SERVICE ANALYSIS

GENERAL REFRIGERATION SYSTEM SERVICE ANALYSIS

POSSIBLE CAUSES	POSSIBLE CORRECTIVE STEPS
Problem - Compressor will not run.	
No supply at motor.	Check connections and controls.
Main disconnects open.	Close disconnect.
Fuse blown.	Repair electrical defect: replace fuse.
Overload open circuit	Rectify overload condition; replace overload.
Control open circuit.	Repair or replace.
Burn out.	Check windings with meter.
Problem - Compressor hums but will not start.	
Incorrectly wired.	Check against wiring diagram.
Motor winding incorrectly connected.	Check winding resistance. The resistance of the start windings for single-phase motor should be higher than that of the run windings. The windings of three phase motors should be equal.
Low line voltage.	Check voltage at motor terminals.
Start capacitor open circuit.	Replace start capacitor.
Relay not operating.	Replace relay.
Motor winding open circuit.	Check leads, if correct, replace compressor.
Seized compressor.	Check oil level; rectify seize or replace compressor.
Piston jammed or broken valve reed.	Rectify cause of liquid pumping; replace valve plate.
Problem - Compressor will not run up to speed.	
Low line voltage.	Check voltage at motor terminals.
Relay defective.	Replace relay.
Start capacitor shorted.	Replace capacitor.
High discharge pressure.	Ensure that discharge shut-off valve is open. Check condenser cooling.
Incorrectly wired.	Check against wiring diagram.
Motor winding incorrectly connected.	Check winding resistance. The resistance of the start windings for single-phase motors should be higher.

GENERAL REFRIGERATION SYSTEM SERVICE ANALYSIS

POSSIBLE CAUSES	POSSIBLE CORRECTIVE STEPS
Problem - Compressor short cycles.	
Control differential too small.	Readjust controls.
Valve plate leaking.	Replace valve plate.
Motor overloading.	Check condenser cooling, refrigerant charge, compressor lubrication, and load conditions.
Shortage of refrigerant.	Repair leak and check for acidity.
Expansion valve.	Adjust or replace.
High-pressure switch operates.	Check condenser cooling, and refrigerant charge.
Problem - Start relay burnt out.	
Low voltage.	Check voltage at motor terminals.
Run capacitor incorrect.	Fit correct valve capacitor.
Short cycling.	Reduce number of starts per hour to 20 or less.
Prolonged operations on start windings.	Reduce starting load, check for low voltage.
Incorrect relay.	Fit correct relay.
Problem - High discharge pressure.	
Refrigerant overcharge.	Remove refrigerant.
Air in system.	Purge air.
Dirty condenser.	Clean.
Problem - Low discharge pressure.	
Shortage of refrigerant.	Check for leaks and moisture; add refrigerant.
Compressor inefficient.	Check and replace valve plate.
Problem - Compressor noisy.	
Shortage of oil.	Check application for oil return; add oil.
Pumping liquid.	Check application for oil return; ensure that liquid refrigerant does not return to compressor.
Broken valve reed.	Check application for liquid pumping; replace valve plate.