



GGEL ROOTS BLOWER- TW-50

Specification

Green Genesis Engineering Limited supplies high-quality, energy-efficient three-lobe GGEL Brand Roots Blowers designed for reliable and continuous industrial operation. Manufactured using advanced engineering technology and stringent quality control procedures, our blowers deliver stable airflow, high efficiency, low noise, minimal maintenance requirements, and extended service life.

Widely used in wastewater treatment plants, aquaculture, pneumatic conveying systems, and various industrial applications, GGEL Roots Blowers are engineered to provide dependable performance under demanding operating conditions.

Committed to innovation, quality, and customer satisfaction, GGEL offers cost-effective solutions, customized engineering support, and prompt after-sales service to meet the diverse needs of industries across Bangladesh and beyond.

❖ Feature

- ❖ Wide range for air Volume ` pressure and vacuum.
 1. Bore : 40A~400A (1.5"~16")
 2. Capacity : 0.5~360 m³/min
 3. Pressure : 0~8000 mmAq
 4. Vacuum : - 5000 mmAq
- ❖ Stable air flow and less pressure variation.
- ❖ Clean air not with oil moist.
- ❖ Construction simple and easy maintenance.
- ❖ Bearings are all lubricated by oil moist.

❖ Why You Select

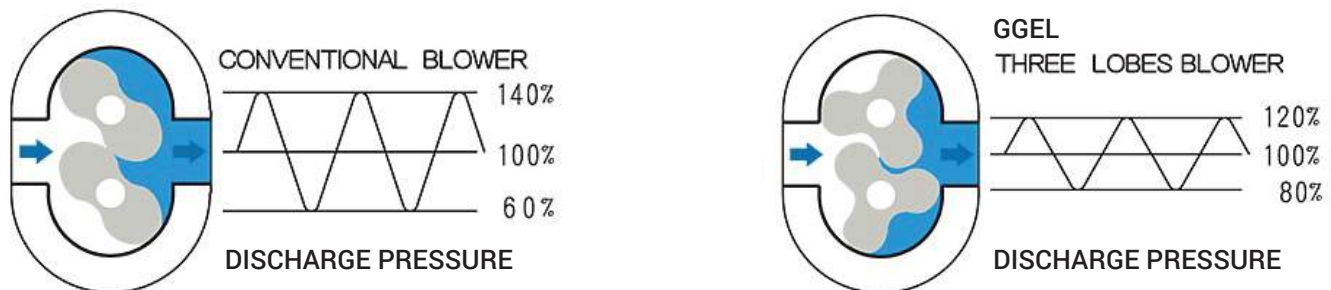
Low Energy Consumption: GGEL Roots Blower has designed on three lobes' basis and it control backflow pressure to rotor. So, it reduce energy consumption.

Lower Noise: In a Roots Blower pressure pluses are the major noise source. Since our blower is three lobes so, this design can efficiently reduce noise by approximately 5dB.

Longer Bearing Life : With Modern technology and three lobe causes of less vibration. And the less vibration transmitted through the lobe result approximately 20% longer bearing life.

❖ Lower Energy Consumption

Three lobes design control backflow pressure to rotor so reduce consumption



❖ Lower Noise

Pressure pluses are the major noise source of blower.

Three lobes design can efficiently reduce noise by approximately 5dB.

❖ Longer Bearing Life

Less vibration transmitted through the lobe results approximately 20% longer bearing life. Conventional blowers result pressure pluses and vibration rob power and shorten the life of every bearing, gear and other drive train components.

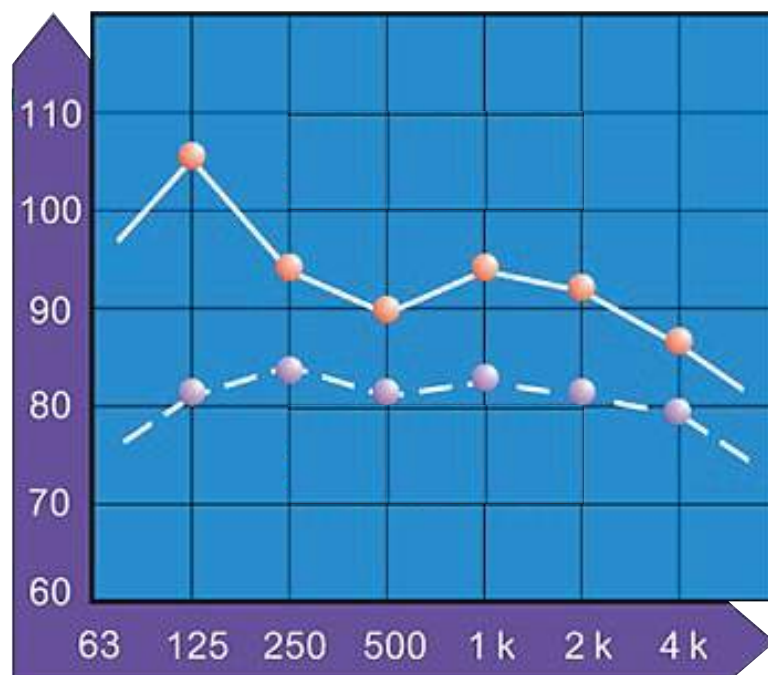


Fig: Hz

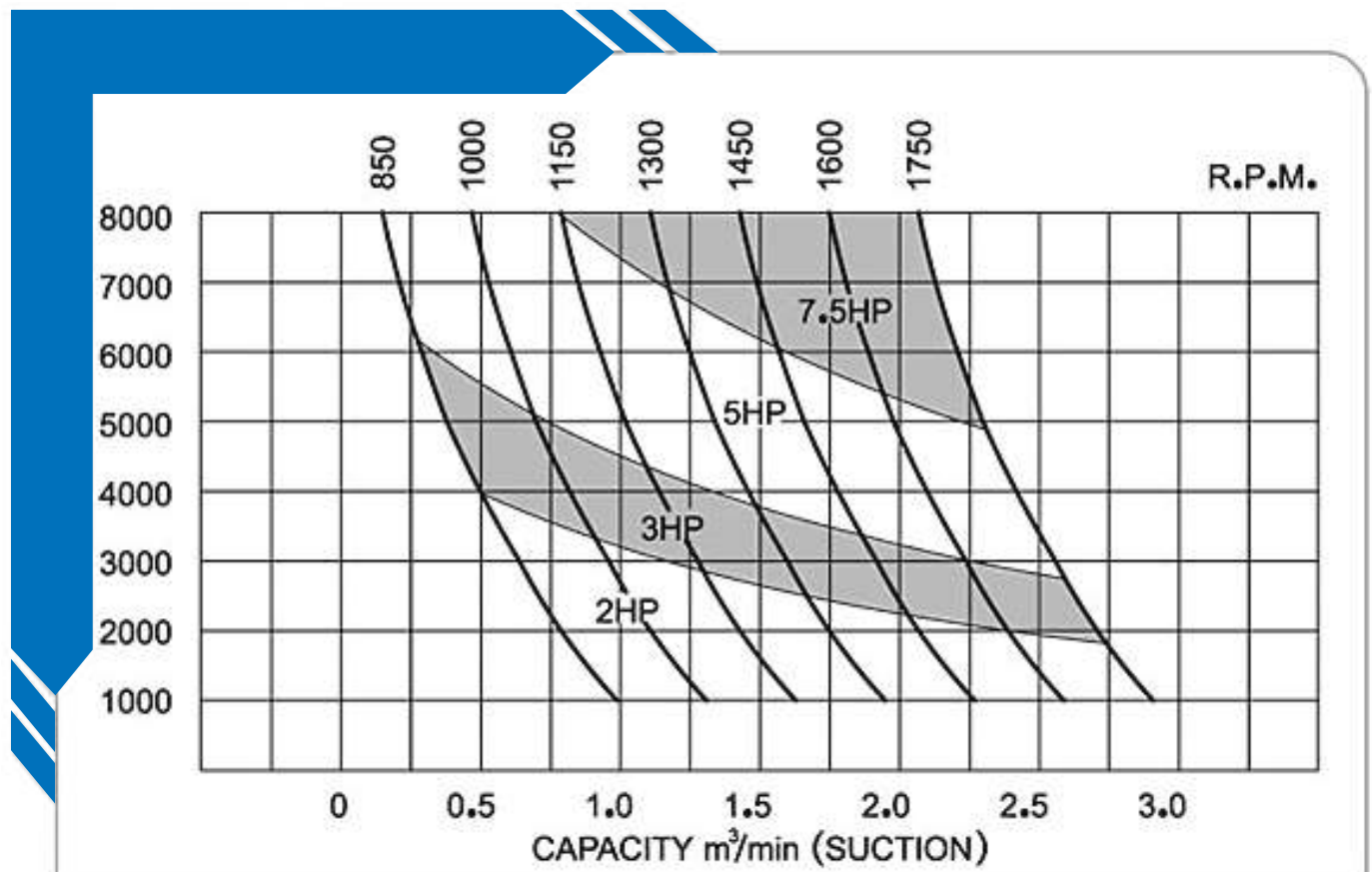


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❖ TW-50 Performance Table (For Pressure)

TYPE	RPM	Qs(m ³ /min)				PRESSURE(mmAq)								La(Kw)			
		1000mmAq		2000mmAq		3000mmAq		4000mmAq		5000mmAq		6000mmAq		7000mmAq		8000mmAq	
		Qs	La	Qs	La	Qs	La	Qs	La	Qs	La	Qs	La	Qs	La	Qs	La
TW-50	850	0.99	0.41	0.79	0.80	0.64	1.16	0.50	1.51	0.38	1.84	0.29	2.15	0.21	2.45	0.15	2.74
	1000	1.31	0.48	1.11	0.94	0.96	1.37	0.82	1.77	0.70	2.16	0.61	2.53	0.53	2.88	0.47	3.22
	1150	1.63	0.56	1.44	1.08	1.28	1.57	1.15	2.04	1.02	2.49	0.93	2.91	0.86	3.32	0.79	3.71
	1300	1.95	0.63	1.76	1.22	1.61	1.78	1.47	2.31	1.34	2.81	1.25	3.29	1.18	3.75	1.12	4.19
	1450	2.27	0.70	2.08	1.36	1.93	1.98	1.79	2.57	1.67	3.13	1.58	3.67	1.50	4.18	1.44	4.67
	1600	2.60	0.77	2.40	1.50	2.25	2.19	2.11	2.84	1.99	3.46	1.90	4.05	1.82	4.61	1.76	5.16
	1750	2.92	0.85	2.72	1.64	2.57	2.39	2.43	3.11	2.31	3.78	2.22	4.43	2.14	5.05	2.08	5.64

❖ TW-50 Performance Curve (For Pressure)

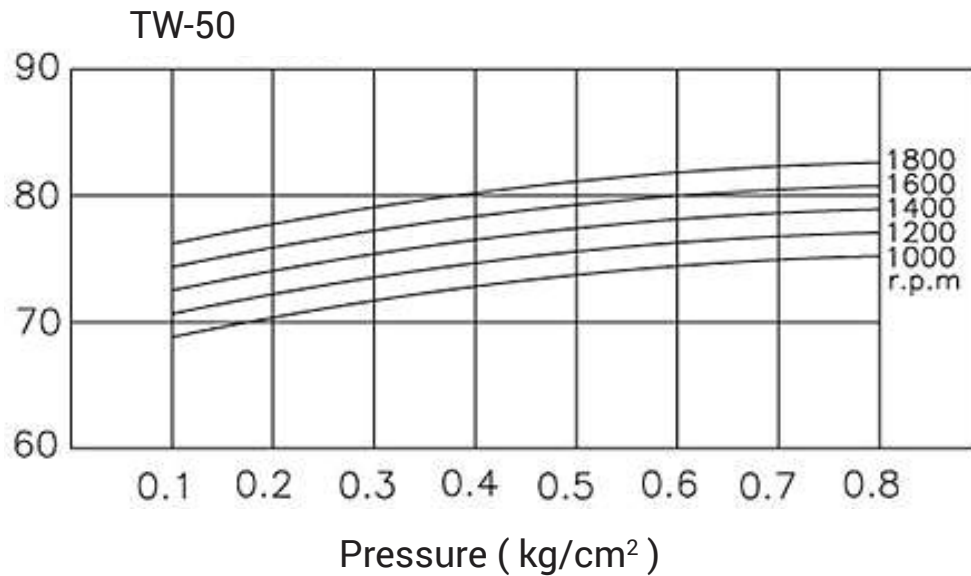




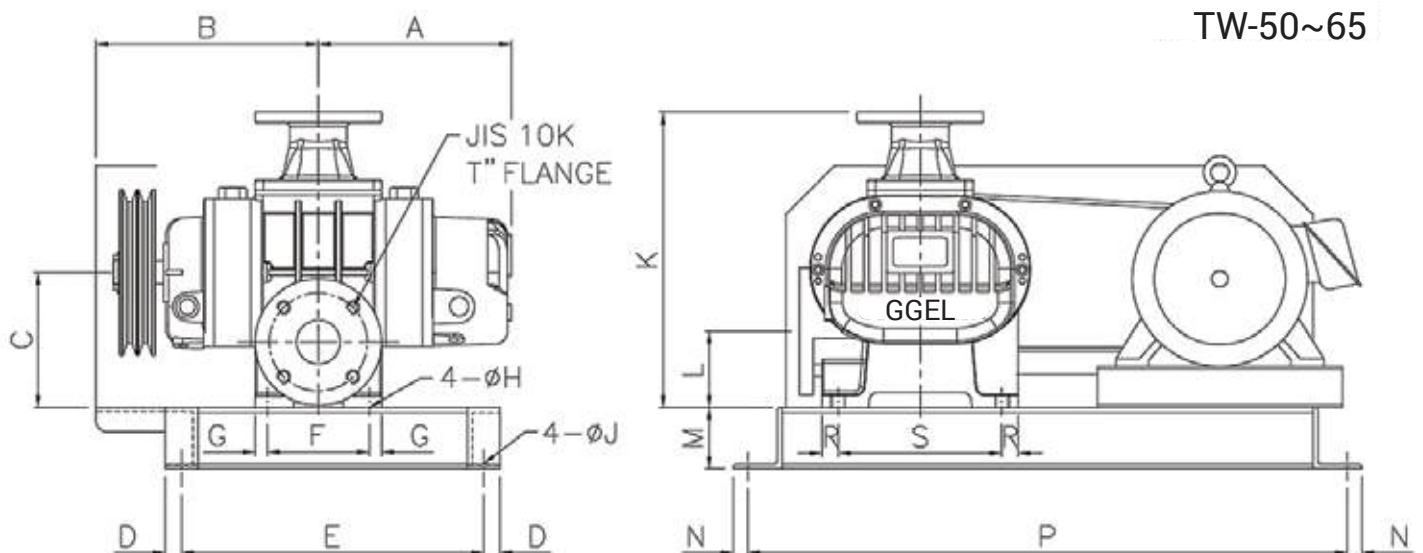
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❖ Noise Level Of Blower

1. LEVEL MEASURED AT DISTANCE 1 METER FOR THE BLOWER FITTED WITH STANDARD SILENCER.
2. NOISE LEVEL MAY BE DIFFERENT ACCORDING TO THE EXTEND PIPE LENGTH AND AMBIENT CONDITION.



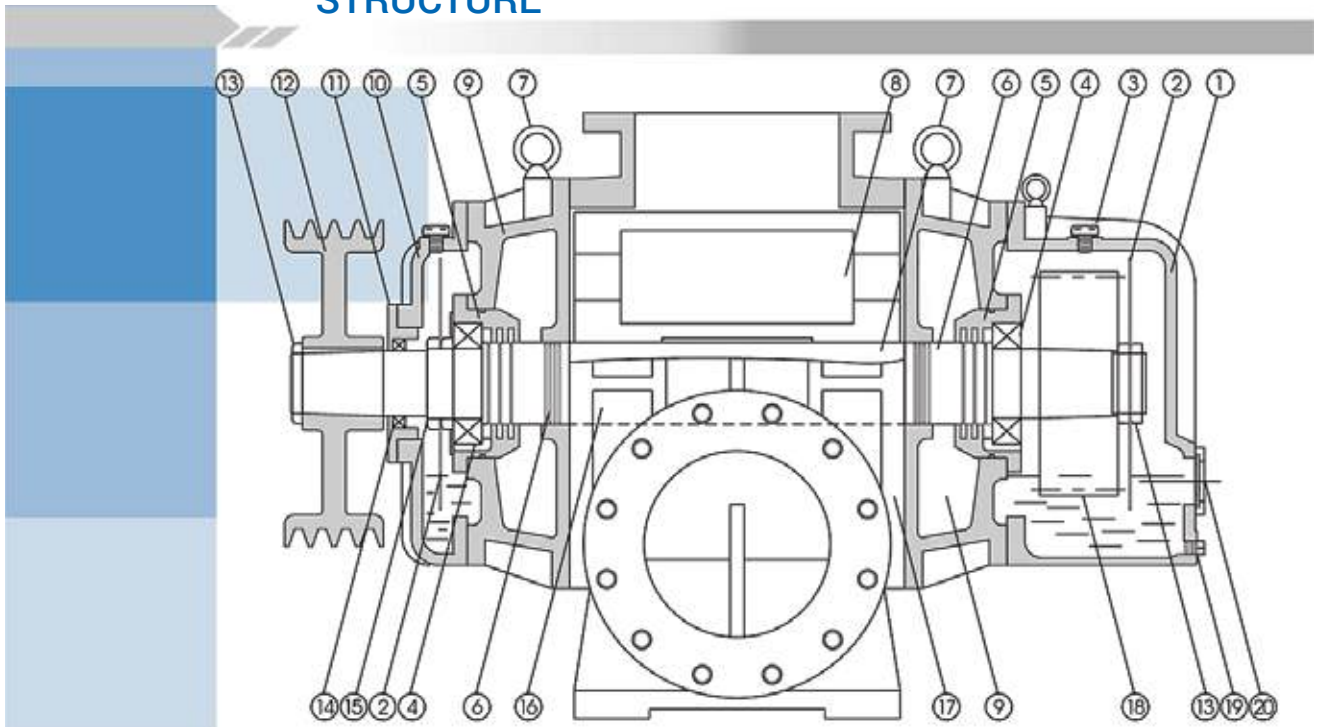
❖ Outline Dimension



UNITS : mm																		
MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Wt. (Kg)
TW-50	240	270	168	20	370	125	15	15	15	356	90	75	18	734	15	200	2	76

(WT. FOR MAINBODY)

STRUCTURE



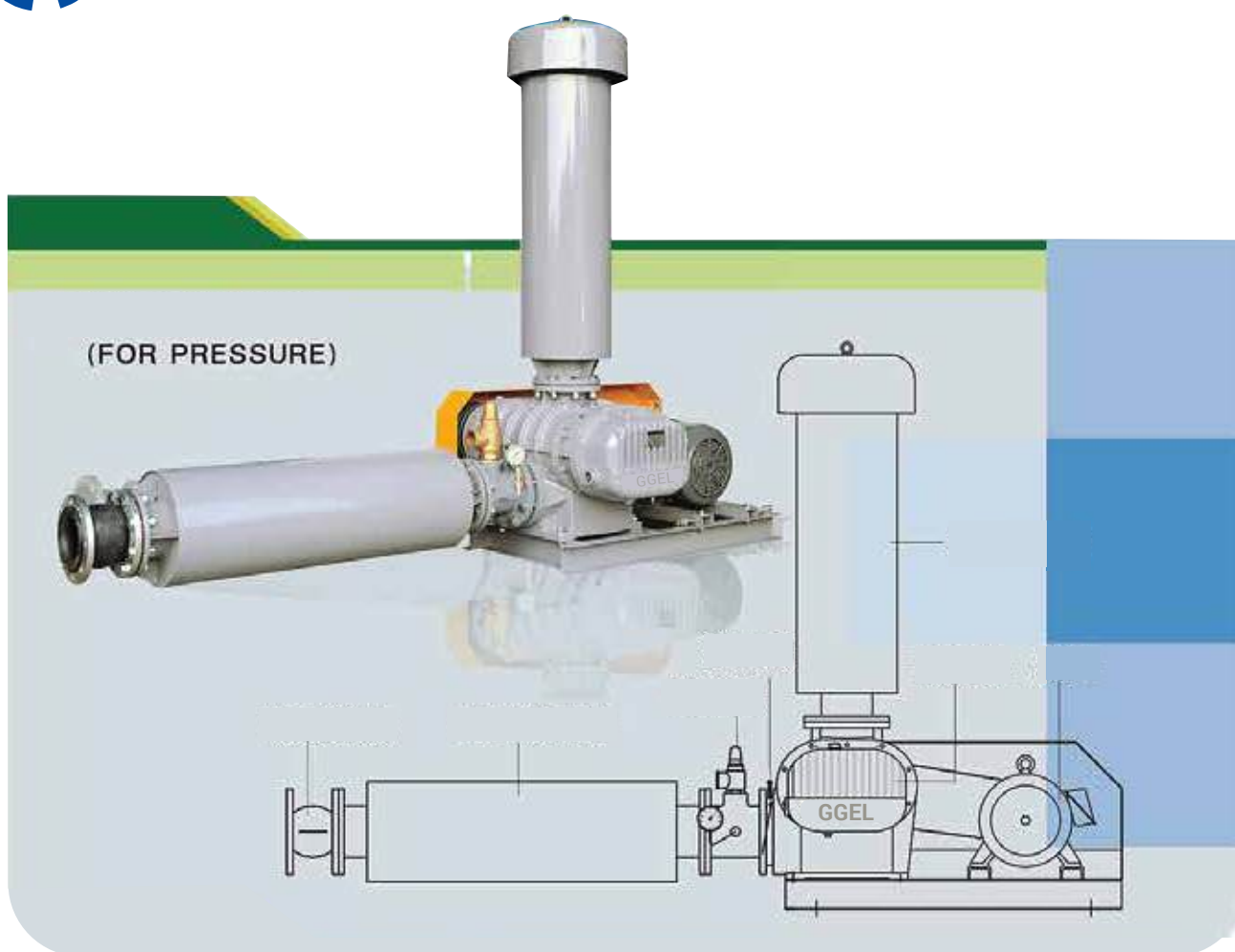
MATERIAL LIST

NO.	NAME	MATERIAL	NO.	NAME	MATERIAL
1.	Gear Case	FC250	11.	Seal case	FC250
2.	Oil splash	SS400	12.	Pulley	FC250
3.	Oil plug	S45C	13.	Nut	SS400
4.	Bearing	SUJ2	14.	Seal	NBR
5.	Bearing case	FC250	15.	Nut	SS400
6.	Labyrinth seal	SS400	16.	Shaft	SCM440
7.	Eye bolt	S45C	17.	Main casing	FC250
8.	Rotor	FC250	18.	Timing gear	SCM415
9.	Side cover	FC250	19.	Oil drain	S45C
10.	Oil case	FC250	20.	Oil gauge	S45C



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❖ INSTALLATION GUIDELINES



GGEL Roots Blower Installation Guidelines

To ensure safe operation, optimum performance, and long service life of the GGEL Roots Blower, please follow the installation instructions below:

1. Foundation and Mounting

- ❖ Install the blower on a solid, level, and vibration-free concrete foundation.
- ❖ Ensure sufficient load-bearing capacity to support the blower and motor assembly.
- ❖ Secure the blower firmly using foundation bolts and vibration isolators if required.

2. Location Requirements

- ❖ Install the blower in a clean, dry, and well-ventilated area.
- ❖ Protect the unit from rain, direct sunlight, excessive dust, and corrosive gases.
- ❖ Maintain adequate clearance around the blower for inspection and maintenance.

3. Piping Installation

- ❖ Ensure inlet and outlet piping are properly aligned and independently supported.
- ❖ Do not allow piping loads or stress to be transferred to the blower casing.
- ❖ Install a flexible connector to minimize vibration transmission.
- ❖ Keep piping as short and straight as possible to reduce pressure losses.



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4. Safety Accessories

- ✧ Install an inlet air filter to prevent dust and foreign particles from entering the blower.
- ✧ Install a pressure relief valve to protect the blower from overpressure conditions.
- ✧ Fit pressure gauges and non-return (check) valves where applicable.

5. Electrical Connection

- ✧ Electrical installation must be performed by a qualified electrician.
- ✧ Verify motor voltage, frequency, and phase sequence before startup.
- ✧ Ensure proper grounding of the motor and control panel.
- ✧ Install overload protection and suitable circuit breakers.

6. Lubrication

- ✧ Fill the blower gearbox with the recommended grade and quantity of lubricating oil before operation.
- ✧ Check oil levels regularly and replace oil according to the maintenance schedule.

7. Pre-Startup Inspection

- ✧ Check all bolts, couplings, belts, and fasteners.
- ✧ Rotate the blower shaft manually to ensure free movement.
- ✧ Verify that all guards and safety devices are properly installed.
- ✧ Ensure all valves are in the correct operating position.

8. Startup and Commissioning

- ✧ Start the blower without load whenever possible.
- ✧ Confirm correct rotation direction according to the arrow mark on the blower.
- ✧ Monitor pressure, temperature, vibration, and noise levels during initial operation.
- ✧ Stop the unit immediately if abnormal conditions are observed.

9. Ventilation Requirements

- ✧ Ensure adequate airflow around the blower to dissipate heat generated during operation.
- ✧ The ambient temperature should typically remain between 5°C and 40°C unless otherwise specified.
- ✧ Avoid installing the blower in confined spaces without proper ventilation.

10. Noise and Vibration Control

- ✧ Install anti-vibration pads or vibration isolators where necessary.
- ✧ Use flexible joints on both suction and discharge pipelines.
- ✧ Regularly inspect foundation bolts and pipe supports for looseness.

11. Air Intake Considerations

- ✧ The suction air source should be clean and free from excessive moisture, dust, and corrosive gases.
- ✧ Regularly inspect and clean the inlet filter to maintain blower efficiency.
- ✧ Restricted air intake can increase operating temperature and power consumption.



12. Discharge Piping Requirements

- ❖ Install a pressure gauge on the discharge line for performance monitoring.
- ❖ Avoid sudden pipe size reductions and excessive bends that may increase system resistance.
- ❖ Ensure discharge piping is adequately supported to prevent mechanical stress on the blower.

13. Belt Drive Inspection (If Applicable)

- ❖ Check belt alignment and tension before startup.
- ❖ Excessive belt tension may damage bearings, while insufficient tension may cause slippage.
- ❖ Recheck belt tension after the first 24–48 hours of operation.

14. Coupling Alignment (Direct-Coupled Units)

- ❖ Verify precise alignment between motor and blower shafts.
- ❖ Misalignment can lead to excessive vibration, bearing failure, and reduced equipment life.
- ❖ Alignment should be checked after installation and periodically during operation.

15. Operating Environment

- ❖ Avoid installing the blower in hazardous or explosive atmospheres unless specifically designed for such applications.
- ❖ Protect the equipment from flooding, chemical splashes, and severe weather conditions.
- ❖ Maintain a clean environment around the blower to facilitate maintenance activities.

16. Trial Run Procedure

- ❖ Conduct a no-load test run before connecting the blower to the process system.
- ❖ Observe vibration, noise, current consumption, discharge pressure, and temperature.
- ❖ Verify that all instruments and protection devices are functioning correctly.

17. Routine Monitoring After Installation

- ❖ Check bearing temperature and lubrication condition regularly.
- ❖ Monitor pressure, airflow, vibration, and motor current during operation.
- ❖ Investigate any abnormal sound, excessive vibration, or temperature rise immediately.

18. Maintenance Accessibility

- ❖ Leave sufficient space around the blower for routine inspection, oil replacement, filter cleaning, and major maintenance work.
 - ❖ Ensure easy access to gauges, valves, lubrication points, and electrical control panels.
- Safety Warning

Never operate the blower without an air filter, pressure relief valve, or protective guards. Failure to follow proper installation and safety procedures may result in equipment damage, reduced performance, personal injury, or voiding of the product warranty.

Important Notice

Improper installation may cause excessive vibration, overheating, air leakage, reduced efficiency, increased power consumption, or premature equipment failure. Always follow GGEL installation recommendations and consult our technical team whenever assistance is required.