Troubleshooting Guide

Symptom	Possible Cause	Procedure for Checking	Corrective Action
Motor fails to start.	Incorrect connection of SINPAC Switch.	De-energize. Check the wiring and connection diagram.	Reconnect properly.
	Start capacitor open or shorted.	De-energize motor, discharge, and check capacitor.	Replace capacitor.
	Thermal overload opened.	Check thermal overload. Check motor and SINPAC Switch wiring.	Wait until cool down. Check/replace thermal overload. Correct motor and SINPAC Switch wiring.
	Motor not free to rotate.	Check for jam or obstruction.	Remove obstruction.
	AC line voltage too low.	Measure line voltage at the motor terminals.	Increase voltage.
	No line voltage.	De-energize, check AC line fuses. Check wiring and connection diagram.	Replace fuses as required and apply AC line voltage.
	Start winding open.	De-energize and disconnect. Measure the resistance of the start winding.	Check the start winding. Motor may have to be rewound. Infinite resistance would show an open winding or loose connection.
	Motor hipot tested with switch installed without motor and SINPAC Switch leads tied together.	See *Procedure* to check SINPAC Switch (Page 28)	Replace switch and hipot motor, with installed SINPAC Switch, by tying all motor and SINPAC Switch leads together.
	SINPAC Switch damaged (open circuit).	See *Procedure* to check SINPAC Switch (Page 28)	Replace SINPAC Switch after checking all of the above possible causes
	SINPAC Switch, if it has a metal enclosure, is not grounded.	Check continuity between SINPAC Switch metal case and ground.	Ground metal case.
Motor starts, but switch fails to cut out when cut out speed is reached.	Current in the start winding is above rating of SINPAC Switch.	Remove switch and check the current of the start winding. See *Procedure* to check SINPAC Switch (Page 28).	Replace SINPAC Switch, if damaged.
	Wrong series SINPAC Switch installed — 115 V SINPAC Switch connected to 230 V start winding.	Consult selection chart — Measure voltage across wires connected to terminals 1 and 2.	Change switch — Check SINPAC Switch for damage and replace with correct switch.
	Start capacitor shorted.	De-energize motor, discharge and check the capacitor.	Replace capacitor.
	Start winding induced voltage is too low when motor reaches desired cut out speed. The voltage is due to the low winding-ratio of certain old style motors, foreign motors, converted motors, and special motor designs.	Perform SINPAC Switch Selection *Procedure* as described on Page 28.	Select proper SINPAC Switch.
	AC line voltage too low.	Measure the AC line voltage across the motor terminals.	Increase the AC line voltage.
	Start winding damaged.	De-energize and check the start winding.	Rewind motor.
	Mismatch of motor and load. Motor cannot reach cut out speed.	Check the load and motor characteristics.	Reduce load. Replace the motor with an appropriately larger sized motor.
	Incorrect connection of SINPAC Switch for capacitor start motors.	De-energize and check the connection diagram. Be sure that terminal 4 of switch is connected to the junction of the start capacitor and start winding (Pages 24-27).	Correct wiring.
	Damaged SINPAC Switch.	See *Procedure* to check SINPAC Switch (Page 28).	Replace SINPAC Switch after checking all of above possible causes.
	SINPAC Switch exposed to excessive temperature.	Check the operating ambient temperature of SINPAC Switch. It should be less than 80°C (185°F).	Change mounting location of switch. SINPAC Switches can be remotely mounted.
Upon overload, the start winding is not reenergized (no cut in)	Wrong switch installed. (PV Series switch on capacitor start motor.)	Consult selection chart.	Install correct switch.
Motor worked properly for many cycles of operations (days, weeks, months, years), then failed.	Start capacitor failure on capacitor start or cap. start/cap. run motors.	De-energize motor and check capacitor and SINPAC Switch.	Replace start capacitor and SINPAC Switch as appropriate.
	Switch failure.	See *Procedure* to check SINPAC Switch. Also check start capacitor (Page 28).	Replace switch.
Premature start capacitor failures.	High cycle rate. Excessive motor temperature.	De-energize motor and check start capacitor and SINPAC Switch.	Connect a 15,000 ohm, 2 watt bleeder resistor across the start capacitor(s).
			If a single start capacitor was originally installed, replace with two start capacitors of twice the capacitance valve and same voltage rating as the original and connected in series.
Instant reverse motor, upon rapid reverse, will not reverse direction.	Wrong switch installed. CV or VR Series installed instead of instant reverse SINPAC Switch.	Ensure that instant reverse SINPAC Switch was installed to replace any mechanical instant reversing switch.	Install SINPAC instant reverse switch.