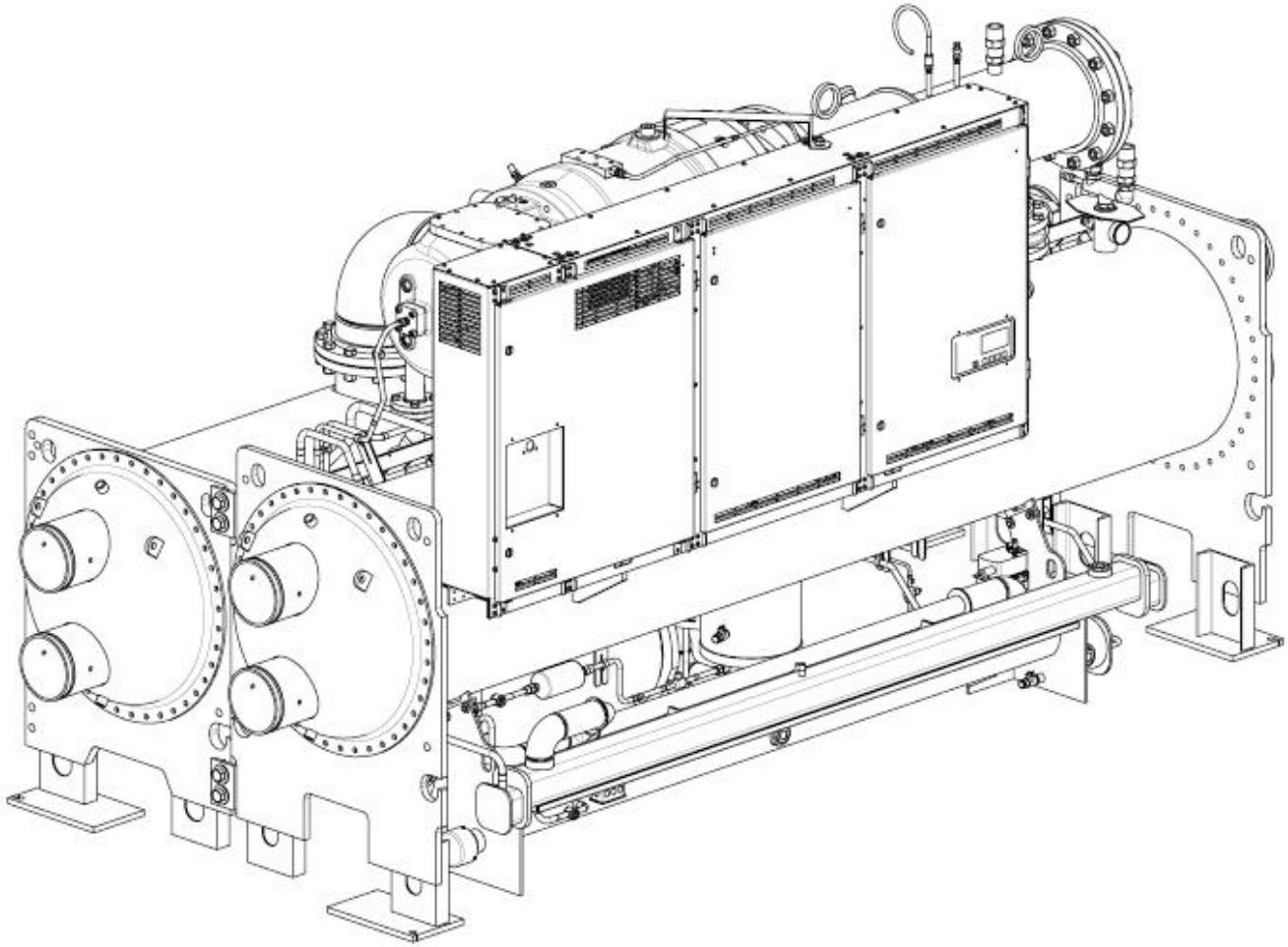
23XR FAMILIARIZATION

Foxfire Introductory Session

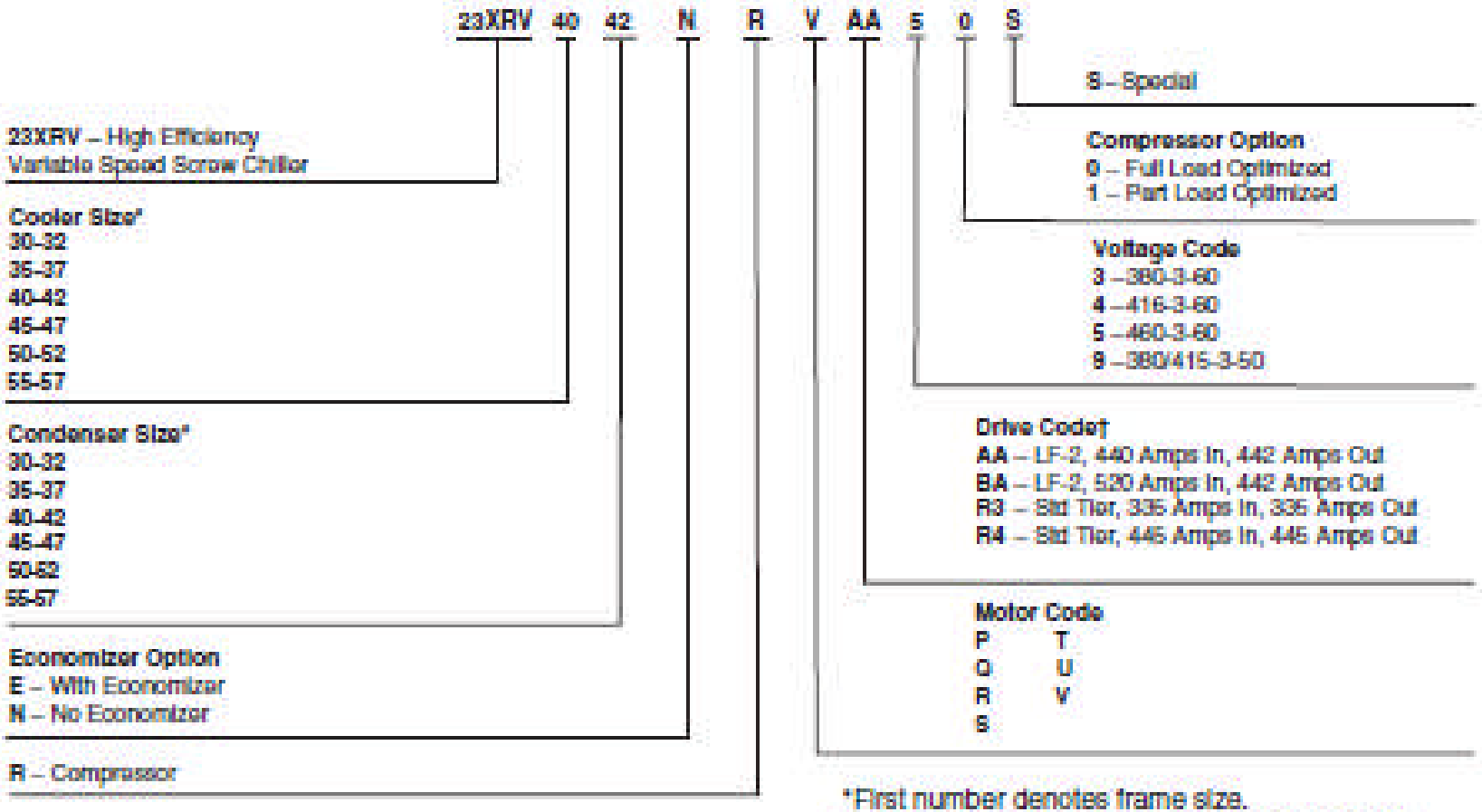


23XR FAMILIARIZATION

- Frame 3, 4, and 5 Heat Exchangers
- Optional Economizer
- TRI Rotor Compressor
- 7 Motor Sizes
- 4 Drive Ratings
- Insulation
- Unit Mounted Pump out
- Hot Bas By-Pass

23XR FAMILIARIZATION

Model number nomenclature



*First number denotes frame size.
†Maximum limits only. Additional application limits apply that may reduce these ampacities.

23XR FAMILIARIZATION

23XRV Model Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Model	2	3	X	R	V	4	0	4	2	N	R	V	A	A	5	1	S

23XRV Chiller Model Number Example

Digits 1-5
23XRV = High Efficiency Variable Speed Screw Chiller

Digit 6
Cooler Frame Size
3 = Frame 3
4 = Frame 4
5 = Frame 5

Digit 7
Cooler Size & Tube Quantity
0 = Short Heat Exchanger Length & Minimum # of Tubes
1 = Short Heat Exchanger Length & Median # of Tubes
2 = Short Heat Exchanger Length & Maximum # of Tubes
5 = Long Heat Exchanger Length & Minimum # of Tubes
6 = Long Heat Exchanger Length & Median # of Tubes
7 = Long Heat Exchanger Length & Maximum # of Tubes

23XR FAMILIARIZATION

23XRV Model Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Model	2	3	X	R	V	4	0	4	2	N	R	V	A	A	5	1	S

Digit 8
Condenser Frame Size
3 = Frame 3
4 = Frame 4
5 = Frame 5

Digit 9
Condenser Size & Tube Quantity
0 = Short Heat Exchanger Length & Minimum # of Tubes
1 = Short Heat Exchanger Length & Median # of Tubes
2 = Short Heat Exchanger Length & Maximum # of Tubes
5 = Long Heat Exchanger Length & Minimum # of Tubes
6 = Long Heat Exchanger Length & Median # of Tubes
7 = Long Heat Exchanger Length & Maximum # of Tubes

Digit 10
Economizer Option
N = No Economizer
E = Economizer Included

Digit 11
R = Compressor

Digit 12
Motor Code
P = 232 HP
Q = 249 HP
R = 267 HP
S = 294 HP
T = 326 HP
U = 373 HP
V = 391 HP *(Standard)*

Digits 13-14
Drive Code
AA = LF2, 440 Amps In / 442 Amps Out
BA = LF2, 520 Amps In / 442 Amps Out
R3 = Std Tier, 335 Amps In / 335 Amps Out
R4 = Std Tier, 445 Amps in / 445 Amps Out

Digit 15
Voltage Code
3 = 380-3-60
4 = 416-3-60
5 = 460-3-60
9 = 380/415-3-50

Digit 16
Compressor Optimization Option
0 = Full Load Optimized
1 = Part Load Optimized

Digit 17
Special Code
- = Standard
S = Special

23XR FAMILIARIZATION

S e r i a l 2 7 1 0 Q 5 8 4 2 3

23XRV Serial Model Number Example

Digits 1-2

Week of Year

1111 = Week of the Year that the Chiller was manufactured.

Digits 3-4

Year of Manufacture

1111 = Year that the Chiller was manufactured.

Digit 5

Manufacturing Location

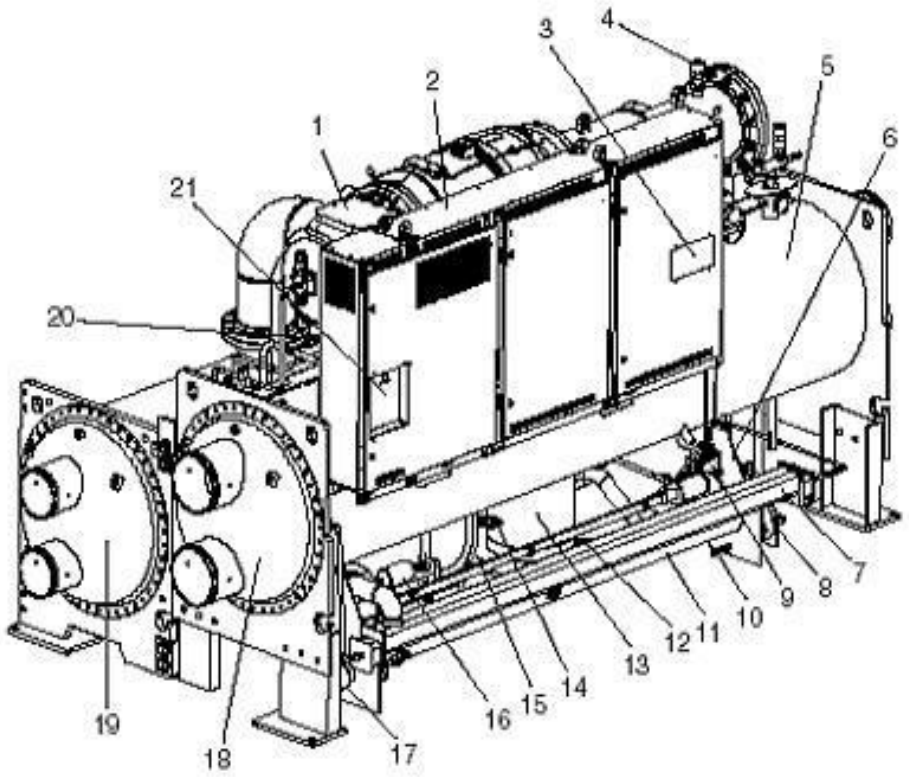
Q = Charlotte, NC

Digits 6-10

Unique Number

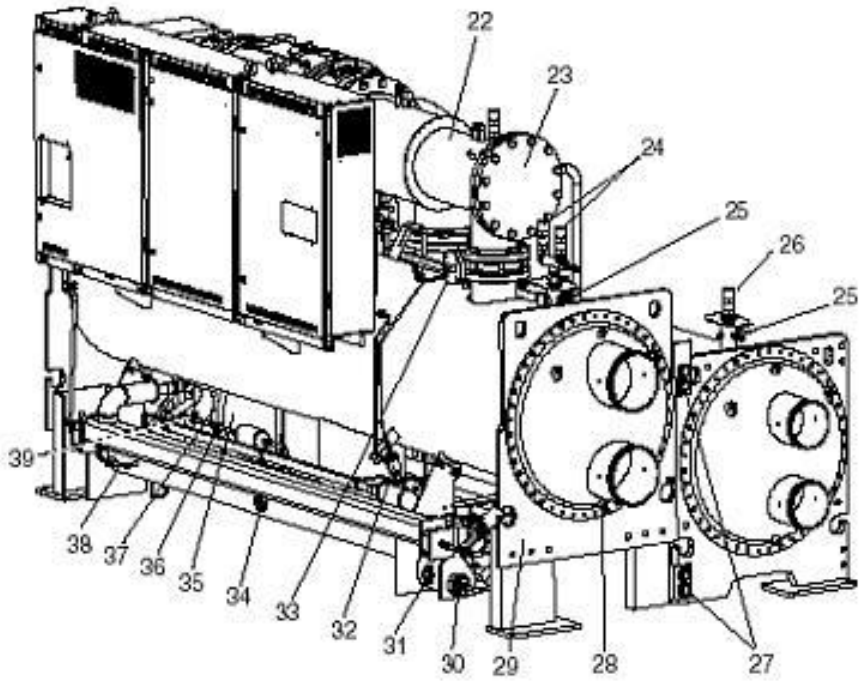
1111111111 = Equates to the Chiller's Unique Serial Number

23XR Components



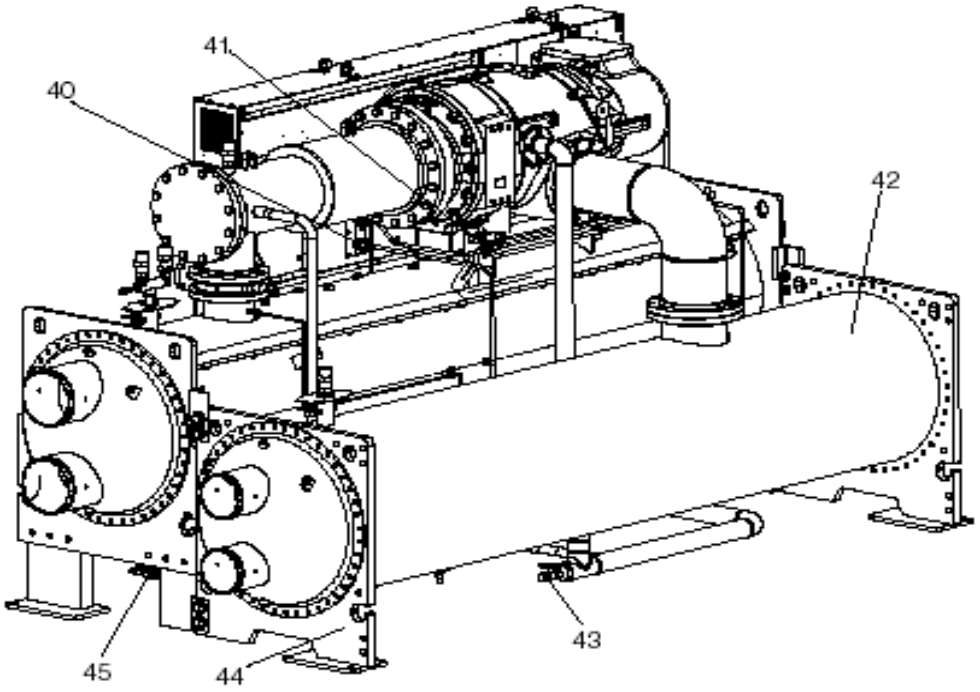
1 — Compressor Nameplate
2 — Variable Frequency Drive
3 — International Chiller Visual Controller (ICVC)
4 — Discharge Pipe/Muffler Relief Valve
5 — Condenser
6 — Vaporizer Feed Sight Glass
7 — Vaporizer
8 — Oil Filter Assembly (Hidden)
9 — Oil Reclaim Shutoff Actuator
10 — Oil Charging/Drain Valve
11 — Oil Sump
12 — Cooler Refrigerant Isolation Valve
13 — Condenser Float Chamber
14 — Condenser Refrigerant Pumpout Valve
15 — ASME Nameplate, Economizer (Hidden)
16 — Filter Drier
17 — Oil Heater
18 — Condenser Supply/Return End Waterbox
19 — Cooler Supply/Return End Waterbox
20 — VFD Isolation Ball Valve
21 — VFD Disconnect

23XR Components



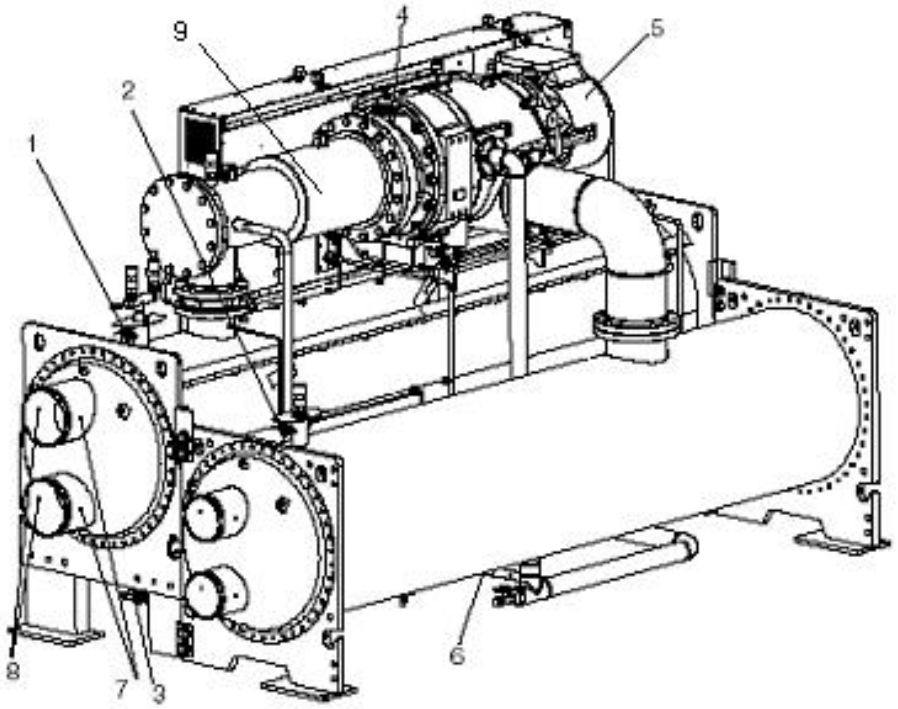
22 — Discharge Pipe/Muffler
23 — Compressor Discharge Check Valve Access Cover
24 — Condenser Relief Valves
25 — Refrigerant Charging Valve
26 — Cooler Relief Valve
27 — Take-Apart Connector
28 — Typical Waterbox Drain Port
29 — ASME Nameplate, Condenser
30 — Oil Pump Inlet Strainer
31 — Strainer Housing Sight Glass
32 — Oil Separator Orifice Strainer
33 — Condenser Isolation Valve (Option or Accessory)
34 — Oil Sump Sight Glass
35 — Economizer
36 — Motor Cooling Sight Glass
37 —
38 — Vaporizer Drain Sight Glass
39 — Motor Cooling Feed Isolation Valve

23XR Components



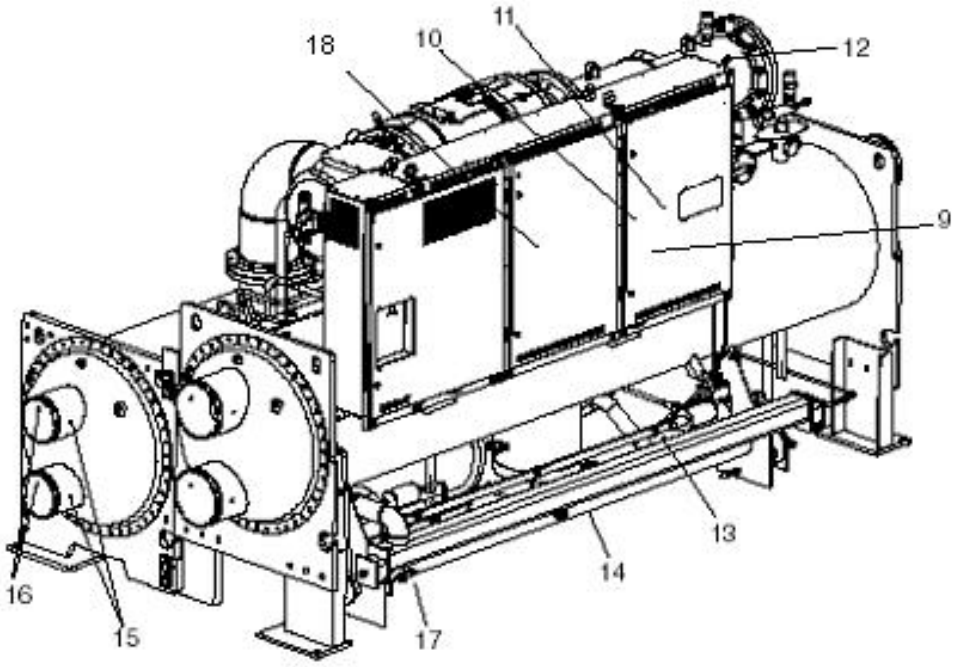
40 — VFD Cold Plate Refrigeration Connection
41 — VFD Cold Plate Solenoid
42 — Cooler
43 — Cooler Refrigerant Pumpout Valve
44 — ASME Nameplate, Cooler
45 — Oil Pump Isolation Valve

23XR Sensors



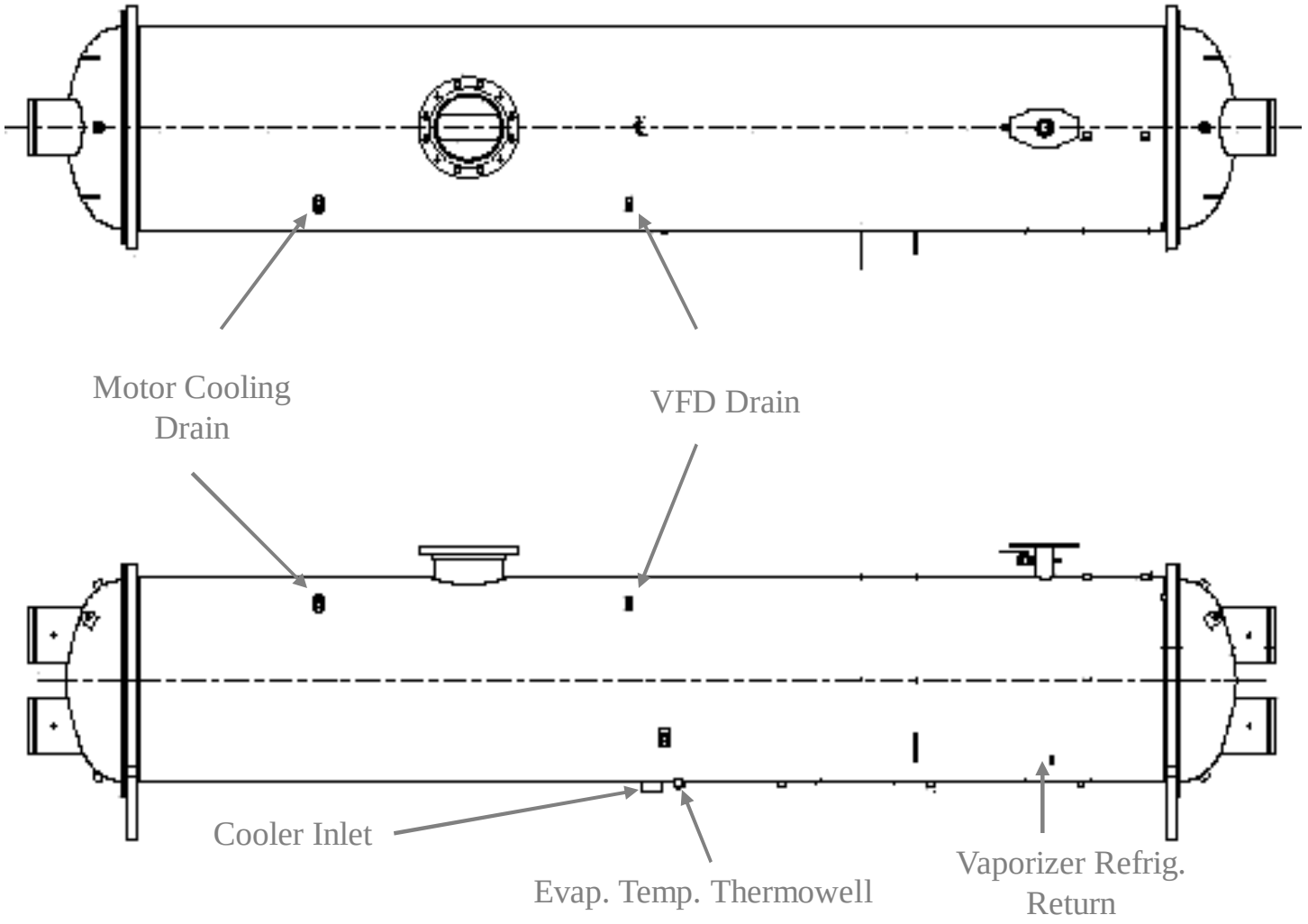
1 — Condenser Pressure
2 — Evaporator Pressure
3 — Oil Pressure Leaving Filter
4 — Compressor Discharge Pressure
5 — Compressor Motor Winding Temperature
6 — Evaporator Saturation Temperature
7 — Condenser Liquid Temperature
8 — Condenser Liquid Flow (Optional)
9 — Compressor Discharge High Pressure Switch

23XR Sensors

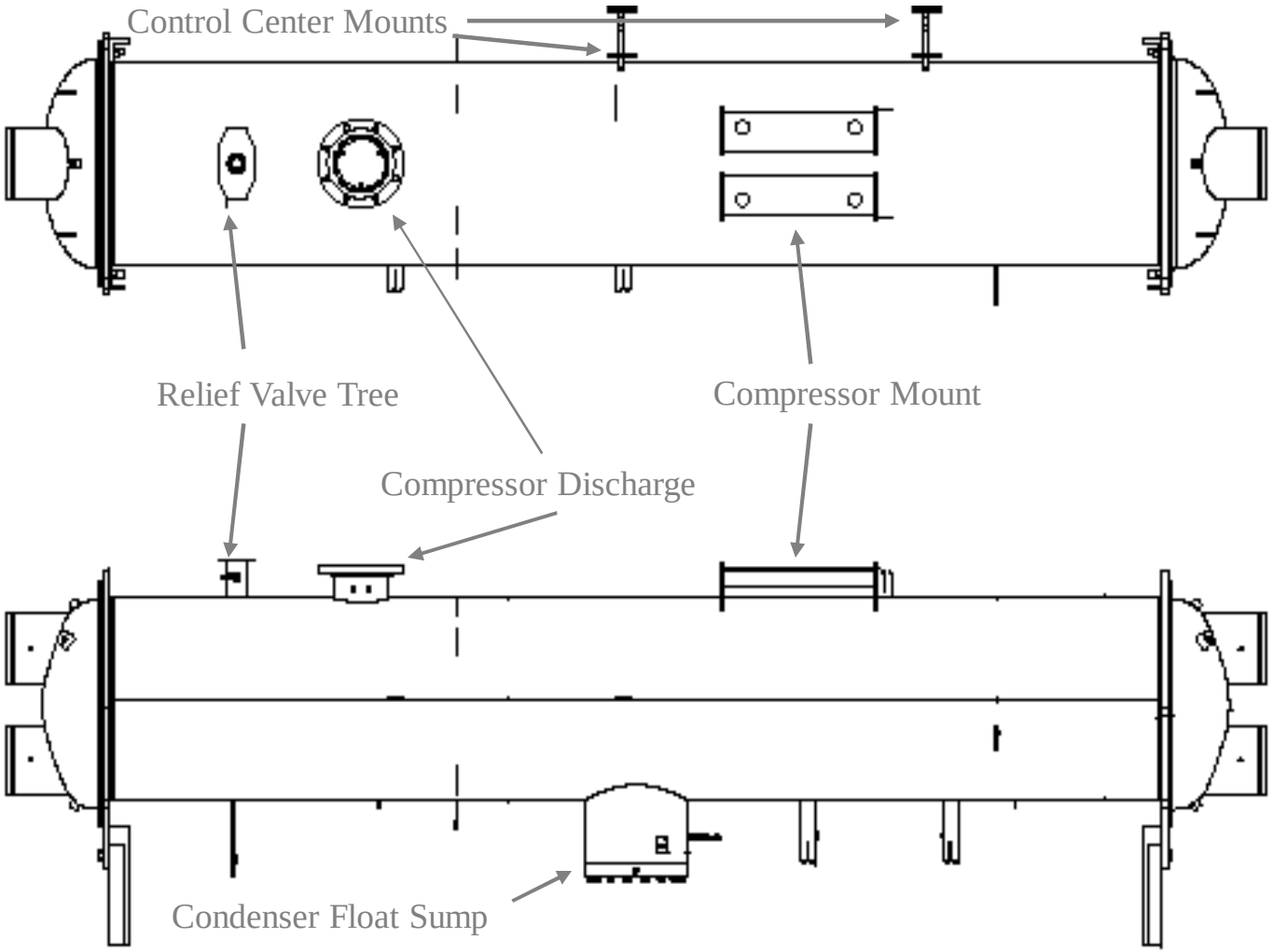


9 — VFD Rectifier Temperature
10 — VFD Cold Plate Ambient Air Temperature
11 — VFD Inverter Temperature
12 — Compressor Discharge Temperature
13 — Oil Sump Pressure
14 — Compressor Oil Sump Temperature
15 — Evaporator Liquid Flow (Optional)
16 — Evaporator Liquid Temperature
17 — Vaporizer Temperature
18 — Inductor Temperature

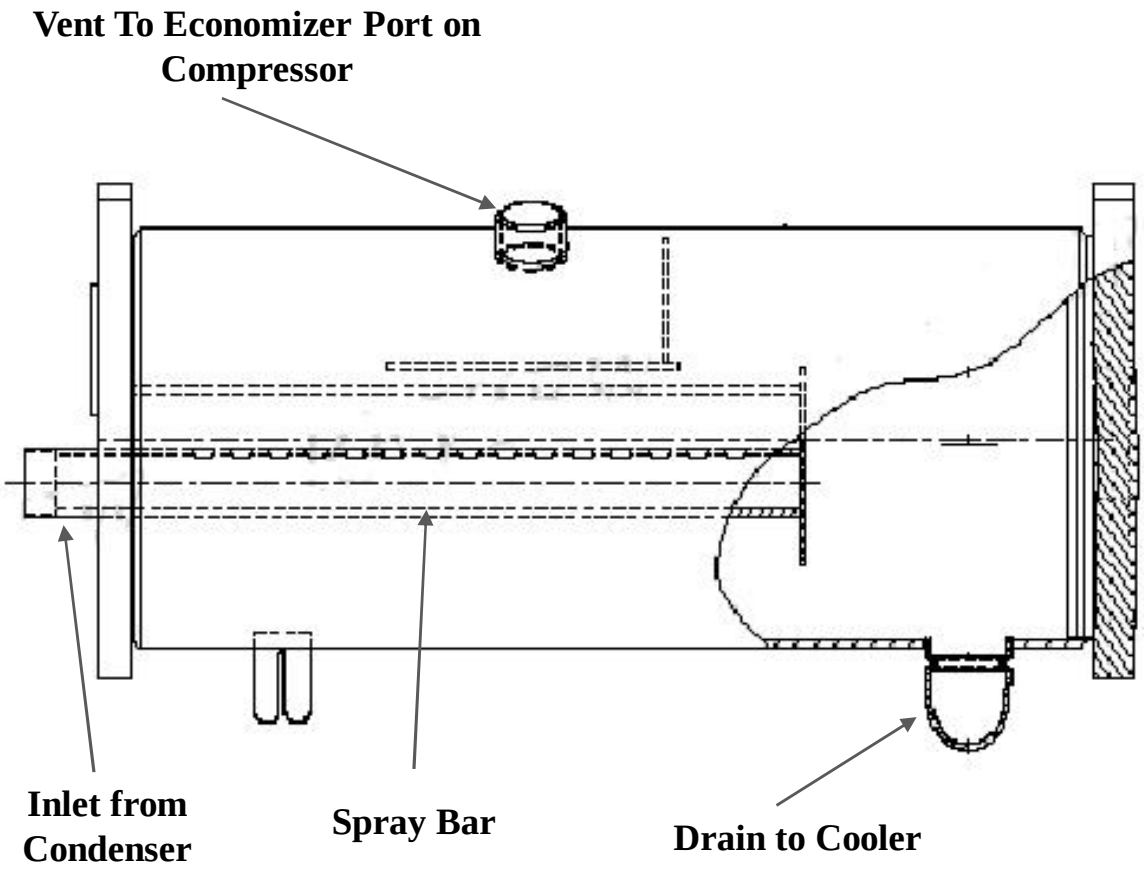
Cooler


Motor Cooling Drain
VFD Drain
Cooler Inlet
Evap. Temp. Thermowell
Vaporizer Refrig. Return

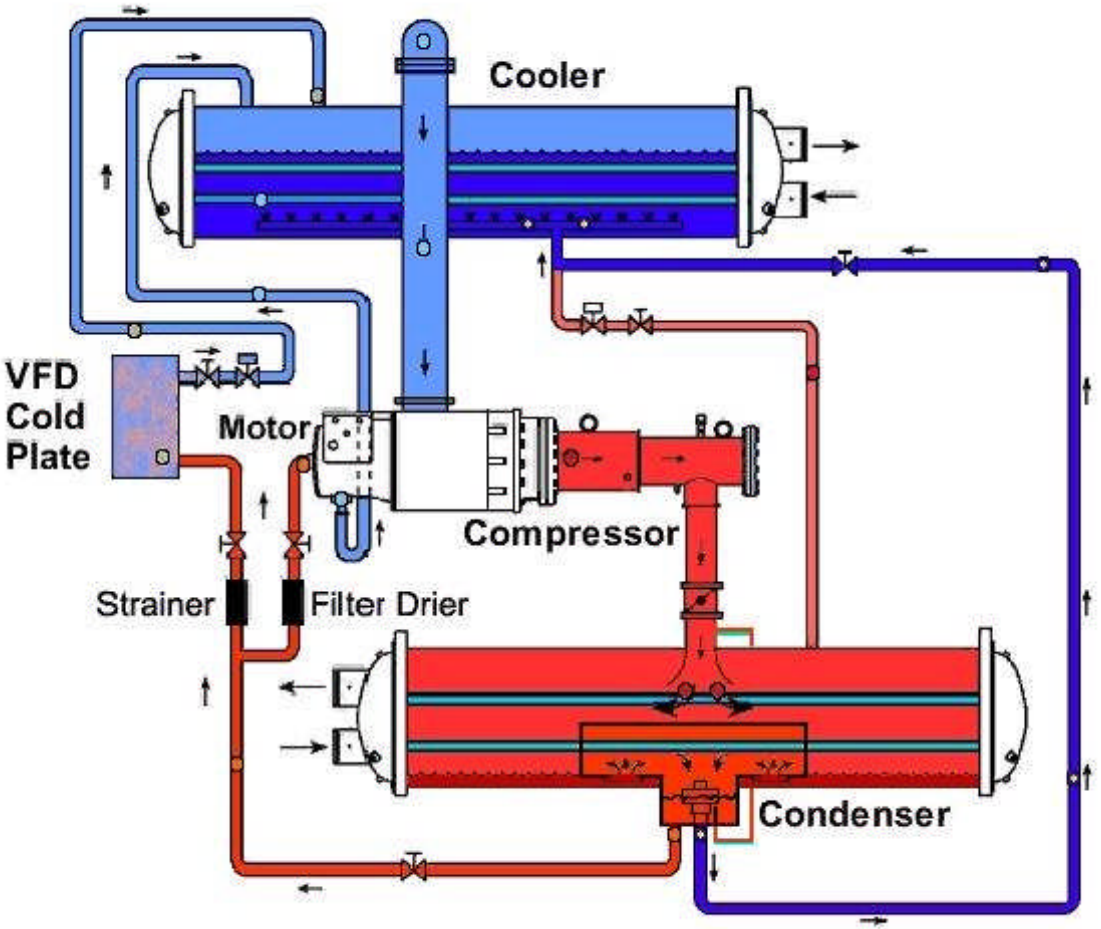
Condenser


Control Center Mounts
Relief Valve Tree
Compressor Discharge
Compressor Mount
Condenser Float Sump

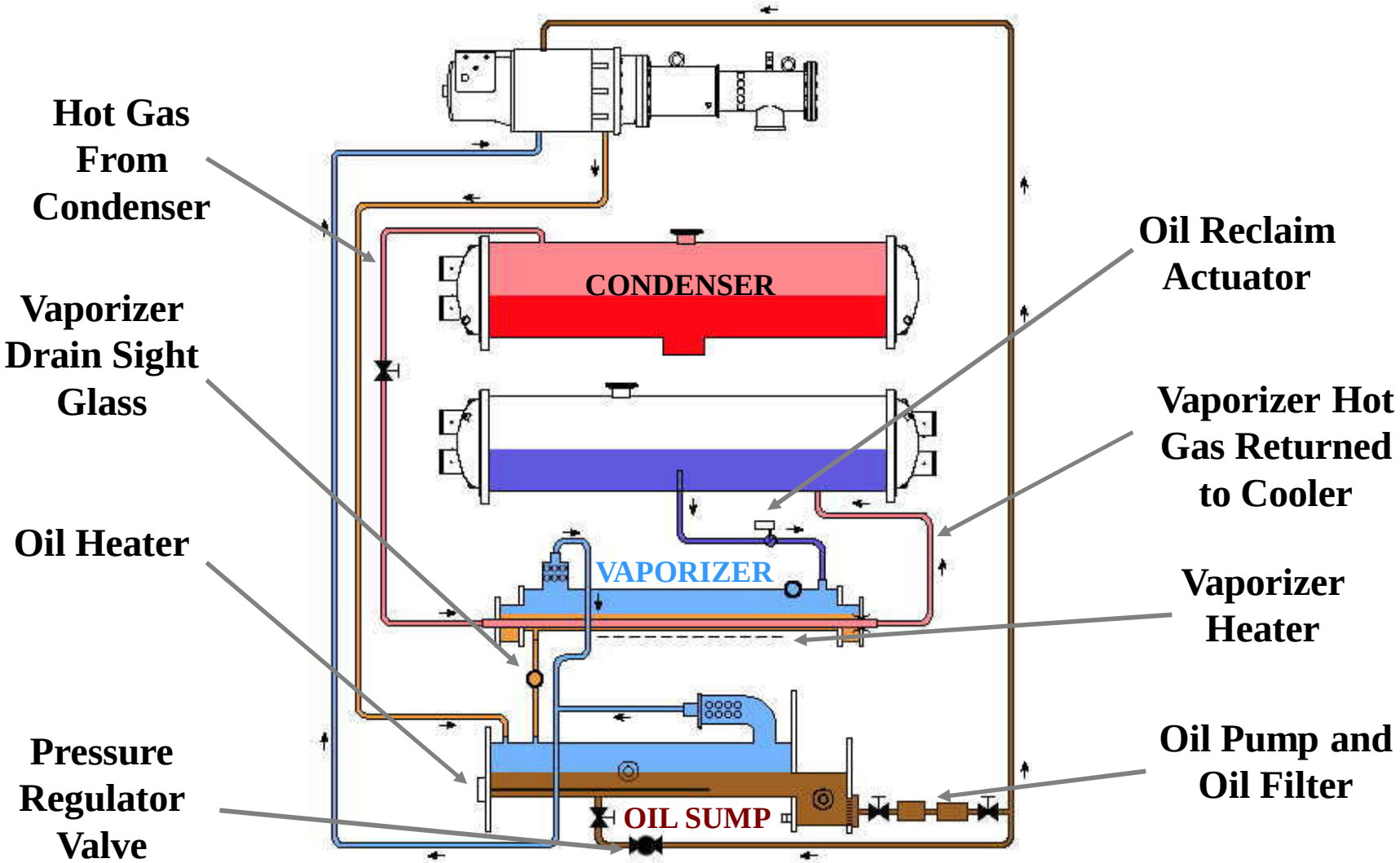
Economizer

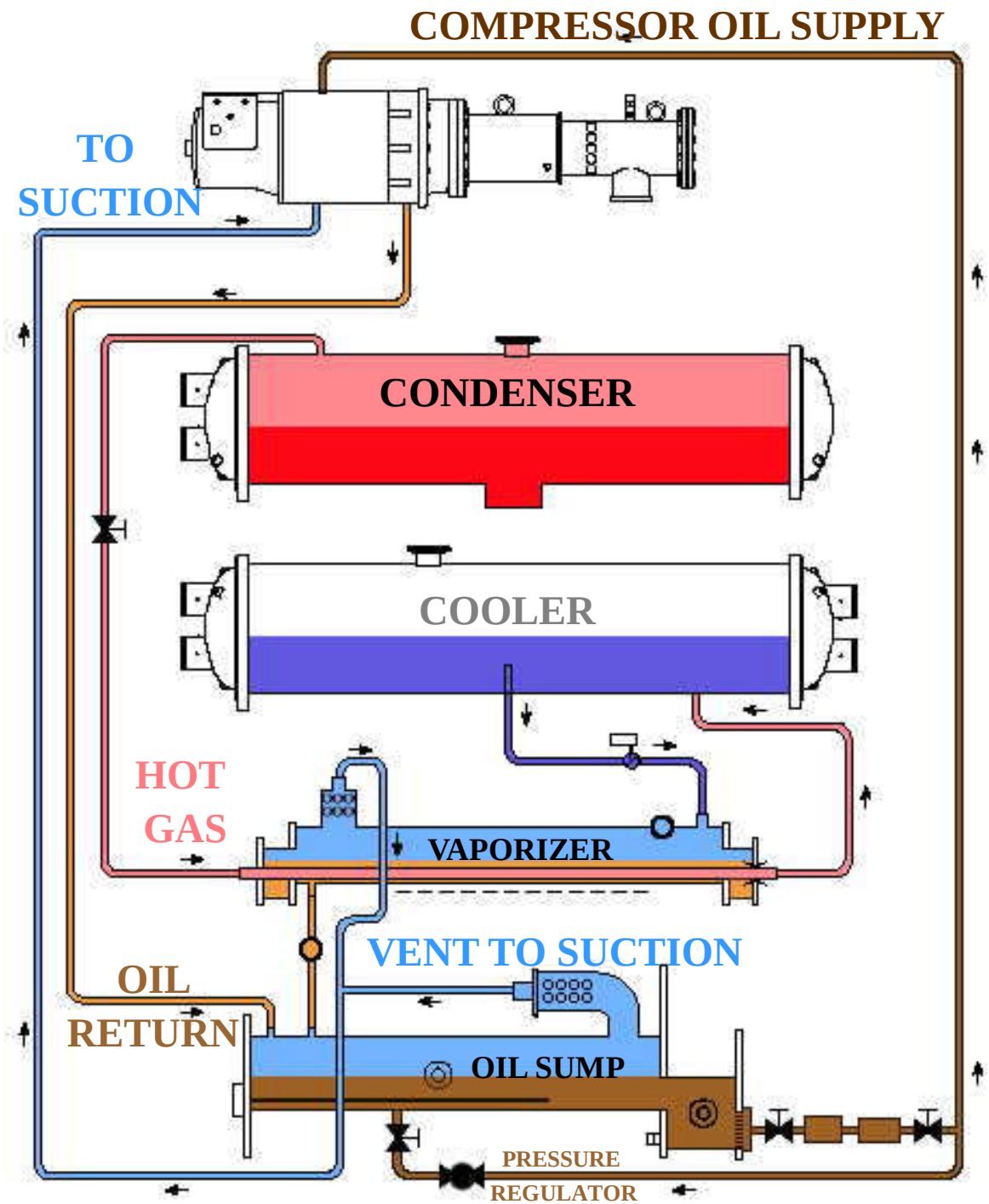

Vent To Economizer Port on Compressor
Inlet from Condenser
Spray Bar
Drain to Cooler

Refrigerant Flow Diagram

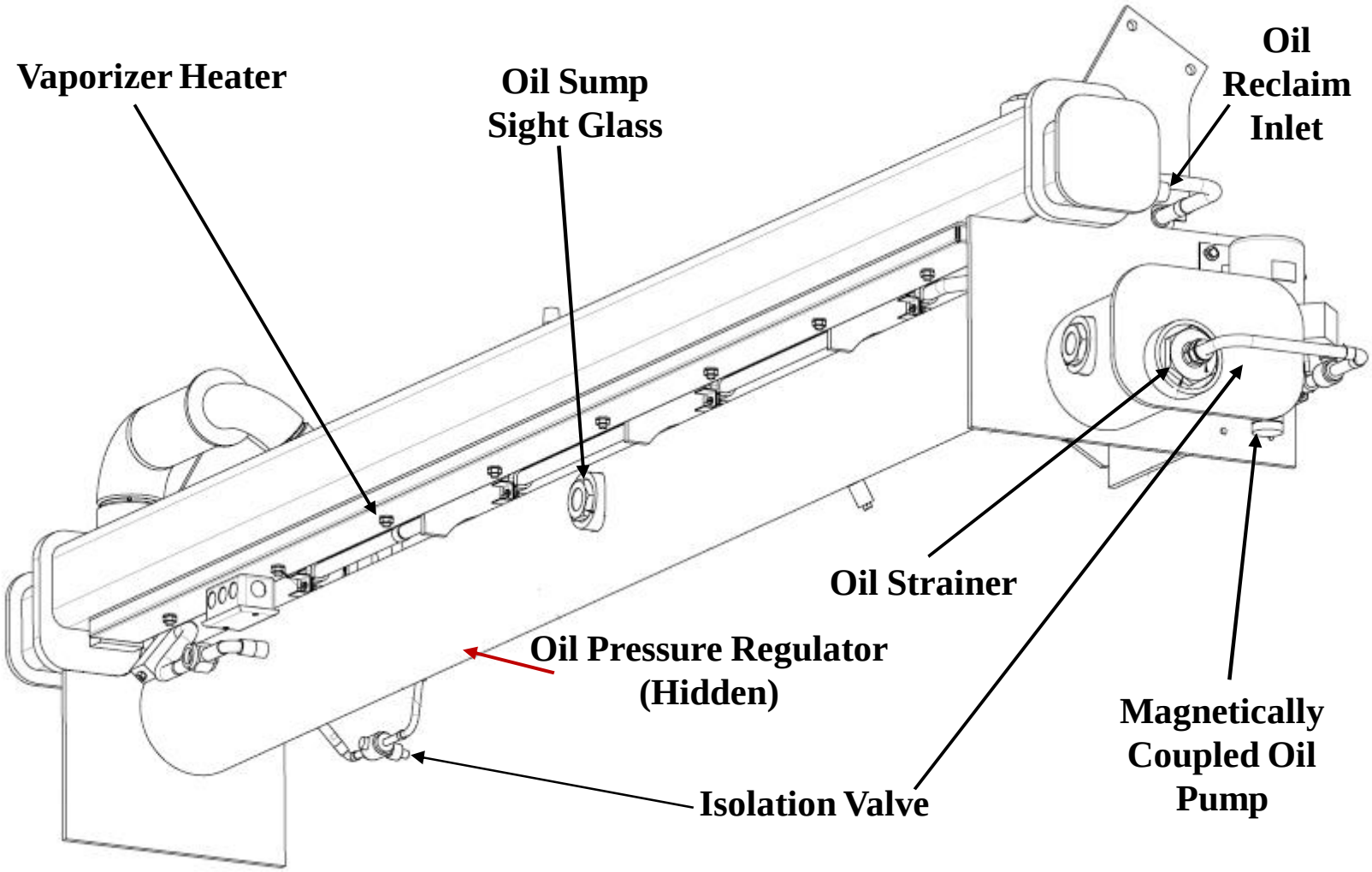


Lubrication System

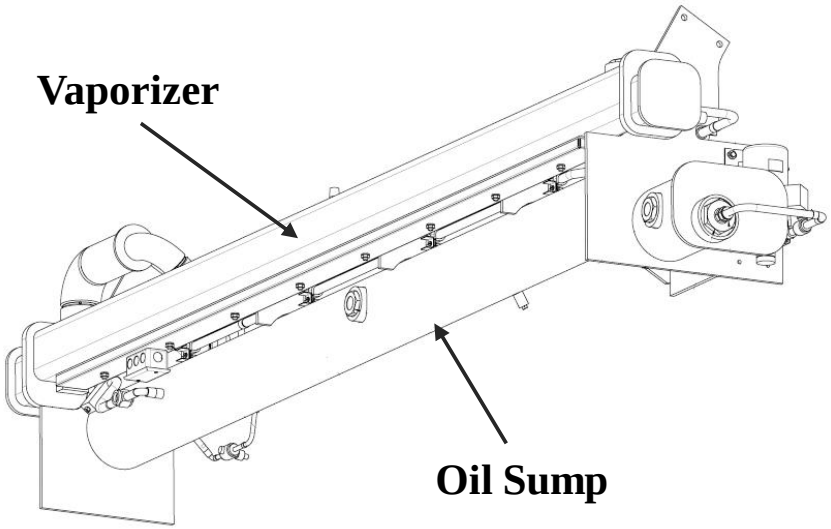


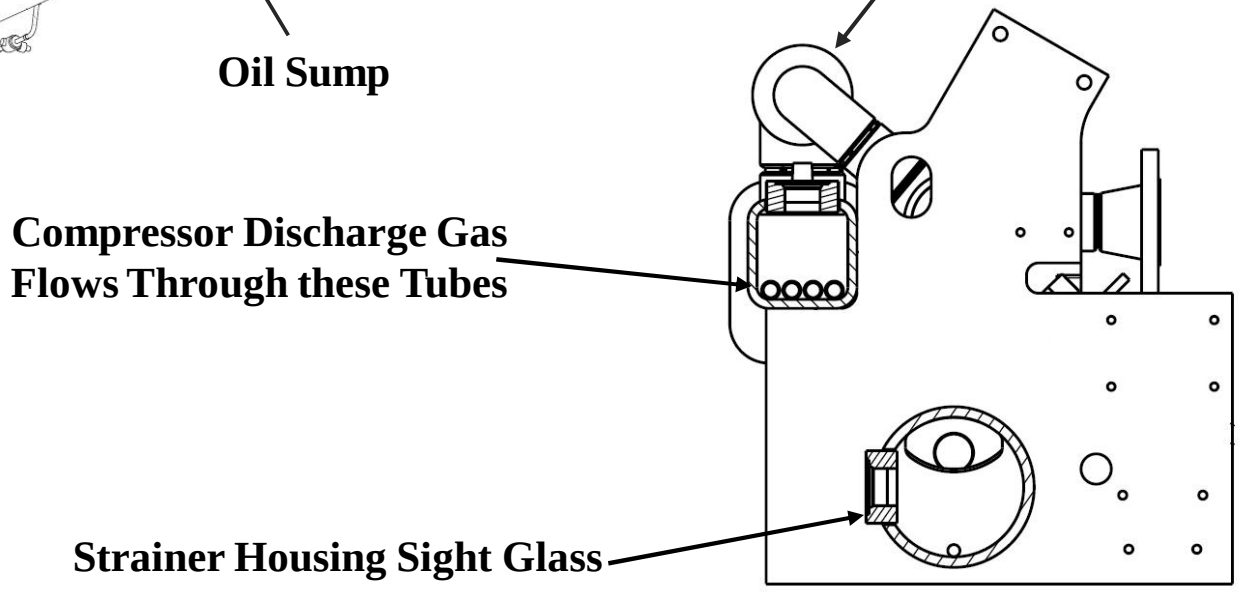

COMPRESSOR OIL SUPPLY
TO
SUCTION
CONDENSER
COOLER
HOT
GAS
VAPORIZER
VENT TO SUCTION
OIL
RETURN
OIL SUMP
PRESSURE
REGULATOR

Vaporizer & Oil Sump

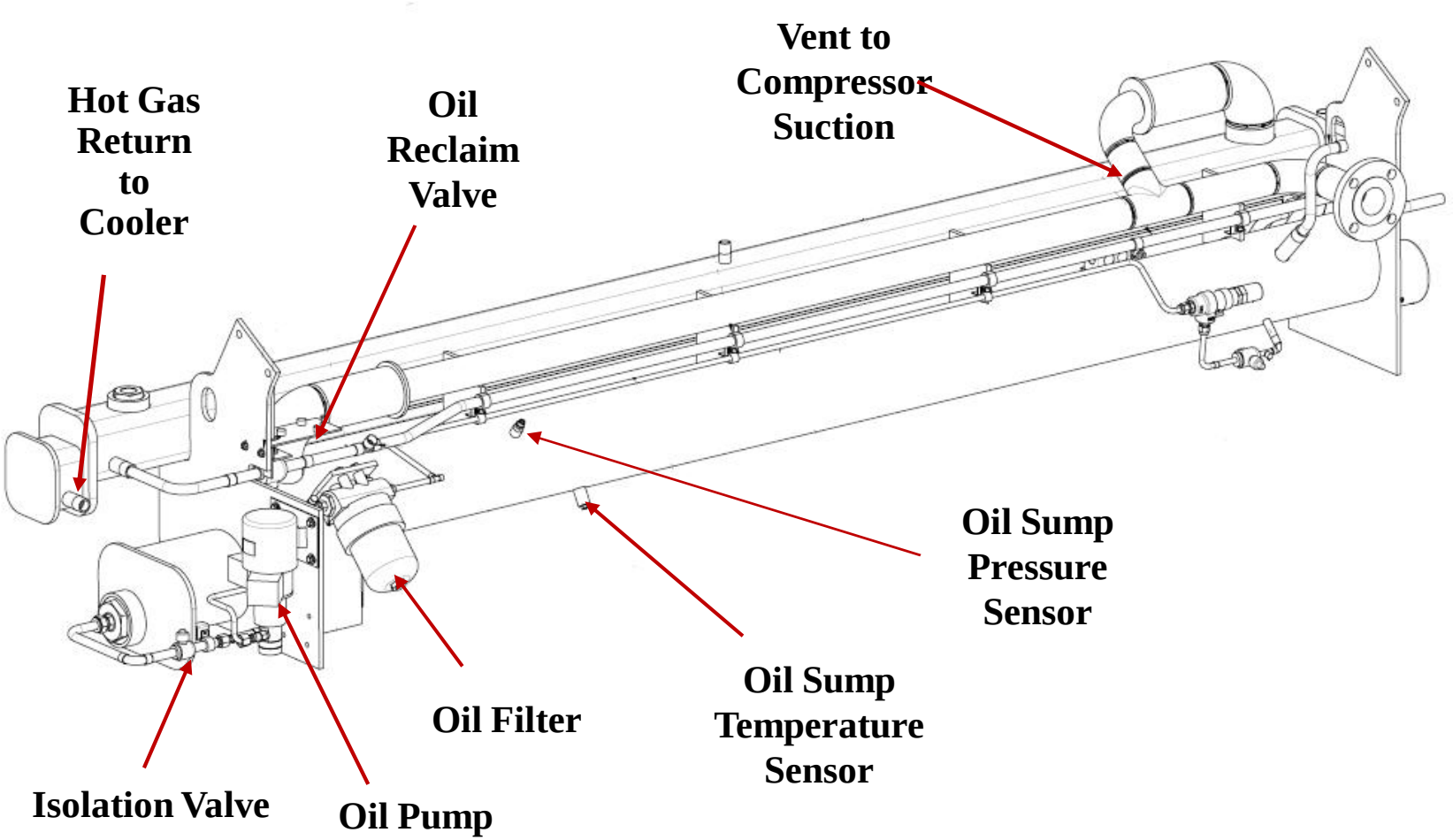


Vaporizer & Oil Sump

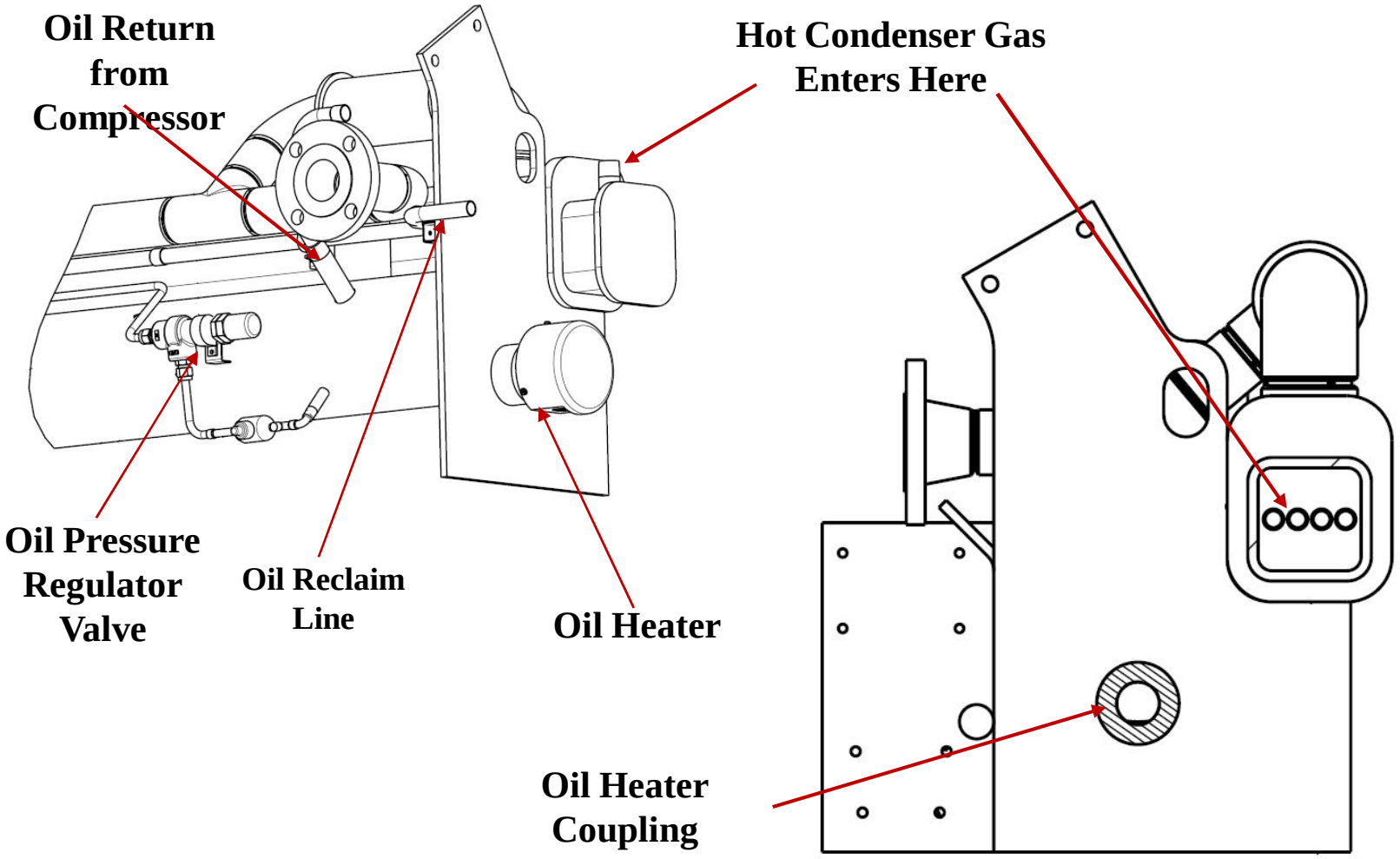




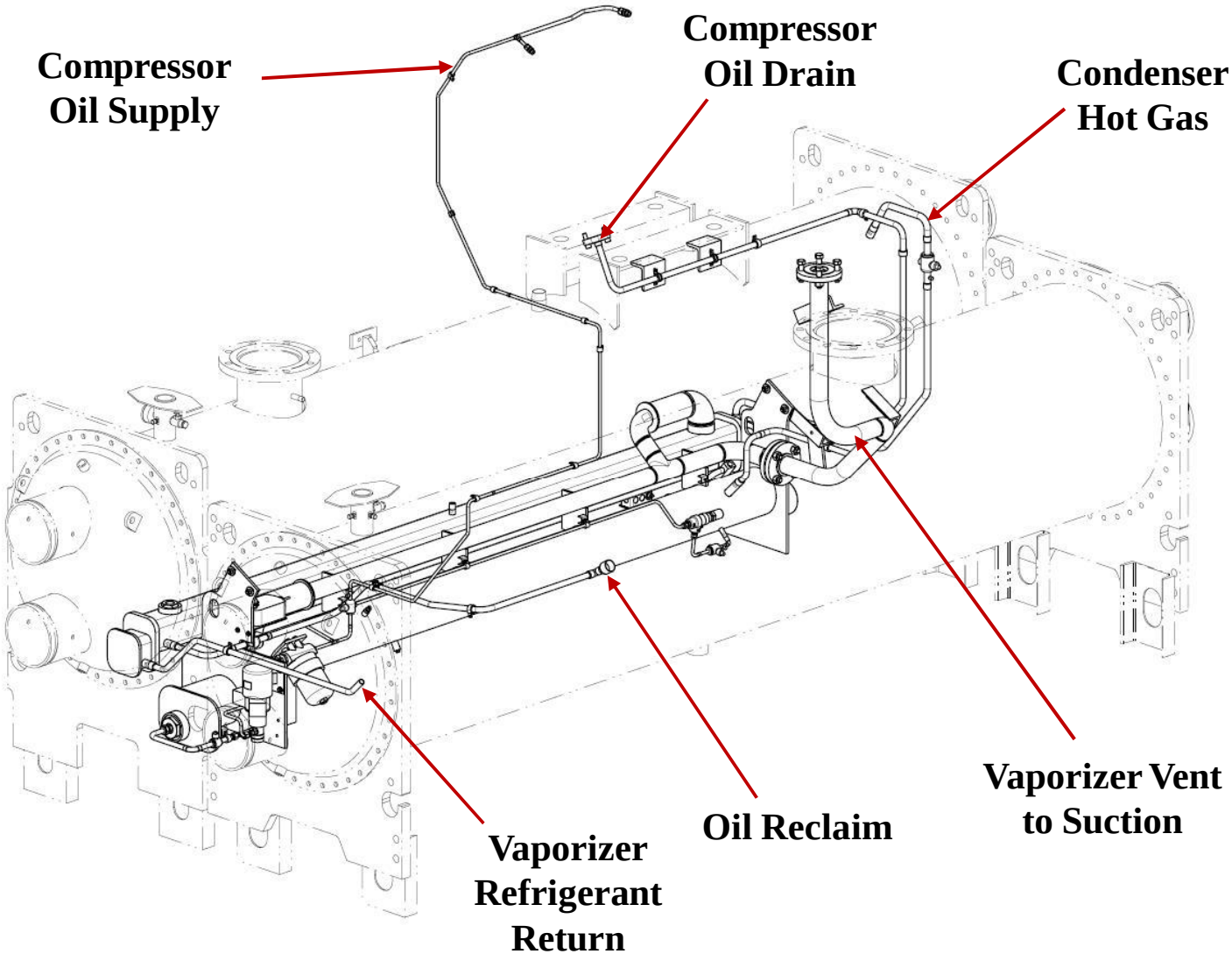
Vaporizer & Oil Sump



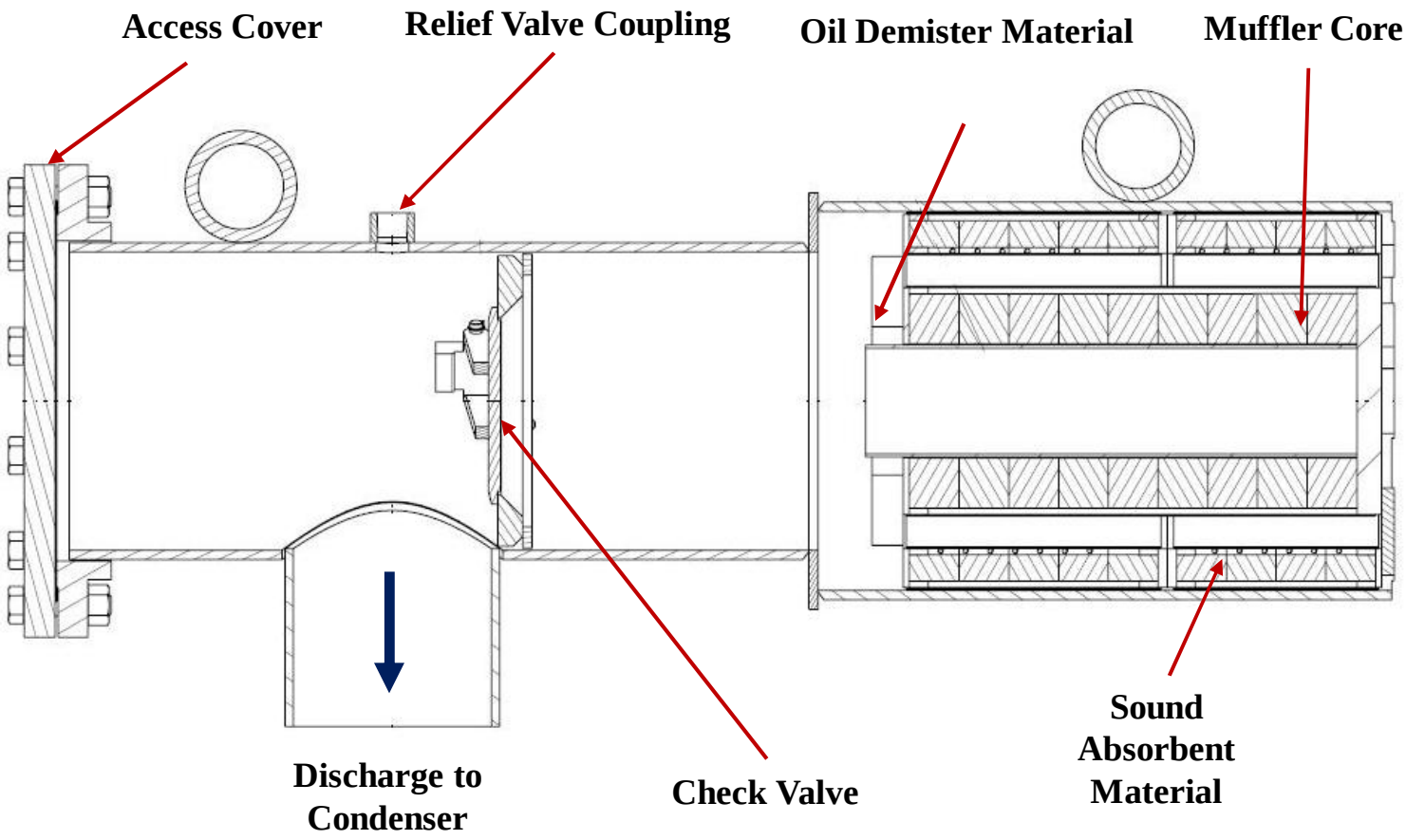
Vaporizer & Oil Sump



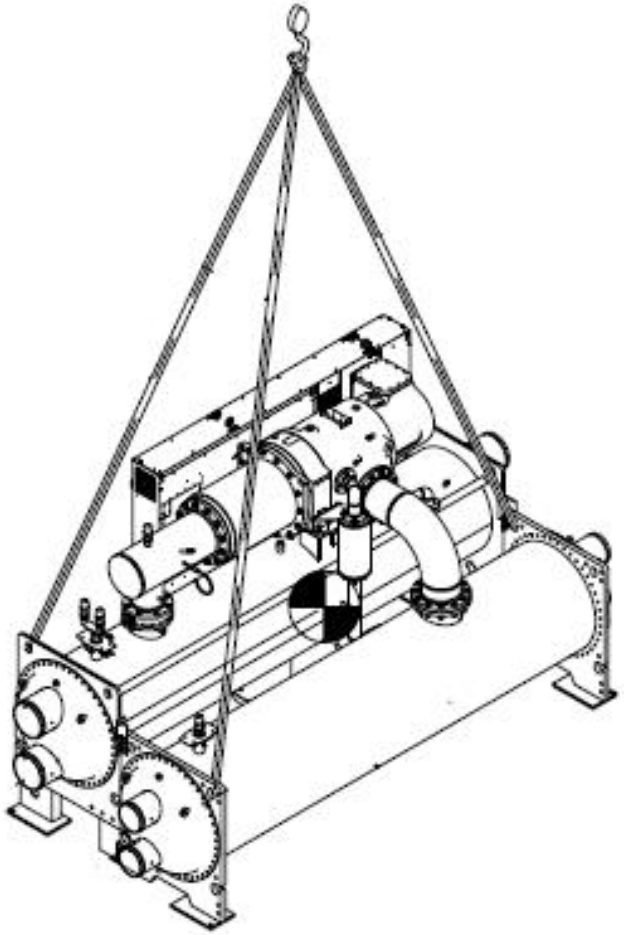
Lubrication System



Muffler


Access Cover
Relief Valve Coupling
Oil Demister Material
Muffler Core
Discharge to Condenser
Check Valve
Sound Absorbent Material

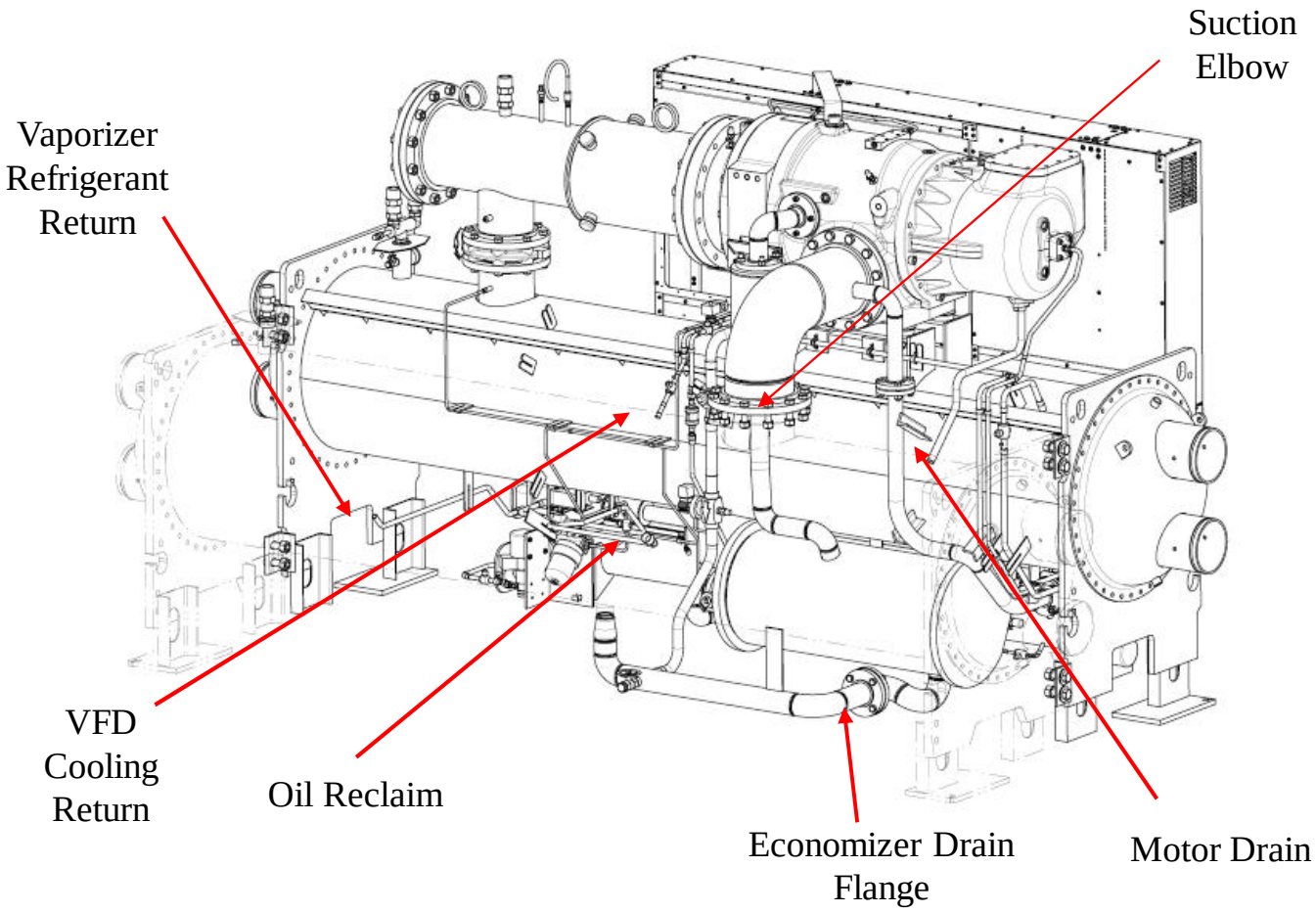
Rigging



Frame 5 Rigging Weight: 26,950 – 28,479 lbs.

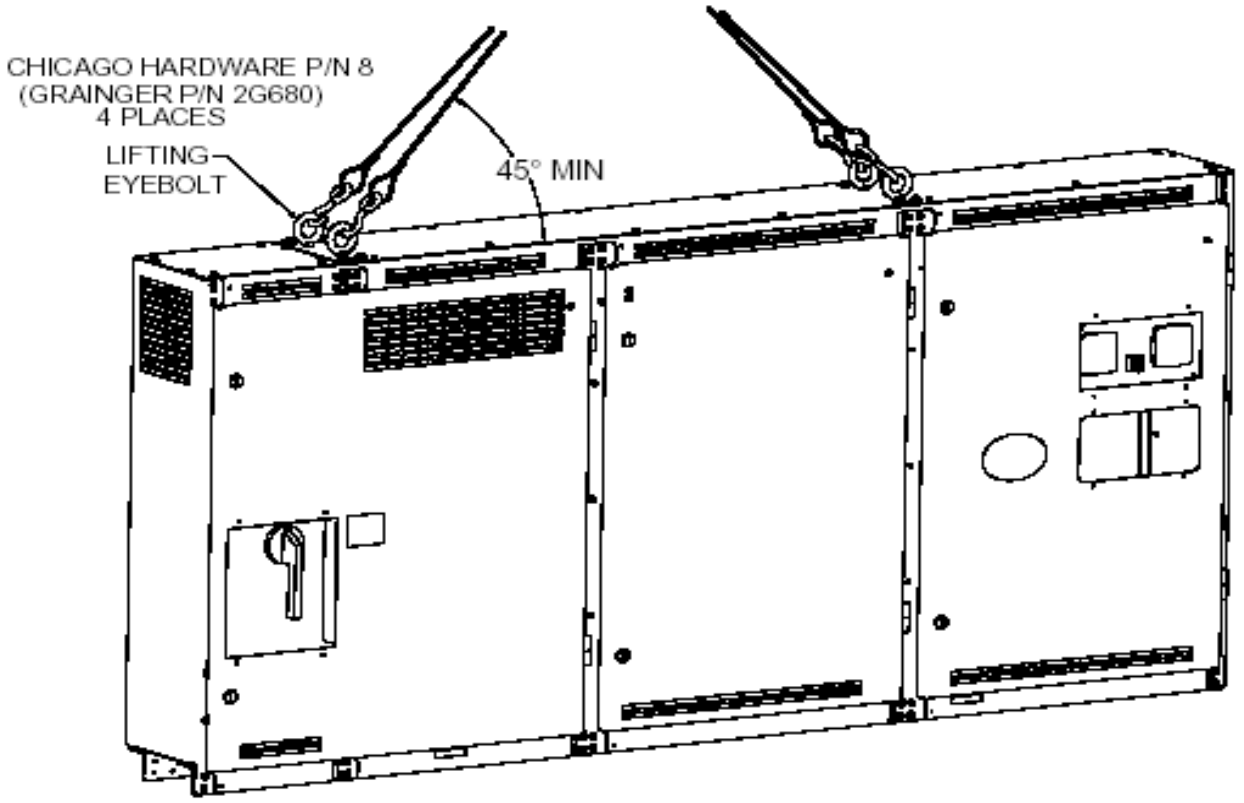
Disassembly Procedure

Cooler Removal



Disassembly Procedure

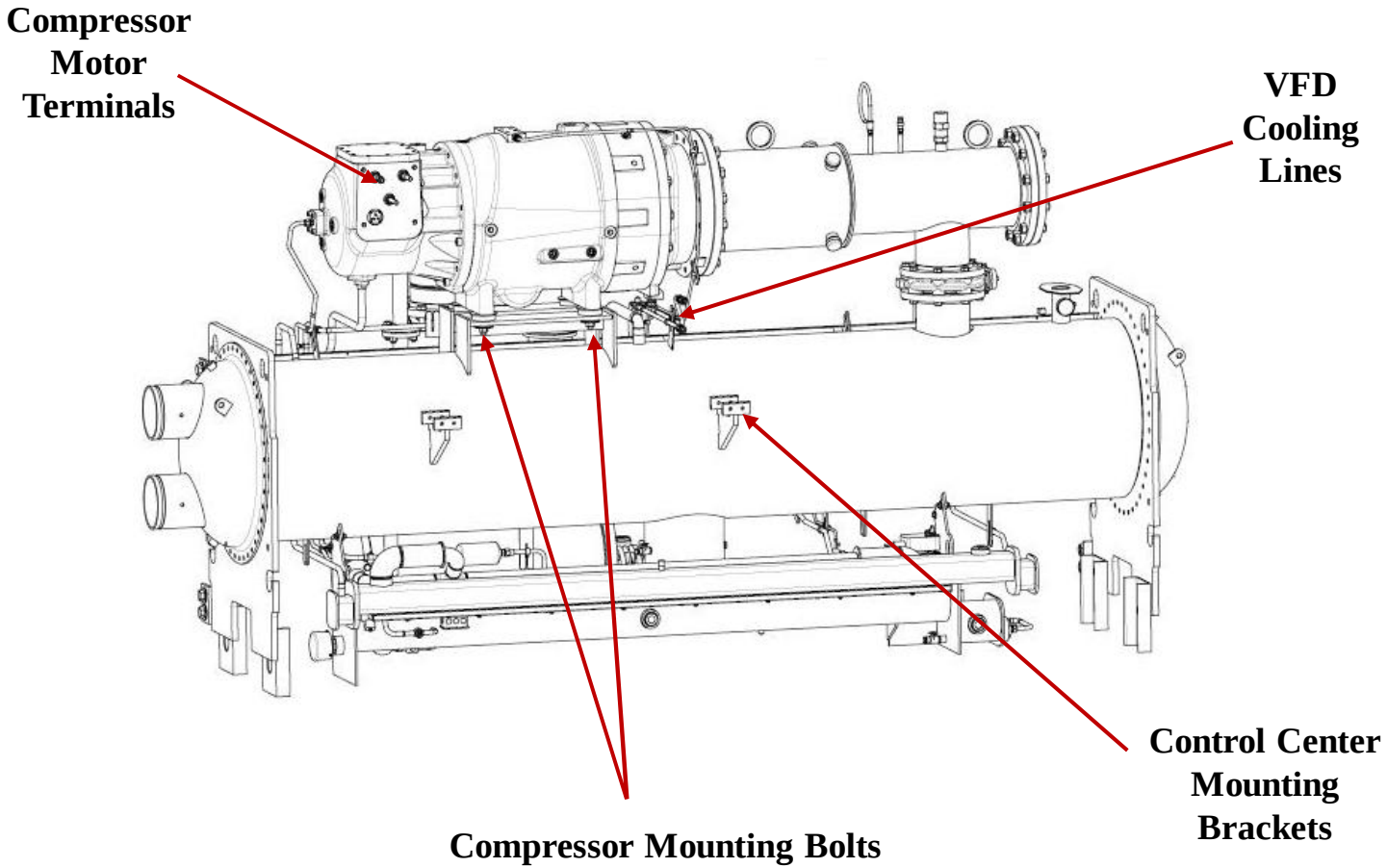
Control Center Removal



Approximate Control Center Weight – 1650 lbs.

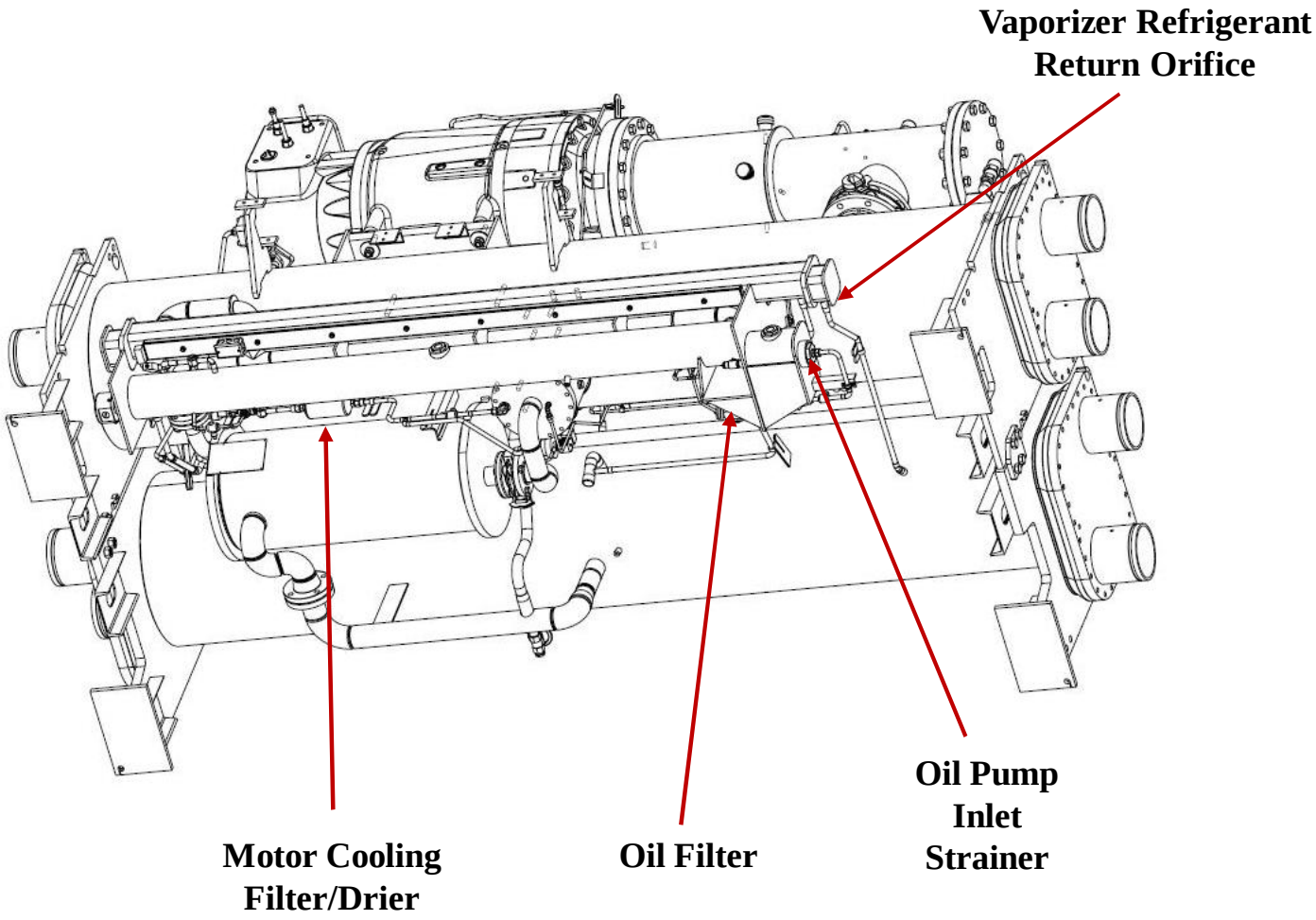
Disassembly Procedure

Control Center Removal



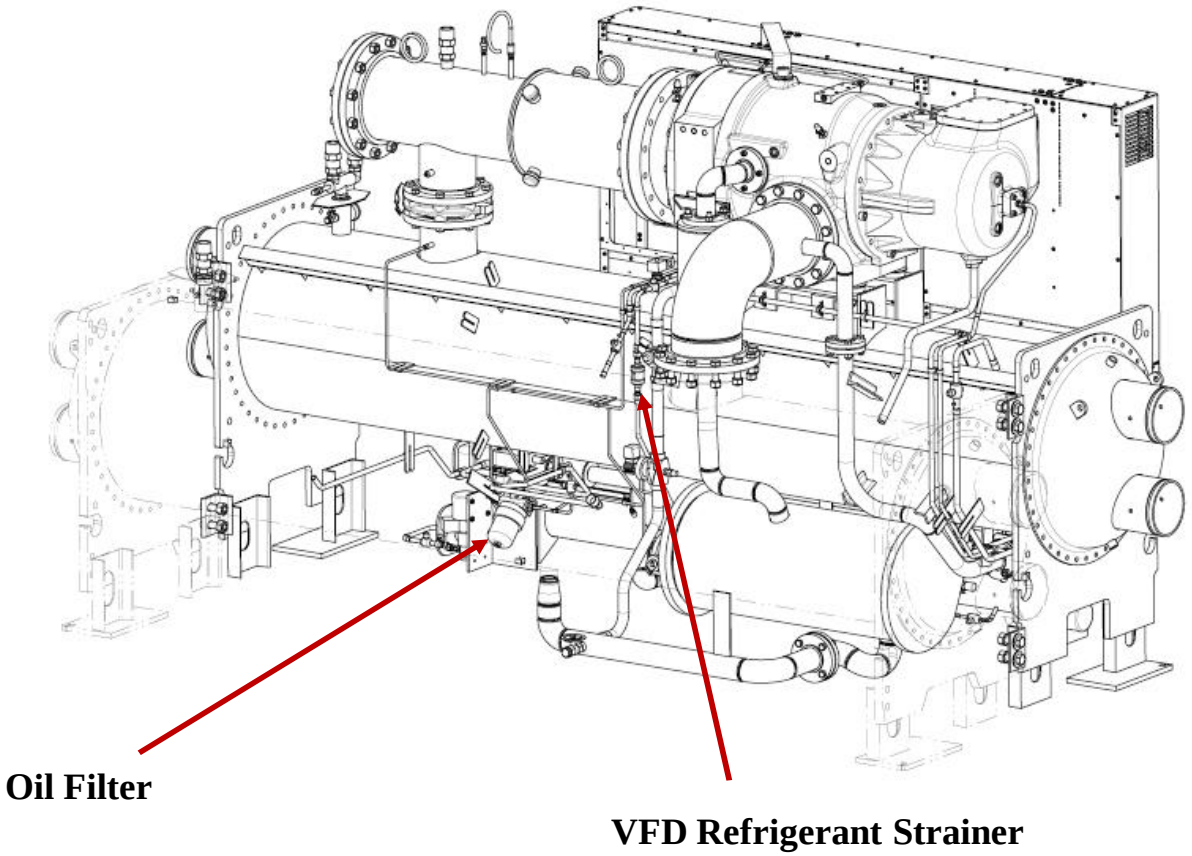
Preventative Maintenance

Filters, Strainers & In-Line Orifices



Preventative Maintenance

Filters, Strainers & In-Line Orifices



Insulation

¾” Closed Cell PVC/Nitrile & 3/16” Vinyl Noise Barrier

<u>Standard Insulation</u>

Compressor & Muffler

Cooler

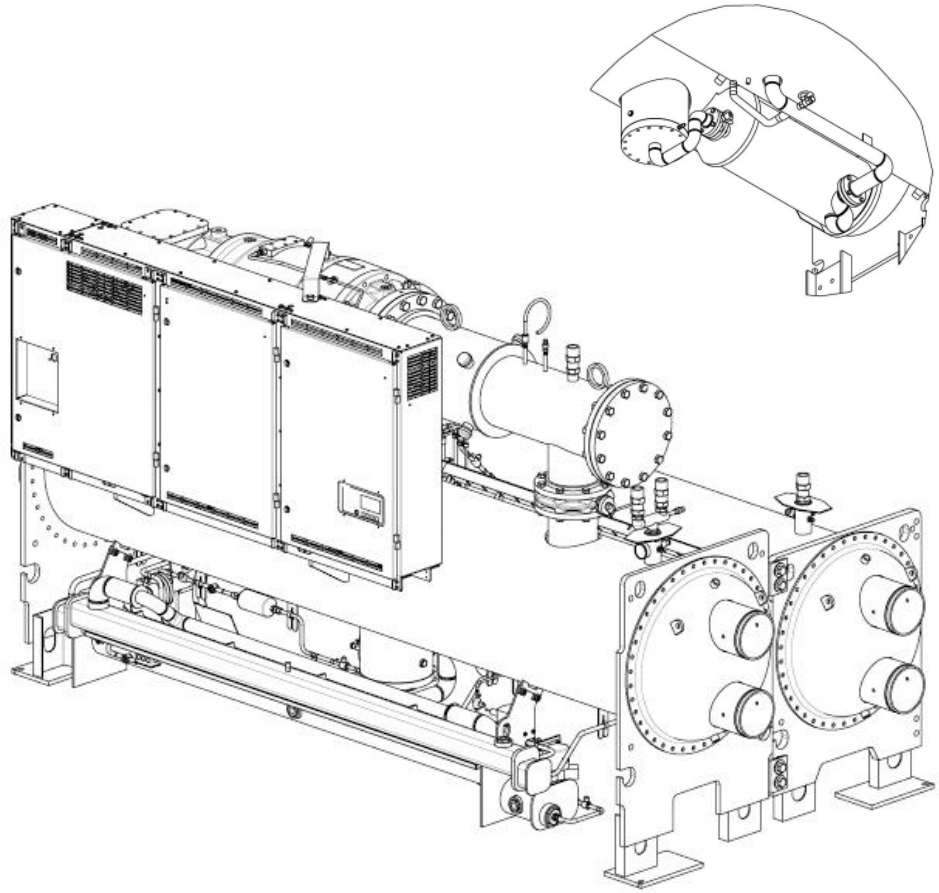
Suction Elbow

Economizer

Vaporizer

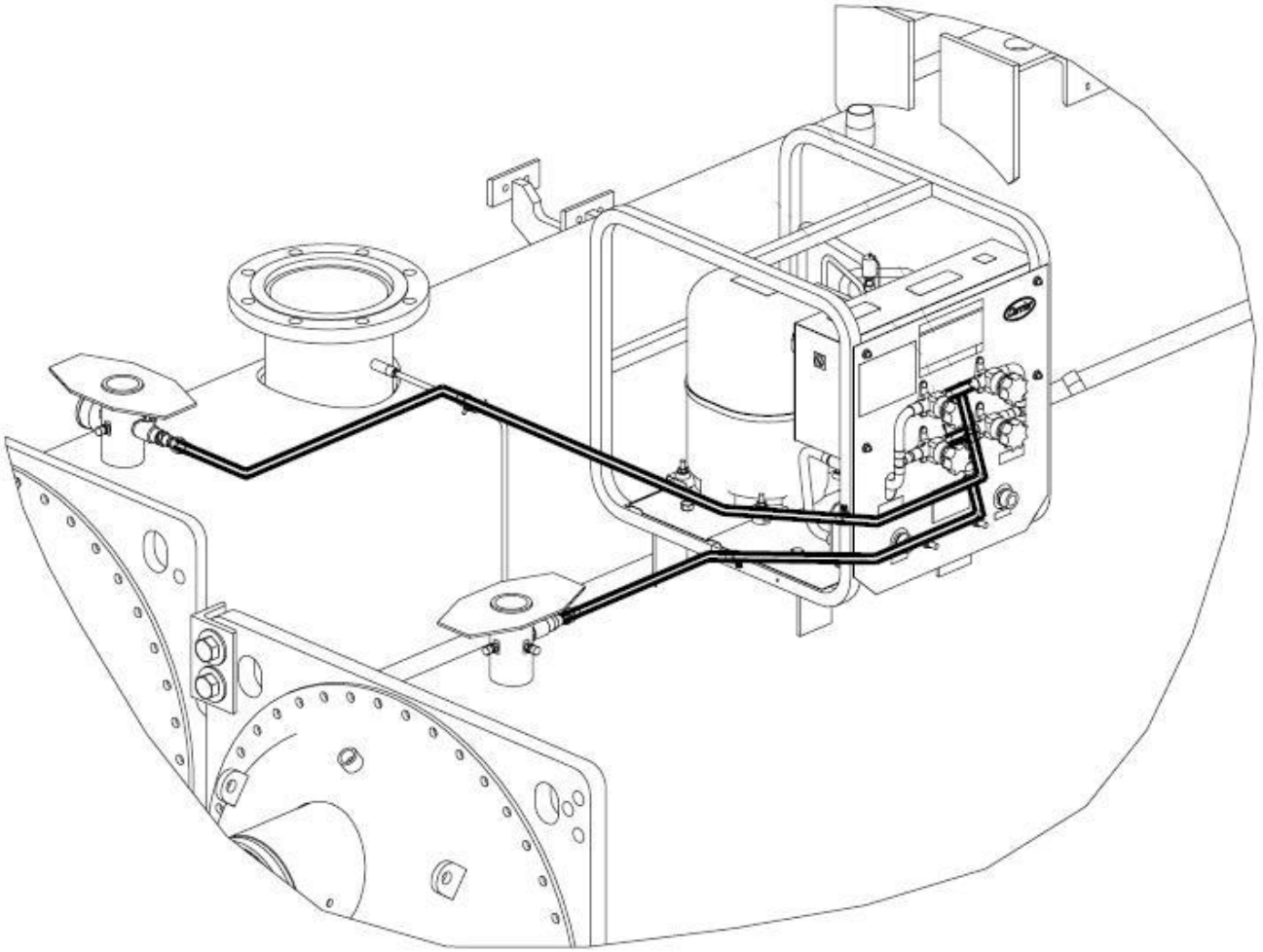
Liquid & Vent Lines

Condenser



Pumpout

Unit Mounted



Installation Manual

New Features:

- Detailed Take-Apart Instructions
- Electrical Cable Routing
- Control Center Rigging
- Sensor Wiring Diagram
- Control Center Field Wiring
- Lead-Lag Wiring Diagram
- Control Center Status

O&M Manual

New Features :

VFD Capacity Control Table

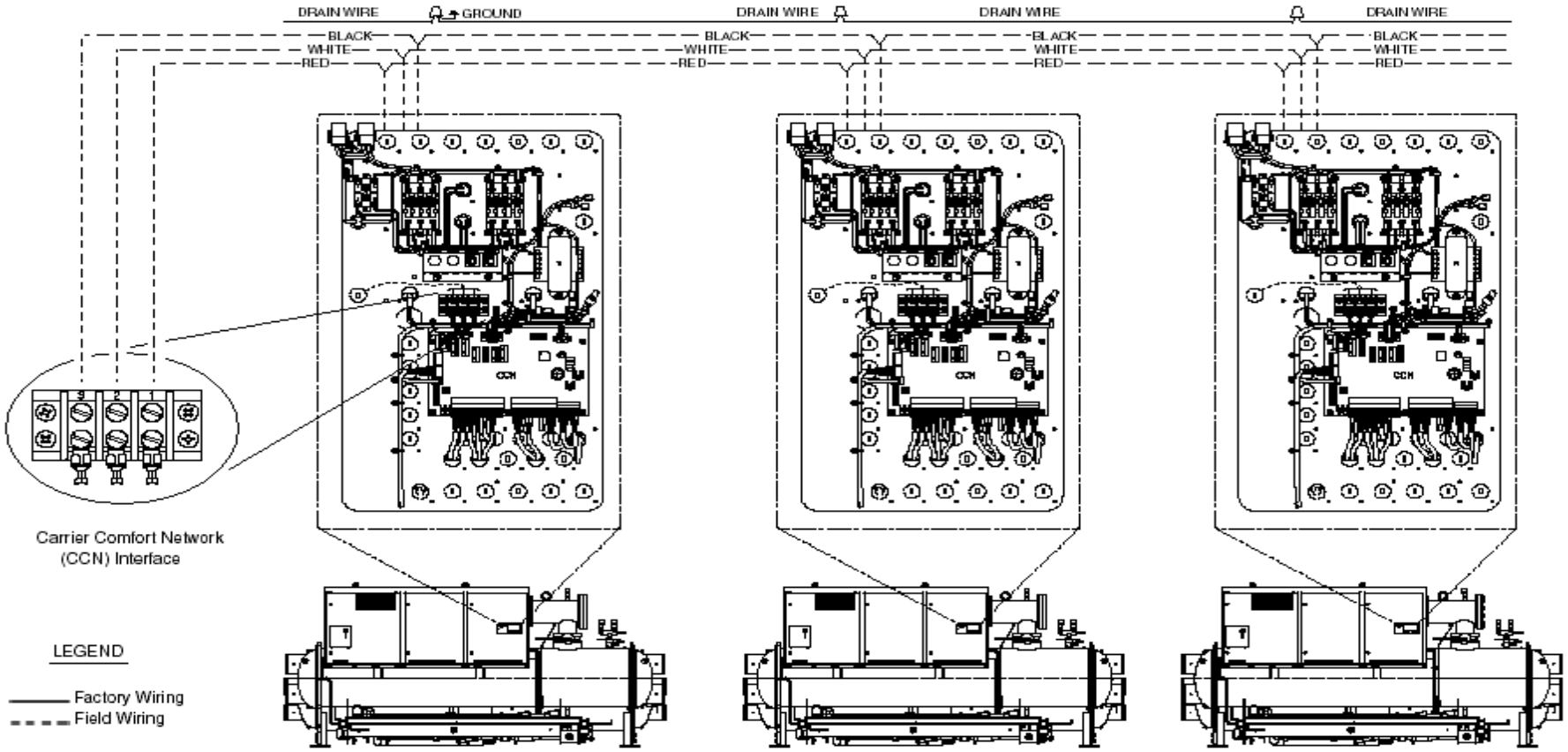
Detailed Protective Limit & Capacity Override Tables

Control Center Component Diagrams

ICVC Parameter Index

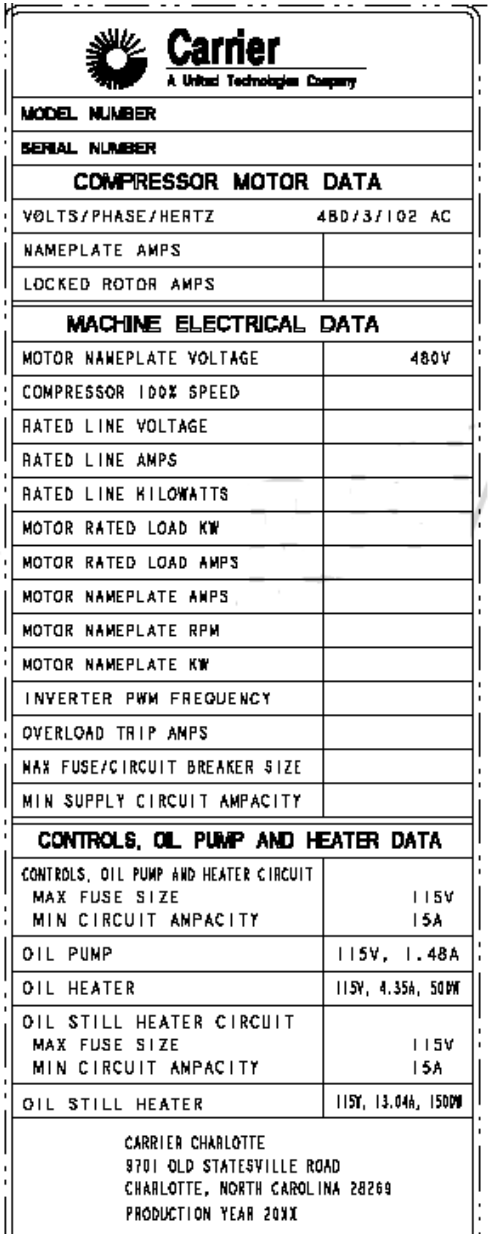
VFD Fault Codes & Troubleshooting

23XR CCN


DRAIN WIRE
GROUND
DRAIN WIRE
DRAIN WIRE
DRAIN WIRE
BLACK
WHITE
RED
BLACK
WHITE
RED
BLACK
WHITE
RED
BLACK
WHITE
RED
CCN
CCN
CCN
Carrier Comfort Network
(CCN) Interface
LEGEND
Factory Wiring
Field Wiring

Machine Electrical Data Nameplate Label

Enter 10 Set-Up Parameters in ICVC



Carrier
A United Technologies Company

MODEL NUMBER	
SERIAL NUMBER	
COMPRESSOR MOTOR DATA	
VOLTS/PHASE/HERTZ	480/3/102 AC
NAMEPLATE AMPS	
LOCKED ROTOR AMPS	
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
OIL PUMP	115V, 1.48A
OIL HEATER	115V, 4.35A, 500W
OIL STILL HEATER CIRCUIT MAX FUSE SIZE MIN CIRCUIT AMPACITY	 115V 15A
OIL STILL HEATER	115V, 13.04A, 1500W

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