

Liebert XDC

Parts Manual



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Product Description

Increased Cooling Power for Rack Enclosures and High Heat Density Areas.

Liebert X-treme Density heat removal system is designed to address the higher heat loads generated by densely populated electronic rack enclosures. It can cool more than 30 kW per rack. Individual modules can improve enclosure airflow or cool hot spots, or zones. The modules in the Liebert XD system use a unique heat rejection process, using a pumped refrigerant. It operates at low pressure and becomes a gas at room temperatures, making it ideal for use around electronic equipment. Liebert XD complement the precision cooling provided by Liebert Deluxe System/3 or Liebert DS, and are built with the quality and features you expect from Liebert.

Liebert XDO — Overhead Fan Coil: This ceiling-installed unit is placed above the heat-emitting equipment, drawing hot air from the Hot Aisle and discharging cold air down into the Cold Aisle. Connects via flexible piping and uses pumped refrigerant technology.

Liebert XDV — Vertical Top Cooler: The XDV is installed above or on the rack enclosure. It draws in hot air from inside the enclosure or from the Hot Aisle. It then cools the air and discharges it down into the Cold Aisle. Connects via flexible piping and uses pumped refrigerant technology.

Liebert XDH — Horizontal Row Cooler: The XDH is placed in line with rack enclosures and air from the hot aisle is drawn in through the rear of the unit, cooled, and discharged into the cold aisle where the electronic equipment air inlets are located. Connects via flexible piping and uses pumped refrigerant technology.

Liebert XD CoolFrame — Rack Cooler: The Liebert XD CoolFrame is designed and performance certified when attached to the back of the Egenera BladeFrame EX rack. It cools the exhaust air from the rack before the air enters the room. Connects via flexible piping to the liebert XD system and uses pumped refrigerant technology. Liebert is a member of Egenera Inc. Assured Solution Alliance program.

Liebert XDP — Pumping Unit: When a building chilled water system is available, the XDP serves as an intermediary, to isolate the building chilled water circuit from the pumped refrigerant circuit. It circulates the refrigerant to the cooling modules at a temperature always above the actual dew point to prevent condensation.

Liebert XDC — Refrigerant Chiller: The XDC is an indoor unit that connects directly to the modules via the pumped refrigerant circuit. It circulates the refrigerant to the cooling modules at a temperature always above the actual dew point to prevent condensation.

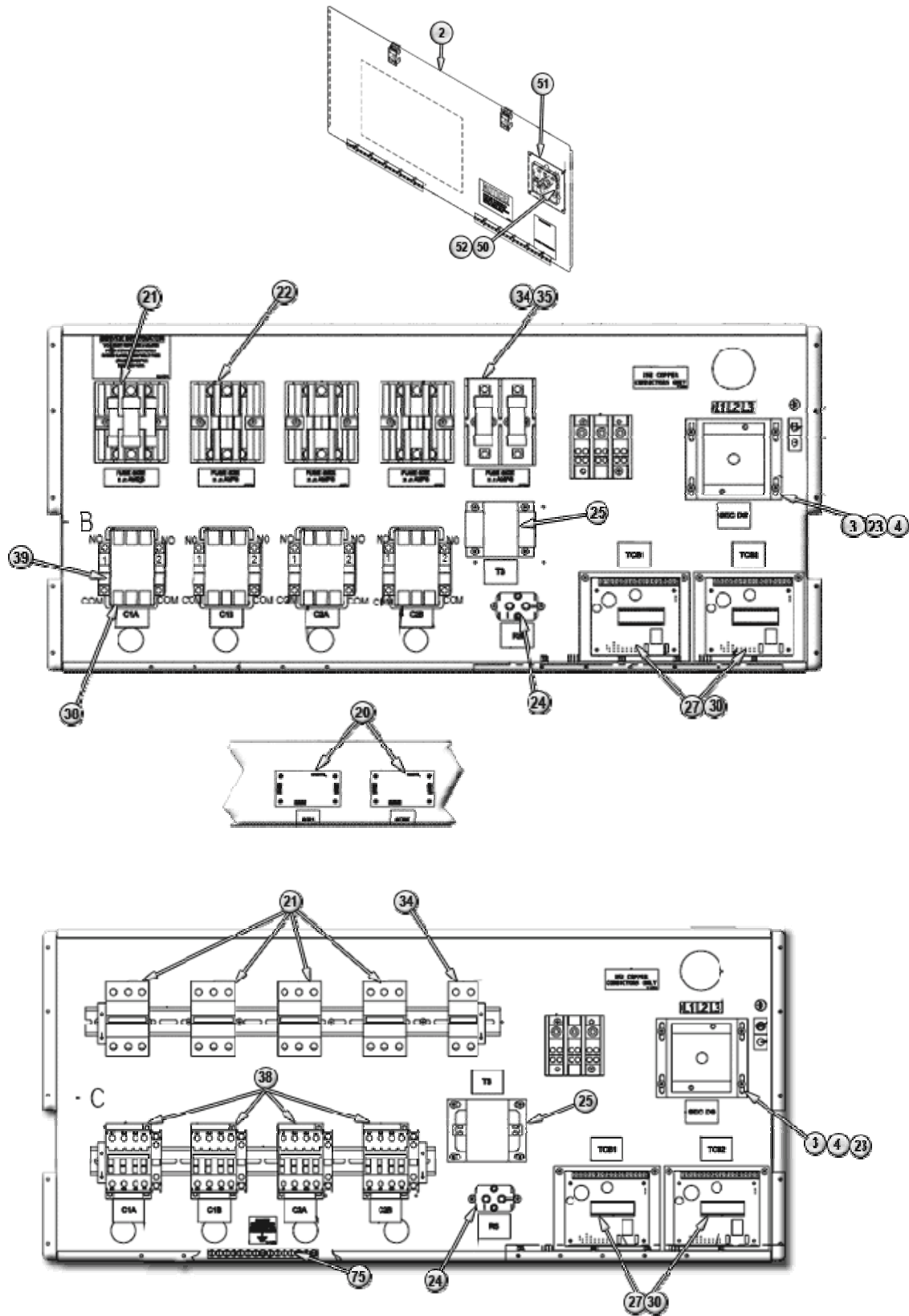
Liebert XD Piping: The XD Piping is pre-fabricated distribution piping that is installed in anticipation of a growing and changing system. XD cooling modules are added as required and are quickly made operational with flexible connection piping with quick-connect fittings. The flexible connection piping also allows the cooling modules to be re-positioned without interruption in operation. Liebert XD Piping makes the system adaptive and provides for future expansion and simplifies both the installation of additional units and the reconfiguration of components as needs change.

Liebert XDA — Air Flow Enhancer: Lightweight fan unit is mounted to the exhaust side of a rack enclosure. The XDA, that is compatible with most rack enclosures, increases the airflow through densely populated enclosures, past congested cabling, thus removing hot spots within the enclosure that can threaten the uptime of critical systems.

Features

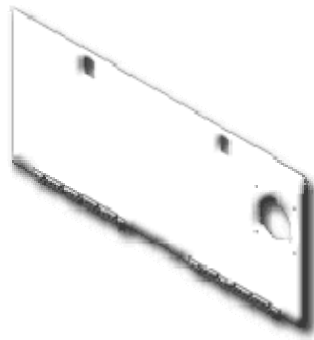
- Can Cool More Than 30 kW per rack
- Utilizes Pumped Refrigerant Technology
- Energy Efficient
- Intelligent Controls of the Refrigerant
- Floor Space Efficient
- Scalable and Flexible

1.0 XDC EP ASSEMBLY



- | | | | |
|-----|---------------------|-----|-------------------|
| 2. | DeadFront XDC | 30. | Plate Back |
| 3. | Standoff Disconnect | 34. | FuseBlock |
| 4. | Collar | 35. | Fuse Dual Element |
| 20. | PWA Converter | 38. | Contactora |
| 21. | FuseBlock | 39. | Contacts |
| 22. | FuseBlock | 50. | Handle Disc |
| 23. | Switch Disconnect | 51. | Plate Disc |
| 24. | Relay | 52. | Label Disconnect |
| 25. | Transformer | 75. | Ground Lug |
| 27. | PWA Control | | |

1.1 DeadFront XDC



| Part Number | Description | Quantity |
|-------------|---------------|----------|
| 179362P1 | DEADFRONT XDC | 1 |

1.2 Standoff Disconnect



| Part Number | Description | Quantity |
|-------------|-----------------------------|----------|
| 179810P1 | STANDOFF DISCONNECT XDC/XDP | 1 |

1.3 Collar



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 1C18354P1 | COLLAR LKG DISC W/2 SCREWS KM | 1 |

1.4 PWA Converter



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 4C14341G1 | PWA MOD MTR 0-10V CONVTR | 2 |

1.5 FuseBlock



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| 136811P1 | FUSEBLOCK BUSS JP600V 30A 3P | 4 |

1.6 FuseBlock

| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 136821P16 | FUSE DUAL ELMNT "J" 600V 30.0A | 12 |

1.7 Switch Disconnect



| Part Number | Description | Quantity |
|-------------|-----------------------|----------|
| 1C18351P1 | SW DISC 600V 3PL 100A | 1 |

1.8 Relay



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| E03-0170 | RELAY 1P2T 24V 50/60HZ | 1 |

1.9 Transformer



| Part Number | Description | Quantity |
|-------------|----------------------|----------|
| E-007B | XFMR 075VA 60 460-24 | 1 |

1.10 PWA Control



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 163587P2 | PWA CNTRL ELEC HGBP FAST | 2 |

1.11 Plate Back



| Part Number | Description | Quantity |
|-------------|------------------|----------|
| 163589P1 | PLATE BACK EHGBP | 2 |

1.12 FuseBlock



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| 136810P1 | FUSEBLOCK BUSS J 600V 30A 2P | 1 |

1.13 Fuse Dual Element



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 136821P2 | FUSE DUAL ELMNT "J" 600V 1.25A | 2 |

1.14 Contactor



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 123273P1 | CONTACTOR 3PL 25/30 NO/NC AUX | 4 |

1.15 Contacts



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 149117P1 | CONTACTS AUX NO/NC 49ACR6 FRNS | 4 |

1.16 Handle Disc



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 1C18352P1 | HANDLE DISC SWT/FACEPLATE K/M | 1 |

1.17 Plate Disc



| Part Number | Description | Quantity |
|-------------|----------------|----------|
| 1C18707P1 | PLATE DISC K/M | 1 |

1.18 Label Disconnect



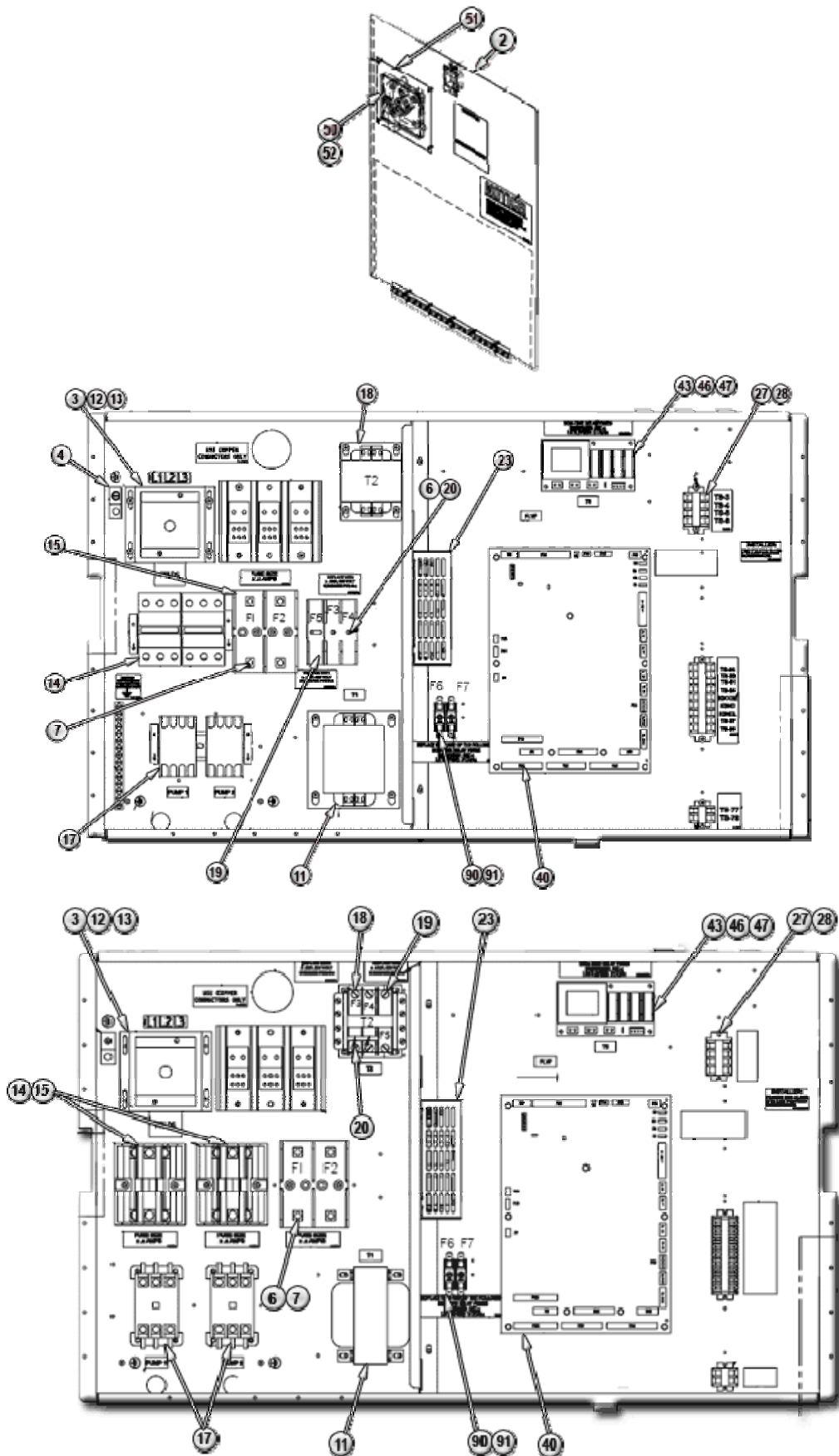
| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| 4D10624P1 | LABEL DISCONNECT K/M LIEBERT | 1 |

1.19 Ground Lug



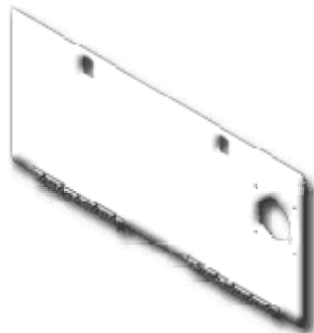
| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| E-3620 | GROUND LUG STRIP 13POS SCRTRM | 1 |

2.0 EP XDC 460/480V 2 PUMP



- | | | | |
|-----|---------------------------|-----|-----------------------|
| 2. | DeadFront XDC | 19. | Fuse |
| 3. | Collar Locking Disconnect | 20. | Fuse |
| 4. | Terminal Lug | 23. | Power Supply |
| 6. | FuseBlock Buss | 27. | Terminal Strip |
| 7. | FuseBlock | 28. | Terminal Strip End |
| 11. | Transformer | 40. | PWA Universal Control |
| 12. | Standoff Disconnect | 43. | PWA ISO XFMR/Fuse |
| 13. | Switch Disconnect | 46. | Fuse Kit |
| 14. | Fuse Dual Element | 47. | Fuse Glass |
| 15. | FuseBlock | 90. | Fuse Glass |
| 17. | Contactora | 91. | FuseBlock |
| 18. | Transformer | | |

2.1 DeadFront XDC



| Part Number | Description | Quantity |
|-------------|---------------|----------|
| 179362P1 | DEADFRONT XDC | 1 |

2.2 Collar Locking Disconnect



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 1C18354P1 | COLLAR LKG DISC W/2 SCREWS KM | 1 |

2.3 Terminal Lug



| Part Number | Description | Quantity |
|-------------|----------------------------|----------|
| E-362B | TERM LUG MECH #14-2/0 1/4" | 1 |

2.4 FuseBlock Buss



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| 136810P1 | FUSEBLOCK BUSS J 600V 30A 2P | 1 |

2.5 FuseBlock



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| 1C13244P1 | FUSEBLOCK 600V 2P 030A | 1 |

2.6 Transformer



| Part Number | Description | Quantity |
|-------------|-------------------------|----------|
| 136202P1 | XFMR 300VA 460-615/2460 | 1 |

2.7 Standoff Disconnect



| Part Number | Description | Quantity |
|-------------|-----------------------------|----------|
| 179810P1 | STANDOFF DISCONNECT XDC/XDP | 1 |

2.8 Switch Disconnect



| Part Number | Description | Quantity |
|-------------|-----------------------|----------|
| 1C18351P1 | SW DISC 600V 3PL 100A | 1 |

2.9 Fuse Dual Element



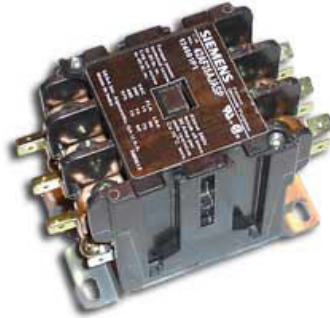
| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 136821P10 | FUSE DUAL ELMNT "J" 600V 10.0A | 6 |

2.10 Fuseblock



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| 136811P1 | FUSEBLOCK BUSS JP600V 30A 3P | 2 |

2.11 Contactor



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 124501P1 | CONTACTOR 3PL 24VCOIL 15/20AMP | 2 |

2.12 Transformer



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 519458P1 | XFMR 100VA 480-240/120 W/FUSE | 1 |

2.13 Fuse



| Part Number | Description | Quantity |
|-------------|----------------|----------|
| 127977P7 | FUSE FNQ-R-1/2 | 2 |

2.14 Fuse



| Part Number | Description | Quantity |
|-------------|----------------|----------|
| 127977P2 | FUSE FNQ-R-1/4 | 4 |

2.15 Power Supply



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 140922P1 | PWR SPLY UNIV 1.6A 24VDC | 1 |

2.16 Terminal Strip



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 132487P1 | TERMLSTRIP SECTION 1 POS | 15 |

2.17 Terminal Strip End



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 132487P2 | TERMLSTRIP SECTION END BARRIER | 3 |

2.18 PWA Universal Control



| Part Number | Description | Quantity |
|-------------|---------------------------|----------|
| 415761G7 | PWA UNIVERSAL CONTROL XDC | 1 |

2.19 PWA ISO XFMR/Fuse



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| 4C14651G1 | PWA ISO XFMR/FUSE INTF | 1 |

2.20 Fuse Kit



| Part Number | Description | Quantity |
|-------------|-------------------------------------|----------|
| 135637P2 | FUSE KIT Quantity 8 4A NON-TD FUSES | 1 |

2.21 Fuse Glass



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 135409P2 | FUSE GLASS 250V 4AMP .25X1.25 | 4 |

2.22 Fuse Glass



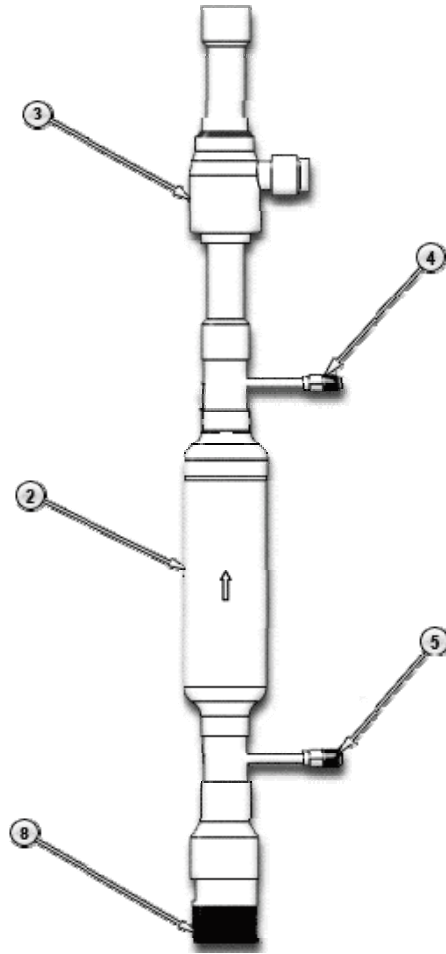
| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 135409P4 | FUSE GLASS 250V 4AMP .25X1.25 | 4 |

2.23 FuseBlock



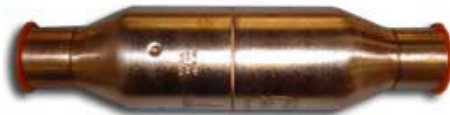
| Part Number | Description | Quantity |
|-------------|-------------------|----------|
| 176023P1 | FUSEBLOCK 1P 300V | 2 |

3.0 DSCH STACK GRUNDFOS



- 2. Valve Check
- 3. Valve Ball
- 4. Valve Access Body
- 5. Valve Core Refrigerant
- 8. Adapter

3.1 Valve Check



| Part Number | Description | Quantity |
|-------------|-----------------------|----------|
| 1C23493P1 | VALVE CHECK 1-1/8" OD | 1 |

3.2 Valve Ball



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 1A25919P1 | VALVE BALL REFRIG 1-1/8" | 1 |

3.3 Valve Access Body



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-3910 | VALVE ACCESS BODY 1/4 EXT 2" | 2 |

3.4 Valve Core Refrigerant



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 2 |

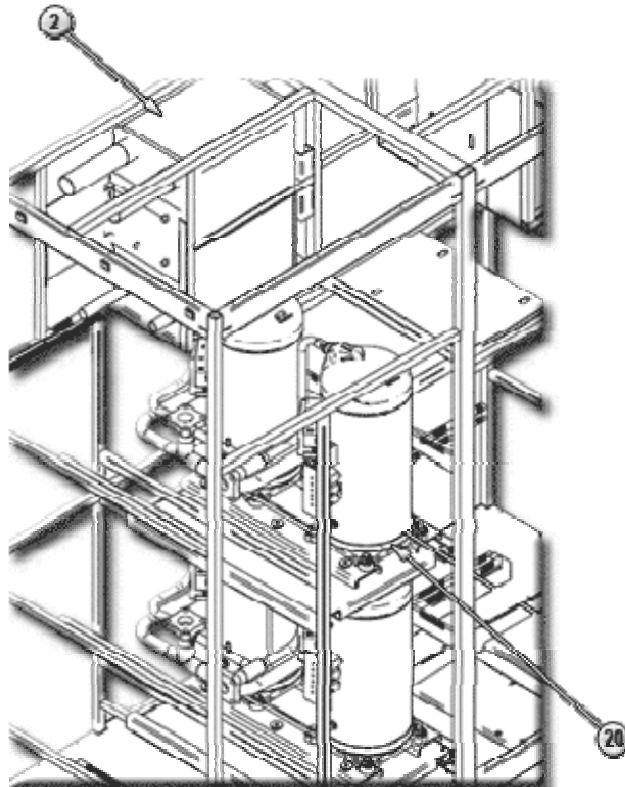
3.5 Adapter



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 180328P1 | ADAPTER ST/CU 1-5/8FTGX1-1/4M | 1 |

4.0 Piping Configuration

4.1 Compressors



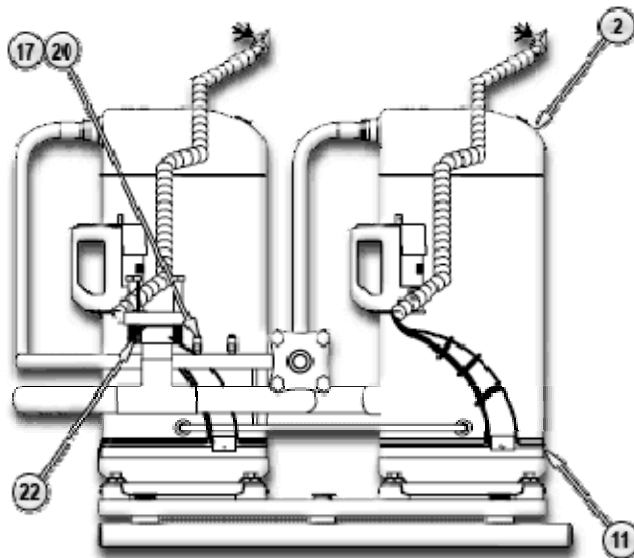
- 2. HX CSCDE Condenser
- 20. XDC Compressor Mount

4.1.1 HX CSCDE Condenser



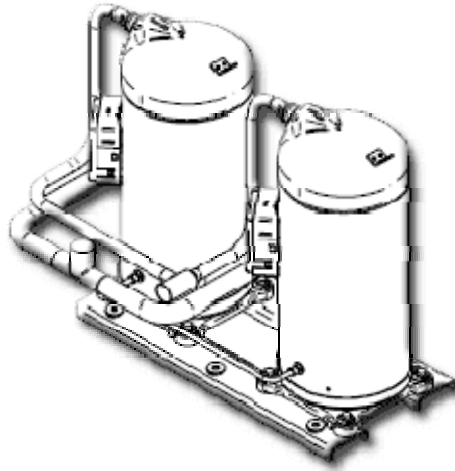
| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| 179288G1 | HX CSCDE COND ASSY XDC | 1 |

4.1.2 XDC Compressor Mount



- 2. Compressor Scroll
- 11. Crankcase Heater
- 17. Valve Access Body
- 20. Valve Core
- Refrigerant
- 22. Gasket Valve

4.1.2.1 Compressor Scroll



| Part Number | Description | Quantity |
|-------------|-------------------------|----------|
| 179303P1 | COMP SCRL ZRT250KCE-TFD | 2 |

4.1.2.2 Crankcase Heater



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 172147P2 | HEATER C/CASE 480V 90W SMT SCR | 4 |

4.1.2.3 Valve Access Body



| Part Number | Description | Quantity |
|-------------|----------------------------|----------|
| P02-0270 | VALVE ACCESS BODY 1/4X SWT | 4 |

4.1.2.4 Valve Core Refrigerant



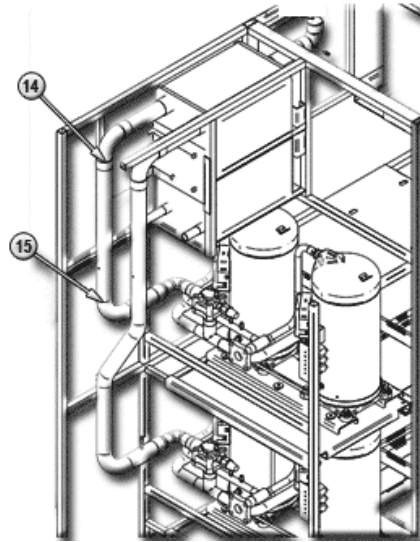
| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 4 |

4.1.2.5 Gasket Valve



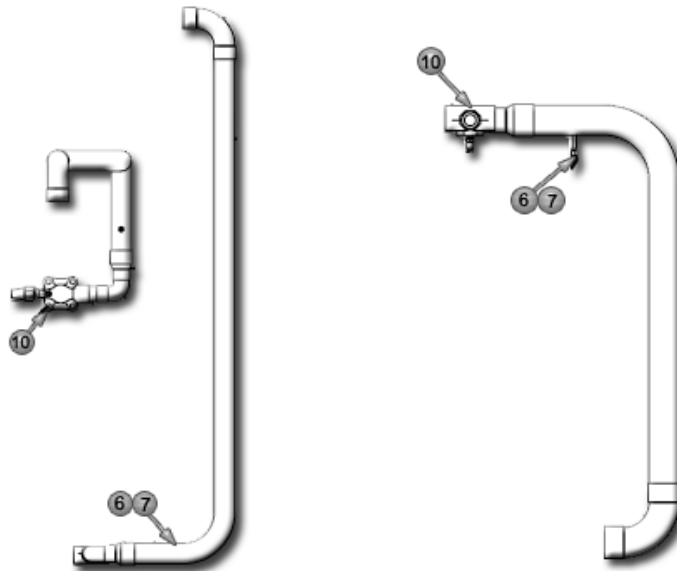
| Part Number | Description | Quantity |
|-------------|---------------------------|----------|
| C-089A | GASKET VALVE COMP SERVICE | 4 |

4.2 Suction Lines



- 14. XDC Suction Circuit
- 15. XDC Suction Circuit 2

4.2.1 XDC Suction Circuit



- 6. Valve Access Body
- 7. Valve Core Refrigerant
- 10. Valve Comp Serv

4.2.1.1 Valve Access Body



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-3910 | VALVE ACCESS BODY 1/4 EXT 2" | 1 |

4.2.1.2 Valve Core Refrigerant



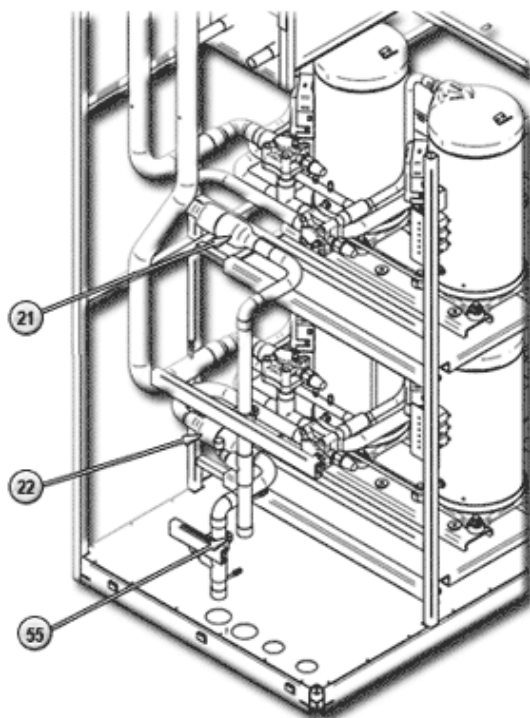
| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 1 |

4.2.1.3 Valve Comp Serv



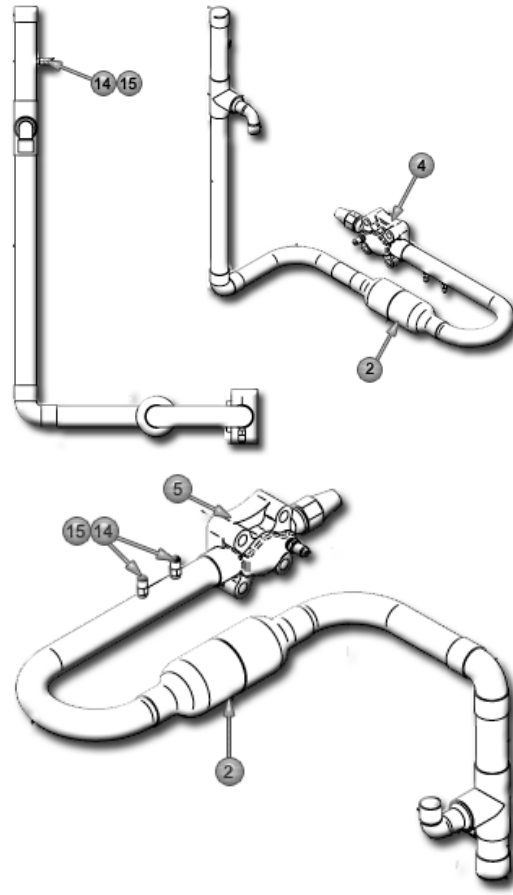
| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 130740P1 | VALVE COMP SERV SUCT 1-5/8SWT | 1 |

4.3 Discharge Lines



- | | | | |
|-----|---------------------|-----|------------|
| 21. | XDC Comp1 Discharge | 55. | Clamp Tube |
| 22. | XDC Comp2 Discharge | | |

4.3.1 XDC Comp1/ Comp2 Discharge



- 2. Check Valve
- 4./5. Valve Comp Serv
- 14. Valve Access Body
- 15. Valve Core Refrigerant

4.3.1.1 Check Valve



| Part Number | Description | Quantity |
|-------------|----------------------|----------|
| 179306P1 | CHECK VLV 1-3/8" SWT | 1 |

4.3.1.2 Valve Comp Serv



| Part Number | Description | Quantity |
|-------------|-------------------------|----------|
| 1A18898P1 | VALVE COMP SERV 1-3/8ID | 1 |

4.3.1.3 Valve Access Body



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-3910 | VALVE ACCESS BODY 1/4 EXT 2" | 1 |

4.3.1.4 Valve Core Refrigerant



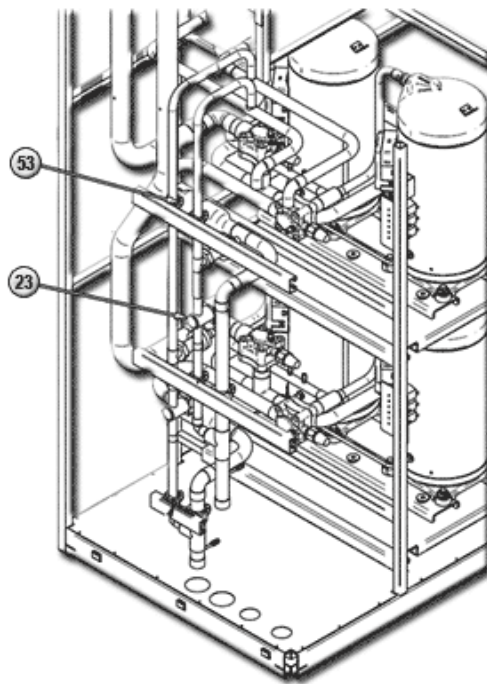
| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 1 |

4.3.2 Clamp Tube



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 179061P4 | CLAMP TUBE CUSH-A-CLAMP 1.375 | 2 |

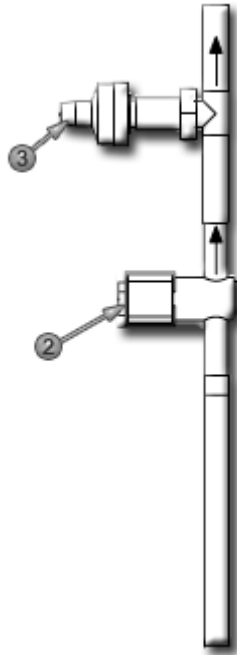
4.4 HGBP and Liquid Return Lines



23. XDC HGBP

53. Clamp Tube

4.4.1 XDC HGBP Assembly



- 2. Valve Solenoid
- 3. Valve Electronic HGBP

4.4.1.1 Valve Solenoid



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-287A | VALVE SOLND 7/8FXM 24V-50/60 | 1 |

4.4.1.2 Valve Electronic HGBP



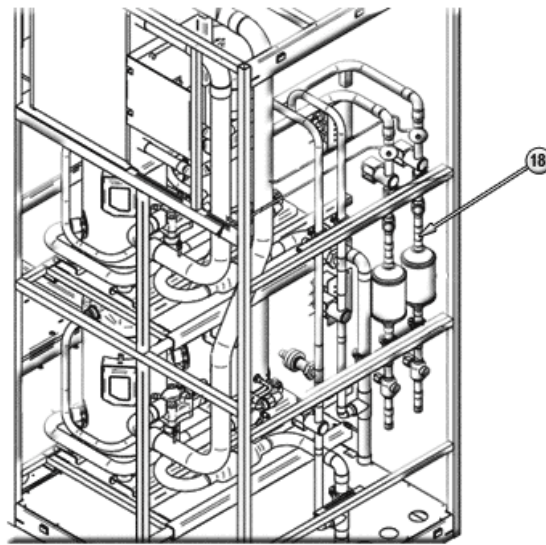
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|-------------|-----------------------|----------|
| 163586P2 | VALVE ELECTRONIC HGBP | 1 |

4.4.2 Clamp Tube



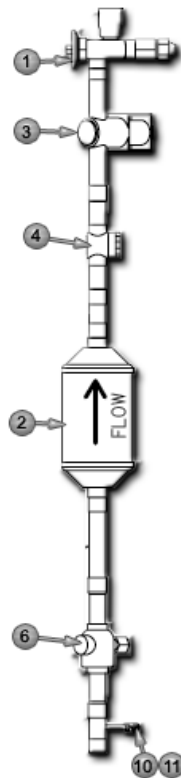
| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 179061P5 | CLAMP TUBE CUSH-A-CLAMP 0.875 | 5 |

4.5 Liquid Return Stacks and Clamps



18. XDC Liquid Line

4.5.1 XDC Liquid Line



- | | |
|---------------------|----------------------------|
| 1. Valve Exp | 6. Valve Ball Refrigerant |
| 2. Filter/Drier | 10. Valve Access Body |
| 3. Solenoid | 11. Valve Core Refrigerant |
| 4. Liquid Indicator | |

4.5.1.1 Valve Exp



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 133532P1 | VALVE EXP 7/8X1-1/8X1/4ODF 60" | 1 |

4.5.1.2 Filter/Drier



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 130721P1 | FILTER/DRIER 7/8ODF SLDR | 1 |

4.5.1.3 Valve Solenoid



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-287A | VALVE SOLND 7/8FXM 24V-50/60 | 1 |

4.5.1.4 Liquid Indicator



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| P05-1050 | INDICATOR LIQUID 7/8"ODF | 1 |

4.5.1.5 Valve Ball Refrigerant



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P05-1380 | VALVE BALL REFRIG 7/8" | 1 |

4.5.1.6 Valve Access Body



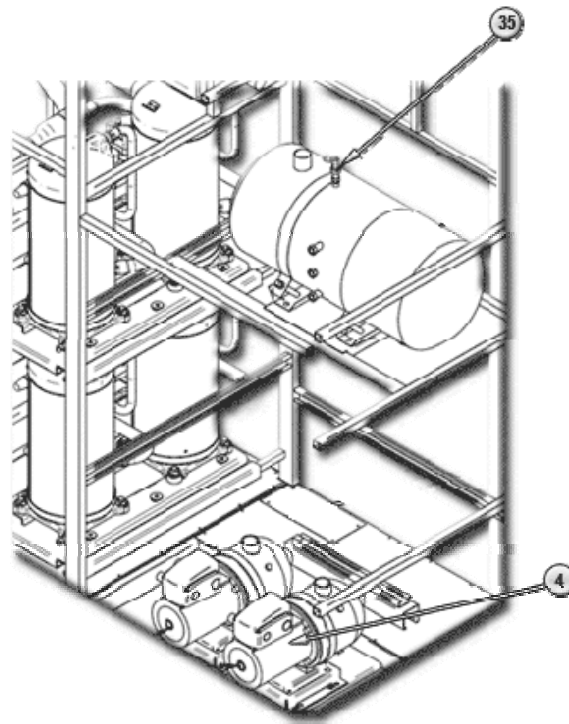
| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-3910 | VALVE ACCESS BODY 1/4 EXT 2" | 1 |

4.5.1.7 Valve Core Refrigerant



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 1 |

4.6 Pumps and Receiver



- 4. Pump
- 35. Valve Relief

4.6.1 Pump



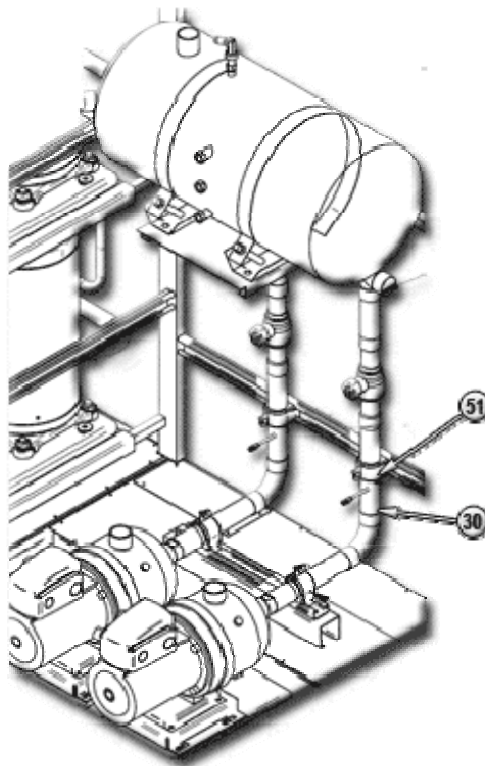
| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| 183404G1S | KIT PUMP REPLACEMENT 208V XD | 2 |
| 183404G2S | KIT PUMP REPLACEMENT 460V XD | 2 |
| 183404G3S | KIT PUMP REPLACEMENT 400V XD | 2 |

4.6.2 Valve Relief



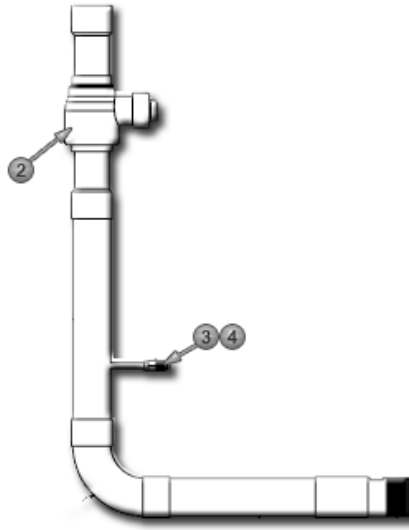
| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 178753P1 | VALVE RELIEF 300#1/4MPTX3/8FLR | 1 |

4.7 Pumps Suction Lines



- 30. Suction Line
- 51. Clamp Tube

4.7.1 Suction Line



- 2. Valve Ball Refrigerant
- 3. Valve Access Body
- 4. Valve Core Refrigerant

4.7.1.1 Valve Ball Refrigerant



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 177813P1 | VALVE BALL REFRIG 1-5/8" | 1 |

4.7.1.2 Valve Access Body



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-3910 | VALVE ACCESS BODY 1/4 EXT 2" | 1 |

4.7.1.3 Valve Core Refrigerant



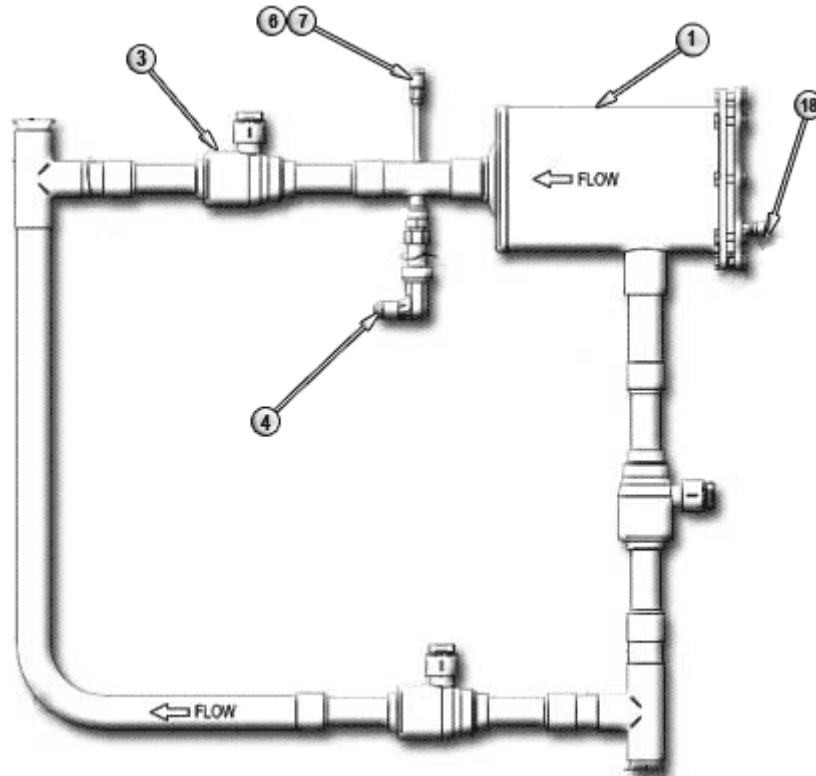
| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 1 |

4.7.2 Clamp Tube



| Part Number | Description | Quantity |
|-------------|-------------------------------|----------|
| 179061P1 | CLAMP TUBE CUSH-A-CLAMP 1.625 | 5 |

5.0 Filter/Drier Replace Assembly



- | | |
|-----------------|---------------------------|
| 1. Filter Drier | 6. Valve Access Body |
| 3. Valve Ball | 7. Valve Core Refrigerant |
| 4. Valve Relief | 18. Valve Access |

5.1 Filter Drier



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 1A21683P4 | FILTER DRIER REPL C489 1.1 ODF | 1 |

5.2 Valve Ball



| Part Number | Description | Quantity |
|-------------|--------------------------|----------|
| 1A25919P1 | VALVE BALL REFRIG 1-1/8" | 3 |

5.3 Valve Relief



| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 178753P1 | VALVE RELIEF 300#1/4MPTX3/8FLR | 1 |

5.4 Valve Access Body



| Part Number | Description | Quantity |
|-------------|------------------------------|----------|
| P-3910 | VALVE ACCESS BODY 1/4 EXT 2" | 1 |

5.5 Valve Access



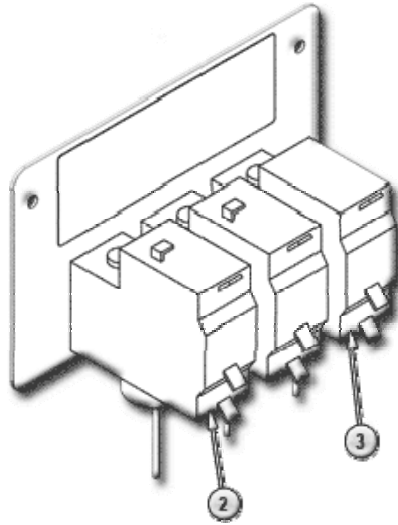
| Part Number | Description | Quantity |
|-------------|--------------------------------|----------|
| 175817P1 | VALVE ACCESS BODY ONLY 1/4"NPT | 1 |

5.6 Valve Core Refrigerant



| Part Number | Description | Quantity |
|-------------|------------------------|----------|
| P02-0290 | VALVE CORE REFRIGERANT | 1 |

6.0 Press Switch Assembly



2/3. Pressure Switch

6.1 Pressure Switch



| Part Number | Description | Quantity |
|-------------|-------------------|----------|
| 1D15060P1 | SW PRES HI 360PSI | 1 |

6.2 Pressure Switch



| Part Number | Description | Quantity |
|-------------|----------------------|----------|
| 1D16206P1 | SW PRES LOW 20/65PSI | 2 |

7.0 Accessories

| Part Number | Description |
|-------------|-------------------|
| CSL415 | Condenser |
| CSL616 | Condenser |
| 185010G2 | Receiver Kit |
| 185010G4 | Receiver Kit |
| 179713G1 | Receiver Kit |
| 179713G3 | Receiver Kit |
| 179711G1 | Head Pressure Kit |
| 179711G2 | Head Pressure Kit |

8.0 Control and Sensor



| Part Number | Description | Quantity |
|-------------|-------------------------|----------|
| 1C16334G20 | SENSORS T/H 15 REM 150' | 1 |
| 153210G2 | BOX WALL MOUNTED | 1 |

9.0 Revision Page

| Version | Revision Date | Section | Details |
|---------|---------------|---------------------|------------------------------------|
| 01 | 07/15/2008 | Sensor and Controls | Add sensor and control information |