

Tranquility[®] Vertical Stack (817/TRM) Series

Submittal Data

Models 817 09 - 36 60Hz - HFC-410A



LC522

Rev.: February 28, 2023



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Vertical Stack 817/TRM Series

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TRANQUILITY® VERTICAL STACK (817/TRM) SERIES WITH EARTH PURE® REFRIGERANT

The Tranquility® Vertical Stack (817/TRM) Series replacement chassis offers quick replacement of the old chassis without having to tear out existing cabinets or modifying riser stacks. Keeping your old cabinet means no sheet rock removal and repair. 817/TRM replacement chassis slide into most existing California Heat Pump (CHP) and ClimateMaster cabinets. Accessory kits available: water adapter kit to convert hard union water piping to hose connection; cabinet kit to upgrade deck, blower assembly, motor, P Controls; and hose kit. The 817/TRM Series exceeds ASHRAE 90.1 efficiencies. Using EarthPure® (HFC-410A) refrigerant, the 817/TRM Series not only protects the environment, it does so while delivering unprecedented comfort, efficiency, and reliability.

Available in sizes 3/4 ton (2.6 kW) through 3 tons (10.6 kW). ClimateMaster's exclusive double isolation compressor mounting system makes the 817/TRM Series the quietest vertical stack units on the market. Compressors are mounted on specially engineered sound-tested EPDM rubber grommets to a heavy gauge mounting plate, which is then isolated from the cabinet base with vibration isolation grommets for maximized vibration/sound attenuation.

In some replacements are best suited for 817 model chassis while others are TRM. The Climatemaster replacement chassis will select the best match for each application.

UNIT FEATURES

- Sizes 09 (3/4 ton, 2.6 kW) through 36 (3 ton, 10.6 kW)
- Environmentally-friendly EarthPure® (HFC-410A) zero ozone depletion refrigerant
- High efficiency rotary and scroll compressors
- Exceeds ASHRAE 90.1 efficiencies
- Unique double isolation compressor mounting for quiet operation
- UltraQuiet construction (optional to delete)
- TXV metering device
- Wide variety of chassis options including stainless steel drain pan, coated air coil, insulated tubing for extended range operation, autoflow regulator, motorized water valve either fail-opened or fail-closed and cupro-nickel coaxial heat exchanger

ACCESSORY KITS / OPTIONS

- Cabinet deck/blower assembly/P control kits for old cabinet 10, 15, 28, 30, 36 - optional
- Cabinet deck/blower assembly/P control kit for old cabinet 20, for old size 20 the kit is mandatory.
- Water adapter kit - converts hard union connection to hose connection.
- Hose kits - connect new chassis to water connection.
- Return air panel may be required.
- Thermostat may be required.

Note: Many different styles of return air panels have been sold. Some panels will require field modification for attachment to new chassis. Recommended to purchase new style return air panel. ClimateMaster is not responsible or liable for any modifications to panels or walls required to securely attach return air panel.

Some models will require a new thermostat if controls are changed.

Selection Procedure

Reference Calculations

| HEATING | |
|--|--|
| $LWT = EWT - \frac{HE}{GPM \times Constant}$ | |
| $LAT = EAT + \frac{HC}{CFM \times 1.08}$ | |

| COOLING | |
|--|-----------------------|
| $LWT = EWT + \frac{HR}{GPM \times Constant}$ | $LC = TC - SC$ |
| $LAT (DB) = EAT (DB) - \frac{SC}{CFM \times 1.08}$ | $S/T = \frac{SC}{TC}$ |

Constant = 500 for water, 485 for antifreeze

Conversion Table - to convert inch-pound (English) to S-I (Metric)

| Airflow | Water Flow | Est Static Pressure | Water Pressure Drop |
|-----------------------------|---------------------------------|---------------------------------|---------------------------------|
| Airflow (L/s) = CFM x 0.472 | Water Flow (L/s) = gpm x 0.0631 | ESP (Pa) = ESP (in of wg) x 249 | PD (kPa) = PD (ft of hd) x 2.99 |

Legend and Glossary of Abbreviations

| Abbreviations | Descriptions |
|---------------|---|
| BTUH | BTU (British Thermal Unit) per hour |
| CDT | Compressor discharge temperature |
| CFM | Airflow, cubic feet per minute |
| COP | Coefficient of performance = BTUH output/BTUH input |
| CT ECM | Electronic commutated constant torque fan motor |
| CV ECM | Electronic commutated constant volume fan motor |
| DB | Dry bulb temperature, °F |
| EAT | Entering air temperature |
| EER | Energy efficient ratio = BTUH output/Watt input |
| ESP | External static pressure, inches w.g. |
| EWT | Entering water temperature |
| FPT | Female pipe thread |
| GPM | Water flow in U.S., gallons per minute |
| HC | Air heating capacity, BTUH |
| HE | Total heat of extraction, BTUH |
| HR | Total heat of rejection, BTUH |
| HWC | Hot water generator (desuperheater) capacity, Mbtuh |
| KW | Total power unit input, kilowatts |
| LAT | Leaving air temperature, °F |
| LC | Latent cooling capacity, BTUH |
| LOC | Loss of charge |
| LWT | Leaving water temperature, °F |
| MBTUH | 1,000 BTU per hour |
| MPT | Male pipe thread |
| MWV | Motorized water valve |
| PSC | Permanent split capacitor |
| SC | Sensible cooling capacity, BTUH |
| S/T | Sensible to total cooling ratio |
| TC | Total cooling capacity, BTUH |
| TD or delta T | Temperature differential |
| VFD | Variable frequency drive |
| WB | Wet bulb temperature, °F |
| WPD | Waterside pressure drop, psi or feet of head |
| WSE | Waterside economizer |

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Selection Procedure

- Step 1** Determine the actual heating and cooling loads at the desired dry bulb and wet bulb conditions.
- Step 2** Obtain the following design parameters: Entering water temperature, water flow rate in GPM, air flow in CFM, water flow pressure drop and design wet and dry bulb temperatures. Air flow CFM should be between 300 and 450 CFM per ton. Unit water pressure drop should be kept as close as possible to each other to make water balancing easier. Go to the appropriate tables and find the proper indicated water flow and water temperature.
- Step 3** Select a unit based on total and sensible cooling conditions. Select a unit which is closest to, but no larger than, the actual cooling load.
- Step 4** Enter tables at the design water flow and water temperature. Read the total and sensible cooling capacities (Note: interpolation is permissible, extrapolation is not).
- Step 5** Read the heating capacity. If it exceeds the design criteria it is acceptable. It is quite normal for Water-Source Heat Pumps to be selected on cooling capacity only since the heating output is usually greater than the cooling capacity.
- Step 6** Determine the correction factors associated with the variable factors of dry bulb and wet bulb.

Corrected Total Cooling = tabulated total cooling x wet bulb correction.

Corrected Sensible Cooling = tabulated sensible cooling x wet/dry bulb correction.
- Step 7** Compare the corrected capacities to the load requirements. Normally if the capacities are within 10% of the loads, the equipment is acceptable. It is better to undersize than oversize, as undersizing improves humidity control, reduces sound levels and extends the life of the equipment.
- Step 8** When completed, calculate water temperature rise and assess the selection. If the units selected are not within 10% of the load calculations, then review what effect changing the GPM, water temperature and/or air flow and air temperature would have on the corrected capacities. If the desired capacity cannot be achieved, select the next larger or smaller unit and repeat the procedure. Remember, when in doubt, undersize slightly for best performance.

Example Equipment Selection For Cooling

Step 1 Load Determination:

Assume we have determined that the appropriate cooling load at the desired dry bulb 80°F and wet bulb 65°F conditions is as follows:

Total Cooling.....15,100 BTUH
Sensible Cooling.....10,500 BTUH
Entering Air Temp.....80°F Dry Bulb / 65°F Wet Bulb

Step 2 Design Conditions:

Similarly, we have also obtained the following design parameters:

Entering Water Temp.....90°F
Water Flow (Based upon 10°F rise in temp.)4.5 GPM
Air Flow515 CFM

Step 3, 4 & 5 HP Selection:

After making our preliminary selection (TRM18), we enter the tables at design water flow and water temperature and read Total Cooling, Sens. Cooling and Heat of Rej. capacities:

Total Cooling.....16,800 BTUH
Sensible Cooling.....12,500 BTUH
Heat of Rejection.....21,300 BTUH

Step 6 & 7 Entering Air and Airflow Corrections:

Next, we determine our correction factors.

| | Table | Ent Air | Air Flow | Corrected |
|-------------------------|-------|---------|-----------------|-----------|
| Corrected Total Cooling | = | 16,800 | × 0.957 × 0.934 | = 15,016 |
| Corrected Sens Cooling | = | 12,500 | × 1.093 × 0.833 | = 11,381 |
| Corrected Heat of Rej. | = | 21,300 | × 0.970 × 0.952 | = 19,669 |

Step 8 Water Temperature Rise Calculation & Assessment:

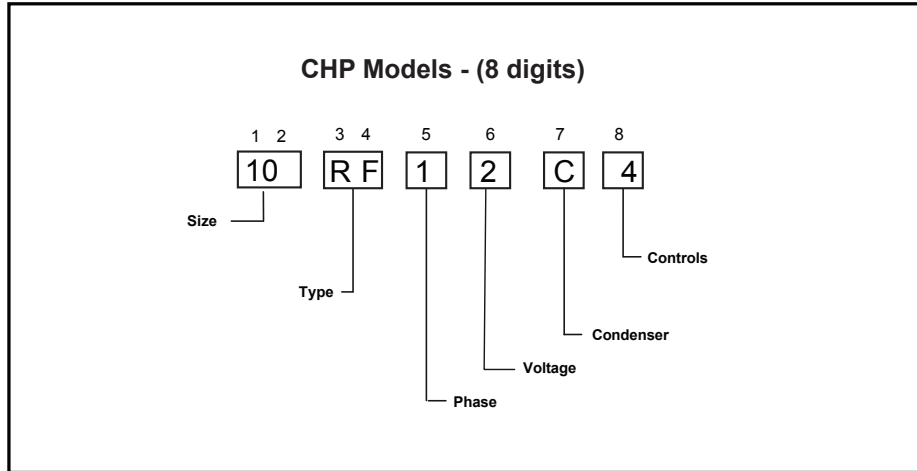
Actual Temperature Rise.....8.9°F

When we compare the Corrected Total Cooling and Corrected Sensible Cooling figures with our load requirements stated in Step 1, we discover that our selection is within +/- 10% of our sensible load requirement. Furthermore, we see that our Corrected Total Cooling figure is slightly undersized as recommended, when compared to the actual indicated load.

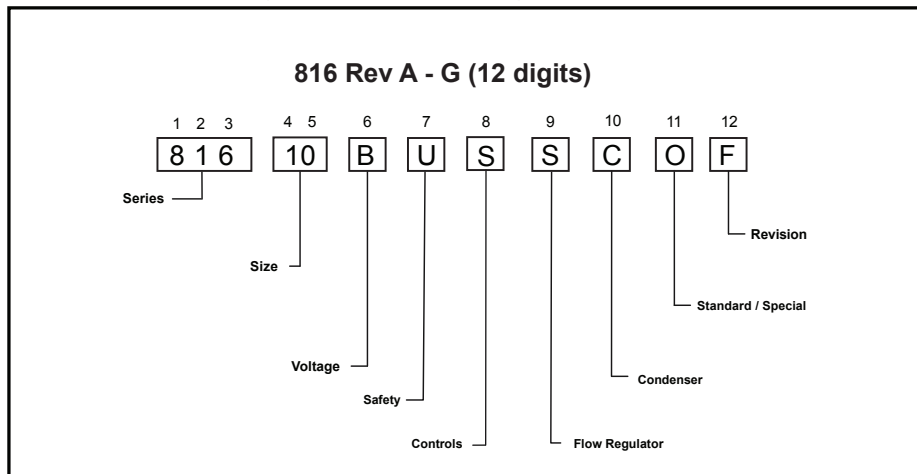
Decoders for Old Models

To select your replacement unit and accessories, use software program located on the business center at climatemaster.com

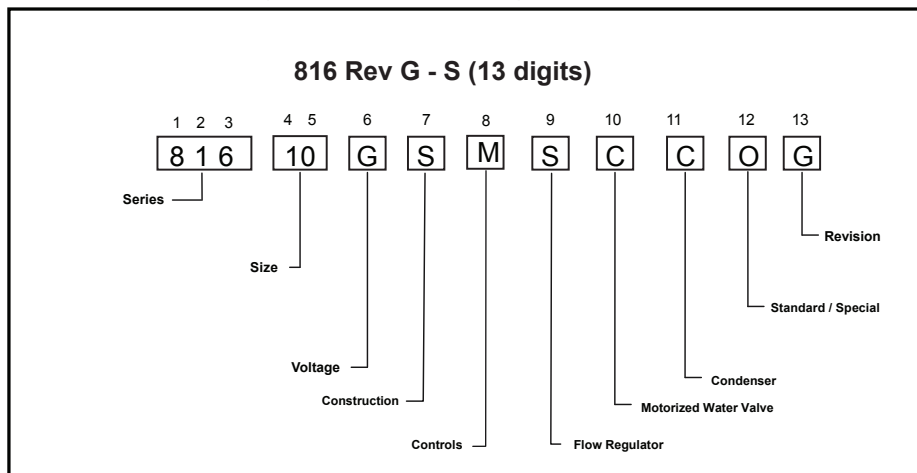
* Note - DO NOT TRY TO USE ATTACHED DECODERS



Decoder for reference only - Use 816 to 817(TRM) Conversion Program to obtain correct replacement model and required accessories.



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TRM & 817 Series Nomenclature

Chassis

1 2 3 4 5 6 7 8 9 10 11 12 13

8 1 7 **0 9** **G** **S** **P** **S** **S** **C** **S** **A**

Series
817 = TRANQUILITY
HIGH RISE
REPLACEMENT CHASSIS

Unit Size
09
12
24
30
36

Voltage
E = 265/60/1
G = 208-230/60/1

| OPTION | S.S. Drain Pan | MUTE |
|--------|----------------|------|
| A | X | - |
| S | - | - |
| 1 | - | X |
| 2 | X | X |

Controls
P = Standard (24V N.C. Safeties) for use with CXM2 or DXM2.5
M = Combination Controls (24V N.C. Safeties) For use w/ether Electro-Mechanical or CMC Controls. (Compare with Cabinet Decoder for Compatibility)
S = Standard (Line Voltage, Pilot Duty Lock-Out Relay, Original chassis had N.O. Switches. Replacement has N.C. High Pressure Switch, Low Pressure Switch or High Discharge Temp Switch, FreezeStat and Quick Connect cord. (Compare with Cabinet Decoder for Compatibility)

Revision Level
A = Current Revision Level

Standard
S = Standard
A = Special #1
B = Special #2
Etc.....

Heat Exchanger Options
C = Copper Coax w/Coated Air Coil
N = Cupro-Nickel Coax w/Coated Air Coil
D = Copper Coax w/Coated Air Coil & Insulated Tubing
E = Cupro-Nickel Coax w/Coated Air Coil & Insulated Tubing
F = Copper Coax w/Non-Coated Air Coil & Insulated Tubing
G = Cupro-Nickel Coax w/Non-Coated Air Coil & Insulated Tubing
L = Copper Coax w/Non-Coated Air Coil
M = Cupro-Nickel Coax w/Non-Coated Air Coil
H = Copper, RV Energized in Heating w/Coated Air Coil (Replacement Only)
J = Cupro-Nickel, RV Energized in Heating w/Coated Air Coil

Water Valve & Pump Option
S = No Water valve
M = 2-Way Water Valve (Fail Closed)
N = 2-Way Water Valve (Fail Opened)

| | 5/8 SWEAT | | 7/8 SWEAT | | | |
|---|-----------|---------|--------------|---------|---------|---------|
| | UNIT 09 | UNIT 12 | UNIT 15 & 18 | UNIT 24 | UNIT 30 | UNIT 36 |
| C | 1.5 | | | | | |
| D | 2.0 | 2.0 | | | | |
| E | 2.5 | 2.5 | 2.5 | | | |
| F | 3.0 | 3.0 | 3.0 | | | |
| G | 3.5 | 3.5 | 3.5 | | | |
| H | 4.0 | 4.0 | 4.0 | | | |
| J | 5.0 | 5.0 | 5.0 | 5.0 | | |
| K | | | 6.0 | 6.0 | 6.0 | 6.0 |
| L | | | 7.0 | 7.0 | 7.0 | 7.0 |
| M | | | | 8.0 | 8.0 | 8.0 |
| N | | | | 9.0 | 9.0 | 9.0 |
| P | | | | 10.0 | 10.0 | 10.0 |

S = STANDARD - NO FLOW REGULATOR

Chassis

1 2 3 4 5 6 7 8 9 10 11 12

T R M **1 8** **G** **S** **S** **S** **C** **S** **A**

Series
TRM = Tranquility® High Rise Chassis

Unit Size
9, 12, 15, 18, 24, 30, 36

Voltage
G = 208-230/60/1
E = 265/60/1

| OPTION | S.S. Drain Pan | MUTE | RAS |
|--------|----------------|------|-----|
| A | X | - | - |
| D | - | - | X |
| E | X | - | X |
| 1 | - | X | - |
| 2 | X | X | - |
| 5 | - | X | X |
| 6 | X | X | X |
| S | - | - | - |

RAS = Return Air Sensor

Revision Level
A = 24, 30, 36
B = 09, 12, 15, 18

Standard
S = Standard

Heat Exchanger Options

| | Non Coated Air Coil | | Tin-Plated Air Coil | |
|----------------|---------------------|--------------|---------------------|--------------|
| | Copper | Cupro-nickel | Copper | Cupro-nickel |
| Standard | L | M | C | N |
| Extended Range | F | G | D | E |

Water Valve & Pump Option
S = No Water valve
M = 2-Way Water Valve (Fail Closed)
N = 2-Way Water Valve (Fail Opened)
P = Secondary Circulating Pump

Auto Flow Regulator

| | 5/8 SWEAT | | 7/8 SWEAT | | | | |
|---|-----------|---------|-----------|---------|---------|---------|---------|
| | UNIT 09 | UNIT 12 | UNIT 15 | UNIT 18 | UNIT 24 | UNIT 30 | UNIT 36 |
| C | 1.5 | - | - | - | - | - | - |
| D | 2.0 | 2.0 | - | - | - | - | - |
| E | 2.5 | 2.5 | 2.5 | - | - | - | - |
| F | 3.0 | 3.0 | 3.0 | 3.0 | - | - | - |
| G | - | 3.5 | 3.5 | 3.5 | - | - | - |
| H | - | - | 4.0 | 4.0 | 4.0 | - | - |
| J | - | - | - | 5.0 | 5.0 | 5.0 | - |
| K | - | - | - | - | 6.0 | 6.0 | 6.0 |
| L | - | - | - | - | 7.0 | 7.0 | 7.0 |
| M | - | - | - | - | - | 8.0 | 8.0 |
| N | - | - | - | - | - | - | 9.0 |
| P | - | - | - | - | - | - | 10.0 |

S = STANDARD - NO FLOW REGULATOR

Note - Only P Control

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Performance Data – Tested to ISO 13256-1

Tested to ISO 13256-1. English (I-P) Units

| Model | Water Loop Heat Pump | | | |
|---------------|----------------------|---------------|------------------|-----|
| | Cooling 86°F | | Heating 68°F | |
| | Capacity Btuh | EER Btuh/W | Capacity Btuh | COP |
| 817 09 | 8,800 | 13.0 | 12,500 | 4.6 |
| 817 12 | 11,600 | 13.0 | 15,800 | 4.5 |
| TRM 18 | 16,700 | 13.0 | 22,600 | 4.7 |
| 817/TRM 24 | 22,100 | 13.0 | 29,400 | 4.5 |
| 817/TRM 30 | 27,100 | 13.0 | 33,100 | 4.6 |
| 817/TRM 36 | 32,000 | 12.5 | 39,500 | 4.6 |

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature
 Heating capacities based upon 68°F DB, 59°F WB entering air temperature
 All units shipped on high speed motor TAP
 All ratings based upon operation at lower voltage of dual voltage rated models

Tested to ISO 13256-1. Metric (S-I) Units

| Model | Water Loop Heat Pump | | | |
|---------------|----------------------|------------|----------------|-----|
| | Cooling 30°C | | Heating 20°C | |
| | Capacity kW | EER W/W | Capacity kW | COP |
| 817 09 | 2.58 | 3.8 | 3.66 | 4.6 |
| 817 12 | 3.40 | 3.8 | 4.63 | 4.5 |
| TRM 18 | 4.89 | 3.8 | 6.62 | 4.7 |
| 817/TRM 24 | 6.48 | 3.8 | 8.62 | 4.5 |
| 817/TRM 30 | 7.94 | 3.8 | 9.70 | 4.6 |
| 817/TRM 36 | 9.38 | 3.7 | 11.58 | 4.6 |

Cooling capacities based upon 27°C DB, 19°C WB entering air temperature
 Heating capacities based upon 20°C DB, 15°C WB entering air temperature
 All units shipped on high speed motor TAP
 All ratings based upon operation at lower voltage of dual voltage rated models

Electrical Data

| Model | Voltage Code | Voltage | Min/Max Voltage | Compressor | |
|---------------|-----------------|------------------|--------------------|------------|------|
| | | | | RLA | LRA |
| 817 09 | G | 208- 230/60/1 | 197/254 | 4.7 | 23 |
| 817 12 | G | 208- 230/60/1 | 197/254 | 5.3 | 30 |
| TRM 18 | G | 208- 230/60/1 | 197/254 | 6.6 | 33 |
| 817/TRM 24 | G | 208- 230/60/1 | 197/254 | 12.8 | 58.3 |
| 817/TRM 30 | G | 208- 230/60/1 | 197/254 | 12.8 | 64 |
| 817/TRM 36 | G | 208- 230/60/1 | 197/254 | 14.1 | 77 |
| 817 09 | E | 265/60/1 | 239/292 | 3.5 | 22.0 |
| 817 12 | E | 265/60/1 | 239/292 | 4.2 | 22.0 |
| TRM 18 | E | 265/60/1 | 239/292 | 5.6 | 28.0 |
| 817/TRM 24 | E | 265/60/1 | 239/292 | 13.5 | 47.5 |
| 817/TRM 30 | E | 265/60/1 | 239/292 | 13.5 | 52.0 |
| 817/TRM 36 | E | 265/60/1 | 239/292 | 14.8 | 62.8 |

VERIFY ELECTRICAL SERVICE IS ADEQUATE FOR NEW CHASSIS.

Physical Data

| Model | 09 | 12 | 18* | 24* | 30* | 36* |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Compressor (1 Each) | Rotary | | | Scroll | | |
| Factory Charge HFC-410A (oz) [kg] | 33.5 [0.95] | 34 [0.96] | 48.5 [1.38] | 71 [2.01] | 75 [2.13] | 75 [2.13] |
| COAX | | | | | | |
| Internal Volume U.S. Gallon (L) | .22 (.84) | .26 (.98) | .37 (1.40) | .60 (2.27) | .60 (2.27) | .60 (2.27) |
| Hose Kit (AHH Series Required) | | | | | | |
| FPT (in) | 1/2 | 1/2 | 3/4 | 1 | 1 | 1 |
| Drain Hose | | | | | | |
| Internal Diameter In (mm) | .875 (22.2) | | | | | |
| Chassis Air Coil | | | | | | |
| Standard Filter - 1" [25.4mm] Throwaway, qty (in) [mm] | 14 x 24 [356 x 610] | 14 x 24 [356 x 610] | 16 x 30 [406 x 762] | 20 x 32 [508 x 813] | 20 x 32 [508 x 813] | 20 x 32 [508 x 813] |
| Weight | | | | | | |
| Chassis - (lbs) [kg] | 90 [41] | 97 [44] | 115 [52] | 176 [80] | 182 [83] | 182 [83] |

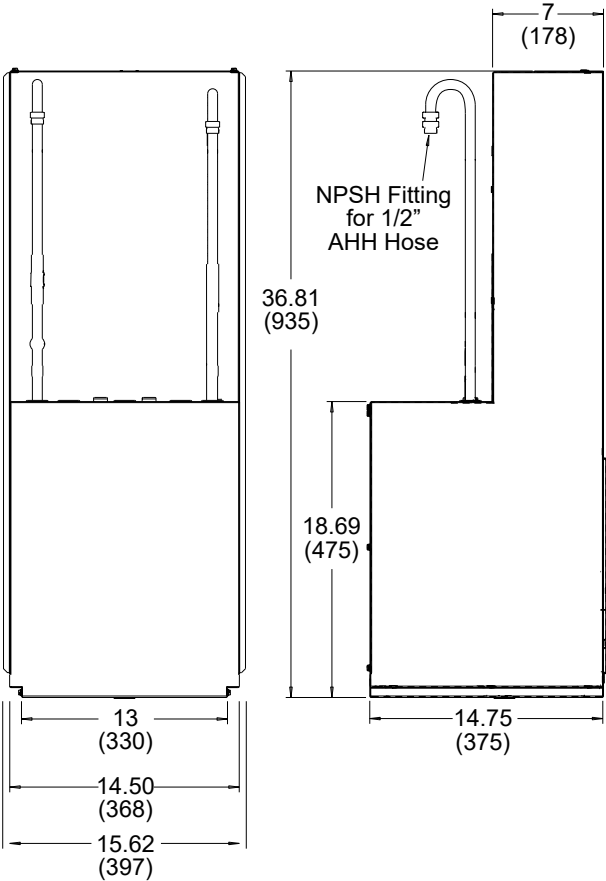
*18 is TRM and 24-36 can be 817 or TRM depending on controls.

| Unit Maximum Water Working Pressure | |
|--------------------------------------|-------------------------|
| Options | Max Pressure PSIG [kPa] |
| Base Unit | 300 [2,068] |
| Internal Secondary Pump (ISP) | 145 [999] |
| Internal Motorized Water Valve (WMV) | 300 [2,068] |
| Internal Auto Flow Valve | 300 [2,068] |

| Old Chassis | New Chassis | |
|--------------|---------------------|------------------|
| | Without Cabinet Kit | With Cabinet Kit |
| 816 10 S | 8179S | 81709P |
| 816 10 M | 81709M | |
| 816 10 P | 81709P | |
| 816 15 S | 81712S | 81712P |
| 816 15 M | 81712M | |
| 816 15 P | 81712P | |
| 816 20 S,M,P | N/A | TRM18 |
| 816 28 S | 81724S | TRM24 |
| 816 28 M | 81724M | |
| 816 28 P | TRM24 | |
| 816 30 S | 81730S | TRM30 |
| 816 30 M | 81730M | |
| 816 30 P | TRM30 | |
| 816 36 S | 81736S | TRM36 |
| 816 36 M | 81736M | |
| 816 36 P | TRM36 | |

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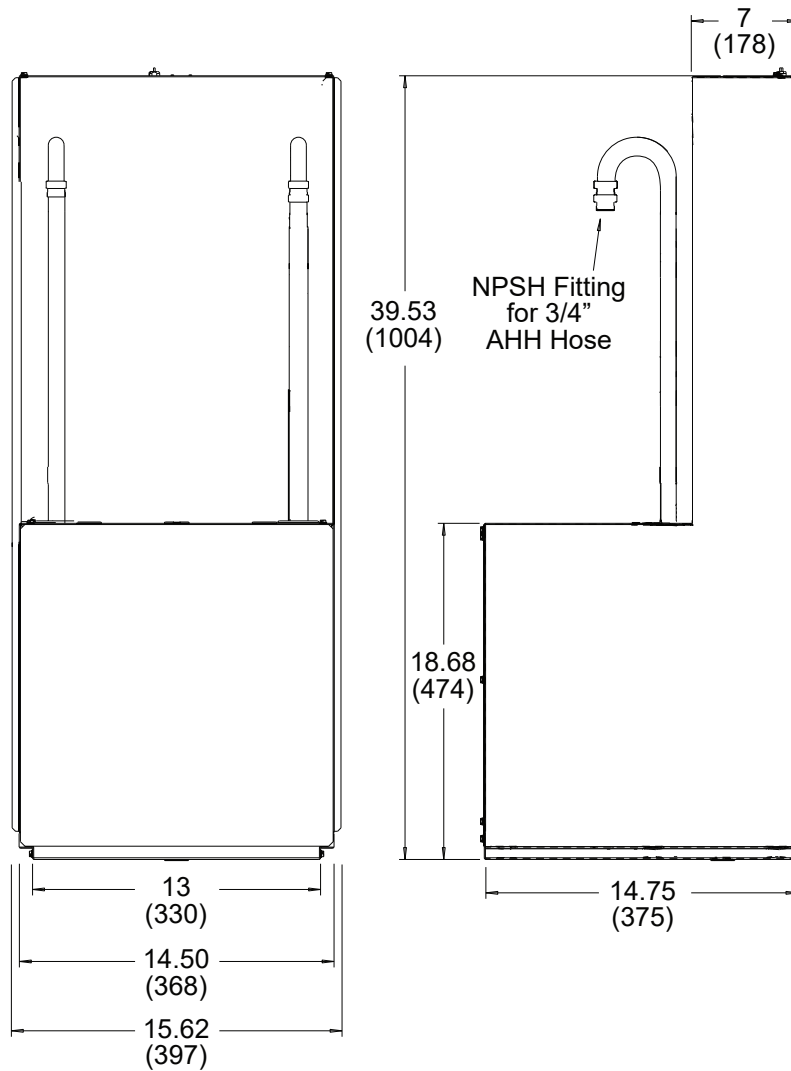
Chassis Dimensions – 817 09/12



817
09/12
 (For 816 10/15 cabinet)

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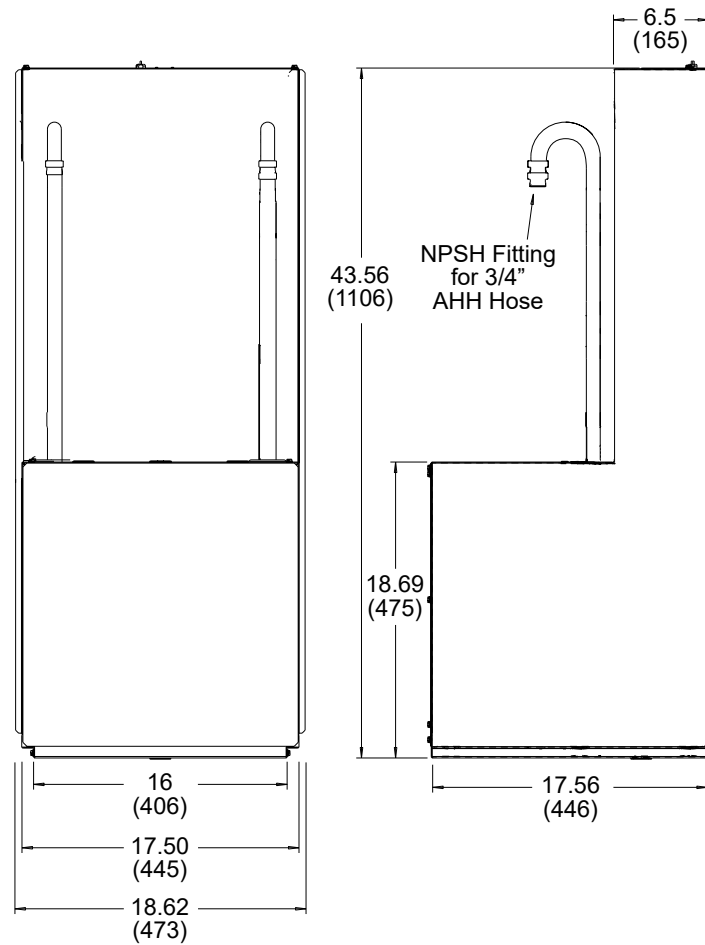
Chassis Dimensions – TRM 09/12



TRM 09/12

(For TRM 09/12 cabinet)

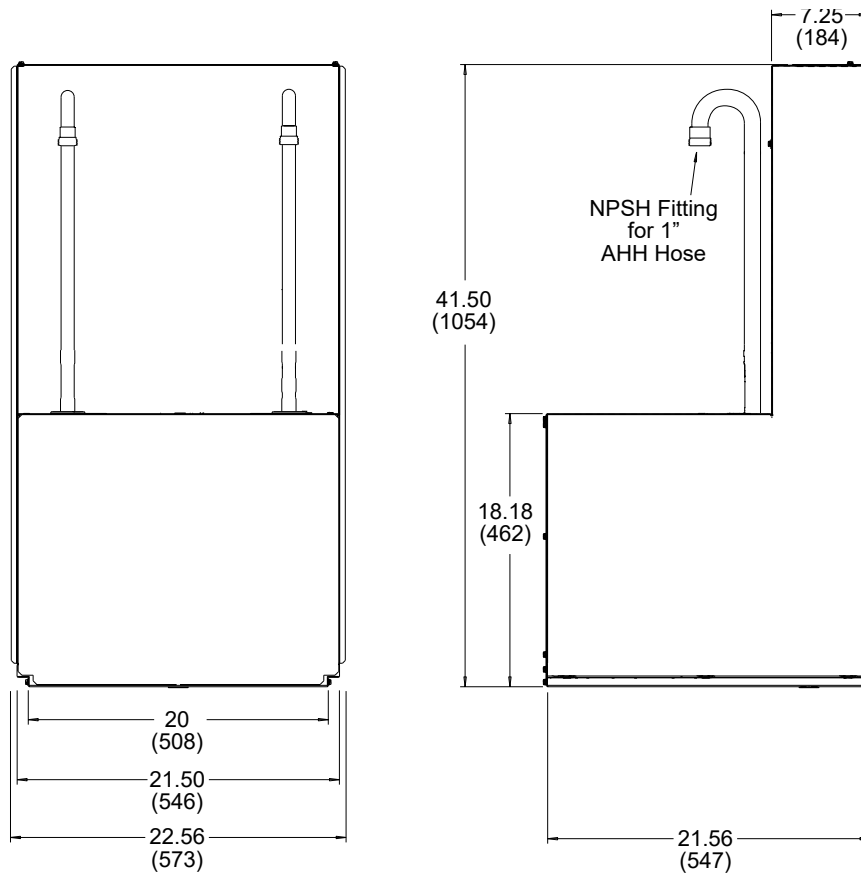
Chassis Dimensions – TRM 15/18



TRM 15/18

(For TRM 15/18 cabinet,
TRM 18 is also for 816 20 cabinet
and requires a cabinet conversion kit)

Chassis Dimensions – 817/TRM 24/30/36



817/ TRM 24/30/36

(For TRM 24/30/36 cabinet,
for 816 28/30/36 cabinet)

817/TRM to 816 Comparison

| Model | Cabinet (in) | WLHP | | | | Hose Diameter (IN) |
|-----------|--------------|---------|------|---------|-----|--------------------|
| | | Cooling | | Heating | | |
| | | CAP | EER | CAP | COP | |
| 81709 | 17x17 | 8800 | 13 | 12500 | 4.6 | 0.5 |
| 81610 | | 8500 | 11.6 | 11500 | 4.2 | 0.5 |
| 81712 | | 11600 | 13 | 15800 | 4.5 | 0.5 |
| 81615 | | 12000 | 12.3 | 14700 | 4.2 | 0.5 |
| TRM18 | 20x20 | 16700 | 13 | 22600 | 4.7 | 0.75 |
| 81620 | | 18500 | 12 | 23600 | 4.2 | 0.5 |
| 817/TRM24 | 24x24 | 22100 | 13 | 29400 | 4.5 | 1 |
| 81628 | | 25200 | 12 | 32000 | 4.2 | 0.75 |
| 817/TRM30 | | 27100 | 13 | 33100 | 4.6 | 1 |
| 81630 | | 28100 | 12.5 | 36000 | 4.2 | 0.75 |
| 817/TRM36 | | 32000 | 12.5 | 39500 | 4.6 | 1 |
| 81636 | | 32600 | 12.5 | 42500 | 4.2 | 0.75 |

Not recommended to increase model within your cabinet size

817 Series Wiring Diagram Matrix

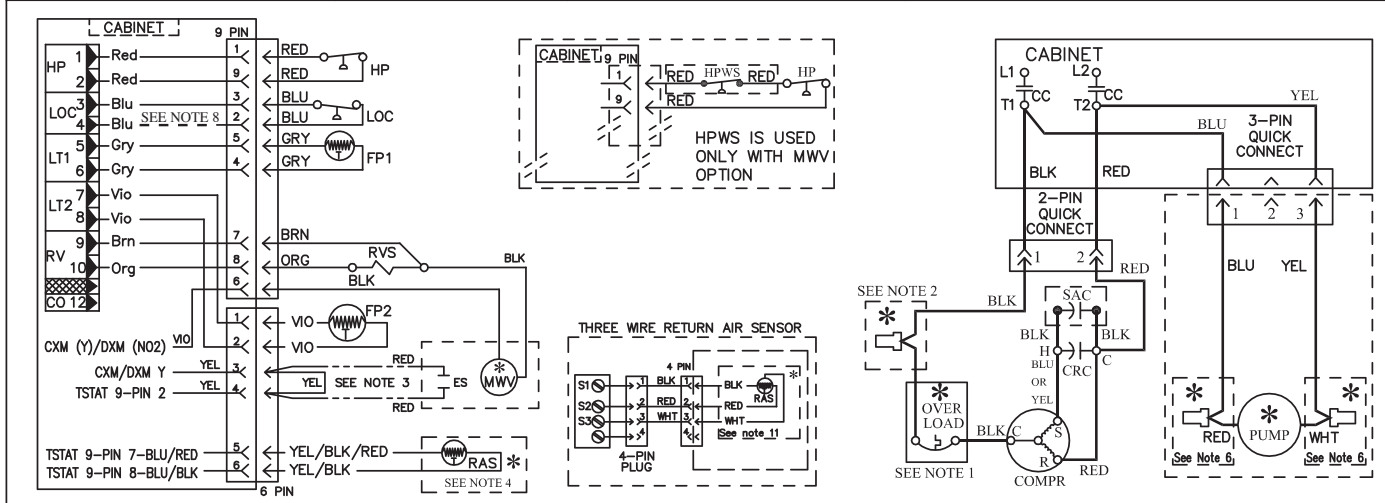
All diagrams can be located online at climatemaster.com using the part numbers presented below

| Model | Refrigerant | Wiring Diagram Part Number | Electrical | Control | Agency |
|--------------|--------------------------|----------------------------|---------------------------|--------------------------------------|--------|
| 817 09-36 | EarthPure® (HFC-410A) | 96B0036N18 | 208-230/1/60, 265/1/60 | "P" Controls (Standard/FC MWV) | ETL |
| | | 96B0036N19 | | "P" Controls (FO MWV) | |
| | | 96B0036N07 | | "S" Controls | |
| | | 96B0036N17 | | "M" Controls | |

Wiring Diagrams

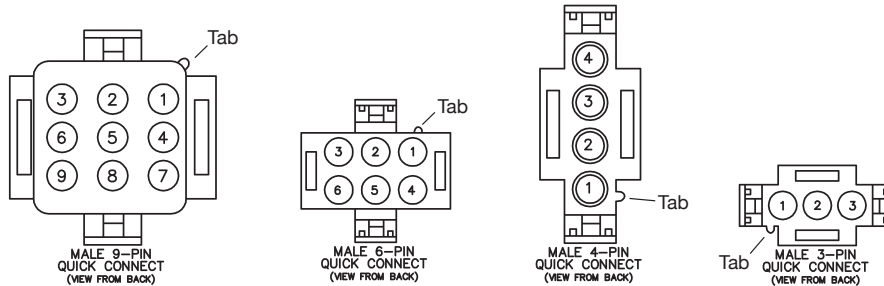
96B0036N18 - P Controls

| | | | | | | | |
|--|--|--|----------------|--|------------------------|---|--|
| TITLE: Size 09 - 36 "G", "E" & "V" Voltage, CXM or DXM, w/ "P" Controls | | PCN NO: 14-0014 | DATE: 01/21/14 | | DRAWING NO: 96B0036N18 | REV: A | |
| LEGEND: Factory Line Voltage Wiring Factory Low Voltage Wiring Optional Wiring Option Box High Pressure Switch Loss of Charge Switch Sensor, Water Coil Freeze Protection Field Low Voltage | | RV Solenoid Coil RELAY/ACTUATOR COIL CAPACITOR * OPTIONAL ITEMS • BUTT CONNECT Splice Cap Wire Nut | | COMPONENTS: CRC Compressor Run Capacitor COMPR Compressor ES Water Valve End Switch HP High Pressure Switch HPWS High Pressure Water Switch FP1 Sensor, Low Temp Protection Water Coil FP2 Sensor, Low Temp Protection Air Coil LOC Loss of Charge RAS Remote Air Sensor RVS Reversing Valve Solenoid SAC Start Assist Capacitor TBLK Terminal Block MWV Motorized Water Valve | | NOTES: 1. Ext. Compr. Overload on Sizes 09, 10, 12 & 15 Only. 2. Used with TRM24/30/36 only. 3. WHEN THERE IS NO MWV END SWITCH, YELLOW JUMPER MUST BE ATTACHED AT PINS 3 & 4. 4. Optional wiring for Remote Air Sensor. Connects to 9-Pin Quick Connect In Cabinet, For Surface mounted TSTAT. 5. SPLICE CAP THE END SWITCH WIRES ON NORMALLY OPEN MOTORIZED WATER VALVE. 6. FOR USE WITH TACO PUMP: RED/YEL AND WHT WIRES ARE INSIDE PUMP WIRING BOX. 7. START ASSIST CAPACITOR FOR SIZES 9 -18 ONLY. 8. Field connect blue wire, shipped loose with chassis. Part No. 11B0023N01. | |

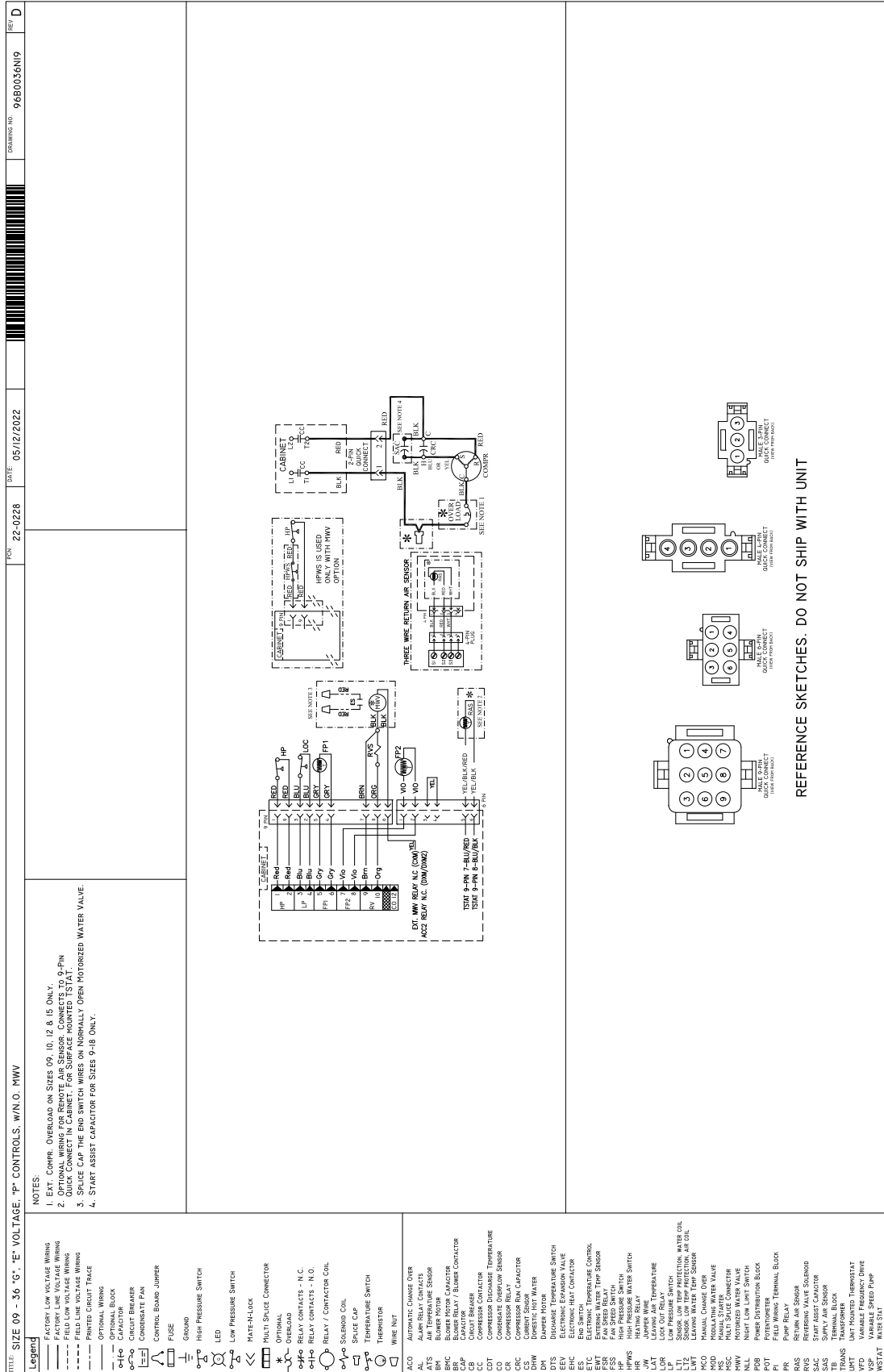


Old Cabinet

New Chassis



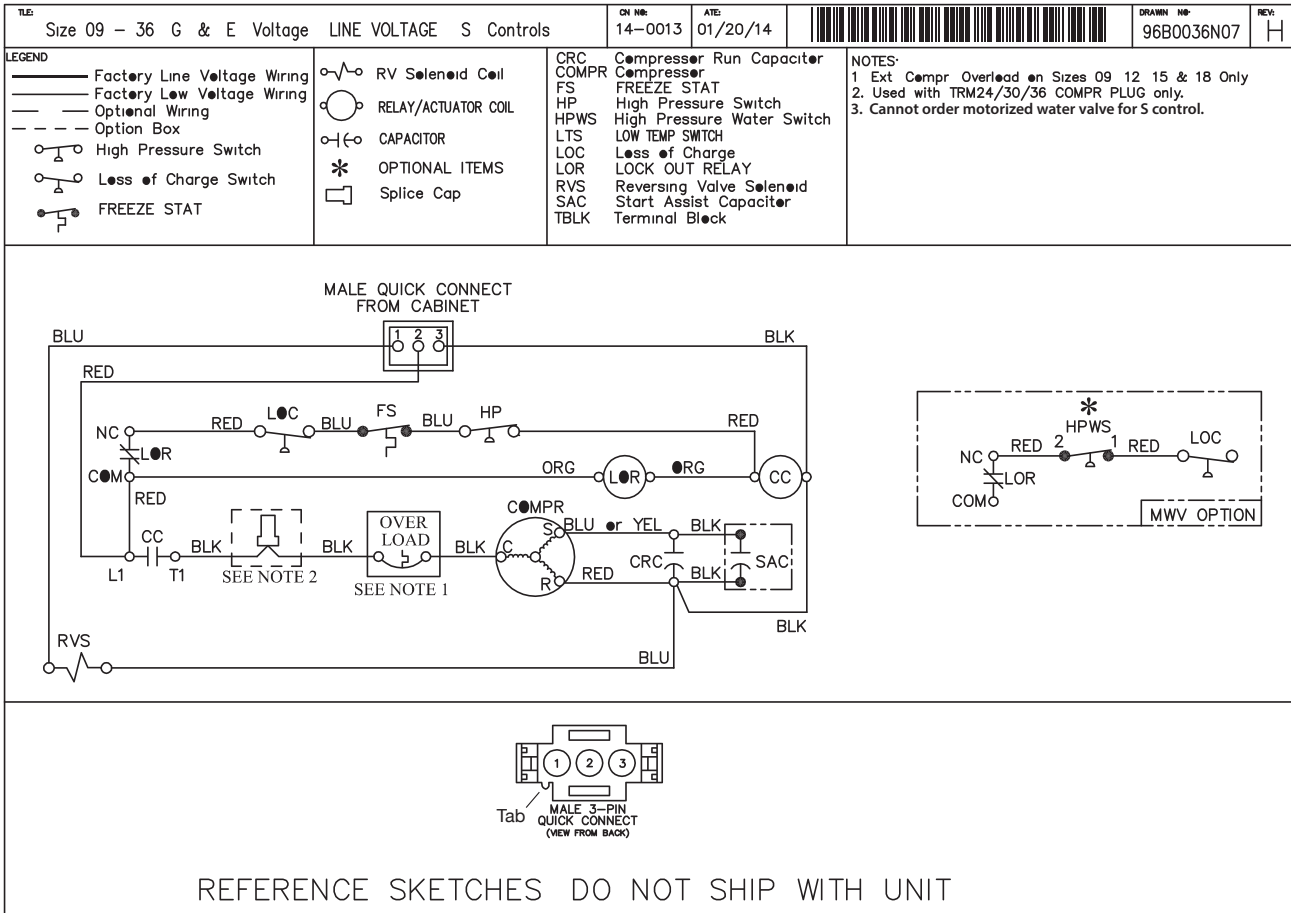
96B0036N19 - P Controls Normally-Open MWV



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Wiring Diagrams












96B0036N07 - S Controls

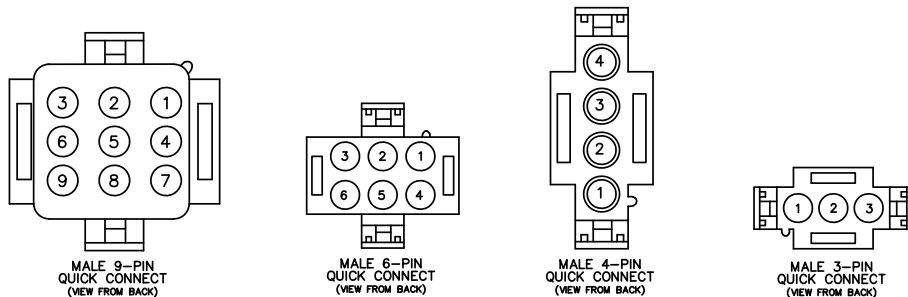
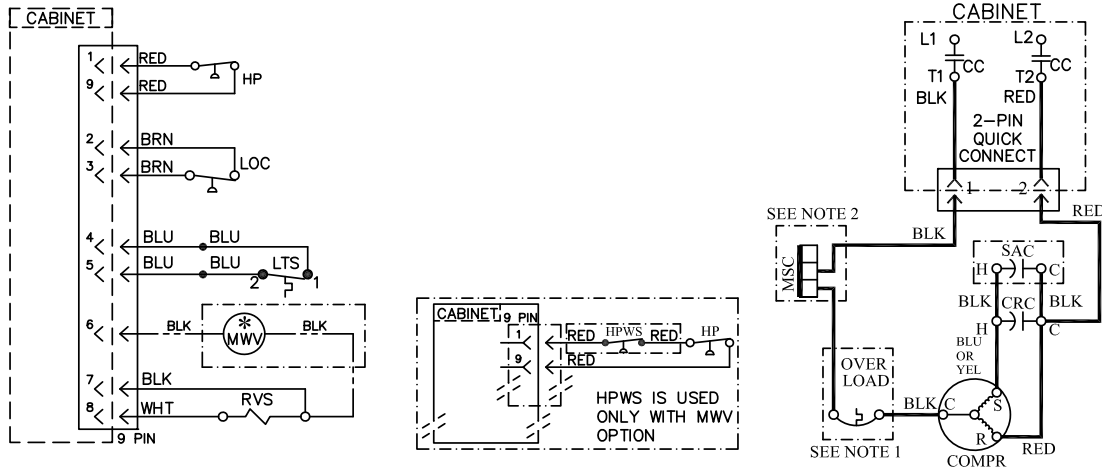


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Wiring Diagrams

96B0036N17 - M Controls

| | | | | | | |
|---|--|--|--------------------------|---|----------------------------------|--|
| TITLE: Size 09 - 36 "G" & "E" Voltage, CMC or ELEC MECH "M" Controls | | PCN NO: 21-0095 | DATE: 03/02/21 |  | DRAWING NO: 96B0036N17 | REV: C |
| LEGEND: ——— Factory Line Voltage Wiring - - - Factory Low Voltage Wiring - - - Optional Wiring - - - Option Box  High Pressure Switch  Loss of Charge Switch  Sensor, Water Coil Freeze Protection  RV Solenoid Coil | |  RELAY/ACTUATOR COIL  CAPACITOR  OPTIONAL ITEMS  BUTT CONNECT  MULTI SPLICE CONNECTOR  Wire Nut | | CMC Compressor Run Capacitor COMPR Compressor HP High Pressure Switch HPWS High Pressure Water Switch LTS LOW TEMP SWITCH LOC Loss of Charge RVS Reversing Valve Solenoid SAC Start Assist Capacitor TBLK Terminal Block MWV Motorized Water Valve | | NOTES: 1. Ext. Compr. Overload on Sizes 09, 12, 15 & 18 Only. 2. Used with TRM24/30/36 COMPR PLUG only. |



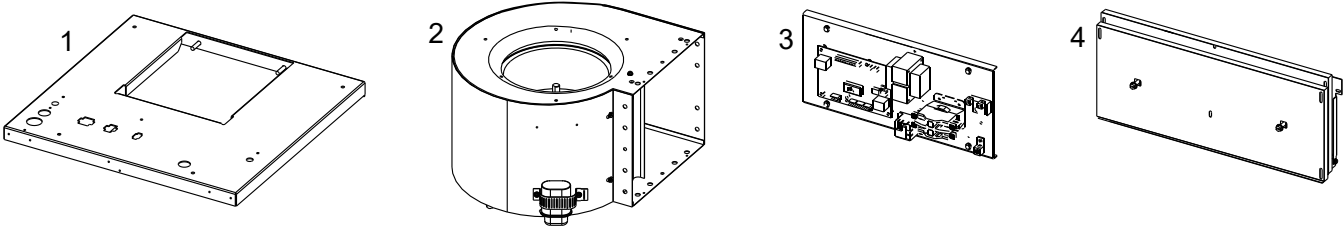
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Cabinet Kit (79S004 Series)

Note: Make sure line voltage matches old cabinet. Using cabinet kit makes controls P(24VAC). Check new chassis has P controls.

Kit will upgrade cabinet with new internal components. Your unit will now have latest compressor protection technology. Optional for all models except 20's mandatory. If old cabinet had fuses, must order kit with breaker option, verify wiring to unit is correct gauge for current codes — if not keep old fuses. If old cabinet had disconnect order kit with disconnect option. Return air panel may require modifications.

- 1 – Deck
- 2 – Blower assembly (motor, blower, housing, blower wheel and capacitor)
- 3 – Control assembly (mounting plate, transformer, contactor, relay, terminal block CXM2 or DXM2.5, and wiring), and
- 4 – Upper blockoff.

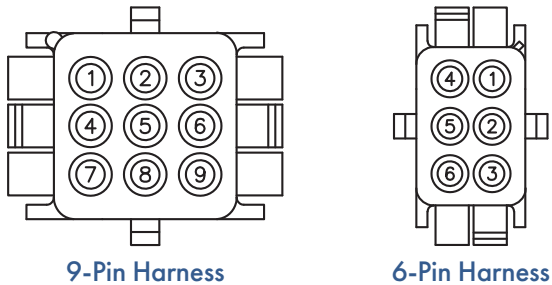
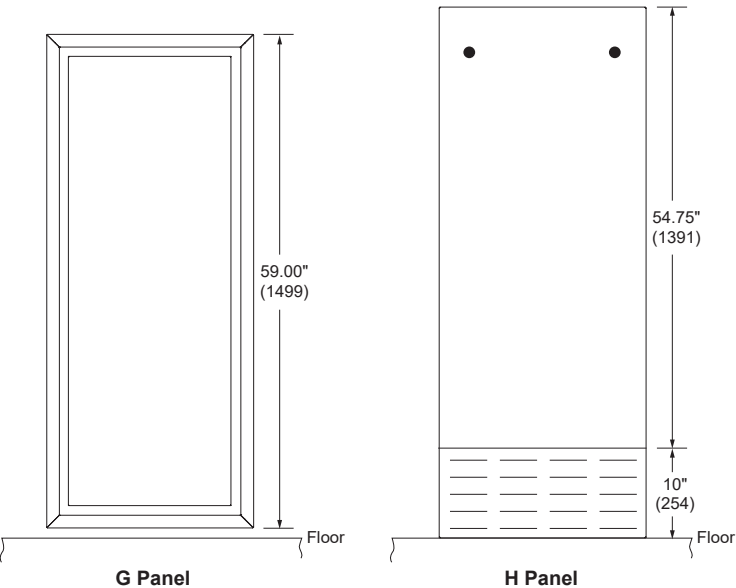


Return Air Panel (AVHSG Series or AVHSH Series)

Optional to order new panel, for correct fit, check dimension from front of cabinet to front of finished wall for G Panel must be 1.25" (32mm) to 2.25" (57mm); for H Panel must be 4" (101) or more. See TRM Submittal for rough opening and other dimensions. Cabinet may require modifications to mount new panel (must be secure).

Controls Conversion Kit (S11S0084N01)

When a replacement chassis is being used in an 816 style cabinet with "P" style controls only, a wire harness conversion kit is required. 816 style cabinets with "P" controls were offered with a singular 9-pin harness and utilized a gray FP1 thermistor for freeze protection in heating mode only. The later generation cabinets introduced a 6-pin wire harness combined with a 9-pin harness which added a violet FP2 thermistor for freeze protection during both heating and cooling modes of operation. The S11S0084N01 controls conversion kit includes a combination 12/9/6-pin wire harness, violet FP2 thermistor, and a wiring diagram for connection of the new replacement chassis to the existing legacy series cabinet.

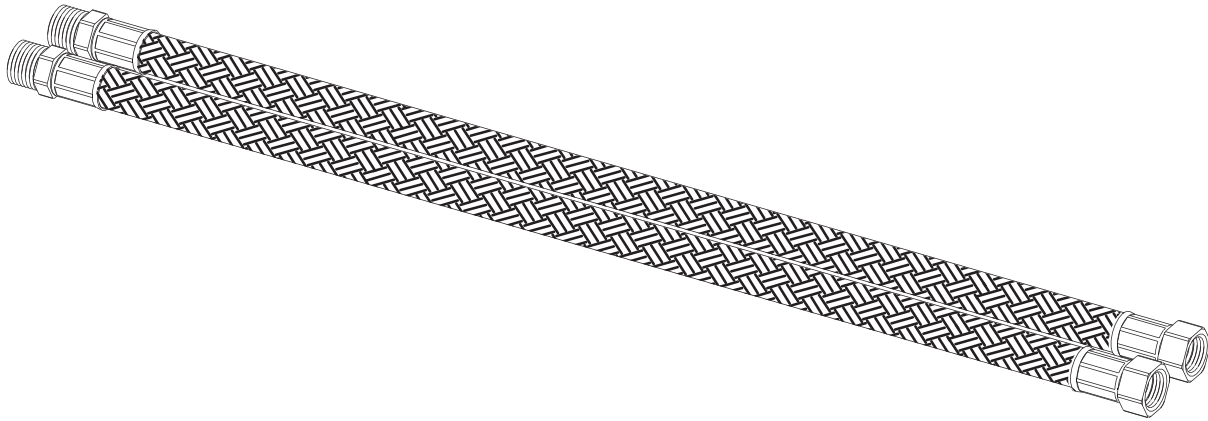


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AHH Series Stainless Steel Braided Hose Kit

Specifications:

- Designed for VHS water source heat pump applications.
- Kevlar® reinforced EPDM core with ANSI 302/304 stainless steel outer braid.
- Fire rated materials per ASTM E 84-00 (NFPA 255, ANSI/UL 723 & UBC 8-1).
- NPT(E) (External Pipe Thread) fitting at one end; swivel with NPSH thread connector (Internal Thread) at the other end (seals via fiber or EPDM gasket, shipped inside connection).
- Swivel connection provides union between chassis and risers.
- Brass fittings, stainless steel ferrules.
- Temperature range of 15°F [9°C] to 180°F [82°C]. (Operation below 32°F requires antifreeze)
- Max. working pressure of 400 psi [2756 kPa].
- Min. burst pressure of four times working pressure.

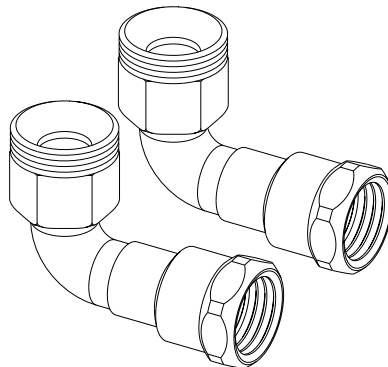


Physical Data

| Unit | Part # | Inside Diameter inches | Length feet [cm] | Working Pressure psi [kPa] | Min. Burst Pressure psi [kPa] | Min. Bend Radius inches [mm] |
|--------|------------|------------------------|------------------|----------------------------|-------------------------------|------------------------------|
| 09, 12 | AHH05024SC | 0.50 | 2 [61] | 400 [2756] | 1600 [11024] | 2.5 [63.5] |
| 15, 18 | AHH07536SC | 0.75 | 3 [91] | 400 [2756] | 1600 [11024] | 4.5 [114.3] |
| 24-36 | AHH10036SC | 1.00 | 3 [91] | 400 [2756] | 1600 [11024] | 5.5 [139.7] |

Hose Adapter Kit

Connects hard union piping to hose.



Performance Sheet

SUBMITTAL DATA - S-I UNITS

Unit Designation: _____

Job Name: _____

Architect: _____

Engineer: _____

Contractor: _____

PERFORMANCE DATA

Cooling Capacity: _____ kW

EER: _____

Heating Capacity: _____ kW

COP: _____

Ambient Air Temp: _____ °C

Entering Water Temp (Clg): _____ °C

Entering Air Temp (Clg): _____ °C

Entering Water Temp (Htg): _____ °C

Entering Air Temp (Htg): _____ °C

Airflow: _____ l/s

Fan Speed or Motor/RPM/Turns: _____

Operating Weight: _____ (kg)

ELECTRICAL DATA

Power Supply: _____ Volts

_____ Phase _____ Hz

Minimum Circuit Ampacity: _____

Maximum Overcurrent Protection: _____

SUBMITTAL DATA - I-P UNITS

Unit Designation: _____

Job Name: _____

Architect: _____

Engineer: _____

Contractor: _____

PERFORMANCE DATA

Cooling Capacity: _____ Btuh

EER: _____

Heating Capacity: _____ Btuh

COP: _____

Ambient Air Temp: _____ °F

Entering Water Temp (Clg): _____ °F

Entering Air Temp (Clg): _____ °F

Entering Water Temp (Htg): _____ °F

Entering Air Temp (Htg): _____ °F

Airflow: _____ CFM

Fan Speed or Motor/RPM/Turns: _____

Operating Weight: _____ (lb)

ELECTRICAL DATA

Power Supply: _____ Volts

_____ Phase _____ Hz

Minimum Circuit Ampacity: _____

Maximum Overcurrent Protection: _____

Notes

Revision History

| Date: | Item: | Action: |
|----------|--|--|
| 02/28/23 | Transitioned from CXM to CXM2 and DXM to DXM2.5 controls on in a cabinet deck kits | Updated |
| 03/11/22 | Added TRM size 09/12 chassis dimensions | Updated page 10 |
| 01/12/22 | Added Controls Conversion Kit section for 816 cabinets with "P" controls | Added to Page 17 |
| 09/10/21 | Hose Kit Model Nomenclature | Updated |
| 08/13/21 | Updated 2-Way Water Valve description to "Fail Closed". Added 2-Way Water Valve "Fail Opened" options to TRM and 817 series products | Updated |
| 09/18/19 | 3,4,and 13 | Added references to TRM, updated text |
| 11/15/16 | Document Design Update | Updated |
| 02/05/15 | Edits - Page 16 | Updated |
| 02/27/14 | Text & Wiring Diagrams | Updated |
| 07/11/13 | All Pages | Updated |
| 11/15/11 | 817 Chassis Nomenclature Cabinet Kit | Updated |
| 08/09/11 | Unit Maximum Working Water Pressure | Updated to Reflect New Safeties |
| 01/03/11 | Format - All Pages | Updated |
| 07/29/10 | Wiring Diagrams | Updated |
| 07/26/10 | Wiring Diagrams | Updated |
| 07/26/10 | Compressor Mounting Information and Graphics | Updated to Reflect Spring/Grommet Change |
| 06/28/10 | Unit Features | Updated |
| | Electrical Data | Added Note for New Chassis |
| 06/11/10 | Format - All Pages | Updated |
| 06/11/10 | Engineering Specifications | Updated |
| 05/20/10 | Created | Created |



A NIBE GROUP MEMBER

7300 S.W. 44th Street
Oklahoma City, OK 73179
Phone: 405-745-6000
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