



# OPERATION / MAINTENANCE INSTRUCTIONS



**ALL-STAR®**  
**TurboBlower**

All-Star™ HB™ Series and Big Bertha Blower™ are registered trademarks of All-Star Products.

# 1 INTRODUCTION

To insure safe operation of your All-Star blower, please read this instruction manual and pay particular attention to instructions marked with the following signs:



**DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.



**CAUTION** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.

## 1.1 Application

The All-Star blower is a complete unit, ready for immediate installation. It is designed for handling air and other non-flammable, non-corrosive and non-explosive gasses only.

## 1.2 Blower Pressure

The drive motor can be loaded to the total differential pressure given in the Technical Data table.

## 1.3 Temperature

The maximum permissible ambient temperature and gas temperature at the inlet is 40 degree C (104 degree F). For higher temperature use, refer to the factory.

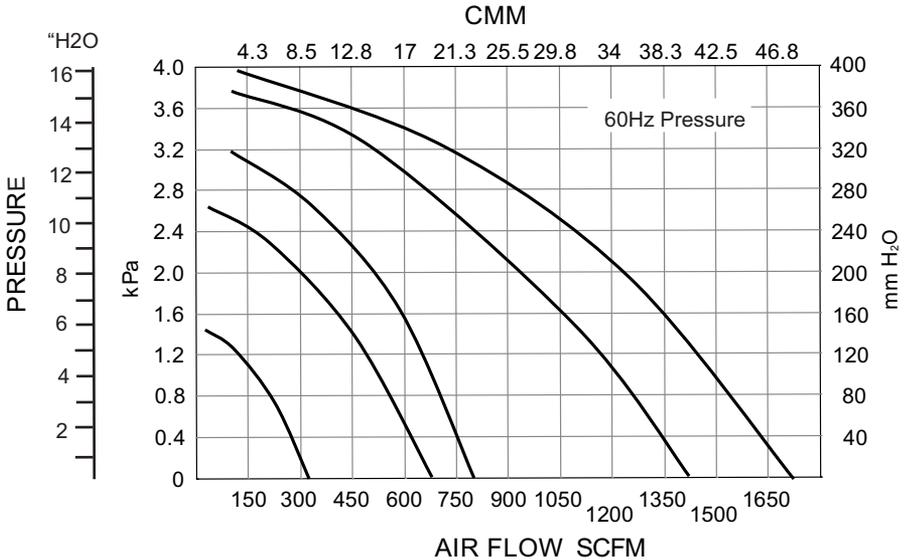
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## 1.4 Performance Specifications

All blower motors are 2 pole design and operate at approximately 3450 rpm at 60HZ. Motors are suitable for operation on 3/50/220/380. Motor nameplate currents vary from time to time. If the current listed below is different from the current on your motor nameplate, use the nameplate current for sizing and selection purposes.

Model No	HP	Voltage	Current	Maximum Performance		Intake	Sound db(A)	Wt lbs
				SCFM	"H2O			
TB05-3*	½	208-230/460	2.2/2.0/1.0	315	5.9	3.9"	70	40
TB1-3*	1	208-230/460	3.5/3.2/1.6	675	10.4	4.9"	80	66
TB205-3**	2.5	208-230/460	6.8/6.2/3.1	800	12.6	4.9"	90	88
TB305-3	3.5	208-230/460	9.2/8.3/4/1	1400	15	5.9"	96	133
TB5-3	5	208-230/460	14.8/13.4/6.7	1725	15.7	5.9"	100	164

\* Available in 1/60/50/115/230 volts \*\* Available in 1/60/50/239 volts



## 2 OPERATION

### 2.1 Transport and Storage

When lifted by crane, All-Star blowers must be secured at the eyebolt on the pump casing.

Attention should be paid to the load-bearing capacity of the hoisting equipment.

### 2.2 Installation

All-Star blowers can be installed and mounted in any horizontal or vertical position. Quiet vibration-free running is achieved by insuring the blower is mounted onto a firm foundation or structure.

Keep ventilation gratings and opens clear. The direction of flow is indicated by an arrow on the silencer housing.



**WARNING** On installation or after maintenance, it is required to check that the blower rotation is correct before returning to service.



**WARNING** Do not operate the blower with the outlet blocked or restricted.

### 2.3 Electrical Connection



**DANGER** The electric power must be disconnected before any work is performed on the blower or associated equipment.

The system voltage and frequency must be the same as stated on the blower nameplate. +/- 5% voltage and +/- 2% frequency variations are permissible without affecting the blower performance. The incoming electrical power should be connected according to the wiring diagram located in the conduit box cover. The protective earth conduction should be connected to the  terminal.

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 **CAUTION** High surface temperatures of more than 70 Deg C (158 Deg F) can occur on the blower's surface. No heat-sensitive parts such as normal electrical leads or electronic components can make contact with or be attached to the blower. Warning signs and protective screens must be installed around the blower surfaces to prevent accidental contact by individuals.

The rated motor currents are based on 40 Deg C gas inlet and ambient temperature.

Select motor circuit breakers to match the rated motor current. All-Star blowers are suitable for operation on VFD (variable frequency drives). Shielded power leads are recommended to control high frequency currents and voltage harmonics that cause electromagnetic interference.

Exceeding the rated operating speed (3450 rpm), causes increased noise, vibration, heat and reduces the life of bearing lubricant. If the blower is to operate at higher speeds, the manufacturer should be contacted.

## 2.4 Commissioning

 **CAUTION** The blower must not be operated with the intake or outlet closed or blocked.

 **CAUTION** If the blower is started without being bolted to a mounting base, the initial starting torque of the motor may cause the blower to move suddenly and possibly topple over.

For safe operation, the following conditions, as a minimum must be followed:

The blower should be assembled and operated according to the data on the nameplate.

When VFDs are used, operating speeds are not to be exceeded unless the blower has been specifically designed for VFD operation.

The blower is properly assembled, aligned and connected to piping and/or hosing.

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## 3.0 Lubrication



**DANGER** Before any work is performed on the blower, equipment and especially when removing covers on moving parts, the motor needs to be disconnected from the electrical power supply.



**DANGER** Do not connect the electrical power supply until the blower and other equipment have been completely reassembled.

### 3.1 Bearing Types

Shielded and open bearings require relubrication. The frequency of replacing the grease depends upon the application. As a guideline, in normal clean environments with less than a 40 Deg C ambient, bearings should be lubricated after approximately 20,000 hours of service or prior to 2.5 years. If service conditions are dusty, dirty or include high operating temperatures, bearings should be lubricated more frequently.

### 3.2 Grease Types

All-Star blowers utilize standard Shell Albida LC, -30 Deg F to + 320 Deg F, although other lubricants can be used from time to time and is therefore subject to change. Lubricants of different manufacturers should not be mixed. If changing lubricant types, the bearing and housing should be thoroughly cleaned to remove all lubricant before adding grease from a new supplier.



**WARNING** On installation or after maintenance, it is required to check that the blower rotation is correct before returning to service.



**WARNING** Do not operate the blower with the outlet blocked or restricted.

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 **DANGER** Covers which prevent contact with rotating parts are not to be opened during operation.

## 4 MAINTENANCE

 **DANGER** Before any work is performed on the blower, equipment and especially when removing covers on moving parts, the motor needs to be disconnected from the electrical power supply.

 **DANGER** Do not connect the electrical power supply until the blower and other equipment have been completely reassembled.

### 4.1 Cleaning

The surface of the blower should be clean and free from dust or other contaminants. Surface dust can be blown with a low pressure air hose or supply periodically to prevent a build-up of material.

When required by the operating conditions, dismantle the cover from the blower by removing the screws or nuts from the cover. Do not lose the screws or nuts, they are required for reassembly. Remove and clean the cover. Clean impeller and the internal portion of the blower with low pressure air after covering the rolling contact bearing and bearing grease housing. Be careful not to blow any dirt or contaminants into the bearing grease. If dirt enters the lubrication or bearing, remove the contaminated grease, clean the bearing and replenish with new grease.

 **WARNING** After removing the blower cover screws or nuts, some parts held with centering fits and can suddenly separate, fall and possibly cause injury and damage to the parts. Care needs to be taken during disassembly to insure all parts are securely held in place.

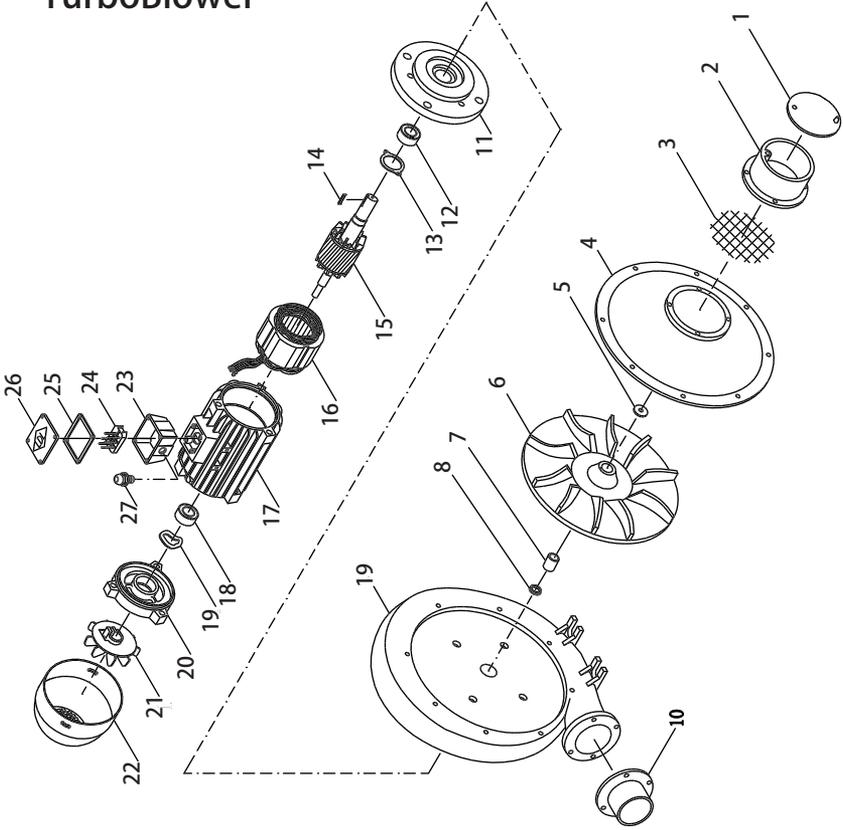
 **DANGER** Covers which prevent contact with rotating parts are not to be opened during operation.

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## 4.2 Troubleshooting

<b><i>Problem</i></b>	<b><i>Cause</i></b>	<b><i>Corrective Steps</i></b>
Motor does not start, no rotor noise.	At least two power supply conductors interrupted	Eliminate interruption by means of fuses, terminals or lead feeder.
Motor does not start, humming noise	Interruption in one power supply conductor	See "Motor does not start, no running noise."
	Impeller jammed	Open cover, remove foreign matter, clean; if necessary, check impeller gap and adjust if necessary
	Impeller defective	Replace impeller
	Bearing defective	Replace bearing
Motor-protective circuit breaker trips again after motor is switched on, power consumption too high	Short circuit in the winding	Inspect motor winding
	Motor overloaded	Reduce operating pressure, clean filter, silencer, connecting pipes.
	Compressor jammed	See "Motor does not start, humming noise."
No pressure or pressure is weak	Leak in the system	Make system airtight
	Wrong direction of rotation	Change direction of rotation
	Compressor too small	Use larger compressor Fit new shaft seal Confirm calculations Clean impeller Replace worn impeller.
Compressor is not airtight.	Sealing disc defective	Inspect sealing disc

# TurboBlower



Part No	Description
1	Flange Cover
2	Inlet Flange
3	Inlet Screen
4	Front Cover
5	Impeller Washer
6	Impeller
7	Sealing Sleeve
8	Sleeve
9	Housing
10	Outlet Flange
11	Rubber Seal
12	Motor Joint Cover
13	Front Bearing
14	Inner Bearing Cover
15	Key
16	Rotor
17	Stator
18	Motor Housing
19	Back Bearing
20	Spring Washer
21	Motor Endbell
22	Motor Cooling Fan
23	Cooling Fan Cover
24	Terminal Box
25	Terminal Box
26	Terminal Box Seal
27	Terminal Box Cover
28	Power Cable Connector

# CONNECTION DIAGRAM

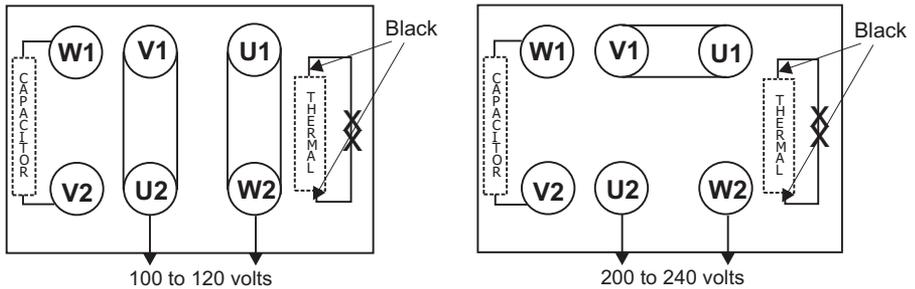
The blower is designed to operate on:

60HZ Single Phase	115/230 volts	50HZ Single Phase	220 volts
Three Phase	208, 230, 460 volts	Three Phase	220, 380 volts

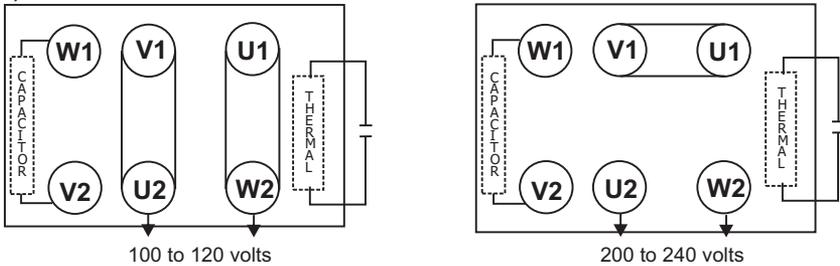
Single phase motors include two types of thermal protectors, which can be connected in several methods. If you have any questions, refer to the All Star Products.

Thermal Protector Type 1. This thermal device is used in all single phase motors. The thermal protector is connected to two black **unmarked** wires in the conduit box.

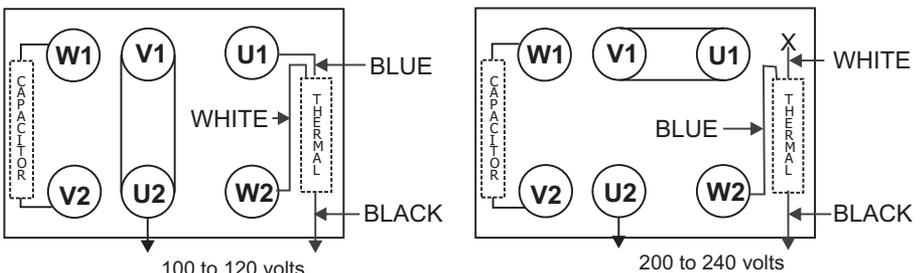
**1) To disable the thermal protector, connect the two black wires as shown below.**



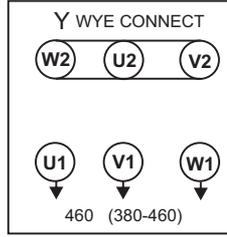
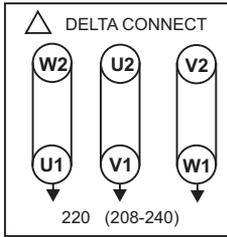
**2) Connect the two black wires as shown below for manual re-start of the blower motor.**



**3) Connect as shown below for auto-restart of the blower motor for .25, .33 and .67HP blowers only. CAUTION: When using this connection, the motor will restart automatically and can cause damage to machinery or injury to individuals. All installations wired in this manner require posting of information regarding the possible dangers regarding auto restarting of the machinery or equipment.**

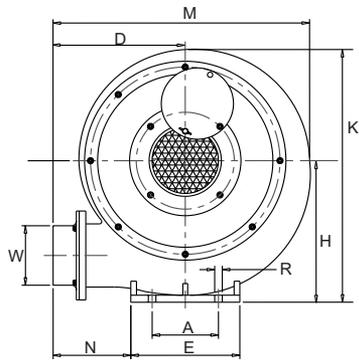
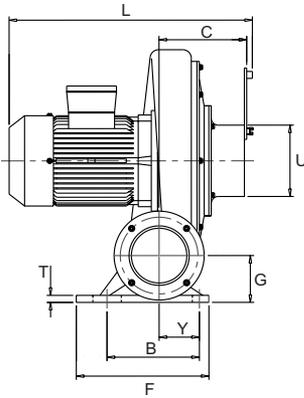


### THREE PHASE MOTOR CONNECTION DIAGRAM



### DIMENSIONS

MODEL	A	B	C	D	E	F	G	H	K	L	M	N	R	T	U	W	Y
TB-05-3	5.3	5.3	4.6	8.26	7.28	7.28	2.76	7.99	14.76	13.98	15.55	4.5	.39	.47	3.93	3.6	1.96
TB1-3	5.3	6.5	4.92	9.92	7.48	9.05	2.63	9.64	17.71	14.45	17.71	6.02	.51	.59	4.92	4.5	2.16
TB2-3	5.5	6.5	6.10	10.35	7.48	9.64	3.26	10.52	19.29	17.13	19.49	6.14	.51	.59	4.92	5.3	2.76
TB305-3	5.5	7.67	7.28	11.02	9.05	11.02	3.94	11.93	21.25	19.49	21.65	6.49	.63	.59	7.08	5.9	3.35
TB5-3	13.8	9.45	7.87	13.78	16.33	11.22	4.52	12.80	24.60	21.26	25.39	3.97	.63	.78	7.08	5.9	2.56



All Star blowers are high quality engineered and manufactured blowers. They are designed to meet international standards and have received approvals and recognition from the following agencies.

Registered and approved by one or more of these standards agency



## Warranty

All-Star Products warrants all of its products against defects in material and workmanship for a period of one (1) year from the date the product is placed in service to a maximum of eighteen (18) months from the date of shipment, whichever occurs first. Purchaser is responsible for providing adequate and approved storage during the 18 month period. Notwithstanding the foregoing, any equipment or components of the products not of All-Stars Products own manufacture and/or specified by the purchaser, is sold under only such warranty as the maker thereof extends to All-Star Products and All-Star Products is able to enforce, but such items are not warranted by All-Star Products in any way. All Star Products is not responsible for product failures caused by the purchaser or their customer misapplying the product, operating the product beyond the published ratings and values, misuse, field alterations and changes, lack of proper maintenance or improper storage, neglect or accident are also excluded from this Limited Warranty. This Limited Warranty is effective, provided (1) The purchaser immediately notifies All-Star Products in writing of the alleged defect after it becomes known to the purchaser and (2) No alterations, repairs or services have been performed by the purchaser or third parties on the product, without the written approval of an officer of All-Star Products (3) a properly size intake air filter is installed. This Warranty is in lieu of all other expressed or implied warranties, including any warranty of merchantability or fitness for any purpose.

The warranty does not cover misuse or misapplication, abuse, neglect or other causes of failure beyond the manufacture's control. Do not disassemble or try to repair the blower/pump or any component. Any attempt to repair or correct a problem by you or your agent will void your warranty. A disassembled unit will not be considered as a warranted failure under any circumstance.

For more detailed information, visit <http://www.all-star-usa.com>

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