

Quest 132D

Installation, Operation and Maintenance Instructions

– Read and Save These Instructions –

This manual is provided to acquaint you with the dehumidifier so that installation, operation and maintenance can proceed successfully. Ultimate satisfaction depends on the quality of installation and a thorough understanding of this equipment. The dehumidifier is built around tested engineering principles and has passed a thorough inspection for quality of workmanship and function.

Quest 132D:

- Low dewpoint operation
- 132 Pints/Day @ AHAM
- Wide operating range
- 24 Amps total power consumption
- Factory installed 115VAC power cords (2 required @ 15 Amps each)
- Simple ON/OFF operation with optional low voltage control for remote/dehumidistat operation
- Vertical or horizontal operation
- Multiple ducting options



Water Removal Rates (Pints/Day)

95 Pints	100° F, 20%
135 Pints	90° F, 90%
135 Pints	80° F, 80%
132 Pints	80° F, 60% (AHAM)
130 Pints	70° F, 80%
120 Pints	70° F, 60%
120 Pints	60° F, 80%
115 Pints	60° F, 60%
115 Pints	50° F, 80%
100 Pints	50° F, 60%
45 Pints	10° F, 80%



Therma-Stor[®] LLC

Driven by performance. Powered by design.™

4201 Lien Rd
Madison, WI 53704
www.QuestClimate.com

Phone 608-237-8400
Toll-Free 1-877-420-1330
info@QuestClimate.com

Table of Contents

Safety Precautions3

1. Specifications4

2. Installation5

 2.1 Electrical Requirements5

 2.2 Ducting Options5

 a. Inside Drying Space with
 Single Reactivation Outlet Duct5

 b. Inside Drying Space with
 Isolated Reactivation Duct5

 c. Outside Drying Space5

3. Operation5

 3.1 How the Quest DRY 155 Works5

 3.2 Controlling the Quest 132D6

4. Maintenance6

 4.1 Air Filters6

 4.2 Blower Motors and Rotor Drive Motor7

 4.3 Desiccant Rotor Cassette Assembly7

5. Service7

 5.1 Warranty7

 5.2 Technical Description7

 a. Main Components7

 b. Control Circuit8

 c. Safety Components8

 5.3 Normal Operation8

 5.4 Troubleshooting8

6. Wiring Diagram10

7. Service Parts List11

Warranty12

Serial No. _____

Purchase Date _____

Dealer's Name _____



Safety Precautions

Read the installation, operation and maintenance instructions carefully before installing and operating this device. Proper adherence to these instructions is essential to obtain maximum benefit from your Quest 132D.

READ AND SAVE THESE INSTRUCTIONS

The Quest 132D can be installed in a variety of locations to meet the owner's needs as listed below. In all cases, keep the following cautions in mind:

- The Quest 132D is designed to be installed **INDOORS ONLY**.
- If used near water, the unit should be plugged into GFCI circuits
- **DO NOT** use the Quest 132D as a bench or table
- Avoid discharging the process air directly at people
- This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety
- The appliance shall be installed in accordance with national wiring regulations
- Please allow one foot of clearance for the inlets and outlets of the unit
- Never operate a unit with a damaged 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
- In order to avoid hazard due to inadvertent resetting of the thermal cutout, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility
- **DO NOT** operate the Quest 132D at an altitude higher than 32,000 ft (10,000m)
- Reactivation outlet air **MUST** be discharged into a location that can tolerate high temperature, moist air.
- If the reactivation outlet ductwork passes through a cold space, the duct must be insulated to prevent condensation from forming inside the duct.
- Le Quest 132D est conçu pour être installé **SEULEMENT À L'INTÉRIEUR**.
- Lorsqu'utilisée près d'une zone d'eau, l'unité doit être branchée sur des circuits DDFT.
- **N'UTILISEZ PAS** le Quest 132D comme banc ou table.
- Évitez d'évacuer l'air de procédé directement vers les gens.
- Cet appareil ne doit pas être utilisé par des personnes dont les capacités physiques, sensorielles ou mentales sont limitées (y compris les enfants) ou des personnes sans expérience ni connaissances pertinentes pour l'utilisation de l'appareil à moins d'avoir été formées sur l'utilisation de l'appareil par une personne responsable de leur sécurité.
- L'appareil doit être installé suivant les réglementations nationales en matière de câblage.
- Veuillez s'il vous plaît prévoir une distance d'un pied entre l'unité et les entrées et arrivées.
- N'utilisez jamais un appareil présentant un cordon d'alimentation endommagé. Si le cordon d'alimentation est endommagé, celui-ci doit être remplacé par le fabricant, par son agent de service ou par une personne compétente pour éviter tout risque.
- Pour éviter tout risque relié à la réinitialisation accidentelle de l'interrupteur magnétothermique, cet appareil ne doit pas être alimenté par un dispositif de commutation externe telle une minuterie ni être branché à un circuit qui est régulièrement allumé et éteint par l'appareil.
- N'utilisez pas le Quest 132D à plus de 32 800 pieds d'altitude (10 000 m).
- Les sorties d'air de réactivation **DOIVENT** être évacuées vers un emplacement pouvant tolérer de hautes températures et un air humide.
- Si les conduits de sortie d'air de réactivation traversent un espace froid, ceux-ci doivent être isolés pour éviter la formation de condensation à l'intérieur de la canalisation.

The Quest 132D supports multi-position operation and multiple ducting options. In **EVERY** case the Reactivation Outlet air **MUST** be ducted out of the drying space and to a location tolerant of high temperature moist air (usually outside).

1. Specifications

- Part Number:** 4037900
- Power:** 2 Circuits; 12Amps, 115VAC each
24 Amps total power consumption
- Kilowatts:** 2.8 (66 KWh/Day)
- Capacity per Day:** 132 Pints (80°F 60%RH)
- Blower:** 385 CFM Process Ariflow @ 0" ESP
75 CFM Reactivation Airflow @ 0"ESP
- Temperature Range:** 10°F to 120°F*
- Filters:** Process Filter Size: 16" X 20" X 2"
Reactivation Filter Size: 12" X 12" X 1"
- Reactivation Duct:** 6" (Start collars included)
- Process Duct:** 8" (Start collars included)
- External Static Pressure:** 0-0.4" WC Process
0-0.25" WC Reactivation
- Warranty:** 1 Year Parts and Labor

**Low temperature performance is dependent on reactivation air source. Supplying warmer reactivation air will significantly increase water removal.*

Dimensions :

	Unit	Shipping
Width	20"	25"
Height	36"	47"
Depth	20"	24"
Weight	105 Lb	125 Lb

Process Air Filter Replacement:
4021475 16" x 20" x 2" MERV 11 Filter (Standard)

Reactivation Air Filter Replacement:
4026860 12" x 12" x 1" MERV 7 Filter

2. Installation

2.1 Electrical Requirements

The Quest 132D draws a total of 24 Amps at 115VAC. For convenience, this can be supplied by two standard 15 Amp outlets on separate circuits (cords provided). The Quest 132D also allows for the connection of low voltage remote dehumidistat controls (sold separately).

2.2 Ducting Options

a. Inside Drying Space with Single Reactivation Outlet Duct (Simplest Hookup) Fig. 2.2

- Reactivation air exhausts moisture, makeup air infiltrates uncontrolled into space
- Creates a slight negative pressure on drying space
- Works well if infiltrating air is conditioned and drying space is not “tight”

b. Inside Drying Space with Isolated Reactivation Duct Fig. 2.3

- Requires reactivation air to be ducted into and out of drying space.
- Works well on tightly sealed drying spaces.
- Keeps separation between air inside and air outside of drying space.

c. Outside Drying Space Fig. 2.4

- Requires process air to be ducted out from and back into drying space
- Works well if drying space is too small for mounting unit inside.
- Reduces heat load on drying space.

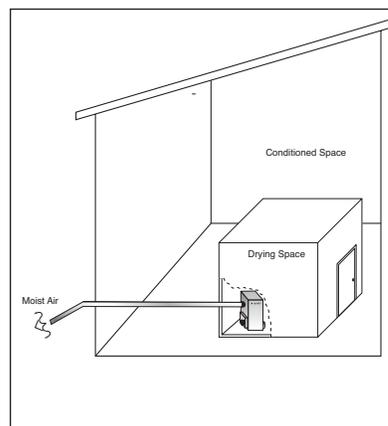


Figure 2.2
Single Reactivation Outlet duct

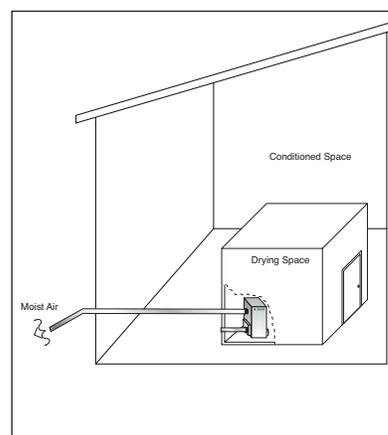


Figure 2.3
Isolated Reactivation Outlet Duct

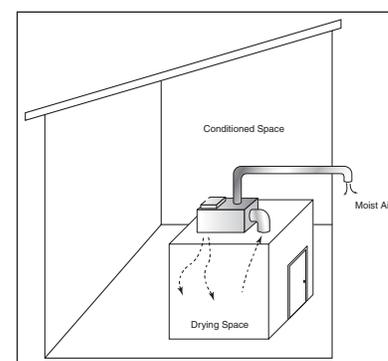


Figure 2.4
Outside Drying Space

3. Operation

The Quest 132D comes complete and can be plugged in and turned on. Connected this way, the Quest 132D will run continuously. With the addition of a high or low voltage humidistat or a duty cycle timer, the ON/OFF switch will act as an override.

Note: Check for airflow at all inlets and outlets. DO NOT run unit if no airflow is detected.

3.1 How the Quest 132D works

Your Quest 132D has two separate air streams that run through it – Process (Fig. 2.5) and Reactivation (Fig. 2.6).

Note: Check for airflow at all inlets and outlets. DO NOT run unit if no airflow is detected.

Process Air Stream:

P1 – 385 CFM of air enters (8” duct) the top of the machine and...

P2 – ...water vapor from incoming air is deposited on the desiccant wheel.

P3 – 385 CFM of dry air exits (8” duct) the machine.

Reactivation Air Stream:

R1 – 75 CFM of air enters (6” duct) the lower-side of the machine and...

R2 – passes over the heater coils.

R3 – Water vapor is picked up from the desiccant wheel by the hot air and...

R4 – ...75 CFM of wet air exits (6” duct) the machine.

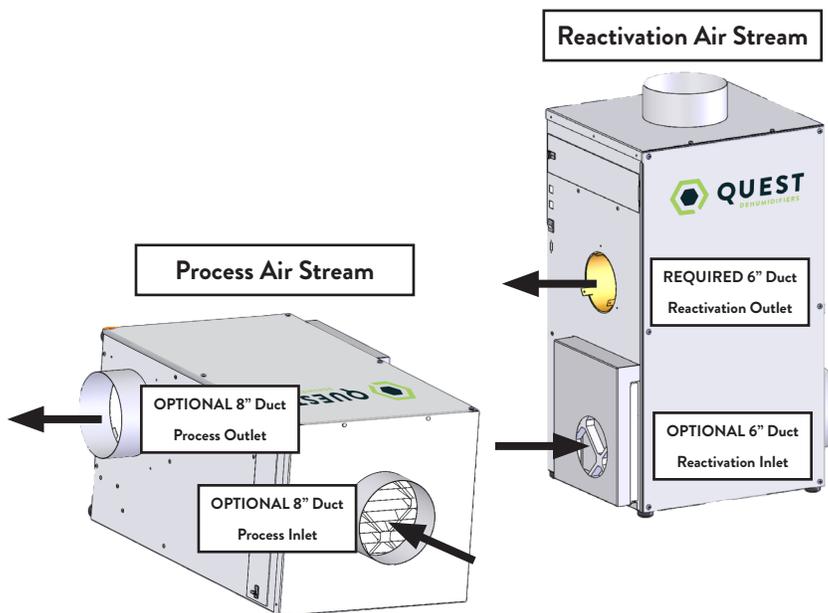


Figure 2.5

Figure 2.6

3.2 Controlling the Quest 132D

a. Continuous Operation

The Quest 132D is shipped ready to plug in and run. After plugging both cords into separate 120VAC 15A circuits, switch it on using the power switch. Connected this way, it will run continuously regardless of the ambient humidity

b. External Control

The Quest 132D includes terminals to connect a low-voltage (24VAC) external control, such as a humidistat or duty cycle timer. This must be a dry contact control – no power should be connected to the terminals. When the terminals are electrically connected and the power switch is switched on, the unit will run. When the terminals are not electrically connected, the unit will not run. Remove the factory-installed jumper before installing an external control. If the jumper is not removed, the Quest 132D will operate continuously as described in 3.2 (a)

IMPORTANT: Line-voltage controls that interrupt power to the unit may not be used with the Quest 132D. The unit uses an internal thermal cutout that may be reset inadvertently if power to the unit is disconnected

4. Maintenance

4.1 Air Filters

The Quest 132D is equipped with two pleated fabric air filters that must be checked regularly. The larger process filter is 16”X20”X2” and is located at the 8” duct inlet. The smaller reactivation filter is 12”X12”X1” and is located at the 6” duct inlet.

Operating the unit with dirty filters will reduce its capacity and efficiency, and could cause the heater to cut out on thermal overload.

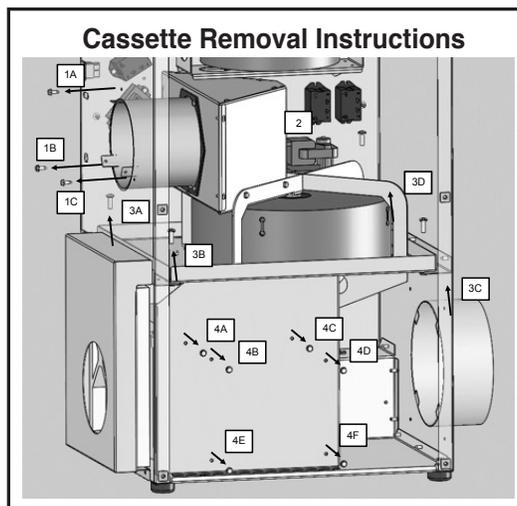
DO NOT operate the unit without the filters as the desiccant wheel inside the unit will become clogged and require disassembly to clean.

4.2 Blower Motors and Rotor Drive Motor

All motors on the 132D are permanently lubricated and do not require maintenance.

4.3 Desiccant Rotor Cassette Assembly

The cassette can be easily removed to inspect and/or clean the seals and rotor. Reverse these steps to reinstall the cassette.



- Step 1:** Remove three #10 screws holding reactivation duct in place (1A, 1B, 1C) using 5/16" hex driver. Push duct section (1D) in toward wheel
- Step 2:** Unplug wheel drive motor wires (2)
- Step 3:** Remove four 1/4" screws holding cassette in place (3A-3D) using #3 Phillips driver
- Step 4:** Remove six #10 screws holding reactivation inlet cover in place (4A-4F) using 5/16" hex driver. Remove reactivation inlet panel
- Step 5:** Lift cassette up and out of cabinet to avoid tearing lower reactivation gasket
- Step 6:** Installation is reverse of removal

5. Service

5.1 Warranty

A warranty certificate has been enclosed with this unit; read it before any repair is initiated. If a warranty repair is required, call the factory first at 1-800-533-7533 for warranty claim authorization and technical assistance.

5.2 Technical Description

a. Main Components

The Quest 132D produces airflow using two permanent split capacitor (PSC) blower motors. A shaded-pole gear motor rotates the desiccant rotor via a pulley and belt. Heat for reactivation is generated by a two-stage nichrome heating element powered by two separate branch circuits. The heating elements cannot be energized individually – both cords must be plugged in for them to operate.

b. Control Circuit

The blowers, rotor motor, and heating elements are operated by a line- and low-voltage control circuit. One branch circuit (Circuit 1) delivers power to the process blower, control transformer, and a 1270W heating element through one line-voltage relay (Relay 1) and a control relay. A separate branch circuit (Circuit 2) delivers power to the reactivation blower, rotor motor, and a 1360W heating element through a second line-voltage relay (Relay 2). Circuit 1 provides power to the coil for Relay 2 and Circuit 2 provides power to the Relay 1 coil. Because of this latching between the two circuits, the unit cannot operate unless both cords are plugged in. With both cords plugged in, turning on the power switch energizes the Relay 2 coil. This energizes all of the loads on Circuit 2, as well as the Relay 1 coil, which energizes all of the loads on Circuit 1. If either cord is unplugged, all loads are de-energized.

The control transformer provides power for a low-voltage (24 VAC) control relay. This relay's coil is energized when electrical contact is made between the external control terminals, which energizes the loads on Circuit 1 (and Circuit 2 as a result).

c. Safety Components

Three thermal cutout switches allow for safe operation of the 132D. Two of these cutouts are located in the heater. If the reactivation inlet temperature is too high or if there is insufficient reactivation airflow, the automatically-resetting heater cutout opens and all loads are de-energized. Once the temperature drops by a few degrees F, the switch closes again and the loads are re-energized. The second heater cutout has a higher temperature limit and only trips if the automatically-resetting switch hasn't opened. This higher cutout will hold itself open (preventing the unit from operating) until both cords are unplugged and the unit is allowed to cool. The third cutout is located in the process inlet and senses the air temperature of the air entering the process side. If this temperature exceeds 140°F, the switch opens and all loads are de-energized. The switch resets (and all loads are re-energized) once the process inlet air temperature drops to 100°F.

A 3A resettable circuit breaker is wired in series with the control transformer secondary coil. This protects the transformer if the low voltage relay coil becomes shorted.

5.3 Normal Operation

1. The 132D is connected to two 110-120VAC branch circuits
2. The power switch is turned on
3. If there is continuity across the external low-voltage control terminals, the rotor motor, reactivation blower, process blower, hour meter, indicator lamp, and both heating elements are energized
4. If there is no continuity across the low-voltage control terminals, all loads are de-energized
5. If either cord is unplugged, all loads are de-energized
6. If any thermal cutout opens, all loads are de-energized
7. If the high heater cutout opens, all loads remain de-energized until both cords are unplugged and the unit is allowed to cool

5.4 Troubleshooting

Each cord must be plugged into a separate branch circuit. Plugging both cords into the same circuit will likely cause the branch circuit protector (e.g. fuse or breaker) to trip.

Neither blowers, rotor motor, nor heater operating

1. Cord(s) unplugged
2. Unit turned off
3. No continuity across low-voltage control terminals
4. Thermal cutout(s) tripped. Unplug unit and allow to cool. Identify and correct problem before plugging unit back in
5. Defective relay(s)
6. Wiring fault inside device

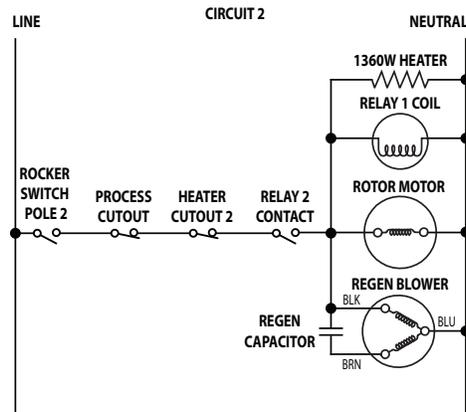
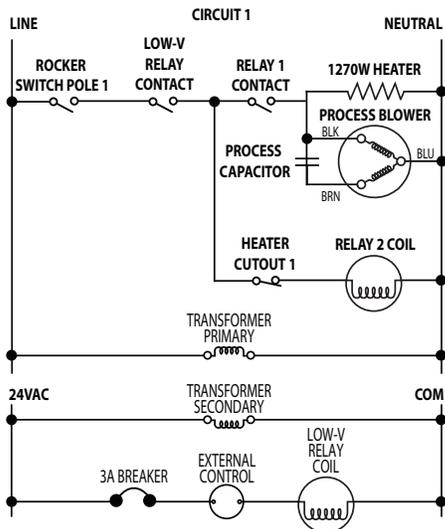
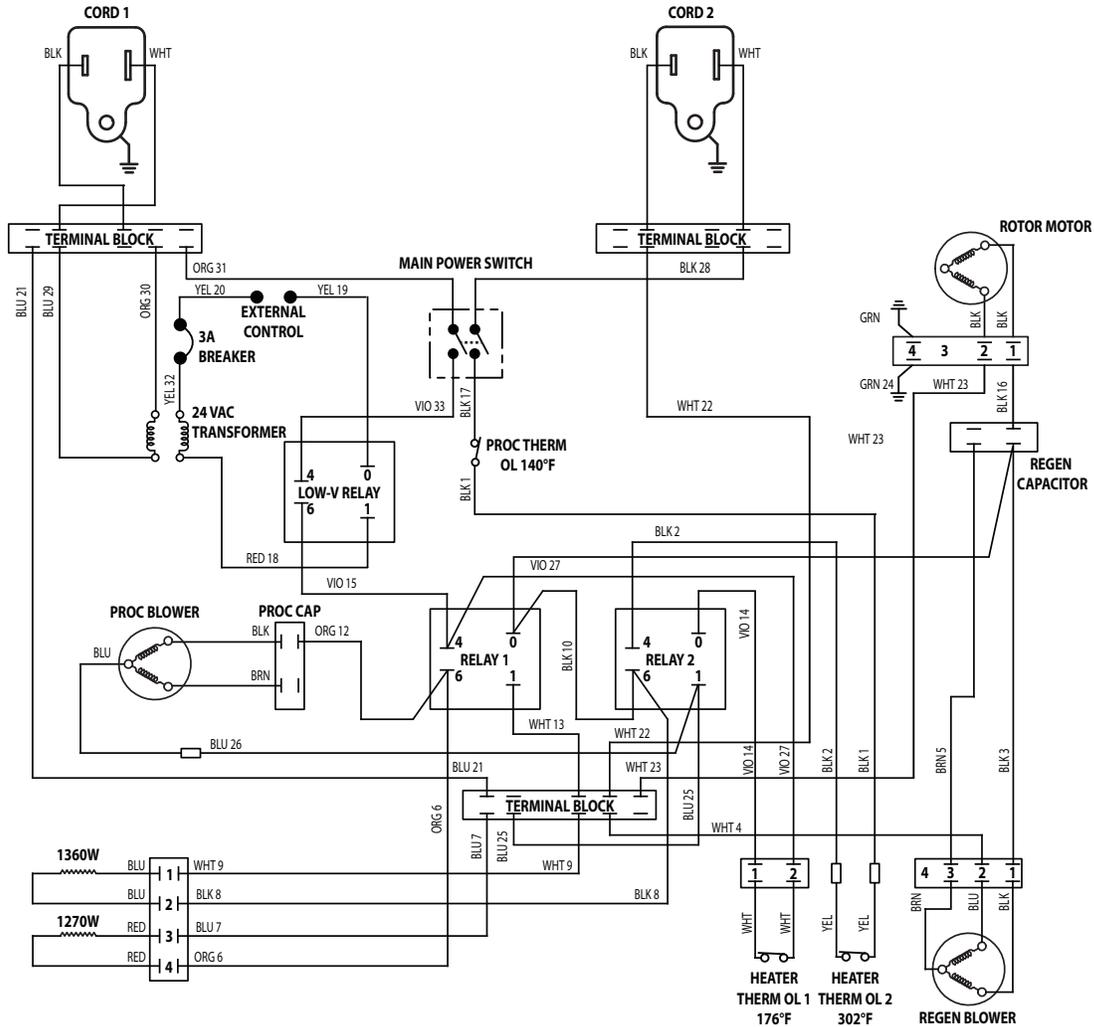
Blowers and heater operating, rotor not turning

1. Rotor unplugged
2. Belt broken or not properly tensioned. Adjust or replace belt
3. Pulley not fixed to driveshaft. Tighten or replace set screw
4. Rotor is obstructed from rotating. Check bearings and confirm rotor turns freely
5. Defective gear motor

Rotor motor and heater operating, blower(s) not operating

1. Defective blower or blower capacitor

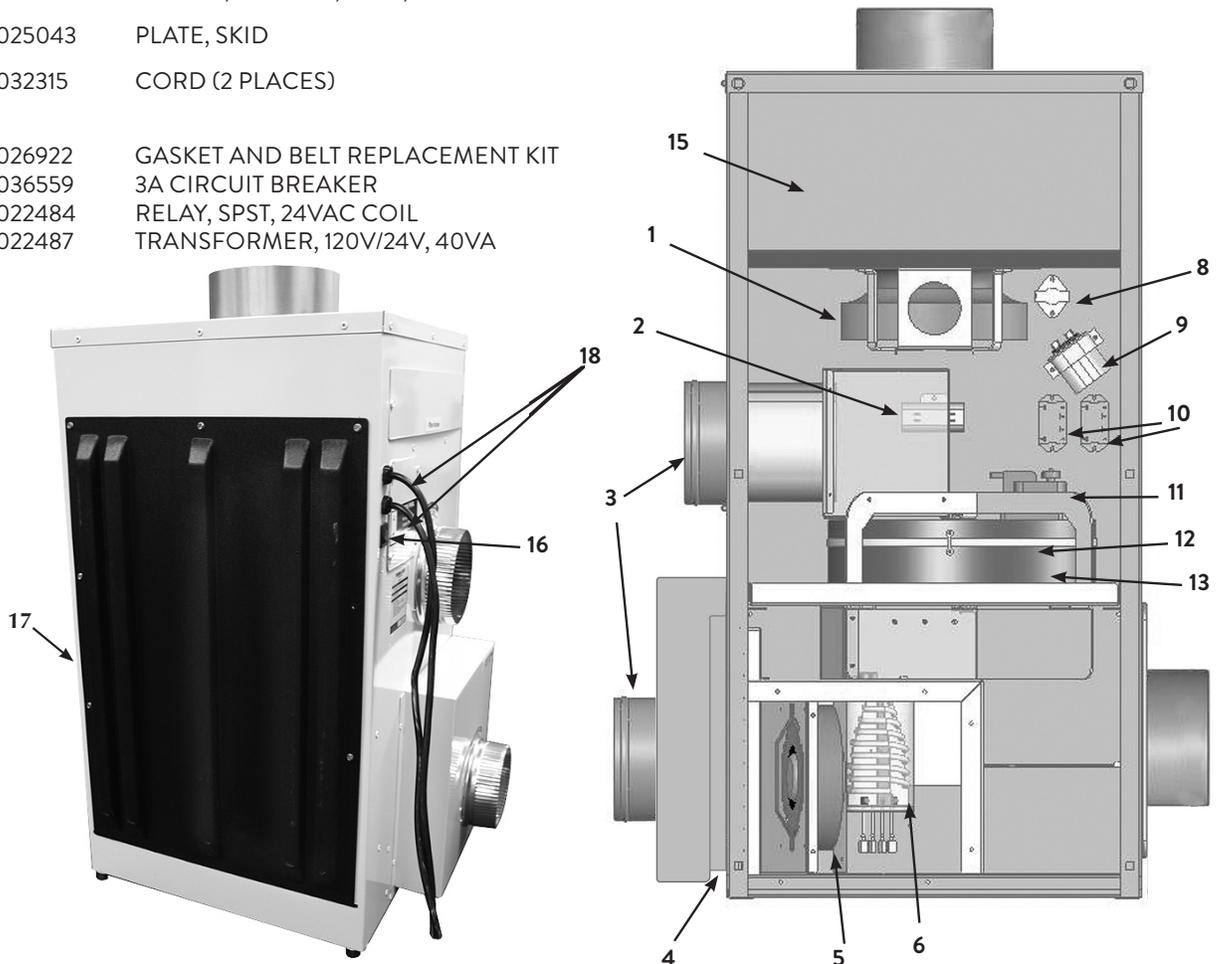
6. Wiring diagram



7. Service Parts List

Item	Part No.	Description
1	4025076	FAN, MOTORIZED IMPELLER, PROCESS AIR
2	4035235-07	CAPACITOR, RUN, 15 MFD, 370V, DRY, PROCESS AIR
3	4019652	COLLAR, 6" (2 PLACES)
4	4026860	FILTER, AIR, 12 X 12 X 1, REACTIVATION AIR
5	4026798	FAN, MOTORIZED IMPELLER, REACTIVATION AIR
6	4037807	HEATER KIT, DESICCANT
8	4026898	THERMAL OVERLOAD, PROCESS AIR
9	4035235-11	CAPACITOR, RUN, 8 MFD, DRY, REACTIVATION AIR
10	1970010	RELAY SPST 110VAC COIL (2)
11	4026773	MOTOR, DESICCANT WHEEL
12	4026795	BELT, DRIVE, QUEST 132D DESICCANT
13	4026772	WHEEL, DESICCANT
15	4021475	FILTER, AIR, 16 X 20 X 2, PROCESS AIR
16	4026194	SWITCH, ROCKER, DPST, ON-OFF
17	4025043	PLATE, SKID
18	4032315	CORD (2 PLACES)

Not Shown 4026922 GASKET AND BELT REPLACEMENT KIT
 4036559 3A CIRCUIT BREAKER
 4022484 RELAY, SPST, 24VAC COIL
 4022487 TRANSFORMER, 120V/24V, 40VA



Quest 132D Dehumidifier Limited Warranty

Warrantor:

Therma-Stor LLC
4201 Lien Rd
Madison, WI 53704
Telephone: 1-800-533-7533

Who Is Covered: This warranty extends only to the original end-user of the Quest 132D dehumidifier, and may not be assigned or transferred.

One Year Warranty: Therma-Stor LLC warrants that, for one (1) year the Quest 132D dehumidifier will operate free from any defects in materials and workmanship, or Therma-Stor LLC will, at its option, repair or replace the defective part(s), free of any charge.

End-User Responsibilities: Warranty service must be performed by a Servicer authorized by Therma-Stor LLC. If the end-user is unable to locate or obtain warranty service from an authorized Servicer, the end-user should call Therma-Stor LLC at the above number and ask for the Therma-Stor Service Department., which will then arrange for covered warranty service. Warranty service will be performed during normal working hours.

The end-user must present proof of purchase (lease) upon request, by use of the warranty card or other reasonable and reliable means. The end-user is responsible for normal care. This warranty does not cover any defect, malfunction, etc. resulting from misuse, abuse, lack of normal care, corrosion, freezing, tampering, modification, unauthorized or improper repair or installation, accident, acts of nature or any other cause beyond Therma-Stor LLC' reasonable control.

Limitations and Exclusions: If any Quest 132D Dehumidifier part is repaired or replaced, the new part shall be warranted for only the remainder of the original warranty period applicable thereto (but all warranty periods will be extended by the period of time, if any, that the Quest 132D Dehumidifier is out of service while awaiting covered warranty service).

UPON THE EXPIRATION OF THE WRITTEN WARRANTY APPLICABLE TO THE QUEST 132D DEHUMIDIFIER OR ANY PART THEREOF, ALL OTHER WARRANTIES IMPLIED BY LAW, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL ALSO EXPIRE. ALL WARRANTIES MADE BY THERMA-STOR LLC ARE SET FORTH HEREIN, AND NO CLAIM MAY BE MADE AGAINST THERMA-STOR LLC BASED ON ANY ORAL WARRANTY. IN NO EVENT SHALL THERMA-STOR LLC, IN CONNECTION WITH THE SALE, INSTALLATION, USE, REPAIR OR REPLACEMENT OF ANY QUEST 132D DEHUMIDIFIER OR PART THEREOF BE LIABLE UNDER ANY LEGAL THEORY FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES INCLUDING WITHOUT LIMITATION WATER DAMAGE (THE END-USER SHOULD TAKE PRECAUTIONS AGAINST SAME), LOST PROFITS, DELAY, OR LOSS OF USE OR DAMAGE TO ANY REAL OR PERSONAL PROPERTY.

Some states do not allow limitations on how long an implied warranty lasts, and some do not allow the exclusion or limitation of incidental or consequential damages, so one or both of these limitation may not apply to you.

Legal Rights: This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.