

Troubleshooting Guide

FAULT FINDING & RECOGNITION

<i>Kind of Fault</i>	<i>Symptom</i>	<i>Cause</i>	<i>Remedy</i>
Fail to start without load	Motionless And soundless	Power-off	Consult power company
		Switch-off	Switch-on
		No fuse	Install fuse
		Broken wires	Check wires and repair
		Broken lead	Check leads and repair
		Faulty winding	Check winding and repair
	Fuse blowing – (Circuit Breaker trips off, slow start with electromagnetic noise)	Short circuit	Check circuit
		Incorrect wiring	Check wiring
		Poor contact in circuit switches	Check and repair
		Broken wiring	Check and repair
		Poor contact of starting switch	Check and repair
		Incorrect connection of starting switch	Check and repair
Overload after start	Fuse blowing – Fail to restart due to circuit breaker tripping	Insufficient capacity of fuse or breaker	Replace fuse or breaker
		Overload	Lighten load
		High load at low voltage	Check circuit capacity and reduce load

<i>Kind of Fault</i>	<i>Symptom</i>	<i>Cause</i>	<i>Remedy</i>
Overload after start	Overheating of Motor	Overload or Intermittent Overload	Lighten Load
		Under-voltage	Check circuit capacity and power source
		Over-voltage	Check power source
		Ventilation duct clogged	Remove the foreign matter in the duct
		Ambient temperature exceeds 45°C	Lower ambient temperature
		Friction between rotor and stator	Repair
		Fuse blowing (Single phase rotating)	Install the specified fuse
		Poor contact of circuit switches	Check and repair
		Poor contact of starting switch	Check and repair
		Unbalanced three phase voltage	Check circuit or consult power company
	Speed falls sharply	Voltage drop	Check circuit and power source
		Sudden overload	Check machine
		Single phase rotating	Check circuit and repair
	Switch overheat	Insufficient capacity of switch	Replace switch
		High load	Lighten load

<i>Kind of Fault</i>	<i>Symptom</i>	<i>Cause</i>	<i>Remedy</i>
Overload after start	Bearing Overheat	Misalignment between motor and load	Re-align
		Not enough grease	Fully purge bearings with grease
		High bearing noise	Replace damaged bearing
Noise	Electro-magnetic noise induced by electricity	Occurrence from first operation	Check noise not normal
		Sudden sharp noise and smoking	Short circuit of windings. Repair.
	Bearing noise	Not enough grease	Fully purge bearings with grease
		Deterioration of grease	Clean bearing and re-grease
		Excessive noise	Replace the damaged bearing
	Mechanical noise caused by machinery	Loose belt sheaf	Adjust key and lock the screw
		Loose coupling	Adjust the position of couplings and tighten
		Loose screw	Tighten screw
		Fan rubbing	Adjust fan position

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Noise	Mechanical noise caused by machinery	Rubbing as a result of ingress of foreign matter	Clean motor interior and ventilation ducts
		Wind noise	Noise induced by air flowing through ventilation ducts
		Induced by conveyance machine	Repair machine
Vibration	Electro-magnetic vibration	Short circuit of windings	Repair
		Open circuit of rotor	Repair
	Vibration	Unbalanced rotor	Repair
		Unbalanced fan	Repair
	Mechanical vibration	Broken fan blade	Replace fan
		Un-symmetrical centres between belt sheaf	Align central points
		Central points of couplings do not lie on the same level	Adjust the central points of couplings on the same level
		Improper mounting installation	Lock the mounting screw
		Motor mounting bed is not strong	Reinforce mounting bed

Remarks:

- i. Circuit switches: This includes knife switch, electromagnetic switch, fuse and other connection switches etc.
- ii. Starting switches: This includes Delta-Star starter, compensate starter, reactance starter, resistor starter, starting controllers etc.