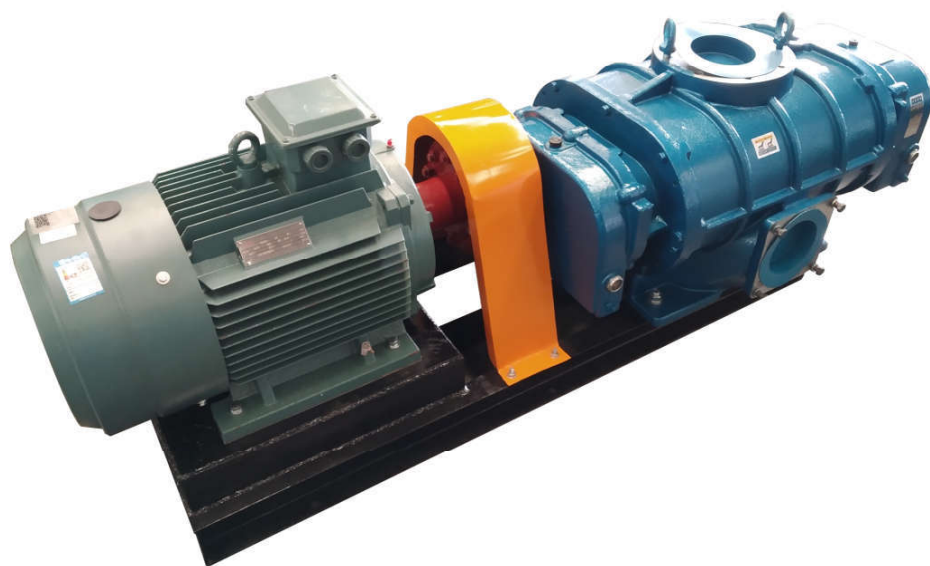


品质源自专业 诚信铸就明天

Specialty Builds Quality Honesty Creates Future



RSR Series Three Lobes Roots Blower / Vacuum Pump



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山东明天机械集团股份有限公司  
Shandong Mingtian Machinery Group Joint Stock Co., Ltd

## Company Introduction



**Shandong Mingtian Machinery Group Joint Stock Co., Ltd** is located Zhangqiu District, Jinan City, Shandong Province. It covers an area of more than 76000 m<sup>2</sup>, building surface is more than 39000m<sup>2</sup>, with more than 180 employees, among of them including 22 technicians, 5 technical engineers, and 3 domestic chief experts.

Founded in 2007, we are manufacturing and exporting roots blower and MVR compressors with 12 years experiences. With advanced CNC processing centers and test equipments, we are able to manufacture roots blowers, roots vacuum pumps and MVR compressors in 10 series and 220 models, with air capacity 0.6-1000 m<sup>3</sup>/min and pressure rise 9.8-198kPa. Our blowers are widely used in pneumatic conveying, waste water treatment, aquaculture, petroleum, chemical industry, metallurgy, electric power, cement, food, coal preparation, vacuum packaging and other industries.

## Roots Blower Working Principle



The rotary-type positive-displacement roots blower incorporates two intermeshing rotors mounted on parallel shafts. In a twin-lobe roots blower, each rotor has two lobes (four per roots blower). In a tri-lobe roots blower, each rotor has three lobes (six per roots blower).

- The two rotors rotate in opposite directions.
- As each rotor passes the blower inlet, it traps a definite volume of gas (the 'displaced volume') and carries it around the case to the blower outlet. With constant speed operation, the displaced volume remains approximately the same at different inlet temperatures, inlet pressures and discharge pressures.
- As each rotor passes the blower outlet the gas is compressed to the system pressure there and expelled.
- Small but definite clearances allow operation without lubrication being required inside the air casing.
- Timing gears control the relative position of the rotors to each other.

## Products Features

Shanggu three lobes Roots Blower are new series Roots type blowers. With the help of CNC machine, we make precise rotors and casings to get a perfect gap to promote air performance, lower vibrations and noises results a significant improvement compared to traditional two lobe Roots Blower.

Traditional Roots Blower lubricate bearings and gears with grease and oil. Shanggu blowers with double oil tank need oil only. It is very convenient to maintain and oil has a better lubricating effect than grease. So it could be a longer bearings and gears life.

- ◆ Strict management of quality standards. ISO9001 and CE systems.
- ◆ Technical customization (size, pressure, design, pump accessories).
- ◆ CNC machinery enabling precise measurements and grinding needed for more efficient pumping.
- ◆ Fewer vibrations transmitted through the lobe, for longer-lasting shafts, gears and bearings.
- ◆ Three-lobe design controls any backflow pressure towards rotor.
- ◆ Oil and dust-free outlet.
- ◆ Lubricated with high grade oil, proven to be a much better alternative to grease.
- ◆ Significant improvement in air performance ratios: wider air, pressure and vacuum range.
- ◆ Much quieter: our new design can effectively reduce noise by approximately 5 dB.
- ◆ Lower energy consumption.
- ◆ All our products can be used for OEM.

## Product Performance

- ◆ Pressure Rise: 9.8 to 98kpa      Air Capacity: 0.6-184m<sup>3</sup>/min      Motor Power: 0.75-280kw
- ◆ Vacuum Degree: -9.8 to -78kpa      Air Capacity: 1.02-131.2 m<sup>3</sup>/min      Motor Power: 0.75-250kw

## Information to Submit When Order

|              |                                                                                                                                                                     |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage        | Blowing use or vacuum use                                                                                                                                           |
| Gas Handled  | Gas variety, status, temperature                                                                                                                                    |
|              | With or without corrosiveness and explosiveness<br>State the proportion of gas formation and the molecular weight if handle mixed gas                               |
| Pressure     | Unit: kPa, kgf/cm <sup>2</sup> , mmH <sub>2</sub> O, mmHg, Pa, etc.                                                                                                 |
|              | Difference between gauge pressure and absolute pressure                                                                                                             |
| Air Capacity | Unit: m <sup>3</sup> /min                                                                                                                                           |
|              | Differences among Reference Condition (N : 0oC, 1 standard atmosphere pressure), Standard Condition (S : 20oC, 1 standard atmosphere pressure), and inlet condition |
| Location     | Outdoor or indoor                                                                                                                                                   |
|              | Surrounding temperature, with or without dangerous                                                                                                                  |
| Motor        | Model No, output, poles                                                                                                                                             |
| Driving Type | Coupling or v-belt                                                                                                                                                  |
| Others       | Temperature of cooling water                                                                                                                                        |
|              | Operating time                                                                                                                                                      |
|              | Whether in need of accessories or spare parts                                                                                                                       |
|              | Painting colour                                                                                                                                                     |

## Performance Table Explain

- The performance tables give the model type, bore, r.p.m, discharge pressure, air capacity and required power of the blower.
- The air capacity in the tables is indicated in the standard suction state. The standard suction state herein mentioned is defined as the condition at 20 temperature, 1.0332kgf/cm<sup>2</sup> [101.3kPa] absolute pressure and 65%relative humidity.
- The reference air capacity(temperature 0℃ and 1.0332kgf/cm<sup>2</sup> [101.3kPa] absolute pressure is generally indicated in Nm<sup>3</sup>/min.
- However, it may be converted into the standard air capacity by the following equation if the suction pressure is equal.

$$Q_s = Q_N \times 1.0732$$

Where,

$Q_s$ : standard air capacity;

$Q_N$ : reference air capacity;

- The discharge air capacity can be converted into the standard air capacity by the following equation.

$$Q_s = Q_d \times \frac{1.0332 + P_d}{2 \times 1.0332} \times \frac{273 + t_s}{273 + t_d}$$

Where,

$Q_d$ : discharge air capacity, in (m<sup>3</sup>/min)

$P_d$ : discharge pressure, in (kgf/cm<sup>2</sup>)

$t_s$ : suction temperature, in (℃)

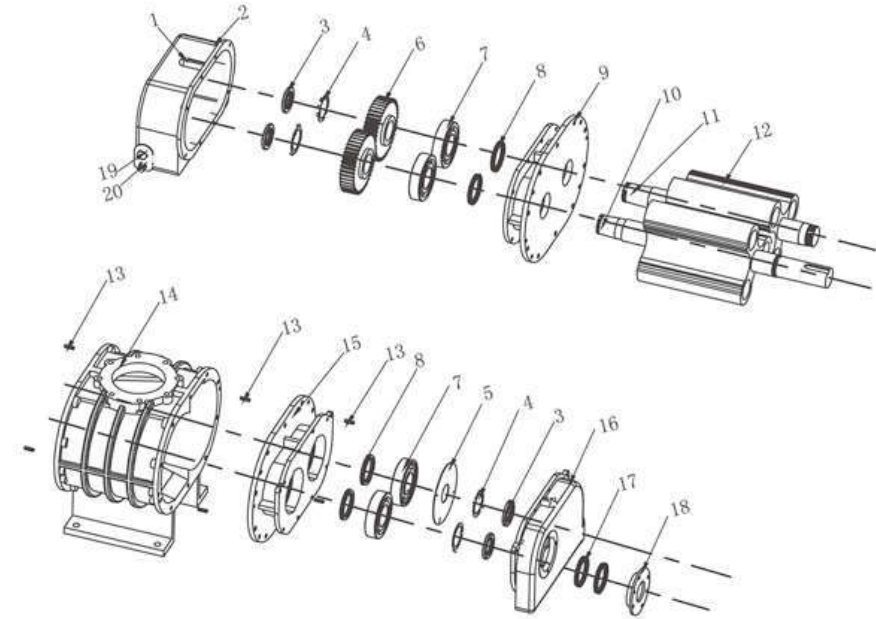
$t_d$ : discharge temperature, in (℃)

- According to the air capacity and discharge pressure as calculated above, the model number, bore, r.p.m and required power can be found in the performance table.

## Pressure Conversion Table

|          | Pa                         | Bar                         | Kgf/cm <sup>2</sup>        | Atm                        | MmH <sub>2</sub> O          | MmHg (Torr)                 |
|----------|----------------------------|-----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Pressure | 1                          | 1 x 10 <sup>-5</sup>        | 1.01972 x 10 <sup>-5</sup> | 9.86923 x 10 <sup>-6</sup> | 1. 01972 x 10 <sup>-1</sup> | 7. 50062 x 10 <sup>-3</sup> |
|          | 1 x 10 <sup>5</sup>        | 1                           | 1.01972                    | 9.86923 x 10 <sup>-1</sup> | 1.01972 x 10 <sup>4</sup>   | 7. 50062 x 10 <sup>2</sup>  |
|          | 9. 80665 x 10 <sup>4</sup> | 9.80665 x 10 <sup>-1</sup>  | 1                          | 9.67841 x 10 <sup>-1</sup> | 1 x 10 <sup>4</sup>         | 7. 35559 x 10 <sup>2</sup>  |
|          | 1.01325 x 10 <sup>5</sup>  | 1.01325                     | 1. 03323                   | 1                          | 1. 03323 x 10 <sup>4</sup>  | 7. 60000 x 10 <sup>2</sup>  |
|          | 9.80665                    | 9. 80665 x 10 <sup>-5</sup> | 1 x 10 <sup>-4</sup>       | 9.67841 x 10 <sup>-5</sup> | 1                           | 7. 35559 x 10 <sup>-3</sup> |
|          | 1.33322 x 10 <sup>2</sup>  | 1. 33322 x 10 <sup>-3</sup> | 1.35951 x 10 <sup>-3</sup> | 1.31579 x 10 <sup>-3</sup> | 1. 35951 x 10 <sup>1</sup>  | 1                           |

## Roots Blower Structure



## Parts Material Table

| No. | Name             | Material       | QTY | No. | Name            | Material       | QTY |
|-----|------------------|----------------|-----|-----|-----------------|----------------|-----|
| 1   | Lubrication Plug | A3             | 2   | 11  | Driven Shaft    | 45#            | 1   |
| 2   | Gear Case        | HT250          | 1   | 12  | Rotor           | QT400          | 2   |
| 3   | Lock Nut         | A3             | 4   | 13  | Positioning Pin | 45#            | 6   |
| 4   | Washer           | A3             | 4   | 14  | Casing          | HT250          | 1   |
| 5   | Oil Splash       | A3             | 2   | 15  | Drive Side Wall | HT250          | 1   |
| 6   | Gear             | 20CrMnTi       | 2   | 16  | Drop Tank       | HT250          | 1   |
| 7   | Bearing          | SUJ2           | 4   | 17  | Oil Seal        | Nitrile Rubber | 2   |
| 8   | V-ring           | Nitrile Rubber | 4   | 18  | Oil Tank Cap    | HT250          | 1   |
| 9   | Wall Plate       | HT250          | 1   | 19  | Oil Gauge       | Organic Glass  | 2   |
| 10  | Drive Shaft      | 45#            | 1   | 20  | Purge Plug      | A3             | 2   |





## RSR Series Roots Blower Performance Datasheet

Qs: Inlet Airflow (m³/min.) La: Blower Shaft Power(Kw) Po: Motor Power(Kw)

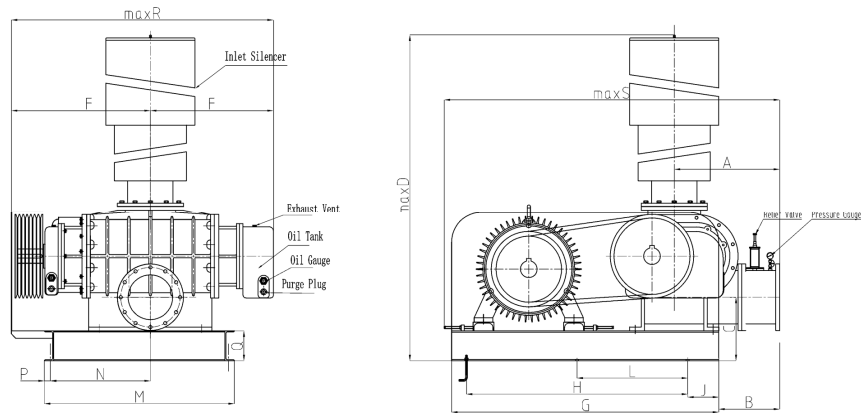
| Model    | Bore mm | RPM  | Performance Datasheet |      |      |         |       |      |         |       |     |         |       |     |       |       |     |         |       |     |         |       |     |         |       |     |         |       |     |       |       |     |
|----------|---------|------|-----------------------|------|------|---------|-------|------|---------|-------|-----|---------|-------|-----|-------|-------|-----|---------|-------|-----|---------|-------|-----|---------|-------|-----|---------|-------|-----|-------|-------|-----|
|          |         |      | 9.8KPA                |      |      | 19.6KPA |       |      | 29.4KPA |       |     | 39.2KPA |       |     | 49KPA |       |     | 58.8KPA |       |     | 68.6KPA |       |     | 78.4KPA |       |     | 88.2KPA |       |     | 98KPA |       |     |
|          |         |      | Qs                    | La   | Po   | Qs      | La    | Po   | Qs      | La    | Po  | Qs      | La    | Po  | Qs    | La    | Po  | Qs      | La    | Po  | Qs      | La    | Po  | Qs      | La    | Po  | Qs      | La    | Po  | Qs    | La    | Po  |
| RSR 200H | 200A    | 970  | 32.1                  | 8.3  | 11   | 31.0    | 16.5  | 18.5 | 30.1    | 23.2  | 30  | 29.1    | 25.7  | 30  | 28.2  | 32.2  | 37  | 27.8    | 38.6  | 45  | 27.2    | 45.0  | 55  | 26.6    | 53.4  | 75  | 26.3    | 57.9  | 75  | 25.7  | 64.3  | 75  |
|          |         | 1170 | 39.9                  | 10.6 | 15   | 38.7    | 18.6  | 22   | 37.7    | 27.9  | 37  | 36.8    | 35.8  | 45  | 36.0  | 38.8  | 45  | 35.4    | 46.5  | 55  | 34.7    | 54.3  | 75  | 34.4    | 62.0  | 75  | 33.8    | 69.8  | 90  | 33.5  | 77.5  | 90  |
|          |         | 1250 | 42.8                  | 11.5 | 15   | 41.7    | 18.6  | 22   | 40.7    | 29.0  | 37  | 39.7    | 40.1  | 45  | 38.9  | 44.4  | 55  | 38.4    | 54.7  | 75  | 36.7    | 57.0  | 75  | 36.1    | 60.3  | 75  | 35.7    | 75.6  | 90  | 35.4  | 86.8  | 110 |
|          |         | 1350 | 46.5                  | 11.1 | 15   | 45.3    | 23.1  | 30   | 44.4    | 30.8  | 37  | 43.7    | 41.8  | 45  | 42.7  | 44.7  | 55  | 42.2    | 53.7  | 75  | 41.6    | 62.6  | 75  | 41.1    | 74.6  | 90  | 40.6    | 80.5  | 90  | 40.3  | 89.5  | 110 |
|          |         | 1450 | 50.2                  | 10.8 | 15   | 49.0    | 24.7  | 30   | 48.1    | 32.4  | 37  | 47.4    | 38.4  | 45  | 46.7  | 48.1  | 55  | 46.1    | 57.7  | 75  | 45.5    | 67.3  | 75  | 45.0    | 76.9  | 90  | 44.6    | 89.5  | 110 | 44.1  | 96.1  | 110 |
| RSR 200  | 200A    | 970  | 39.1                  | 10.6 | 15   | 38.4    | 18.4  | 22   | 37.7    | 24.7  | 30  | 37.1    | 32.9  | 37  | 36.5  | 44.1  | 55  | 35.7    | 49.3  | 55  | 35.0    | 57.6  | 75  | 34.3    | 65.8  | 75  | 33.7    | 77.0  | 90  | 33.0  | 82.2  | 90  |
|          |         | 1150 | 46.8                  | 14.7 | 18.5 | 45.9    | 21.7  | 30   | 45.4    | 29.0  | 37  | 45.0    | 38.6  | 45  | 44.1  | 48.2  | 55  | 43.5    | 57.9  | 75  | 43.1    | 67.5  | 75  | 42.6    | 77.2  | 90  | 42.1    | 86.8  | 110 | 41.0  | 96.5  | 110 |
|          |         | 1230 | 50.7                  | 18.3 | 22   | 49.1    | 25.6  | 30   | 48.6    | 35.8  | 45  | 48.1    | 44.3  | 55  | 47.4  | 54.6  | 75  | 46.8    | 61.9  | 75  | 46.6    | 74.2  | 90  | 46.2    | 82.6  | 90  | 45.7    | 92.9  | 110 | 44.8  | 103.2 | 110 |
|          |         | 1390 | 55.5                  | 18.3 | 22   | 55.2    | 28.2  | 37   | 54.9    | 41.0  | 45  | 54.5    | 54.5  | 75  | 54.0  | 68.3  | 75  | 53.6    | 74.0  | 90  | 53.1    | 81.6  | 90  | 52.9    | 93.3  | 110 | 52.5    | 105.0 | 110 | 52.0  | 116.6 | 132 |
|          |         | 1480 | 59.3                  | 19.0 | 22   | 58.8    | 28.9  | 37   | 58.4    | 44.9  | 55  | 58.1    | 55.9  | 75  | 57.7  | 64.1  | 75  | 57.5    | 74.5  | 90  | 57.1    | 86.9  | 110 | 56.9    | 99.3  | 110 | 56.5    | 111.7 | 132 | 56.0  | 126.2 | 160 |
| RSR 250D | 250A    | 970  | 50.0                  | 18.6 | 22   | 47.8    | 21.2  | 30   | 45.9    | 31.7  | 37  | 44.8    | 43.3  | 55  | 43.8  | 53.9  | 75  | 42.8    | 63.5  | 75  |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1250 | 65.8                  | 21.6 | 30   | 64.1    | 28.7  | 37   | 62.7    | 44.9  | 55  | 61.6    | 54.5  | 75  | 60.6  | 68.2  | 75  | 59.7    | 81.8  | 90  | 58.1    | 100.5 | 110 | 56.9    | 115.5 | 132 |         |       |     |       |       |     |
|          |         | 1450 | 77.9                  | 23.8 | 30   | 76.1    | 37.5  | 45   | 74.4    | 47.4  | 55  | 73.2    | 63.3  | 75  | 72.3  | 79.1  | 90  | 71.5    | 94.9  | 110 | 70.2    | 117.2 | 132 | 69.0    | 133.9 | 160 |         |       |     |       |       |     |
|          |         | 1600 | 86.4                  | 24.5 | 30   | 84.9    | 34.9  | 45   | 83.4    | 53.4  | 75  | 82.1    | 73.8  | 90  | 81.2  | 87.3  | 110 | 80.4    | 106.7 | 132 |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1750 | 95.3                  | 38.2 | 45   | 93.7    | 43.4  | 55   | 92.2    | 57.3  | 75  | 90.6    | 76.3  | 90  | 89.7  | 95.4  | 110 | 89.3    | 114.5 | 132 |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1900 | 103.9                 | 38.7 | 45   | 102.1   | 44.5  | 55   | 101.2   | 62.2  | 75  | 99.9    | 87.9  | 110 |       |       |     |         |       |     |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 2050 | 118.9                 | 37.4 | 45   | 111.2   | 44.7  | 55   | 110.4   | 74.0  | 90  | 108.4   | 89.4  | 110 |       |       |     |         |       |     |         |       |     |         |       |     |         |       |     |       |       |     |
| RSR 250  | 250A    | 980  | 65.8                  | 32.7 | 37   | 62.9    | 48.0  | 55   | 61.9    | 60.0  | 75  | 61.1    | 70.6  | 75  | 60.3  | 81.1  | 90  | 59.5    | 87.0  | 110 | 58.9    | 93.3  | 110 | 57.9    | 106.6 | 132 | 57.0    | 120.0 | 132 | 56.4  | 133.3 | 160 |
|          |         | 1150 | 78.3                  | 38.5 | 45   | 75.5    | 55.5  | 75   | 73.3    | 76.0  | 90  | 71.6    | 85.8  | 90  | 70.9  | 92.9  | 110 | 70.3    | 105.5 | 132 | 69.4    | 108.4 | 132 | 68.4    | 129.9 | 160 | 67.4    | 139.3 | 160 | 66.8  | 158.8 | 185 |
|          |         | 1250 | 85.8                  | 41.9 | 55   | 82.9    | 60.3  | 75   | 80.7    | 82.6  | 90  | 78.8    | 93.2  | 110 | 77.1  | 103.7 | 110 | 75.6    | 113.6 | 132 | 74.2    | 127.8 | 160 | 73.4    | 134.6 | 160 | 72.5    | 159.5 | 185 | 71.7  | 168.3 | 185 |
|          |         | 1320 | 91.0                  | 44.2 | 55   | 88.1    | 64.1  | 75   | 85.9    | 87.2  | 90  | 83.6    | 98.4  | 110 | 82.7  | 107.6 | 132 | 81.7    | 128.0 | 160 | 80.8    | 140.0 | 160 | 79.9    | 158.5 | 185 | 79.0    | 169.9 | 185 | 78.1  | 197.7 | 220 |
|          |         | 1450 | 100.6                 | 48.6 | 55   | 97.7    | 74.2  | 90   | 95.5    | 95.8  | 110 | 93.6    | 108.1 | 132 | 91.9  | 117.1 | 132 | 90.4    | 134.0 | 160 | 89.0    | 159.7 | 185 | 87.7    | 168.2 | 185 | 86.4    | 176.7 | 200 | 85.2  | 205.2 | 220 |
| RSR 300  | 300A    | 980  | 92.5                  | 36.7 | 45   | 90.1    | 61.1  | 75   | 89.1    | 77.5  | 90  | 88.1    | 89.6  | 110 | 87.1  | 108.2 | 132 | 86.0    | 122.0 | 132 | 85.1    | 134.6 | 160 | 84.1    | 169.3 | 185 |         |       |     |       |       |     |
|          |         | 1150 | 110.2                 | 43.1 | 55   | 106.3   | 65.0  | 75   | 104.7   | 83.6  | 90  | 103.7   | 94.0  | 110 | 102.8 | 108.4 | 132 | 101.7   | 135.1 | 160 | 100.7   | 162.7 | 185 | 99.9    | 180.4 | 200 | 93.2    | 214.1 | 250 | 89.7  | 238.9 | 280 |
|          |         | 1250 | 120.5                 | 46.9 | 55   | 116.7   | 77.1  | 90   | 113.7   | 97.9  | 110 | 111.0   | 113.1 | 132 | 109.8 | 132.5 | 160 | 108.6   | 156.5 | 185 | 107.2   | 183.6 | 200 | 105.8   | 200.5 | 220 | 102.6   | 232.4 | 280 | 100.0 | 258.6 | 280 |
|          |         | 1350 | 126.2                 | 50.6 | 55   | 124.0   | 81.4  | 90   | 122.4   | 107.4 | 132 | 121.1   | 119.4 | 132 | 119.6 | 131.7 | 160 | 118.0   | 158.1 | 185 | 116.5   | 194.4 | 220 | 115.0   | 210.8 | 250 | 112.0   | 251.3 | 280 | 110.3 | 279.3 | 315 |
|          |         | 1450 | 141.3                 | 56.3 | 75   | 137.4   | 92.8  | 110  | 134.5   | 113.5 | 132 | 131.5   | 131.2 | 160 | 130.0 | 153.7 | 185 | 128.5   | 194.5 | 220 | 126.9   | 215.2 | 250 | 125.4   | 231.5 | 280 |         |       |     |       |       |     |
| RSR 300C | 300A    | 980  | 127.8                 | 41.2 | 45   | 123.1   | 72.1  | 90   | 121.6   | 97.3  | 110 | 120.2   | 106.9 | 132 | 118.6 | 135.6 | 160 | 117.1   | 157.9 | 185 |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1170 | 154.7                 | 50.4 | 55   | 150.0   | 85.9  | 110  | 146.4   | 108.4 | 132 | 143.4   | 127.5 | 160 | 140.7 | 155.5 | 185 | 138.6   | 183.6 | 200 |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1250 | 166.0                 | 54.9 | 75   | 161.4   | 91.7  | 110  | 157.8   | 124.1 | 132 | 154.7   | 138.7 | 160 | 152.1 | 181.4 | 200 | 149.6   | 197.0 | 220 |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1360 | 181.6                 | 59.7 | 75   | 176.7   | 99.8  | 110  | 173.4   | 135.0 | 160 | 170.3   | 155.5 | 185 | 167.7 | 195.3 | 220 | 165.2   | 220.0 | 250 |         |       |     |         |       |     |         |       |     |       |       |     |
|          |         | 1480 | 198.6                 | 65.3 | 75   | 194.0   | 108.6 | 132  | 190.5   | 158.2 | 185 | 187.4   | 195.8 | 220 | 184.7 | 228.5 | 250 | 182.2   | 274.2 | 315 |         |       |     |         |       |     |         |       |     |       |       |     |







## RSR Series Belt Drive Drawings

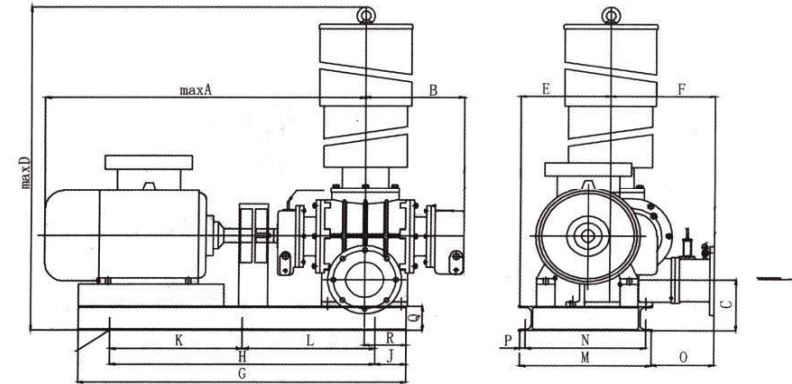


| Model    | Bore  | A   | B   | C   | D    | Ed  | Es  | F   | G    | H    | J   |
|----------|-------|-----|-----|-----|------|-----|-----|-----|------|------|-----|
| RSR-50   | 50A   | 255 | 165 | 120 | 895  | 225 | 260 | 201 | 560  | 410  | 100 |
| RSR-65   | 65A   | 255 | 165 | 130 | 950  | 243 | 280 | 221 | 600  | 450  | 100 |
| RSR-80   | 80A   | 290 | 205 | 150 | 1250 | 245 | 300 | 240 | 750  | 500  | 100 |
| RSR-100  | 100A  | 290 | 205 | 160 | 1320 | 285 | 340 | 280 | 800  | 580  | 100 |
| RSR-125  | 125A  | 345 | 215 | 185 | 1450 | 290 | 356 | 290 | 910  | 700  | 110 |
| RSR-150C | 150A  | 360 | 220 | 210 | 1650 | 369 | —   | 356 | 1010 | 700  | 110 |
| RSR-150A | 150A  | 400 | 240 | 210 | 1730 | 335 | 400 | 300 | 1050 | 750  | 160 |
| RSR-150  | 150A  | 400 | 240 | 210 | 1730 | 390 | 450 | 375 | 1050 | 750  | 160 |
| RSR-175A | 150A  | 400 | 240 | 210 | 1730 | 432 | 500 | 418 | 1050 | 750  | 160 |
| RSR-175  | 150 A | 400 | 250 | 210 | 1665 | 477 | —   | 463 | 1050 | 750  | 160 |
| RSR-200H | 200A  | 500 | 285 | 250 | 2200 | 485 | 555 | 465 | 1280 | 1000 | 180 |
| RSR-200  | 200A  | 500 | 285 | 250 | 2200 | 536 | 605 | 515 | 1330 | 1000 | 180 |
| RSR-250D | 250A  | 500 | 285 | 360 | 2240 | 611 | 680 | 590 | 1500 | 1000 | 215 |
| RSR-250  | 250A  | 710 | 370 | 360 | 2400 | 575 | 640 | 580 | 1800 | 1490 | 210 |
| RSR-300  | 300A  | 710 | 420 | 385 | 2780 | 655 | 775 | 670 | 1800 | 1490 | 210 |

| Mode     | Bore | L   | M    | Nd  | Ns  | P  | Q   | n-Φl  | R    | S    | Weight(kg) |
|----------|------|-----|------|-----|-----|----|-----|-------|------|------|------------|
| RSR-50   | 50A  | —   | 300  | 130 | 166 | 15 | 80  | 4-Φ14 | 490  | 730  | 132        |
| RSR-65   | 65A  | —   | 340  | 150 | 186 | 15 | 80  | 4-Φ14 | 530  | 780  | 173        |
| RSR-80   | 80A  | —   | 360  | 150 | 205 | 15 | 80  | 4-Φ18 | 690  | 970  | 245        |
| RSR-100  | 100A | —   | 470  | 190 | 245 | 15 | 80  | 4-Φ18 | 720  | 1000 | 334        |
| RSR-125  | 125A | 350 | 500  | 180 | 240 | 20 | 100 | 6-Φ18 | 790  | 1230 | 451        |
| RSR-150C | 150A | 350 | 590  | 250 | —   | 20 | 100 | 6-Φ18 | 850  | 1300 | 506        |
| RSR-150A | 150A | 375 | 590  | 195 | 268 | 20 | 100 | 6-Φ18 | 1070 | 1350 | 805        |
| RSR-150  | 150A | 375 | 590  | 250 | 325 | 20 | 100 | 6-Φ18 | 1070 | 1350 | 777        |
| RSR-175A | 150A | 375 | 755  | 295 | 368 | 20 | 100 | 6-Φ18 | 1075 | 1350 | 860        |
| RSR-175  | 150A | 375 | 755  | 340 | —   | 20 | 100 | 6-Φ18 | 1000 | 1350 | 860        |
| RSR-200H | 200A | 500 | 755  | 300 | 373 | 25 | 120 | 6-Φ20 | 1290 | 1765 | 1324       |
| RSR-200  | 200A | 500 | 755  | 355 | 425 | 25 | 120 | 6-Φ20 | 1290 | 1765 | 1489       |
| RSR-250D | 250A | 500 | 950  | 430 | 500 | 30 | 160 | 6-Φ22 | 1295 | 2010 | 2152       |
| RSR-250  | 250A | 745 | 875  | 385 | 485 | 30 | 160 | 6-Φ22 | 1320 | 2380 | 2978       |
| RSR-300  | 300A | 745 | 1080 | 420 | 580 | 30 | 160 | 6-Φ22 | 1550 | 2960 | 3310       |

Note: Ed, Nd for Single Oil Tank. Es, Ns for Double Oil Tank.  
The weights not include the motor.

## RSR Series Coupling Drive Drawings

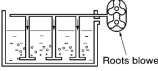
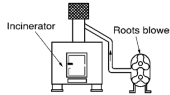
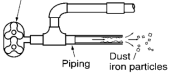
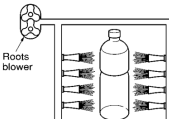
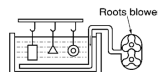
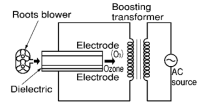
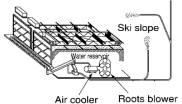
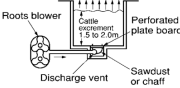
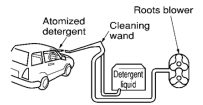
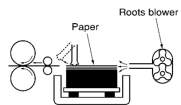
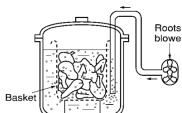
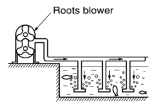
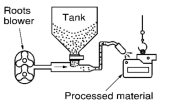
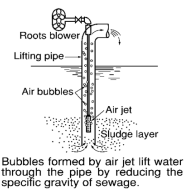
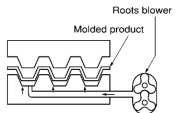
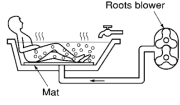
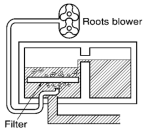
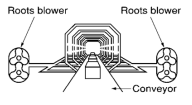
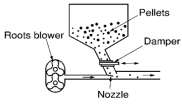
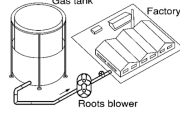


| Model    | Bore | A    | B   | C   | D    | E   | F   | G    | H    | J   |
|----------|------|------|-----|-----|------|-----|-----|------|------|-----|
| RSR-50   | 50A  | 696  | 201 | 125 | 895  | 160 | 255 | 580  | 420  | 80  |
| RSR-65   | 65A  | 756  | 221 | 135 | 950  | 200 | 255 | 600  | 440  | 80  |
| RSR-80   | 80A  | 926  | 240 | 150 | 1250 | 265 | 290 | 820  | 500  | 160 |
| RSR-100  | 100A | 996  | 280 | 160 | 1320 | 295 | 290 | 880  | 630  | 125 |
| RSR-125  | 125A | 1077 | 290 | 185 | 1450 | 285 | 345 | 1000 | 710  | 145 |
| RSR-150C | 150A | 1250 | 356 | 210 | 1730 | 350 | 400 | 1250 | 1010 | 120 |
| RSR-150A | 150A | 1382 | 318 | 210 | 1730 | 335 | 400 | 1250 | 1010 | 120 |
| RSR-150  | 150A | 1439 | 375 | 210 | 1730 | 335 | 400 | 1250 | 1010 | 120 |
| RSR-175A | 150A | 1482 | 418 | 210 | 1730 | 335 | 400 | 1500 | 1010 | 200 |
| RSR-175  | 150A | 1595 | 463 | 210 | 1800 | 410 | 410 | 1700 | 700  | 150 |
| RSR-200H | 200A | 1739 | 463 | 250 | 2200 | 435 | 500 | 1700 | 1400 | 150 |
| RSR-200  | 200A | 1791 | 515 | 250 | 2200 | 435 | 500 | 1700 | 1400 | 150 |
| RSR-250D | 250A | 1866 | 590 | 360 | 2240 | 435 | 500 | 2000 | 1800 | 100 |
| RSR-250  | 250A | 1800 | 580 | 360 | 2400 | 600 | 710 | 1700 | 1400 | 150 |
| RSR-300  | 300A | 1900 | 670 | 385 | 2780 | 650 | 710 | 1900 | 1600 | 150 |

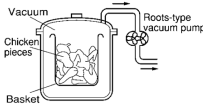
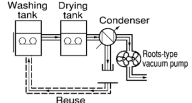
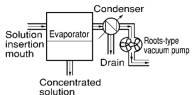
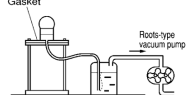
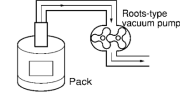
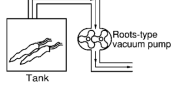
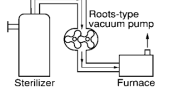
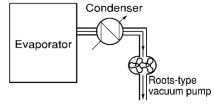
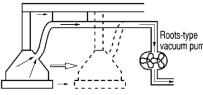
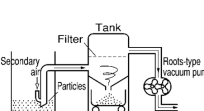
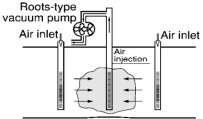
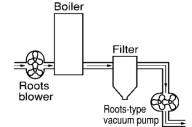
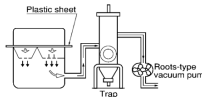
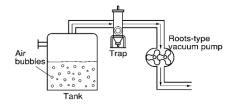
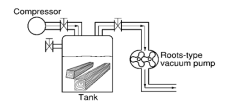
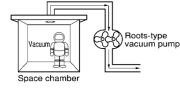
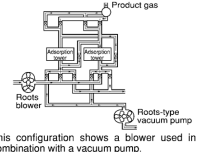
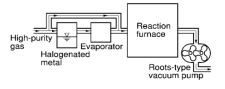
| Mode     | Bore  | L   | M    | Nd  | Ns  | P  | Q   | n-Φl  | R    | S    | Weight(kg) |
|----------|-------|-----|------|-----|-----|----|-----|-------|------|------|------------|
| RSR-50   | 50A   | —   | 300  | 130 | 166 | 15 | 80  | 4-Φ14 | 490  | 730  | 132        |
| RSR-65   | 65A   | —   | 340  | 150 | 186 | 15 | 80  | 4-Φ14 | 530  | 780  | 173        |
| RSR-80   | 80A   | —   | 360  | 150 | 205 | 15 | 80  | 4-Φ18 | 690  | 970  | 245        |
| RSR-100  | 100A  | —   | 470  | 190 | 245 | 15 | 80  | 4-Φ18 | 720  | 1000 | 334        |
| RSR-125  | 125A  | 350 | 500  | 180 | 240 | 20 | 100 | 6-Φ18 | 790  | 1230 | 451        |
| RSR-150C | 150A  | 350 | 590  | 250 | —   | 20 | 100 | 6-Φ18 | 850  | 1300 | 506        |
| RSR-150A | 150 A | 375 | 590  | 195 | 268 | 20 | 100 | 6-Φ18 | 1070 | 1350 | 805        |
| RSR-150  | 150A  | 375 | 590  | 250 | 325 | 20 | 100 | 6-Φ18 | 1070 | 1350 | 777        |
| RSR-175A | 150 A | 375 | 755  | 295 | 368 | 20 | 100 | 6-Φ18 | 1075 | 1350 | 860        |
| RSR-175  | 150A  | 375 | 755  | 340 | —   | 20 | 100 | 6-Φ18 | 1000 | 1350 | 860        |
| RSR-200H | 200A  | 500 | 755  | 300 | 373 | 25 | 120 | 6-Φ20 | 1290 | 1765 | 1324       |
| RSR-200  | 200A  | 500 | 755  | 355 | 425 | 25 | 120 | 6-Φ20 | 1290 | 1765 | 1489       |
| RSR-250D | 250A  | 500 | 950  | 430 | 500 | 30 | 160 | 6-Φ22 | 1295 | 2010 | 2152       |
| RSR-250  | 250A  | 745 | 875  | 385 | 485 | 30 | 160 | 6-Φ22 | 1320 | 2380 | 2978       |
| RSR-300  | 300A  | 745 | 1080 | 420 | 580 | 30 | 160 | 6-Φ22 | 1550 | 2960 | 3310       |

Note: Ed, Nd for Single Oil Tank. Es, Ns for Double Oil Tank.  
The weights not include the motor.

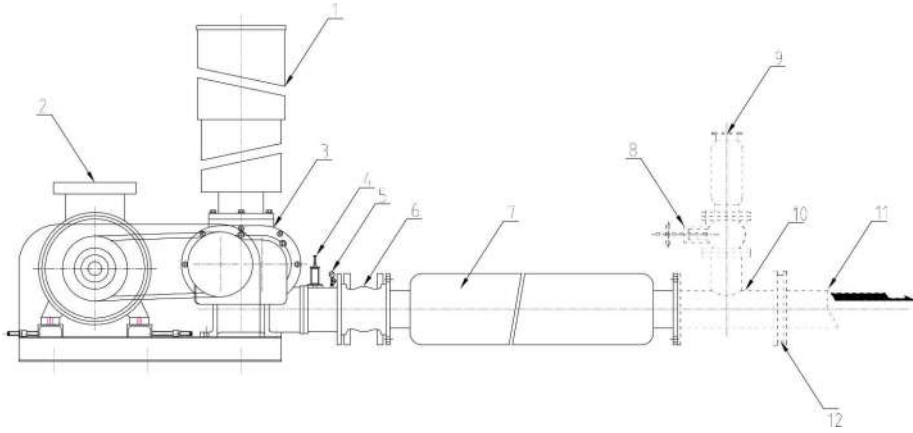
## Roots Blower Applications

|                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water Treatment</b>  <p>Blowers are used to purify water and stir up sediment at water treatment plants.</p>                                                                                                           | <b>Incinerators</b>  <p>Blowers enhance combustion efficiency and promote the removal of exhaust gases.</p>                                                                 | <b>Cleaning of Pipes</b>  <p>Blowers can be used to remove dust and iron particles when piping is replaced or periodically checked. They can also be used to supply various kinds of coating material to the interior of pipes.</p> | <b>Air Blower</b>  <p>Here blower is used to blow off drops of water clinging to surfaces of cans, bottles, machine parts, etc. Air blowers can also be used as sources of cooling or drying air.</p>                   |
| <b>Plating Bath</b>  <p>Plating quality can be enhanced by using a blower to circulate electrolytes in the plating bath to give the plating a more uniform thickness. Here blowers serve as the source of air supply.</p> | <b>Ozonizer</b>  <p>This blower is used as the air supply source for a high-concentration ozonizer.</p>                                                                     | <b>Snow Machine</b>  <p>Ski resorts use blowers for pneumatic transport with artificial snow machines.</p>                                                                                                                          | <b>Fermentation</b>  <p>The stream of air provided by the blower promotes the fermentation of livestock excrement, etc., for efficient composting.</p>                                                                  |
| <b>Atomization of Detergent</b>  <p>Blowers conserve energy at car washes by atomizing water and detergent.</p>                                                                                                           | <b>Paper Feed for Printer</b>  <p>Air discharged from blowers facilitates the separation of sheets of paper as well as their distribution in neat piles after printing.</p> | <b>Frozen Food</b>  <p>Blowers are useful in the stir-freezing of frozen foods in water.</p>                                                                                                                                        | <b>Aquaculture Oxygen Supply</b>  <p>Aquafarms producing all sorts of fish and shellfish use blowers to oxygenate and circulate the water in tanks. Blowers are also used for aquariums and live fish tanks.</p>        |
| <b>Sand Blasting</b>  <p>Provides a concentrated blast of air for use in sandblasting.</p>                                                                                                                              | <b>Airlift Pump</b>  <p>Bubbles formed by air jet lift water through the pipe by reducing the specific gravity of sewage.</p>                                             | <b>Press</b>  <p>Blower is used for lift when removing molded products from the press.</p>                                                                                                                                        | <b>Medical Treatment Bath</b>  <p>Blowers supply the air that creates the whirlpool in a Jacuzzi hot tub. Many health centers and other facilities have introduced whirlpool baths for their therapeutic effects.</p> |
| <b>Back Washing</b>  <p>Blowers are used to optimize filter and filter material performance by backwashing.</p>                                                                                                         | <b>Drying Line</b>  <p>Our blowers are used to good effect in small-scale drying lines.</p>                                                                               | <b>Particle Transportation</b>  <p>Blower is used for the pneumatic conveyance of pelletized raw materials such as vinyl chloride and polyethylene (The vacuum method will work here as well).</p>                                | <b>Special Gas</b>  <p>Blowers serve vital functions in the supply of city gas, etc.</p>                                                                                                                              |

## Roots Blower Applications

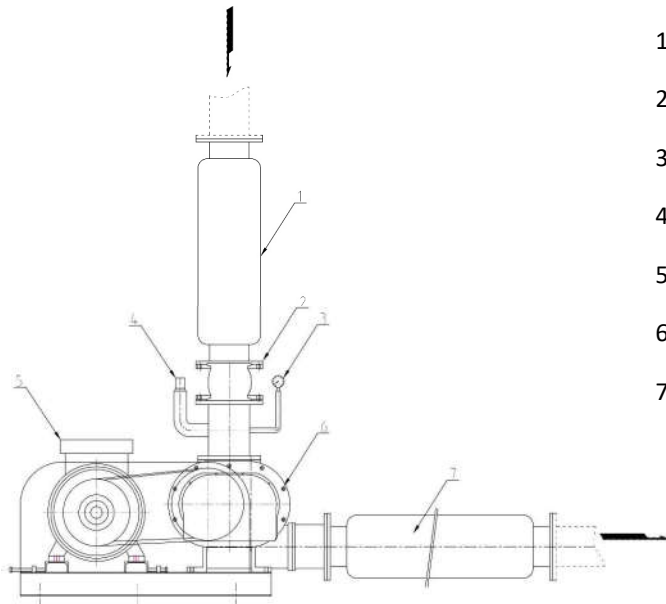
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Food Processing</b>  <p>Vacuum conditions are useful in the seasoning of foods.</p>                                                                                                                                                                | <b>Vacuum Drying</b>  <p>Here, a Roots-type vacuum pump that can collect solvent drainage is ideal (used with drainage pot).</p>                                                   | <b>Vacuum Drying</b>  <p>Used to vacuum dry the moisture.</p>                                                                                                                                      | <b>Leak Testes</b>  <p>Can be used in tests of airtightness.</p>                                                                                                                          |
| <b>Vacuum Packing of Food</b>  <p>Vacuum packing keeps foods such as meat and vegetables fresh.</p>                                                                                                                                                   | <b>Freeze Drying</b>  <p>Freshness and quality of vegetables and other foods can also be preserved by freezing the foods in tanks under vacuum conditions.</p>                     | <b>Sterilization Apparatus</b>  <p>Our pumps are used as vacuum sources in sterilizers.</p>                                                                                                        | <b>Concentration/Distillation</b>  <p>In these processes, liquids are made more concentrated by evaporation, or the vapor produced is cooled and returned once again to liquid state.</p> |
| <b>Adsorption Conveyance</b>  <p>Adsorption conveyance by vacuum pump is well suited to heavy materials such as steel plates and easily breakable materials such as glass. Energy savings are promoted by the elimination of gripping operations.</p> | <b>Particle Transport</b>  <p>Used in the conveyance of rice, wheat, soybeans, resin pellets, etc.</p>                                                                             | <b>Soil Remediation</b>  <p>Used in the decontamination of soil and groundwater.</p>                                                                                                               | <b>Combustion Gas Recovery</b>  <p>Also used in the desulfurization of high-temperature combustion gas and flue gas.</p>                                                                  |
| <b>Vacuum Molding</b>  <p>Roots-type vacuum pumps are used as vacuum sources for vacuum molders used with resins, etc. (trap attached).</p>                                                                                                         | <b>Vacuum Defoaming</b>  <p>Product quality is improved for chemicals and pharmaceuticals by using a Roots-type vacuum pump to remove air bubbles by defoaming under vacuum.</p> | <b>Impregnation</b>  <p>In this setup, our pumps first produce a vacuum in the tank and then supply high pressure to facilitate the impregnation of parts with liquids or gases.</p>             |                                                                                                                                                                                                                                                                              |
| <b>Experiments</b>  <p>Dry vacuum pumps can be used to create a "space environment" on Earth by producing a vacuum state within a space chamber.</p>                                                                                                | <b>VPSA/PSA</b>  <p>This configuration shows a blower used in combination with a vacuum pump.</p>                                                                                | <b>Heat Treatment</b>  <p>Reaction furnaces for heat treatment need to be airtight so that no oil or air will become admixed with the reactants. Roots-type vacuum pumps can meet this need.</p> |                                                                                                                                                                                                                                                                              |

### Roots Blower Installation Sample



- 1.Inlet Silencer 2.Motor 3.Roots Blower 4.Safety Valve 5.Pressure Gauge 6.Flexible Connector  
7.Outlet Silencer 8.Gatevalve 9.Empty Silencer 10.Empty Joint 11.Main Pipe 12.Check Valve

### Vacuum Pump Installation Sample



- 1.Inlet Silencer  
2.Flexible Connector  
3.Pressure Gauge  
4.Vacuum Degree Valve  
5.Motor  
6.Roots Blower  
7.Outlet Silencer

### Company&Equipment&Projects



Office Building



Agma CNC Center



Hanchuan Lathe



Ready Delivery Roots Blower



Workshop



Pneumatic Conveying Project



Power Plant Project



Cement Plant Project