

ROOTS® Tri-Nado™ Tri-Lobe Blowers



Frame 1125 & 1128 Design and Construction Features:

- Cast-foot design for reduced vibration
- Stronger construction for minimum noise and vibration
- Progressive chamber design that reduces noise

Tri-Lobe Vacuum Blower Description

The ROOTS® TRI-NADO™ Truck-Mount, Tri-Lobe Vacuum Blowers have been redesigned to incorporate the latest technology for reduced noise and vibration. These features include:

- Cast-foot design for reduced vibration
- Stronger construction for minimum noise and vibration
- Progressive chamber design that reduces noise and features cooler operation.

Casing

The casing is of one piece close-grained cast iron construction. The casing is heavily ribbed to prevent distortion under the most severe operating conditions and incorporates the ROOTS WHISPAIR™ feature for reduced pulsation, horsepower and noise levels.

Impellers

The closed-end impellers are made from ductile iron with high tensile strength, and operate without liquid sealing or lubrication.

Shafts

The shafts are 3" diameter alloy steel forgings flange connected to the impeller body.

Timing Gears

The impellers are timed by a pair of alloy steel spur gears that operate in an oil bath.

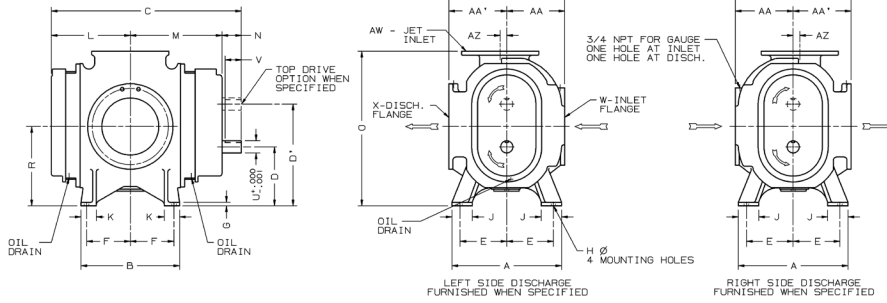
Bearings

The impeller/shaft assemblies are supported at each end by antifriction bearings.

Lubrication

A patented jet spray oil slinger system provides lubrication to gears and bearings.

Model	Speed	6" HgVac		15" HgVac		21" HgVac		24" HgVac		27" HgVac		28" HgVac	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1125 Tri-Nado	750	1768	28.0	1376	69.1	962	96.7	526	110.7	-	124.3	-	-
	1200	3064	44.0	2672	110.5	2258	154.7	1822	176.8	508	198.9	-	-
	1400	3640	52.0	3248	128.9	2834	180.5	2398	206.3	1084	232.1	-	-
	1600	4216	59.0	3824	147.4	3410	206.3	2974	235.8	1660	265.3	-	-
	1800	4792	74.4	4400	170.9	3986	235.1	3550	267.3	2236	299.4	-	310
	2000	5368	84.8	4976	191.2	4562	262.1	4126	297.5	2812	333	-	344
1128 Tri-Nado	750	2000	31.7	1557	78.2	1088	109.4	595	125.2	-	140.6	-	-
	1200	3466	49.8	3023	125.0	2554	175.0	2061	200.0	575	225.0	-	-
	1400	4118	58.8	3674	145.8	3206	204.2	2713	233.4	1226	262.6	-	-
	1600	4769	66.7	4326	166.7	3858	233.4	3364	266.7	1878	300.1	-	-
	1800	5421	84.2	4978	193.3	4509	266.0	4016	302.4	2529	338.7	-	351
	2000	6073	95.9	5629	216.3	5161	296.5	4668	336.5	3181	376.7	-	390



**Vertical configuration
(Horizontal air flow)**

**Horizontal configuration
(Vertical air flow)**

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Outline drawing of ROOTS Tri-nado Truck Mount Tri-lobe Vacuum Blower

Frame	A	B	C	D	D ₁	E	F	G	H	J	K	L	M
1125 Tri-nado	27.00	24.25	46.79	14.50	25.00	11.50	10.75	0.88	1.13	5.00	3.75	19.44	22.56
N	O	P	R	U	V	KEYWAY	WFig	XFig	AA	AA ₁	AW Fig	AZ	Approx. Net Wt.
4.79	38.00	28.50	19.50	3.000	4.00	.750 x.375	12	14	14.3	14.3	12	1.63	2670

Frame	A	B	C	D	D ₁	E	F	G	H	J	K	L	M
1128 Tri-nado	27.00	24.25	50.04	14.50	25.00	11.50	10.75	0.88	1.13	5.00	3.75	21.06	24.19
N	O	P	R	U	V	KEYWAY	WFig	XFig	AA	AA ₁	AW Fig	AZ	Approx. Net Wt.
4.79	38.00	28.50	19.50	3.000	4.00	.750 x.375	12	14	14.3	14.3	12	1.63	2800

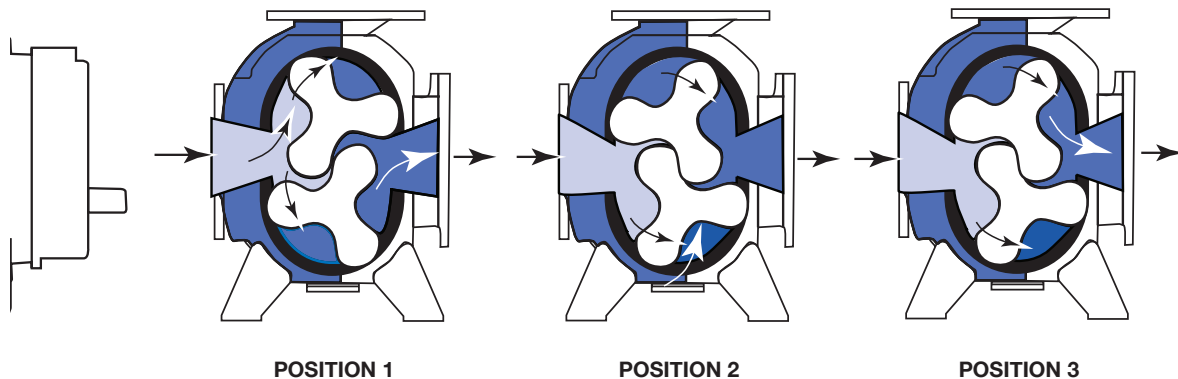
Principle of Operation

Shaded blue areas indicate air pressure variations from intake to atmosphere discharge.

Position 1 - Incoming air is trapped between the impellers and the case, producing a vacuum in the application system. Simultaneously, air is discharged (right) from the vacuum blower.

Position 2 - As the impeller passes the jet plenum, atmospheric air flows into the space between the impeller and the case. This cools the trapped air, aids impeller movement and reduces shock and power loss.

Position 3 - The trapped air is then moved to the discharge flange (right). Backflow is reduced, resulting in lower discharge noise relative to conventional rotary vacuum blowers.



Testing

Each ROOTS rotary lobe vacuum blower is given a complete mechanical run at full speed and vacuum to ensure mechanical integrity and verify performance. The units are operated at maximum rated vacuum level for a minimum of one hour after temperatures have stabilized. Performance readings are recorded during the test, and each unit must meet vibration in three planes before being certified as acceptable