KESTNER CHEMICAL PUMPS LIMITED

ELECTRIC MOTOR OPERATIONAL PROBLEMS

FAULT	CAUSE	REMEDY
Motor overheated	Motor connected in Delta instead of Star as described on nameplate.	Correct the connection
	Mains voltage deviates from the rated motor Voltage by more than 6%. Too high a voltage is particularly detrimental for multiple motors since such motors have 'no load' current approximately equal to the full load current even when operating on normal voltage.	Make arrangements for correct mains voltage to be applied.
	Volume of cooling air inadequate, cooling air ducts clogged.	Clean around motor cooling fans and arrange for unimpeded access & discharge of cooling air.
	Cooling air is pre-heated.	Arrange for cool air supply.
	Overload at normal mains voltage. Current excessive. Speed too low.	Install larger motor (size to be determined by measuring power).
	Motor capability exceeded (SI to S8) e.g the motor becomes overheated due to excessive switching frequency, in such cases it is not sufficient simply to use a larger motor since in all probability the same conditions would still arise.	It is preferable under these circum-stances to consult a qualified electrical engineer to determine the correct size of motor req in order that the motor may be adapted to suit the actual mode of operation.
	Supply cable has loose contact i.e (temporary single phasing) Burnt out fuse.	Correctly secure the loose contact. Replace the fuse.
Motor will not start	Fuse burnt out.	Replace the fuse.
	Motor protection switch has tripped.	Check motor protection switch for the correct setting and adjust.
	Motor protection switch inoperative fault in the control line.	Check operational & regulation of motor protection switch and rectify.
Motor will not start or starts with difficulty	Designed for delta connection but connected in Star.	Connect motor correctly.
	Voltage or frequency of electrical supply Deviates considerably from required value During starting conditions.	Improve mains supply conditions.
Motor will not start when connected in star will only start when connected in delta.	Torque insufficient from star connection.	If delta starting current is not excessive then re-connect for DOL starting, otherwise larger size of motor or motor Having special windings will be required.

FAULT	CAUSE	REMEDY
Motor hums and takes excessive current.	Fault in windings.	Motor to be examined and repaired by qualified electrical engineers.
	Rotor grazing.	Motor to be examined and repaired by qualified electrical engineers.
Fuses blow or motor protection switch trips immediately.	Short circuit on line.	Remove short circuit.
	Short circuit in motor.	Fault to be remedied by qualified electrical engineer.
	Line terminals incorrectly connected.	Correct the connections.
Wrong direction of rotation.	Motor incorrectly connected.	Interchange any two of the incoming main lines.

FOR WINDING FAULTS THE MOTOR MUST BE CHECKED AND REPAIRED BY QUALIFIED ELECTRICAL ENGINEERS.

One Phase burnt out.	One phase missing in delta connection motor protection inadequate.	Motor should be re-wound. Motor protective switch to be correctly set.
Two Phases burnt out.	One phase missing in star connection motor protection inadequate.	Motor to be rewound and protective switch adjusted correctly.
Three phases burnt out uniformly.	Overload, blocking, Excessive switching Frequency. Insufficient motor protection incorrect connection.	Motor to be rewound and protective switch adjusted correctly. Wiring to be Corrected and drive checked.
Winding fault (several windings burnt out in one slot).	Mechanical damage to winding or other insulation faults.	Motor to be rewound.