

## **COOL ONLY**

### **BLACK TERMINAL BLOCK (EXTERNAL):**

"R" Red wire. Comes from TRANSFORMER

"G" Green Wire. Goes to FAN RELAY terminal #3

"W" -empty-

"B" Black wire. Goes to CONTACTOR terminal F

### **COMPRESSOR CAPACITOR:**

1) One black wire from the hard start on each side

2) A red wire on one side from PLUG 1B

3) Two white wires on the other side

A) White wire from the PLUG 2A

B) White wire from CONTACTOR terminal D

### **CONTACTOR (see picture below):**

#### **110 Volt Power-In Side**

Terminal A:1) Black wire from TRANSFORMER (Orange wire instead if 220 volt)

2) Black from FUSE

3) Black from PUMP RELAY terminal 2

Terminal B:1) White wire from WHITE TERMINAL BLOCK - WHITE POWER LEAD

2) Pink wire from PLUG 3B

3) White wire from TRANSFORMER

#### **110 Volt Power-In Side**

Terminal A:1) Black wire from PLUG 1C

Terminal B:1) White wire from COMPRESSOR CAPACITOR - white side

2) White to WHITE TERMINAL BLOCK - WHITE PUMP LEAD

24 Volt Side A:1) Green wire from TRANSFORMER

2) Yellow wire from TIME DELAY

3) Yellow wire from PUMP RELAY terminal 1

24 Volt Side B:1) Black wire from BLACK TERMINAL BLOCK "B"

2) Black wire from FAN RELAY terminal 3

FAN RELAY (this is the little relay NOT mounted on the side of the box):

Terminal 1) (24v) Yellow wire from CONTACTOR terminal E

Terminal 2) (110v) Black wire from CONTACTOR terminal A

Terminal 3) (24v) Green wire from BLACK TERMINAL BLOCK "G"

Terminal 4) (110v) Purple wire from PLUG 3C

FUSE HOUSING:

1) Black wire to WHITE TERMINAL BLOCK - BLACK POWER LEAD

2) Black wire to CONTACTOR terminal A

PUMP RELAY (this is the little relay that IS mounted on the side of the box):

Terminal 1) (24v) Yellow wire from TIME DELAY

Terminal 2) (110v) Piggyback red wires

2A) Red wire from PLUG 3A

2B) Red wire from WHITE TERMINAL BLOCK - BLACK PUMP LEAD

Terminal 3) (24v) Black wire from CONTACTOR terminal F

Terminal 4) (110v) Black from PLUG 4B

PLUG (looking at the plug from inside the box):

1st Row #1 = Unused yellow wire (used on units with heat)

#2 = Red wire to COMPRESSOR CAPACITOR (the set of terminals with no white wires)

#3 = Black wire to CONTACTOR terminal C

2nd Row #1 = White wire to COMPRESSOR CAPACITOR

#2 = Unused blue wire (used on units with heat)

#3 = Green wire to ground

3rd Row #1 = Red wire to PUMP RELAY terminal 2

#2 = Pink wire to CONTACTOR terminal B

#3 = Purple wire to FAN RELAY terminal 4

4th Row #1 = -Empty-

#2 = Black wire to PUMP RELAY terminal 4

#3 = -Empty-

TIME DELAY:

- 1) Yellow wire from CONTACTOR terminal E
- 2) Yellow wire from PUMP RELAY 1

TRANSFORMER:

- 1) (24v) Red wire goes to BLACK TERMINAL BLOCK "R"
- 2) (24v) Green to CONTACTOR terminal E
- 3) (110v) White to CONTACTOR terminal B
- 4) IF unit is 110v: Black to CONTACTOR terminal A (Orange and Red wires are capped off)  
IF unit is 220v: Orange to CONTACTOR terminal A (Black and Red wires are capped off)

WHITE TERMINAL BLOCK (EXTERNAL):

BLACK POWER LEAD. Black wire goes to FUSE

WHITE POWER LEAD. White wire goes to CONTACTOR terminal B

BLACK PUMP LEAD. Red wire goes to piggyback PUMP RELAY terminal 2

WHITE PUMP LEAD. White wire goes to CONTACTOR terminal D

NOTE:

EBM blowers have a capacitor in the control box.

- 1) One wire piggybacks to the purple wire on FAN RELAY terminal 4
- 2) The other wire goes to PLUG 4A

# **ELECTRIC HEAT**

## **BLACK TERMINAL BLOCK (EXTERNAL):**

"R" Red wire. Comes from TRANSFORMER

"G" Green Wire. Goes to FAN RELAY terminal #3

"W" White wire. Goes to HEAT CONTACTOR terminal E

"B" Black wire. Goes to CONTACTOR terminal F

## **COMPRESSOR CAPACITOR:**

1) One black wire from the hard start on each side

2) A red wire on one side from PLUG 1B

3) Two white wires on the other side

A) White wire from the PLUG 2A

B) White wire from CONTACTOR terminal D

## **CONTACTOR (See picture below):**

### **110 Volt Power-In Side**

Terminal A:1) Black wire from TRANSFORMER (Orange wire instead if 220 volt)

2) Black from FUSE

3) Black from PUMP RELAY terminal 2

4) Black from HEAT CONTACTOR terminal D

Terminal B:1) White wire from WHITE TERMINAL BLOCK - WHITE POWER LEAD

2) Pink wire from PLUG 3B

3) White wire from TRANSFORMER

4) White from HEAT CONTACTOR terminal C

### **110 Volt Power-In Side**

Terminal A:1) Black wire from PLUG 1C

Terminal B:1) White wire from COMPRESSOR CAPACITOR - white side

2) White to WHITE TERMINAL BLOCK - WHITE PUMP LEAD

24 Volt Side A:1) Green wire from TRANSFORMER

2) Yellow wire from TIME DELAY

3) Yellow wire from PUMP RELAY terminal 1

4) Yellow wire from HEAT CONTACTOR terminal F

24 Volt Side B:1) Black wire from BLACK TERMINAL BLOCK "B"

2) Black wire from FAN RELAY terminal 3

FAN RELAY (this is the little relay NOT mounted on the side of the box):

Terminal 1) (24v) Yellow wire from CONTACTOR terminal E

Terminal 2) (110v) Black wire from CONTACTOR terminal A

Terminal 3) (24v) Green wire from BLACK TERMINAL BLOCK "G"

Terminal 4) (110v) Purple wire from PLUG 3C

CONTACTOR (See picture below):

[NOTE this is the contactor between the transformer and the fan relay]

110 Volt Power-In Side

Terminal A) Blue wire from Plug 2B

Terminal B) Yellow wire from PLUG 1A

110 Volt Power-In Side

Terminal A) White wire from CONTACTOR terminal B

Terminal B) Black wire from CONTACTOR terminal A

24 Volt Side A) White wire from BLACK TERMINAL BLOCK "W"

24 Volt Side B) Yellow wire from CONTACTOR terminal E

FUSE HOUSING:

1) Black wire to WHITE TERMINAL BLOCK - BLACK POWER LEAD

2) Black wire to CONTACTOR terminal A

PLUG (looking at the plug from inside the box):

Row 1 #1 = Yellow wire to HEAT CONTACTOR terminal B

#2 = Red wire to COMPRESSOR CAPACITOR (the set of terminals with no white wires)

#3 = Black wire to CONTACTOR terminal C

Row 2 #1 = White wire to COMPRESSOR CAPACITOR

#2 = Blue wire HEAT CONTACTOR terminal A

#3 = Green wire to ground

Row 3 #1 = Red wire to PUMP RELAY terminal 2

#2 = Pink wire to CONTACTOR terminal B

#3 = Purple wire to FAN RELAY terminal 4

Row 4 #1 = -Empty-

#2 = Black wire to PUMP RELAY terminal 4

#3 = -Empty-

PUMP RELAY (this is the little relay that IS mounted on the side of the box):

Terminal 1) (24v) Yellow wire from TIME DELAY

Terminal 2) (110v) Piggyback red wires

2A) Red wire from PLUG 3A

2B) Red wire from WHITE TERMINAL BLOCK - BLACK PUMP LEAD

Terminal 3) (24v) Black wire from CONTACTOR terminal F

Terminal 4) (110v) Black from PLUG 4B

TIME DELAY:

1) Yellow wire from CONTACTOR terminal E

2) Yellow wire from PUMP RELAY terminal 1

TRANSFORMER:

1) (24v) Red wire goes to BLACK TERMINAL BLOCK "R"

2) (24v) Green to CONTACTOR terminal E

3) (110v) White to CONTACTOR terminal B

4) IF unit is 110v: Black to CONTACTOR terminal A (Orange and Red wires are capped off)

IF unit is 220v: Orange to CONTACTOR terminal A (Black and Red wires are capped off)

WHITE TERMINAL BLOCK (EXTERNAL):

BLACK POWER LEAD. Black wire goes to FUSE

WHITE POWER LEAD. White wire goes to CONTACTOR terminal B

BLACK PUMP LEAD. Red wire goes to piggyback PUMP RELAY terminal 2

WHITE PUMP LEAD. White wire goes to CONTACTOR terminal D

NOTE:

EBM blowers have a capacitor in the control box.

- 1) One wire piggybacks to the purple wire on FAN RELAY terminal 4
- 2) The other wire goes to PLUG 4A

## **REVERSE CYCLE**

### **BLACK TERMINAL BLOCK (EXTERNAL):**

"R" Red wire. Comes from piggybacked terminal on REVERSING RELAY 6

"G" Green Wire. Goes to FAN RELAY terminal #3

"W" White wire. Goes to REVERSING RELAY terminal below 6

"B" Black wire. Goes to CONTACTOR terminal F

### **COMPRESSOR CAPACITOR:**

1) One black wire from the hard start on each side

2) A red wire on one side from PLUG 1B

3) Two white wires on the other side

A) White wire from the PLUG 2A

B) White wire from CONTACTOR terminal D

### **CONTACTOR (See picture below):**

#### **110 Volt Power-In Side**

Terminal A:1) Black wire from TRANSFORMER (Orange wire instead if 220 volt)

2) Black from FUSE

3) Black from PUMP RELAY terminal 2

Terminal B:1) White wire from WHITE TERMINAL BLOCK - WHITE POWER LEAD

2) Pink wire from PLUG 3B

3) White wire from TRANSFORMER

#### **110 Volt Power-In Side**

Terminal A:1) Black wire from PLUG 1C

2) Yellow wire from PLUG 1A

Terminal B:1) White wire from COMPRESSOR CAPACITOR - white side

2) White wire to REVERSING RELAY terminal 3

3) White to WHITE TERMINAL BLOCK - WHITE PUMP LEAD

24 Volt Side A:1) Green wire from TRANSFORMER

2) Yellow wire from TIME DELAY



3) Yellow wire from PUMP RELAY terminal 1

4) Yellow wire from REVERSING RELAY terminal below 4

24 Volt Side B:1) Black wire from BLACK TERMINAL BLOCK "B"

2) Black wire from FAN RELAY terminal 3

FAN RELAY (this is the little relay NOT mounted on the side of the box):

Terminal 1) (24v) Yellow wire from CONTACTOR terminal E

Terminal 2) (110v) Black wire from CONTACTOR terminal A

Terminal 3) (24v) Green wire from BLACK TERMINAL BLOCK "G"

Terminal 4) (110v) Purple wire from PLUG 3C

FUSE HOUSING:

1) Black wire to WHITE TERMINAL BLOCK - BLACK POWER LEAD

2) Black wire to CONTACTOR terminal A

PUMP RELAY (this is the little relay that IS mounted on the side of the box):

Terminal 1) (24v) Yellow wire from TIME DELAY

Terminal 2) (110v) Piggyback red wires

2A) Red wire from PLUG 3A

2B) Red wire from WHITE TERMINAL BLOCK - BLACK PUMP LEAD

Terminal 3) (24v) Black wire from CONTACTOR terminal F

Terminal 4) (110v) Black from PLUG 4B

PLUG (looking at the plug from inside the box):

Row 2 #1 = Yellow wire to CONTACTOR terminal C

#2 = Red wire to COMPRESSOR CAPACITOR (the set of terminals with no white wires)

#3 = Black wire to CONTACTOR terminal C

Row 2 #1 = White wire to COMPRESSOR CAPACITOR

#2 = Blue wire to REVERSING RELAY terminal 1

#3 = Green wire to ground

Row 3 #1 = Red wire to PUMP RELAY terminal 2

#2 = Pink wire to CONTACTOR terminal B

#3 = Purple wire to FAN RELAY terminal 4

Row 4 #1 = -Empty-

#2 = Black wire to PUMP RELAY terminal 4

#3 = -Empty-

#### REVERSING RELAY:

Terminal 1) (110v) Blue wire from PLUG 2B

Terminal 2) -empty-

Terminal 3) (110v) White wire from CONTACTOR D

Terminal 4) (24v) Black wire from CONTACTOR F

Terminal 5) -empty-

Terminal 6) (24v) Piggyback

6A) Red wire from TRANSFORMER

6B) Red wire from BLACK TERMINAL BLOCK "R"

Below 4) (24v) Yellow wire from CONTACTOR E

Below 6) (24v) White from BLACK TERMINAL BLOCK "W"

#### TIME DELAY:

1) Yellow wire from CONTACTOR terminal E

2) Yellow wire from PUMP RELAY terminal 1

#### TRANSFORMER:

1) (24v) Red wire goes to REVERSING RELAY terminal 6 (piggyback)

2) (24v) Green to CONTACTOR terminal E

3) (110v) White to CONTACTOR terminal B

4) IF unit is 110v: Black to CONTACTOR terminal A (Orange and Red wires are capped off)

IF unit is 220v: Orange to CONTACTOR terminal A (Black and Red wires are capped off)

#### WHITE TERMINAL BLOCK (EXTERNAL):

BLACK POWER LEAD. Black wire goes to FUSE

WHITE POWER LEAD. White wire goes to CONTACTOR terminal B

BLACK PUMP LEAD. Red wire goes to piggyback PUMP RELAY terminal 2

WHITE PUMP LEAD. White wire goes to CONTACTOR terminal D

NOTE:

EBM blowers have a capacitor in the control box.

- 1) One wire piggybacks to the purple wire on FAN RELAY terminal 4
- 2) The other wire goes to PLUG 4A

## **FX-1 WIRING**

### **CIRCUIT BOARD:**

COM L1 Black from PLUG 4B

RUN L2 White from COMPRESSOR CAPACITOR

PUMP L-1 Black from WHITE TERMINAL BLOCK Black Pump Wire

PUMP L-2 Blue from PLUG 2B -AND- White from WHITE TERMINAL  
BLOCK White Pump Wire

VALVE L-1 Yellow from PLUG 1A

AC L-1 Black from FUSE

AC L-2 WHITE TERMINAL BLOCK White Power Wire

FAN L-2 Purple from PLUG 3C

FAN L-1 Pink from PLUG 3B

### **COMPRESSOR CAPACITOR:**

- 1) One black wire from the hard start on each side
- 2) A red wire on one side from PLUG 1B
- 3) Two white wires on the other side
  - A) White wire from the PLUG 2A
  - B) White wire from CIRCUIT BOARD RUN L2

### **FUSE HOUSING:**

- 1) Black wire to WHITE TERMINAL BLOCK - BLACK POWER LEAD
- 2) Black wire to CIRCUIT BOARD AC L-1

### **HP SWITCH PLUG:**

Upper wire to Red PLUG wire 3A

Middle wire to Black PLUG wire 1C

Lower capped off

PLUG (looking at the plug from inside the box):

1A = Yellow wire to CIRCUIT BOARD VALVE L-1

ABC 1B = Red wire to COMPRESSOR CAPACITOR (the set  
\_\_\_\_\_ of terminals with no white wires)

1- |000| 1C = Black wire to Middle HP Switch Wire

2- |000| 2A = White wire to COMPRESSOR CAPACITOR

3- |000| 2B = Blue wire CIRCUIT BOARD PUMP L-2

4- |000| 2C = Green wire to ground

--- 3A = Red wire to Upper HP Switch Wire

3B = Pink wire to CIRCUIT BOARD FAN L-1

3C = Purple wire to CIRCUIT BOARD FAN L-2

4A = -Empty-

4B = Black wire to CIRCUIT BOARD COM L1

4C = -Empty-

WHITE TERMINAL BLOCK (EXTERNAL):

BLACK POWER LEAD. Black wire goes to FUSE

WHITE POWER LEAD. White wire goes to CIRCUIT BOARD AC L-2

BLACK PUMP LEAD. Black wire goes to CIRCUIT BOARD PUMP L-1

WHITE PUMP LEAD. White wire goes to CIRCUIT BOARD PUMP L-2

NOTE:

EBM blowers have a capacitor in the control box.

1) One wire piggybacks to the purple wire on CIRCUIT BOARD FAN L-2

2) The other wire goes to PLUG 4A

## **WIRING HARNESS HOOK-UP**

**BLACK WIRE** These 2 wires go to the high pressure switch. They are interchangeable.

**RED WIRE**

**YELLOW WIRE** These 2 wire go to the heat system (reverse cycle valve or electric heat strip) - IF-

**BLUE WIRE** the unit has heat. Wires are capped off if Cool Only. They are interchangeable.

**BLACK WIRE** These wires go to the compressor. Black goes to "C" (common), Red goes to "S" (start)

**RED WIRE** and the white wire goes to "R" (run).

**WHITE WIRE**

**PURPLE WIRE** These wires go to the blower. Purple is hot (typically attaches to the black blower

**PINK WIRE** wire), Pink is common (typically attaches to the white blower wire). Brown is

**BROWN WIRE** only used on EBM blowers with a brown wire. If no brown wire is present this

wire is capped off.

# CONTACTOR DIAGRAM

