



CHILLER START-UP CHECKLIST

A. Project Information

* CUSTOMER/PURCHASER NAME _____ Phone # _____

* JOB/SITE NAME _____

* ADDRESS _____

* CITY _____ STATE _____ ZIP _____

* SITE CONTACT NAME _____ Phone # _____

* INSTALLED BY _____ Phone # _____

* SALESPERSON _____ Phone # _____

* START-UP PERFORMED BY _____ Phone # _____

Equipment Description

Unit Model#: _____ S/N: _____

B. *Preliminary Check List

*Refer the Installation Manual for all necessary information. Contact Cold Shot Chillers as needed.

***Chiller Switch Must Be In The Off Position Prior To Applying Power. Do Not Operate In Cooling Cycle.**

*Chiller Requires The Power To Be Energized With The Chiller Switch In The Off Position, 24 Hours Prior To Start Up. All breakers must be On. This Is To Power The Crank Case Heaters On The Compressor(s).

*Please Complete Sections A and B, If Cold Shot Chillers is to Perform the Startup, Send Copy of Section A and B To Cold Shot Chillers Prior To Scheduling Startup.

N/A

1. Is there ANY PHYSICAL DAMAGE? YES NO _____
If YES, document issues, take photos, notify Cold Shot Chillers. Description: _____

2. Unit is installed level and properly supported YES NO _____

3. Unit has proper clearances around and above the unit YES NO _____

4. Chiller selector switch is in the OFF position YES NO _____

5. Power supply agrees with the unit nameplate requirements YES NO _____

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6. Electrical power wiring is installed properly YES NO _____
7. Unit is properly grounded YES NO _____
8. Electrical circuit protection provided: Type: _____ Size: _____amps YES NO _____
9. Remote Control/Status box is installed and wired properly YES NO _____
(Thermocouple wire must not be run in same conduit as voltage wires).
10. Automatic city switchover is installed and wired properly YES NO _____
11. For Split Systems (Remote Condenser and Condensing Unit): (Refer to Installation Manual)
- a. All refrigerant circuit piping installed, evacuated, dehydrated YES NO _____
- b. Refrigerant circuit charged accordingly YES NO _____
12. All refrigerant circuit valves are open (as indicated) YES NO _____
13. All fluid piping is connected properly and checked for leaks YES NO _____
14. All fluid circuit valves are open (as needed) YES NO _____
15. Fluid added to the system and air has been purged, as capable YES NO _____
- a. If outdoor ambient is or can be below 32°F (0°C) then this item will have to be completed to provide cooler freeze protection to -20°F (-29°C). Recommend that any outdoor piping be wrapped with electric heater tape and insulated as needed.
- Freeze protection solution type/concentration _____% _____ to _____% water
- Proper loop freeze protection provided to _____°F. YES NO _____
16. Crankcase heaters operational YES NO _____
(Power must be on 24 hours before starting the compressors on all units with crank case heaters.)
17. Will a heat load be available for chiller startup? YES NO _____
18. Provide page 1 and 2 of Startup Checklist to Cold Shot Chillers YES NO _____

***On the day of the startup, a site qualified person must be available for support of the process circuit of the system. The person should understand the process and be able to operate any equipment, valves, etc to permit the system to be operated during the chiller system startup.**

***To ensure the system operates as designed, a heat load will be required during startup process.**

***Cold Shot Chillers is not permitted to operate any system components without written consent by an approved customer representative.**

Print/Sign - Customer Representative Company Name Date

C. Unit Start-Up (Refer to the Installation and Operations Manual)

1. Compressor oil level is correct YES NO ____
2. Verify compressor mounting vibration dampeners YES NO ____
3. All terminals and plug assemblies are tight YES NO ____
4. Unit free of detectable leaks. (Locate, repair and report any refrigerant leaks) YES NO ____
5. Voltage is within unit nameplate range YES NO ____

6. Check voltage imbalance:

Line Voltages = L1 to L2 _____V

L1 to L3 _____V

L2 to L3 _____V

Average Voltage = $(L1-L2 + L1-L3 + L2-L3) / 3 =$ _____V

Maximum Deviation (voltage difference) From Average Voltage = _____ΔV

Voltage Imbalance = $(\text{Max. Deviation} / \text{Average Voltage}) \times 100 =$ _____%

Voltage Imbalance Less Than 2% ? YES NO ____

(Do Not Start Chiller If Voltage Imbalance is greater than 2%. Contact local utility for assistance.)

7. Control transformer primary connection set for proper voltage YES NO ____
Control transformer(s) secondary voltage: (24/120VAC) _____ VAC / _____ VAC

START AND OPERATE MACHINE

8. System motors are operating in the correct rotation (A-B-C) YES NO ____
9. Check refrigerant and oil charge YES NO ____
10. Record operating temperatures and pressures (Enter in Data Section) YES NO ____
11. Record compressor(s) motor current (Enter in Data Section) YES NO ____
12. Record fan(s) motor current (Enter in Data Section) YES NO ____
13. Record pump(s) motor current (Enter in Data Section) YES NO ____
14. Chilled water flow switch is operational YES NO ____
15. Check system for leaks (fluid and refrigerant) YES NO ____
16. Verify sequence of operation YES NO ____
17. Provide operating instructions to owner's personnel YES NO ____

Instruction time _____ Hrs. (Note the names of all personnel at end of this document)

OPERATING DATA:

Record the following information from the pressures and temperatures modes when machine is in a stable operating condition.

PRESSURE/TEMPERATURES ----- All readings taken at full load.

		CIRCUIT A		CIRCUIT B	
Low Side	Suction Pressure	_____	psig	_____	psig
	Saturation Temperature	_____	°F	_____	°F
	Actual Temperature	_____	°F	_____	°F
	Evaporator Superheat	_____	Δ°F	_____	Δ°F
High Side	Head Pressure	_____	psig	_____	psig
	Saturation Temperature	_____	psig	_____	psig
	Actual Temperature	_____	°F	_____	°F
	Condenser Subcooling	_____	Δ°F	_____	Δ°F
Compressor	Discharge Line Temperature	_____	°F	_____	°F
	Compressor Superheat	_____	Δ°F	_____	Δ°F
	Oil Pressure – High side	_____	psig	_____	psig
	– Low side	_____	psig	_____	psig
	Differential Pressure	_____	Δ psig	_____	Δ psig
Cooler	Entering Fluid Temperature	_____	°F	_____	°F
	Leaving Fluid Temperature	_____	°F	_____	°F
	Flowrate	_____	gpm	_____	gpm
Ambient Temperature (condenser)		_____	°F	_____	°F
Process Value (PV)		_____	°F	_____	°F
Setpoint Value (SV)		_____	°F	_____	°F
Percent Total Capacity		_____	%	_____	%

CURRENTS ----- All readings taken at full load.

	A Circuit			B Circuit			
COMPRESSORS	A1	A2	A3	B1	B2	B3	
L1	_____	_____	_____	_____	_____	_____	
L2	_____	_____	_____	_____	_____	_____	
L3	_____	_____	_____	_____	_____	_____	
Crankcase Heater	_____	_____	_____	_____	_____	_____	
CONDENSER FAN	1	2	3	4	5	6	7
L1	_____	_____	_____	_____	_____	_____	_____
L2	_____	_____	_____	_____	_____	_____	_____
L3	_____	_____	_____	_____	_____	_____	_____
PUMPS	Chiller Pump(s)			Process Pump(s)			
	A	B		A	B		
L1	_____	_____		_____	_____		
L2	_____	_____		_____	_____		
L3	_____	_____		_____	_____		

NAMES OF TRAINED PERSONNEL:

COMMENTS:

SIGNATURES:

Print/Sign - Startup Technician	Company Name	Date
Print/Sign - Customer Representative	Company Name	Date

**ONCE FORM IS COMPLETED, INITIAL ALL PAGES TO PROVIDE ACKNOWLEDGEMENT OF REVIEW,
PLEASE SEND COPY TO COLD SHOT CHILLERS.
KEEP COPY OF THIS RECORD AVAILABLE FOR REFERENCE USE BY SERVICE PERSONNEL.**

COLD SHOT CHILLERS REVIEW: For Cold Shot Chillers Internal Use Only		
Cold Shot Chillers		
Print/Sign - Cold Shot Chillers Sales Rep	Company Name	Date