

## Side Channel Blower & Turbo Blower Instruction Manual



For any further technical information  
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### **Instructions prior to installation and operation**

1. Check if any part of the blower has been damaged during transportation.
2. Installation of an air filter before the inlet is required to prevent material entering the inlet directly, otherwise damage to blower may occur.
3. Do not use near acid, alkali or inflammable gas, otherwise explosion and damage may occur.
4. Do not use near liquid and air with a high temperature.
5. Do not touch the blower to avoid injury. Surface temperature will rise after continuous operation.
6. High pressure blower (SS & TS Series) electric current is proportional to pressure and inverse proportional to air flow. Turbo blower (TU Series) electric current is proportional to air flow and inverse proportional to pressure.
7. Ensure pressure of high pressure blower (SS & TS Series) does not exceed max. static pressure (motor full loading). Do not operate unless a relief or vacuum limitation valve has been installed to protect motor.
8. When blowing air into water, the maximum transportation depth shall not exceed 70% max static pressure remarked on catalogue. (water column).

### **Installation**

1. 3-phase blower shall be installed with ambient temperature -10 to +40 Degrees Celsius, single phase blower with ambient temperature -5 to +40 Degrees Celsius, relative humidity to be under 80%.
2. When installed outdoors, please check for any obstructions around the blower suction inlet, and install shelter to avoid motor damage or electric shock due to the blower getting wet.
3. If the inlet does not connect to any pipe, a filter with larger area shall be installed at the suction inlet.
4. Overly high pressure use shall be avoided in closed piping loops for high pressure blowers (SS & TS series), otherwise deformation and damage may occur to the blower due to high temperature. An adjustable pressure relief or vacuum limitation valve shall be installed to protect the motor.
5. Distance of at least 50mm shall be maintained between the blower's motor fan and wall to avoid over heating due to poor motor heat dissipation.
6. Heat may be produced during operation due to friction between air impeller and piping. Heat resisted piping material shall be used over 1m for outlet piping.
7. Section area of piping shall not be smaller than 60% of blower inlet and outlet section area.
8. Centreline of piping and blower inlet and outlet shall remain the same, please do not connect forcibly.
9. Piping shall be fixed independently, the weight of piping shall not load on the rim of the blower inlet or outlet, to avoid damage occurring to the rim.
10. Unusual sudden diameter shrinkage, enlarging or curved design of piping shall be avoided to ensure the best blower air efficiency.
11. When installing the blower in a vertical or inclined position, please consider the total weight of the impeller and rotor loading on bearing. Please contact your blower supplier or manufacturer for further information.
12. Blower with the same horsepower could be installed in series or parallel connection. Please contact your blower supplier or manufacturer for further confirmation before installation.
13. Install with screw on levelling and a hard foundation or base. Standard loading is generally around 3 times the blower weight, if installed on an uneven base, a vibration absorber shall be installed to avoid deformation or noise occurring due to fastening of blower.

## **Wiring and operation**

1. Make sure the voltage and frequency of power supply fits the requested electrical condition marked on the blower rating plate or label, otherwise injury or motor damage may occur due to incorrect voltage.
2. Allowable voltage variance shall be within  $\pm 5\%$  of rated voltage, and frequency variance shall be within  $\pm 2\%$ .
3. Please install according to the wiring instruction inside the cover of terminal box, and connect earth lines to prevent electrical leakage accident.
4. Overheat relay device is not available for normal blower, please install over-load switch according to the voltage marked on the rating plate or rating label and choose the appropriate over-load switch.
5. After installation, turn on the switch for a short time and test run blower, make sure rotation is in compliance with arrow direction. If wrong direction occurred with three phase blower, please exchange any two lines of three wires. For single phase blowers, please contact your supplier or manufacturer.
6. Overload may happen when all-close piping system for high pressure blower or all-open piping system for turbo blower, please keep the current in allowable range marked on rating plate or label to avoid motor damage.
7. Avoid turning the blower switch on and off too many times within a short time, otherwise overheating may occur to the motor.
8. Inverter is not available for single phase blower. When using inverter in three-phase blower, please avoid operation with too high or too low frequency, otherwise damage may occur to the blower.

## **Maintenance and inspection**

1. The air filter used in the piping system may be blocked after a period of operation, and may block airflow, please clean the air filter periodically.
2. Please clean any dust and oil on the blower housing to ensure best heat dissipation performance.
3. Bearing seal and muffler cotton are consumable parts with a limited life, life can vary for different ambient and operating conditions. Please inspect and replace periodically.
4. Please inject lubricant oil periodically to ensure long bearing life for models with an oil injection nipple.
5. Conveying air with higher moisture may make shorten the blower's service life, avoid moisture in the air if possible. If not avoidable, inspect the blower's parts periodically to prevent blower damage or injury occurred due to corrosion.

## Troubleshooting

Status	Causes	Solution
Motor does not work, without any sound	<ol style="list-style-type: none"> <li>1. Power lose phase</li> <li>2. Wiring disconnection</li> <li>3. Electro-magnetic switch broken</li> <li>4. Motor coil burnout</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power condition</li> <li>2. Check wiring connection and tighten if loose</li> <li>3. Check electro-magnetic switch condition</li> <li>4. Send for repair</li> </ol>
Motor does not work, with current sound	<ol style="list-style-type: none"> <li>1. Blower impeller stuck</li> <li>2. Bearing cannot rotate</li> <li>3. Loose screws</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean blower inside</li> <li>2. Replace new bearing</li> <li>3. Check all screws and tighten if loose</li> </ol>
Motor RPM not regular, with loud current sound	<ol style="list-style-type: none"> <li>1. Wrong wiring connection</li> <li>2. Wrong voltage</li> <li>3. Motor coil burnout</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring connection method</li> <li>2. Use multimeter to check power voltage</li> <li>3. Send for repair</li> </ol>
Motor RPM regular, blower with strange sound	<ol style="list-style-type: none"> <li>1. Impeller deformed or corrosion</li> <li>2. Worn bearing</li> <li>3. Blower housing damaged</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace new impeller</li> <li>2. Replace new bearing</li> <li>3. Send for repair</li> </ol>
Blower with harsh loud sound	<ol style="list-style-type: none"> <li>4. Blower crack from deformation or corrosion</li> <li>5. Worn muffler cotton</li> <li>6. Blower running pressure too high</li> </ol>	<ol style="list-style-type: none"> <li>4. Send for repair</li> <li>5. Replace new muffler cotton</li> <li>6. Check piping or filter blocked or choose blower with bigger capacity</li> </ol>
Blower works normally, pressure or airflow lower than standard.	<ol style="list-style-type: none"> <li>1. Wrong motor rotation</li> <li>2. Worn blower impeller</li> <li>3. Blocked piping or filter</li> <li>4. Frequency too low</li> <li>5. Worn bearing</li> <li>6. Too many piping sudden change or curve design</li> </ol>	<ol style="list-style-type: none"> <li>1. Change motor rotation direction</li> <li>2. Replace new blower impeller</li> <li>3. Clean piping and filter</li> <li>4. Set the right frequency</li> <li>5. Replace new bearing</li> <li>6. Change piping design</li> </ol>
Blower is a technical product, please do not dismantle and repair it without consulting a professional technician to avoid any danger.		