

Manual DehuKing Four Ton (48,000 BTU)

Model DU04T05CK126-1010-X

PLEASE READ THIS MANUAL BEFORE POWER UP

THANK YOU FOR YOUR PURCHASE. DehuKing® Warranty info is on the last page. Dehumidifiers are very similar to air conditioning units except the same air is carried across the condenser and the evaporator. This process removes moisture from the atmosphere that is collected in a stainless steel pan. The water is then routed to a collection point of your choosing.



PLEASE READ. It is important that you read the information within about nutrients and condensed water.

About Four Ton (48,000 BTU) DehuKing Dehumidifier

DehuKing changed the location of the controller for the four ton units when the base size was increased. These changes came about due to our complying with ETL complying with UL regulations. Each two ton side has its own dehumidify controller. These can be staged by setting one higher than the other on the setting for dehumidification; in other words, maximum or 80%. This will save cost for electricity.

Location of Unit

Choosing a location for your DehuKing Dehumidifier

Clearance around unit

It's important, if possible, to locate the dehumidifier in the most humid area of the structure. Open space is the next most important thing when choosing a location. This stainless steel cabinet CANNOT be mounted flush against the wall of the structure. It is important that all sides or ends are exposed to free air. Two sides with filters are intakes and the other two sides are for discharge.

Crossflow Intake & Discharge

The intake end has a filter over the evaporator/HX* and the discharge end has the large condenser. This unit intakes humid air on one end that is filtered before crossing through the evaporator/moisture removal HX, the dry cooled air is then drawn across the condenser before being discharged out the other end as close to room temperature dry air.

This unit operates similar to an air conditioner that uses a compressor. Because of this, there will be a slight temperature increase in the area of the DehuKing Dehumidifier. Room temperature air is drawn through the filter and across the refrigerant chilled evaporator/moisture removal HX. Dry cool air is then blown across the condenser before discharging out the end of the dehumidifier. AC compressors make heat from the electric motor that turns the refrigerant compressor internally.



Crossflow™ is DehuKing's patent pending method of moving air across heat exchangers in two opposite directions. This is done within the body of the cabinet of the dehumidifier.

*Heat exchanger

Discharge Grill



Air Filter

This DehuKing Dehumidifier moves a high volume of air. The filter is designed for long-term use. Many websites estimate five years or more for the life of a replaceable 3M filter. It can be rinsed to remove dirt and shaken to remove loose moisture, then reused. The filter should be cleaned once a month at minimum. At times it may be necessary to rinse more often.

TO CUT A NEW FILTER. The models beginning with DU02T & DU04 have a filter size of 26" x 11.25" x 1" thick. This is a 3M UL listed product, branded as Filtrete Basic Custom Fit Air Cleaning Filter, which can be purchased from your local hardware store and cut to size. **WEAR SAFETY EQUIPMENT! WEAR GLOVES AND SAFETY GLASSES.** After measuring, press down with a large straight edge along the measurement then cut with a sharp knife or shears.

If there is ever a question of the wear or condition of your filter, please contact DehuKing 512-303-1529. We can normally assist you in judging the condition of your filter. Texted photos may be necessary to grade your filter. We can also assist you in choosing a different type filter dependent upon your operation

NEVER OPERATE THE DEHUMIDIFIER WITHOUT A FILTER IN PLACE.

Don't be tempted to operate without a filter. Just one day of use without a filter can cause severe damage to the internal workings of the dehumidifier. The fins and blades must be clean to condense moisture in the air. Condensed water is lacking minerals and metals. In using condensed water for crops you must add nutrients or minerals if used for machinery operation.



Mounting

Mounting/Hanging Tabs

This is a self-contained commercial dehumidifier. **INSTALL LEVEL.** There are optional stainless steel tabs for each long side of the dehumidifier at the bottom of each side. These are used for hanging the dehumidifier or special straps can be ordered for securing to a wall. This DehuKing dehumidifier can be hung from the ceiling using chain (not provided) or all thread bolts. It can be mounted to the wall or it can be placed on a shelf. Make sure mounting hardware can accommodate the weight of the dehumidifier. The chain is divided by four since there are four suspension points. ****All thread can be substituted for chain.**



****All thread bolts can be used for hanging.** The tabs are pre bent at ninety degrees to support all thread washer and nuts. The tab is mounted to the dehumidifier near the bottom of the dehumidifier. Mount the tabs to the cover bolts then feed the all thread through and apply nut.



Mounting (cont.)

Weight Calculations for Hanging

HANG LEVEL: FRONT TO REAR, SIDE TO SIDE.

If the dehumidifier weighs 125 lbs, the chain should support $125/4 = 31.25$ lbs + 20%. The chain should support 20% more weight than the weight of the dehumidifier. Each chain should support 37.5 lbs. minimum. The calculation is $31.25 \times 1.20 = 37.5$ lbs. Each section of chain should support more than 37.5 lbs. in this example.

This is not a claim of the dehumidifier's weight, nor intended to be the weight used for hanging your dehumidifier. Weight should come from the spec sheet for the model you intend to hang. Spec sheets are on the Chilling website under "specs" or on the dehumidifier's identification sticker affixed to the machine.

The 4 ton dehumidifier weighs 325 lbs, any hangers or chain must be capable of supporting 82 pounds if there are four chains or four all thread rods.

Identification Sticker



Identification Sticker

There is a sticker on the side of your unit that has the ETL marker on it. It will have the model number and serial number of your unit. Each DehuKing Dehumidifier has its own unique to it serial number. The charge of type refrigerant and how much charge is listed on this sticker. The Mfg date is encoded on this sticker and will help you with warranty claims. In addition to this unit being US and Canada ETL listed it is also EU CE compliant.

Drain Removal of Condensed Water

The water that has been removed is very similar to distilled water. Water vapors in the atmosphere are collected by cooling to bring about condensation. The condensed water runs down the evaporator/moisture removal HX and drips into a pan. It is then routed out the end of the dehumidifier through the drain outlet. The heat exchanger must be below dewpoint to condense the moisture in the air (humidity).

Use Backing Tool



Plumbing the Drain

It is important to collect the condensed water and route it to either a collection point or drain to waste. The outlet from the DehuKing Dehumidifier is 3/4" female pipe thread. You must use a 3/4" male fitting with pipe compound or Teflon tape to begin your drain route. Use a backing tool when tightening the male fitting into the female fitting of the dehumidifier. We recommend PEX because long rolls can be purchased and used in long lengths. A male 3/4" PEX fitting is made to join to the dehumidifier. We prefer the PEX crimp rings as shown. PEX pipe is easily bent without any need for additional fittings. The water can be routed drain to waste or drain to collect.



Electrical

Electrical Knockout: Due to the U.L. Codes and restrictions, electrical panels cannot have pre-drilled holes for electrical connections. Those must be drilled or punched by your local licensed electrician. The hole should be located near the electrical service bar inside the dehumidifier. The spec sheet by model designates where the electrical service panel is.

The 4 ton Crossflow two circuit units have a penetration in one of the electrical panels for the power wire. The 4 ton units are to be hardwired into this one location. This one input is for both sides, you install the wire into the terminal block after removing the cover and passing the conduit wires into the electrical cabinet and attaching with a nut to the conduit connector. Minimum circuit is 25 amps with a maximum of 40 amps. Number ten wire should be used. A licensed electrician should make this connection.

Dehumidifier Controls

The controls are very simple to operate. Simply set the controller for the desired humidity in the area of the dehumidifier. The manual for the controller on your dehumidifier is supplied with your purchase documents.



Temperature Operating Range

The operating temperature for both the one ton dehumidifier and the two ton dehumidifier is 58F to 100F. It's the same for the four ton. The four tons have a factory adjustable freeze controller on the humidity removal heat exchanger that is also called an evaporator. This unit will operate until just before ice forms then will turn off at 33F and restart at 38F. There is a five minute delay on the compressor after turning off due to 33F or colder. The temperature will need to increase to 38F and five minutes need to pass for the compressor to restart. Ambient is the operating temperature of the greenhouse, room, enclosure, swimming pool room, or indoor grow room. The four ton operating temperature is 33F to 105F. If unit operates in low temperature environments, it's possible to build up ice on the evaporator of the 1 ton and the 2 ton. 1 and 2 tons built after November 1, 2019 will have the freeze controller and operate from 33F to 105F.

All DehuKing Dehumidifiers manufactured after July 8, 2019 and prior to November 1, 2019 have a safety control to prevent ice buildup or operation below 58F. This safety is located inside the control panel and is clearly marked.

Control Options WiFi

Contact Biotherm Solutions™ for solutions on networking a number of dehumidifiers. Biotherm Solutions will also have options for WiFi and apps that give you additional options. Check progress or change settings from the comfort of your home.

Performance

The model beginning with DU02T will produce a maximum of 552 pints with +90% RH at 90F. At lower temps with lower RH, it will produce 515 pints at 80F and 60% relative humidity. The four ton will produce twice this amount. You must provide a drain that is capable of handling this much water.

IMPORTANT! Please read this section titled “Recovered Water”.

RECOVERED WATER

Add Nutrients & Minerals as Needed

Contact Biotherm Solutions for storage solutions. If the condensed water is collected and stored, we highly recommend plastic storage or stainless steel containers. Since the water has similar characteristics to distilled water, it is very low in minerals and metals. For that reason it can cause corrosion of the metals used in storage. If this water is used to water plants or for production, please mix minerals and nutrients into the water to match your crop or production needs.

Warranty information

The warranty for the DehuKing dehumidifiers is 1 year on all parts, 3 years on compressor, 3 years on refrigeration circuit. The refrigeration circuit includes the evaporator/moisture collector, the condenser, and the copper tubing that carries the refrigerant liquids or gases. Three months for labor. Warranty begins three days after purchase date from Biotherm.

3 years-Compressor

3 years-Refrigeration circuit, condenser, evaporator, and filters

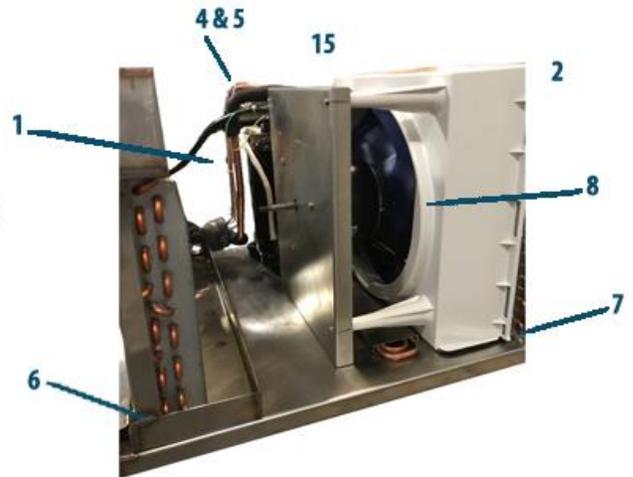
1 year-All parts

3 months-Labor

Controller PDF with below information.

H46 Humidity Controller

Humidity Controllers provide automatic control of dehumidifiers.

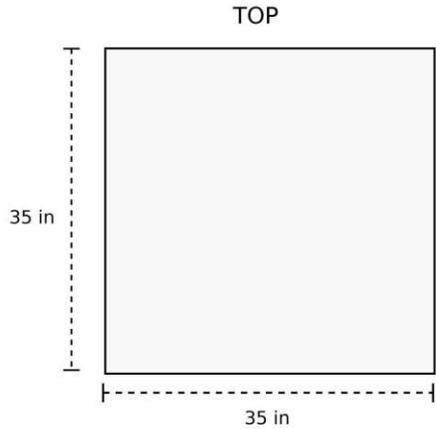


Model DU02 shown

2 Ton Parts List

1. Compressor
2. 410a refrigerant
3. Humidity controller
4. Refrigerant liquid line filter
5. Suction filter
6. Evaporator/moisture collector
7. Condenser
8. Fan & motor
9. Air filter chassis
10. Air filter
11. Power cord LCDI/GFCI (*not applicable on 4 ton*)
12. Stainless steel cabinet
13. Stainless steel base
14. Stainless steel pan/with drain piece 3/4" female
15. Single phase only start capacitor

MODEL DU04T05CK126-1010-1 Staged Dehumidification Energy Saver



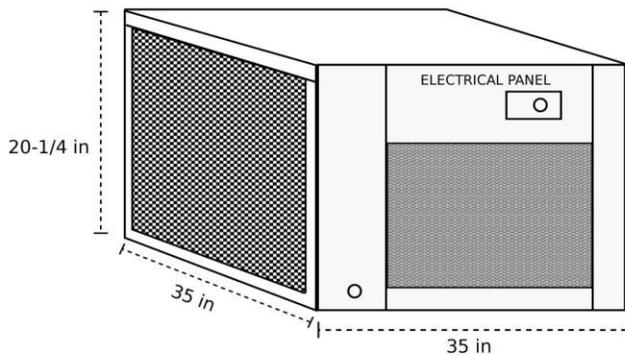
SPECIFICATIONS:

- 4 ton dehumidifier
- Performance: 1030 pints @ 80F and 60% relative humidity
- 5.42 gallons per hour, 130 gallons per day
- 10.58 pints per KW
- Electrical: 208/230V, 60hz Single phase
- Minimum Circuit Ampacity: 25, Maximum Fuse Size 40 Amps
- R410a Refrigerant
- Two 24,000 BTU/HR compressors
- CFM: 2,000
- Dimensions: 35" wide, 35" long, 20-1/4" tall
- Weight (LBS): 311
- Decibels: 84

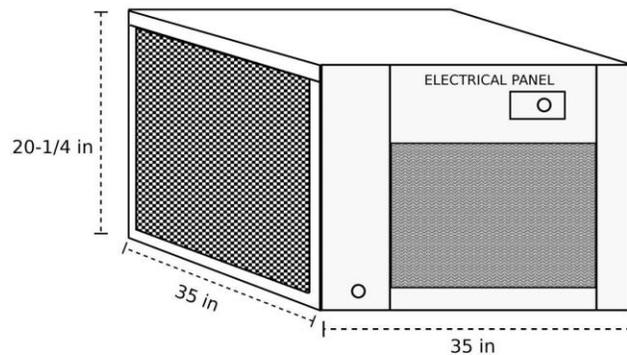
ADDITIONAL FEATURES:

- Dual Dehumidistats stage process
- For suspending in Greenhouse, four easy access all thread mounts

FRONT SIDE EXPOSED



REAR SIDE EXPOSED

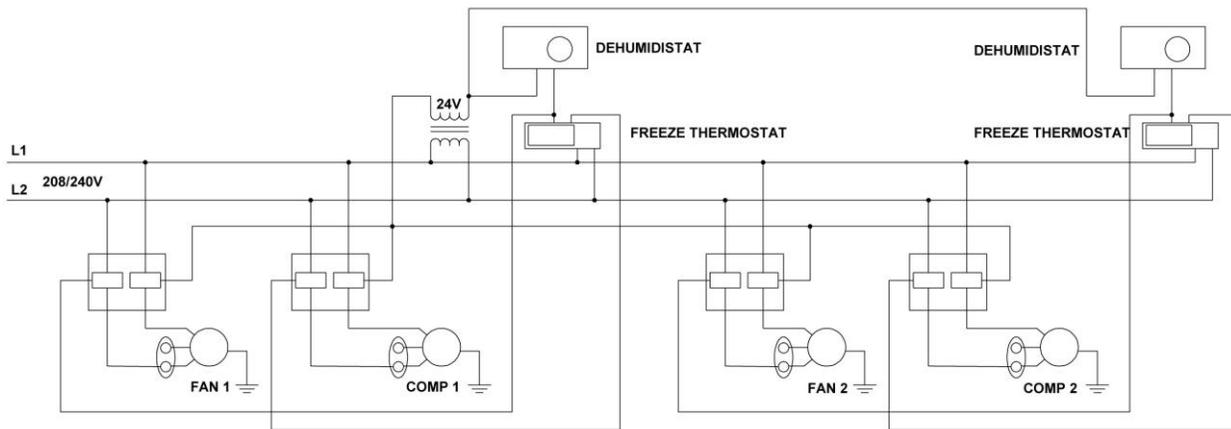


*EACH OPPOSITE SIDE IDENTICAL



MODEL DU04T05CK126-1010-1 WIRING DIAGRAM

4 ton Dehumidifier
208/230V Single Phase



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www.chillking.com

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