

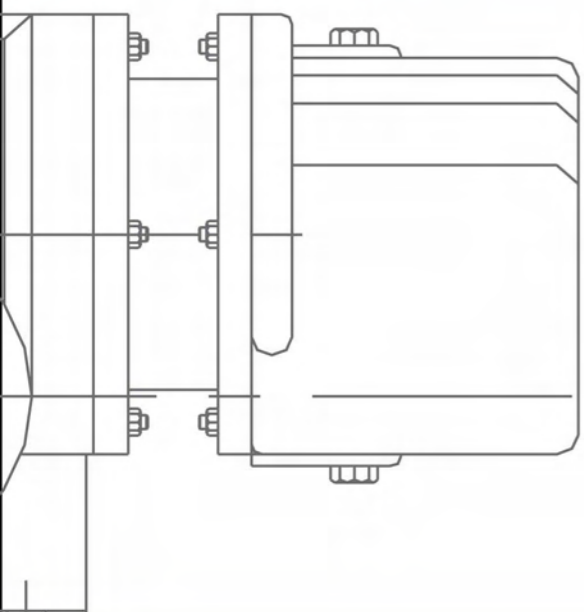
# Norvax



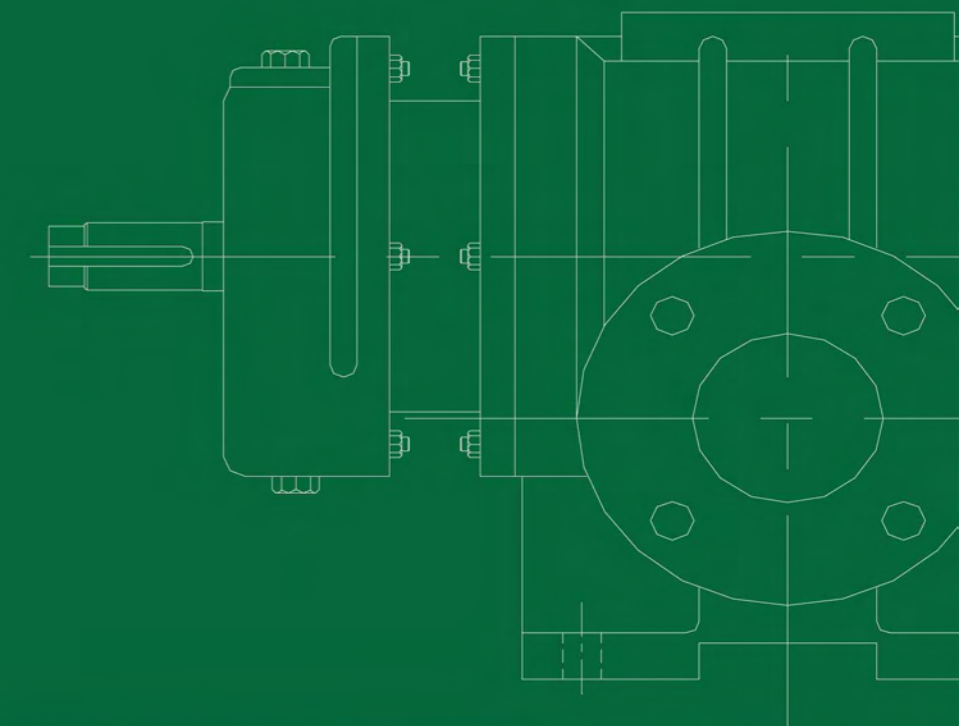
# Norvax

**ROOTS BLOWER**

▷▷▷▷ **ROOTS VACUUM PUMP**



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## THREE LOBE ROOTS BLOWER

### APPLICATIONS

- Waste water treatment, dust collecting after burning
- Equipment of dust collection
- Vacuum dehydration for dying, paper industry
- flue gas desulfurization, facility of environmental regulation
- Exhausting, drying and air transportation
- transportation of gas and power, aquiculture
- Conveyance by air, liquid agitation

### FEATURES

- Wide range of capacity and pressure  
Calibre: 40mm-300mm(1.5"-12")  
Capacity: 0.6-160m<sup>3</sup>/min(12-5700CFM)  
Pressure: The pressure of one-stage GRB type up to 8000mmAq(0.8kgf/cm<sup>2</sup>)
- Delivers completely oil-free air.
- Low oscillation and low noise by dynamic balance which revised by computer.
- Smaller change in capacity against change in pressure.
- High efficiency due to special impeller design.
- Simpler and solid structure, less trouble.
- Highest quality pilot & accurate great applied, long life and low noise assured.
- Standardized product with strict quality control.
- Our rotor has used the most advanced technic, one time for all working process of the four-shaft method, to enhance the precision of leave wheel.

### TYPE DESCRIPTION

**NVD - 125**

PIPE DIAMETER(mm)

NVD : Horizontal Discharge  
 NVV : Vertical Discharge  
 NVG : Horizontal Discharge with Vertical silencer

### WORKING DIRECTIONS OF PERFORMANCE TABLE

- The performance parameter indicate the type, caliber, revolutions, discharge pressure, actual inlet air capacity and shaft power of the blower.
- The performance parameter indicate the air quantity in standard suction condition (temperature 20°C, absolute pressure 1.0332 kgf/cm<sup>2</sup> and relative humidity 65%) .
- The reference air capacity (0°C temperature and 1.0332 kgf/cm<sup>2</sup> absolute pressure) is generally indicated in Nm<sup>3</sup>/min.
- The inlet air capacity can be converted as following.

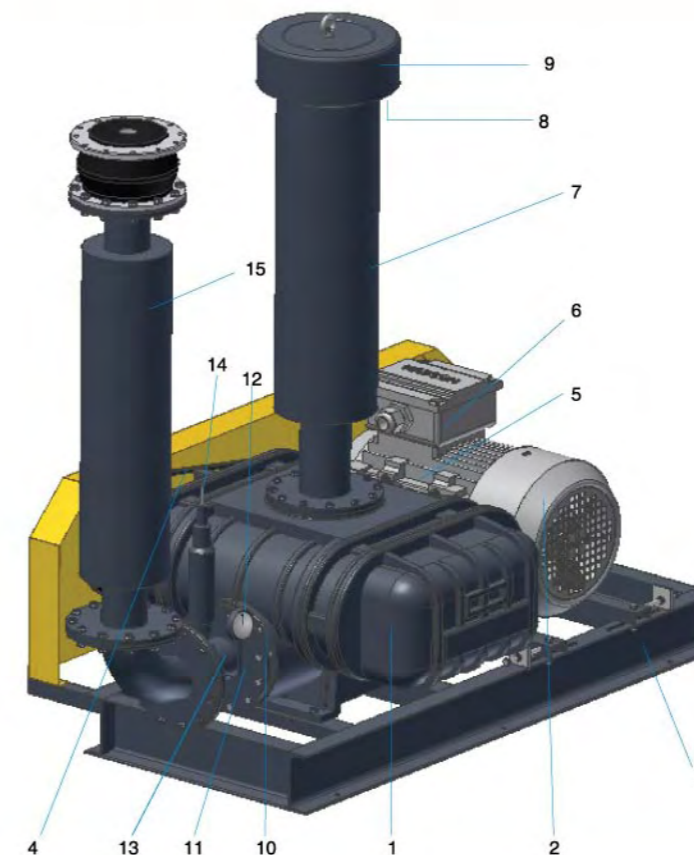
$$Q_2 = Q_1 \times \frac{P_1}{P_2} \times \frac{273 + T_2}{273 + T_1}$$

Q<sub>1</sub>: Air capacity (m<sup>3</sup>/min) based on absolute pressure P<sub>1</sub> (mmAq) temperature T<sub>1</sub> (°C)

Q<sub>2</sub>: Air capacity (m<sup>3</sup>/min) based on absolute pressure P<sub>2</sub> (mmAq) temperature T<sub>2</sub> (°C)

- The motor power is 1.1~1.3 multiple of shaft power.
- The error of the parameter is about 5%.

## EXTERNALITY CONSTRUCTION



No.	Accessories
1	Blower body
2	Motor
3	Foundation
4	Pulley
5	Driving belt
6	Belt cover
7	Suction silencer
8	Air filter
9	Rain cover
10	Check valve
11	Gauge pipe
12	Outlet pressure gauge
13	T-joint
14	Safety valve
15	Outlet silencer

Type NVD-40 without outlet silencer

## CONVERSION TABLE

PRESSURE	atm	kPa	bar	lbt/in <sup>2</sup>	kgf/cm <sup>2</sup>	in Hg	ftAq	mmHg(Torr)	mmAq
1 atm	1	101.325	1.01325	14.696	1.0333	29.921	33.914	760	10333
1 kPa	0.0099	1	0.01	0.145	0.0102	0.295	0.335	7.5	102
1bar	0.9869	100	1	14.504	1.0198	29.53	33.47	750	10198
1 lbt/in <sup>2</sup> (psi)	0.068	6.894	0.0689	1	0.0703	2.036	2.308	51.71	703
1 kgf/cm <sup>2</sup>	0.968	98.062	0.981	14.228	1	28.96	32.82	735.53	10000
1 inHg	0.0334	3.3863	0.0339	0.491	0.0345	1	1.133	25.4	345.3
1 ftAq	0.0295	2.99	0.0299	0.434	0.0305	0.882	1	22.42	304.8
1 mmHg(Torr)	0.013	0.1338	0.00138	0.019	0.0014	0.04	0.045	1	13.6
1 mmAq	0.000097	0.0098	0.000098	0.0014	0.0001	0.003	0.0033	0.074	1

CAPACITY	m <sup>3</sup> /min	l/min	cm <sup>3</sup> /s	in <sup>3</sup> /s	ft <sup>3</sup> /min(cfm)	POWER	Kg-m/sec	KW	HP	PS
1 m <sup>3</sup> /min	1	1000	16667	1016	35.288	1Kg-m/sec	1	0.01	0.013	0.013
1 l/min	0.001	1	16.67	1.02	0.0353	1KW	101.97	1	1.341	1.360
1 cm <sup>3</sup> /s	0.00006	0.06	1	0.061	0.002	1HP	76.038	16.67	1	1.014
1 in <sup>3</sup> /s	0.00098	0.983	16.39	1	0.035	1PS	75	0.7336	0.986	1
1 ft <sup>3</sup> /min(cfm)	0.028	28.32	471.95	28.8	1					

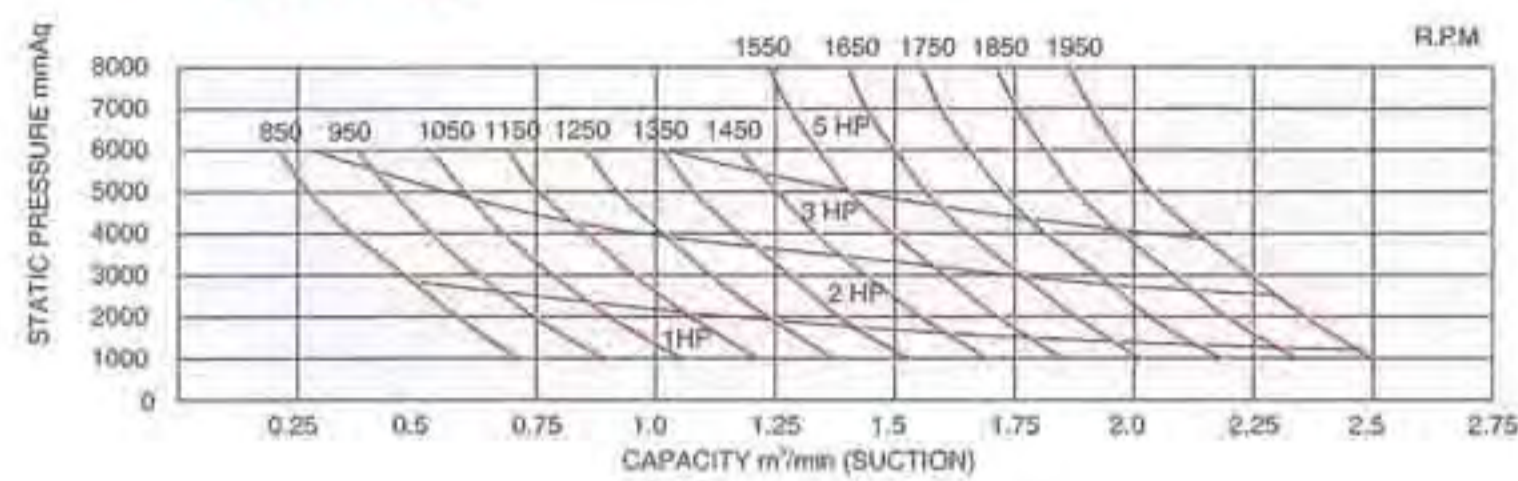
Pressure Conversion Formula  
 1 kPa=1000Pa=1000N/m<sup>2</sup>  
 1mbar=10.198mmAq  
 1mmHg(torr)=133.8Pa



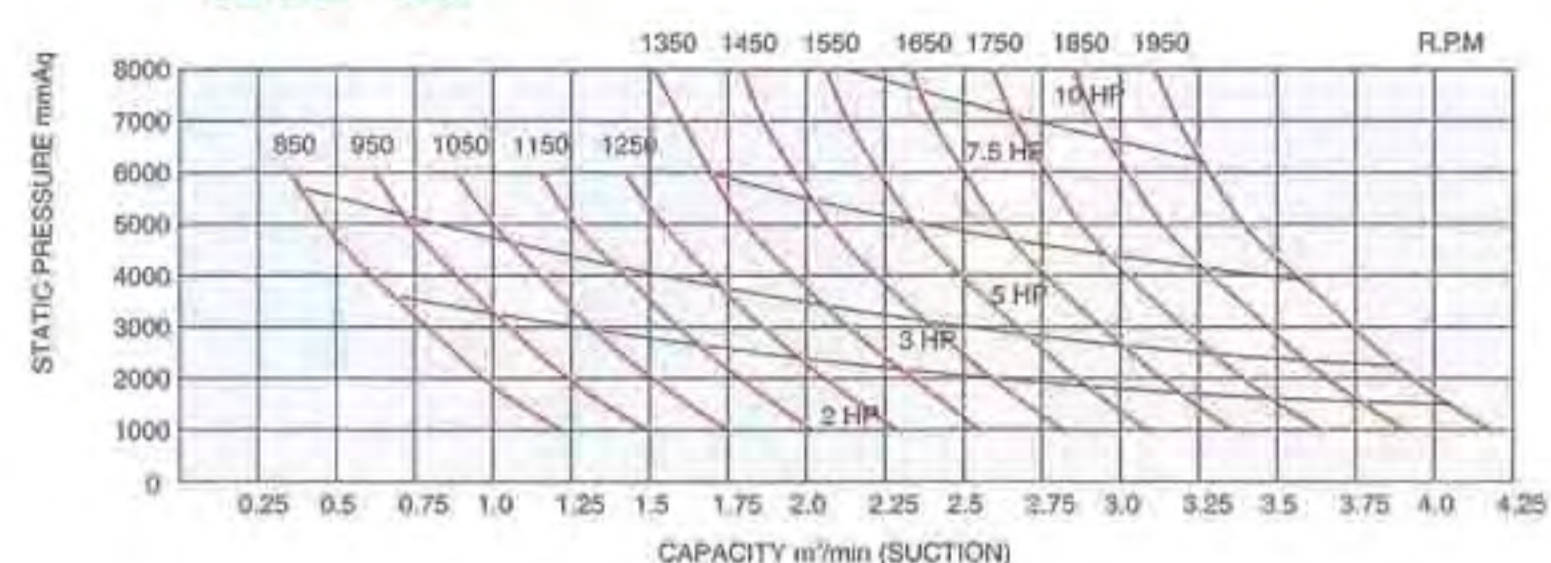


## PERFORMANCE CURVE

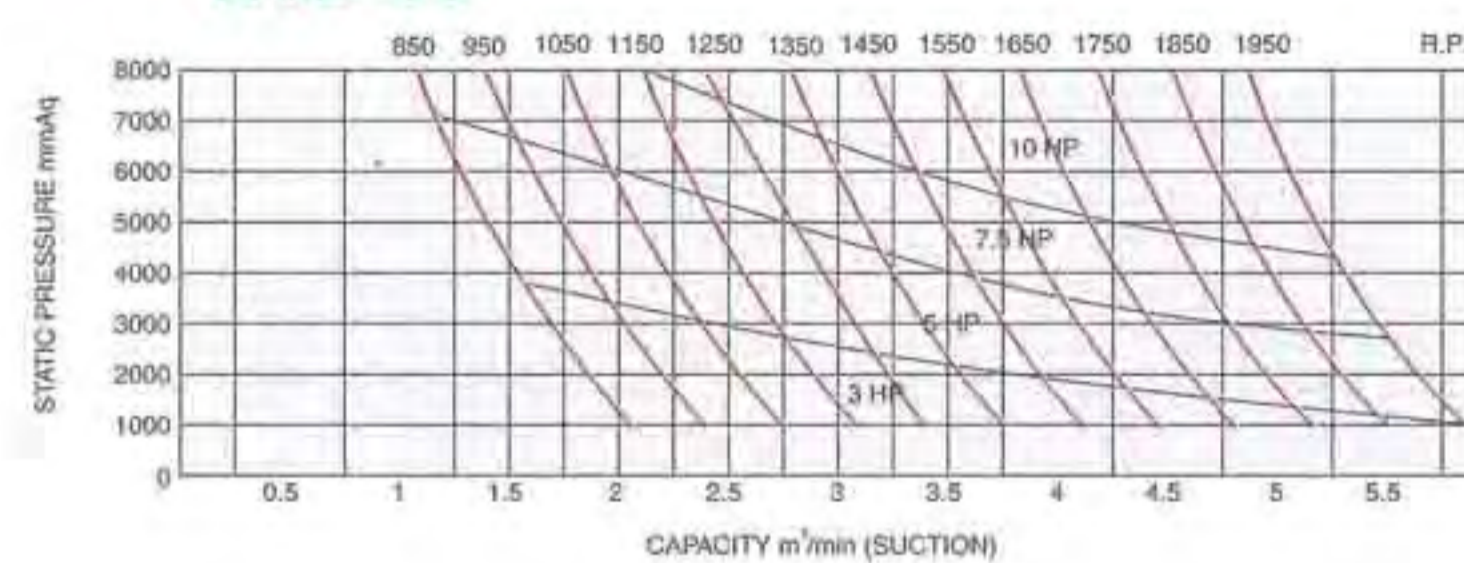
### NVD-40



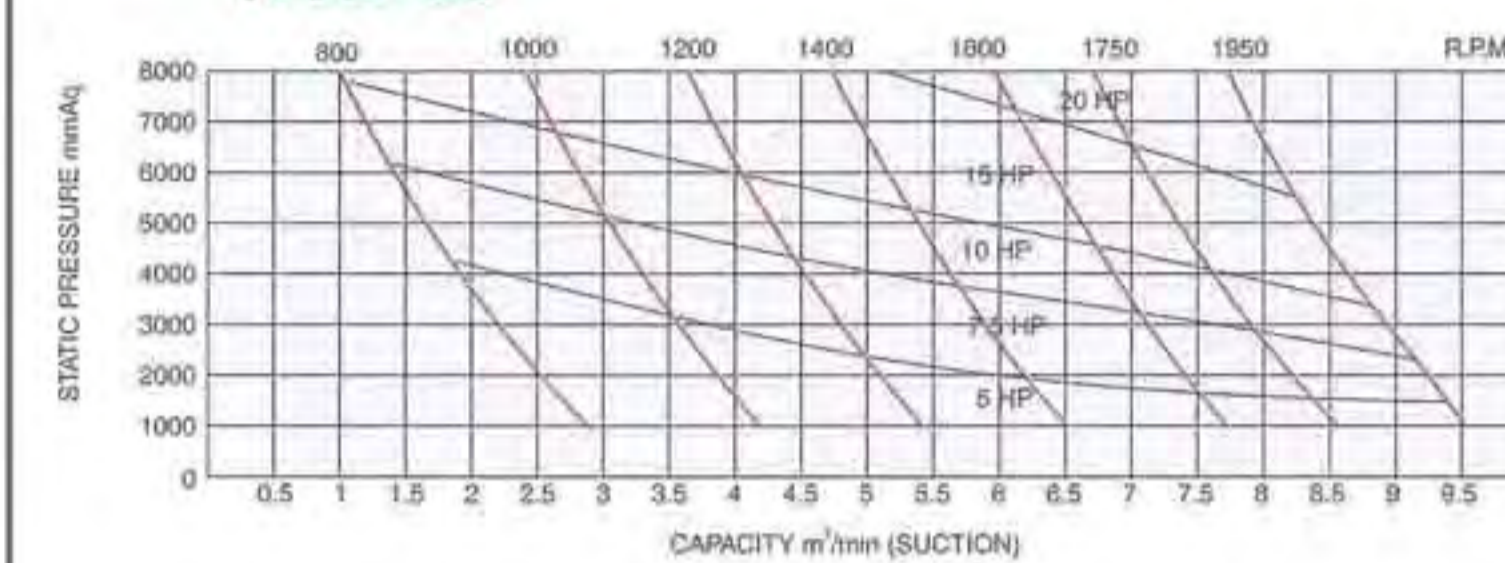
### NVD-50



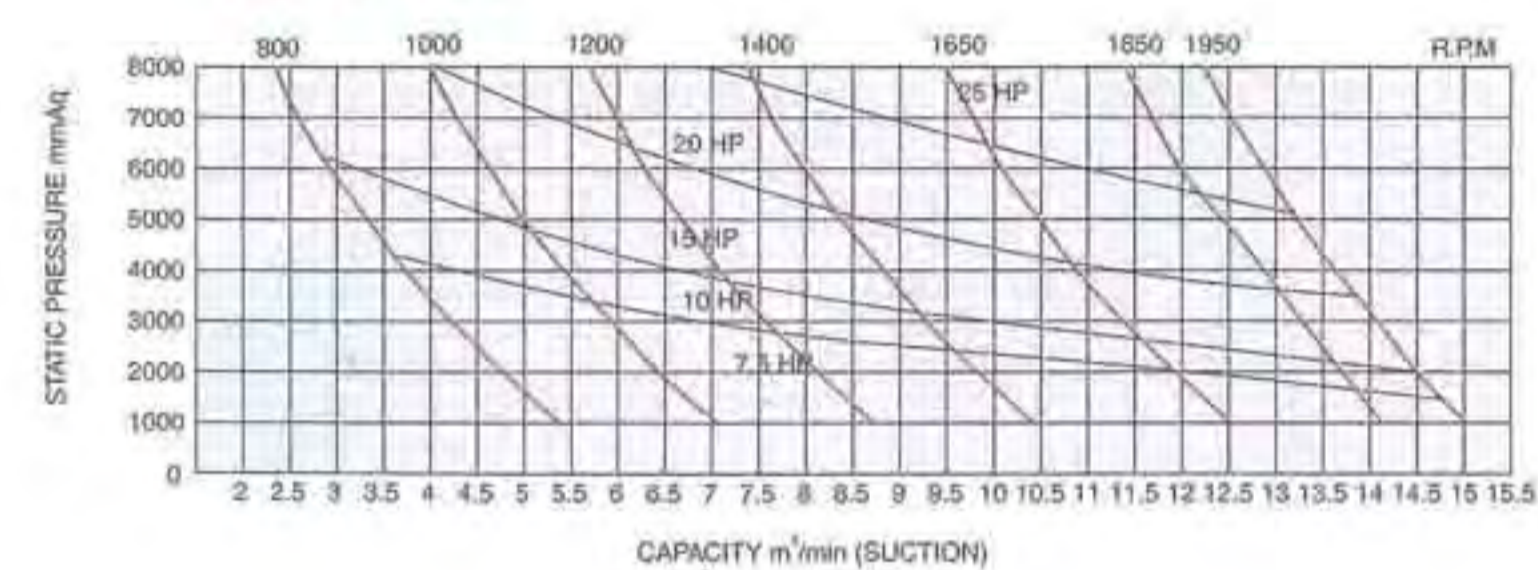
### NVD-65



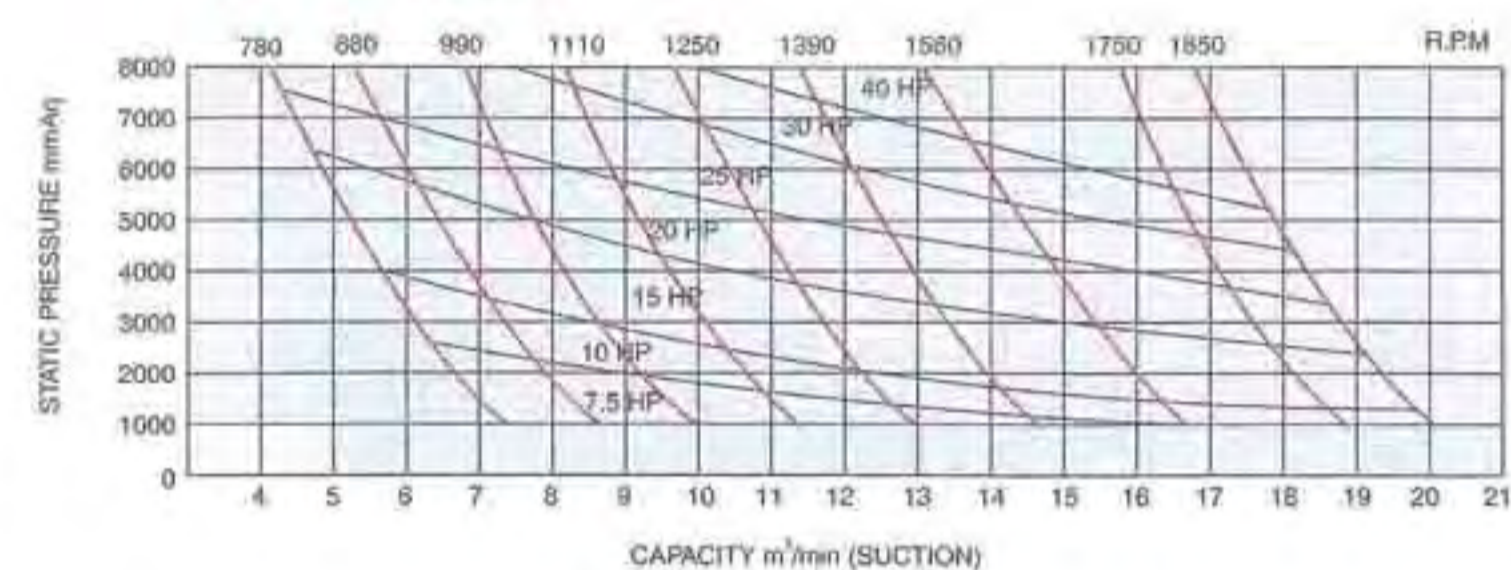
### NVD-80



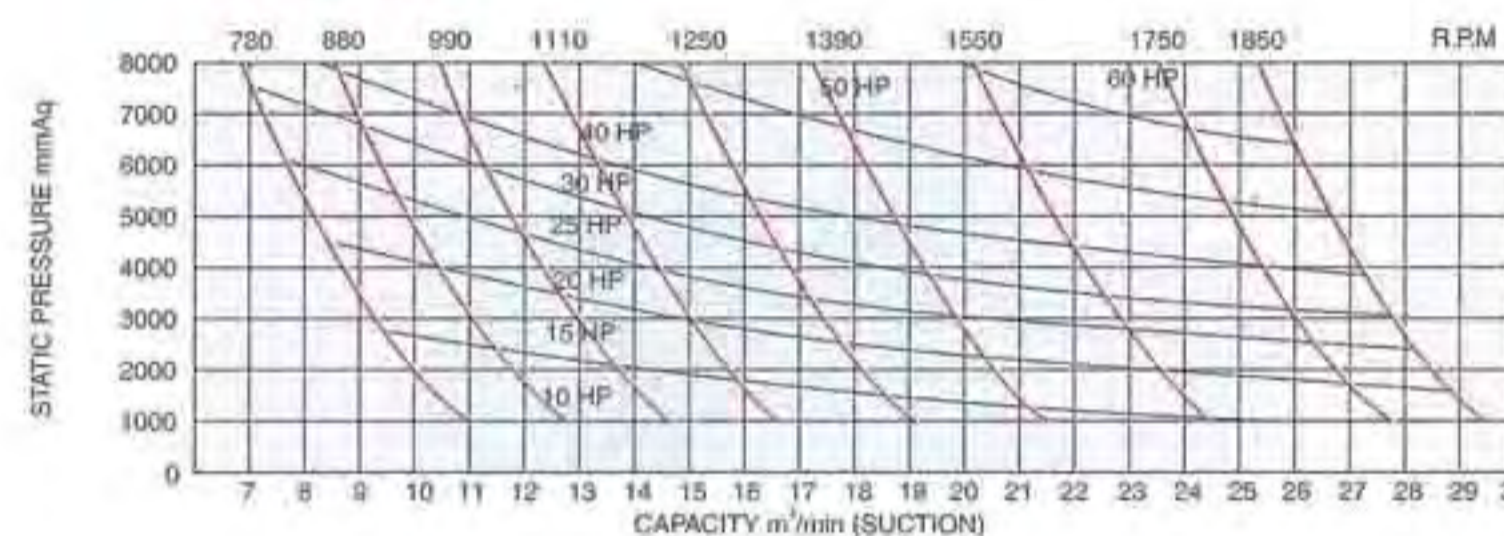
### NVD-100



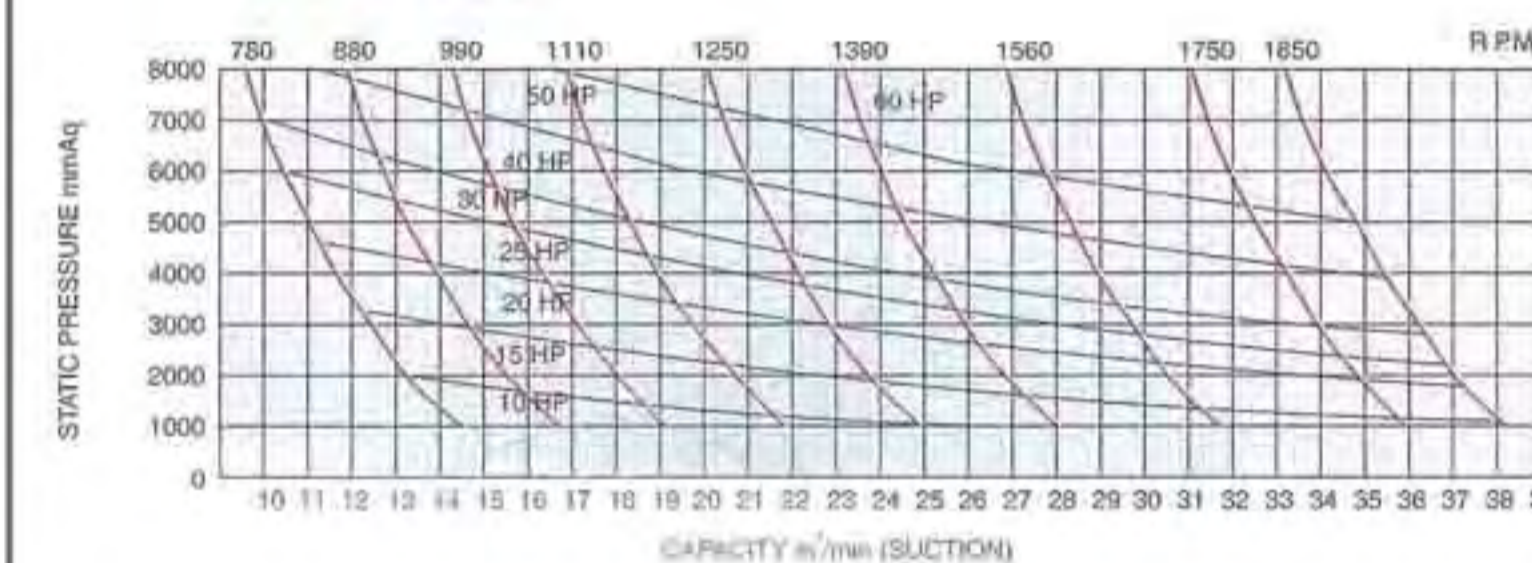
### NVD-125A



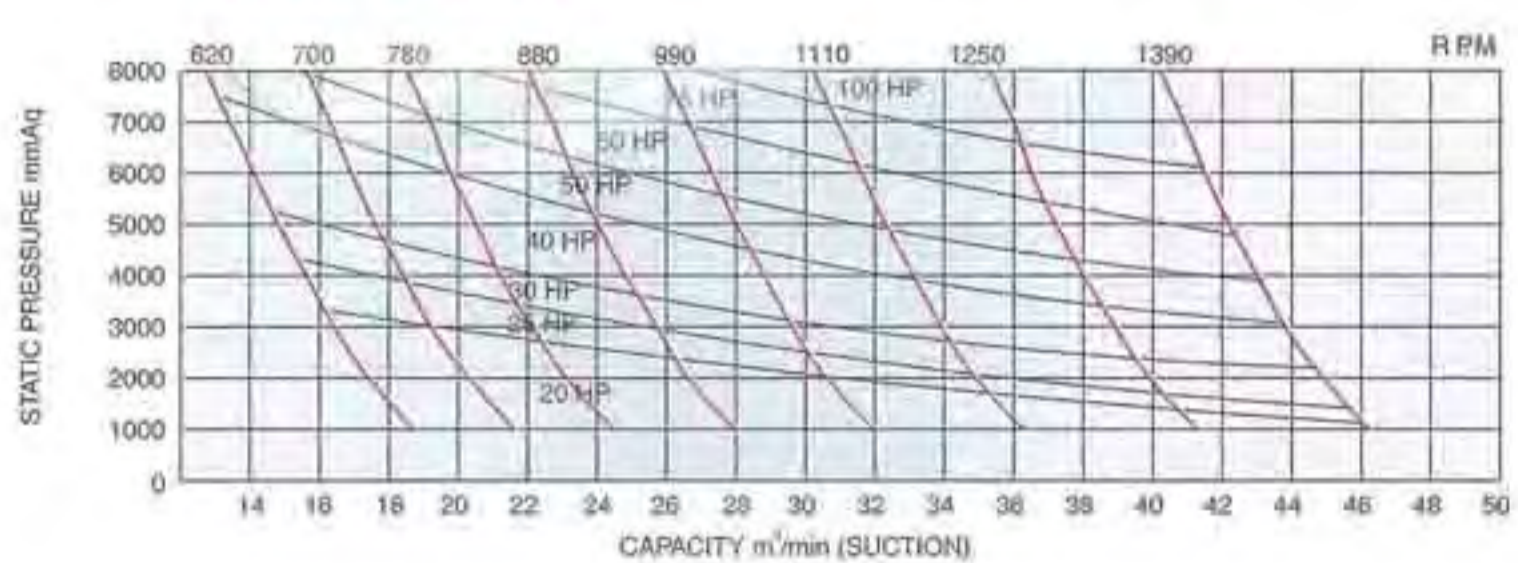
### NVD-125



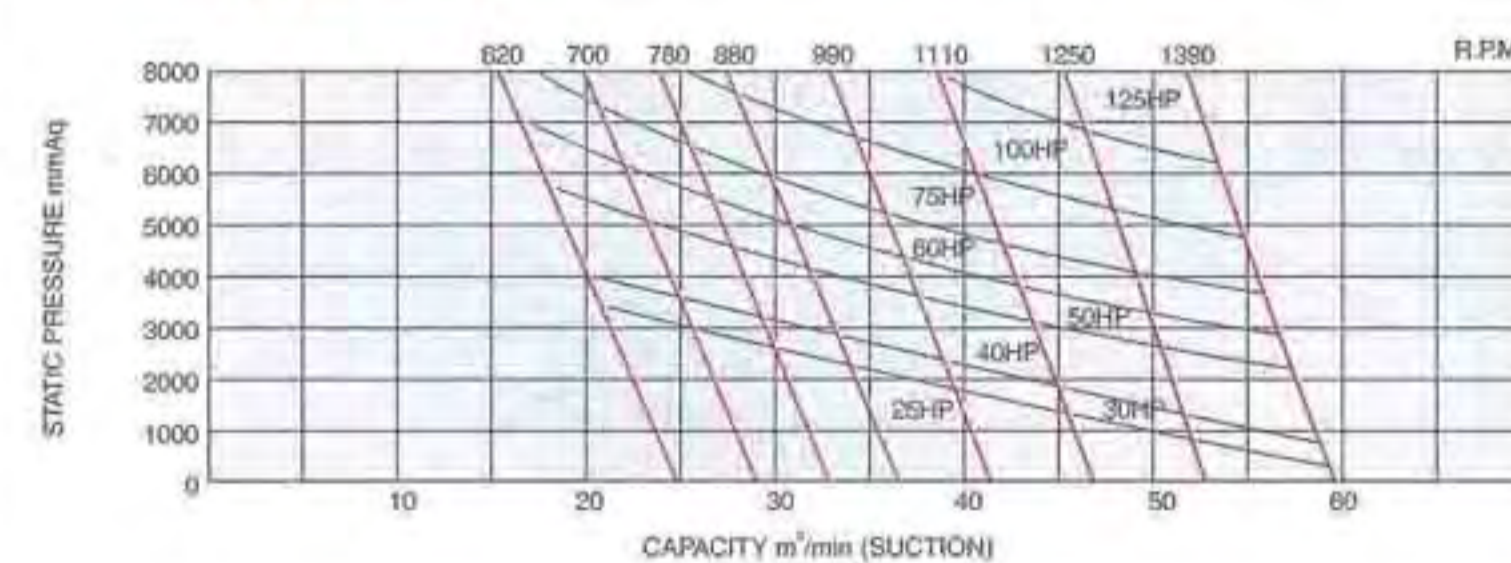
### NVD-150



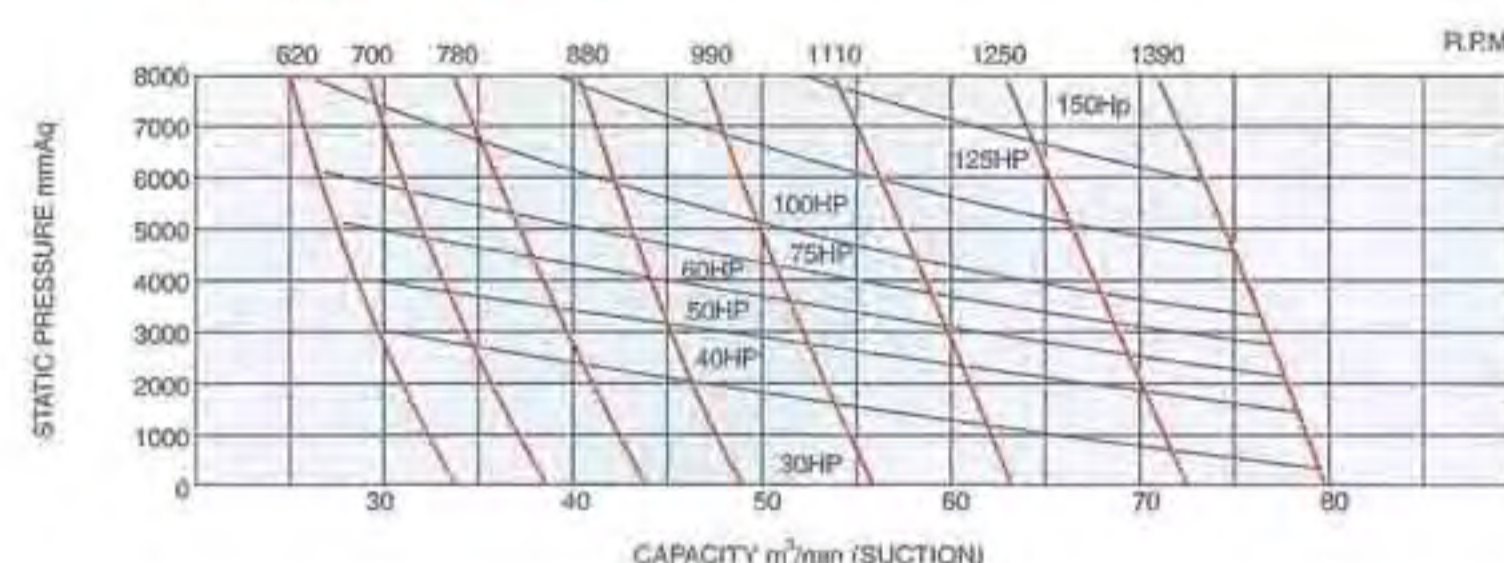
### NVD-200A



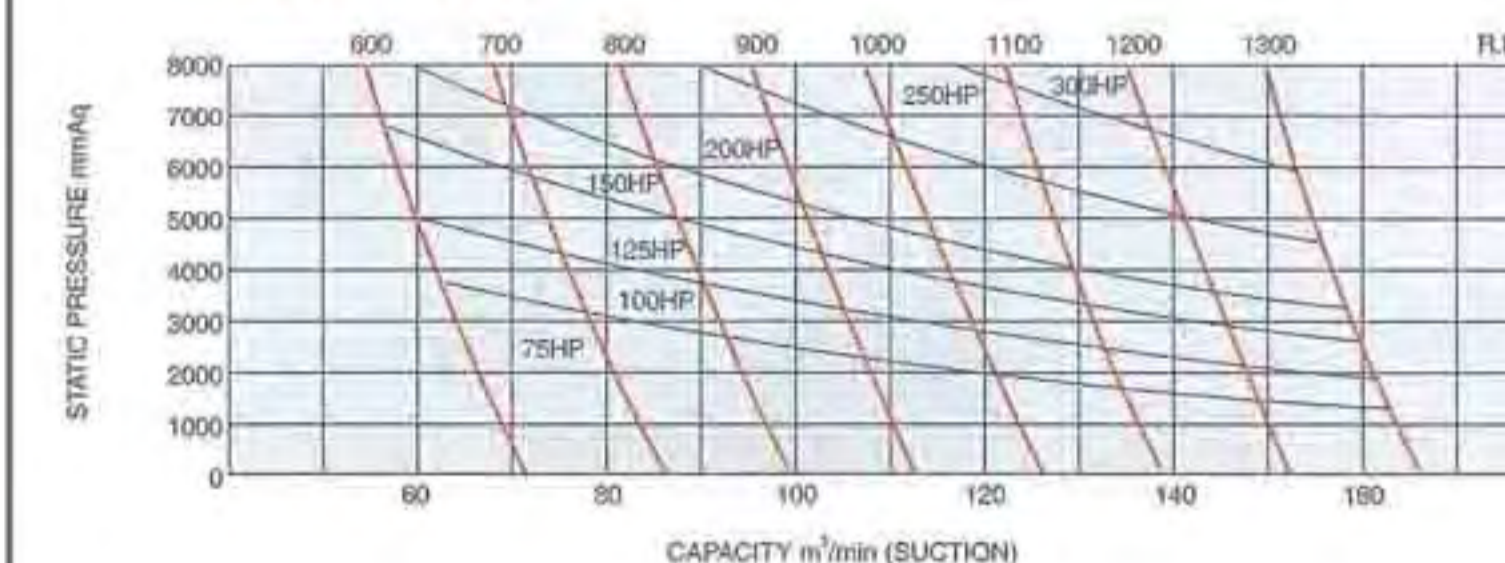
### NVD-200



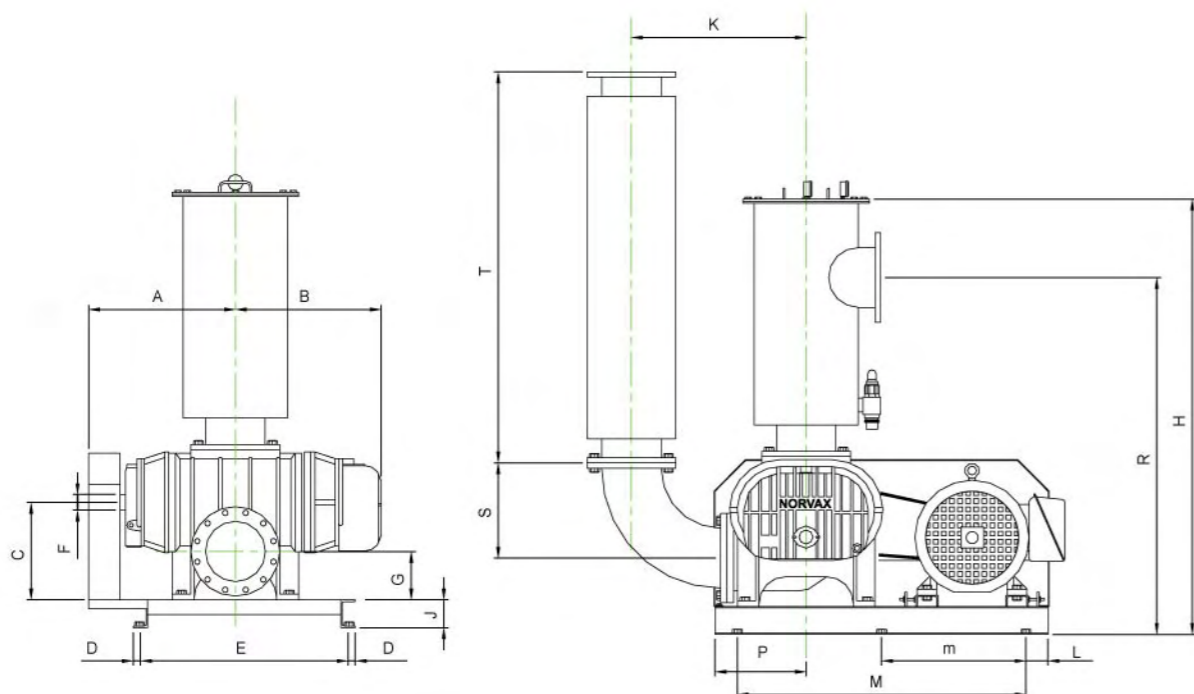
### NVD-250



### NVD-300

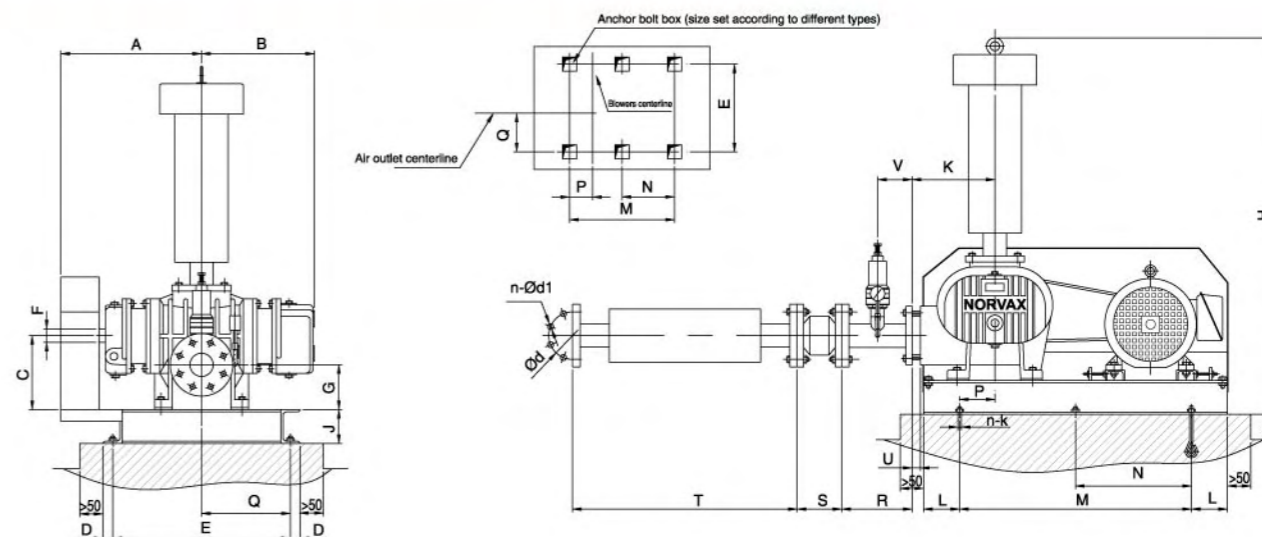


## NVV OVERALL DIMENSION ( Vertical Discharge )

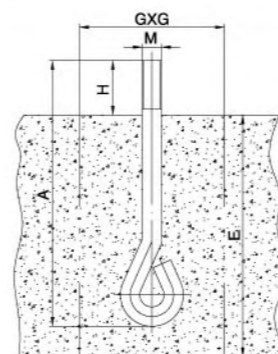


Type	A	B	C	D	E	F	G	H	J	K	L	M	M	P	R	S	T
NVV-50	302	278	175	50	350	28	108	836	75	294	37.5	795	-	245	100	689	592
NVV-65	323	308	173	50	350	28	107	933	75	289	37.5	795	-	245	150	789	596
NVV-80	406	320	213	50	450	38	114	1098	75	332	37.5	945	-	290	180	943	796
NVV-100	467	370	225	25	550	38	120	1286	100	376	100	760	-	240	180	993	796
NVV-125A	440	395	265	25	550	48	143	1294	100	477	100	900	-	238	250	1119	1260
NVV-125	500	455	265	25	550	48	163	1285	100	479	100	900	-	238	250	1110	1260
NVV-150	566	510	295	25	550	48	172	1932	100	517	100	900	-	238	250	1215	1264
NVV-200A	540	497	355	32.5	935	65	194	1680	125	691	100	-	650	410	250	1480	1644
NVV-200	620	547	405	32.5	935	65	198	1780	125	701	100	-	650	410	250	1380	1644
NVV-250	680	622	435	32.5	935	65	216	1945	125	788	100	-	650	410	250	1945	1748
NVV-300A	760	716	415	35	1100	65	255	2270	250	1173	235	-	765	444	481	1920	1848
NVV-300	758	685	550	35	1035	95	300	2510	250	1062	235	-	1000	560	300	2260	1848

## NVD OVERALL DIMENSION ( Horizontal Discharge )

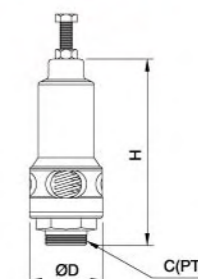


Type	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	Ød	n-Ød1	n-k	Weight (kg)
NVD-40	240	238	180	20	350	28	104	780	46	184	50	500	-	98	88	150	95	592	20	75	110	4-Ø18	4-M12X160	103
NVD-50	302	278	175	20	410	28	103.5	946	80	178	50	620	-	119	148	150	105	592	20	75	125	4-Ø18	4-M12X160	146
NVD-65	313	308	175	20	410	28	104	948	80	176	50	620	-	117	138	150	115	596	24	75	145	4-Ø18	4-M12X160	161
NVD-80	406	320	213	20	510	38	106.5	1283	80	204	100	670	-	112	160	180	135	796	24	90	160	8-Ø18	4-M12X160	265
NVD-100	467	320	225	20	560	38	114.5	1324	100	210	100	760	-	90	233	180	150	796	24	90	180	8-Ø18	4-M16X220	311
NVD-125A	440	395	265	22	556	48	134.5	1988	120	275	100	900	-	133	338	250	165	1260	25	125	210	8-Ø18	4-M16X220	468
NVD-125	500	455	265	22	556	48	157.5	1980	120	275	100	900	-	138	278	250	165	1260	25	125	210	8-Ø18	4-M16X220	490
NVD-150	566	510	295	22	556	48	163	1941	120	276	100	900	-	138	212	250	180	1264	26	125	240	8-Ø22	4-M16X220	565
NVD-200A	540	497	355	30	790	65	198	2317	160	385	100	1300	650	313	454	250	190	1644	28	125	295	8-Ø22	6-M20X300	969
NVD-200	590	547	405	30	940	65	194	2417	160	373	100	1300	650	310	580	250	190	1644	28	125	295	8-Ø22	6-M20X300	1209
NVD-250	680	622	435	30	940	65	216	2587	160	384	140	1400	700	270	490	250	230	1748	28	125	350	12-Ø22	6-M20X300	1507
NVD-300A	760	717	415	25	1100	65	255	2682	160	385	140	1400	700	270	575	300	250	1848	30	125	400	12-Ø22	6-M20X300	1800
NVD-300	758	685	550	35	1030	95	300	3122	250	590	235	2000	1000	325	627	300	250	1848	30	150	400	12-Ø22	6-M20X300	2800



Anchor bolt GB799-88	A	H	E	GxG	Application type
M12	160	36	224	100x100	NVD-40,50,65,80
M16	220	45	275	120x120	NVD-100,125A,125,150
M20	300	55	345	150x150	NVD-200A,200,250,300A,300

### Safety Valve

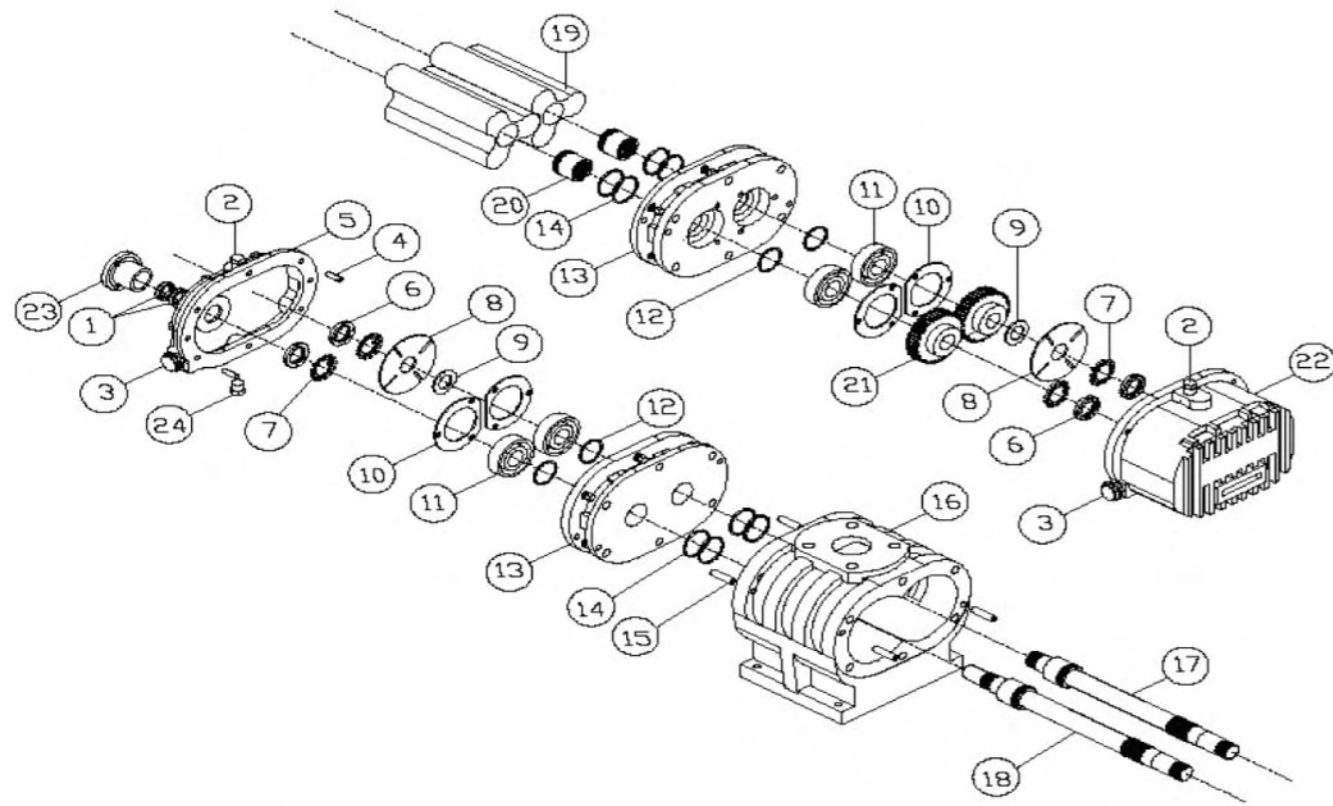


Type	H	ØD	C	Application type
PP1 1/4"	182	71.5	1 1/4"	NVD-40,50,65,80
PP2"	197	85	2"	NVD-100,125A,125,150
PP3"	221	115	3"	NVD-200A,200,250,300A,300

Note: 1. The note E on the drawing is the minimum size, it shall be deepened properly according to the soil condition in the installation place.  
2. GxG is the size of the preformed holes for the secondary casting.



## ASSEMBLED SCHEMATIC DIAGRAM



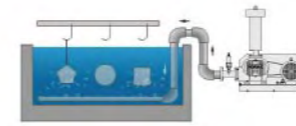
PARTS MATERIAL TABLE

No.	Name	Material	QTY	No.	Name	Material	Number
1	Oil seal	Viton	1	12	V-ring	Viton	4
2	Lubrication plug	S45C	2	13	Bearing case	FC25	2
3	Oil gauge	Plastic	2	14	Seal housing	FC25	1
4	Positioning pin	S45C	2	15	Positioning pin	S45C	4
5	Oil box	FC25	1	16	Casing	FC25	1
6	Lock nut	S45C	4	17	Driven shaft	SCM440	1
7	Washer	S45C	4	18	Drive shaft	SCM440	1
8	Oil splash	SS41	2	19	Rotor	FCD500	2
9	Washer	SS41	2	20	Gear	SNCM220	2
10	Bearing washer	SS41	2	21	Gear case	FC25	1
11	Bearing washer	SUJ2	4	22	Purge plug	S45C	2

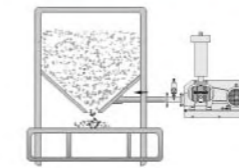
**ROOTS BLOWER**  
**ROOTS VACUUM PUMP**

## APPLICATION

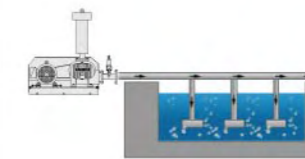
CIRCULATOR



HOPPER



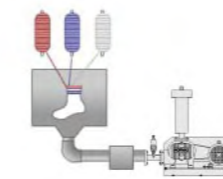
AERAYION



ELIMINATOR



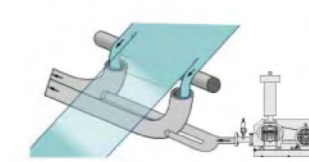
SOCKLOOP



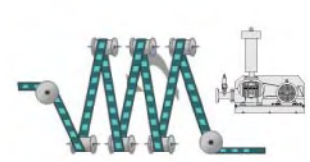
VACUUM TRANSFER



PAPER SCRAP



DRYER



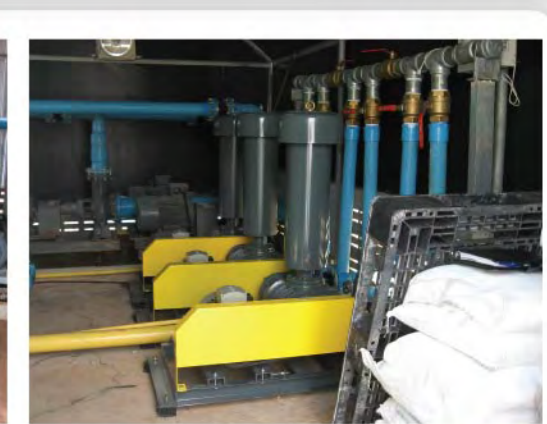
## REFERENCE



Shrimp farm



Waste water treatment



Waste water treatment

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