

ROOTS® HV High Vacuum Boosters



Boosters available
in 6" to 20" gear
diameter frame sizes

ROOTS® HV High Vacuum Boosters are continuous duty, splash lubricated, units designed for applications to the single digit micron range when used in series with a backing pump.

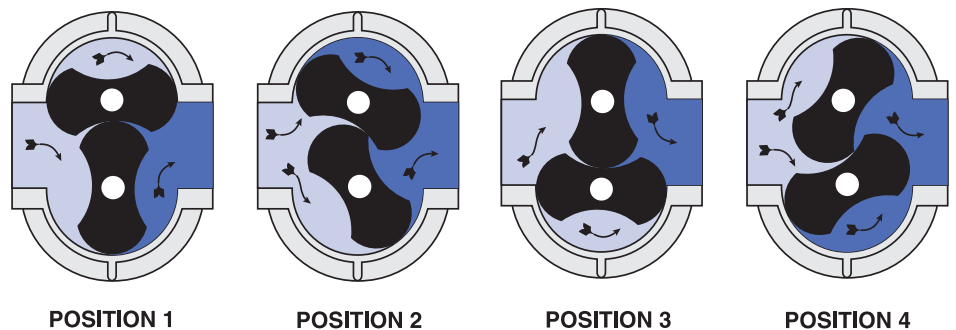
Blower description

The ROOTS® HV High Vacuum Booster utilizes a series of lip seals and purge gas at each shaft to isolate lubrication oil from the process and atmosphere. ROOTS HV design eliminates the need for pressure lubrication of gears, bearings and seals as well as the need for an oil cooler. Alternatively, the ROOTS HV design utilizes a compact splash lubrication design that ensures the oil quality of the booster is maintained.

The ROOTS HV High Vacuum Booster is constructed with a close-grained grey iron casing, alloy steel timing gears, ductile iron impellers and antifriction bearings.

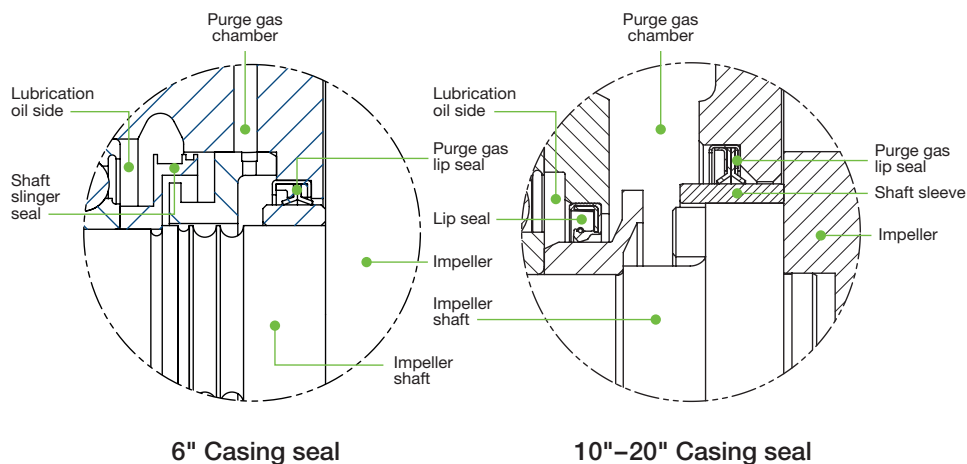
Bi-lobe operating principle

Two figure-eight lobe impellers mounted on parallel shafts rotate in opposite directions. As each impeller passes the blower inlet, it traps a finite volume of air and carries it around the case to the blower outlet, where the air is discharged. With constant speed operation, the displaced volume is essentially the same regardless of pressure, temperature or barometric pressure. Timing gears control the relative position of the impellers to each other and maintain small but finite clearances. This allows operation without lubrication being required inside the lobe cavity.



Performance table

Frame size	Max speed (RPM)	Gross displ. CFM/(m ³ /hr)	Inlet flange in/(mm)	Disch flange in/(mm)	Unit weight lbs/(kg)
623	3600	3,877 (6,587)	7.9 (200)	7.9 (200)	720 (327)
1030	1800	7,182 (12,202)	11.8 (300)	11.8 (300)	2,375 (1,077)
1542	1800	17,922 (30,449)	19.7 (500)	19.7 (500)	5,363 (2,556)
2060	1000	31,920 (54,230)	30.0 (760)	24.0 (610)	13,200 (5,990)



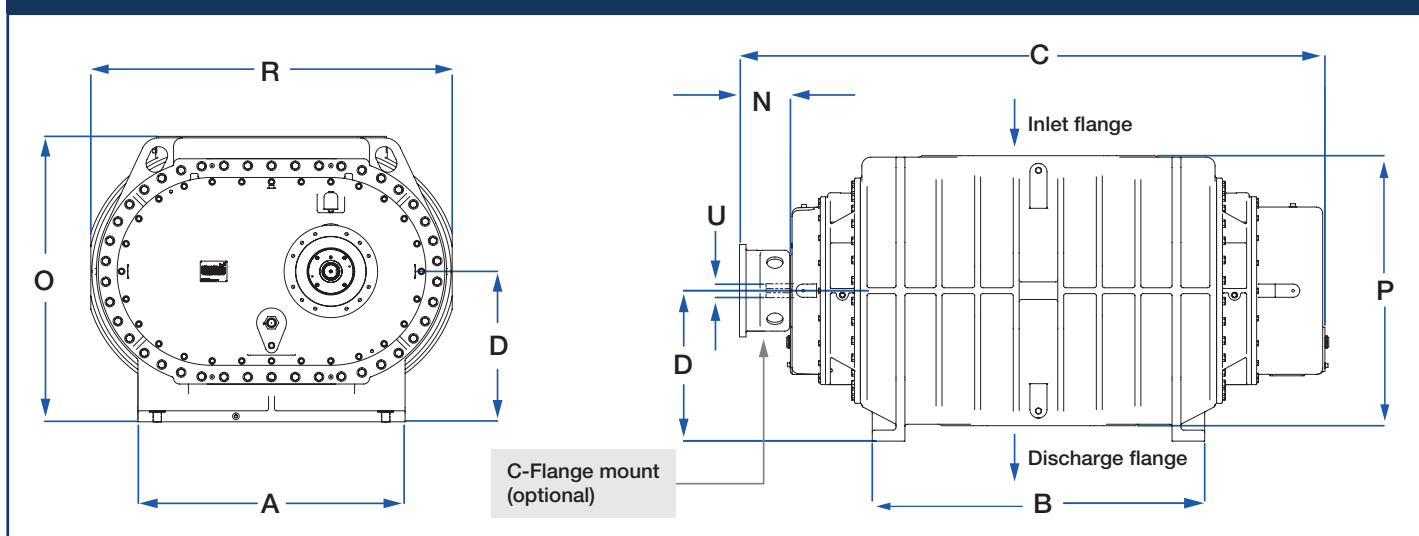
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Frame sizes 623-2092



Dimensional table

Frame size	A in/(mm)	B in/(mm)	C in/(mm)	D in/(mm)	N in/(mm)	O in/(mm)	P in/(mm)	R in/(mm)	U in/(mm)	W in/(mm)	W1 in/(mm)	Weight lbs/(kg)
623	15.00 (381)	25.8 (654.05)	45.3 (1150.92)	9.0 (228.60)	8.8 (222.25)	17.0 (431.80)	16.0 (406.40)	19.9 (504.37)	1.2 (30.00)	7.9 (200)	7.9 (200)	720 (327)
1030	27.0 (685.8)	27.3 (693.7)	60.4 (1534.16)	14.5 (368.3)	8.6 (218)	28.5 (723.9)	28.0 (711.12)	31.0 (787.4)	1.4 (35.019)	11.8 (300)	11.8 (300)	2375 (1077)
1542	34.7 (880)	41.7 (1060)	82.5 (2095.1)	19.7 (500)	10.7 (272)	39.0 (990)	38.6 (980)	42.5 (1079.9)	2.4 (60)	19.7 (500)	19.7 (500)	5636 (2556)
2060	45.0 (1143)	56.0 (1422)	98.6 (2504)	25.6 (651)	8.6 (218)	48.6 (1234)	46.0 (1168)	60.9 (1547)	2.4 (60)	30.0 (760)	24.0 (610)	13200 (5990)

W = Diameter of inlet

W1 = Diameter of discharge