

SPECIFICATIONS

ROOTS

Blowers Compressors Exhausters

ROOTS™ RGS-HVB High Vacuum Boosters

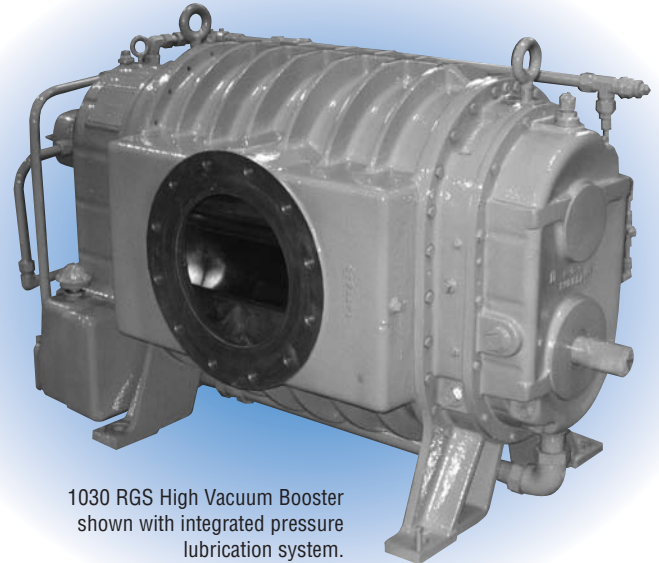
Frames 1009 thru 2060

BASIC BLOWER DESCRIPTION

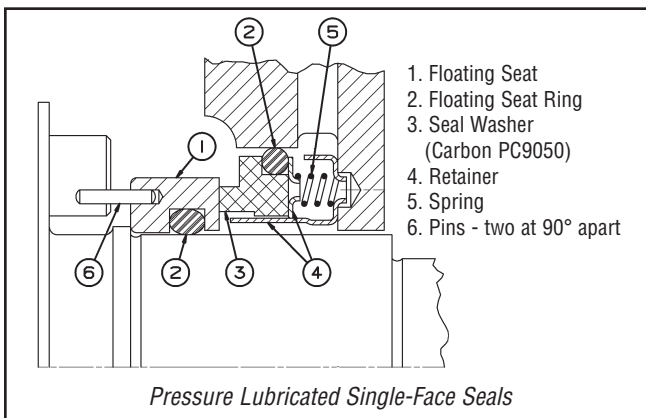
RGS High Vacuum Boosters are continuous duty units designed for applications to the single digit micron range when used in series with a backing pump.

The basic high vacuum booster is constructed with a close-grained grey iron cylinder, alloy steel timing gears, ductile iron impellers and anti-friction bearings.

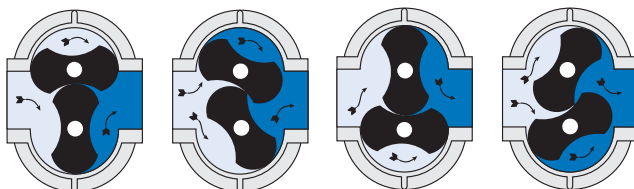
RGS High Vacuum Boosters have four pressure lubricated single-face seals, one at each shaft, between the bearing and pumping compartment. Gears and bearings are under atmospheric pressure. A shaft driven oil pump supplies clean, cool lubricating oil to gears, bearings and seals.



1030 RGS High Vacuum Booster shown with integrated pressure lubrication system.



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

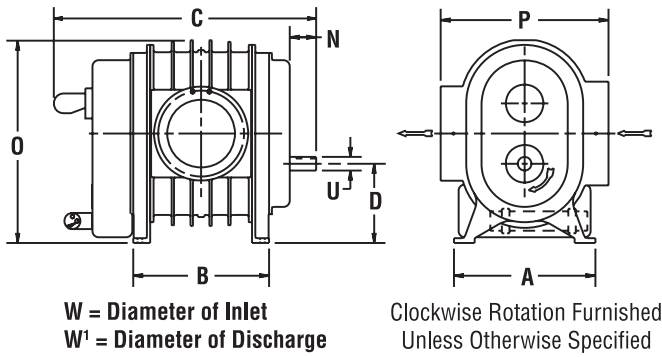
| Size | Max. Speed RPM | Gross Displ. CFM | Inlet Flange Inches | Disch. Flange Inches | Unit Wt. Lbs. |
|------|----------------|------------------|---------------------|----------------------|---------------|
| 1009 | 1900 | 2276 | 8 | 8 | 1840 |
| 1012 | 1900 | 3034 | 8 | 8 | 2010 |
| 1016 | 1900 | 4170 | 10 | 10 | 2240 |
| 1018 | 1900 | 4740 | 10 | 10 | 2300 |
| 1021 | 1900 | 5310 | 12 | 10 | 2400 |
| 1024 | 1900 | 6061 | 12 | 10 | 2740 |
| 1030 | 1900 | 7581 | 14 | 12 | 3390 |
| 1225 | 1600 | 7792 | 14 | 12 | 3900 |
| 1228 | 1600 | 8704 | 14 | 12 | 4060 |
| 1236 | 1600 | 11008 | 16 | 14 | 4590 |
| 1431 | 1350 | 11097 | 16 | 14 | 5800 |
| 1435 | 1350 | 12339 | 18 | 16 | 6050 |
| 1442 | 1350 | 14796 | 20 | 18 | 6640 |
| 1639 | 1200 | 15960 | 18 | 16 | 8170 |
| 1648 | 1200 | 19620 | 24 | 20 | 8590 |
| 1841 | 1060 | 18741 | 20 | 18 | 10230 |
| 1845 | 1060 | 20564 | 20 | 18 | 10600 |
| 1854 | 1060 | 24634 | 24 | 20 | 11200 |
| 2040 | 1000 | 21280 | 24 | 20 | 12750 |
| 2050 | 1000 | 26600 | 24 | 20 | 13700 |
| 2060 | 1000 | 31920 | 30 | 24 | 15480 |



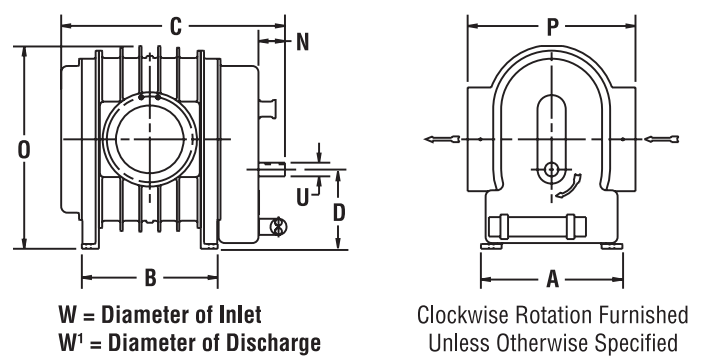
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OUTLINE DRAWINGS & DIMENSIONS

Frame Sizes 1009 - 1442



Frame Sizes 1639 - 2060



| Frame Size | Inlet A | Disch. B | Approx. C | D | N | O | P | U | W | W' | Weight |
|------------|---------|----------|-----------|--------|-------|--------|--------|-------|----|----|--------|
| 1009 | 27 | 15.75 | 40.812 | 14500 | 4.625 | 34.625 | 28.000 | 2.250 | 8 | 8 | 1840 |
| 1012 | 27 | 18.75 | 43.812 | 14.500 | 4.625 | 34.625 | 28.000 | 2.250 | 8 | 8 | 2010 |
| 1016 | 27 | 23.25 | 48.312 | 14.500 | 4.625 | 35.625 | 28.000 | 2.250 | 10 | 10 | 2240 |
| 1018 | 27 | 25.50 | 50.562 | 14.500 | 4.625 | 35.625 | 28.000 | 2.250 | 10 | 10 | 2300 |
| 1021 | 27 | 27.75 | 52.812 | 14.500 | 4.625 | 35.625 | 28.000 | 2.250 | 12 | 10 | 2400 |
| 1024 | 27 | 30.75 | 55.812 | 14.500 | 4.625 | 35.625 | 28.000 | 2.250 | 12 | 10 | 2740 |
| 1030 | 27 | 36.75 | 61.812 | 14.500 | 4.625 | 35.625 | 28.000 | 2.250 | 14 | 12 | 3390 |
| 1225 | 30.50 | 32.50 | 59.312 | 16.625 | 5.500 | 41.375 | 30.500 | 2.625 | 14 | 12 | 3900 |
| 1228 | 30.50 | 36.00 | 62.812 | 16.625 | 5.500 | 41.375 | 30.500 | 2.625 | 14 | 12 | 4060 |
| 1236 | 30.50 | 43.50 | 70.312 | 16.625 | 5.500 | 41.375 | 30.500 | 2.625 | 16 | 14 | 4590 |
| 1431 | 34 | 39.75 | 69.000 | 18.750 | 6.250 | 47.687 | 34.625 | 3.000 | 16 | 14 | 5800 |
| 1435 | 34 | 43.25 | 72.500 | 18.750 | 6.250 | 47.687 | 34.625 | 3.000 | 18 | 16 | 6050 |
| 1442 | 34 | 50.25 | 79.500 | 18750 | 6.250 | 47.687 | 34.625 | 3.000 | 20 | 18 | 6640 |
| 1639 | 37.5 | 48.0 | 78.937 | 21.00 | 7.00 | 54.000 | 38.375 | 3.562 | 18 | 16 | 8170 |
| 1648 | 37.5 | 57.0 | 87.937 | 21.00 | 7.00 | 54.000 | 38.375 | 3.562 | 24 | 20 | 8590 |
| 1841 | 41.0 | 51.0 | 85.687 | 23.25 | 7.75 | 59.750 | 42.375 | 4.188 | 20 | 18 | 10230 |
| 1845 | 41.0 | 55.0 | 89.687 | 23.25 | 7.75 | 59.750 | 42.375 | 4.188 | 20 | 18 | 10600 |
| 1854 | 41.0 | 64.0 | 98.687 | 23.25 | 7.75 | 59.750 | 42.375 | 4.188 | 24 | 20 | 11200 |
| 2040 | 45.0 | 51.0 | 87.000 | 25.50 | 8.75 | 66.937 | 46 | 4.500 | 24 | 20 | 12750 |
| 2050 | 45.0 | 61.0 | 97.000 | 25.50 | 8.75 | 66.937 | 46 | 4.500 | 24 | 20 | 13700 |
| 2060 | 45.0 | 71.0 | 107.000 | 25.50 | 8.75 | 66.937 | 46 | 4.500 | 30 | 24 | 15480 |



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