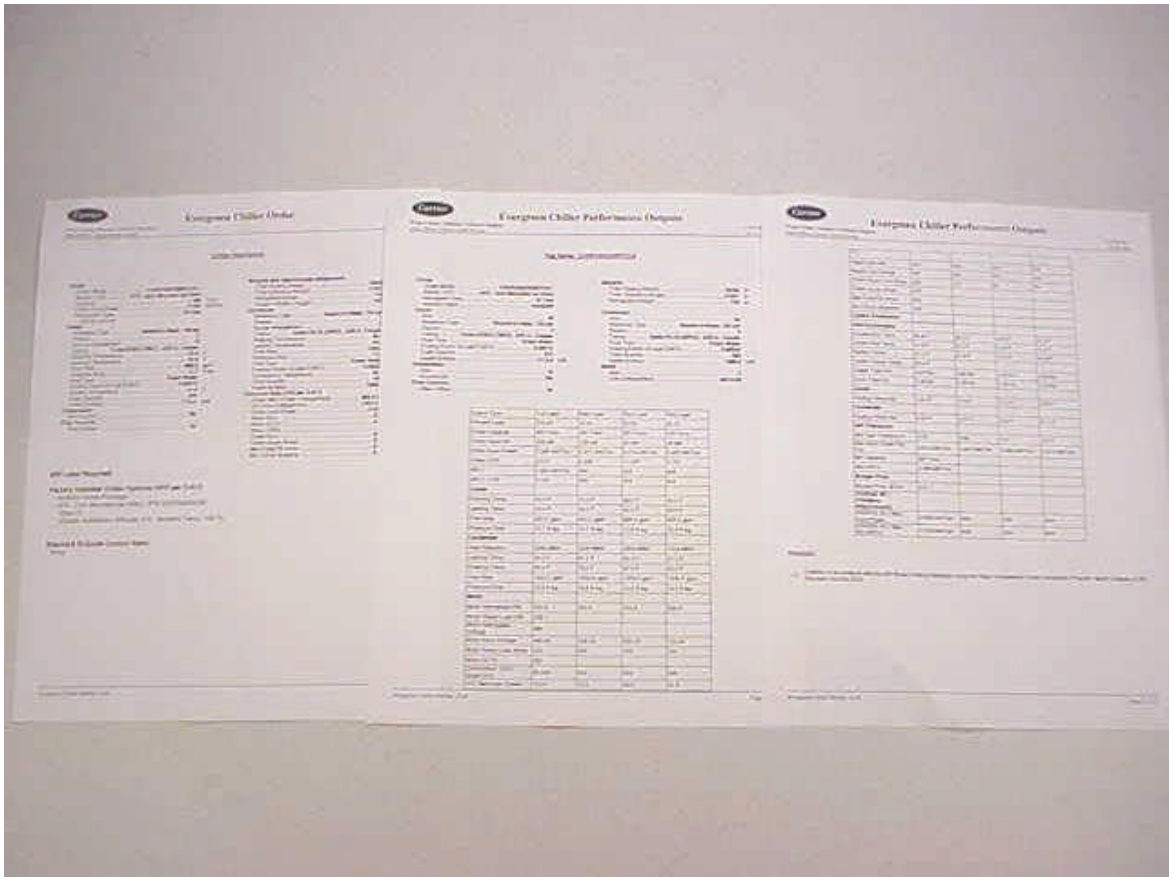
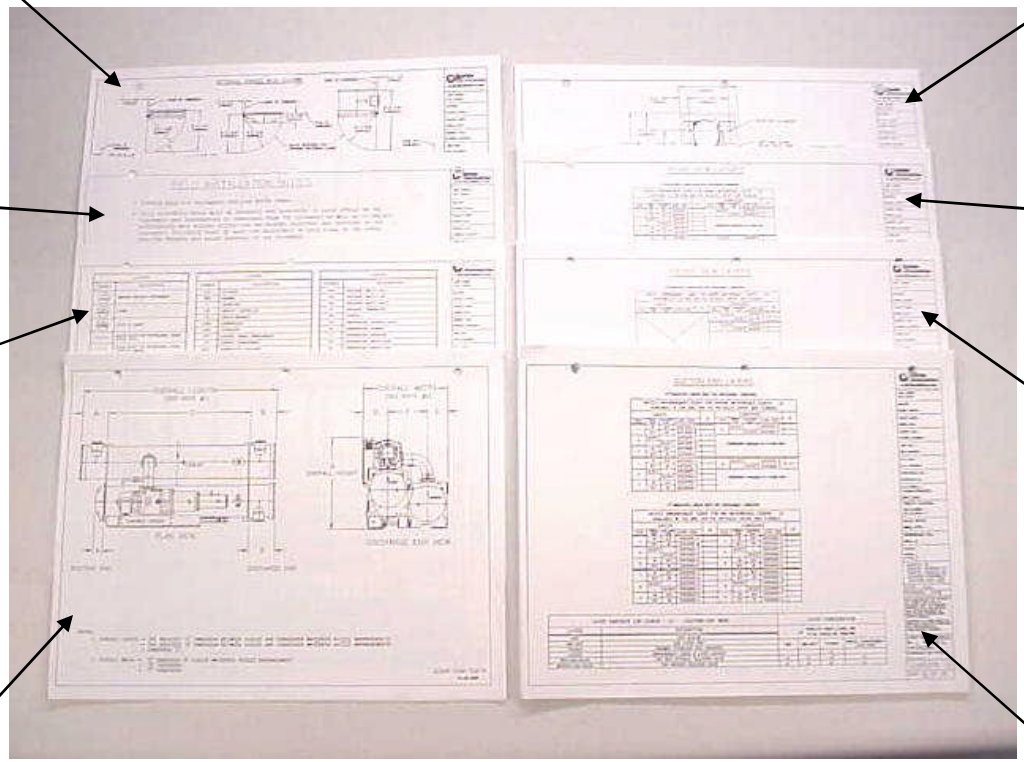
23XR Start-Up

Collect Job Data



Confirm Sales Requisition Selection Physical Data,
Design Voltage, Amps, Set Point, Water Flow

Collect Job Data



Optional Hinged Waterbox Data

Optional Pumpout Dimensions & Piping

Field Installation Notes

Plan View & Service Clearances

Piping & Instrumentation

Machine Data Front View

Overall Dimensions

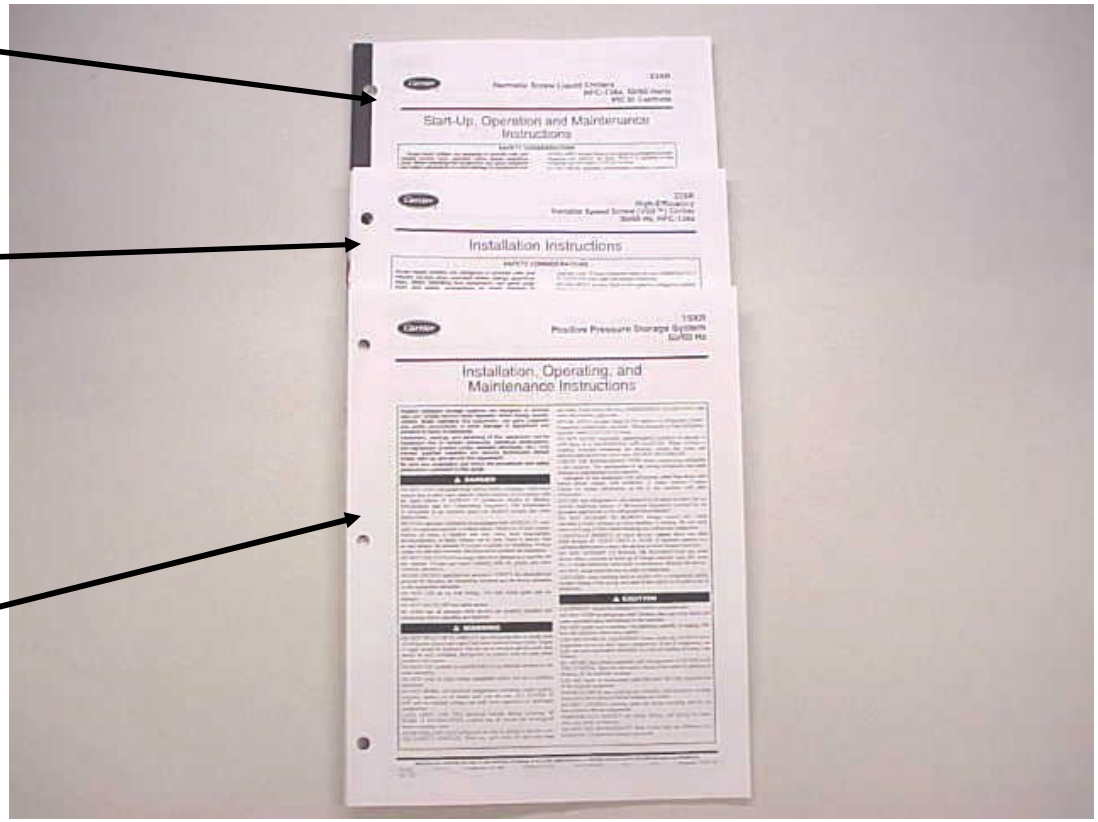
Machine Data End View

Collect Job Data

Operation & Maintenance Manual

Installation Manual

Optional Pumpout Manual

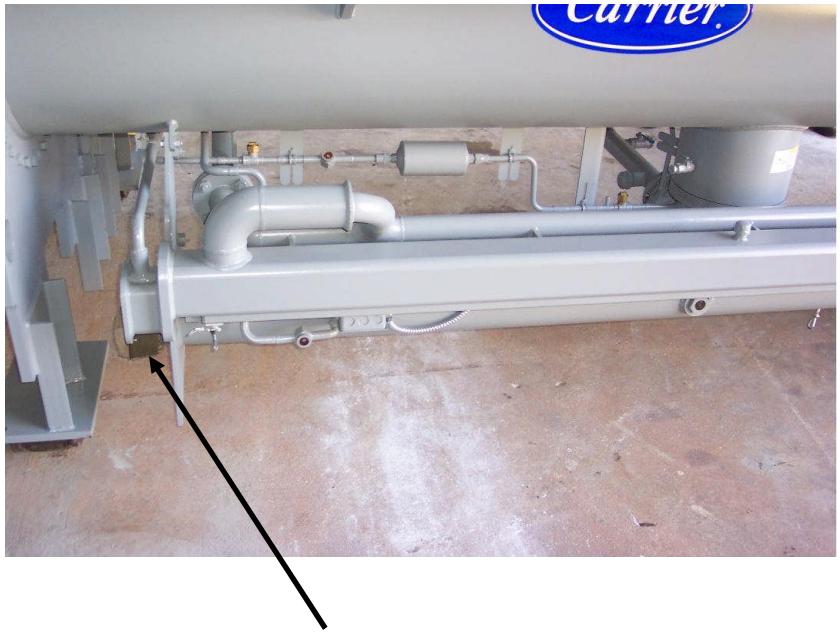


Equipment Required

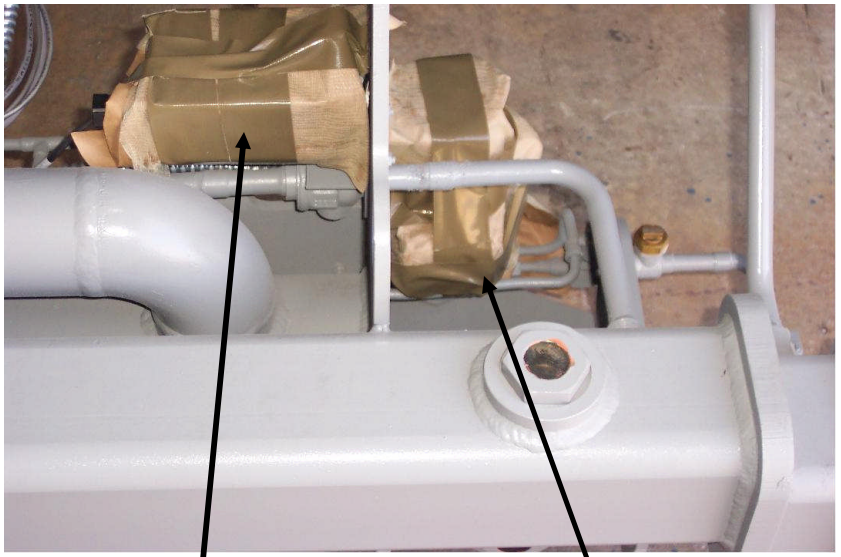
- Mechanic’s Tools
- Torx T30 Screwdriver
- Digital Volt Meter
- Electronic Leak Detector
- Absolute Pressure Manometer
- 500-V Megaohmmeter if chiller is disassembled
- Reliance LCD OIM or VS Utilities Software (optional)

Remove Shipping Packaging

Remove Shipping Packaging



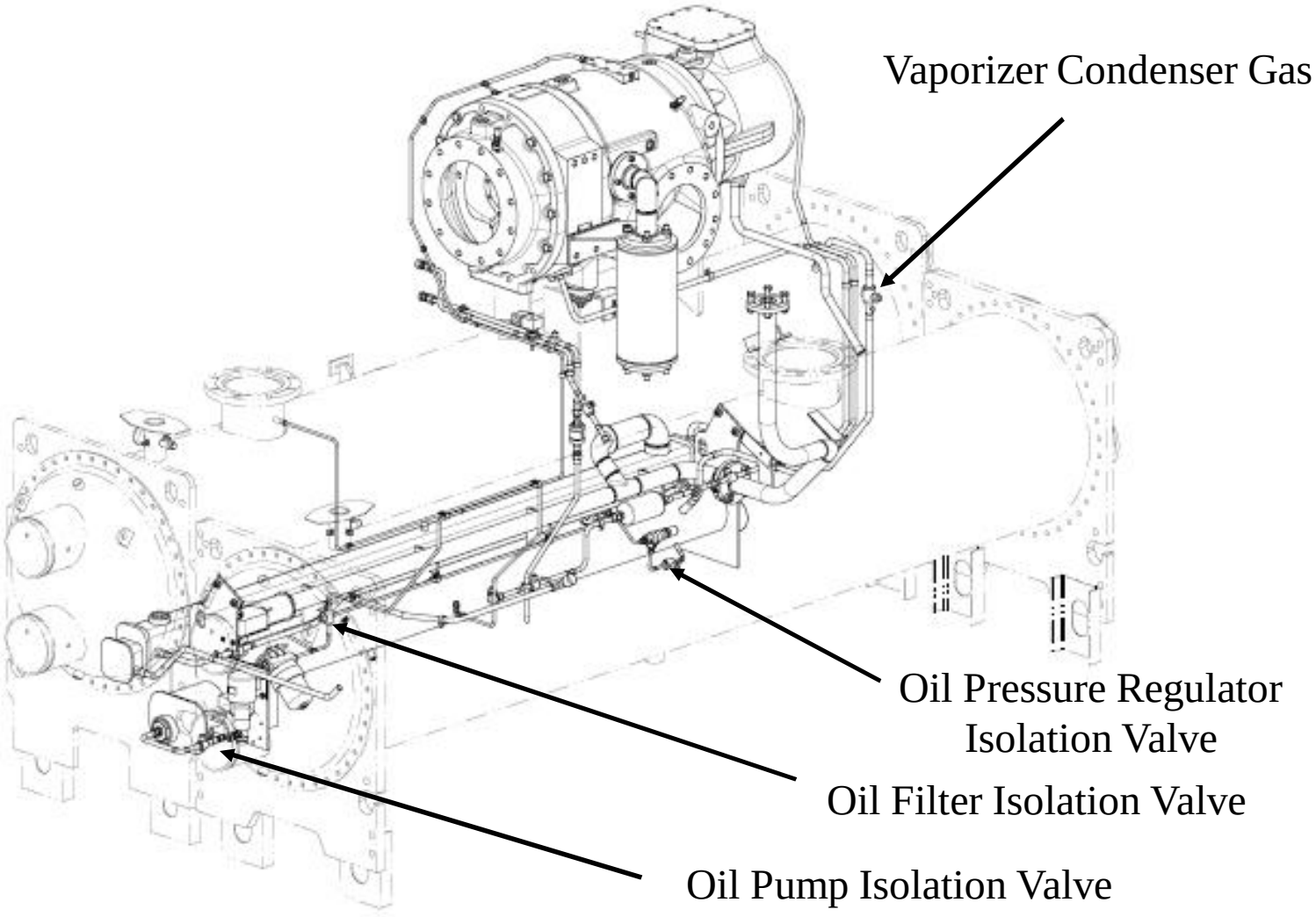
Oil Sump Heater



Oil Reclaim Actuator

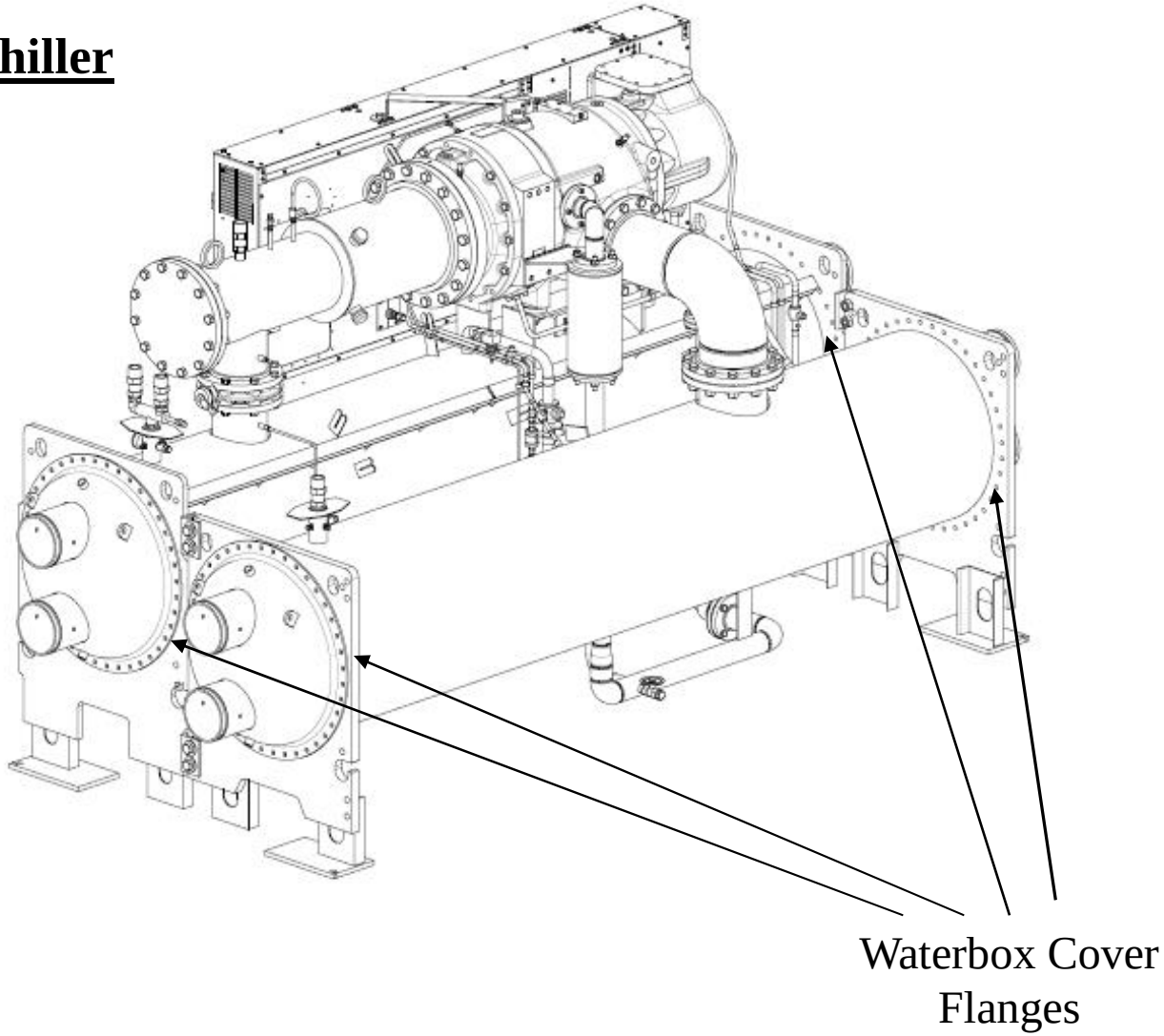
Oil Pump

Open Oil Circuit Valves



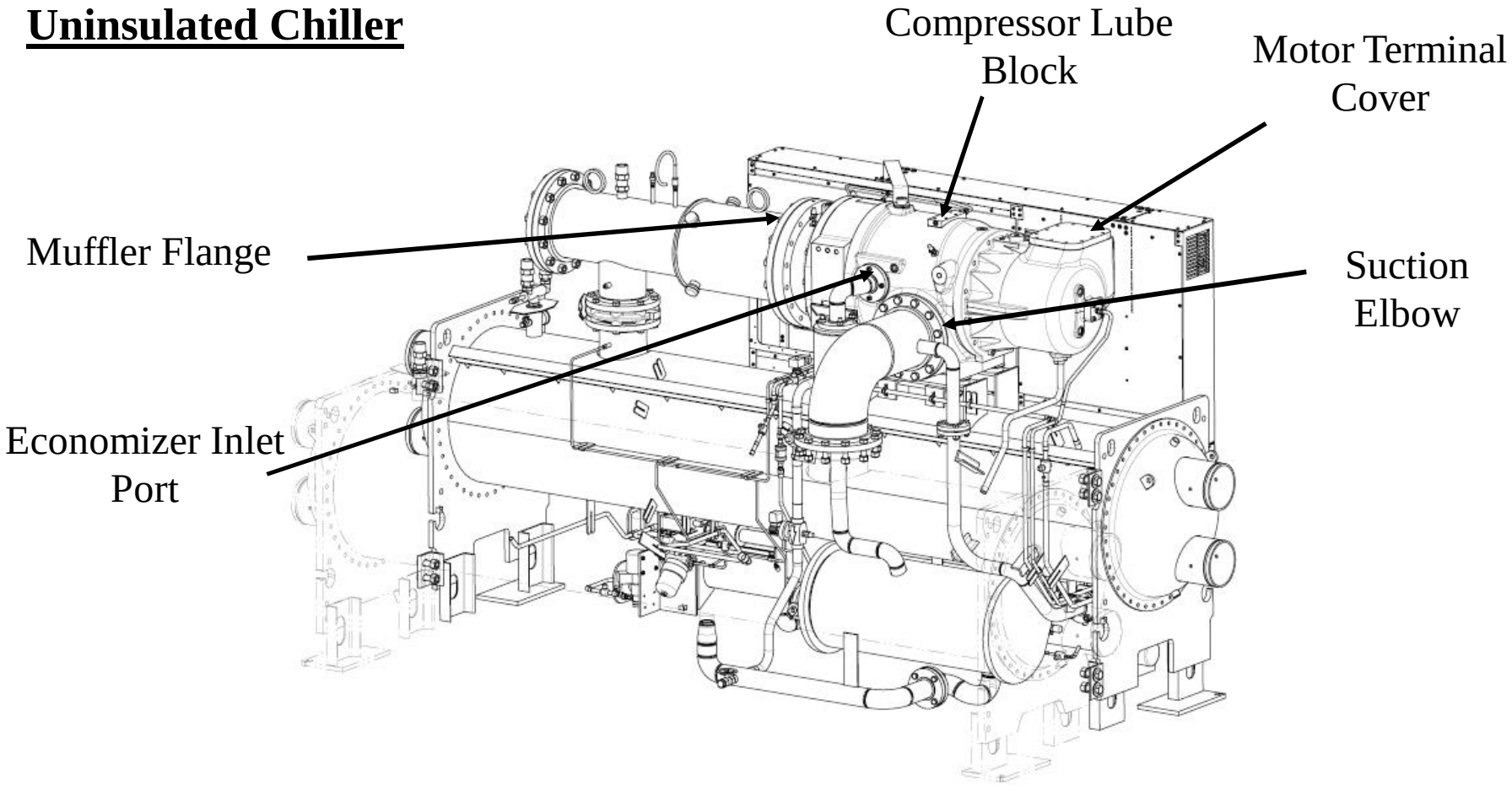
Tighten Gasketed Joints

Insulated Chiller



Tighten Gasketed Joints

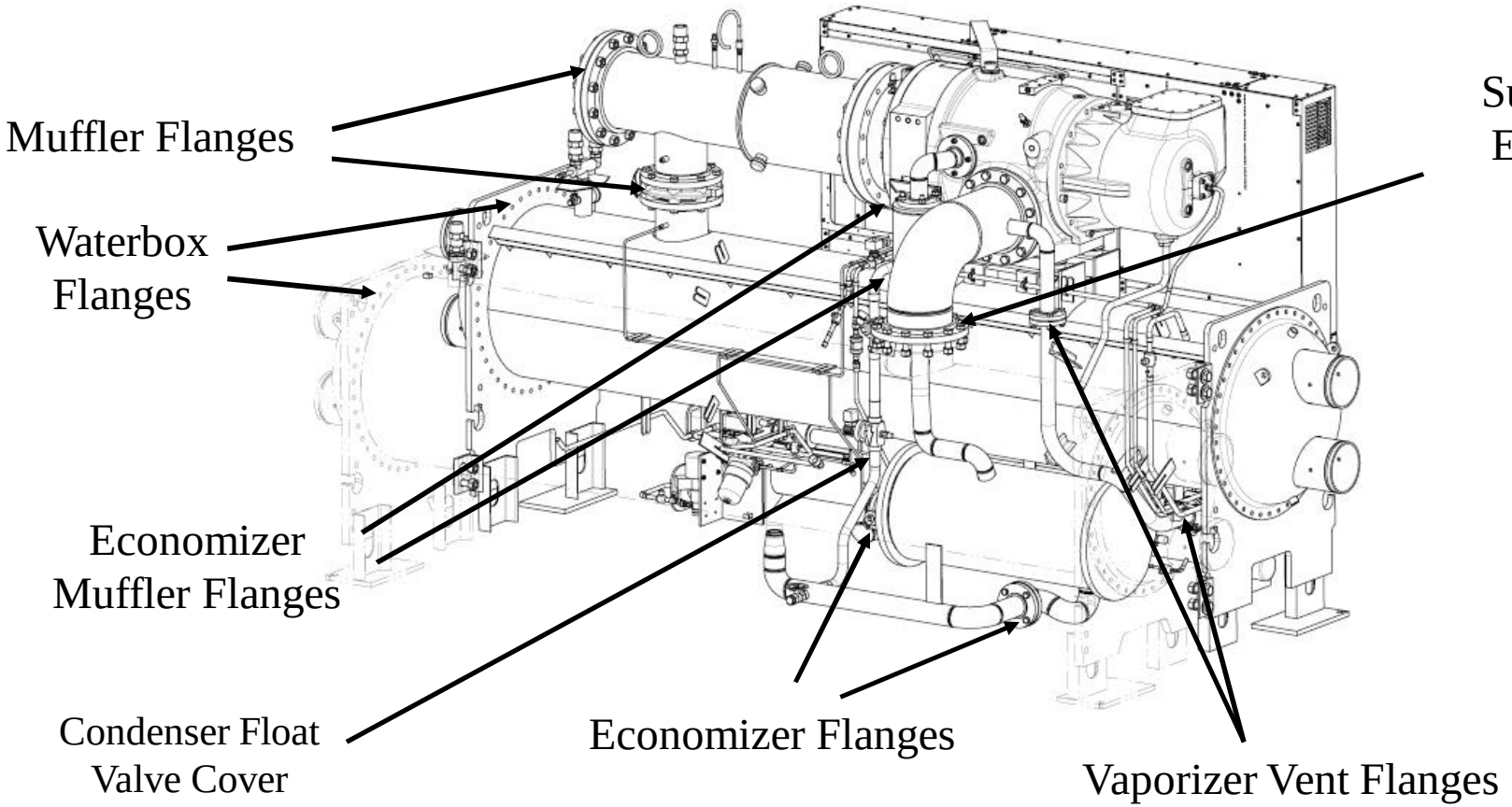
Uninsulated Chiller



Compressor Gaskets

Tighten Gasketed Joints

Uninsulated Chiller



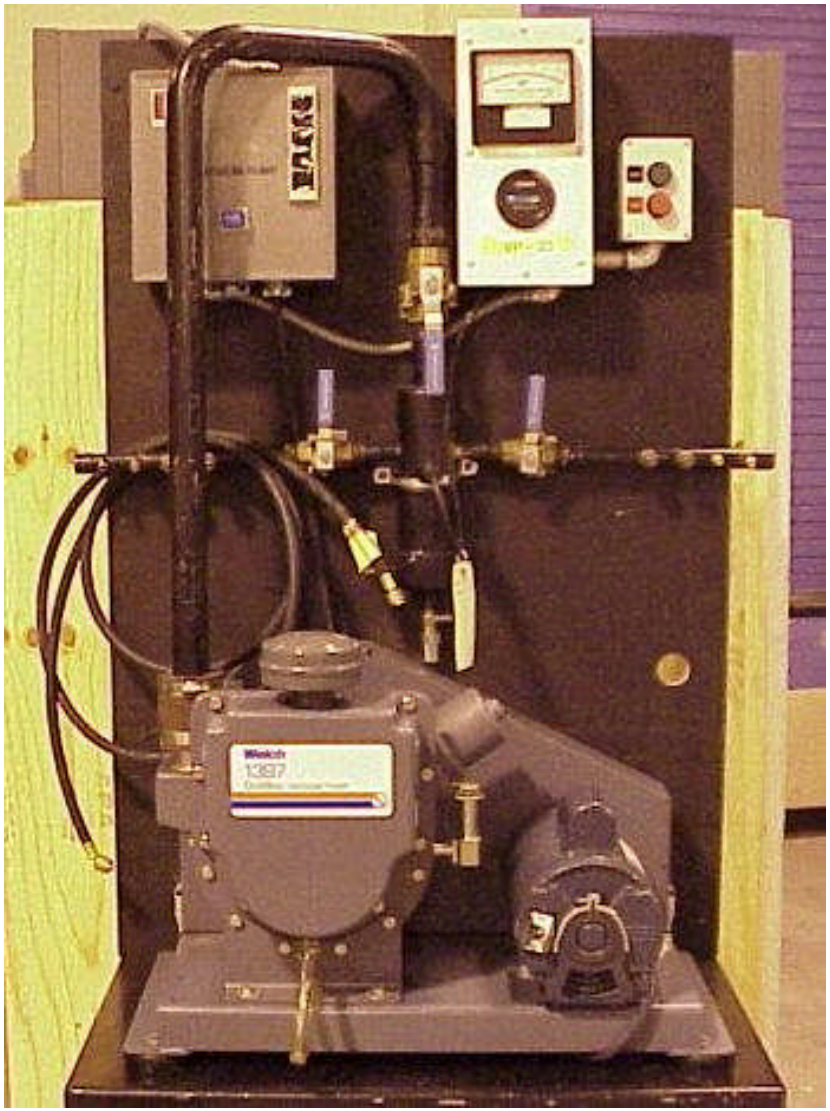
Heat Exchanger Gaskets

Leak Check

Perform Leak test per Operation & Maintenance Manual Instructions

Dehydrate Chiller

Apply 29.8 in Hg.
(-100.6 kPa)
vacuum

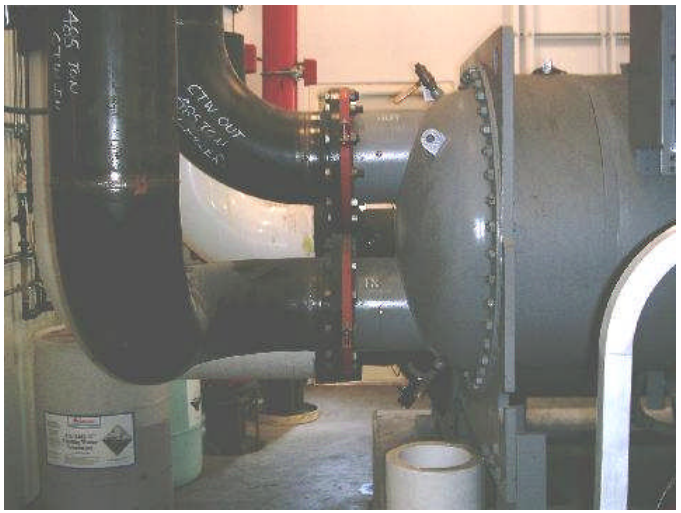


Inspect Piping

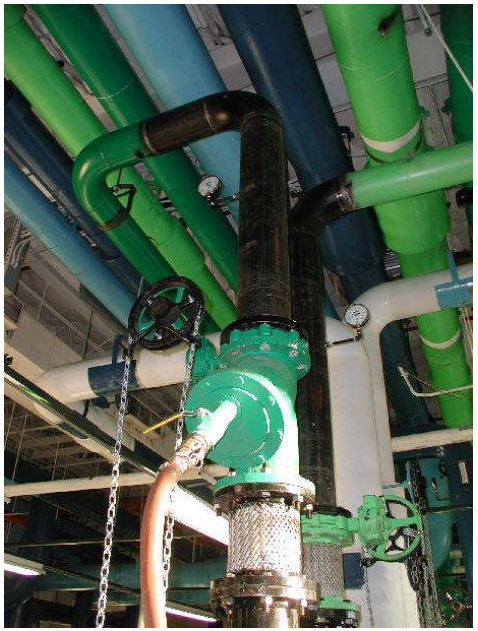
Water Flow & Direction

(23XR Compressor is Mounted on Condenser)

Water Pumps

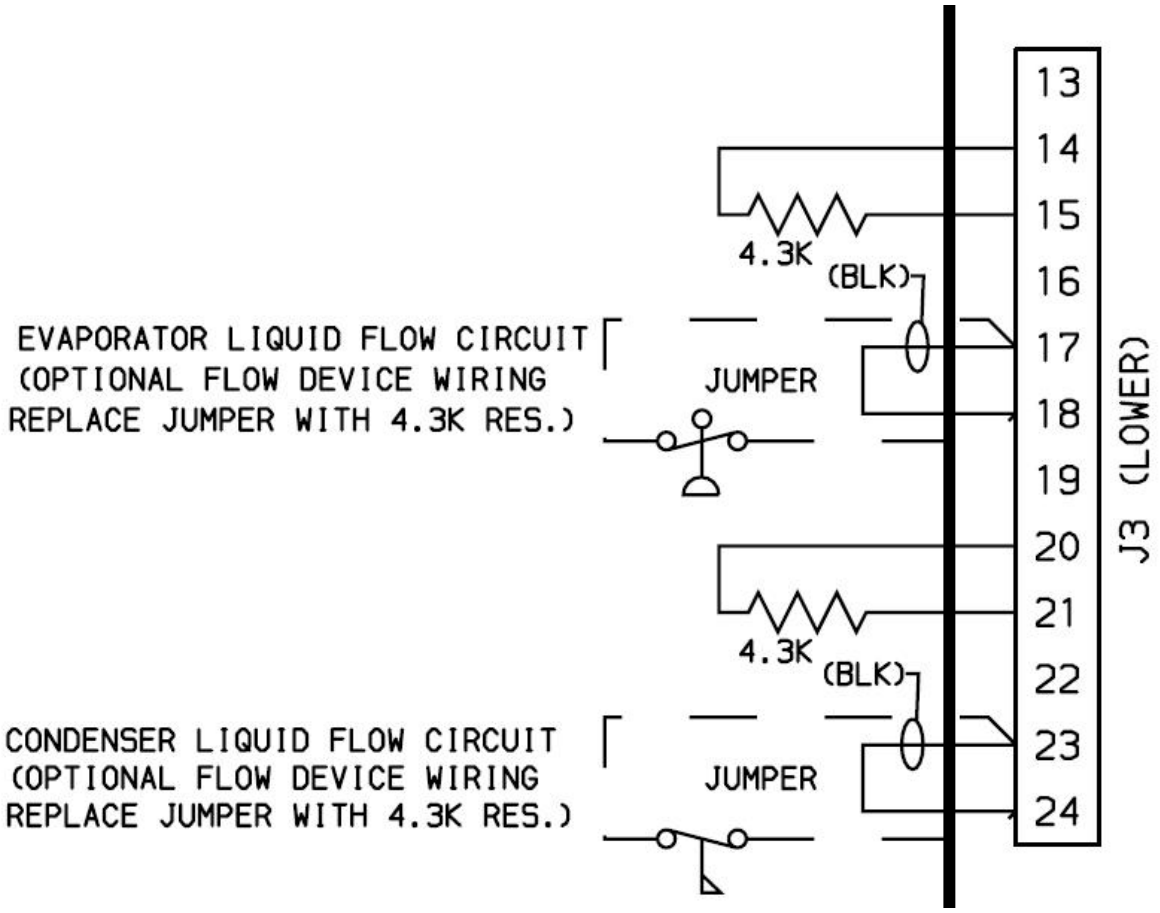


Water Flow & Direction



Strainers

Optional Flow Switch Wiring

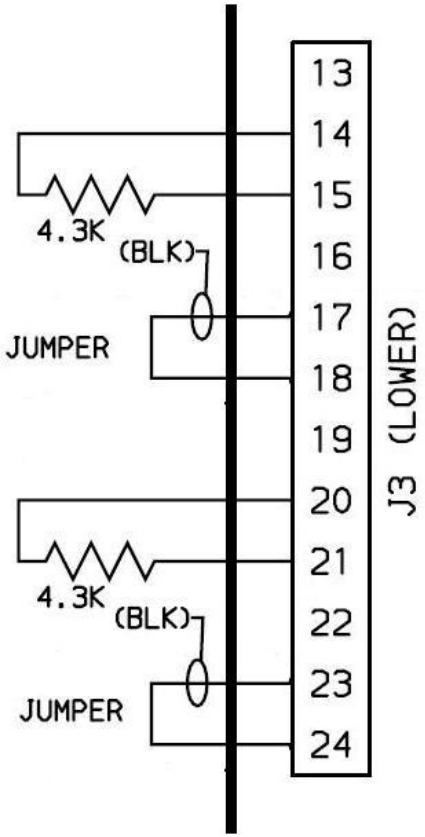


CCM

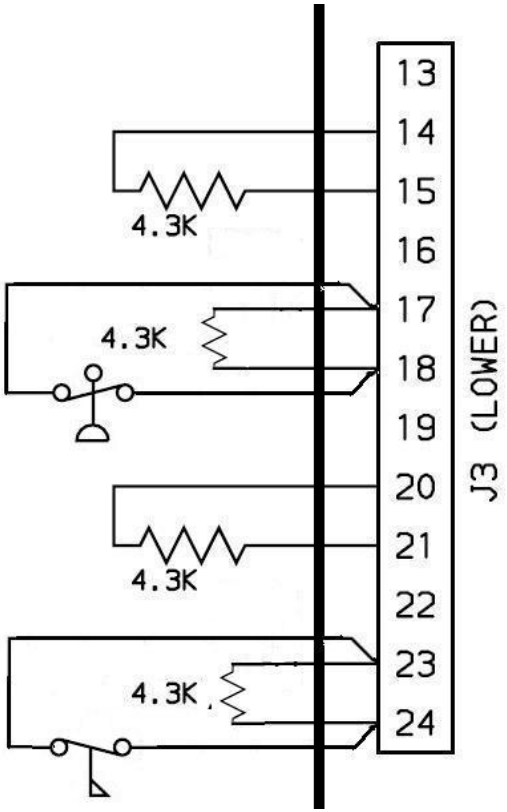
Flow Switch Hardware and Troubleshooting Flow Switches is not covered by Warranty. See Service Bulletins C0132A and C0302

Optional Flow Switch Wiring

No Flow Switches

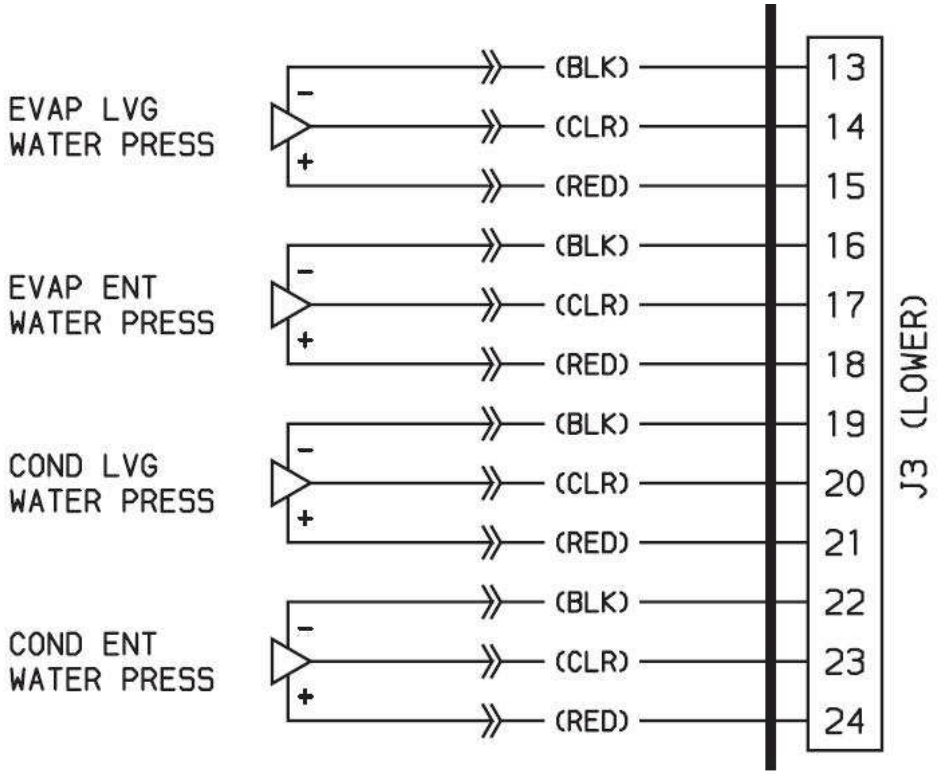


Optional Flow Switches



CCM

Optional Pressure Transducer Wiring

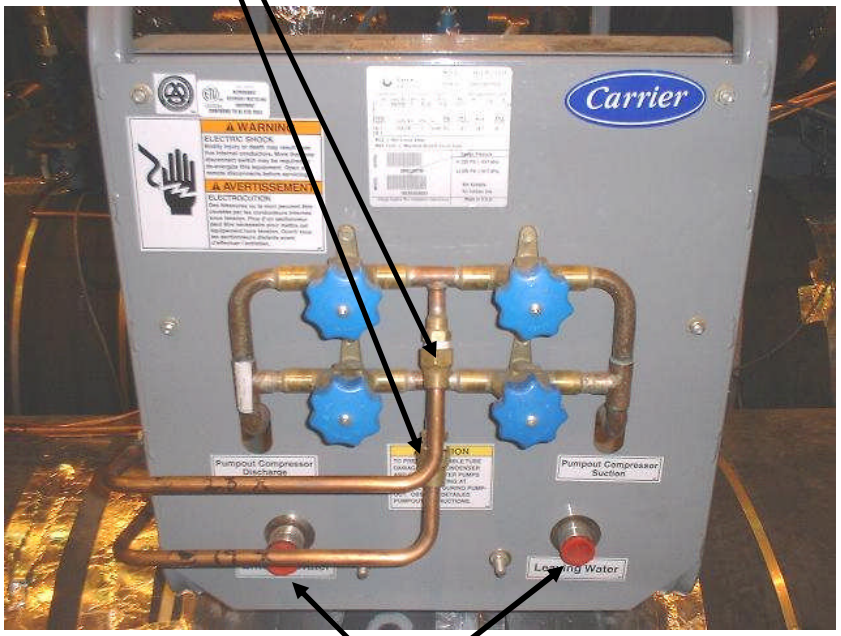


Enable “Flow Delta P Display” in SETUP1 screen to display pressure drop across waterboxes

Inspect Optional Pumpout Piping

Portable Pumpout

Refrigerant Connections

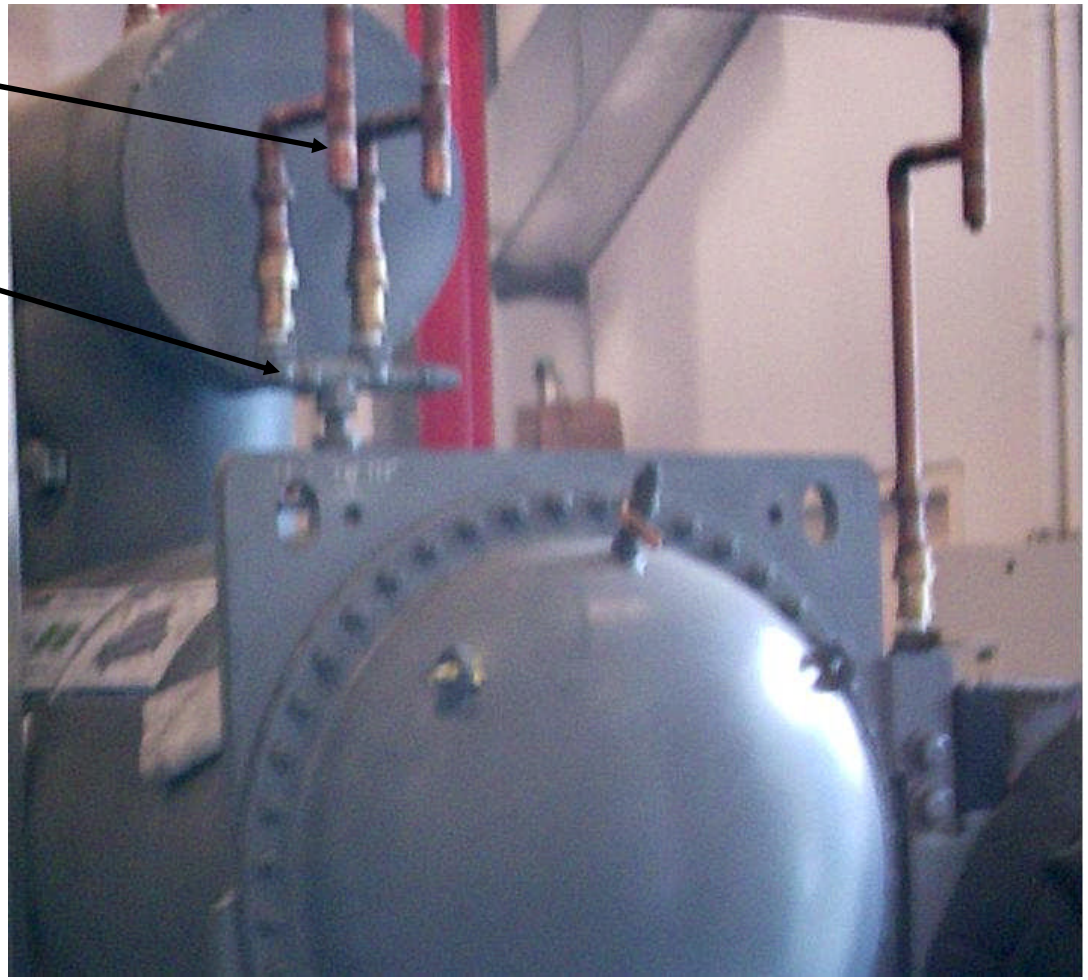


Water Connections

Check Relief Valve Piping

Drip Leg

3-Way Valves must be fully front seated or fully back seated

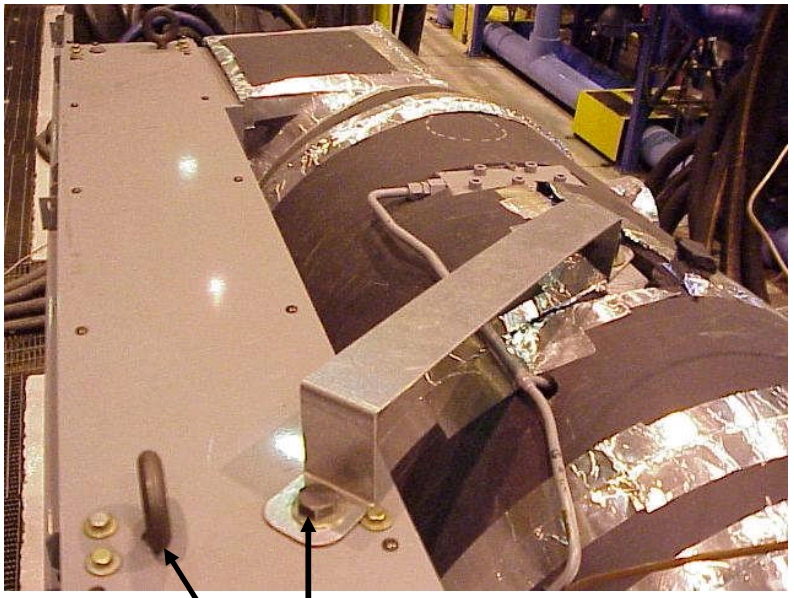


Remove VFD Shipping Brackets

Control Center Door Bracket

Torx T30
Screws

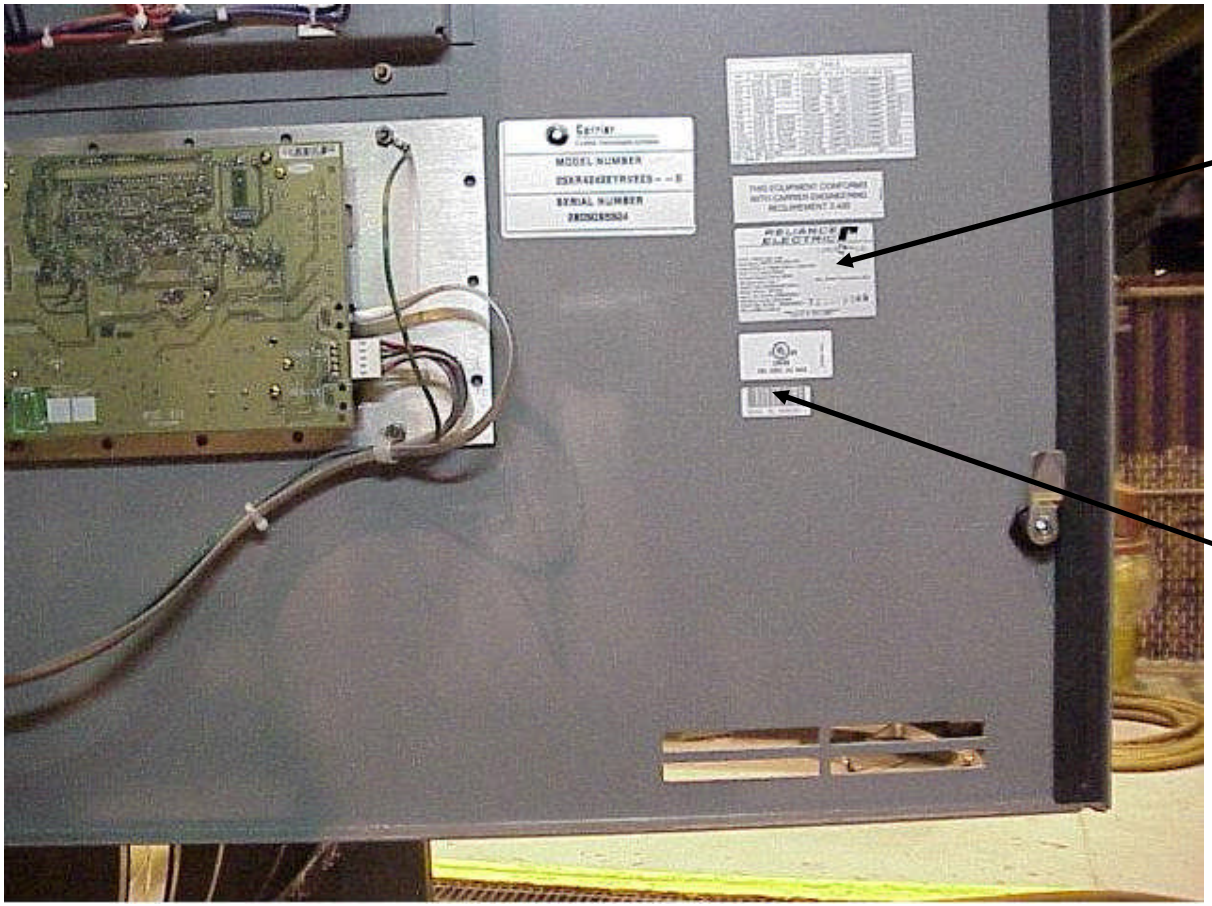
VFD Shipping Bracket



Plug threaded holes to protect from water or debris

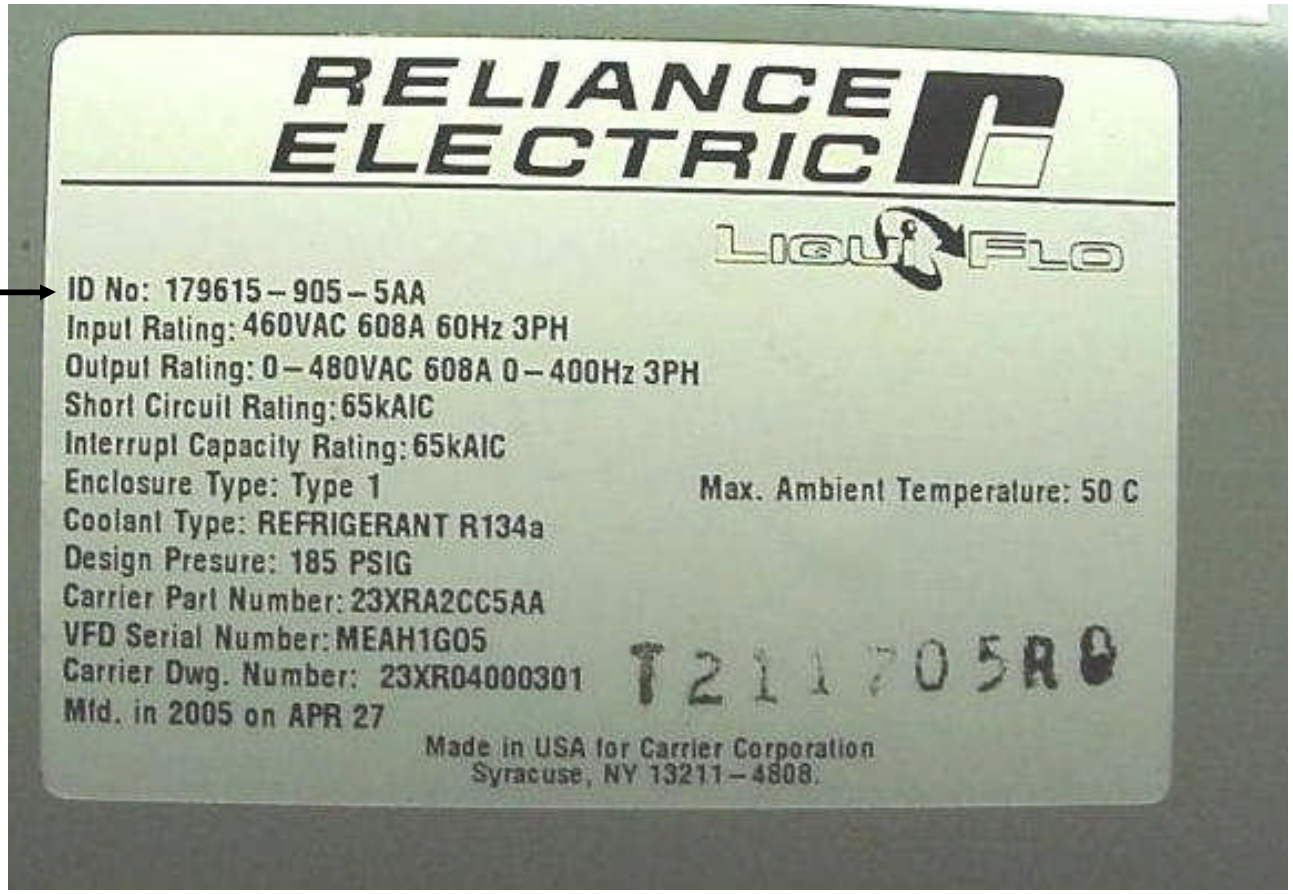
Identify the Control Center

Record ID Number and Serial Number on Start-Up Check List



Identify the Control Center

Control Center ID Number

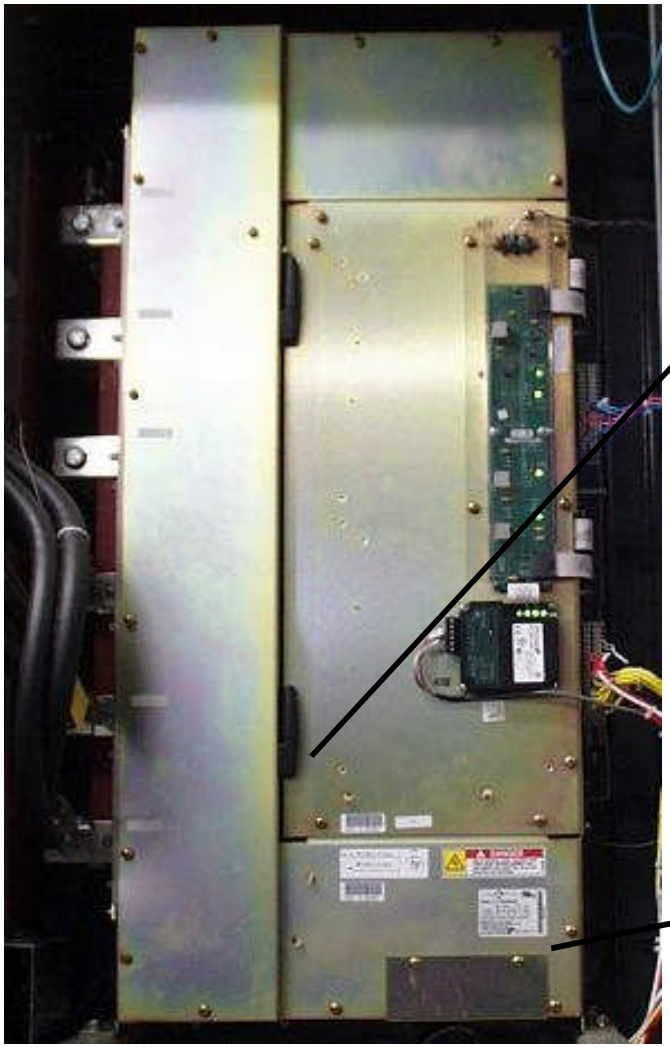


Identify the Control Center

Control Center
Serial Number

Note: Control Center Serial Number and Power Module Serial Number often match on a new chiller

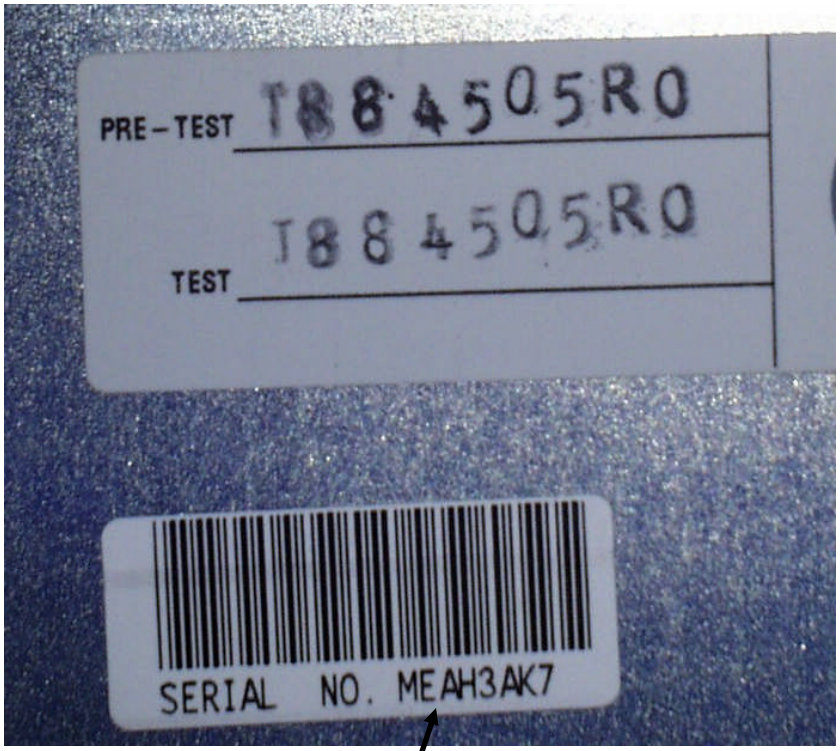
Identify the Power Module



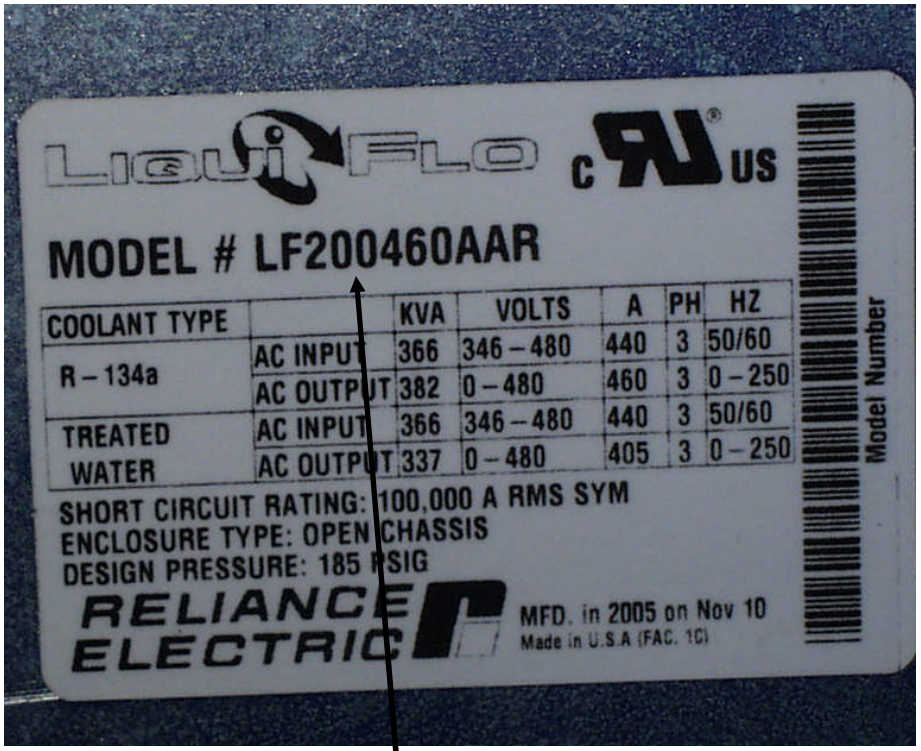
Power Module Labels

Identify the Power Module

Record Model and Serial Number on Start-Up Check List



VFD Power Module Serial Number



VFD Power Module Model Number

Check Input Power Wiring

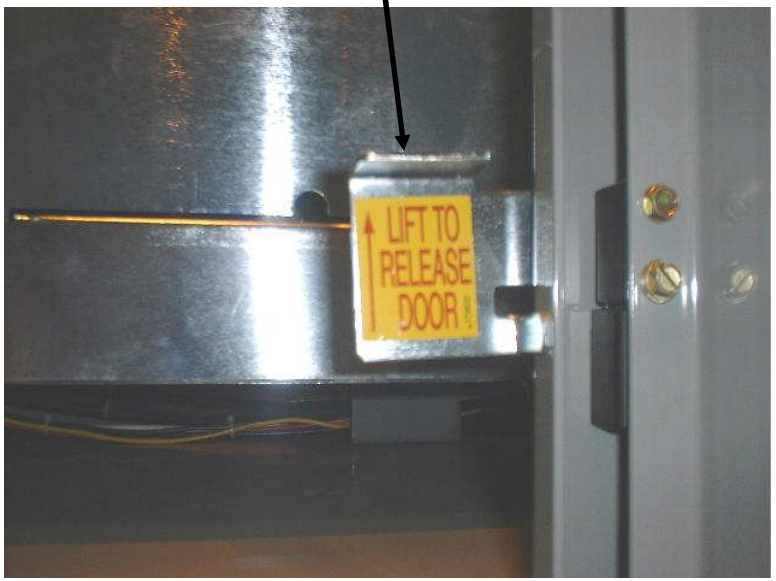
Check Line Voltage Phase to Phase and Phase to Ground

Ground Lug

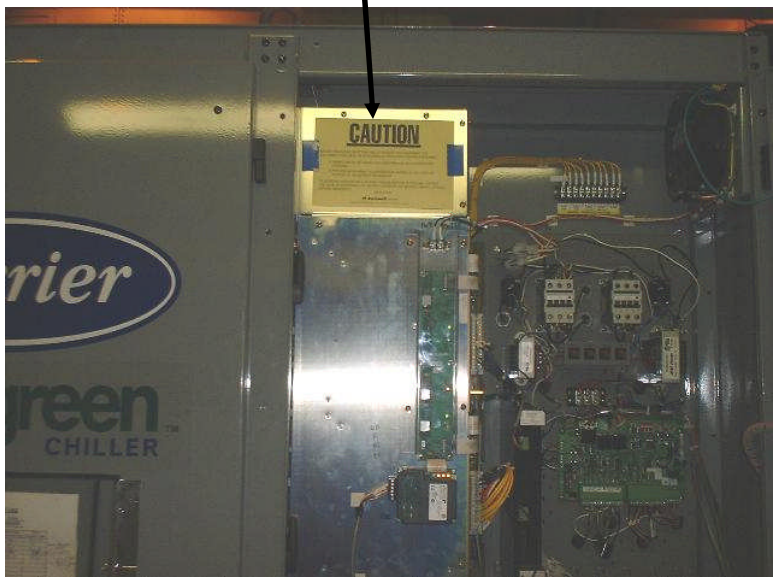
Standard 65 KAIC or Optional 100 KAIC Input Circuit Breaker

Check the Control Center Installation

Control Center Door Release



Remove Caution Signs

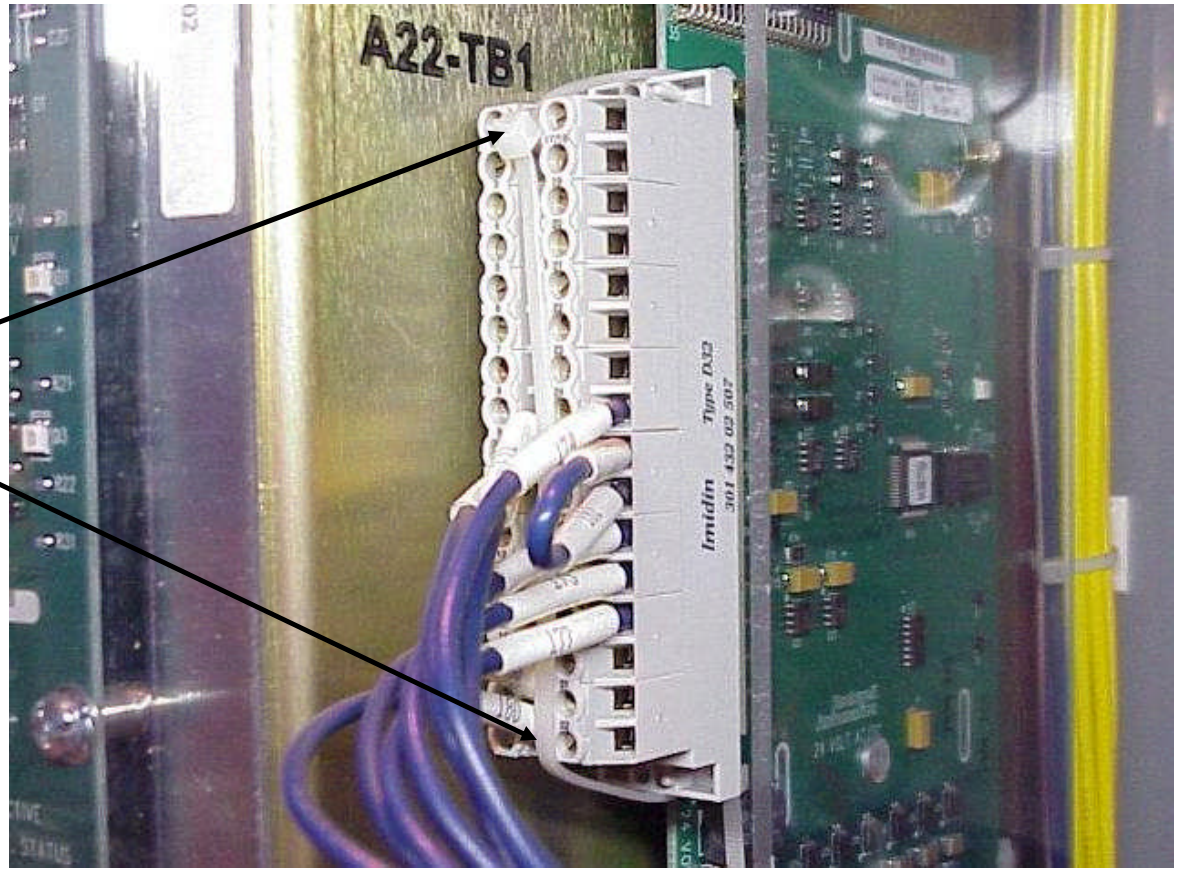


Check the Control Center Installation

Confirm 6 in. (15 cm) Clearance around all VFD Vents

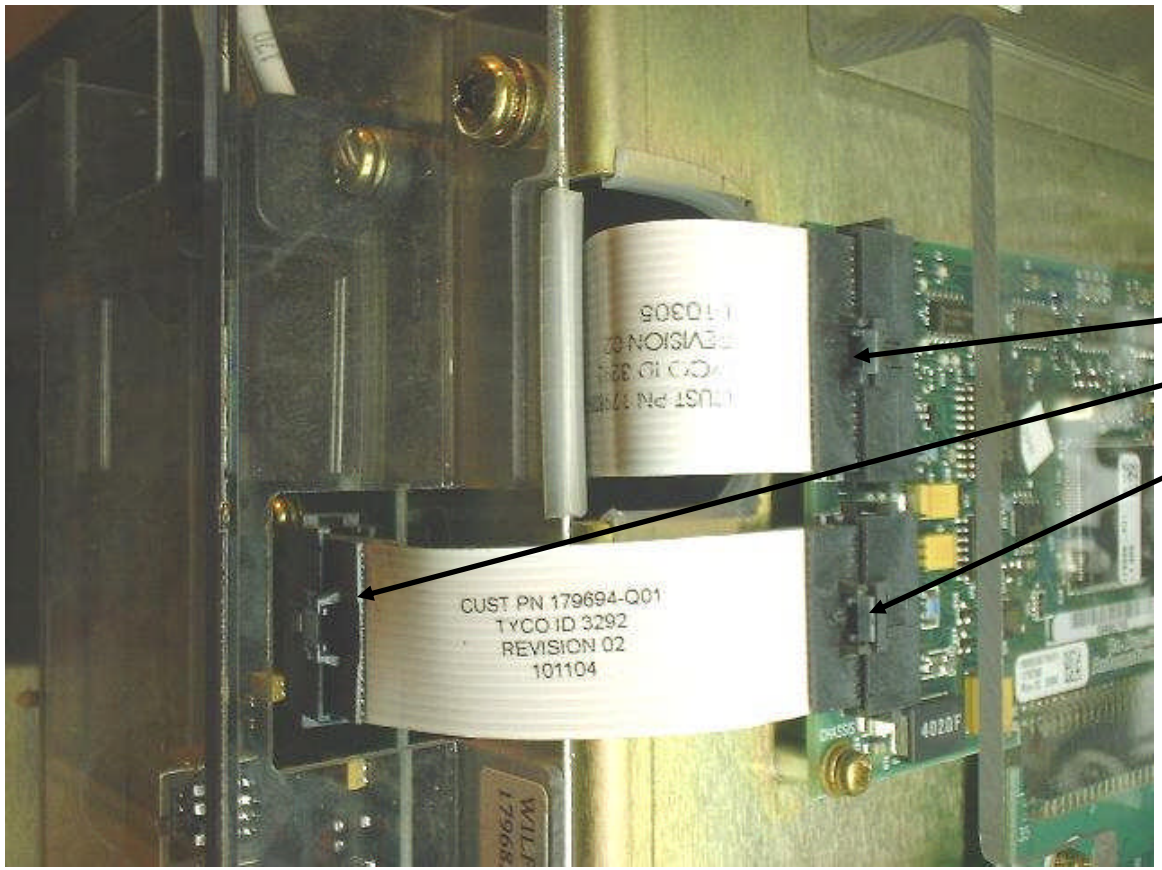
Check the Control Center Installation

Confirm that A22 Standard I/O and A12 A/C Line I/O Board Connectors are secured in place



Power Module

Check the Control Center Installation



Confirm that all power module ribbon cable connectors are fully seated

Power Module

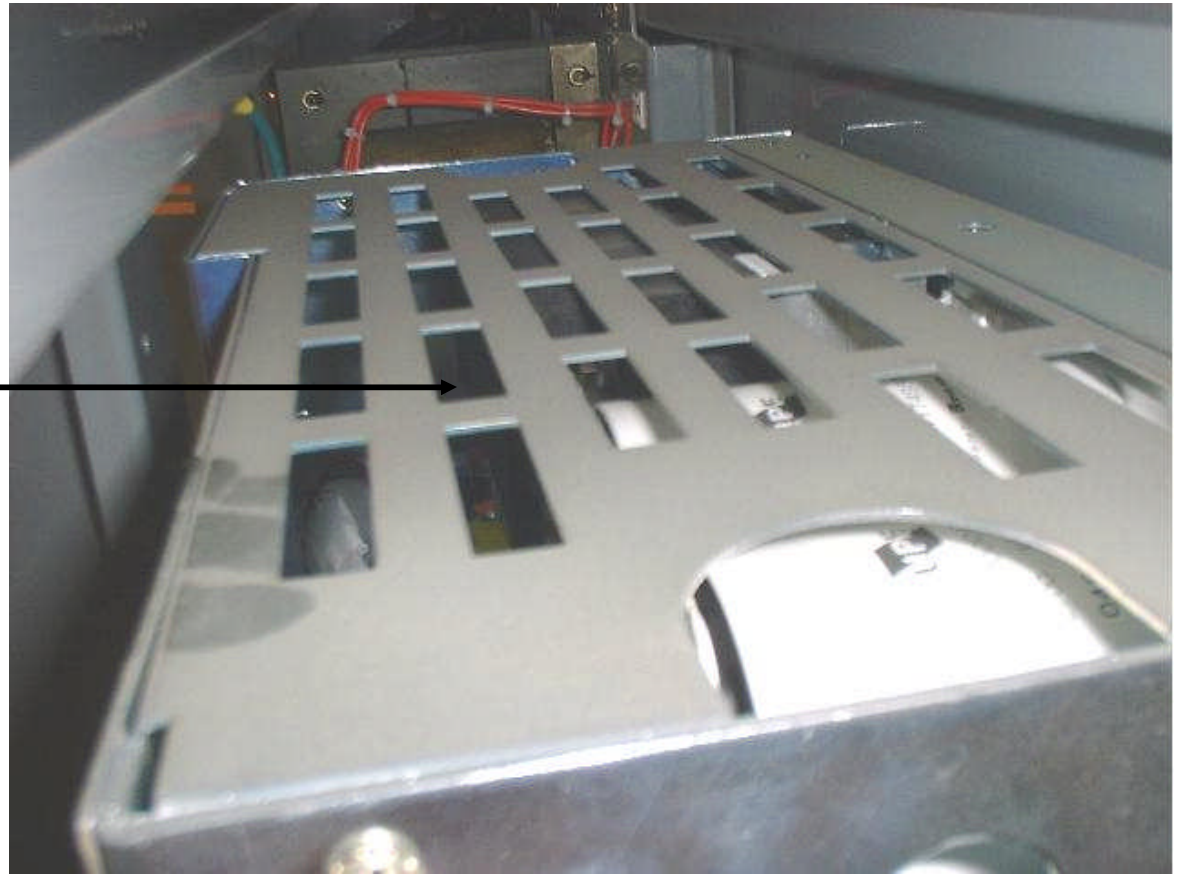
Check the Control Center Installation

Do **not** drill holes through the top of the control center enclosure for field control wiring.

Knockouts provided in the back of the Control Center for field wiring conduit

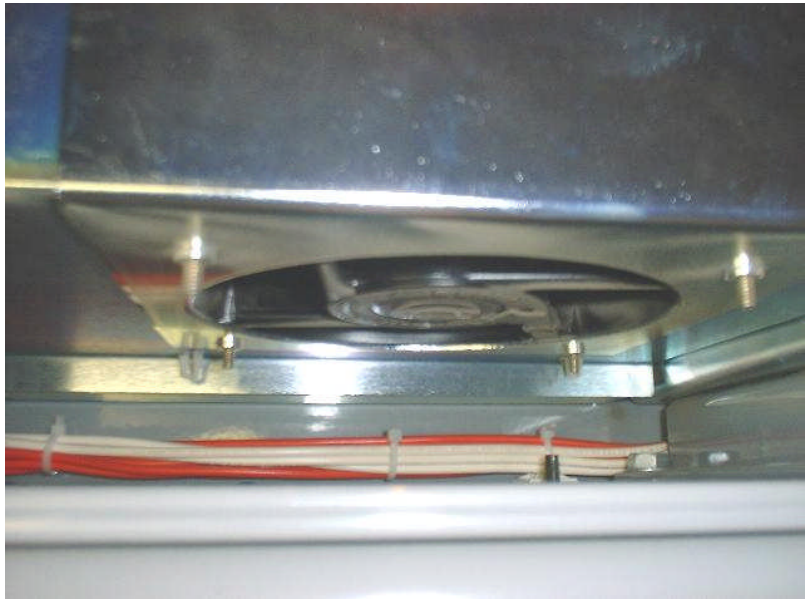
Check the Control Center Installation

Check that no metal chips, hardware or other objects have been dropped into power module vents

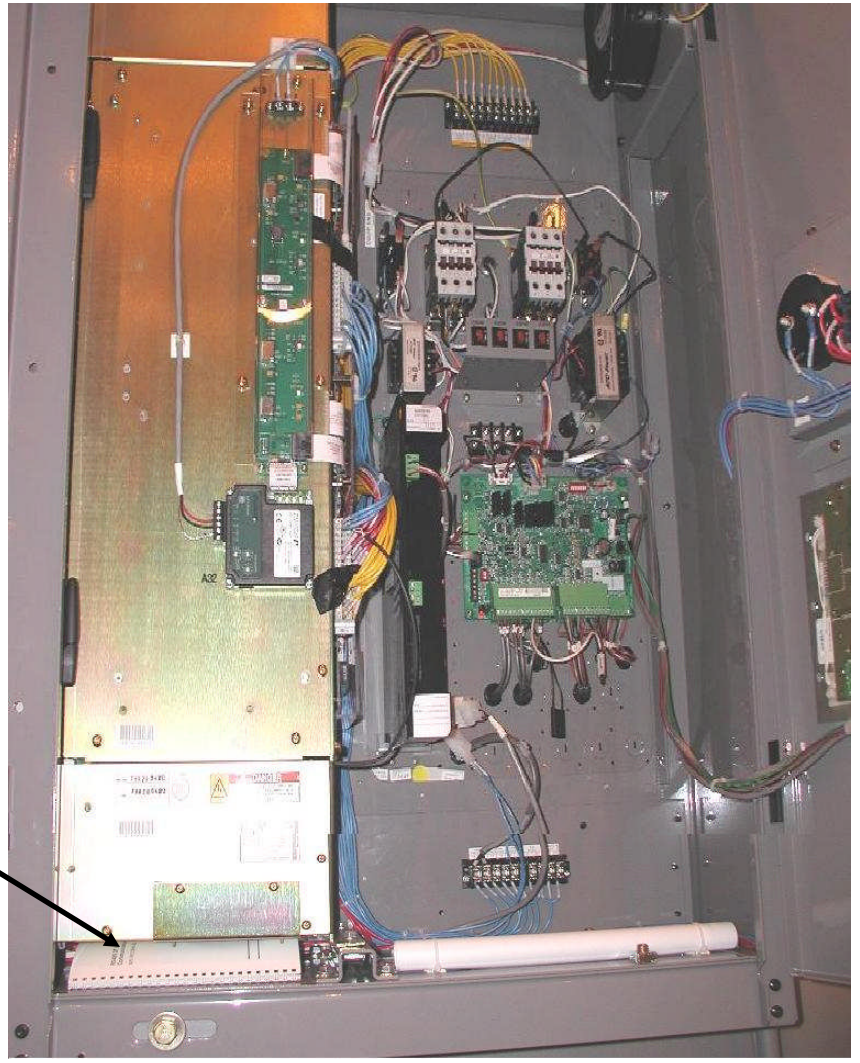


Top Of Power Module

Check the Control Center Installation

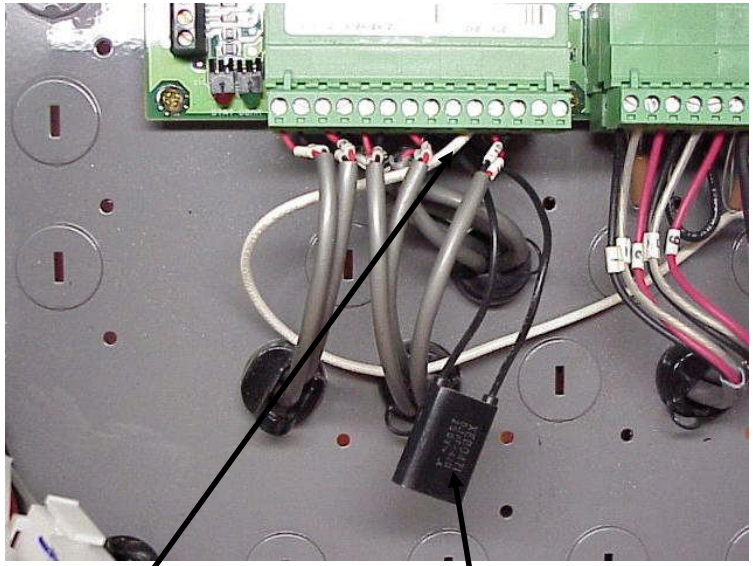


Do not store items under power module. Fan will draw paper up against inlet and block flow.

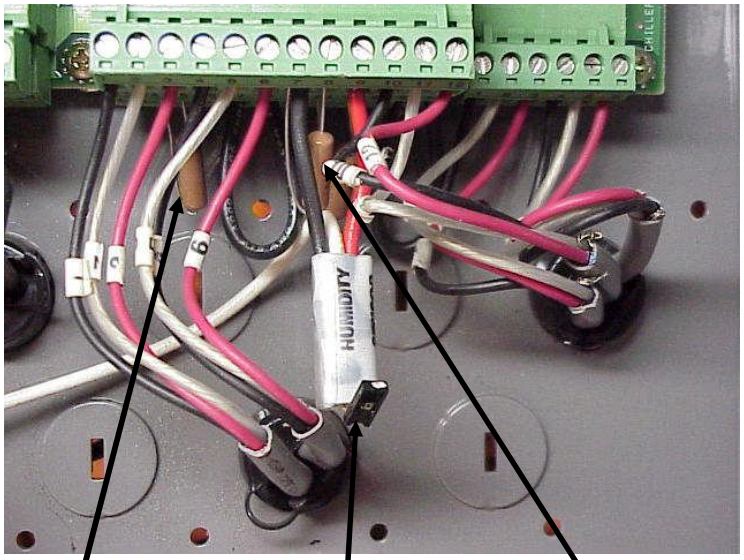


CCM Connections

CCM J4



CCM J5



Humidity Sensor Input

Motor Winding Temperature Snubber

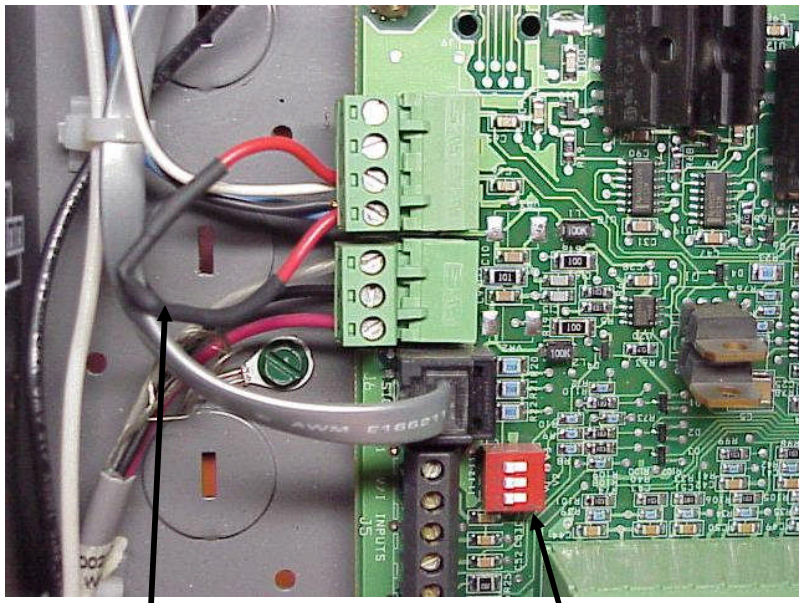
Evaporator Liquid Flow Load Resistor

Humidity Sensor

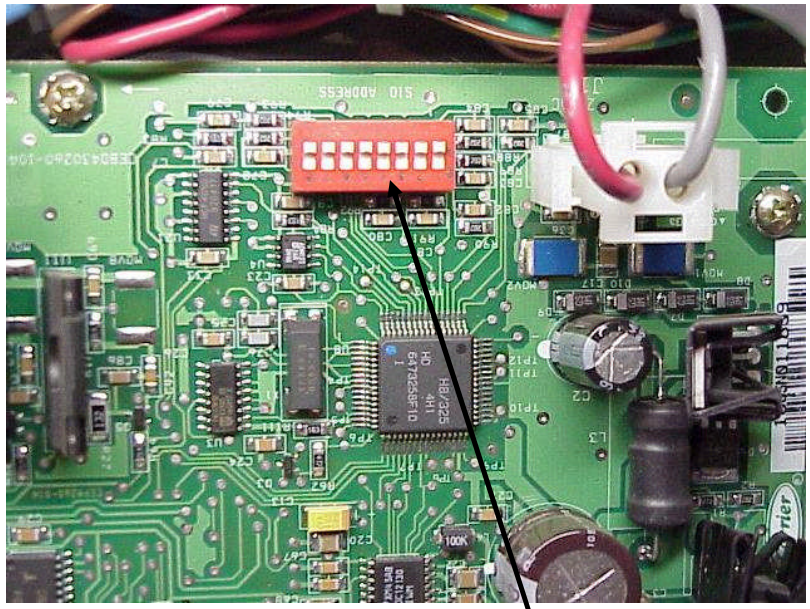
Discharge Pressure Load Resistor

CCM Connections

•CCM J8 and SW2



•CCM J1 and SW1



•Oil Reclaim Actuator Load Resistor

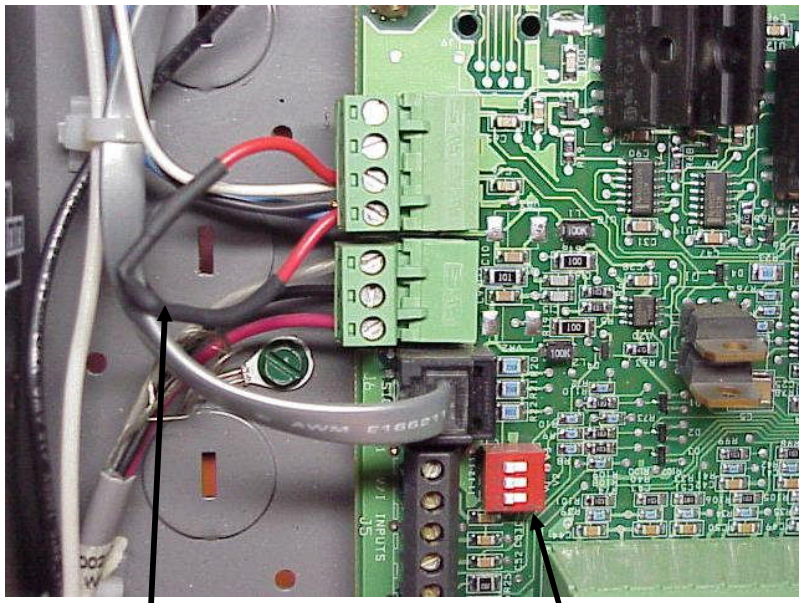
• SW2 Switches 1 - 3 set to "ON" or "OFF" per Type of Optional J5 Input Signal
• "ON" Position (Shown) for 4-20 mA
•"OFF" Position for 0 – 5 V

•SW1 SIO Address Switches all set to "OFF" for both •23XRV and 19XRV LF2

•Note: 19XRV LF2 SW2 Switch 1 must be "OFF" for 0-5 V Humidity Sensor Input on Terminal J5-6

CCM Connections

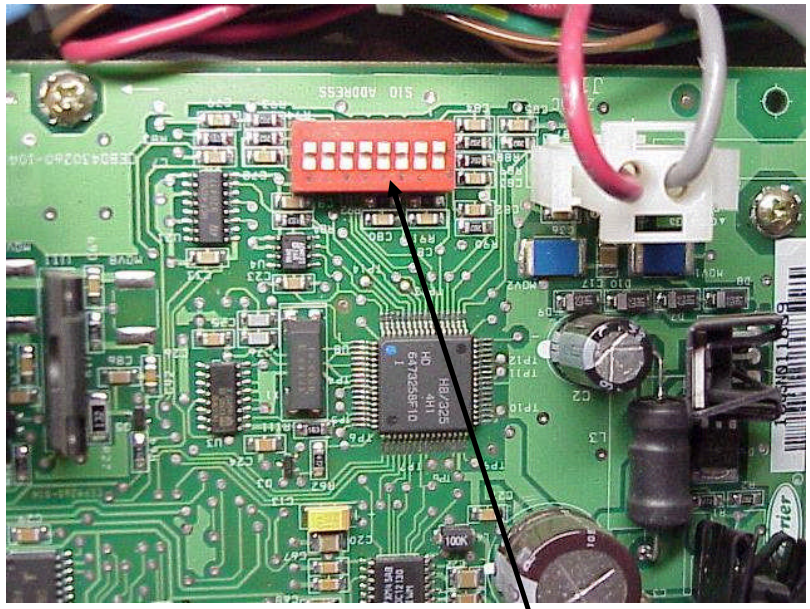
CCM J8 and SW2



Oil Reclaim Actuator Load Resistor

SW2 Switches 1 - 3 set to “ON” or “OFF” per Type of Optional J5 Input Signal
“ON” Position (Shown) for 4-20 mA
“OFF” Position for 0 – 5 V

CCM J1 and SW1

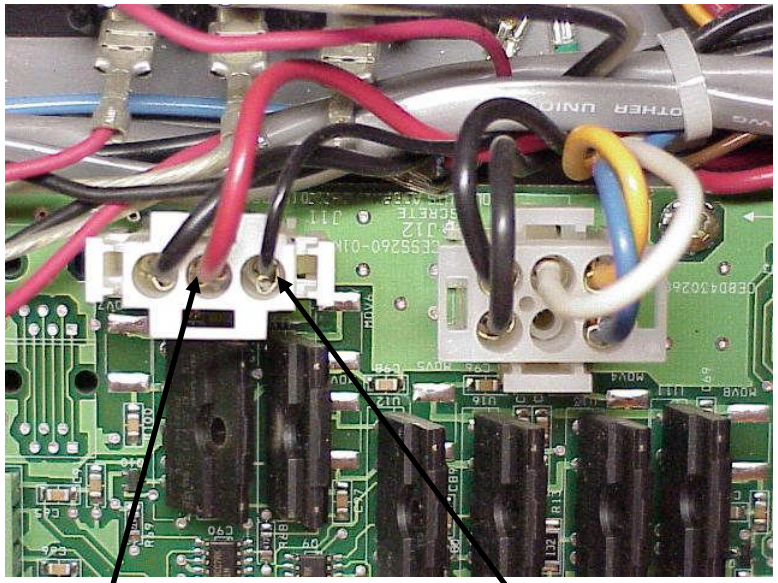


SW1 SIO Address Switches all set to “OFF” for both 23XRV and 19XRV LF2

Note: 19XRV LF2 SW2 Switch 1 must be “OFF” for 0-5 V Humidity Sensor Input on Terminal J5-6

CCM Connections

CCM J11



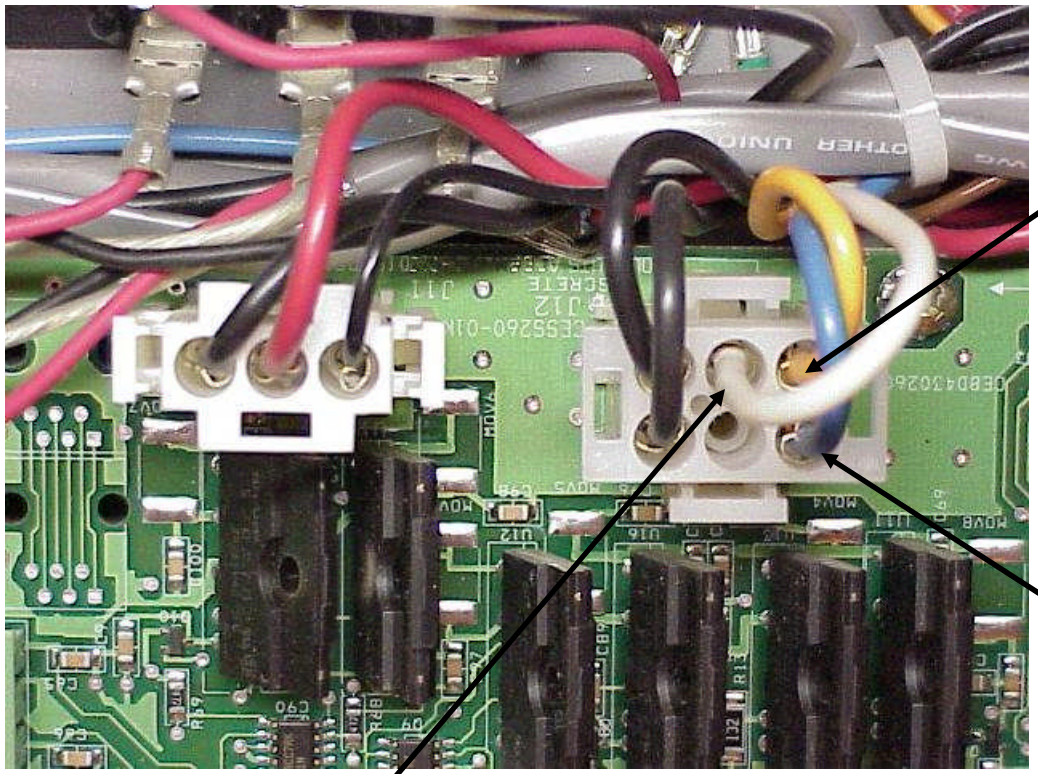
Vaporizer
Heater
(6C Contactor)

VFD Cooling
Solenoid
(5C Contactor)

VFD Cooling Solenoid

CCM Connections

CCM J12



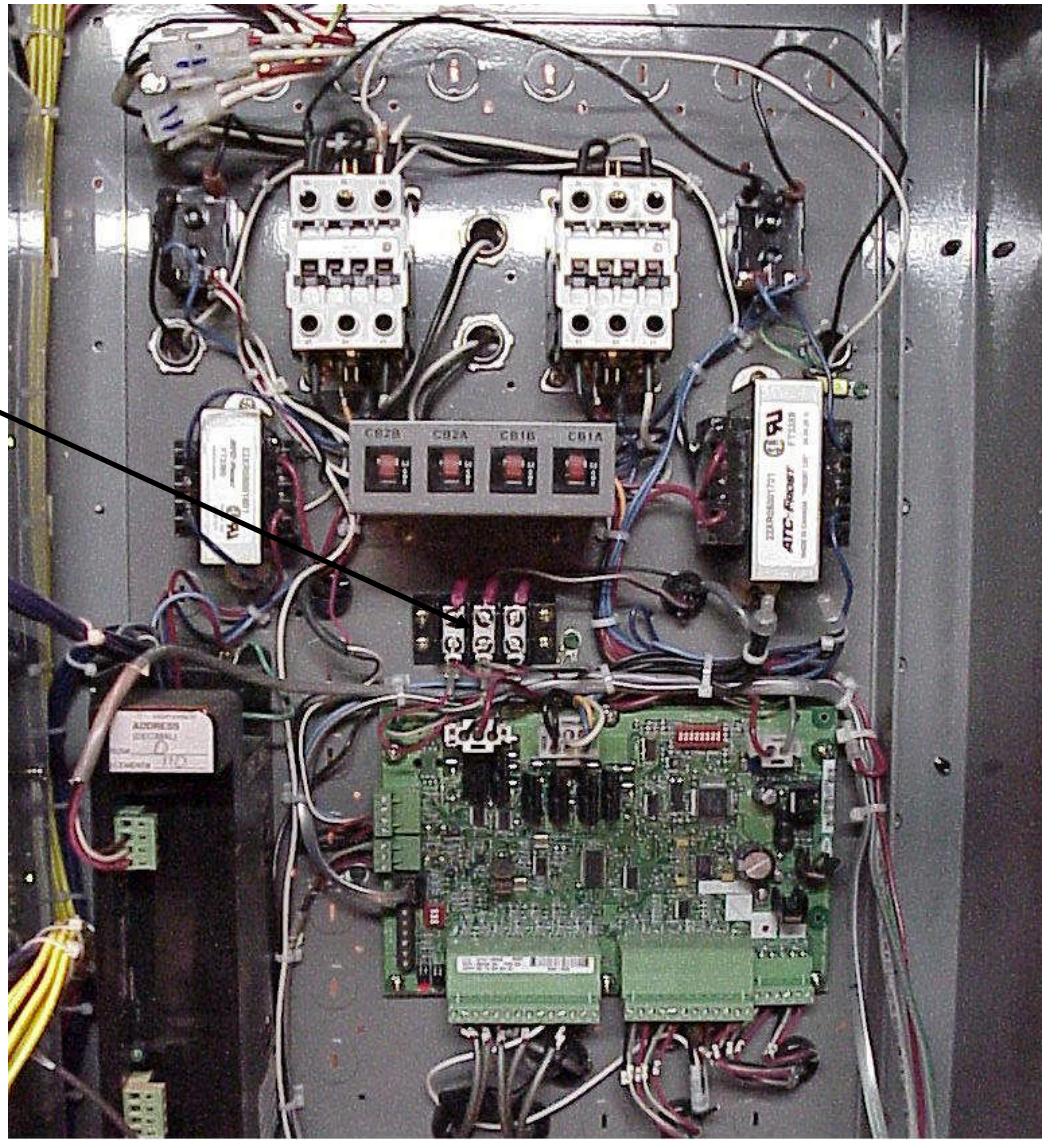
Oil Heater
(1C Contactor)

HGBP (Option)
(3C Contactor)

Oil Pump
(2C Contactor)

Check CCN Wiring

CCN Terminal Block

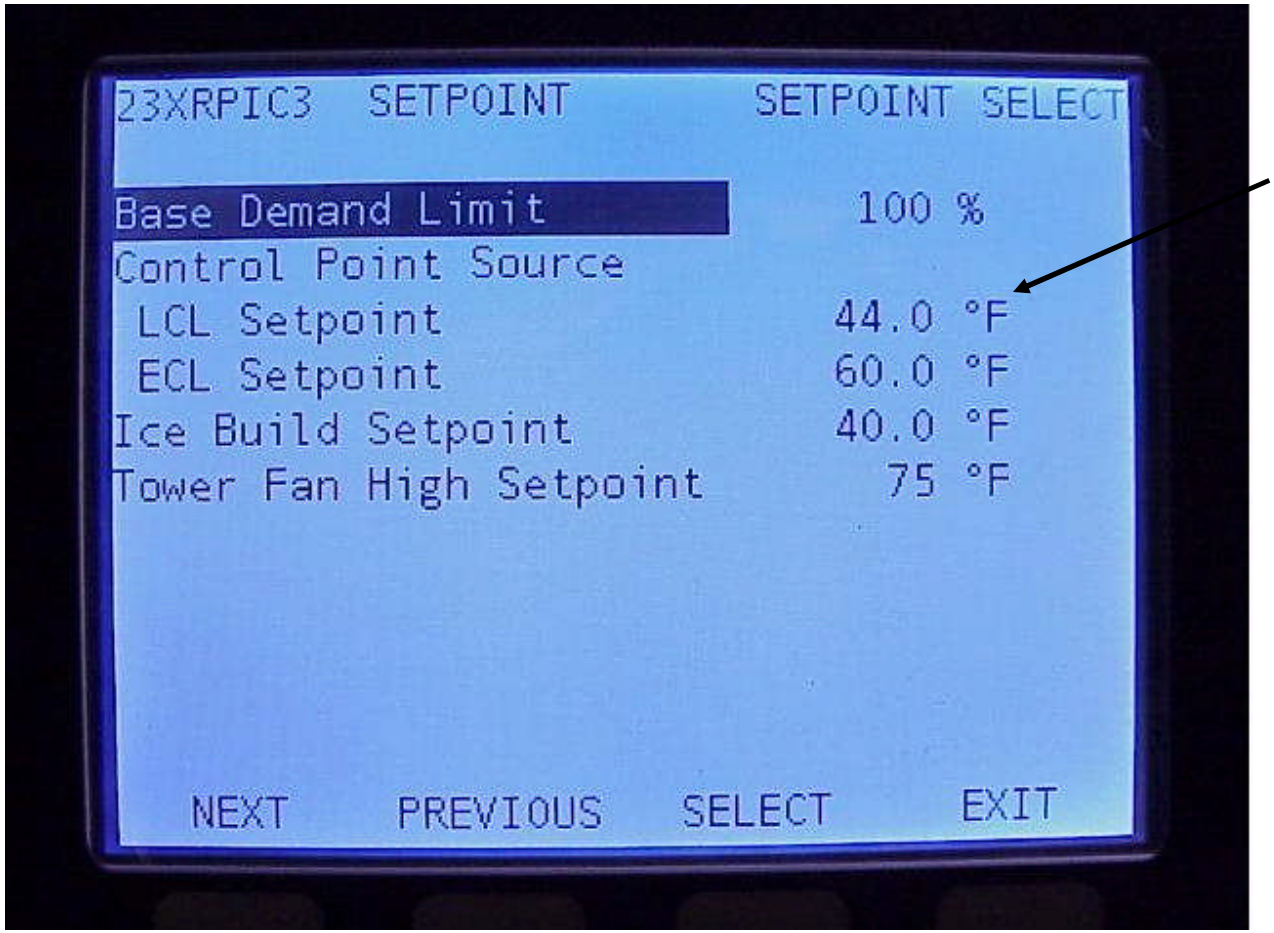


Apply Control Power

Control Power Circuit Breaker supplies Power to Carrier Controls, Oil Pump, and Oil Heaters

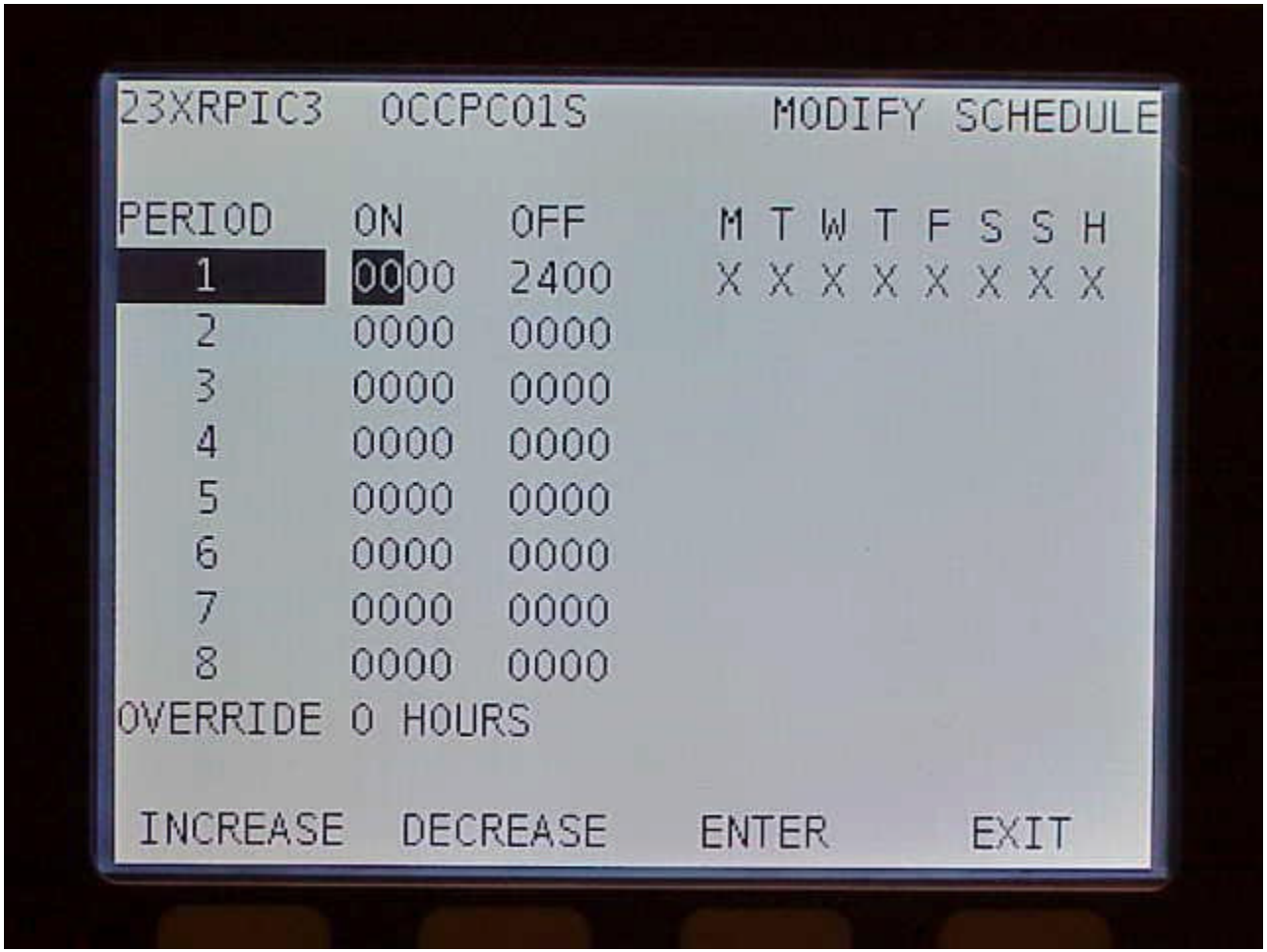
Control Power Circuit Breaker

Enter Set Point



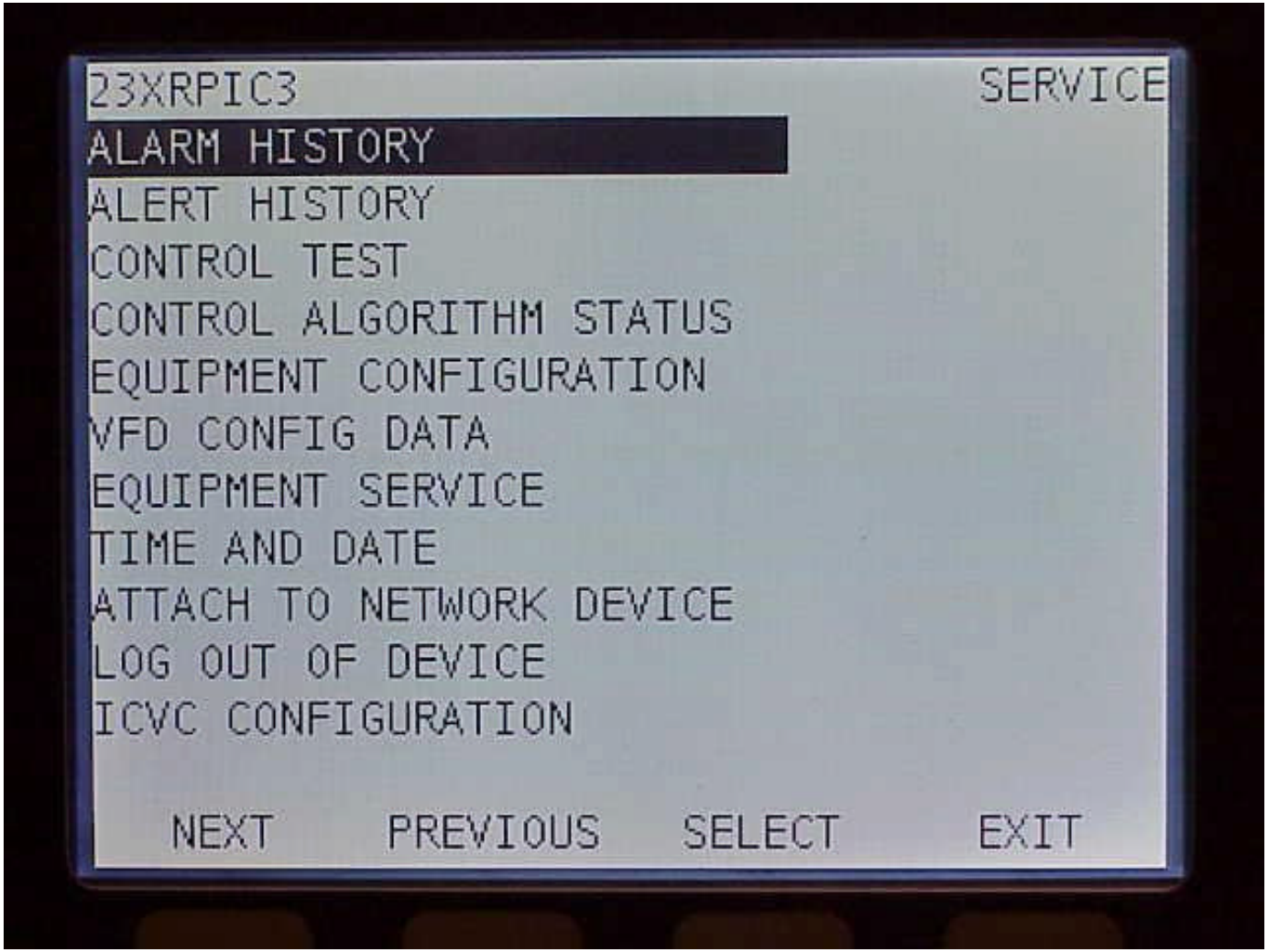
Enter Set Point per Design Selection

Enter Occupied Schedule

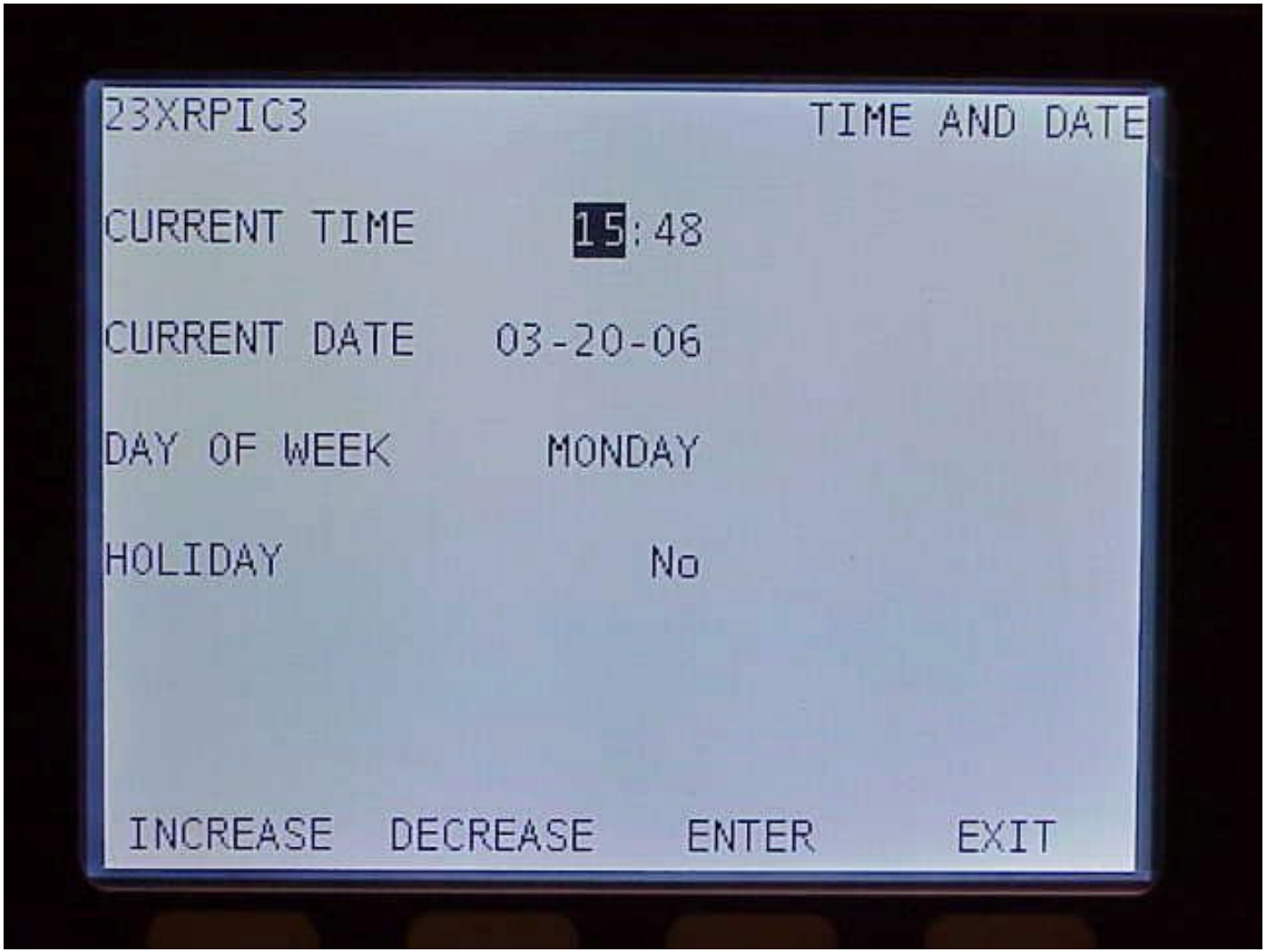


The chiller will not start if the Schedule Status is “Unoccupied”

Enter Service Configurations



Input Time and Date

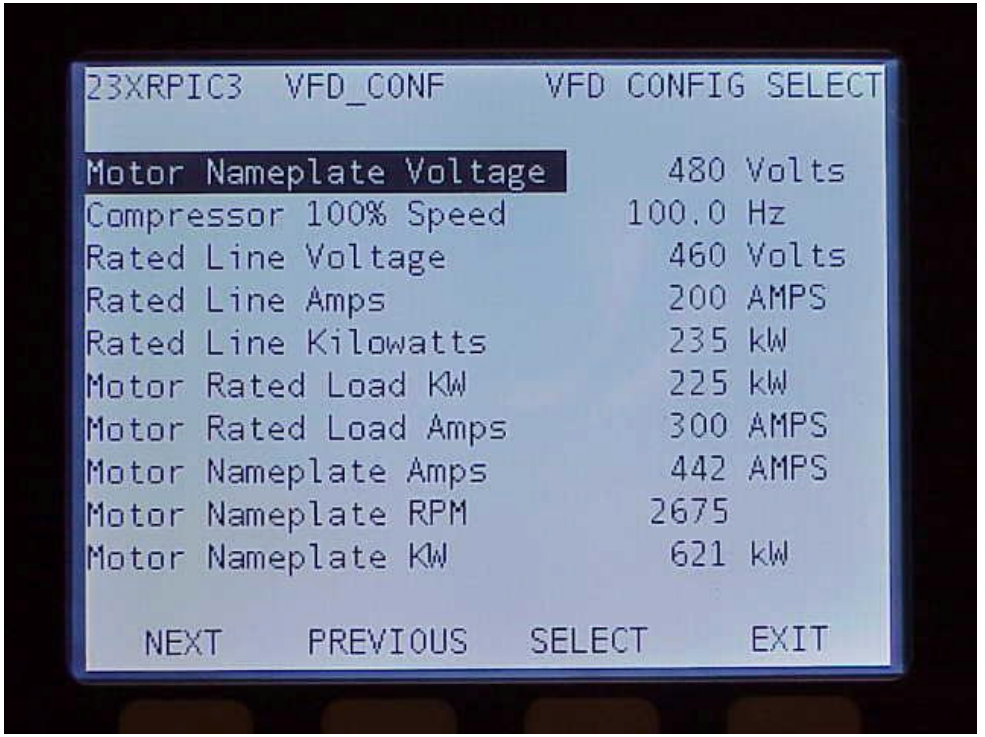


Check VFD_CONF Parameters

Carrier
A United Technologies Company

MODEL NUMBER	
SERIAL NUMBER	
MACHINE NAMEPLATE SUPPLY DATA	
VOLTS/PHASE/HERTZ	
LOCKED ROTOR AMPS	
OVERLOAD TRIP AMPS	
MAX FUSE/CIRCUIT BREAKER SIZE	
MIN SUPPLY CIRCUIT AMPACITY	
MACHINE ELECTRICAL DATA	
MOTOR NAMEPLATE VOLTAGE	480V
COMPRESSOR 100% SPEED	
RATED LINE VOLTAGE	
RATED LINE AMPS	
RATED LINE KILOWATTS	
MOTOR RATED LOAD KW	
MOTOR RATED LOAD AMPS	
MOTOR NAMEPLATE AMPS	
MOTOR NAMEPLATE RPM	
MOTOR NAMEPLATE KW	
INVERTER PWM FREQUENCY	
OVERLOAD TRIP AMPS	
MAX FUSE/CIRCUIT BREAKER SIZE	
MIN SUPPLY CIRCUIT AMPACITY	
CONTROLS, OIL PUMP AND HEATER DATA	
CONTROLS, OIL PUMP AND HEATER CIRCUIT MAX FUSE SIZE MIN CIRCUIT AMPACITY	115V 15A 15A
OIL PUMP	115V, 1.48A
OIL SUMP HEATER	115V, 4.35A, 500W
OIL VAPORIZER HTR CIRCUIT MAX FUSE SIZE MIN CIRCUIT AMPACITY	115V 15A 15A
OIL VAPORIZER HEATER	115V, 13.04A, 1500W

CARRIER CHARLOTTE
9701 OLD STATESVILLE ROAD
CHARLOTTE, NORTH CAROLINA 28269
PRODUCTION YEAR 20XX



Determine Optional HGBP Parameters

Hot Gas Bypass Operation can be adjusted for Minimum Chiller Load Control

In this example the minimum load is 15% of the maximum (design) load:

	Minimum Load (15%)	Maximum Load
Entering Chilled Liquid(ECL)	45.5 F(6.7 C)	54 F(6.7 C)
Leaving Chilled Liquid(LCL)	44 F(7.5 C)	44 F(12.2 C)
Suction Temperature	43 F(6.1 C)	42 F(5.6 C)
Condensing Temperature	70 F(21.1 C)	98 F(21.1 C)

Determine Optional HGBP Parameters

<u>Determine Delta P1/Delta T1 for Minimum Load Conditions</u>:

Minimum Load Suction Temperature = 43 F(6.1 C)

Saturated Refrigerant Temperature = 38 PSIg (262 kPa)

Minimum Load Condensing Temperature = 70 F(21.1 C)

Saturated Refrigerant Temperature = 71 PSIg (490 kPa)

Minimum Load **HGBP DELTA P1** = 71 PSI – 38 PSI = **33 PSI**

= 490 kPa – 262 kPa = **228 kPa**

Minimum Load **HGBP DELTA T1** = 45.5 F – 44 F = **1.5 deg F**

= 7.5 C – 6.7 C = **0.8 deg C**

Determine Optional HGBP Parameters

Determine Delta T2/Delta P2:

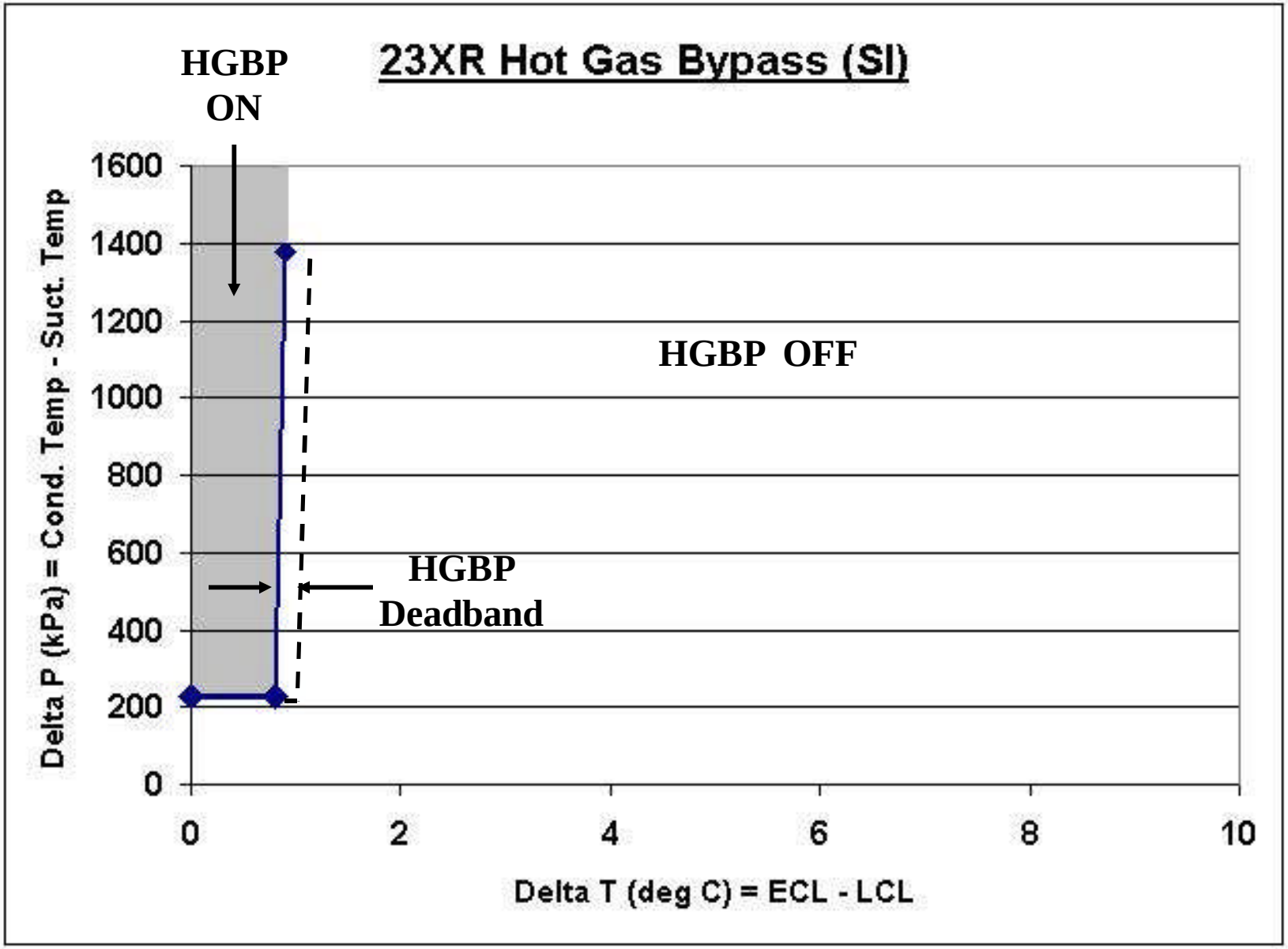
Set HGBP DELTA P2 to a large value to create a steep slope

HGBP DELTA P2 = **200 PSI (1379 kPa)**

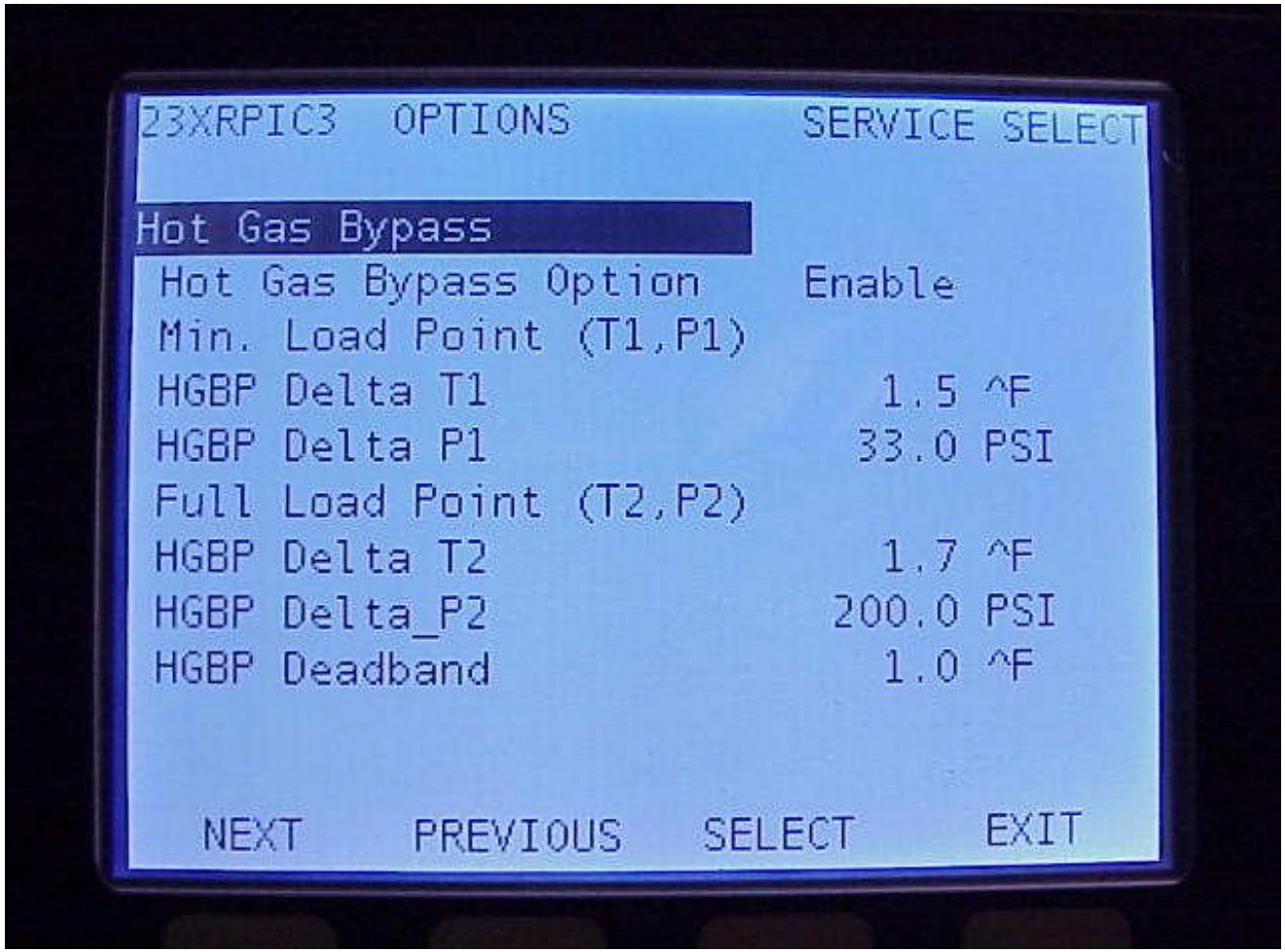
Set HGBP DELTA T2 0.2 F(0.1 C) greater than HGBP DELTA T1

HGBP DELTA T2 = 1.5 F + 0.2 F = **1.7 deg F**

= 0.8 C +0.1 C = **0.9 deg C**


23XR Hot Gas Bypass (SI)
HGBP ON
HGBP OFF
HGBP Deadband
Delta P (kPa) = Cond. Temp - Suct. Temp
1600
1400
1200
1000
800
600
400
200
0
0
2
4
6
8
10
Delta T (deg C) = ECL - LCL

Enter HGBP Parameters



Options Screen

HGBP with version 2.03 Software

- This software is not yet released for production
- This software is for Primary Variable Flow
- Adds The following parameters to the Options Screen
- Option 2 (Low Load) for HGBP
- HGBP ON Delta Speed
- HGBP Off Delta Speed

HGBP with version 2.03 Software

- Option 2 should be used if the chiller is constantly cycling on chilled water recycle due to low load conditions

- This option energizes the Hot Gas Bypass relay based solely on the VFD Target Speed.

HGBP with version 2.03 Software

- HGBP ON Delta Speed
- Default 5%
- If the VFD Target Speed is less than the Minimum Compressor Speed plus the plus HGBP On Delta Speed for 3 consecutive seconds then the Hot Gas Bypass relay shall be turned ON

HGBP with version 2.03 Software

If the minimum Compressor speed is 20% and the HGBP On Delta is 5% then the HGBP will turn on if the VFD Target speed drops below 25%.

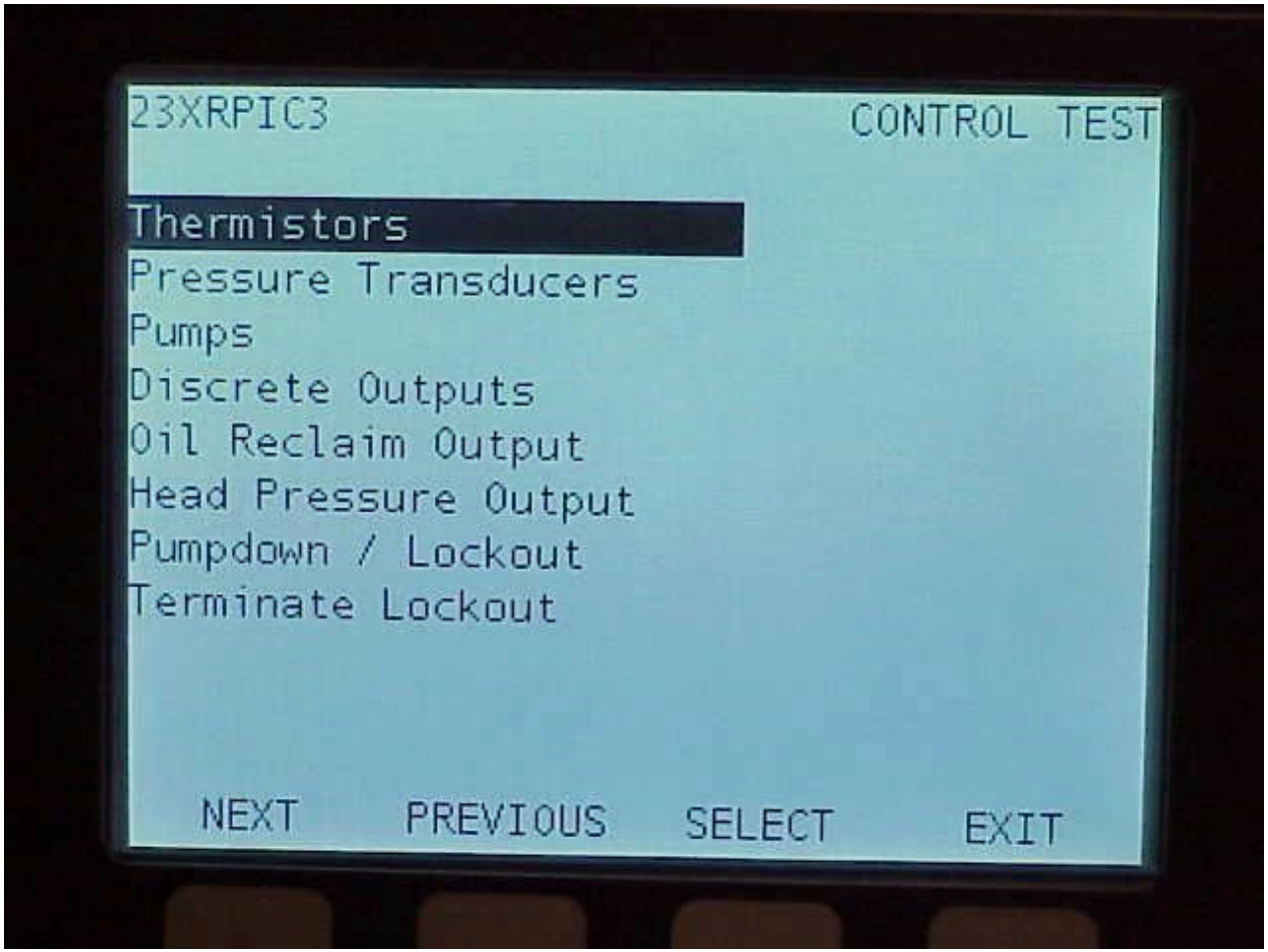
HGBP with version 2.03 Software

- HGBP Off Delta Speed
- Default 15%
- If the VFD Target Speed is greater than the Minimum Speed plus the plus HGBP On Delta Speed plus the HGBP Off Delta Speed for 3 consecutive seconds then the Hot Gas Bypass relay shall be turned OFF.

HGBP with version 2.03 Software

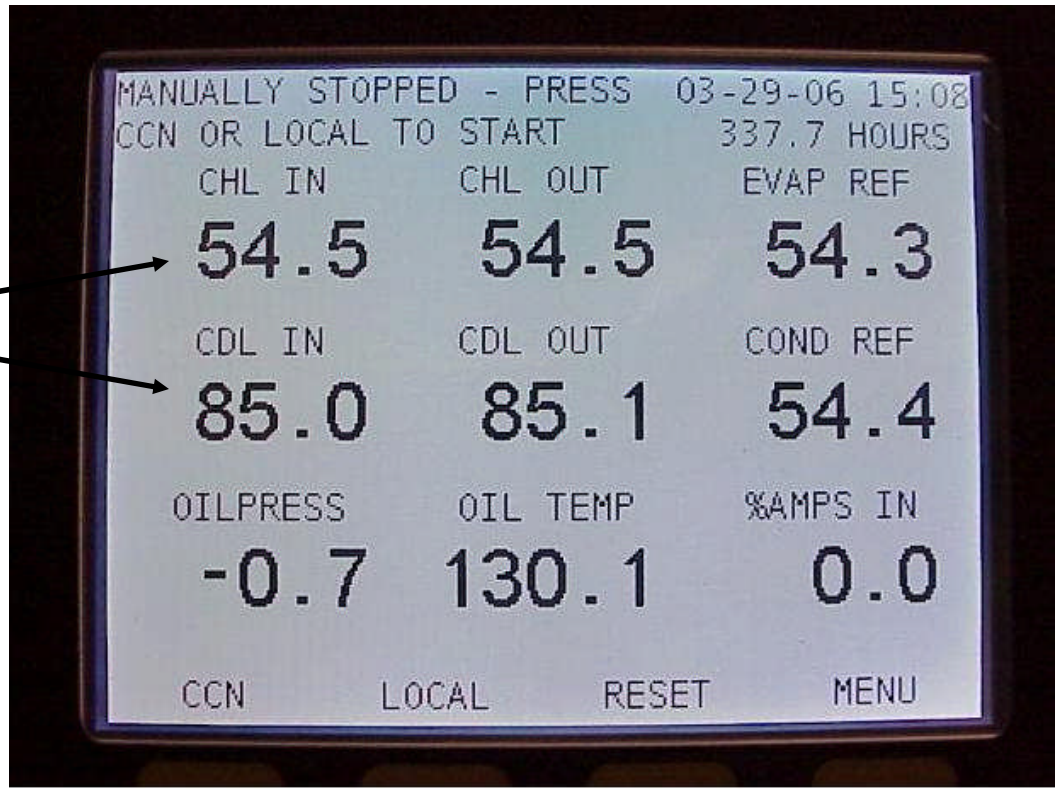
If the minimum Compressor speed is 20% and the HGBP On Delta is set to 5% and the HGBP Off Delta is set to 15% then the HGBP will turn off when the target VFD speed goes above 40%.

Perform Control Test

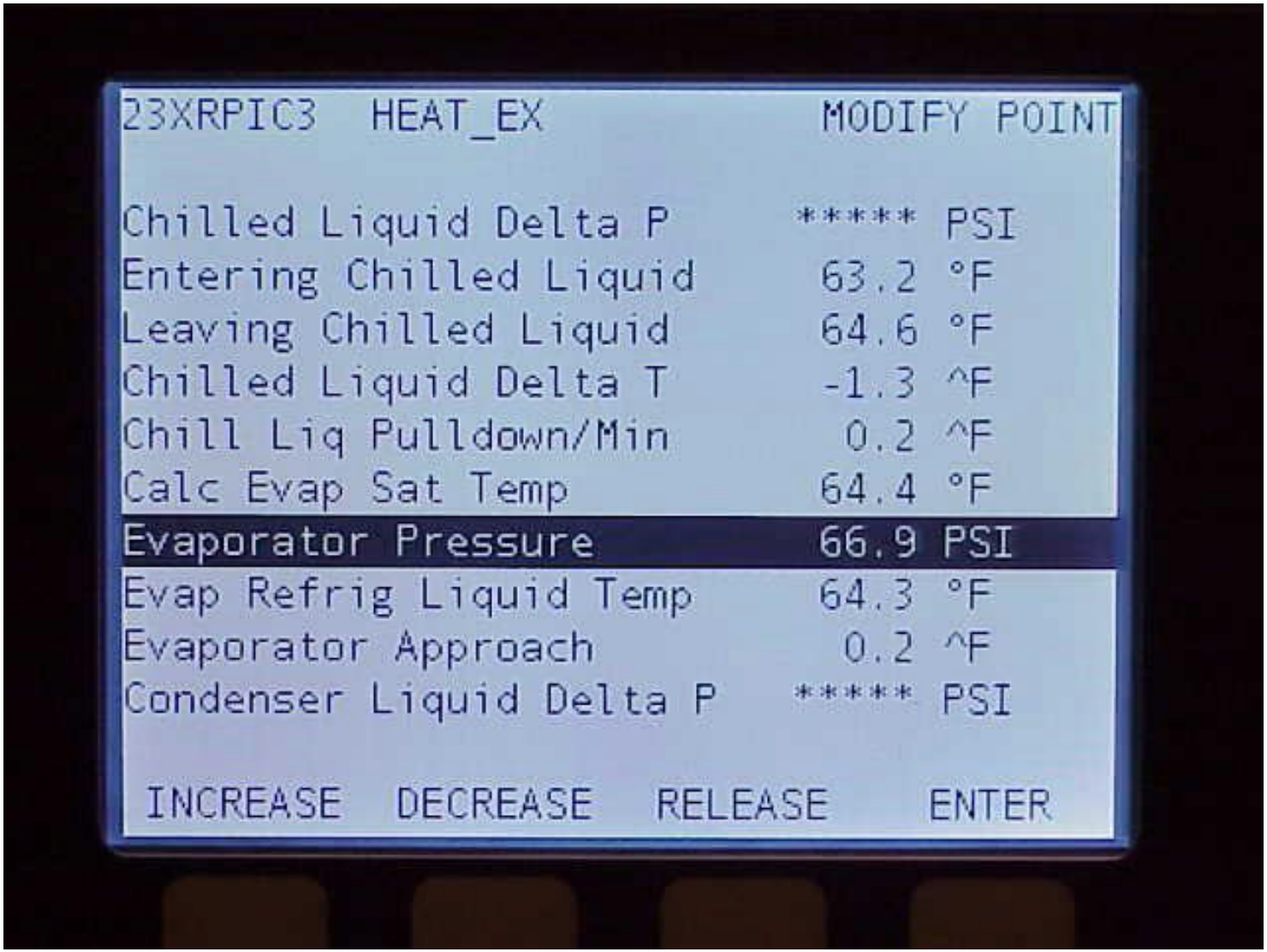


Check for Consistent Liquid Temperatures

Entering and Leaving Liquid Temperatures should be close when the water pumps are on but the compressor is not running



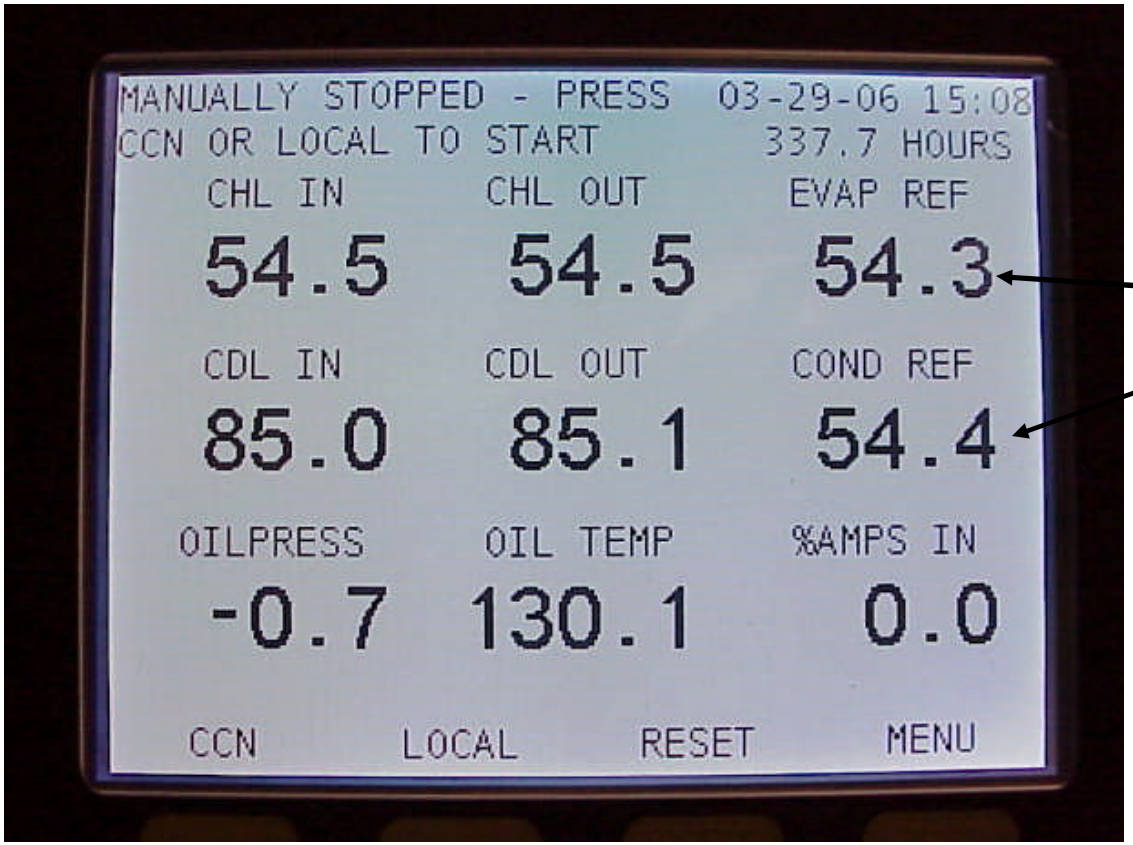
Calibrate Pressure Transducers



Pressure Transducer Calibration

	Delta P Sensors	Pressure Sensors
Oil Sump Pressure	Calibrate in place with Oil Pump off	-
Oil Pressure Leaving Filter	Calibrate in place with Oil Pump off	-
Discharge Pressure	-	Calibrate at 0 PSI Optional High Pressure Calibration
Cooler Pressure	-	Calibrate at 0 PSI Optional High Pressure Calibration
Condenser Pressure	-	Calibrate at 0 PSI Optional High Pressure Calibration
Entering Chilled Liquid (Optional)	Calibrate in place with Chilled Liquid Pump off	
Leaving Chilled Liquid (Optional)	Calibrate in place with Chilled Liquid Pump off	
Entering Condenser Liquid (Optional)	Calibrate in place with Condenser Liquid Pump off	
Leaving Chilled Liquid (Optional)	Calibrate in place with Condenser Liquid Pump off	

Check for Consistent Refrigerant Temperatures



Refrigerant Temperatures should be close when the isolation valves are open, the water temperatures are stable, and the chiller is not running

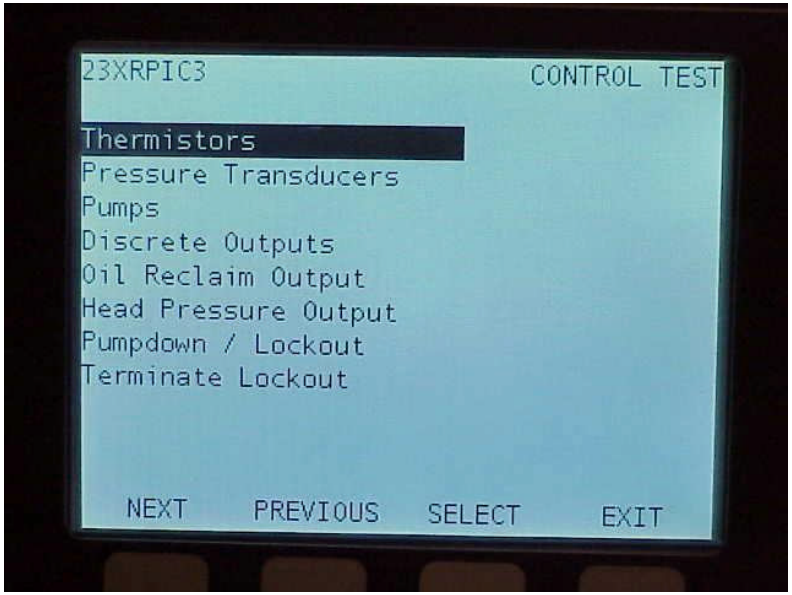
Perform Control Test

Pumps: Carrier Controls must be able to independently energize the Cooler and Condenser Liquid Pumps for Freeze Protection

Discrete Outputs: Cycles Heater Relays, HGBP, Alarm Relay, VFD Cooling Solenoid, and Shunt Trip

Oil Reclaim Output: Varies 2-20 mA oil reclaim output from CCM J8-3 and J8-4 with power removed from oil reclaim motor.

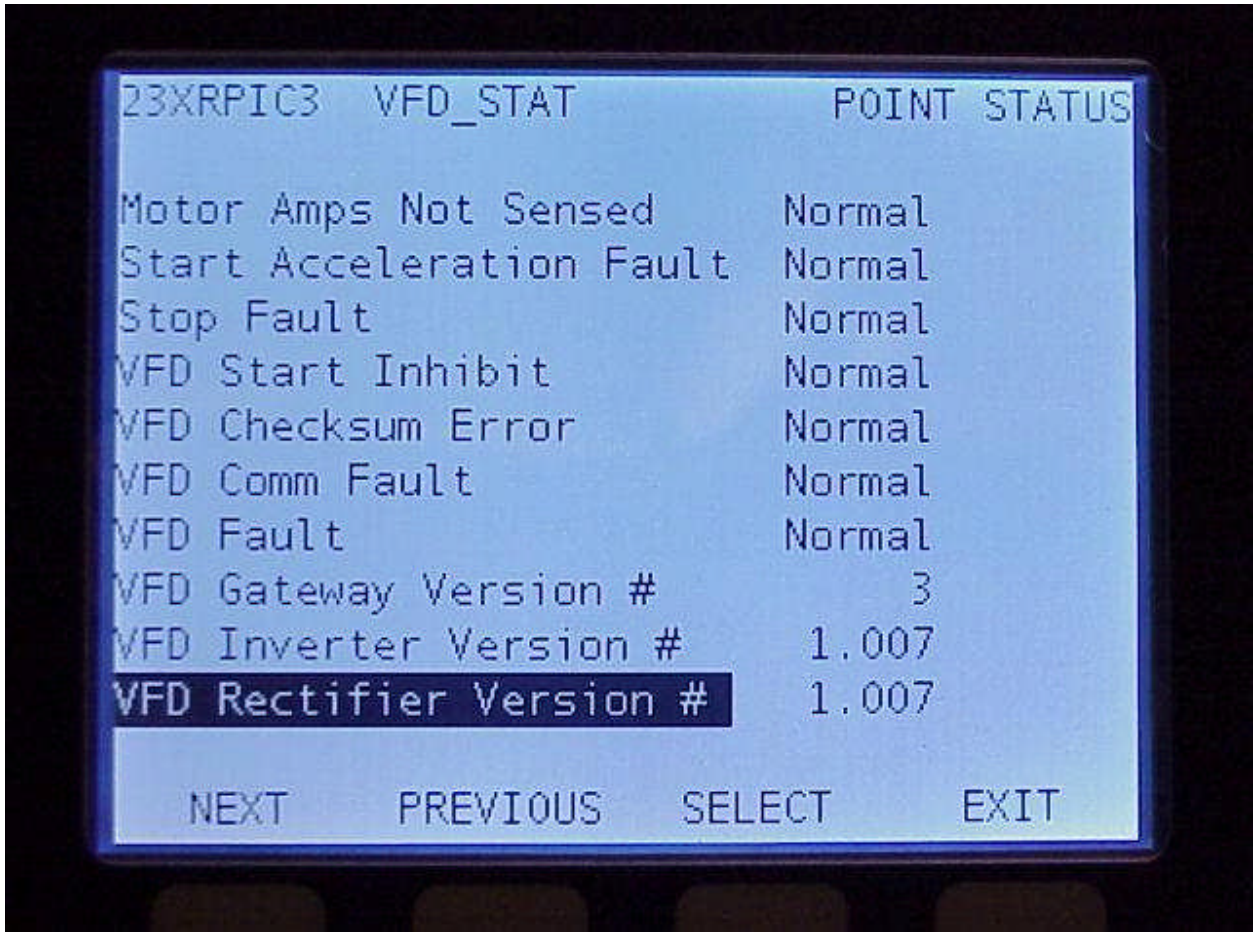
Head Pressure Output: Varies Control Center TB1–17 & TB1-18 output between 4 and 20 mA



ICVC Software Version Number

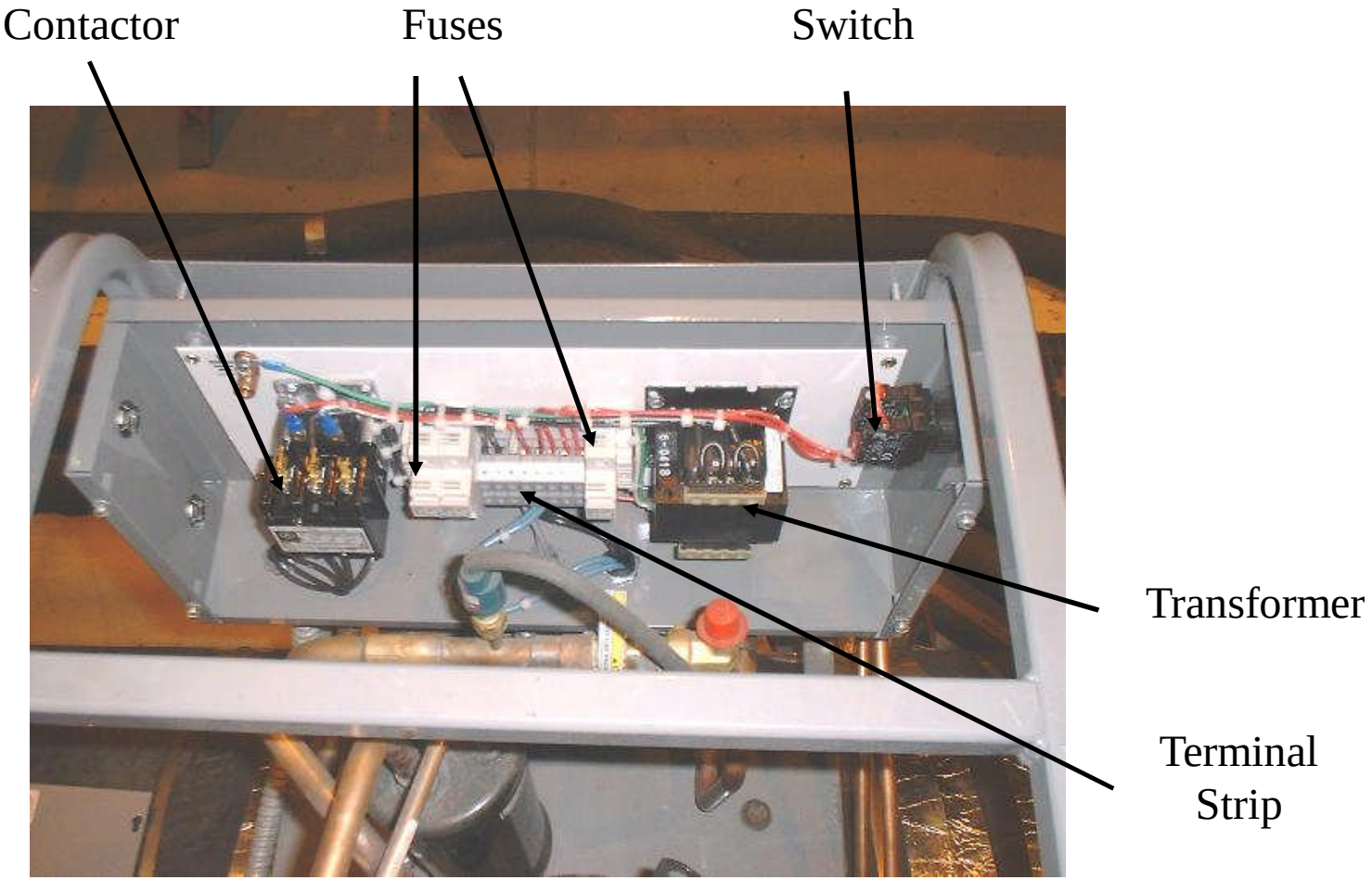
ICVC Software Version in ICVC Configuration Screen

VFD Software Version Number



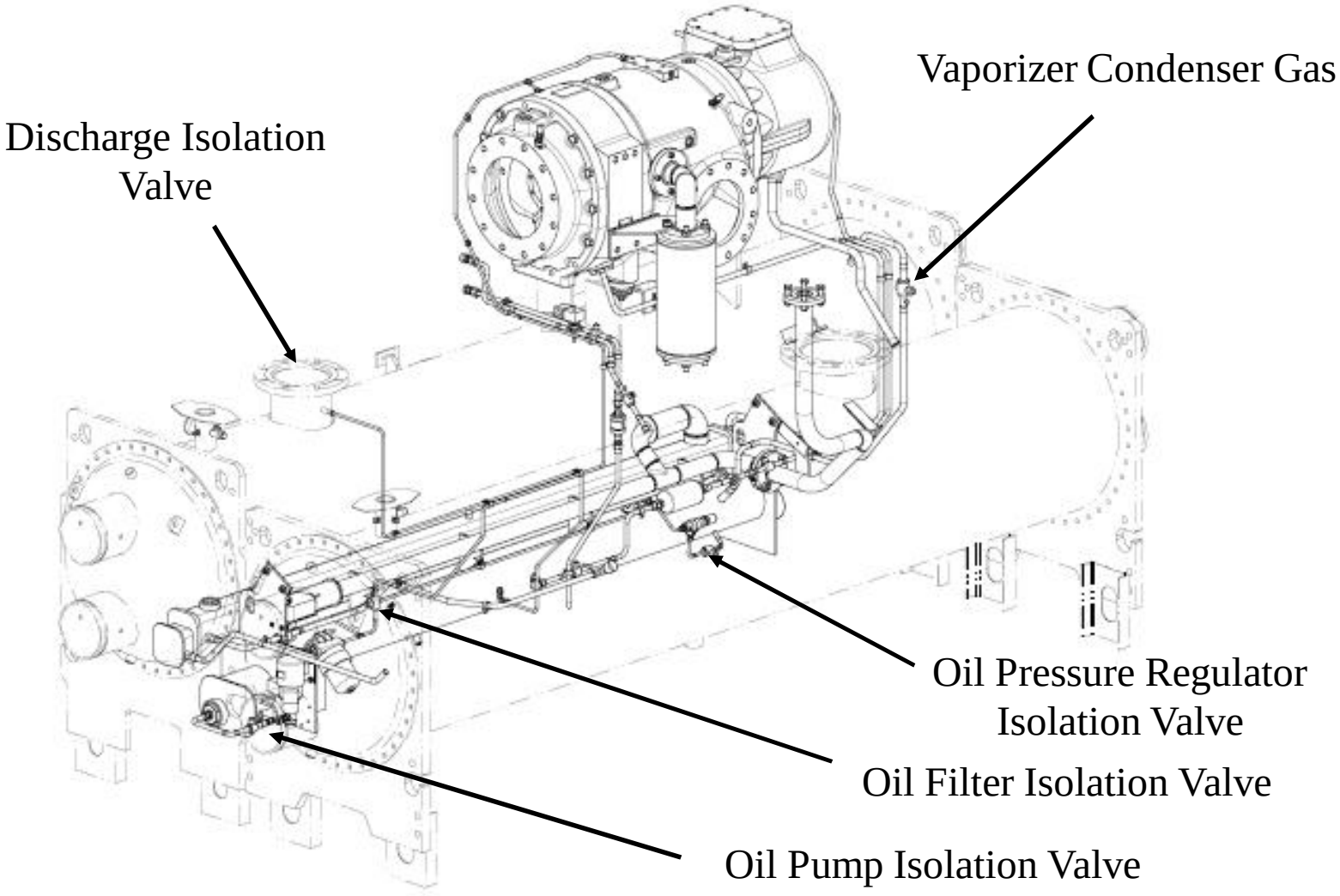
Gateway, Inverter, and Rectifier VFD Software Versions in VFD_STAT Screen

Check Optional Pumpout Controls

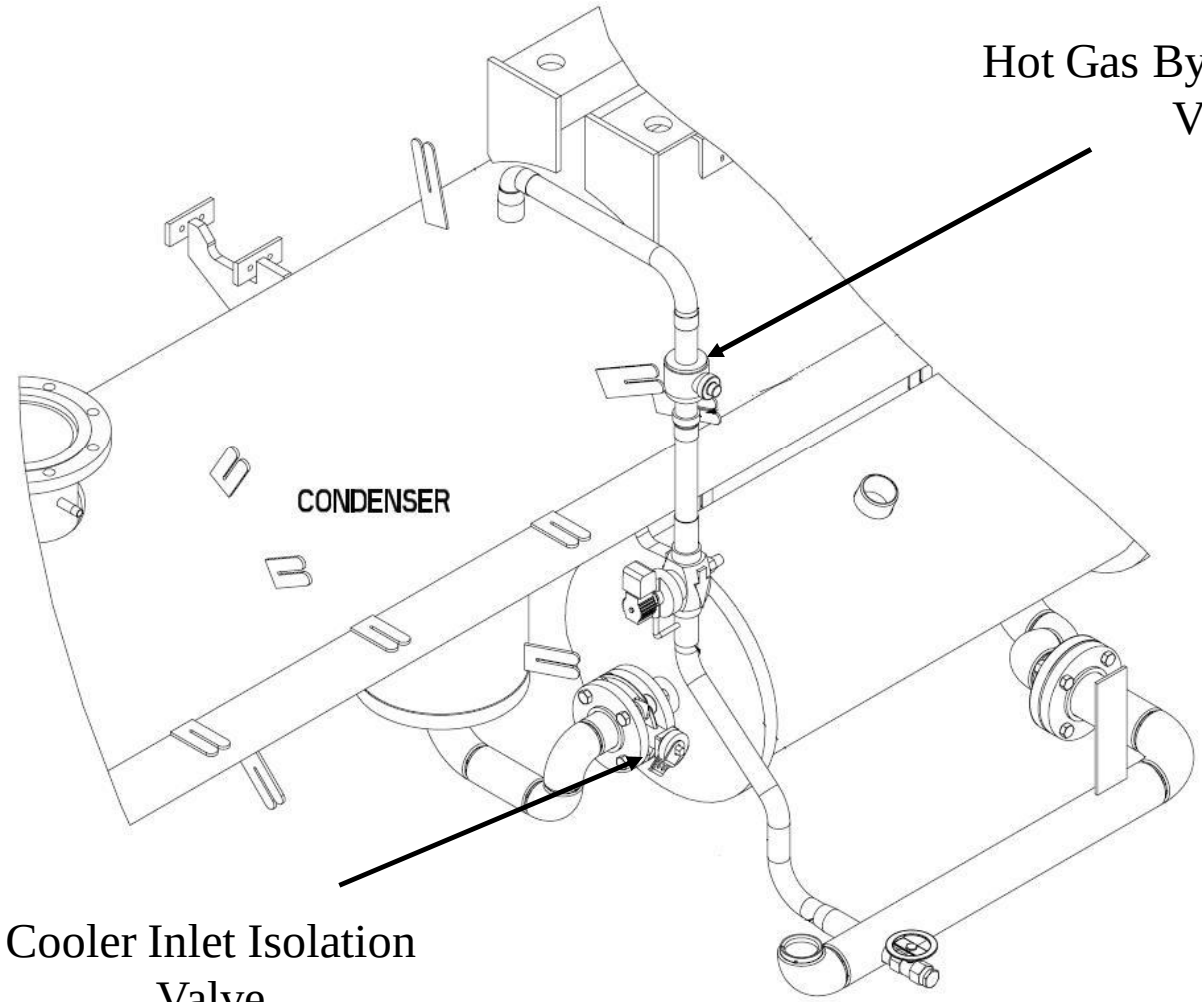


See 19XR-6SI Pumpout Installation, Operating & Maintenance Instruction Manual

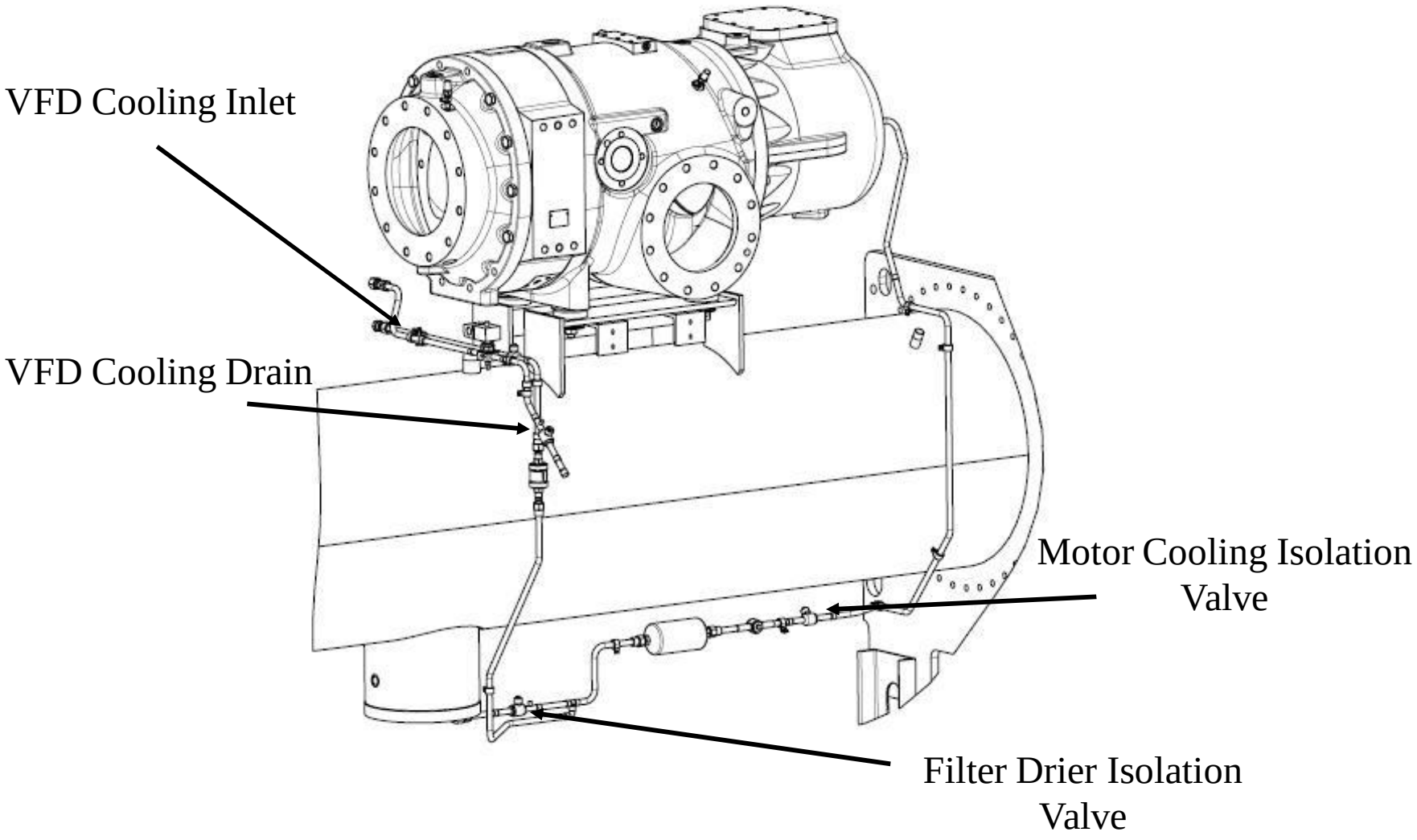
Check Isolation Valves



Check Isolation Valves



Check Isolation Valves



Charge Refrigerant into Chiller

Charge refrigerant through charging valve. Charging refrigerant through the service valve on the refrigerant liquid line may force debris into the float valve

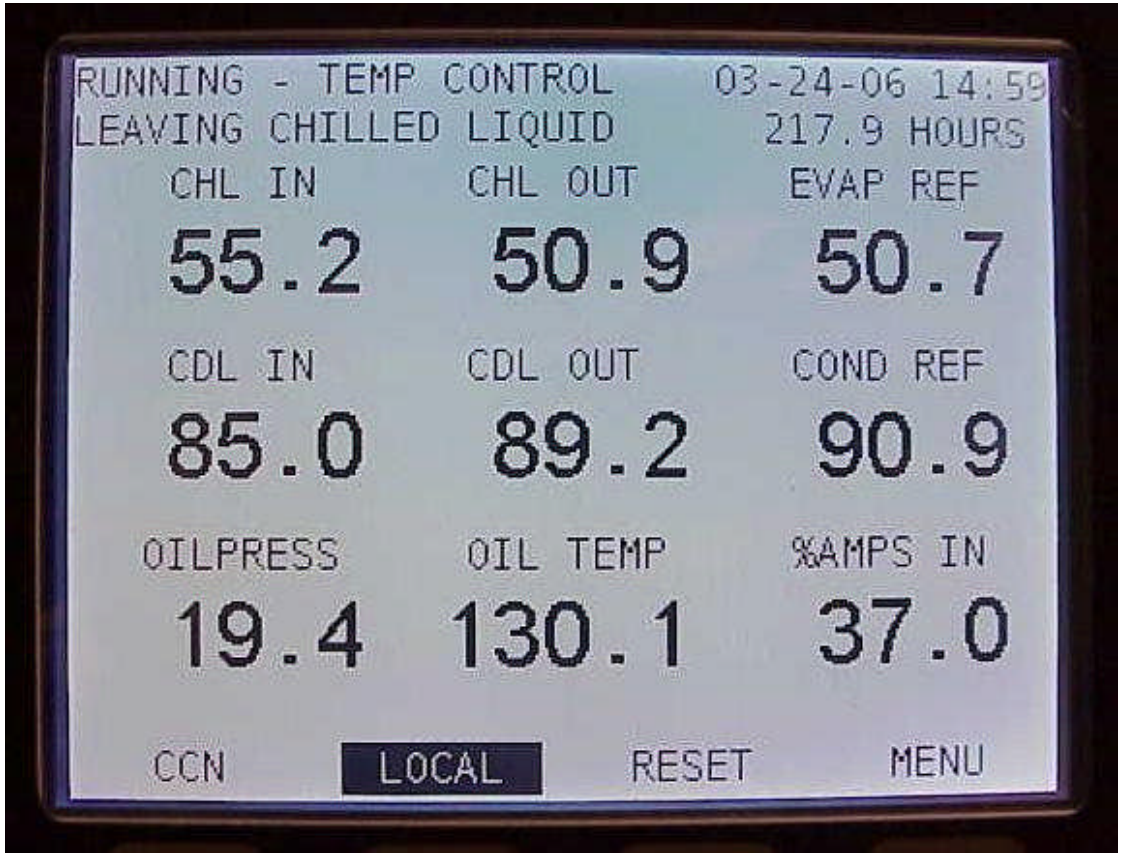
Close Main Circuit Breaker

Main Circuit Breaker

Optional Control Center Volt Meter and Ammeter

Initial Start-Up

Check Oil Pressure and Stop Chiller

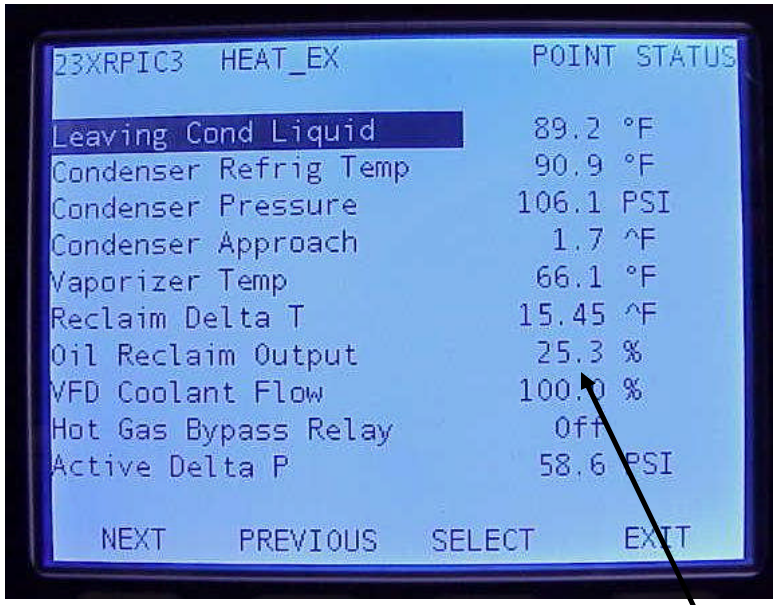


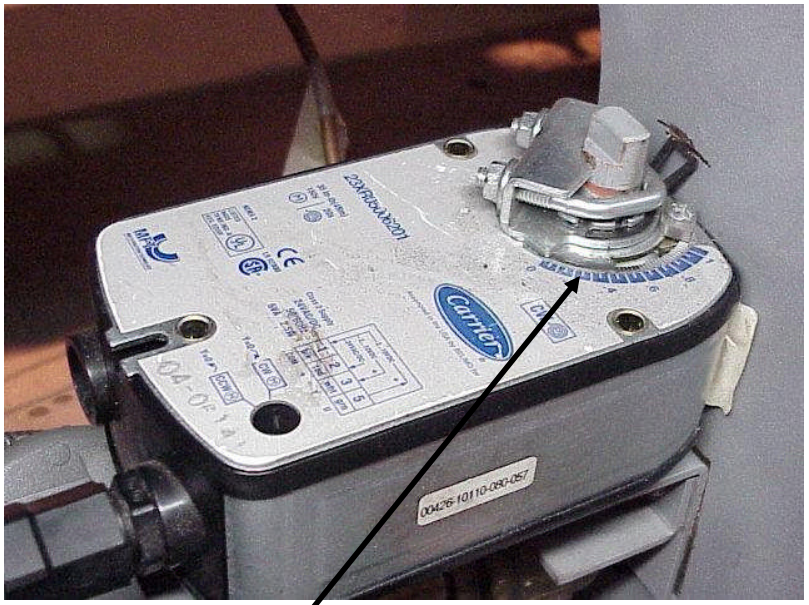
Compressor stops quickly when discharge check valve closes

Start Chiller and Monitor Operation

- Oil Reclaim System
- Motor Cooling
- VFD
- Chiller Alerts

Reclaim Delta T

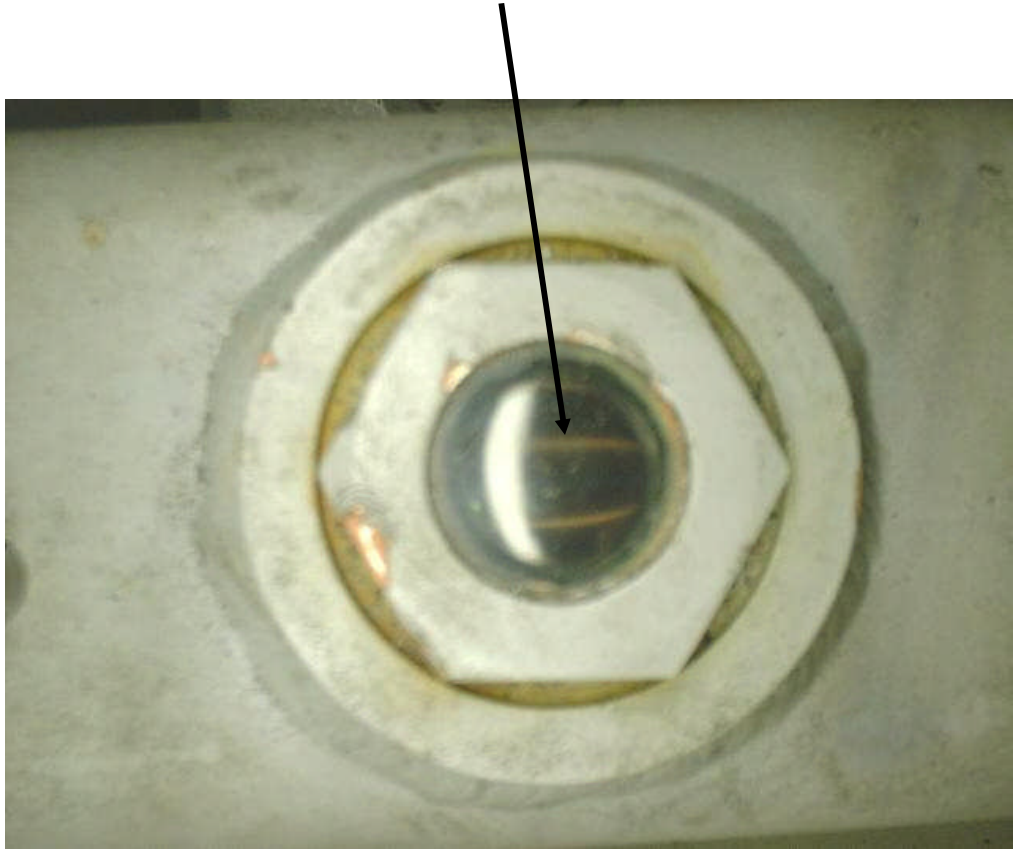




Oil Reclaim Actuator Position Indicator
will vary with OIL RECLAIM OUTPUT
in HEAT_EX screen

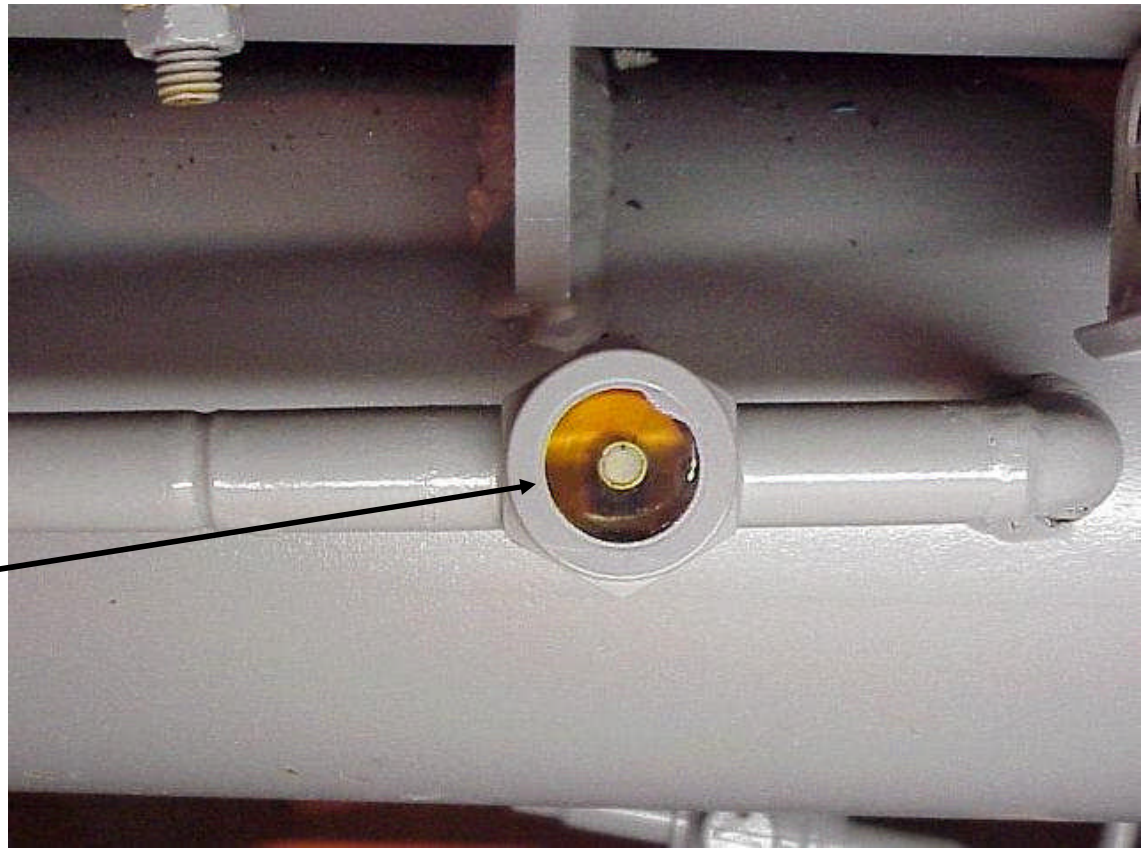
Vaporizer Sight Glass

Boiling refrigerant can be observed around vaporizer tubes when oil reclaim actuator is open



Vaporizer Drain Sight Glass

Ripples in Oil Level should be observed when oil drains into sump

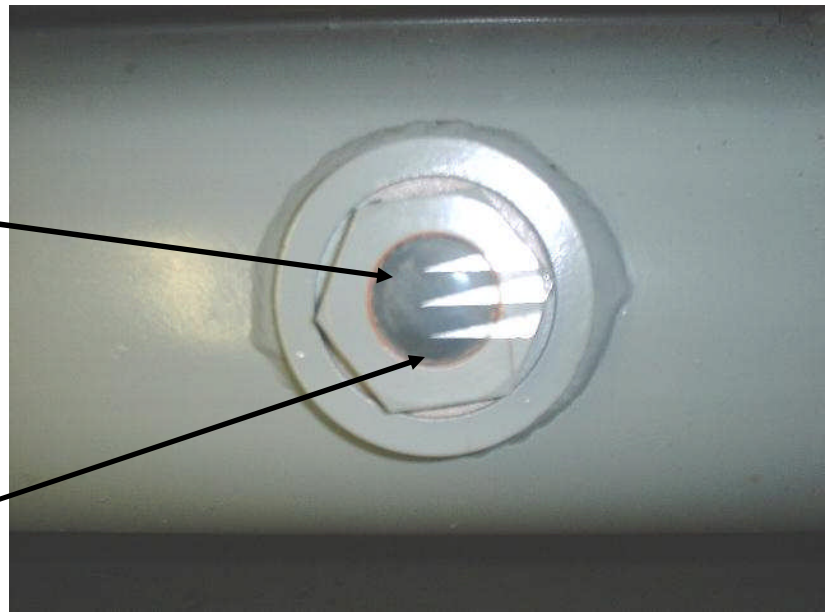


Oil Level

Oil level may cover the Oil Sump Sight Glass before start-up and fall below the bottom of the Oil Sump Sight Glass shortly after start-up.

Oil level stabilizes after the first 24 hours of operation

Check strainer housing sight glass if oil level falls below oil sump sight glass

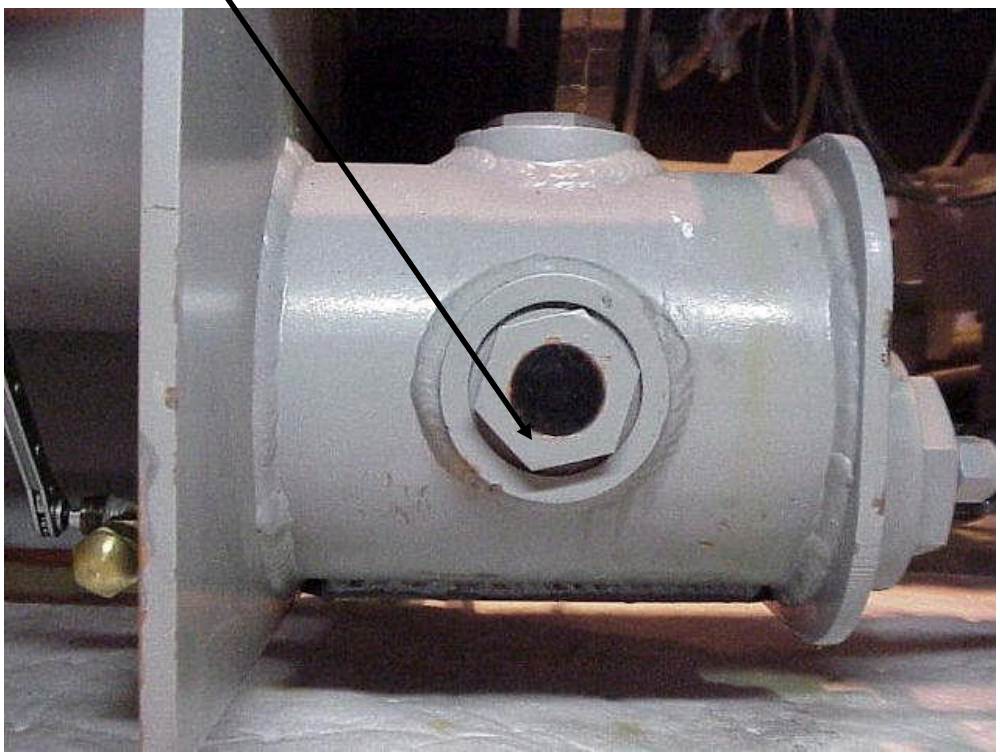


Oil Sump Sight Glass

Oil Level

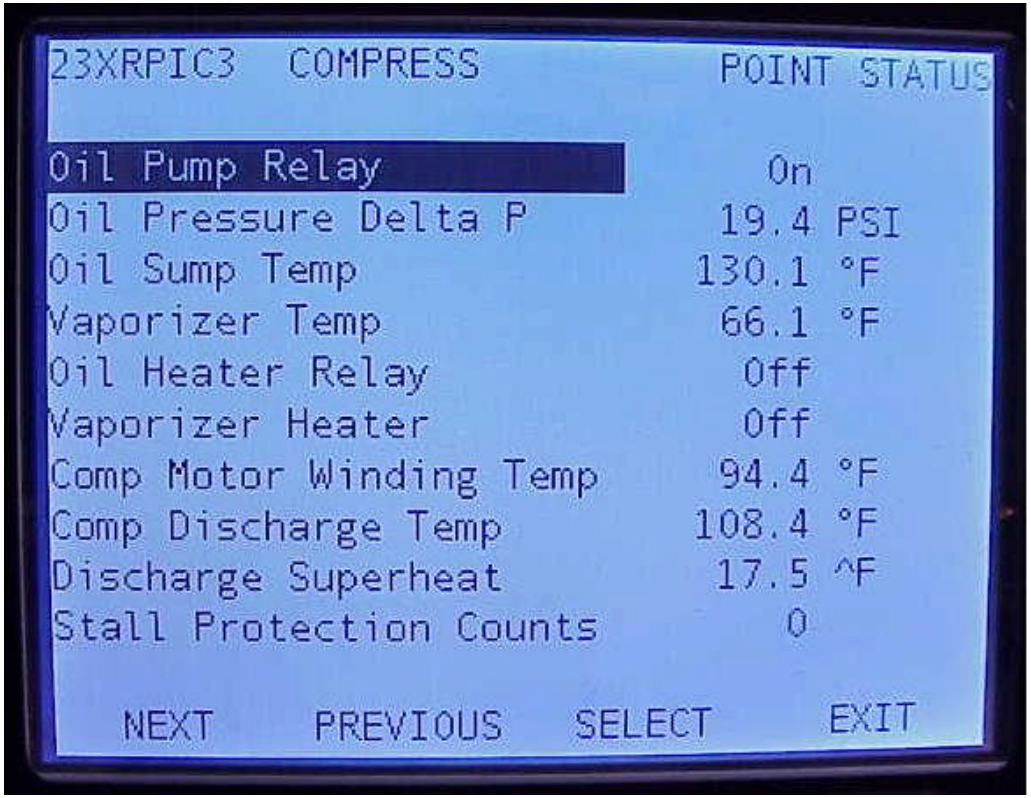
Low Oil Pressure Alarm is declared shortly after level falls below bottom of Oil Strainer Housing Sight Glass

Low Oil Pressure Alarm(228) Threshold (Running) = 15 PSI(103 kPa)



Strainer Housing Sight Glass

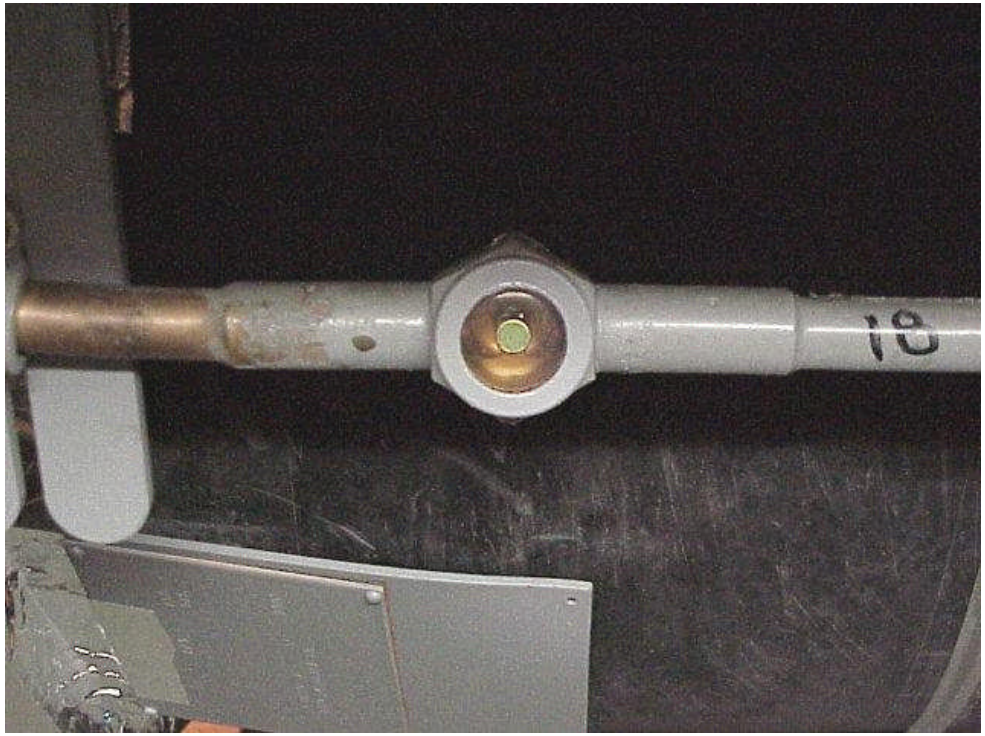
Discharge Superheat



Discharge Superheat may be as low as 1 deg F (0.6 C) at start-up.

Discharge superheat will climb as oil is recovered from the cooler.

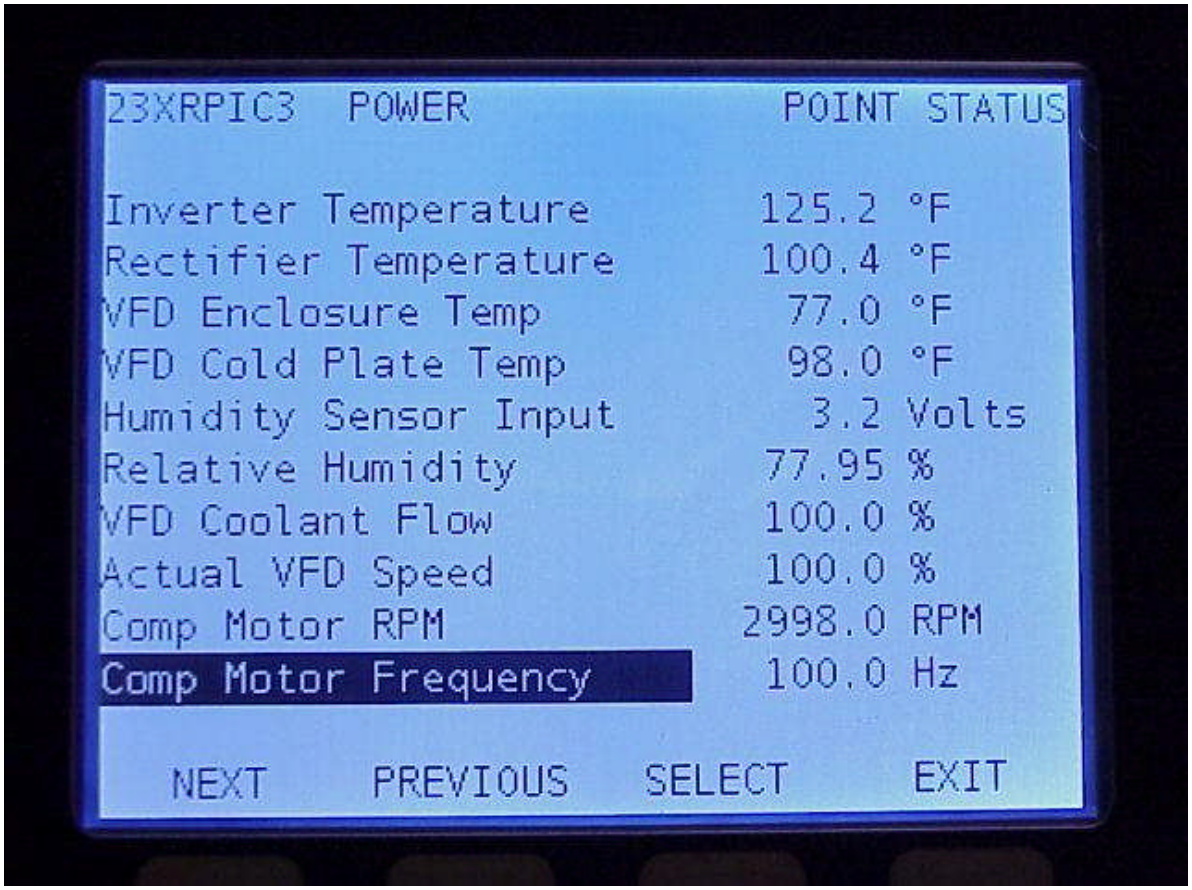
Motor Cooling Sight Glass



Steady Refrigerant Flow should be Observed

High Motor Temperature Alarm(233) Threshold = 244 deg F(118 C)

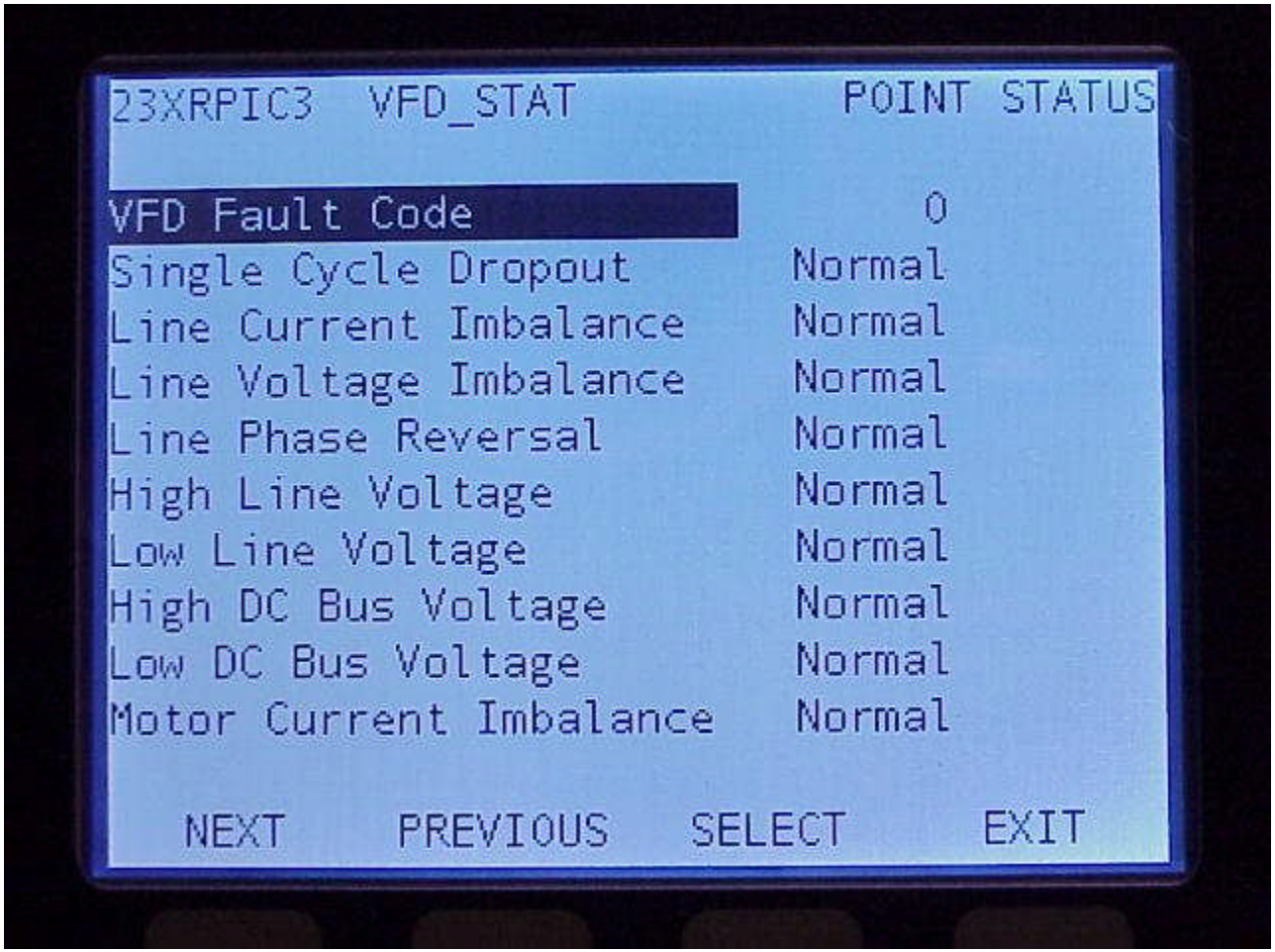
Inverter and Rectifier Temperatures



High Temperature Override Configurable 155 – 170 deg F (68 – 77 deg C)

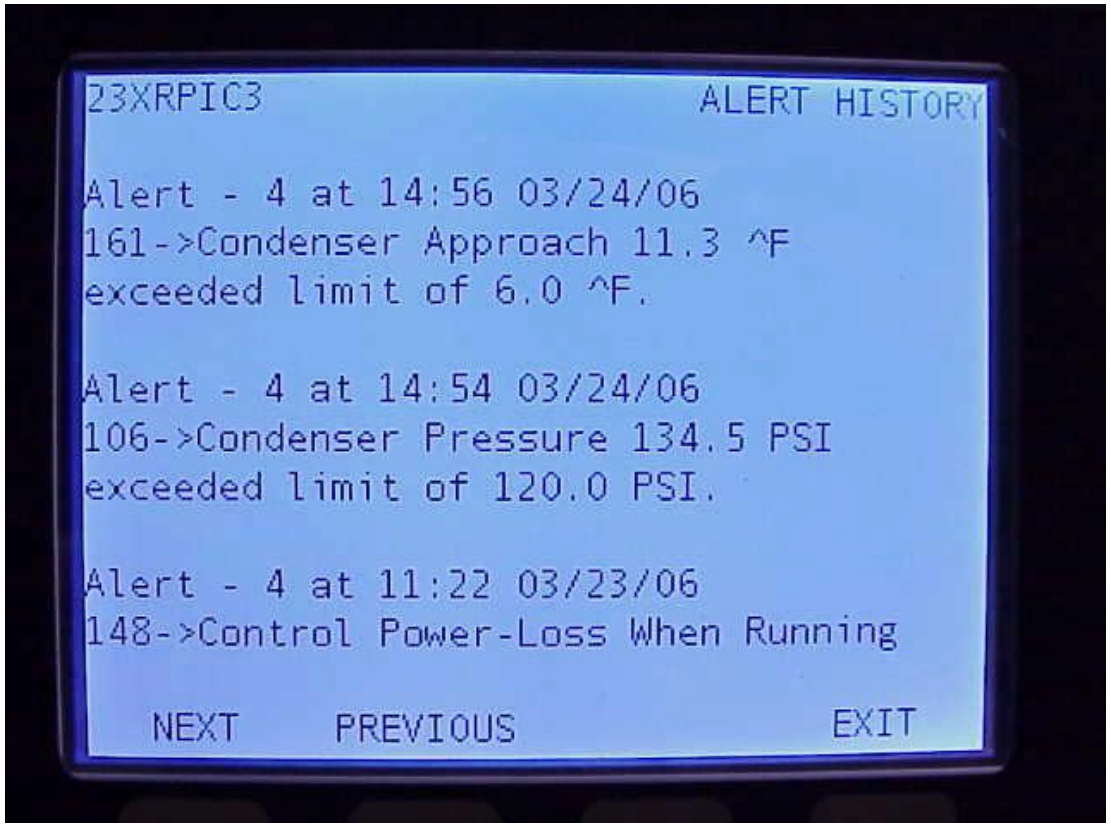
High Temperature Alarm Threshold(218, 219) Variable – Calculated by the VFD

Check VFD_STAT



All parameters should read “Normal”

Check for Alerts



Reoccurring Alerts may help diagnose problems before Alarms are declared

Instruct Customer Operator

- Cooler & Condenser
- Optional Pumpout and Storage Tank
- Motor/Compressor Assembly
- Compressor Lubrication System
- Control System

Instruct Customer Operator

- Auxiliary Equipment
- Chiller Cycles
- Safety Devices and Procedures
- Check Operator Knowledge
- Review Start-Up Operation & Maintenance Manual

Rockwell LiquiFlo II Start-up Registration

Only service technicians that have completed Rockwell LiquiFlo II Tier I Certification Training are to start the related drives.

•Once started, the LiquiFLo 2 VFD is to be registered on the Rockwell WARP Site

• Standard Warranty is One Year. If the LiquiFlo 2 is started by a Certified Technician, the VFD Parts Warranty is extended to Two Years from Start-up.

• In order to register VFD with Rockwell, Control Center and Power Module Model and Serial Numbers are needed from labels located inside the Control Center.

How to Register a Startup
www.automation.rockwell.com/warp

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Customer No

Return No

Login

Customer No and Previous Return No are required for Red menu options.

Warnings Regarding Potential Charges

Info Needed to Create a Warranty Claim

Track Replacement Shipments*

Obtain Return Material Shipping Label*

View Return Information and Inspection Results*

View Product Quality Report*

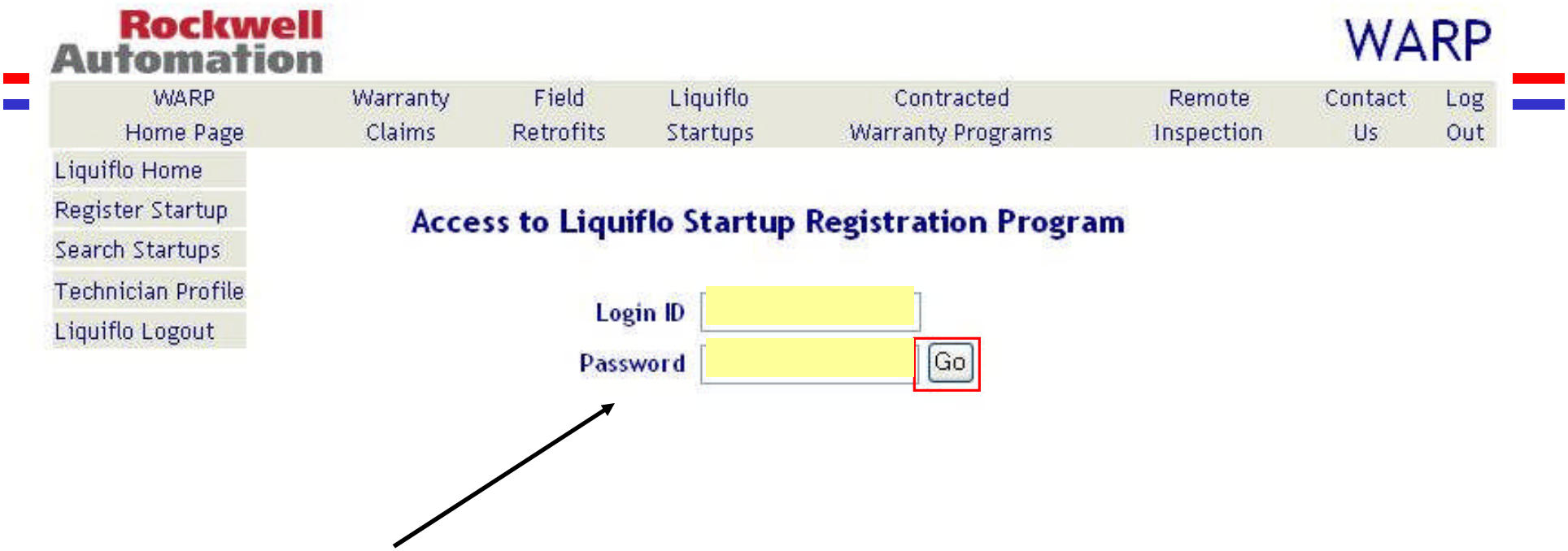
You have accessed the Warranty processing website for Rockwell Automation's Reliance and VTAC brand electronic Drives.

This site provides the functionality to:

- Create your Warranty Claim and receive a no-charge warranty replacement via next day air after the claim is created.
- Track the replacement's shipment
- View the failure analysis of the drive you returned.
- Order field retrofit kits and register their installation.
- Register drive start-ups.
- Access special Contracted Warranty Programs.
- Download a product quality report that summarizes root cause analysis results for warranty claims you have created.

If you need help in initiating a claim or have special circumstances relating to your return, please call the Returns Department at 888-374-8370 and choose pick 5 for assistance.

Please direct all problems to WebMaster.



Enter Login ID and Password of LiquiFlo 2 Certified Technician

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- Liquiflo Home
- Register Startup
- Search Startups
- Technician Profile
- Liquiflo Logout

You have accessed the Rockwell Automation Liquiflo Startup Registration Program. From the menu bar on the left, choose an option that will allow you to :

* **Register the Startups performed in the field.**
* **Search for previous Startup Registrations.**
* **View Service History (Click on Search Startups).**
* **View Technician Profile.**

If you need help, contact the Returns Department at 888-374-8370 and choose pick 5 for assistance.

Please direct all problems to WebMaster.

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Technician Information

- User password must be changed before proceeding.

Login ID BMURPHY949 **Account Type** Technician

Name Brian Murphy

Primary Phone 440-646-7344

Secondary Phone 440-646-7396

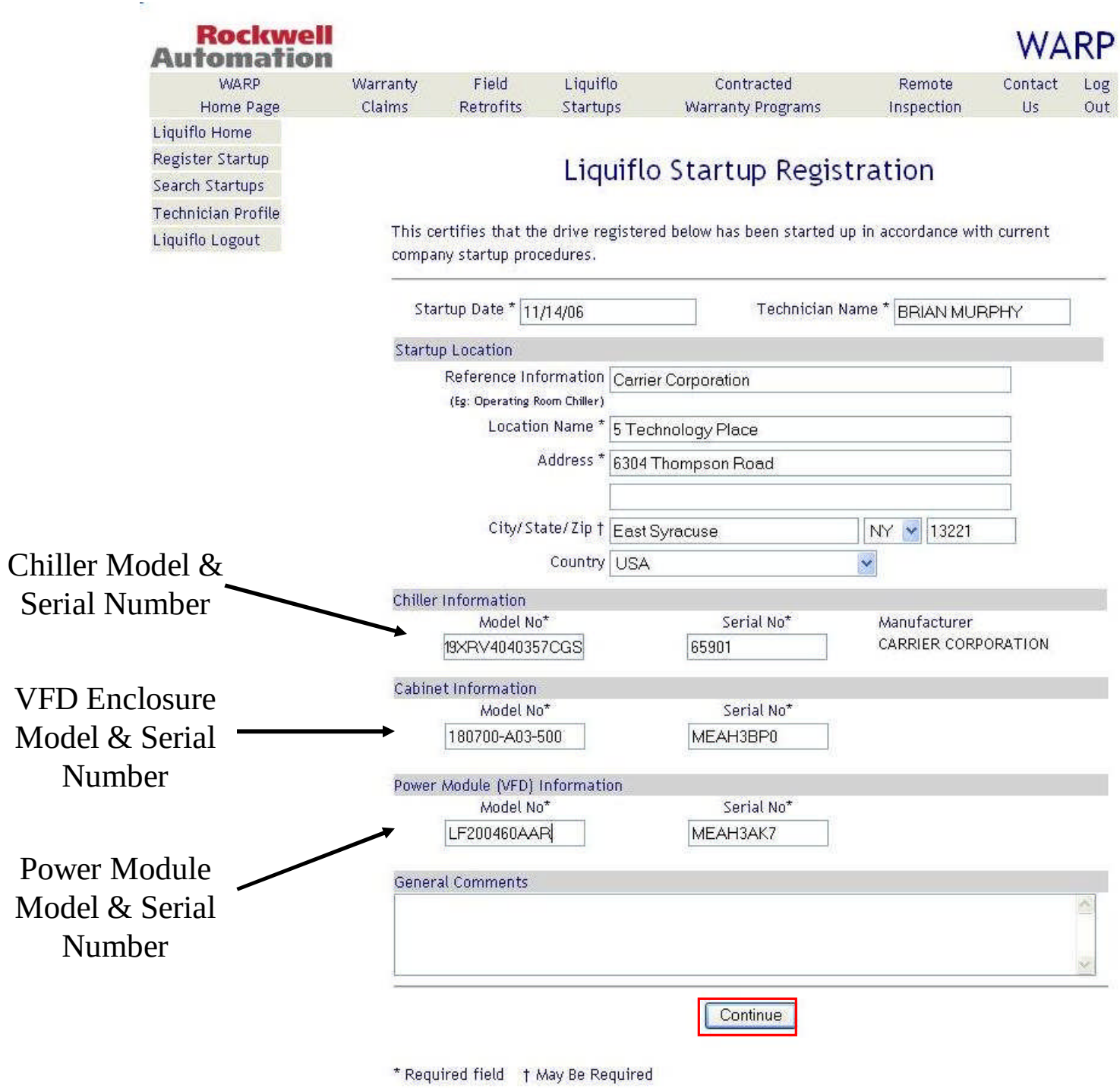
New Password

Confirm Password

Update Account

Certification Information

Product Line	Rev	Status	Completed	Expires
COLUMBUS ELEC REMFG	A	1	5/1/06	5/1/10
LIQUIFLO	A	1	5/1/06	5/1/10
POWER SYSTEMS PARTS	A	1	5/1/06	5/1/10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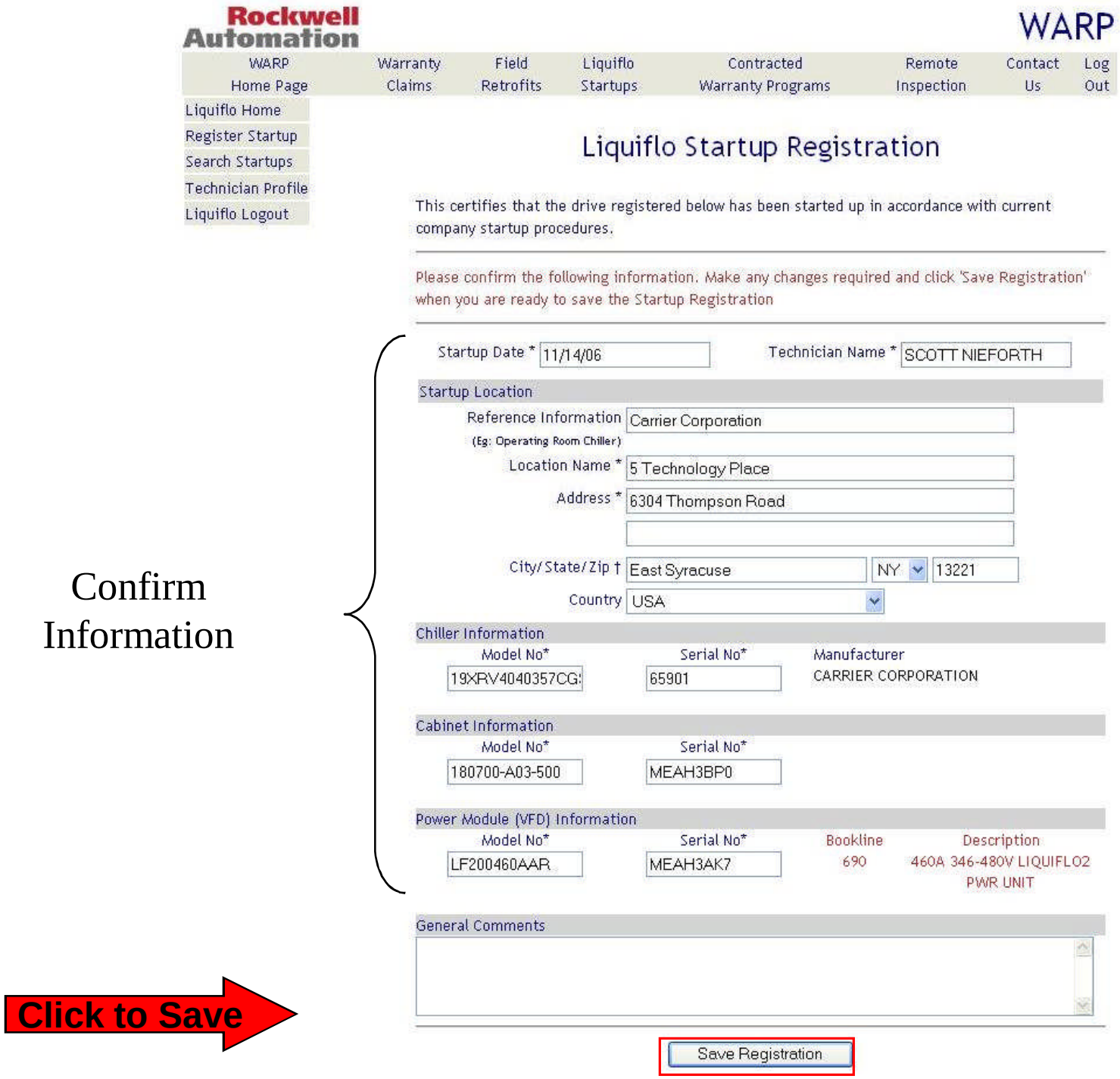
Liquiflo Logout
Liquiflo Startup Registration
This certifies that the drive registered below has been started up in accordance with current company startup procedures.
Startup Date * 11/14/06
Technician Name * BRIAN MURPHY
Startup Location
Reference Information (Eg: Operating Room Chiller) Carrier Corporation
Location Name * 5 Technology Place
Address * 6304 Thompson Road
City/State/Zip † East Syracuse NY 13221
Country USA
Chiller Information
Model No* 19XRV4040357CGS
Serial No* 65901
Manufacturer CARRIER CORPORATION
Cabinet Information
Model No* 180700-A03-500
Serial No* MEAH3BP0
Power Module (VFD) Information
Model No* LF200460AAR
Serial No* MEAH3AK7
General Comments
Continue
* Required field † May Be Required
Chiller Model & Serial Number
VFD Enclosure Model & Serial Number
Power Module Model & Serial Number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Liquiflo Home
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Search Startups
Technician Profile
Liquiflo Logout
Liquiflo Startup Registration
This certifies that the drive registered below has been started up in accordance with current company startup procedures.
Please confirm the following information. Make any changes required and click 'Save Registration' when you are ready to save the Startup Registration
Startup Date * 11/14/06
Technician Name * SCOTT NIEFORTH
Startup Location
Reference Information (Eg: Operating Room Chiller) Carrier Corporation
Location Name * 5 Technology Place
Address * 6304 Thompson Road
City/State/Zip † East Syracuse NY 13221
Country USA
Chiller Information
Model No* 19XRV4040357CG
Serial No* 65901
Manufacturer CARRIER CORPORATION
Cabinet Information
Model No* 180700-A03-500
Serial No* MEAH3BP0
Power Module (VFD) Information
Model No* LF200460AAR
Serial No* MEAH3AK7
Bookline 690
Description 460A 346-480V LIQUIFLO2 PWR UNIT
General Comments
Save Registration
Confirm Information
Click to Save

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Registration Acknowledged →

Liquiflo Startup Registration

This certifies that the drive registered below has been started up in accordance with current company startup procedures.

The Liquiflo Startup Registration has been Saved.

Startup Date * 11/14/06 Technician Name * SCOTT NIEFORTH

Startup Location

Reference Information Carrier Corporation
(Eg: Operating Room Chiller)
Location Name * 5 Technology Place
Address * 6304 Thompson Road
City/State/Zip † East Syracuse NY 13221
Country USA

Chiller Information

Model No*	Serial No*	Manufacturer
19XRV4040357CGS67	65901	CARRIER CORPORATION

Cabinet Information

Model No*	Serial No*
180700-A03-500	MEAH3BP0

Power Module (VFD) Information

Model No*	Serial No*	Bookline	Description
LF200460AAR	MEAH3AK7	690	460A 346-480V LIQUIFLO2 PWR UNIT

General Comments

How to Search for Startups

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- Technician Profile
- Liquiflo Logout

You have accessed the Rockwell Automation Liquiflo Startup Registration Program. From the menu bar on the left, choose an option that will allow you to :

* **Register the Startups performed in the field.**
* **Search for previous Startup Registrations.**
* **View Service History (Click on Search Startups).**
* **View Technician Profile.**

If you need help, contact the Returns Department at 888-374-8370 and choose pick 5 for assistance.

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Liquiflo Home
Register Startup
Search Startups
Technician Profile
Liquiflo Logout
Liquiflo Startup and Service History Search
Chiller M/N :
Chiller S/N :
65901
Drive M/N :
Drive S/N :
Startup Location Name :
Location City :
State :
Location Country :
USA
Startup Date From :
Date To :
Search
Enter Chiller Serial Number

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- Liquiflo Home
- Register Startup
- Search Startups
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- Liquiflo Logout

Liquiflo Startup and Service History Search

Chiller M/N :		Chiller S/N :	65901
Drive M/N :		Drive S/N :	
Startup Location Name :			
Location City :		State :	
Location Country :	USA		
Startup Date From :		Date To :	

Search

* To View the Registration Details and Service History, Click the Chiller S/N Link.

Date	Chiller S/N	Chiller M/N	Drive M/N	Job Location	City	State	Country
6	65901	19XRV4040357CGS67	LF200460AAR	5 TECHNOLOGY PLACE	EAST SYRACUSE	NY	USA

Click to View

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- Liquiflo Home
- Register Startup
- Search Startups
- Technician Profile
- Liquiflo Logout

Liquiflo Startup Registration for: 65901

This certifies that the drive registered below has been started up in accordance with current company startup procedures.

Startup Date * 11/14/06 Technician Name * BRIAN MURPHY

Parts-Only Warranty Two Years from Startup Date

Startup Location

Reference Information CARRIER CORPORATION
(Eg: Operating Room Chiller)
Location Name * 5 TECHNOLOGY PLACE
Address * 6304 THOMPSON ROAD

City/State/Zip † EAST SYRACUSE NY 13221
Country USA

Chiller Information

Model No*	Serial No*	Manufacturer
19XRV4040357CGS67	65901	CARRIER CORPORATION

Cabinet Information

Model No*	Serial No*
180700-A03-500	MEAH3BP0

Power Module (VFD) Information

Model No*	Serial No*	Bookline	Description
LF200460AAR	MEAH3AK7	690	460A 346-480V LIQUIFLO2 PWR UNIT

General Comments