

# DRRF Series Roots Blower

## *Product Introduce*

### Roots Blower

High efficiency tri-lobe rotor,  
quiet running, small outline,  
easy maintenance, low vibration.



DICHENG DRRF Series Two-lobe Roots Blowers adopts the advanced technology of Japan, its air capacity is 38.9m<sup>3</sup>/min - 224.9m<sup>3</sup>/min, the pressure is from 9.8Kpa to 98Kpa. The main characteristic of our air blower is small volume, light weight, flow strong, noise small, steadily reliable operation. This air blower is mainly applied to such trades as water treatment, air transport, mine, vacuum packaging, aquaculture and etc. Our products export to Southeast Asia, Europe, North and South America and etc.

## *Product Feature*



1. Air flow and pressure can be customized
2. Stable air flow and less pressure variation
3. Clean air not with oil moist
4. Construction simple and easy maintenance
5. Bearing are all lubricated by oil moist
6. Long service life

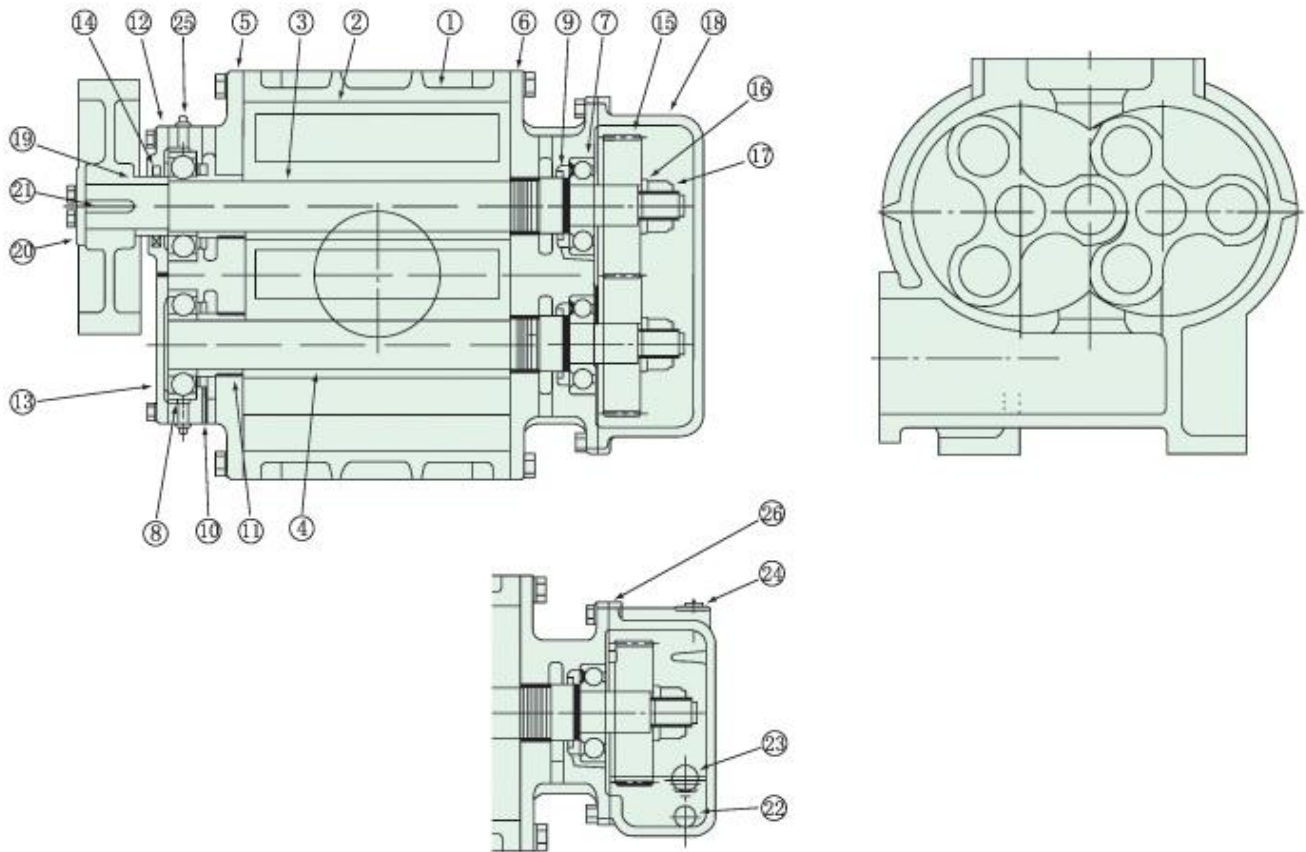
# Blower Selection

## DRRF High Pressure Twin-lobe Roots Blower

|         |                                |           |
|---------|--------------------------------|-----------|
| DRRF240 | 38.9-78.0m <sup>3</sup> /min   | 9.8-98Kpa |
| DRRF245 | 47.5-97.4m <sup>3</sup> /min   | 9.8-98Kpa |
| DRRF250 | 61.6-120.4m <sup>3</sup> /min  | 9.8-98Kpa |
| DRRF290 | 75.8-144.5m <sup>3</sup> /min  | 9.8-98Kpa |
| DRRF295 | 81.0-152.5m <sup>3</sup> /min  | 9.8-98Kpa |
| DRRF300 | 101.5-188.7m <sup>3</sup> /min | 9.8-98Kpa |
| DRRF350 | 126.0-224.9m <sup>3</sup> /min | 9.8-98Kpa |



## Blower Structure Diagram

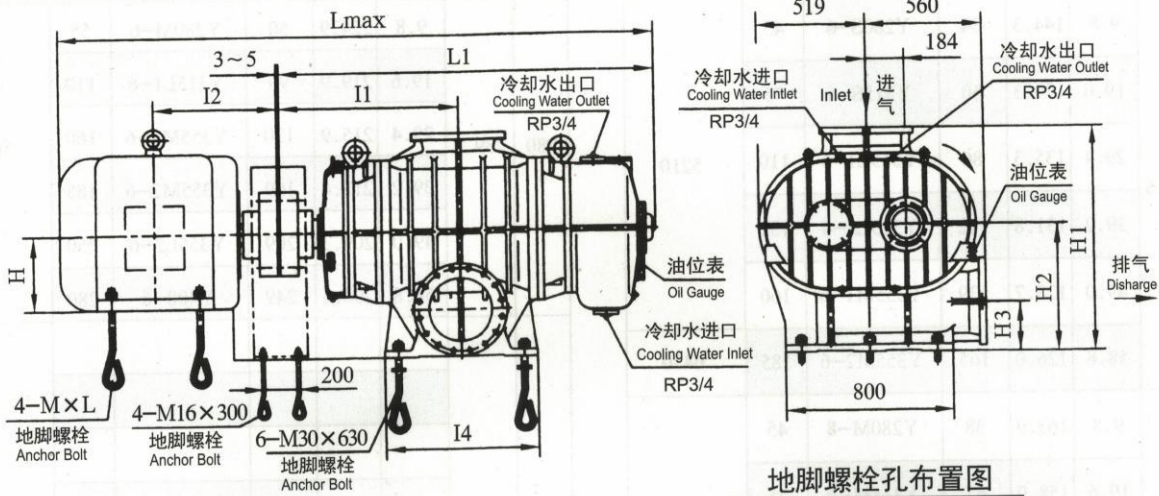


| No. | Name              | Material       | Q' ty | No. | Name             | Material       | Q' ty |
|-----|-------------------|----------------|-------|-----|------------------|----------------|-------|
| 1   | Shell             | HT200          | 1     | 14  | Z sealing ring   | Nitrile rubber | 1     |
| 2   | Impeller          | HT200          | 2     | 15  | Gear             | 35CrM          | 2     |
| 3   | Drive shaft       | 45Cr           | 1     | 16  | Gear lock washer | Q235           | 2     |
| 4   | Driven shaft      | 45Cr           | 1     | 17  | Gear lock nut    | SS400          | 2     |
| 5   | Drive side siding | HT200          | 1     | 18  | Gearbox          | HT200          | 1     |
| 6   | Gear side siding  | HT200          | 1     | 19  | Sleeve           | 45             | 1     |
| 7   | Drive bearing     | NSK            | 2     | 20  | End cover        | Q235           | 2     |
| 8   | Driven bearing    | NSK            | 2     | 21  | Pin              | 45             | 1     |
| 9   | Sealing ring      | Nitrile rubber | 2     | 22  | Plug             | 35             | 1     |
| 10  | Sealing ring      | Nitrile rubber | 2     | 23  | Oil gauge        |                | 1     |
| 11  | Bearing sleeve    | 45             | 4     | 24  | Vent             |                | 1     |
| 12  | Bearing cover     | HT200          | 1     | 25  | Grease nipple    | C3605          | 2     |
| 13  | Bearing cover     | HT200          | 1     | 26  | Gearbox seals    | Barley paper   | 2     |



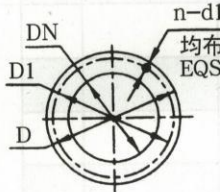
# Outline drawings and foundation installation

## DRRF Roots blower (Coupling drive)

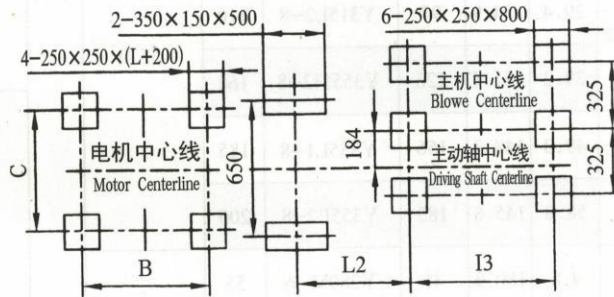
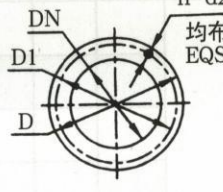


地脚螺栓孔布置图  
Anchor Bolt Hole Arrangement Diagram

进气口法兰尺寸  
Inlet Flange Size



排气口法兰尺寸  
Outlet Flange Size



| 主机型号 (Blower Type) | H1   | H2  | H3  | Lmax | L1   | L2  | I1   | I3  | I4   | DN  | D1  | D   | n-d1   | n-d2   |
|--------------------|------|-----|-----|------|------|-----|------|-----|------|-----|-----|-----|--------|--------|
| DRRF- 240 (V.W)    | 1040 | 570 | 210 | 3120 | 1540 | 532 | 730  | 400 | 480  | 250 | 350 | 395 | 12-Φ22 | 12-M20 |
| DRRF- 250 (V.W)    | 1060 | 600 | 220 | 3230 | 1650 | 557 | 785  | 460 | 590  |     |     |     |        |        |
| DRRF- 290 (V.W)    | 1090 | 630 | 230 | 3370 | 1790 | 557 | 855  | 600 | 730  | 300 | 400 | 445 | 12-Φ22 | 12-Φ22 |
| DRRF- 300 (V.W)    |      |     | 250 | 4360 | 1950 | 582 | 935  | 710 | 860  |     |     |     |        |        |
| DRRF- 350 (V.W)    | 1160 | 640 | 260 | 3695 | 2115 | 572 | 1020 | 900 | 1050 | 350 | 460 | 505 | 16-Φ22 | 16-Φ22 |

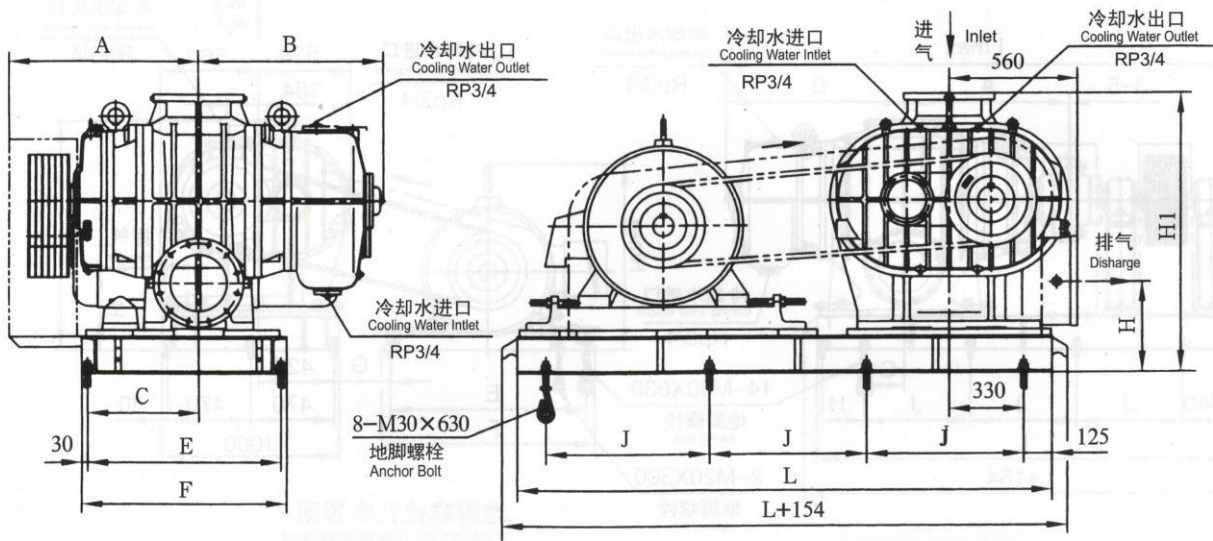
配套电机尺寸表 (Dimension of Motor)

| 电机型号<br>Motor | Y200    |     | Y225 |         | Y250 |     | Y280    |     | Y315 |     |     | Y355    |  | Y400 |
|---------------|---------|-----|------|---------|------|-----|---------|-----|------|-----|-----|---------|--|------|
|               | L       | S   | M    | M       | S    | M   | S       | M   | L    | M   | L   |         |  |      |
| B             | 305     | 286 | 311  | 349     | 368  | 419 | 406     | 457 | 508  | 560 | 630 | 1000    |  |      |
| C             | 318     | 356 |      | 406     | 457  |     | 508     |     |      | 610 |     | 710     |  |      |
| H             | 200     | 225 |      | 250     | 280  |     | 315     |     |      | 355 |     | 400     |  |      |
| MxL           | M16x300 |     |      | M20x300 |      |     | M24x300 |     |      |     |     | M30x630 |  |      |
| I2            | 400     | 437 | 450  | 488     | 519  | 545 | 594     | 620 | 645  | 709 | 744 | 1050    |  |      |

Note: The temperature of cooling water is less than 25 °C, pressure of cooling water is 196-294Kpa, the capacity of cooling water is 15-18L/min.

When the pressure of the blower is less than 39.2Kpa, the blower don't need water cooling.

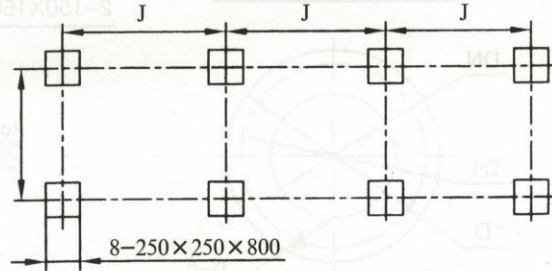
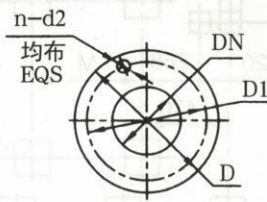
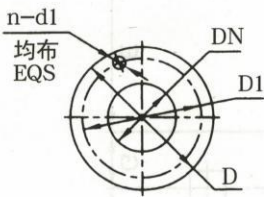
# DRRF Roots blower (Belt drive)



进气口法兰尺寸  
Inlet Flange Size

排气口法兰尺寸  
Outlet Flange Size

地脚螺栓孔布置图  
Anchor Bolt Hole Arrangement Diagram



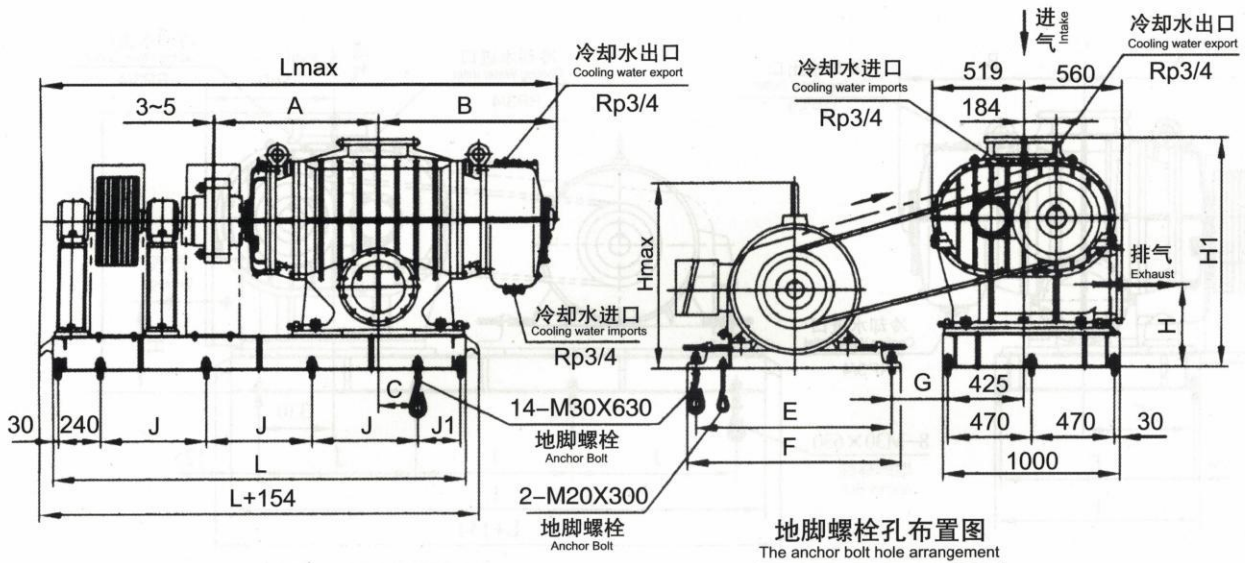
| 主机型号<br>(Blower Type)     | 配套电机<br>Motor      | A    | B    | C   | E    | F    | J   | L    | H   | H1   | DN   | D1   | D    | n-d1   | n-d2   |
|---------------------------|--------------------|------|------|-----|------|------|-----|------|-----|------|------|------|------|--------|--------|
| DRRF-240<br>-245<br>(V.W) | Y180, Y200         | 765  | 810  | 600 | 860  | 920  | 530 | 1840 | 440 | 1270 | Φ250 | Φ350 | Φ395 | Φ12-22 | Φ12-22 |
|                           | Y225, Y250         |      |      |     |      |      |     |      |     |      |      |      |      |        |        |
|                           | Y280, Y315<br>Y355 | 835  | 505  | 710 | 2380 |      |     |      |     |      |      |      |      |        |        |
| DRRF-250<br>(V.W)         | Y200, Y225         | 815  | 865  | 605 | 925  | 985  | 560 | 1930 | 450 | 1290 | Φ250 | Φ350 | Φ395 | Φ12-22 | Φ12-22 |
|                           | Y280, Y315<br>Y355 | 890  |      | 565 | 890  | 950  | 710 | 2380 |     |      |      |      |      |        |        |
| DRRF-290<br>-295<br>(V.W) | Y225, Y250         | 890  | 935  | 630 | 1030 | 1090 | 550 | 1900 | 460 | 1290 | Φ300 | Φ400 | Φ445 | Φ12-22 | Φ12-22 |
|                           | Y280, Y315<br>Y355 | 960  |      | 590 | 990  | 1050 | 710 | 2380 |     |      |      |      |      |        |        |
| DRRF-300<br>(V.W)         | Y250               | 970  | 1015 | 695 | 1150 | 1210 | 540 | 1870 | 480 | 1320 | Φ300 | Φ400 | Φ445 | Φ12-22 | Φ12-22 |
|                           | Y280, Y315<br>Y355 | 1045 |      | 665 | 1120 | 1180 | 710 | 2380 |     |      |      |      |      |        |        |
| DRRF-350<br>(V.W)         | Y288, Y315<br>Y355 | 1130 | 1095 | 780 | 1330 | 1390 | 710 | 2380 | 490 | 1390 | Φ350 | Φ460 | Φ505 | Φ16-22 | Φ16-22 |

Note: The temperature of cooling water is less than 25 °C, pressure of cooling water is 196-294Kpa, the capacity of cooling water is 15-18L/min.

When the pressure of the blower is less than 39.2Kpa, the blower don't need water cooling.

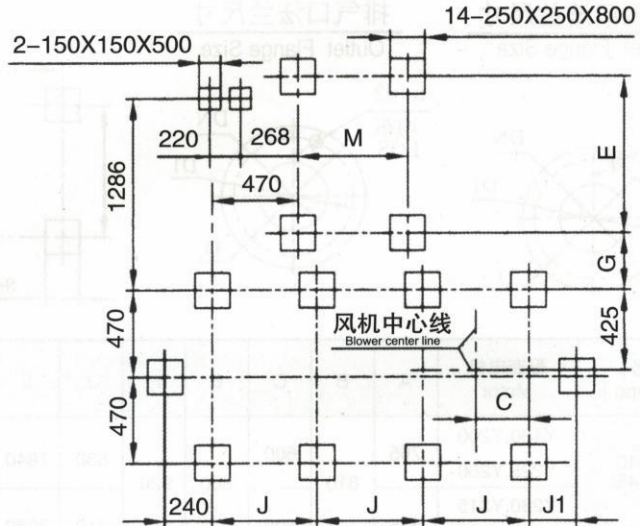
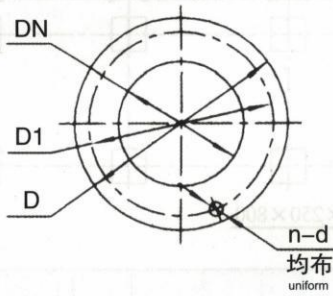


# DRRF Roots blower ( Belt drive+Coupling drive)



地脚螺栓孔布置图  
The anchor bolt hole arrangement

进、排气口法兰尺寸  
Into, exhaust flange size

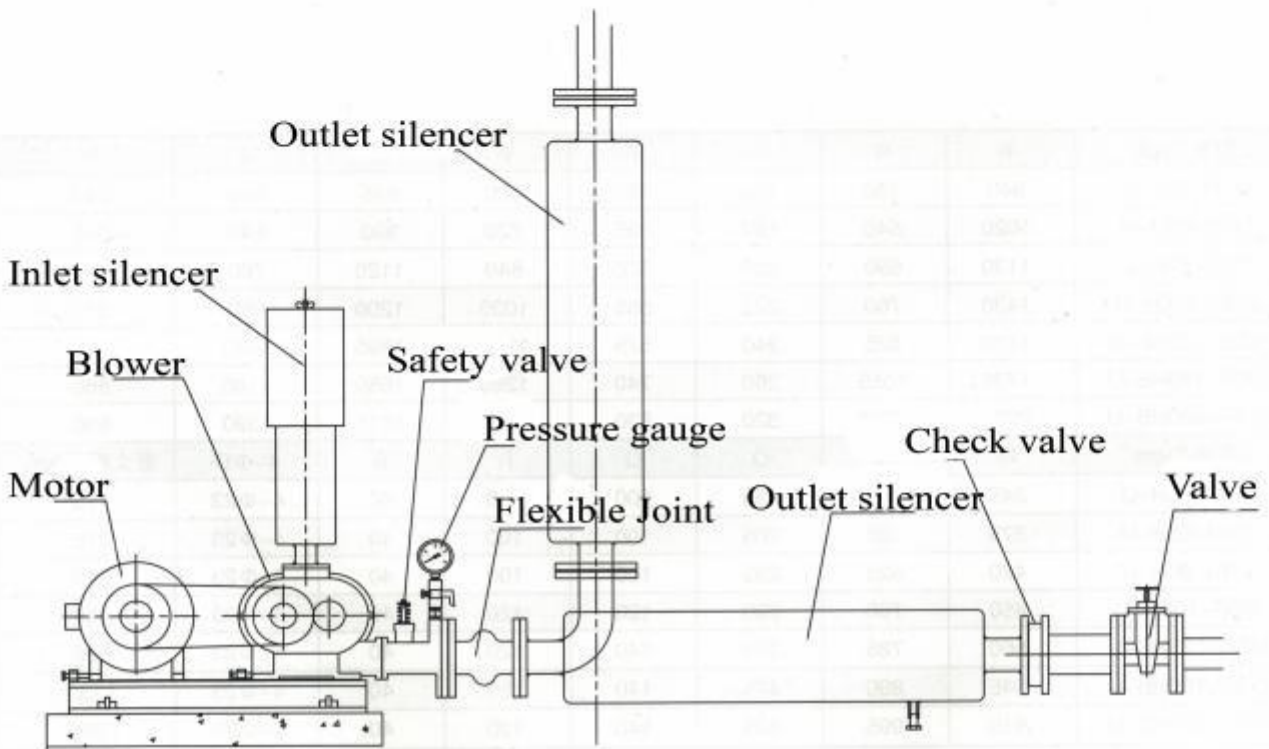
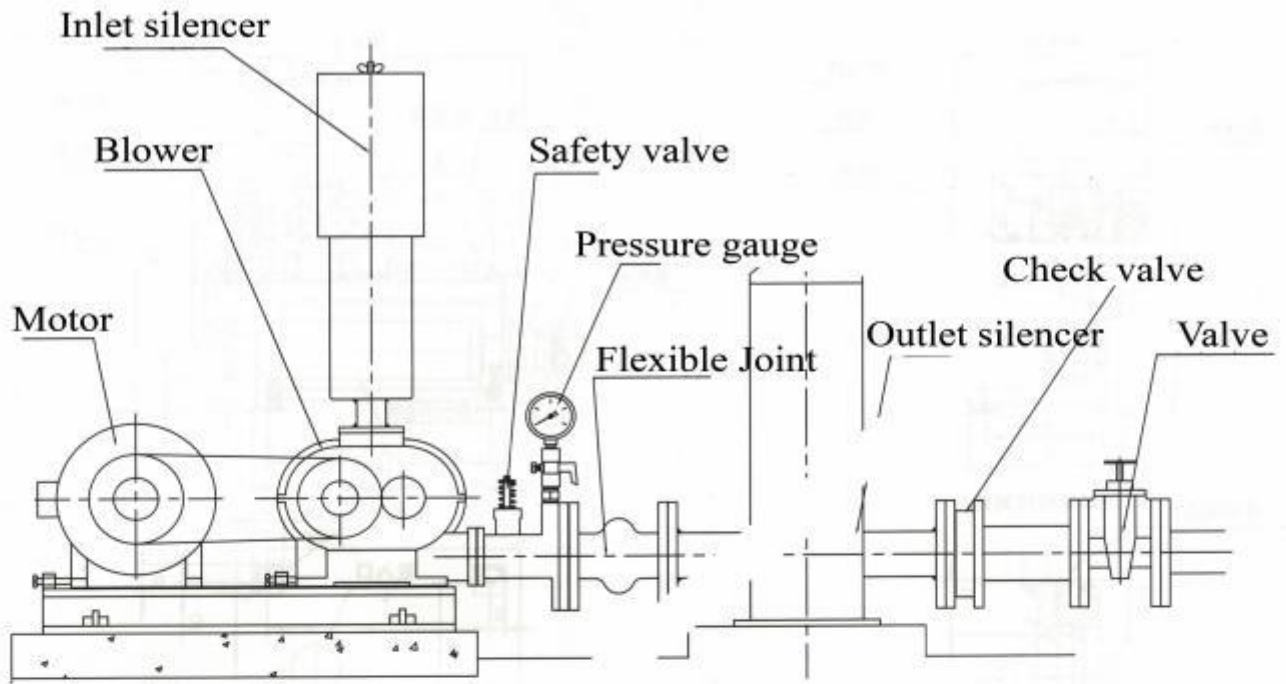


| Model              | Motor | A    | B    | C   | E    | F    | G   | H   | H1   | J   | J1  | L    | M    | Hmax | Lmax | DN   | D1   | D    | n-d    |
|--------------------|-------|------|------|-----|------|------|-----|-----|------|-----|-----|------|------|------|------|------|------|------|--------|
| DRRF(V)-250        | Y355M | 785  | 865  | 90  |      |      |     | 450 | 1290 | 505 | 240 | 2055 | 560  |      | 2637 | Φ250 | Φ350 | Φ395 |        |
|                    | Y355L |      |      |     |      |      |     |     |      |     |     |      | 630  |      |      |      |      |      |        |
| DRRF(V)-290<br>295 | Y355M | 855  | 935  | 155 | 1120 | 1220 | 320 | 460 | 1290 | 550 | 245 | 2195 | 560  | 1135 | 2777 |      |      |      | Φ12-22 |
|                    | Y355L |      |      |     |      |      |     |     |      |     |     |      | 630  |      |      |      |      |      |        |
| DRRF(V)-300        | Y355M | 935  | 1015 | 225 |      |      |     | 480 | 1320 | 600 | 240 | 2340 | 560  |      | 2937 | Φ300 | Φ400 | Φ445 |        |
|                    | Y355L |      |      |     |      |      |     |     |      |     |     |      | 630  |      |      |      |      |      |        |
|                    | Y400  |      |      |     |      |      |     |     |      |     |     |      | 1000 |      |      |      |      |      |        |
| DRRF(V)-350        | Y355M | 1020 | 1095 | 320 | 1120 | 1220 | 320 | 490 | 1390 | 660 |     | 2520 | 560  | 1135 | 3102 | Φ350 | Φ460 | Φ505 | Φ16-22 |

Note: The temperature of cooling water is less than 25 °C, pressure of cooling water is 196-294Kpa, the capacity of cooling water is 15-18L/min.

When the presssure of the blower is less than 39.2Kpa, the blower don't need water cooling.

# Pipe installation reference drawing



# Blower Accessorie

## Inlet silencer

|        | Model  | Dn   | D1  | D    | L      | N-Φh   | Weight (Kg) |
|--------|--------|------|-----|------|--------|--------|-------------|
|        | XF-40  | Φ40  | 85  | 110  | 220    | 4-Φ14  | 4           |
|        | XF-50  | Φ50  | 85  | 150  | 500    | 4-Φ14  | 5           |
|        | XF-65  | Φ65  | 110 | 155  | 550    | 4-Φ14  | 7           |
|        | XF-80  | Φ80  | 130 | 180  | 800    | 4-Φ14  | 15          |
|        | XF-100 | Φ100 | 145 | 207  | 850    | 8-Φ18  | 19          |
|        | XF-125 | Φ125 | 165 | 260  | 915    | 8-Φ18  | 22          |
|        | XF-150 | Φ150 | 200 | 260  | 1100   | 8-Φ18  | 35          |
|        | XF-200 | Φ200 | 280 | 320  | 1450   | 8-Φ20  | 60          |
|        | XF-250 | Φ250 | 350 | 395  | 1650   | 12-Φ20 | 120         |
| XF-300 | Φ300   | 400  | 445 | 1750 | 12-Φ22 | 140    |             |

## Outlet silencer

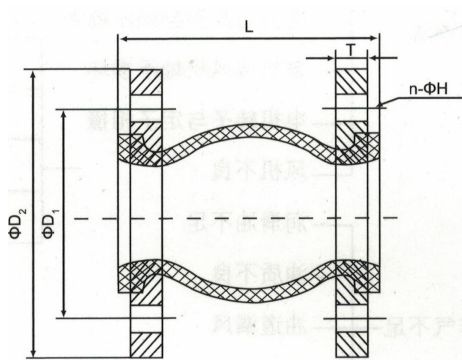
|        | Model  | ΦE   | A    | B   | C   | D      | N-Φh   | Weight (Kg) |
|--------|--------|------|------|-----|-----|--------|--------|-------------|
|        | KM-40  | Φ40  | 500  | 135 | 110 | 150    | 4-Φ19  | 9           |
|        | KM-50  | Φ50  | 600  | 140 | 125 | 165    | 4-Φ19  | 12          |
|        | KM-65  | Φ65  | 700  | 165 | 145 | 185    | 4-Φ19  | 16          |
|        | KM-80  | Φ80  | 900  | 190 | 160 | 200    | 8-Φ19  | 20          |
|        | KM-100 | Φ100 | 1200 | 217 | 180 | 220    | 8-Φ19  | 38          |
|        | KM-125 | Φ125 | 1400 | 261 | 210 | 250    | 8-Φ22  | 45          |
|        | KM-150 | Φ150 | 1600 | 286 | 240 | 285    | 8-Φ22  | 68          |
|        | KM-200 | Φ200 | 1800 | 320 | 295 | 310    | 8-Φ22  | 85          |
|        | KM-250 | Φ250 | 2000 | 450 | 350 | 395    | 12-Φ22 | 130         |
| KM-300 | Φ300   | 2000 | 500  | 400 | 445 | 12-Φ22 | 160    |             |

## Vertical outlet silencer

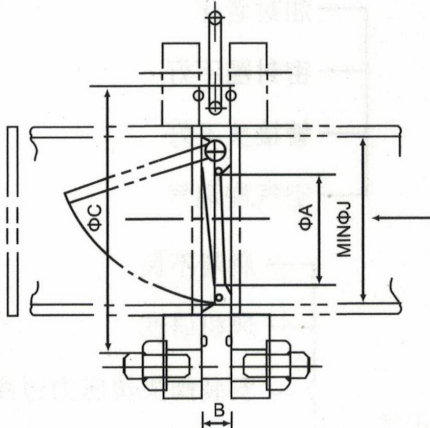
|         | Model   | ΦF   | A    | B   | C   | D   | E   | F   | G      | N-Φh   | Weight (Kg) |
|---------|---------|------|------|-----|-----|-----|-----|-----|--------|--------|-------------|
|         | RKM-40  | Φ40  | 350  | 90  | 125 | 145 | 125 | 110 | 150    | 4-Φ18  | 10          |
|         | RKM-50  | Φ50  | 450  | 130 | 140 | 165 | 140 | 125 | 165    | 4-Φ19  | 15          |
|         | RKM-65  | Φ65  | 500  | 140 | 170 | 190 | 170 | 145 | 185    | 4-Φ19  | 20          |
|         | RKM-80  | Φ80  | 610  | 150 | 190 | 217 | 190 | 160 | 200    | 8-Φ19  | 27          |
|         | RKM-100 | Φ100 | 680  | 160 | 220 | 261 | 220 | 180 | 220    | 8-Φ19  | 34          |
|         | RKM-125 | Φ125 | 820  | 200 | 240 | 286 | 240 | 210 | 250    | 8-Φ22  | 58          |
|         | RKM-150 | Φ150 | 940  | 220 | 290 | 370 | 290 | 240 | 285    | 8-Φ22  | 80          |
|         | RKM-200 | Φ200 | 1060 | 260 | 320 | 420 | 320 | 295 | 340    | 8-Φ22  | 97          |
|         | RKM-250 | Φ250 | 1250 | 400 | 350 | 500 | 500 | 350 | 395    | 12-Φ22 | 140         |
| RKM-300 | Φ300    | 1300 | 430  | 560 | 560 | 560 | 400 | 445 | 12-Φ22 | 180    |             |



## Flexible joint

|  | Model  | Φ   | D1  | D2  | L  | T      | N-Φh  | Weight (Kg) |
|--|--------|-----|-----|-----|----|--------|-------|-------------|
|  | KXT-40 | Φ40 | 110 | 150 | 90 | 16     | 4-Φ18 | 2           |
| KXT-50   | Φ50    | 125 | 165 | 105 | 18 | 4-Φ19  | 3     |             |
| KXT-65   | Φ65    | 145 | 185 | 115 | 20 | 4-Φ19  | 3.5   |             |
| KXT-80   | Φ80    | 160 | 200 | 135 | 20 | 8-Φ19  | 4     |             |
| KXT-100  | Φ100   | 180 | 220 | 150 | 22 | 8-Φ19  | 5     |             |
| KXT-125  | Φ125   | 210 | 250 | 165 | 24 | 8-Φ19  | 6.5   |             |
| KXT-150  | Φ150   | 240 | 285 | 180 | 24 | 8-Φ22  | 9.5   |             |
| KXT-200  | Φ200   | 295 | 340 | 190 | 24 | 8-Φ22  | 16    |             |
| KXT-250  | Φ250   | 350 | 395 | 230 | 24 | 12-Φ22 | 25    |             |
| KXT-300  | Φ300   | 400 | 445 | 245 | 24 | 12-Φ22 | 38    |             |

## Check valve

|  | Model  | Φ   | A  | B   | C   | J    | Weight (Kg) |
|--|--------|-----|----|-----|-----|------|-------------|
|  | DCV-40 | Φ40 | 20 | 16  | 90  | 40   | 1.0         |
| DCV-50   | Φ50    | 25  | 19 | 105 | 50  | 1.2  |             |
| DCV-65   | Φ65    | 36  | 19 | 125 | 65  | 1.5  |             |
| DCV-80   | Φ80    | 46  | 19 | 135 | 80  | 1.8  |             |
| DCV-100  | Φ100   | 67  | 19 | 160 | 100 | 2.5  |             |
| DCV-125  | Φ125   | 88  | 21 | 190 | 125 | 3.6  |             |
| DCV-150  | Φ150   | 108 | 24 | 220 | 150 | 5.2  |             |
| DCV-200  | Φ200   | 138 | 29 | 270 | 200 | 11.0 |             |
| DCV-250  | Φ250   | 200 | 30 | 330 | 250 | 15.0 |             |
| DCV-300  | Φ300   | 240 | 40 | 380 | 300 | 22.0 |             |

|  |   |   |  |   |
|--|---|---|--|---|
|  |  |  |  |  |
| <b>Silencer</b>  | <b>Shell</b>  | <b>Siding</b>   | <b>OPT belt</b>  | <b>Shaft</b>  |
|  |  |  |  |  |
| <b>Impeller</b>  | <b>NSK bearing</b>  | <b>Check valve</b>  | <b>Flexible joint</b>  | <b>Package</b>  |

## *Common malfunctions and Solution*

| Malfunctions |                                 | Reason                                | Solution                               |  |                                       |                                |
|--------------|---------------------------------|---------------------------------------|--|--|---------------------------------------|--------------------------------|
| Blower       | Can not rotate                  | Can rotated by hand                   | The motor is damaged                   | Repair or replace the motor                      |                                       |                                |
|              |                                 | Can rotated round by hand             | The lobes are locked                   | Open to repair                                   |                                       |                                |
|              | Abnormal sound or vibration     | Can rotate                            | The impurity in blower                 |  | Open to clean                         |                                |
|              |                                 |                                       | Skid, v-belt is too tight or too loose |  | Adjust v-belt tension                 |                                |
|              |                                 |                                       | Pulley offset                          |  | Reset pulley                          |                                |
|              |                                 |                                       | Pulley and belt cover friction         |  | Adjust belt cover                     |                                |
|              |                                 |                                       | Bearing oil lack or aging              |  | To replace the oil                    |                                |
|              |                                 |                                       | Gear oil lack or aging                 |  | To replace the oil                    |                                |
|              |                                 |                                       | The safe valve leakage                 |  | Adjust the safe valve                 |                                |
|              |                                 |                                       | Foundation insufficient strength       |  | To strengthen the foundation strength |                                |
|              |                                 |                                       | Piping resonance                       |  | Eliminate by the silencer and support |                                |
|              |                                 |                                       | Exhaust pressure rises abruptly        |  | See ※annotated                        |                                |
|              |                                 |                                       | Anchor bolt is too loose               |  | Tighten                               |                                |
|              |                                 |                                       | Rotor interference                     |  | Open to repair                        |                                |
|              |                                 |                                       | The impurity in blower                 |  | Open to clean                         |                                |
|              |                                 |                                       | Check valve bad                        |  | Replace                               |                                |
|              |                                 |                                       | Overheating                            | Exhaust pressure rises abruptly                  |                                       | See ※annotated                 |
|              |                                 |                                       |  | Temperature of working environment exceeds 40 °C |                                       | Ventilated working environment |
|              | Inlet silencer obstruction      |                                       |  | Cleaning/replace filter                          |                                       |                                |
|              | Airflow insufficient            | Pipeline leaks                        |  | Tighten the pipe connection                      |                                       |                                |
|              |                                 | Inlet silencer obstruction            |  | Cleaning/replace filter                          |                                       |                                |
|              |                                 | The safe valve leakage                |  | Adjust the safe valve                            |                                       |                                |
|              |                                 | V-belt is too loose                   |  | Adjust v-belt tension                            |                                       |                                |
|              | Exhaust pressure rises abruptly | Exhaust pressure rises abruptly       |  | See ※annotated                                   |                                       |                                |
|              |                                 | Shut off the valve                    |  | Fully open the valve                             |                                       |                                |
|              |                                 | The water level rises                 |  | Adjust water level                               |                                       |                                |
|              |                                 | Inlet/outlet pipe jams                |  | Cleaning debris                                  |                                       |                                |
|              |                                 | Valve bad or twist reversed direction |  | Replace or reverse direction twist               |                                       |                                |
| Oil leak     | Airflow overpowered             |                                       | Reduce round speed or exhaust          |  |                                       |                                |
|              | Lubrication oil overmuch        |                                       | Refuel to the center of oil standard   |  |                                       |                                |

## ***FAQ***

### 1. What's the information should I provide when inquiry?

A: Air capacity

B: Pressure

C: Application

D: Use environment(Temperature, atmospheric pressure)

E: Do you need motor?

Or other specials you give us will be more appreciated.

### 2. What is your warranty?

Our warranty is 12 months after received the roots blower. During the warranty period, replace the damaged parts for free of charge. Out warranty period, to provide timely, high-quality technical services and price concessions spare parts to ensure continuous safe and high-quality equipment operation.

### 3. How long is the service life of roots blower?

In normal use environment

A- Service life of blower is more than 10 years.

B- Service life of Impeller is more than 60,000 hours.

C- Service life of bearing is more than 30,000 hours.

D- Service life of gear is more than 60,000 hours.

## ***Contact Us***

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