Quest 185 Cool

Installation, Operation and Maintenance Instructions

– Read and Save These Instructions –

Installation Instructions

INSTALLATION BY A HVAC PROFESSIONAL IS RECOMMENDED

The Quest 185 Cool is a split system dehumidifier with sensible cooling that is integrated into the heating and cooling system to provide the ultimate in comfort, health and property protection through:

- Dehumidification
- Sensible Cooling
- Air Filtration

The two-piece design allows the sensible heat load generated from dehumidifying the room to be released in the outside condensing unit, thus eliminating additional cooling and reducing air conditioner run time.

HVAC Installer: Please Leave Manual for Homeowner

P/N: 4033180 **Serial No.:** **Install Date:**

Sold by:

QUEST DEHUMIDIFIERS

Therma-Stor LLC
Driven by performance. Powered by design.™

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SAFETY INSTRUCTIONS

Read the installation, operation and maintenance instructions carefully before installing and operating this device.

⚠ WARNING!

THIS SYMBOL MEANS IMPORTANT INSTRUCTIONS. FAILURE TO HEED THEM CAN RESULT IN SERIOUS INJURY OR DEATH.

⚠ CAUTION!

THIS SYMBOL MEANS IMPORTANT INSTRUCTIONS. FAILURE TO HEED THEM CAN RESULT IN INJURY OR MATERIAL PROPERTY DAMAGE.

Registrations

The Quest 185 Cool conforms to unified standard UL 474 and CSA Standard C22.2 No. 92.

⚠ WARNING!

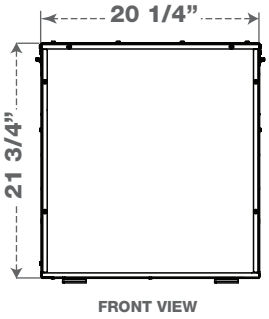
120 VOLTS MAY CAUSE SERIOUS INJURY FROM ELECTRIC SHOCK. DISCONNECT ELECTRICAL POWER BEFORE STARTING INSTALLATION OR SERVICING, AND LEAVE POWER DISCONNECTED UNTIL INSTALLATION OR SERVICE IS COMPLETED. IMPROPER INSTALLATION MAY CAUSE PROPERTY DAMAGE OR INJURY.
INSTALLATION, SERVICE, AND MAINTENANCE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN.

⚠ CAUTION!

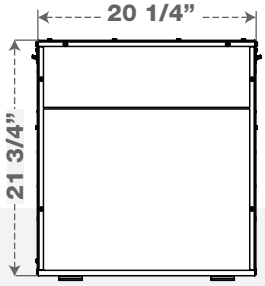
READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION.
ALWAYS USE CAUTION AND WEAR CUT RESISTANT GLOVES WHEN HANDLING SHEET METAL.
DEHUMIDIFIER IS HEAVY. HANDLE WITH CARE AND FOLLOW INSTALLATION INSTRUCTIONS.
DO NOT USE IN POOL APPLICATIONS, OR WARRANTY WILL BE VOID.
NEVER OPERATE A UNIT WITH A DAMAGED POWER CORD. IF THE POWER CORD IS DAMAGED, IT MUST BE REPLACED BY THE MANUFACTURER, ITS SERVICE AGENT, OR A SIMILARLY QUALIFIED PERSON IN ORDER TO AVOID A HAZARD.
THIS APPLIANCE IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF EXPERIENCE OR KNOWLEDGE,
UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING THE USE OF THE APPLIANCE BY A PERSON RESPONSIBLE FOR THEIR SAFETY. CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.
THE CLEAN AIR ACT OF 1990 BANS THE INTENTIONAL VENTING OF REFRIGERANT (CFCS, HCFCS, AND HFCS) AS OF JULY 1, 1992. APPROVED METHODS OF RECOVERY, RECYCLING OR RECLAIMING MUST BE FOLLOWED. FINES AND/OR INCARCERATION MAY BE LEVIED FOR NONCOMPLIANCE.

Dehumidifier

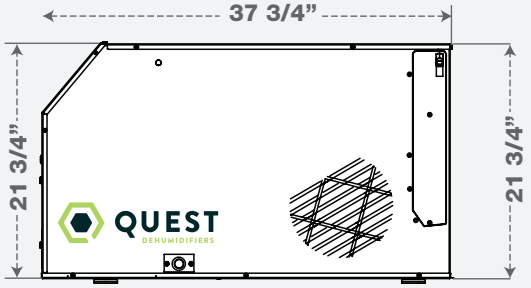
Part Number:	4037391	
Blower:	406 CFM @ 0.0" WG 374 CFM @ 0.2" WG 348 CFM @ 0.4" WG	
Power:	160 Watts @ 80°F and 60% RH	
Supply Voltage:	115 VAC – 1phase – 60 Hz	
Current Draw:	1.4 Amps	
Energy Factor:	3.1 L/kWh	
Operating Range:	Between 56°F and 95°F Max (Inlet Air Temperature)	
Minimum Performance at: Water Removal: Sensible Cooling:	80°F and 60% RH 184 pints/day 4,300 BTUs/Hour	70°F and 60% RH 150 pints/day 5,100 BTUs/Hour
Efficiency:	6.6 Pints/kWh	6.0 Pints/kWh
Duct Connections:	6" Round Inlet; 10" Round Inlet; 10" Oval Outlet	
Air Filter: Efficiency: Size:	MERV-11, Standard Pleat 65% ASHRAE Dust Spot 16" x 20" x 2"	
Optional Air Filter: Efficiency: Size:	MERV-14, Embossed Pleat (will need filter housing) 95% ASHRAE Dust Spot 20" x 24" x 4"	
Power Cord:	10', 115 VAC, Ground	
Internal Insulated Cabinet:	Yes	
Drain Connection:	3/4" Threaded Female NPT	
Refrigerant Type: Refrigerant Amount:	R410A (Refer to manufacturers label for more information) 15 oz.	
Line Set Requirements: Liquid Line: Gas Line:	50 feet (maximum) 1/4" 3/8"	



FRONT VIEW



BACK VIEW



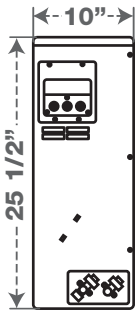
SIDE VIEW

Condenser

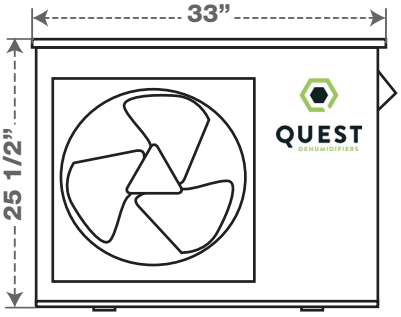
Part Number:	4037392
Power:	1080 Watts @ 80°F and 60% RH
Supply Voltage:	115 VAC – 1phase – 60 Hz
Current Draw:	9.7 Amps
Minimum Cicuit Ampacity:	20 Amps
Maximum Fuse / Breaker:	20 Amps
Refrigerant Type:	R410A (Refer to manufacturers label for more information)
Operating Range:	40°F Min, 115°F Max
Power Cord:	Hard-Wired

Dimensions

	Dehumidifier	Condenser	Shipping
Width:	20.25"	10"	35"
Height:	21.75"	25.5"	44"
Length:	37.25"	33"	44"
Weight:	109 lbs.	75 lbs.	225 lbs.



SIDE VIEW



FRONT VIEW

OPTIONAL ACCESSORIES

4028531	DEH 3000R Control (with remote)
4021475	MERV 11 Filter (16"x20"x2")
4027420	MERV 11 Filters 4-Pack
4027424	MERV 11 Filters 12-Pack
4028614	Pump Kit
4036685	Hang Kit
4025287	MERV 14 Filter Housing
4024370	MERV 14 Filter (20"x24"x4")
4029087	MERV 14 Filters 3-Pack
4023672	6" Motorized Damper
4026859	6" Flex Duct 25'
4020128	6" Flex Insulated Duct 25'
4020656	6" Inlet Hood
4024375	10" Gravity Damper
4026969	10" Flex Duct 25'
4022126	10" Flex Insulated Duct 25'
4028399	10" Oval to Round Adapter

Items Included in Box:

- Quest 185 Cool Dehumidifier
- Quest 185 Cool Condensing Unit
- Quest 185 Cool Installation Instructions
- Quest 185 Cool Leveling Feet

DEHUMIDIFIER SET UP

Important Precautions

- The dehumidifier is designed to be installed indoors in a space that is protected from rain and flooding.
- Install the dehumidifier with enough space to access the back and side panels for maintenance and service.
- Avoid directing the discharge air at people.
- If used near a water source; be certain there is no chance the dehumidifier could fall into the water or get splashed and that it is plugged into a dedicated circuit and Ground Fault Circuit Interrupter (GFCI) protected outlet.
- DO NOT use the dehumidifier as a bench or table.
- DO NOT place the dehumidifier directly on structural building members without vibration absorbers or unwanted noise may result. Place the dehumidifier on supports to raise the base of the unit.
- A drain pan MUST be placed under the dehumidifier if installed above a living area or above an area where water leakage could cause damage.

Location Considerations

- Allow sufficient clearance to handle the unit's overall dimensions as well as the necessary return and supply ductwork to the unit.
- Allow sufficient clearance for filter removal and to prevent airflow obstruction.
- Electrical service access will require the removal of a side panel. Allow sufficient clearance on a side of the unit.
- Locate the dehumidifier in an area where the cord's length (10') easily reaches a 115 VAC electrical outlet with a minimum of a 15 Amp circuit capacity.
- Locate the dehumidifier in an area where field wiring the control (low voltage) to the unit will be possible.
- It is recommended that a backdraft damper be used in the discharge duct of the dehumidifier, especially when connecting to the supply ducting system. The backdraft damper prevents supply air from counter flowing through the dehumidifier when it is not operating. The dehumidifier's location should be chosen to allow installation of this accessory if necessary.
- The dehumidifier may be suspended from structural members with steel hanger straps or a suitable alternative, ensuring the assembly supports the dehumidifier's base in its entirety. DO NOT hang the dehumidifier from its cabinet.
- Allow for proper routing and drainage of needed drain pipes.

CONDENSING UNIT SET UP

⚠ CAUTION!

THIS SYSTEM CONTAINS BOTH REFRIGERANT AND OIL. SOME RUBBER ROOFING MATERIAL MAY ABSORB OIL AND CAUSE THE RUBBER TO SWELL WHEN IT COMES INTO CONTACT WITH OIL. THE RUBBER WILL THEN BUBBLE AND COULD CAUSE LEAKS. PROTECT THE ROOF SURFACE TO AVOID EXPOSURE TO REFRIGERANT AND OIL DURING SERVICE AND INSTALLATION. FAILURE TO FOLLOW THIS NOTICE COULD RESULT IN DAMAGE TO ROOF SURFACE.

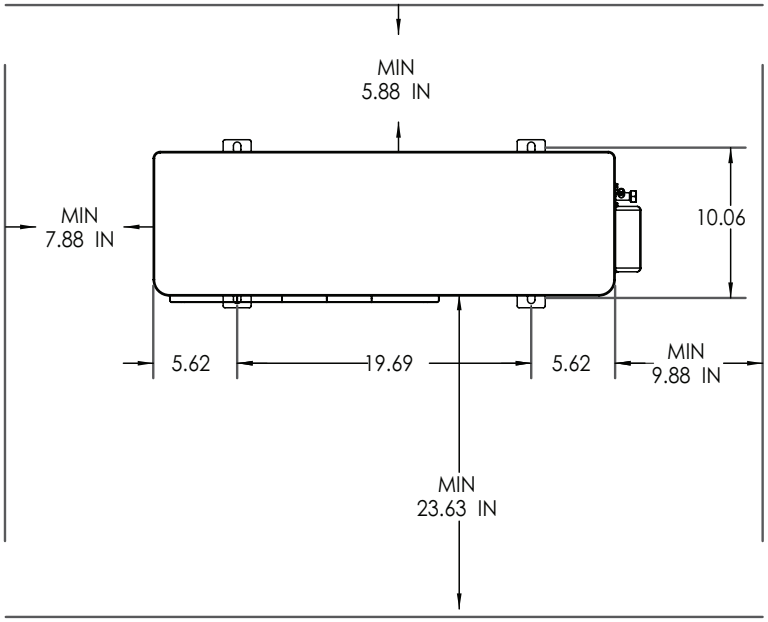
Important Precautions

- The condensing unit is designed to be installed outdoors in a space that is protected from extreme weather (rain, wind, etc.). Do not place the condensing unit in direct sunlight.
- Place the condensing unit at least 1" above ground level.
- Place the condensing unit as close as possible to the dehumidifier to minimize the length of the connecting lines. The maximum line set length is 50 feet.
- Ensure the mounting of the condensing unit can withstand strong winds and earthquakes when mounting above ground level.
- The condensing unit may be mounted to a wall (with brackets) or placed on a roof.
- Mount the base of the condensing unit to a sturdy level pad (or bracket) using 3/8" (10mm) bolts.
- Avoid directing the discharge air at people.
- If used near a water source; be certain there is no chance the dehumidifier could fall into the water or get splashed and that it is plugged into a dedicated circuit and Ground Fault Circuit Interrupter (GFCI) protected outlet.
- DO NOT use the condensing unit as a bench or table.
- DO NOT place the condensing unit where the sound and vibration caused by running the unit will a cause a nuisance. Vibration dampening material may be installed between the condensing unit base and the mounting pad if required.

Location Considerations

- Allow sufficient clearance to handle the unit's overall dimensions.
- Place the condensing unit where there is adequate space for the unit and the air required by the unit.
- Install the condensing unit with space to access the top and side panels for maintenance and service.

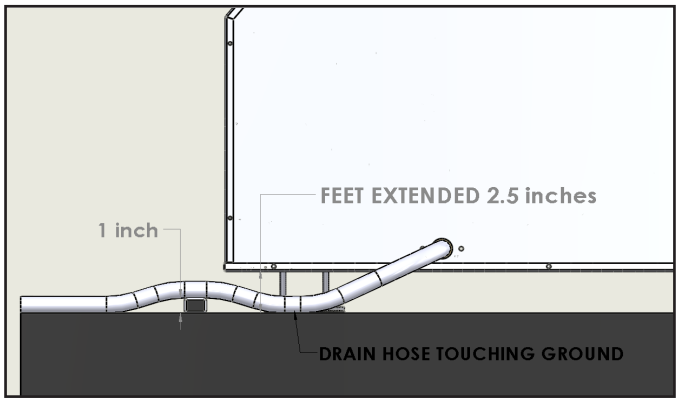
Minimum Distance Required for Condensing Unit and The Footing Dimensions



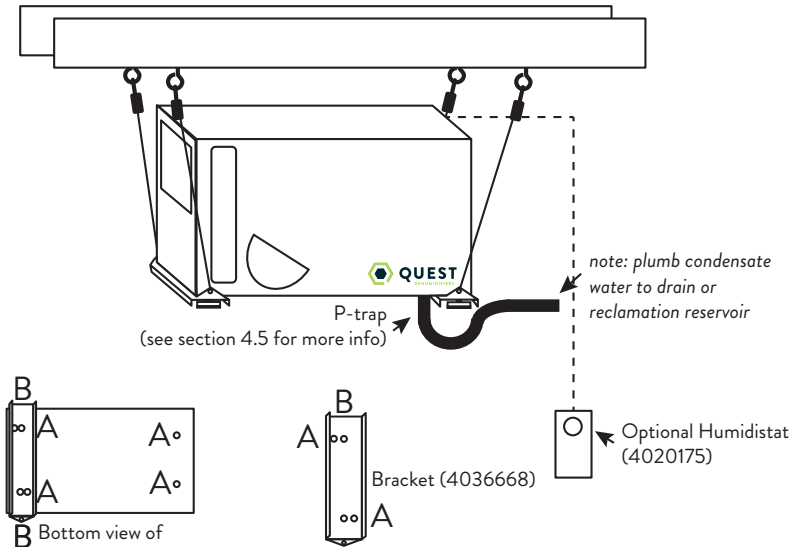
Condensate Water Removal

Condensate drains by gravity via the drain port. Use 3/4" male NPT PVC pipe. Route drain pipe to drain. Install a trap if possible. Take care when installing drain pipe to drain port. Use an adjustable wrench to secure the drain port. An optional condensate pump kit may be installed if a lift is required to dispose of the condensate. The condensate pump kit can be ordered directly from the factory. See the optional parts list for information on the kit.

When installing the drain hose make sure the feet are extended such that the dehumidifier is 2 1/2" off the ground. Then coil the drain hose under itself or position a spacer to lift the hose 1" off the ground after the hose has touched the ground. This procedure will create a trap that ensures your unit drains correctly. See the diagram below for further visual clarification.



Hanging Installation Diagram



Ducting

Supply Duct Kit (P/N 4028607)

A factory designed supply duct kit can be purchased to accept 10" ducting to both outlets of the Quest Dual.

Return Duct Kit (P/N 4028610)

A factory designed return duct kit can be purchased to accept 12" ducting.

To order, contact your dealer or visit www.QuestHydro.com.

DEHUMIDIFIER ELECTRICAL REQUIREMENTS

⚠ WARNING!

ELECTRIC SHOCK HAZARD. CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES. DISCONNECT ALL REMOTE ELECTRIC POWER SUPPLIES BEFORE OPENING ACCESS PANEL. UNIT MAY HAVE MULTIPLE POWER SUPPLIES.

The dehumidifier plugs into a common grounded 115 VAC outlet. The device draws 1.4 Amps at 80°F and 60% RH and can be plugged into a shared branch circuit. Locate the dehumidifier in an area where the cord's length (9') easily reaches a 115 VAC electrical outlet. If used in an area that may become wet, a GFCI protected circuit is recommended. Consult local electrical codes for further information. Field wiring must comply with the National Electric Code (C.E.C. in Canada) and any applicable local codes or ordinances.

Quest offers a variety of control devices for use with the Quest 185 Cool. The control is to be located remotely from the dehumidifier and placed in the space to be conditioned. A low voltage (24 Volt) control MUST be used with the Quest 185 Cool and MUST be connected with low voltage (18-22 gauge) thermostat wire.

⚠ WARNING!

THE REMOTE CONTROLS OF THE QUEST 185 COOL ARE POWERED BY A LOW VOLTAGE CIRCUIT (24 VAC) AND MUST NEVER CONTACT OR BE CONNECTED TO A HIGH VOLTAGE CIRCUIT.

⚠ CAUTION!

DO NOT ALLOW THE YELLOW LEAD TO CONTACT THE RED OR WHITE LEAD ON THE DEHUMIDIFIER OR DAMAGE TO THE TRANSFORMER WILL RESULT.

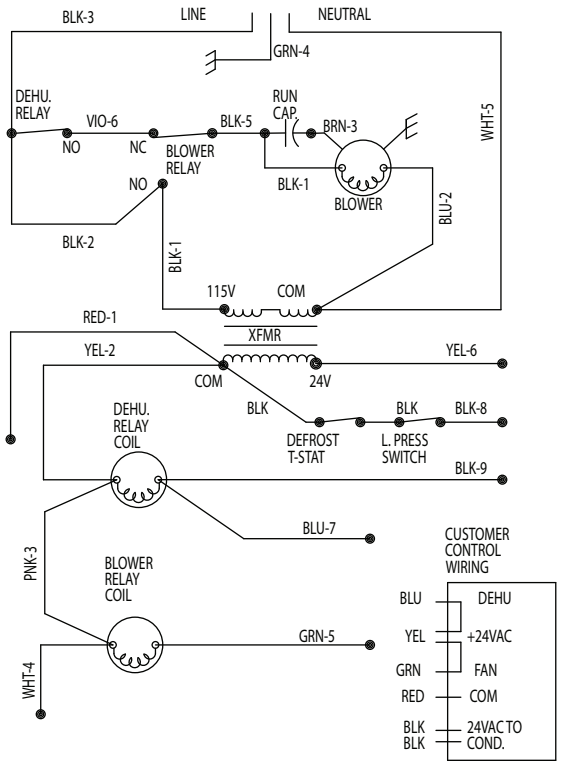
⚠ CAUTION!

SOME OF THE CONTROL WIRES LEAVING THE QUEST 185 COOL MAY NOT BE USED WITH CERTAIN CONTROLS AND SHOULD BE LEFT UNCONNECTED WITH WIRE NUTS TAPED ONTO THE STRIPPED ENDS FOR SAFETY.

Electrical Precautions

- Do not install the control where it may not accurately sense the relative humidity such as near HVAC supply registers, near exterior doors, on an outside wall, near a window, or near a water source.
- The control wires leaving the Quest 185 Cool and the control are numbered and color-coded to prevent confusion.
- Be sure to consult the electrical schematic in the CONTROLS Section (page 26) of this manual or inside the access panel of the dehumidifier before making control connections.

Dehumidifier Wiring Diagram

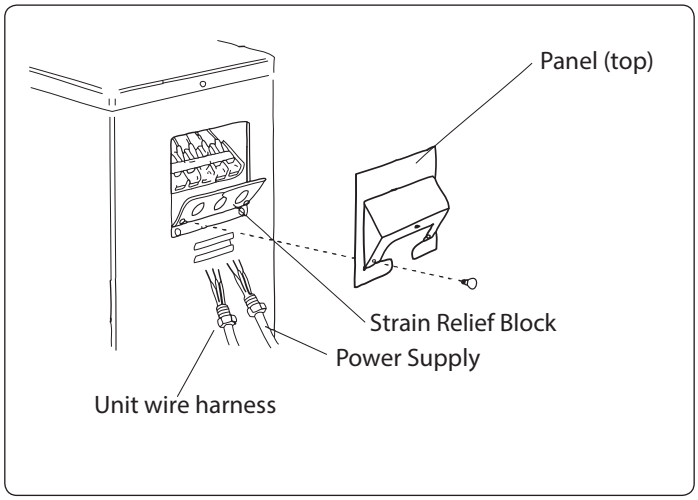


CONDENSING UNIT ELECTRICAL REQUIREMENTS

The condensing unit requires a dedicated 120Vac 20 Amp circuit capacity. Install a properly sized branch circuit disconnect (20 Amp) within sight of the unit. The Installer must supply the power wiring for the condensing unit. The power wiring must have a Minimum Circuit Ampacity of 20A and be run within a rain-tight conduit. The condensing unit must be grounded as required by applicable code(s).

Field Wiring the Condensing Unit:

1. Take off the panel (top), by removing the one screw that secures it to the condensing unit.
2. Loosen the two strain relief block screws.
3. Insert the power and control wires through the strain relief block.
4. Connect the power supply wires and control wires to the corresponding terminals on the terminal board.
5. Ground the condensing unit in accordance with local and national electrical codes.
6. Secure the power and control wires to the strain relief block by tightening the screws.
7. Reinstall the panel (top) by inserting the one screw that secures it to the condensing unit.

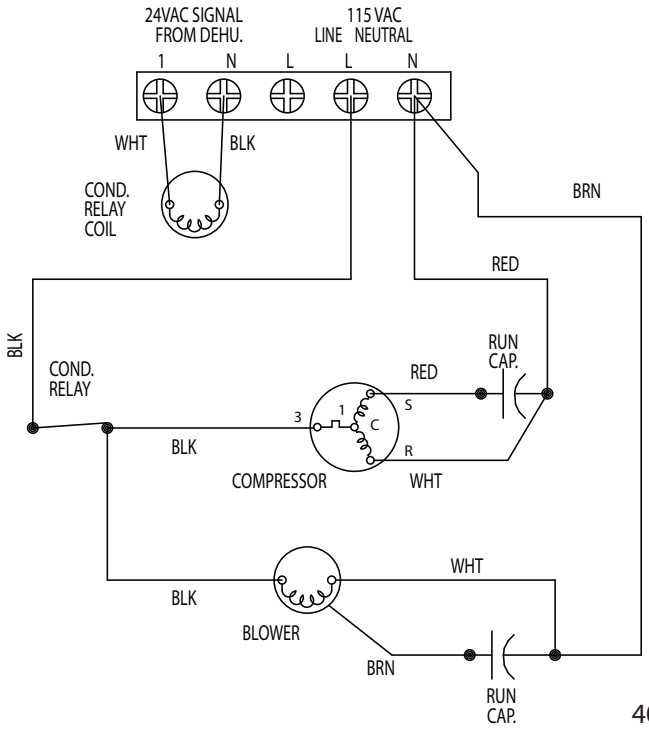


Condensing Unit Electrical Control Connections:

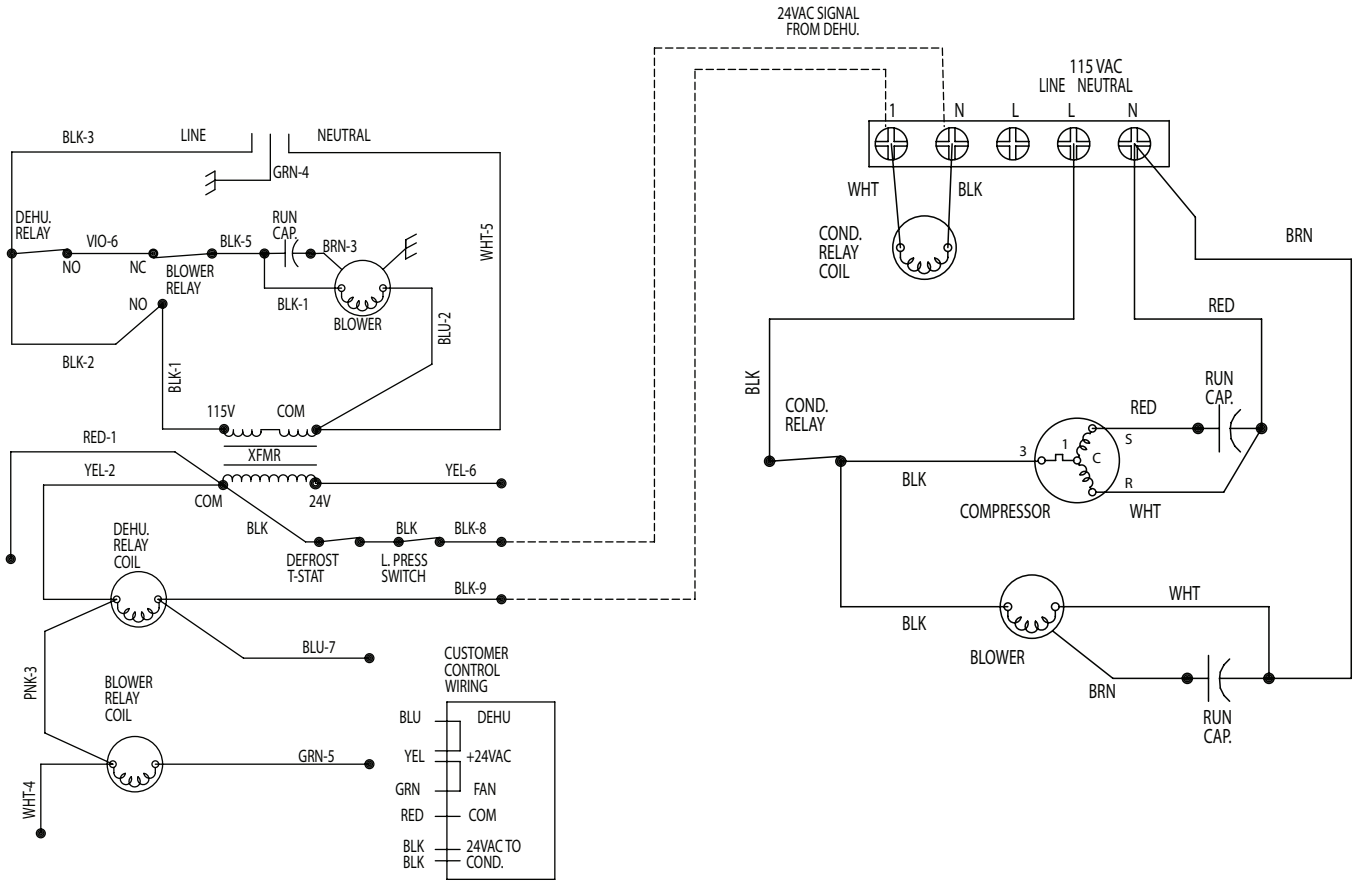
Connect the black control wire (8) from the dehumidifier to terminal N on the condensing unit terminal block.

Connect the black control wire (9) from the dehumidifier to terminal 1 on the condensing unit terminal block.

Condensing Unit Wiring Diagram



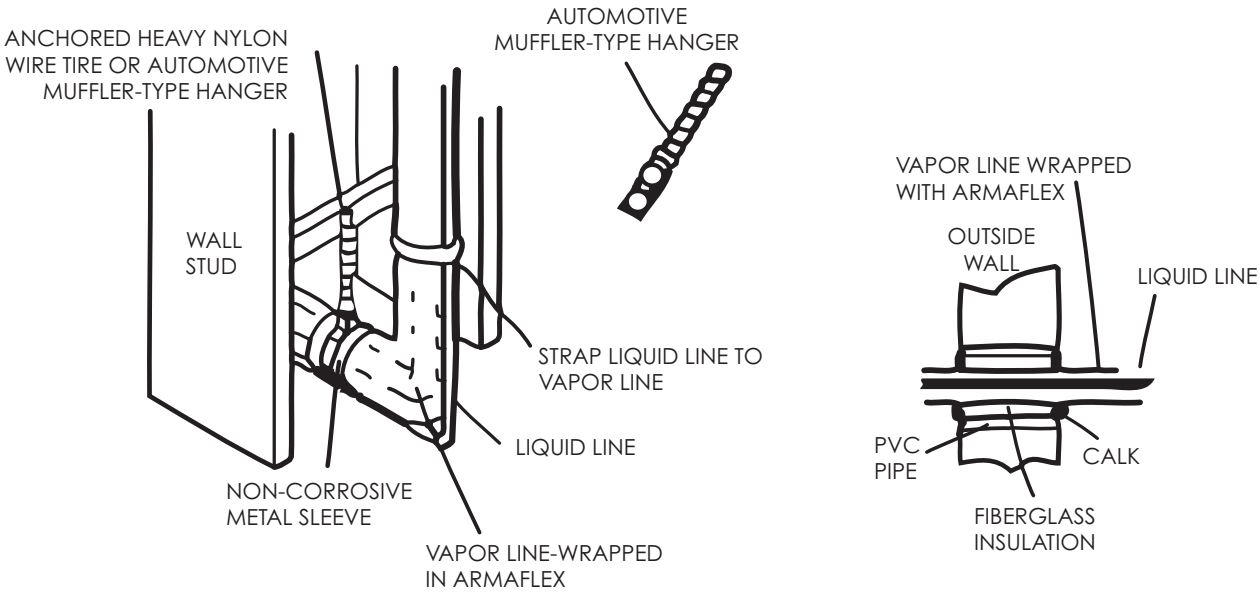
CONDENSING UNIT & DEHUMIDIFIER WIRING



LINE SET INSTALLATION

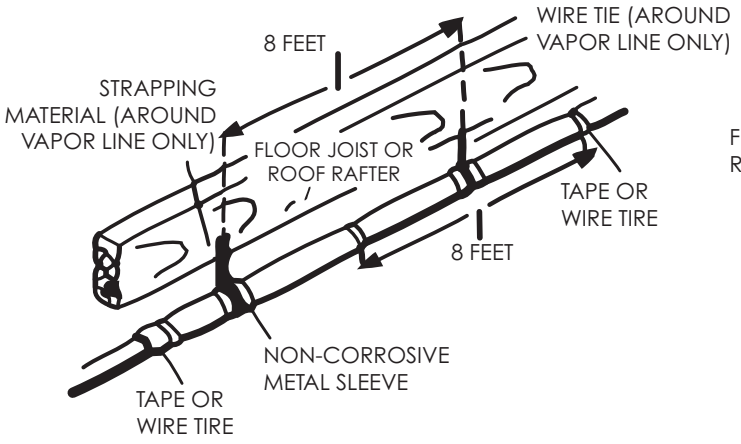
The installer must supply a line set (1/4" liquid line, 3/8" gas line) suitable for use with R410a refrigerant to connect the indoor unit to the outdoor unit. **The maximum allowable length of the line set is 50 feet.** The installer must braze the lines to the dehumidifier and the condensing unit. The gas (suction) line must be insulated to prevent the formation of condensation on the outside of the line.

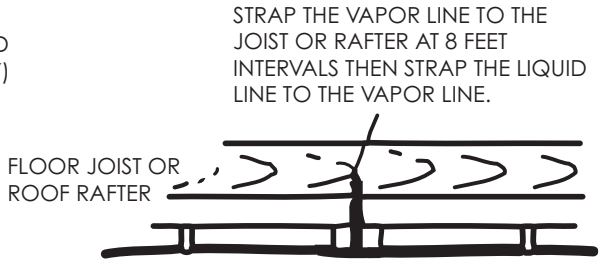
Refrigerant Line Set - Transition From Vertical to Horizontal



Refrigerant Line Set - Installing Horizontal Runs

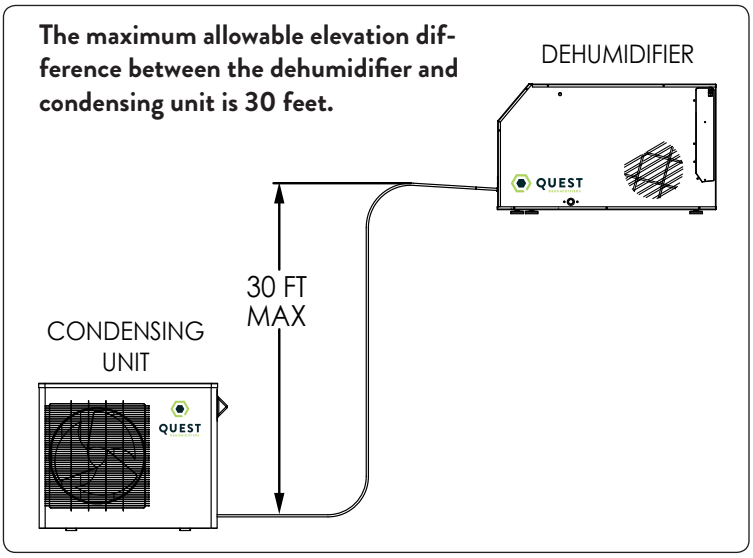
To hang line set from joist or rafter, use either metal strapping material or anchored heavy nylon wire ties.

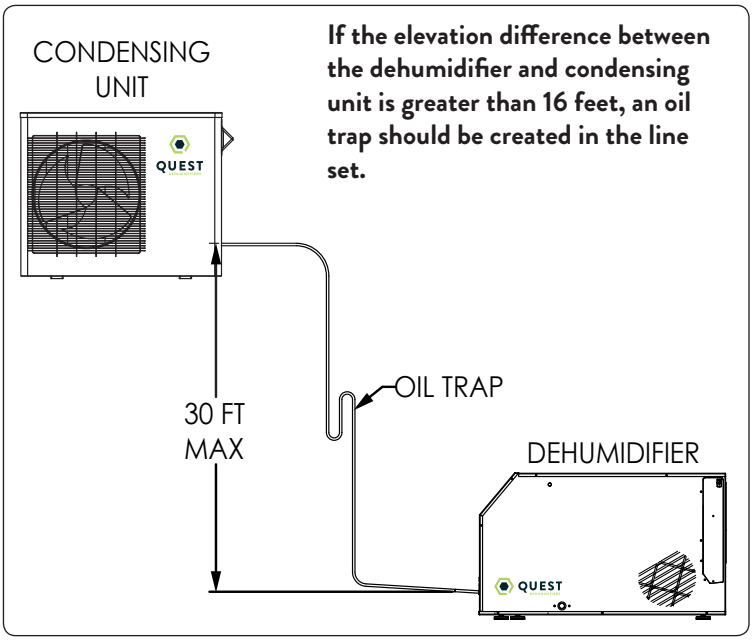




When installing the line set:

- Make sure the lines are suitable for use with R410a.
- Do not crush the lines and always allow a minimum bend radius of 2 inches.
- Keep the ends of the lines covered to prevent dirt and debris from entering the lines during installation.
- Secure the line set to the building with isolating hardware to prevent vibration transmission to the building.
- Seal and isolate the opening(s) where the line set is routed into the building.
- Insulate the gas (suction) line to prevent water condensation on the gas line.
- Flush the lines with an inert gas before and/or during brazing to prevent oxidation inside the lines.
- Release the inert gas holding charge and remove the plugs in the dehumidifier lines before brazing.
- Do not overheat the lines connected to the dehumidifier or the condensing unit when brazing.
- Be aware of the relative location of the dehumidifier (Indoor unit) and condensing unit (Outdoor Unit) when installing the line set.





Brazing the Line Set

⚠ WARNING!

POLYOL ESTER (POE) OILS USED WITH HFC-410A REFRIGERANT ABSORB MOISTURE VERY QUICKLY. IT IS VERY IMPORTANT THAT THE REFRIGERANT SYSTEM BE KEPT CLOSED AS MUCH AS POSSIBLE. DO NOT REMOVE LINE SET CAPS OR SERVICE VALVE STUB CAPS UNTIL YOU ARE READY TO MAKE CONNECTIONS.

⚠ WARNING!

WHEN USING A HIGH PRESSURE GAS SUCH AS DRY NITROGEN TO PRESSURIZE A REFRIGERATION OR AIR CONDITIONING SYSTEM, USE A REGULATOR THAT CAN CONTROL THE PRESSURE DOWN TO 1 OR 2 PSIG.

⚠ CAUTION!

BRAZING ALLOYS AND FLUX CONTAIN MATERIALS WHICH ARE HAZARDOUS TO YOUR HEALTH. AVOID BREATHING VAPORS OR FUMES FROM BRAZING OPERATIONS. PERFORM OPERATIONS ONLY IN WELL-VENTILATED AREAS. WEAR GLOVES AND PROTECTIVE GOGGLES OR FACE SHIELD TO PROTECT AGAINST BURNS. WASH HANDS WITH SOAP AND WATER AFTER HANDLING BRAZING ALLOYS AND FLUX.

TO PREVENT STRIPPING OF THE VARIOUS CAPS USED, THE APPROPRIATELY SIZED WRENCH SHOULD BE USED AND FITTED SNUGLY OVER THE CAP BEFORE TIGHTENING.

ALLOW BRAZE JOINT TO COOL BEFORE REMOVING THE WET RAG FROM THE SERVICE VALVE. TEMPERATURES ABOVE 250° CAN DAMAGE VALVE SEALS.

USE SILVER ALLOY BRAZING RODS WITH 5% MINIMUM SILVER ALLOY FOR COPPER-TO-COPPER BRAZING. USE 45% MINIMUM SILVER ALLOY FOR COPPER-TO-BRASS AND COPPER-TO-STEEL BRAZING.

⚠ WARNING!

FIRE, EXPLOSION AND PERSONAL SAFETY HAZARD. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN DAMAGE, PERSONAL INJURY OR DEATH. NEVER USE OXYGEN TO PRESSURIZE OR PURGE REFRIGERATION LINES. OXYGEN WHEN EXPOSED TO A SPARK OR OPEN FLAME, CAN CAUSE FIRE AND/OR AN EXPLOSION, THAT COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

Note: There is a service port inside the dehumidifier (on the gas line) and both stub tubes of condensing unit. These service ports can be used to introduce and release nitrogen during brazing.

LINE SET INSTALLATION

⚠ CAUTION!

THE DEHUMIDIFIER IS SHIPPED FROM THE FACTORY PRESSURIZED WITH A CHARGE OF INERT GAS AND WITH RUBBER PLUGS IN THE LINES. PURGE THE INERT GAS FROM THE DEHUMIDIFIER BY REMOVING THE RUBBER PLUGS IN THE LIQUID AND GAS LINES TO RELEASE THE INERT GAS BEFORE CONNECTING THE LINE SET.

Note – If there is no pressure in the dehumidifier when the first plug is removed, check the dehumidifier for damage and leaks before continuing with the installation.

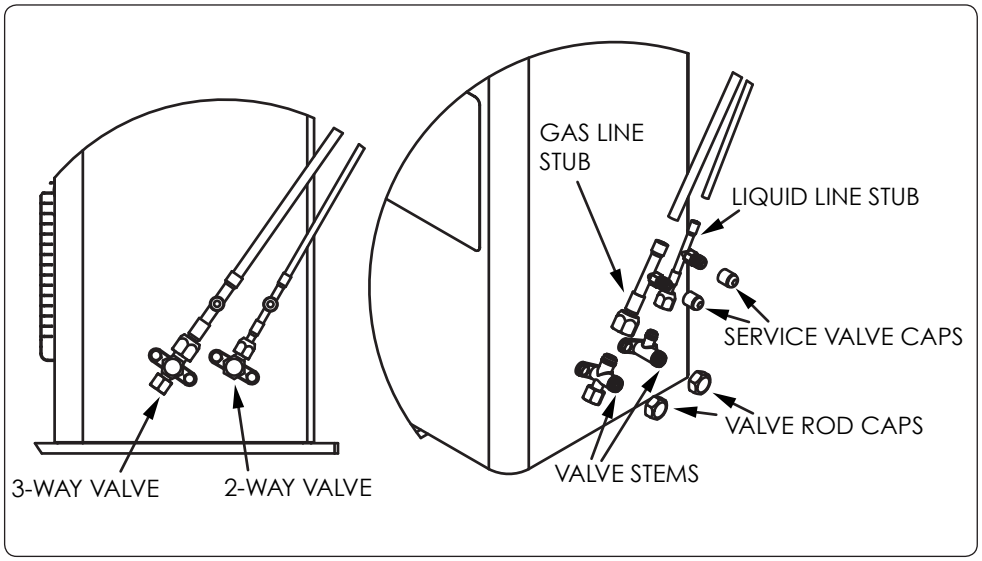
Use the following procedure to connect the line set to the Dehumidifier:

1. Purge the inert gas from the dehumidifier by removing the rubber plugs in the liquid and gas lines to release the inert gas before connecting the line set.
2. Place a field-provided heat shield, such as a wet rag, against the dehumidifier and around the piping stubs. The heat shield must be in place to protect the cabinet from heat damage.
3. Swage the liquid and gas lines (if necessary) to fit onto the dehumidifier lines.
4. Purge the dehumidifier lines and the line set with dry nitrogen (Inert gas) to prevent oxidation during brazing. Flow dry nitrogen into the lines at a low pressure of 1 to 2 psig.
5. Braze the line set lines to the dehumidifier lines.
6. Remove the heat shield after brazing and allow the connections to cool.

Use the following procedure to connect the line set to the Condensing Unit:

1. Cut the line set lines to the proper required length. Deburr the cut ends of the line set lines.
2. Fit the line stubs with flare fittings (included with the condensing unit) onto the line set if necessary.
3. Swage the liquid and gas lines (if necessary) to fit onto the line stubs with the flare fittings.
4. Remove service valve caps and cores.
5. Purge the lines with dry nitrogen (Inert gas) to prevent oxidation during brazing.
6. Braze the line set lines to the line stubs.
7. Apply a light coating of refrigeration oil to the flare fitting threads on the condensing unit valves.
8. Start each flare nut on the corresponding flare fitting on the condensing unit valves by hand, making sure the threads are properly engaged. Tighten the flare nuts hand tight.
9. Carefully torque the flare nuts to the corresponding flare fittings on the condensing unit valves.
   - Torque the liquid line flare nut to 13.3 ft-lbs.
   - Torque the suction line flare nut to 30.1 ft-lbs.
10. Reinstall service valve cores and caps.

Note: Alternately, the stubs with the flare fittings can be connected to the condensing unit before brazing the line set. In this case a field provided heat shield, such as a wet rag, must be placed over the flare fittings and valves on the condensing unit to protect them from heat damage. The service valve cap and core should be removed before brazing near stub tubes.



Leak Test Line Set and Dehumidifier

Manifold Gage Set

When checking the system charge, use a manifold gage set that features low loss anti-blow back fittings.

Manifold gage set used with HFC-410A refrigerant systems must be capable of handling the higher system operating pressures. The gages should be rated for use with high side operating pressures of 0 – 800 psig and low side operating pressures of 30 inches of vacuum to 250 psig. Dampened gages or anti-flutter gages are recommended. Gage hoses must be rated for use at up to 800 psig of pressure with a 4000 psig burst rating.

⚠ CAUTION!

THE ENVIRONMENTAL PROTECTION AGENCY (EPA) PROHIBITS THE INTENTIONAL VENTING OF HFC REFRIGERANTS DURING MAINTENANCE, SERVICE, REPAIR AND DISPOSAL OF APPLIANCE. APPROVED METHODS OF RECOVERY, RECYCLING OR RECLAIMING MUST BE FOLLOWED.

⚠ WARNING!

WHEN USING A HIGH PRESSURE GAS SUCH AS DRY NITROGEN TO PRESSURIZE A REFRIGERATION OR AIR CONDITIONING SYSTEM, USE A REGULATOR THAT CAN CONTROL THE PRESSURE DOWN TO 1 OR 2 PSIG.

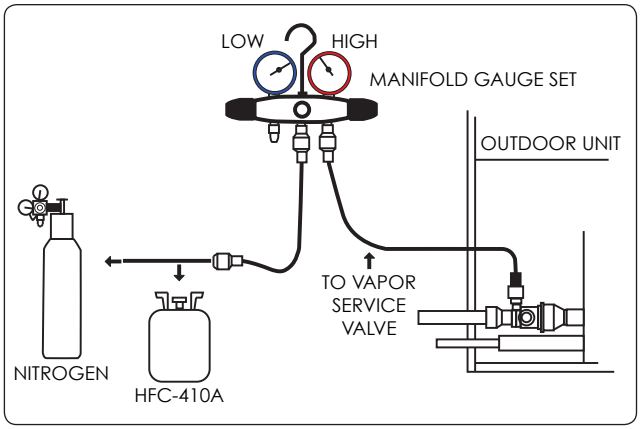
⚠ CAUTION!

LEAK DETECTOR MUST BE CAPABLE OF SENSING HFC REFRIGERANT.

⚠ WARNING!

REFRIGERANT CAN BE HARMFUL IF IT IS INHALED. REFRIGERANT MUST BE USED AND RECOVERED RESPONSIBLY. FAILURE TO FOLLOW THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH.

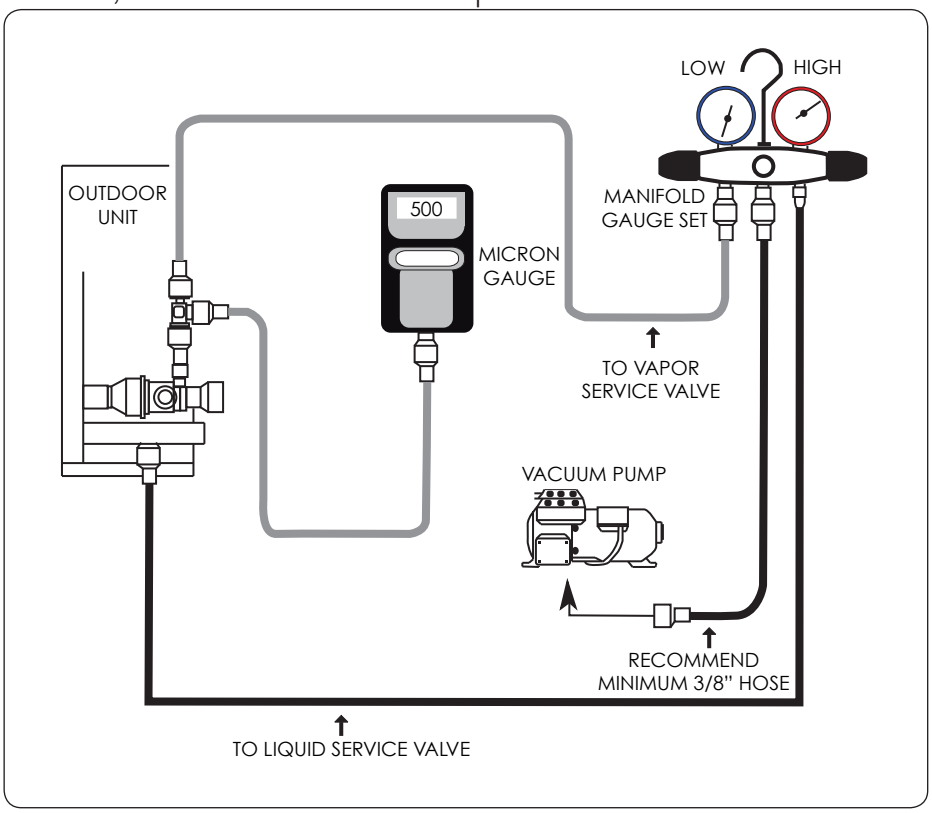
1. Connect the HFC-410A manifold gage set high pressure hose to the service port on the suction gas line. **Note:** Connecting the high pressure hose to the service port on the gas line will protect the manifold gage set from high pressure damage during leak testing. Cap liquid line service port.
2. Make sure all of the valves on the manifold gage set are closed. Connect a cylinder of HFC-410A refrigerant to the center port of the manifold gage set.
3. Position the HFC410A refrigerant cylinder to deliver vapor only. Open the valve on the HFC-410A refrigerant cylinder.
4. Open the high pressure side of the manifold gage set to allow HFC-410A into the line set and dehumidifier. Weigh in a trace amount of HFC-410A [A trace amount is a maximum of two ounces (57g) of refrigerant or 3 PSI]. Close the valve on the HFC-410A cylinder and the valve on the high pressure side of the manifold gage set.



5. Disconnect the HFC-410A refrigerant cylinder from the manifold gage set.
6. Connect a cylinder of dry nitrogen with a pressure regulating valve to the center port of the manifold gage set.
7. Adjust the dry nitrogen pressure regulator to 150 psig. Open the valve on the high pressure side of the manifold gage set to pressurize the line set and dehumidifier.
8. Close the valve on the dry nitrogen cylinder. Close the valve on the high pressure side of the manifold gage set.
9. Allow the system to rest for a few minutes.
10. Check all (brazed and threaded) joints for leaks using a leak detector designed to sense HFC refrigerants.
11. After leak testing is complete, disconnect the dry nitrogen cylinder from the center port of the manifold gage set and disconnect the high pressure hose of the manifold gage set from the suction gas line service port.

Evacuating the Line Set and The Dehumidifier

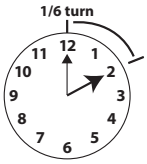
1. Remove the valve cores from the service ports on the liquid and gas line stubs using no-loss valve core removal tools.
2. Connect a 1/4" SAE in-line tee to the gas line stub valve core removal tool.
3. Connect the low pressure side of the manifold gage set to one of the ports on the 1/4" SAE in-line tee.
4. Connect a micron gage to the remaining port of the 1/4" SAE in-line tee.
5. Connect the high pressure side of the manifold gage set to the liquid line stub service port.
6. Connect a vacuum pump to the center port on the manifold gage set.
7. Open the valve core removal tool valves.
8. Open the high and low pressure sides of the manifold gage set and start the vacuum pump.
9. After evacuating for a few minutes, close the high and low pressure sides of the manifold gage set and observe the behavior of the micron gage. A rapid rise in the micron gage reading (pressure) indicates a leak in the system. If this occurs, check the manifold gage set, hoses, tee, and valve core removal tools for leaks. If no leak is found, repeat the leak test procedure on Page 15.
10. Evacuate the line set and dehumidifier for a minimum of 15 minutes and check that the micron gauge reads below 500 microns.
11. Close the low and high pressure sides of the manifold gage set and stop the vacuum pump.
12. Wait 10 minutes.
13. If the micron gage reading rises above 800 microns, check for leaks and return to step 9.
14. If the micron gage reading remains below 800, close the valves on the valve core removal tools.
15. Remove the tee from the gas line stub valve core removal tool. Connect the low pressure side of the manifold gage set to the gas line stub valve core removal tool.
16. Install the valve core into the liquid line stub service port.
17. Remove the vacuum pump from the center port of the manifold gage set and proceed to the next section to charge the system.

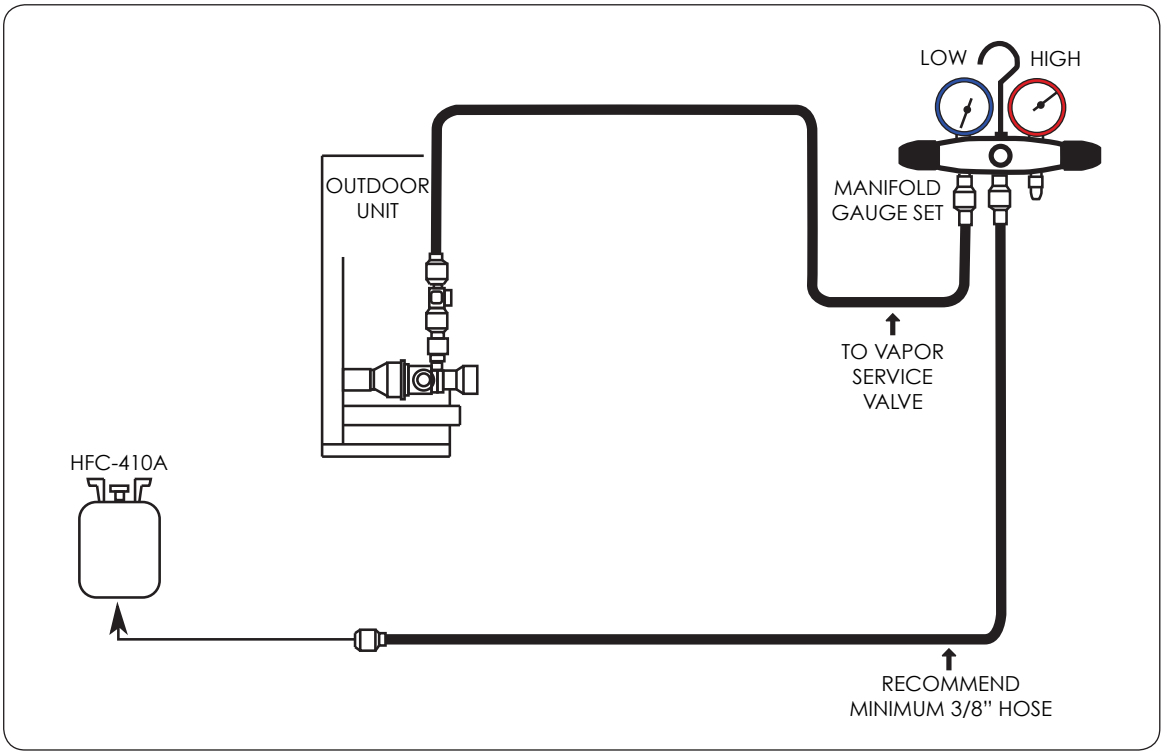


Charging the System

The condensing unit is pre-charged with 42 oz. of HFC-410A refrigerant. The installer will add HFC-410A refrigerant for the dehumidifier and line set.

1. Calculate the amount of HFC-410A required by determining the length of the line set and performing the calculation below:
   11oz + 2.2oz per every 10 feet of line set length = Total charge required
2. Connect a cylinder of HFC-410A refrigerant to the center port of the manifold gage set. Position the HFC410A refrigerant cylinder to deliver liquid only.
3. Open the valve on the HFC-410A cylinder.
4. Place the HFC-410A cylinder on a refrigerant scale and zero the scale.
5. Open the valve on the gas line stub valve core removal tool.
6. Open the low pressure side of the manifold gage set and weigh in the amount of HFC-410A calculated in step 1.
7. Close the valve on the HFC-410A cylinder and the low pressure side of the manifold gage set.
8. Close the valve on the gas line stub valve core removal tool.
9. Remove the high and low pressure sides of the manifold gage set from the valve core removal tools.
10. Install the valve core in the gas line stub port using the no-loss valve core removal tool
11. Remove the no-loss valve core removal tools from the service ports on the liquid and gas line stubs.
12. Install the caps on the service ports of the liquid and gas line stubs finger tight, then tighten an additional 1/6 turn. Check the service port caps for leakage – reinstall if necessary.





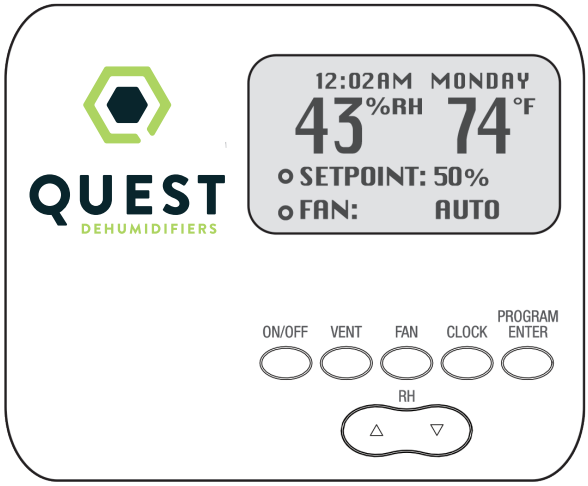
A control must be used with the Quest 185 Cool. Quest offers the DEH 3000 proprietary control. The DEH 3000 allows homeowners to monitor and control relative humidity and proper ventilation levels in their home. This control is also available with a remote sensing option.

Note: The DEH 3000 is sold seperately and can be purchased through your local dealer or online. Other thermostats are compatible with the Quest 185 Cool.

Quest DEH 3000 Digital Control

- **Central Fan Integration** – Operates HVAC fan with dehumidifier operation.
- **A/C Sensor** – Automatically activates or deactivates the dehumidifier when the air conditioner runs.
- **High Temperature Cut-Out** – Disables dehumidifier operations if household temperature reaches the cut-out setpoint.
- **Dry-Out Cycle Timer** – Automatic fan cycling to ensure dry and clean coils.
- **Auto Reboot** – Resumes operation with prior settings in the event of power failure.

See DEH 3000 manual for detailed instructions.



Wiring Controls

⚠ CAUTION!

DO NOT ALLOW THE YELLOW LEAD FROM THE QUEST 185 COOL TO CONTACT THE RED LEAD OR THE WHITE LEAD FROM THE QUEST 185 COOL OR DAMAGE TO THE TRANSFORMER WILL RESULT.
DO NOT CONNECT THE WHITE WIRE TO THE CONTROL IF THE OPTIONAL DAMPER IS NOT USED OR DAMAGE TO THE TRANSFORMER WILL RESULT.

Control Connections

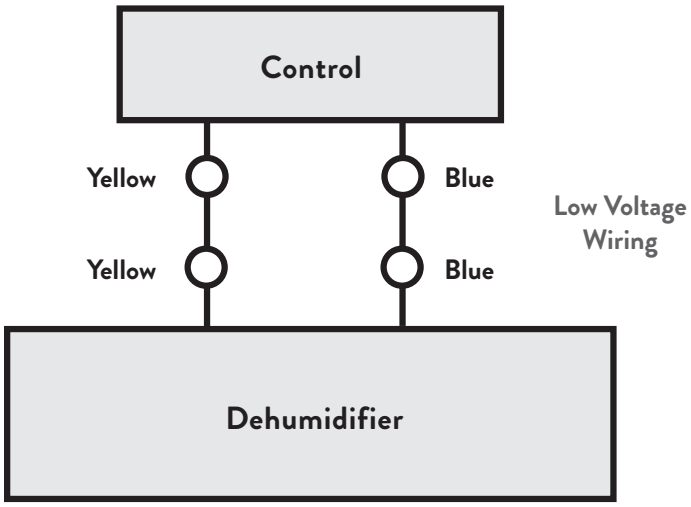
The control and the control wires leaving the Quest 185 Cool are numbered and color-coded to prevent confusion. Depending on the control, some of the wires leaving the Quest 185 Cool may not be used. For safety, the unconnected wires should be covered with wire nuts. Be sure to consult the electrical schematic in this manual or inside the access panel of the Quest 185 Cool before making control connections.

A low voltage control must be used with the Quest 185 Cool.

Five Color Coded Wires Control Operation	
Green (or brown)	Fan control
Blue	Dehumidification (fan and compressor) control
Red	24 VAC power transformer neutral side (common with white)
White	24 VAC power transformer neutral side (common with red)
Yellow	Transformer high side

Between the red/white lead and the yellow lead is a 40VA transformer. This low voltage power source powers the relay coils which control the fan and compressors. This 24 VAC transformer can also be used to power HVAC accessories external to the dehumidifier.	
Unit ON & Fan ON	Make contact between yellow and blue wires
Unit OFF / Fan On	Make contact between yellow and green (or brown) wires
Power HVAC Accessory	Connect the accessory to the white (or red) wire and the yellow wire

Basic Control Wiring



Service Parts List - Dehumidifier

Item	Part No.	Description
1	4021475	Air Filter 16”x20”x2” MERV-11
2	4026221	Foot, Leveling, 5/16-18
3	4031086-05	Evaporator Coil
4	4029510	Filter/Drier
5	4025741	Thermostat, Defrost Control
6	4029508	Low Pressure Switch
7	4026657	Impeller
8	4033031-07	Blower Capacitor, Run, 15 MFD, 370V, Dry
9	4020924	Blower Relay, SPDT, 24V, 15A
10	4022487	Transformer

Service Parts List - Condensing Unit

Item	Part No.	Description
1	4033211	Nut
2	4033212	Fan-Axial
3	4033213	Compressor
4	4033214	Capacitor
5	4033216	Capacitor-Fan Motor
6	4033215	Motor
7	4022484	Relay

Refrigerant Charging

⚠ WARNING!

SERVICING THE QUEST 185 COOL WITH ITS HIGH PRESSURE REFRIGERANT SYSTEM AND HIGH VOLTAGE CIRCUITRY PRESENTS A HEALTH HAZARD WHICH COULD RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR PROPERTY DAMAGE. SERVICE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN.

If the refrigerant charge is lost due to service or a leak, the leak should be repaired and a new charge must be accurately weighed in. If any of the old charge is left in the system, it must be recovered before weighing in the new charge. Refer to the unit nameplate for the correct charge weight and refrigerant type.

Troubleshooting

⚠ CAUTION!

TROUBLESHOOTING SHOULD BE PERFORMED BY A QUALIFIED HVAC TECHNICIAN.

Symptom	Possible Reason	Troubleshooting Procedure
Neither fan nor compressor running. Dehumidification is being called for.	1. Dehumidifier unplugged or no power to outlet. 2. Humidity control set too high. 3. Loose connection in internal or control wiring. 4. Defective compressor relay. 5. Defective control transformer.	**⚠ WARNING!** **ELECTRICAL SHOCK HAZARD:** ELECTRICAL POWER MUST BE PRESENT TO PERFORM SOME TESTS. THESE TESTS SHOULD BE PERFORMED BY A QUALIFIED SERVICE PERSON. **Troubleshooting Procedure for Control Related Issues** This method of diagnosis will test the 3 main components of the control circuit individually to indicate any potential problems. This is to be used when the control will not activate the main unit. 1. Detach field control wiring connections from the pigtails on the main unit. 2. Connect the yellow and green wire pigtails together; only the fan should run. Disconnect the wires. 3. Connect the yellow and blue wires pigtails together; fan and compressor should run. Disconnect the wires. 4. If this test works, the main unit is working correctly from a control standpoint. 5. Reconnect field control wiring to the pigtails on the main unit. 6. Remove the control panel cover and detach the field wiring from the control connections. 7. Connect the yellow and green wires together; only the fan should run. Disconnect the wires. 8. Connect the yellow and blue wires together; fan and compressor should run. Disconnect the wires. 9. If this test works, then the field control wiring is ok. 10. If the problem persists, then the control is most likely faulty.
Compressor is not running. Dehumidification is being called for. Fan is running.	1. Defective compressor run capacitor. 2. Loose connection in compressor circuit. 3. Defective compressor overload. 4. Defective compressor. 5. Defrost thermostat open.	
Compressor cycles on and off. Dehumidification is being called for.	1. Low ambient temperature and/or humidity causing unit to cycle through defrost mode. 2. Defective compressor overload. 3. Defective compressor. 4. Defrost thermostat defective. 5. Dirty air filter(s) or air flow restricted. 6. Defective fan or relay.	

Troubleshooting (Continued)

Symptom	Possible Reason	Troubleshooting Procedure
Fan is not running. Dehumidification or fan is being called for.	1. Loose connection in fan circuit. 2. Obstruction prevents fan impeller rotation. 3. Defective fan. 4. Defective fan relay.	**⚠ WARNING!** **ELECTRICAL SHOCK HAZARD:** ELECTRICAL POWER MUST BE PRESENT TO PERFORM SOME TESTS. THESE TESTS SHOULD BE PERFORMED BY A QUALIFIED SERVICE PERSON. **Troubleshooting Procedure for Performance Related Issues** This method of diagnosis is used to function check the internal components in the dehumidifier. This is to be used when a performance issue is suspected. 1. Set the humidity controller all the way to the most humid setting or off position – Did the unit shut off? 2. If yes, turn the fan setting to the ON position – does the fan start? 3. If fan starts, leave in the fan ON position and set the humidity all the way to driest setting. May have to wait 5 minutes for the compressor to start. 4. Listen for a distinct buzzing/humming sound of a compressor starting up – do you hear this noise? 5. If compressor is running and continues to run, after about 15 minutes you should feel a slight increase in air temperature being discharged out of the discharge air side of the unit. 6. If so, depending on your environmental conditions (temp/Rh%), you should see some water production out of the hose within 30 minutes or so. (Note: If the room temperature is 55 degrees or below and/or in area of low relative humidity, the dehumidifier will produce little to no water.) 7. Collecting the water removed in a 24 hour period will give a measurement of performance.
Low dehumidification capacity (evaporator is frosted continuously). Dehumidification is being called for.	1. Defrost thermostat loose or defective. 2. Low refrigerant charge. 3. Dirty air filter(s) or air flow restricted. 4. Excessively restrictive ducting connected to unit.	
No ventilation. Ventilation is being called for.	1. Loose connection in ventilation control circuit. 2. Loose connection in damper power circuit. 3. Defective fresh air damper.	
Dehumidifier removes some water, but not as much as expected.	1. Air temperature and/or humidity have dropped. 2. Humidity meter and or thermometer used are out of calibration. 3. Unit has entered defrost cycle. 4. Dirty air filter(s) or air flow is restriced. 5. Defective defrost thermostat. 6. Low refrigerant charge. 7. Air leak such as loose cover or ducting leaks. 8. Defective compressor. 9. Restrictive ducting.	

Troubleshooting

⚠ CAUTION!

TROUBLESHOOTING SHOULD BE PERFORMED BY A QUALIFIED HVAC TECHNICIAN.

Symptom	Possible Reason	Troubleshooting Procedure
		⚠ WARNING! **ELECTRICAL SHOCK HAZARD:** ELECTRICAL POWER MUST BE PRESENT TO PERFORM SOME TESTS. THESE TESTS SHOULD BE PERFORMED BY A QUALIFIED SERVICE PERSON. Troubleshooting Procedure for Condenser Relating Issues

WARRANTY

Limited Warranty. Therma-Stor, LLC ("Therma-Stor") warrants as follows: (i) the Quest 185 Cool dehumidifier ("Product") will be free of material defects in workmanship or materials for a period of one (1) year ("One-Year Warranty") following the date of initial purchase of such Product by an original customer purchasing from Therma-Stor or an authorized reseller ("Customer"); and (ii) the Product's condenser, evaporator, and compressor will be free of material defects in workmanship or materials for a period of five (5) years following the date of initial purchase of such Product by a Customer.

Limitation of Remedies. CUSTOMER'S SOLE AND EXCLUSIVE REMEDY UNDER THE ABOVE LIMITED WARRANTY AND THERMA-STOR'S ENTIRE LIABILITY THEREUNDER, SHALL BE, AT THE SOLE OPTION OF THERMA-STOR, REPLACEMENT OR REPAIR OF SUCH PRODUCT OR ITS COMPONENTS ("COMPONENTS") BY THERMA-STOR OR THERMA-STOR'S AGENTS ONLY. REFRIGERANT, PIPING, SUPPLIES, TRANSPORTATION COSTS, LABOR COSTS INCURRED IN REPAIR OR REPLACEMENT OF SUCH COMPONENTS ARE NOT INCLUDED. THIS DISCLAIMER AND EXCLUSION SHALL APPLY EVEN IF THE EXPRESS WARRANTY AND LIMITED REMEDY SET FORTH HEREIN FAILS OF ITS ESSENTIAL PURPOSE. CUSTOMER ACKNOWLEDGES THAT NO REPRESENTATIVE OF THERMA-STOR OR OF ITS AFFILIATES OR RESELLERS IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY ON BEHALF OF THERMA-STOR OR ANY OF ITS AFFILIATES OR RESELLERS THAT IS NOT IN THIS AGREEMENT. Notwithstanding the above, during the term of the One-Year Warranty only, Therma-Stor will provide, free of charge to Customer, all Components and labor (except costs related to removal and installation of Product) required to fulfill its obligations under such One-Year Warranty.

Disclaimer of Warranties. EXCEPT FOR ABOVE LIMITED WARRANTY, WHICH IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED WITH RESPECT TO THE PRODUCT AND ITS COMPONENTS, THERMA-STOR HEREBY DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Warranty Limitations. The foregoing limited warranty extends only to a Customer and shall be null and void upon attempted assignment or transfer. A "defect" under the terms of the limited warranty shall not include problems resulting from Customer's or Customer's employees', agents', invitees' or a third party's misuse, improper installation, improper design of any system in which the Product is included, abuse, lack of normal care, failure to follow written instructions, tampering, improper repair, or freezing, corrosion, acts of nature or other causes not arising out of defects in Therma-Stor's workmanship or material. If a Product or Component is replaced while under warranty, the applicable limited warranty period shall not be extended beyond the original warranty time period. The limited warranty does not cover any costs related to changes to a Product or Component that may be required by any codes, laws, or regulations that may become effective after initial purchase of the Product by Customer.

Customer Responsibilities. As a further condition to obtaining warranty coverage hereunder, the Customer must send a valid warranty claim to Therma-Stor such that Therma-Stor receives such claim prior to the end of the applicable warranty period. Therma-Stor shall have no obligation hereunder with respect to any claim received by Therma-Stor after the expiration of the applicable warranty period. As a further condition to obtaining warranty coverage hereunder, the Customer must present forms of invoices evidencing proof of purchase of a Product. If such invoices do not clearly indicate the date of initial purchase by a Customer, the applicable Product's date of manufacture will be used instead of the date of initial purchase for the purpose of calculating the commencement of the applicable warranty period. Warranty service must be performed by Therma-Stor or a servicer authorized by Therma-Stor. In order to obtain warranty service, the Customer should call Therma-Stor at 1-800-533-7533 and ask for the Therma-Stor Products Service Department, which will then arrange for applicable warranty service. Warranty service will be performed during customary, daytime working hours. If the Product must be shipped for service, Customer shall be solely responsible for properly packaging the Product, for all freight charges, and for all risk of loss associated with shipment.

Limitation of Liability. IN NO EVENT SHALL THERMA-STOR, IN CONNECTION WITH THE DESIGN, SALE, INSTALLATION, USE, REPAIR, REPLACEMENT OR PERFORMANCE OF ANY PRODUCT, COMPONENT, PART THEREOF OR WRITTEN MATERIAL PROVIDED THEREWITH, BE LIABLE, TO THE EXTENT ALLOWED UNDER APPLICABLE LAW, UNDER ANY LEGAL THEORY FOR ANY SPECIAL, DIRECT, INDIRECT, COLLATERAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. NOTWITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, THE SOLE AND EXCLUSIVE LIABILITY OF THERMA-STOR, REGARDLESS OF THE NATURE OR THEORY OF THE CLAIM, SHALL UNDER NO CIRCUMSTANCES EXCEED THE PURCHASE PRICE OF THE PRODUCT, COMPONENT OR PART UPON WHICH THE CLAIM IS PREMISED.

Applicable Law and Venue. ANY ARBITRATION, ENFORCEMENT OF AN ARBITRATION OR LITIGATION RELATED TO THE PRODUCT WILL BE BROUGHT EXCLUSIVELY IN DANE COUNTY, WISCONSIN, AND CUSTOMER CONSENTS TO THE JURISDICTION OF THE FEDERAL AND STATE COURTS LOCATED THEREIN, SUBMITS TO THE JURISDICTION THEREOF AND WAIVES THE RIGHT TO CHANGE VENUE. CUSTOMER FURTHER CONSENTS TO THE EXERCISE OF PERSONAL JURISDICTION BY ANY SUCH COURT WITH RESPECT TO ANY SUCH PROCEEDING.

Miscellaneous. If any term or condition of this Limited Warranty is found by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable, the same shall not affect the other terms or conditions hereof or thereof or the whole of this Limited Warranty. Any delay or failure by Therma-Stor to exercise any right or remedy will not constitute a waiver of Therma-Stor to thereafter enforce such rights.

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