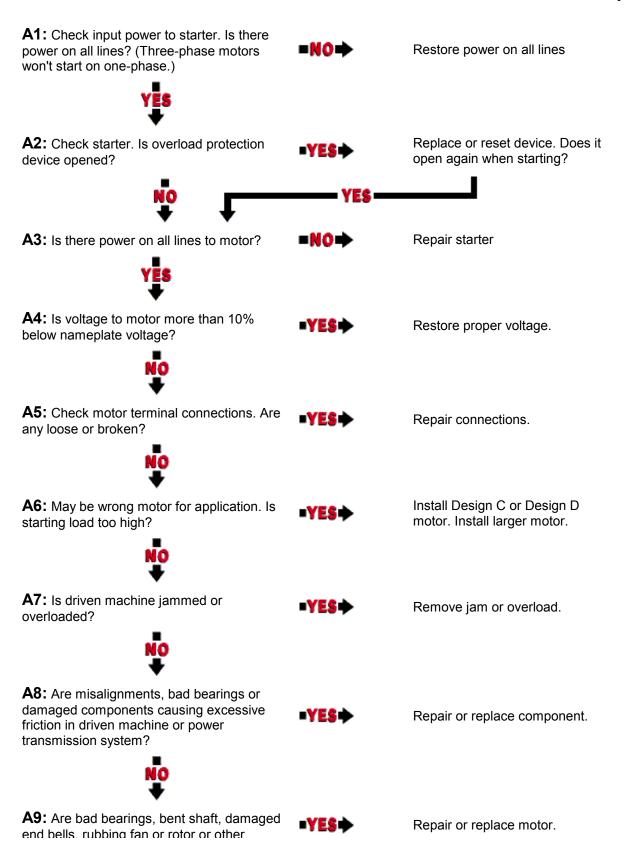
Troubleshooting AC Motors

Problem A - Motor won't start or motor accelerates too slowly



problem causing excessive friction in the motor?



A10: Check stator. Are any coils open, shored or grounded?



Repair coil or replace motor.



A11: Check commutator. Are any bars or rings broken?



Replace rotor.

Problem B - Motor runs noisy

B1: Are vibrations and noise from driven machine or power transmission system being **YES** transmitted to motor?



Locate source of noise and reduce. Isolate motor with belt drive or elastomeric coupling.



B2: Is a hollow motor foundation acting as a sounding board?



Redesign mounting. Coat foundation underside with sound dampening material.



B3: Check motor mounting. Is it loose?



Tighten. Be sure shaft is aligned.



B4: Is motor mounting even and shaft properly aligned?



Shim feet for even mounting and align shaft.



B5: Is fan hitting or rubbing on stationary part or is object caught in fan housing?



Repair damaged fan, end bell or part causing contact. Remove trash from fan housing.



B6: Is air gap nonuniform or rotor rubbing on stator?



Recenter rotor rubbing on worn bearings or relocate pedestal bearings.



B7: Listen to bearings. Are they noisy?



Lubricate bearings. If still noisy, replace.



B8: Is voltage between phases (three-phase motors) unbalanced?



Balance voltages.



B9: Is three-phase motor operating on one-phase? (Won't start on single-phase.)



Restore power on three-phases.

Problem C - Motor overheats

C1: Is ambient temperature too high?



Reduce ambient, increase ventilation or install larger motor.

C2: Is motor too small for present operating



Install larger motor.

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conditions?

C3: Is motor started too frequently?



Reduce starting cycle or use larger motor.



C4: Check external frame. Is it covered with dirt which acts as insulation and prevents proper cooling?



Wipe, scrape or vacuum accumulated dirt from frame.



C5: Feel output from air exhaust openings. Is flow light or inconsistent indicating poor ventilation?



Remove obstructions or dirt preventing free circulation of air flow. If needed, clean internal air passages.



C6: Check input current while driving load. Is it excessive indicating an overload?



Go to Step C11.



C7: Is the driven equipment overload?



Reduce load or install larger motor.



C8: Are misalignments, bad bearings or Repair or replace bad damaged component causing excessive components. friction in driven machine or power transmission system? Lubricate. Does motor still draw **C9:** Are motor bearings dry? excessive current? C10: Are damaged end bells, rubbing fan, bent shaft or rubbing rotor causing excessive **YES** Repair or replace motor. internal friction? Determine cause of bad C11: Are bad bearings causing excessive bearings (See Problem D). friction? C12: Check phase voltage. Does it vary Restore equal voltage on all between phases? phases. C13: Is voltage more than 10% above or Restore proper voltage or install motor built for the voltage. 10% below nameplate? C14: Check stator. Are any coils grounded Repair coils or replace motor. or shorted?

Problem D - Motor bearings run hot or noisy

D1: Check loading. Is excessive side pressure, end loading or vibration overloading bearings?



Reduce overloading.* Install larger motor.



D2: Is sleeve bearing motor mounted on a slant causing end thrust?



Mount horizontally* or install ball bearing motor.



D3: Is bent or misaligned shaft overloading bearings?



Replace bent shaft or align shaft.*



D4: Is loose or damaged end bell overloading shaft?



Tighten or replace end bell.*



D5: Are bearings dry?



Lubricate.*



D6: Is bearing lubricant dirty, contaminated or of wrong grade?



Clean bearings and lubricate with proper grade*



D7: Remove end bells. Are bearings misaligned, worn or damaged?



Replace.