



OPERATOR MANUAL

Fan Coils

Models 80, 200, 600



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1. Warranty Policies & Claim Procedures

DRYAIR MANUFACTURING CORP. (referred to within as DRYAIR) warrants its new, unused equipment to be free of defects in material and workmanship at the time of delivery to the original retail purchaser.

Warranty Policies

Basic Warranty Policy

- DRYAIR will repair or replace, at its option, without charge, any defective part of the equipment for a period of twelve (12) months from delivery to the first retail purchaser, F.O.B St. Brieux, SK., Canada.
- Any parts that are covered by an extended warranty published by DRYAIR are an exception to the Basic Warranty policy and are to be warrantied as per the details of the Extended Warranty Policy.
- Labour is covered as per DRYAIR flat labour rate.
- The Warranty Policy, terms and conditions, may change from time to time without prior notice.
- Warranty terms and conditions are transferable in the event of the sale to a second owner.
- Replacement parts will be warrantied for 90 days from the repair date. Bill of sale must accompany the warranty claim.
- The terms of this Warranty Policy are subject to provincial and state legislation. DRYAIR reserves the right to make modifications in accordance with provincial and state legislation without prior notice or obligation.

Extended Warranty Policy

Heat Exchanger

- An extended warranty is available on the heat exchanger unit of the water heater assembly. The available warranty for a part, under the extended warranty policy, is prorated by 20% per year.
- Shipment date is the date to be used for the commencement of the warranty period.
- Coverage schedule

Year 1 - 100%

Year 2 - 80%

Year 3 - 60%

Year 4 - 40%

Year 5 - 20%

Exceptions to the Warranty Policies

- Under no circumstance shall the owner be entitled to recover costs for incidental, special or consequential damages such as, but not limited to: loss of profit or revenue, other commercial losses, inconvenience and/or replacement equipment rental cost.
- Maintenance, repair or service items not related to warrantable defects.
- Loss or damage during shipping.
- Failure resulting from lack of or improper maintenance.
- Damage caused by operator abuse, negligence or improper operation.
- Damage resulting from improper voltage supply.
- Damage from improper installation. Installation done by other than the manufacturer.
- Non-defective items replaced at the request of the customer.
- Damage due to accidents.
- Damage resulting from improper fuel supply (i.e. pressure or contamination).
- Damage resulting from cracked or broken lines occurring during transport.
- Damage resulting from use of inadequate or improper fluids (i.e. Glycol or oil).
- Mileage is not covered.
- Glycol is considered a consumable and will not be covered under the warranty policy.
- Generators carry their own warranty coverage through their own manufacturers. Please refer generator issues to the OEM. Contact information may be found in the Service & Operators Manual under Optional Equipment.

Owner Obligations

- It is the responsibility of the owner, at the owner's expense, to transport the equipment to the service facility of an authorized DRYAIR distributor/dealer or alternately to reimburse the distributor/dealer, for any traveling expenses incurred in fulfilling this warranty.
- The terms of this Warranty Policy are subject to provincial and state legislation. DRYAIR reserves the right to make modifications in accordance with provincial and state legislation without prior notice or obligation.
- It is the responsibility of the owner to read, understand and implement the maintenance, safety and operational guidelines as laid out in the Operation and Maintenance Guide.
- All parts are to be tagged with warranty claim number and shipped prepaid to DRYAIR within 30 days.

Manufacturer Obligations

- DRYAIR reserves the right to continually improve the product's parts or specifications at any time without notice or obligation.
- The terms of this Warranty Policy are subject to provincial and state legislation. DRYAIR reserves the right to make modifications in accordance with provincial and state legislation without prior notice or obligation.

Warranty Claim Procedure

- All warranty credits must be processed with the DRYAIR Warranty Claim Form.
- All warranty parts, unless otherwise specified, are to be returned to DRYAIR along with a completed Warranty Claim Form.

Note: *Prior to returning warranty parts, please call for an authorization number and shipping instructions from the Warranty department in Canada.*

Location of Warranty Depots:

USA	Canada
DRYAIR Manufacturing Corp. 410 Douglas Road, Box 264 Bradner, OH 43406 Ph. 1 (888) 750-1700	DRYAIR Manufacturing Corp. 400 Service Road, Box 126 St. Brieux, SK S0K 3V0 Ph. 1 (888) 750-1700

- Each warranty claim should only refer to one Serial or Production Schedule numbered unit.
- Warranty parts are to be tagged with warranty claim number.
- When claiming for warranty labour, the allowable warranty labour rate will be \$85.00/hour. The factory reserves the right to adjust the number of hours claimed where deemed necessary.
- The factory may at times specify allowable labour for certain warranty procedures.
- Mileage and travel time to/from the customer are not eligible for warranty credit.
- Freight charges for warranty parts are not eligible for warranty credit.
- Labour flat rates for component changes:
 - Electrical Components - 0.5hr
 - Relays
 - Switches
 - Thermostats
 - Breakers
 - Plumbing Components - 1hr
 - Flow Reverser
 - Flow Switch
 - Valves
 - Electric Motor Changes - 1hr
 - Hose Reel
 - Glycol Pump Changes - 2hrs

Note: *Other labour charges will be at the discretion of DRYAIR.*

2. Safety Concerns

General Safety Guidelines

- Make certain that the operator reads and understands all the information in this manual.
- All unauthorized people must be kept away from the equipment when in operation.
- All guards must be in place when the equipment is in operation.
- Maintain instructional and safety decals. Replace damaged decals (*Figure 1*).
- Use caution when moving Portable Heat Exchangers (Fan Coils). See: Appendix - Product Dimensions for full measurements.

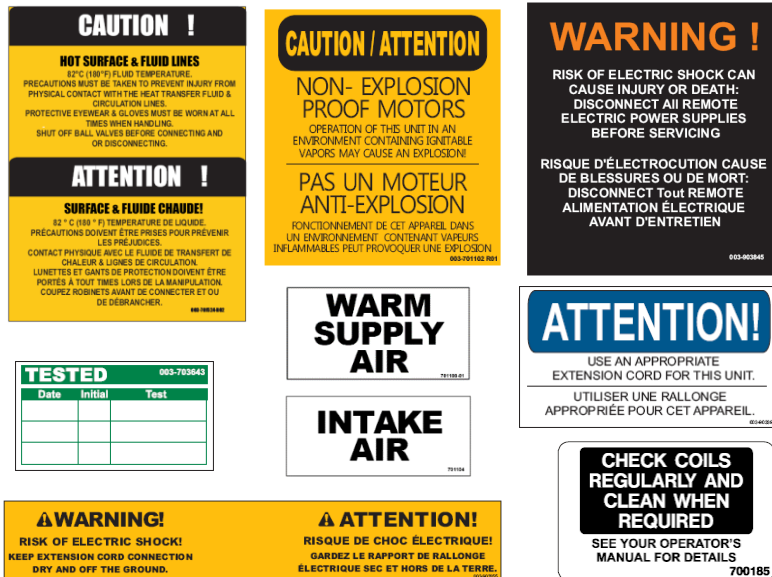


Figure 1 - Safety Decals

Heat Appliance

CAUTION! This unit is a heating appliance.

- Observe all posted warnings and cautions when dealing with any heating appliance.
- Keep children and pets away from all piping and fuel accessories.
- While the system is operating the water heater housing panels must be kept closed to prevent drafts from affecting water heater operation.
- Hot Heat Transfer Fluid is supplied to the unit via circulation lines and the heat is distributed by the fan motor.

Heat Transfer Fluid (HTF)

Follow the following precautions and measures when working with “heat transfer fluid” (“DOWFROST* HTF” & “BOSS CHILL PG”).

Fluid Handling Precautions

- Ventilation Good general ventilation should be sufficient for most conditions.
- Respiratory protection No respiratory protection should be needed.
- Skin protection For brief contact, no precautions other than clean, body-covering clothing should be needed.
..... Use impervious gloves when prolonged or frequently repeated contact should occur.
- Eye protection Use safety glasses.

First Aid Measures

- Eyes Flush eyes with plenty of water.
- Skin Wash off in flowing water or shower.
- Ingestion Induce vomiting if large amounts are ingested.
..... Consult medical personnel.
- Inhalation Remove to fresh air if effects occur.
..... Consult a physician.
- Note to Physician No specific antidote.
..... Supportive care.
..... Treatment based on judgment of the physician in response to reactions of the patient.

For complete “heat transfer fluid” information, refer to the Material Safety Data Sheets for “Dowfrost HTF” & “Boss Chill PG” included with the manuals package

3. Introduction

Portable Heat Exchangers (Fan Coils)

Portable heat exchangers are the ideal way to heat and/or dry enclosed structures. Their compact and mobile design allows them to be positioned where they are required on the job site. The efficient Fan Coil design provides a high rate of heat transfer. High volume fans then deliver this heat evenly throughout a large area. The clean, low relative humidity heat delivery minimizes energy costs by eliminating the need to draw in fresh outside air. With the DRYAIR system, you just reheat warm internal air, rather than heating cold external air.



Figure 2 - Model 80 Slim-Line Fan Coil



Figure 3 - Model 80 Fan Coil

Note: These units are designed to connect to DRYAIR water heaters. Specifications, including BTU output, cannot be guaranteed using other water heaters.

Features

- Provides the low humidity environment control essential for inhibiting mold growth.
- Provides the optimum project application environment for interior finish work.
- Allows for daily application of joint compound or finish texture to drywall.
- Minimizes expansion and contraction of wallboard.
- Reduces amount of downtime between finished drywall and paint application.
- Eliminates shading of paint caused by residue from open flame heaters.
- Allows better adhesion of caulking materials.
- Provides a drier surface for application of water-based carpet and tile adhesives, epoxy and urethane coatings and epoxy joint fillers.
- Reduces the chance of shrinkage at mitered joints in finish trim materials.



Figure 4 - Model 200 Fan Coil



Figure 5 - Model 600 Fan Coil

Accessories

Extension Reservoir Assembly

The Extended Reservoir Tank is required in scenarios when “portable heat exchangers” are higher than the top level of the 200 GTS glycol reservoir tank. If the Extended Reservoir tank is not used, the following can occur:

- **Insufficient Fluid in the System**

Fluid can drain back to the heat transfer reservoir tank from the over-elevated fluid lines when the pump is shut off. The heat transfer reservoir tank will show adequate fluid, but when the pump is started, extra fluid will be required to recharge the over-elevated fluid lines and portable heat exchangers and the system will then have insufficient fluid in the reservoir.

- **Fluid Overflow**

If fluid is added to maintain proper fluid levels while the pump is running, overflow at the reservoir tank may occur when the pump is shut off. This would occur because of the drain back from the over-elevated fluid lines.



Figure 6 - Extended Reservoir Tank

Mixing/Booster Pump

The multifunctional Mixing/Booster ensures maximum flexibility in the use of this system.

- Tempering mode supplies lower temperature fluid for concrete cure and radiant floor heat applications eliminating the need to reduce the water heater operating temperatures below safe operating ranges.
- When operating in booster mode the system can increase flow rates or function as a pumping station to increase pumping distances by over 300 feet per station.
- The system also allows for dual-temperature control. High temperature fluid can be provided to portable heat exchangers, along with a lower temperature fluid for concrete cure and radiant floor heat applications.
- The multifunctional Mixing Booster ensures maximum flexibility in the use of this system.



Figure 7 - Mixing/Booster Unit

Note: Disengage Flow Reverser when using this accessory.

Optional Remote Manifold

- The optional remote manifold allows for additional distribution and/or separation between the central heating trailer and the manifold.



Figure 8 - Optional Remote Manifold

Insulated Line Jackets

- Insulated circulation line jackets are also available. These insulated jackets will prevent exposed circulation line heat loss in extreme sub-zero conditions.

Plate Heat Exchanger

The Plate Heat Exchanger module creates two separate fluid loops. It can extend the range of the HTF distribution and eliminate the need for extended reservoirs in elevated applications. The plate heat exchanger, combined with a central heating module can be used:

- To extend the effective range and lengths of the primary distribution lines.
- In a multi-story application to extend the vertical distance from the heating module that a portable heat exchanger.

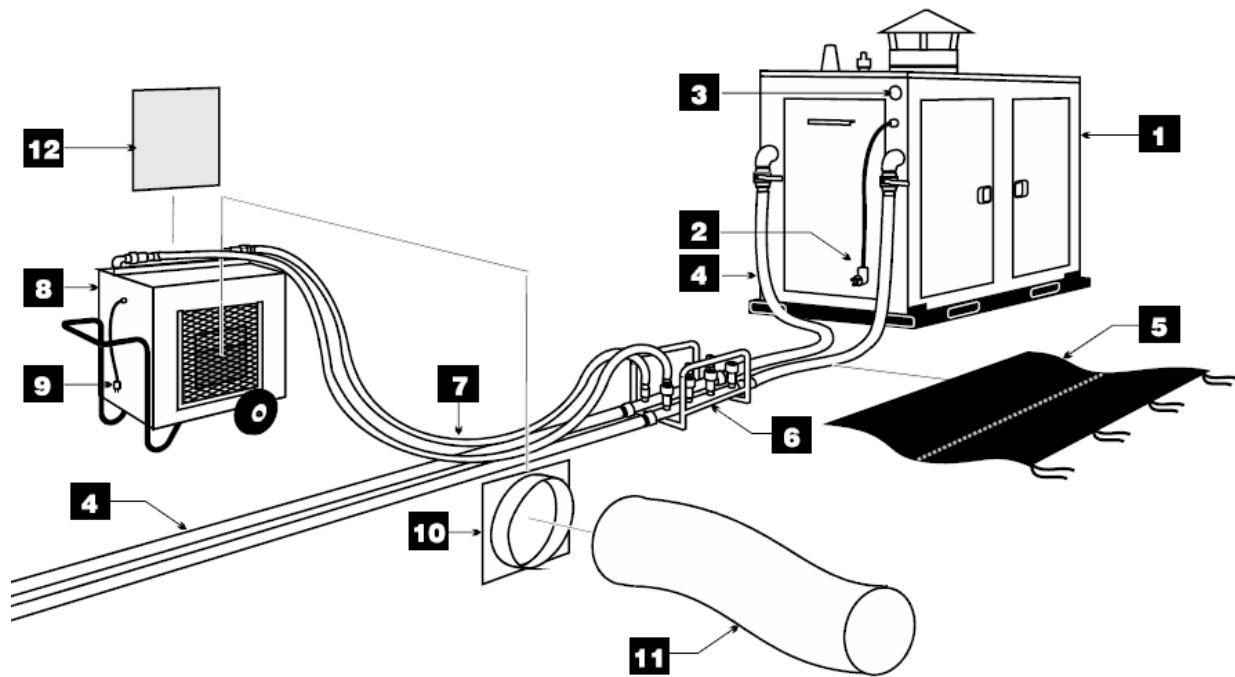


Figure 9 - Plate Heat Exchanger Unit

Note: Disengage Flow Reverser when using this accessory.

How the System Works

Portable Heat Exchangers (Fan Coils) are compact, mobile structures ideal for heating, drying and climate control applications. Hot heat transfer fluid flows through the heat transfer coil, where heat is transferred to the air being drawn through the coil by the fan. The coil is specially designed for optimum heat transfer, without adding any moisture or fuel combustion by-products to the air.

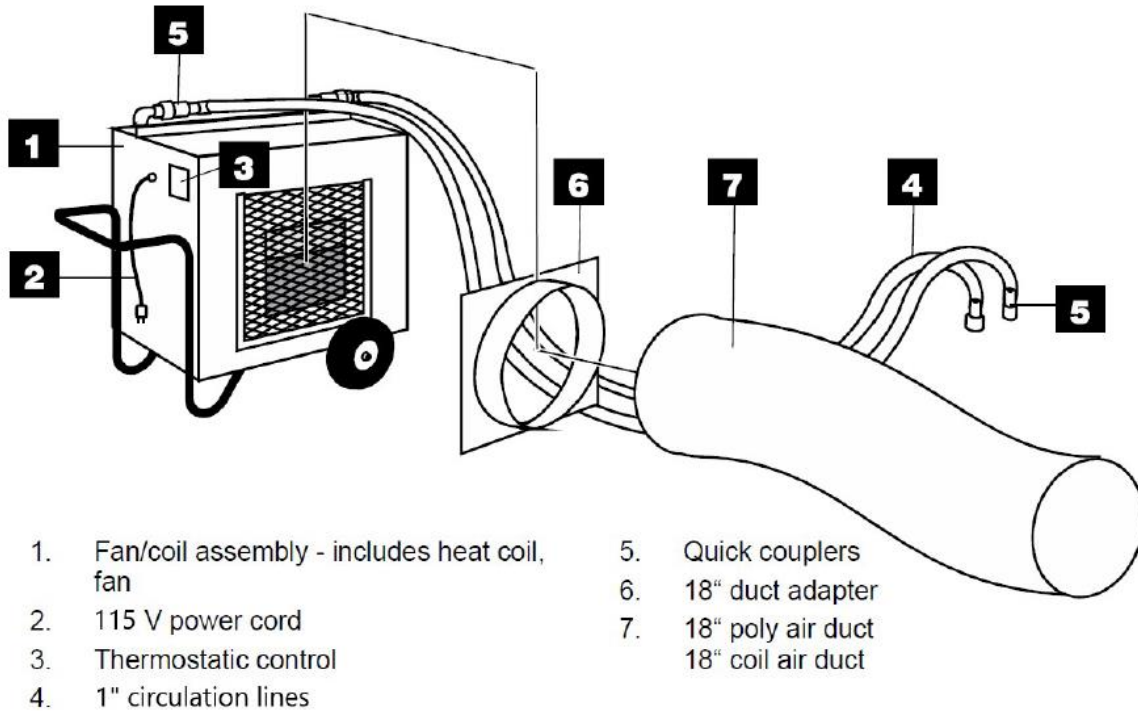


- | | |
|--|--|
| 1. Boiler cabinet - includes hydronic boiler, pump & system controls | 7. 1" secondary circulation line |
| 2. 115/230V power cord | 8. Fan/coil assembly - includes heat coil, fan, thermostatic control |
| 3. Gas inlet | 9. 115V power cord |
| 4. 2" primary circulation line | 10. 18" duct adapter (optional) |
| 5. Insulated wrap | 11. 18" poly air duct (optional)
18" coil air duct (optional) |
| 6. Circulation manifold (can run up to 6 fan coils) | 12. Air filter (optional) |

Figure 10 - Typical System Setup

4. Setup

There are only electrical and heat transfer fluid connections to connect to a Fan Coil (*Figure 11*). Each unit can be placed into position by one person and the connections can be made in only a few minutes.



*Figure 11 - Fan Coil Connections
(Illustration shown with Model 200)*

Required Safety Clearance

Fan Coils are heating appliances, therefore safe heat clearances must be observed from combustible materials and for service access.

- Fan Coils must have a minimum clearance of 1 ½ feet on the air intake side.
- See **Appendix – Product Dimensions** for full dimensions.

Electrical Requirements & Connection

- Fan Coils require a 110V, 15amp power supply.
- Each unit is factory equipped with a two-foot 110V appliance cable and plug.
- A maximum of 100ft. 14 AWG (or equivalent) extension cord can be run to each Fan Coil.
- Electrical schematics for each model can be found in **Appendix - Electrical Schematics**.

Heat Transfer Fluid (HTF)

CAUTION! At no time should you use automobile antifreeze in your system. The use of automobile antifreeze will void your warranty.

HTF Specifications

- DRYAIR pre-mixed “HTF” fluid is made up of 50% “Dowfrost ® HTF” or “Boss Chill PG” and 50% water, by weight - freeze protection down to -28°F (-33°C).
- The “glycol/water mixture chart” will provide you with more information on the proper mixture for your area (*Figure 12*).
- Soft water with a neutral pH level (#7) must be used.

Percent Propylene Glycol		Freezing Point	
By Mass	By Volume	°F	°C
0.0	0.0	32.0	0.0
10.0	9.6	26.1	-3.2
20.0	19.4	17.9	-7.8
30.0	29.4	6.7	-14.0
40.0	39.6	-8.1	-22.3
50.0	49.9	-28.9	-33.8
60.0	60.0	-51.0	-58.3

Figure 12 - Glycol Mixing Guide

CAUTION! Whenever coupling or uncoupling quick couplers, make sure that the isolation valves are closed, and the pump is off. Failure to do so may put you at risk of injury from eye and/or skin exposure to hot glycol.

Fluid Connections

- Each Fan Coil is shipped complete with heat transfer fluid.
- Connect the Fan Coil to the ¾” (Model 80), 1” (Model 200), or 1” (Model 600) circulation lines and then to the circulation manifold using quick couplers.
- Circulation lines of different sizes can be purchased to allow connection to other DRYAIR units.

5. Operation

Once the unit has been connected to both power and fluid lines, follow the operation guidelines below to adjust the temperature of the outlet air. Be sure to entirely read and understand this section before trying to start and run your new DRYAIR system.

Controls

Thermostatic Control – Model 80 & 200

- The thermostatic control is adjusted with a screwdriver.
- Simply adjust to the desired temperature.
- When the desired temperature is reached, the thermostatic control will shut off the fan, thus shutting down heat transfer from the coil.
- Demand for heat will re-activate the fan.

Ball Valve Flow Adjustment – Model 600

- The ball valve is used as a throttling control for the flow of heat transfer fluid through the Fan Coil. Changes can be made at the water heater for a more precise temperature adjustment (note that making changes at the water heater will affect all units attached to it).



Figure 13 - Model 80 Slim-Line (Stainless Steel Edition) Connections and Control



Figure 14 - Model 200 (Stainless Steel Edition) Connections and Control



Figure 15 - Model 600 Connections and Control

6. Troubleshooting

Fan Does Not Start

No Power

- Check that power supply is connected.
- Check the condition of the power connection cable (appliance cable).
- Check that the thermostat temperature is above ambient temperature (*if equipped*).
- Check that the capacitor is good.

Fan is Running but No Heat

a) If fluid inlet is cold:

Check that all quick couplers are open, and fluid is circulating. If valves are closed, open valves to initiate flow. If valves are open and there is circulation, but the fluid is cold, the problem lies with the water heater.

b) If fluid inlet is hot but the outlet is cold and still no heat:

Check the heat exchanger coil for flow obstructions. If flow is obstructed, disconnect the module from the circulation system and flush.

Heat Transfer Fluid is Leaking

- Check all connections, fittings, and hoses. Tighten as required.
- Shut down the fan and check the coil for leaks. Replace coil if leaks are found.

FOR ADDITIONAL ASSISTANCE CALL DRYAIR TECHNICAL SUPPORT 1 (888) 750-1700

7. Maintenance

DRYAIR products are designed to be low maintenance systems. All assemblies are assembled using extensively tested and certified components. Following these maintenance procedures will ensure the maximum benefit and least amount of downtime for the system. The daily maintenance schedule is designed to be a quick system check and ensures a low risk of operating interruptions.

Daily Checklist

Check the Heat Coil for Cleanliness or Clogging

- Clean as required.

***Note:** Do not use high pressure air or water to clean the coil as this will cause damage to the coil fins.*

Check All Fluid Fittings and Connections Daily

- Tighten or replace as required.

Storage

Hardware

- Exercise reasonable care when handling.
- Fan Coils should be sheltered when stored for extended periods of time.

Hose & Poly

- To extend the life of the rubber and poly components of the system (hoses and air tubes), it is recommended that they be stored out of the sun when not in use.

Heat Transfer Fluid

- See **Appendix - Material Safety Data Sheets**.

8. Appendix

Certification & Fan Coil Specifications



		P.O Box 126 400 Service Road St. Brieux, Sk. Canada	
Model / Module:			
Production Schedule / Calendrier de Production:			
Reference / Référence:			
Motor Data / Données Moteur			
HP			
Volts			
Hz	60		
Ambient / Ambiant	60°C		
RPM			
Max. Ampacity / Max. Ampacité:			
Speed / Vitesse:			
Certified for Indoor and Outdoor Use / Certifié pour l'utilisation à l'intérieur et à l'extérieur			
		Max. Inlet Water Temperature / Température Maximale de L'eau d'Entrée:	85°C
003-903386 R01			

Figure 16 - Fan Coil Data & Serial Plate

Electrical Schematics

Model 80 Slim-Line

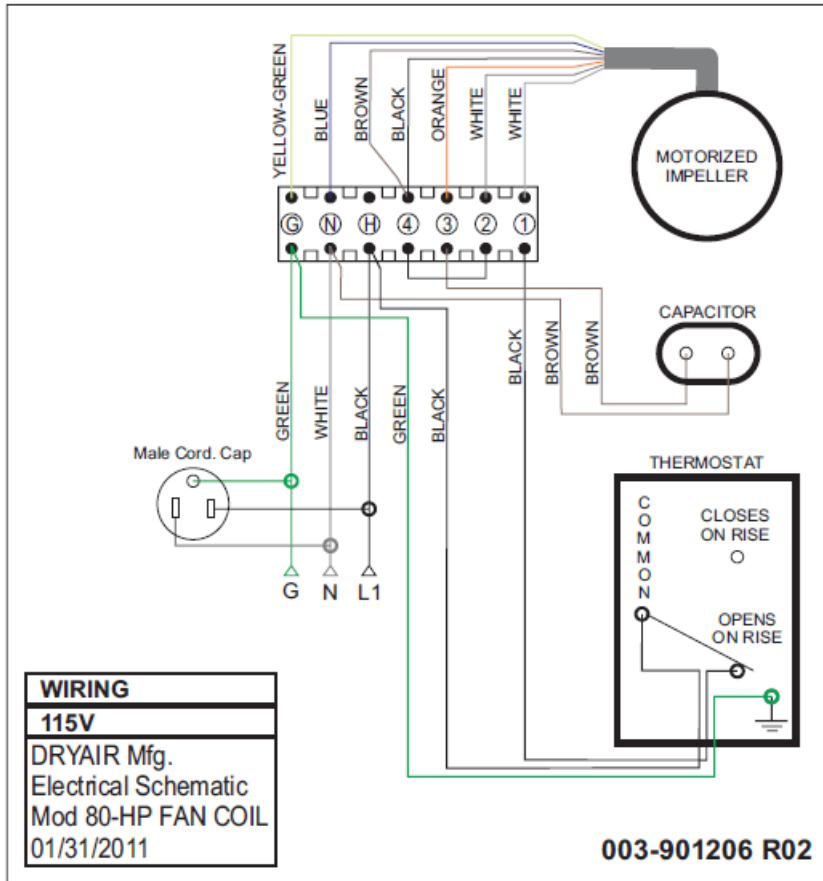


Figure 17 - Model 80 Slim-Line Electrical Schematic

Model 80/Model 200

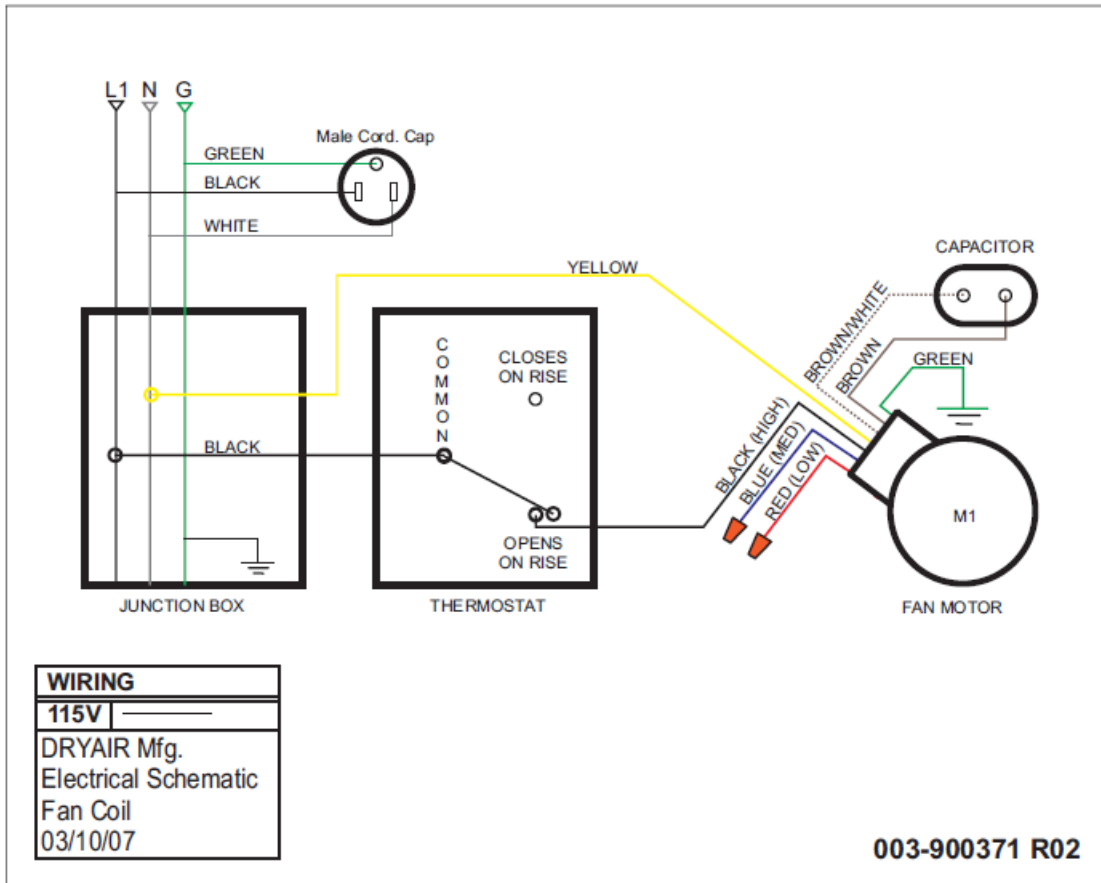


Figure 18 - Model 80/Model 200 Electrical Schematic

Model 600

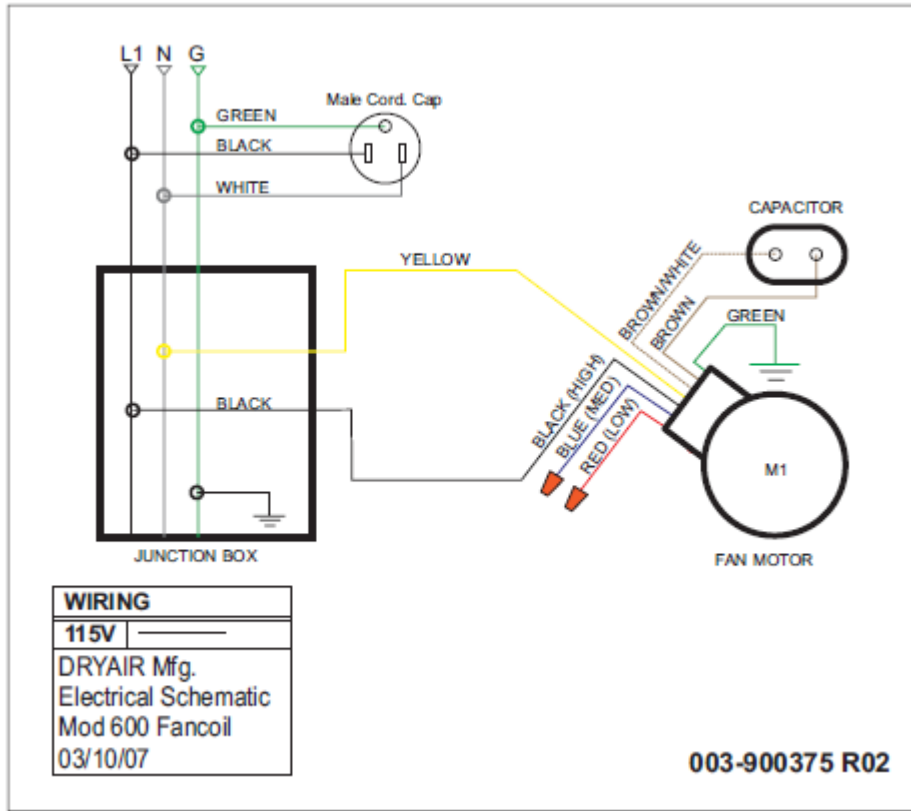


Figure 19 - Model 600 Electrical Schematic

Product Dimensions

Model 80 Slim-Line

Weight = 95lbs (43kg)

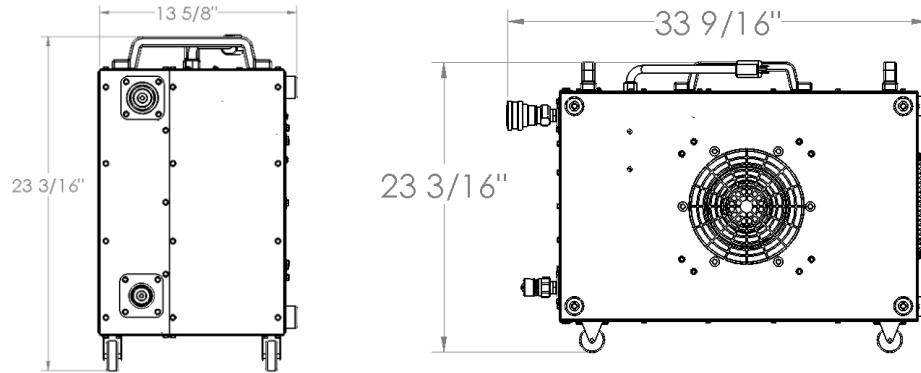


Figure 20 - Model 80 Slim-Line Dimensions

Model 80

Weight = 90lbs (41 kg)

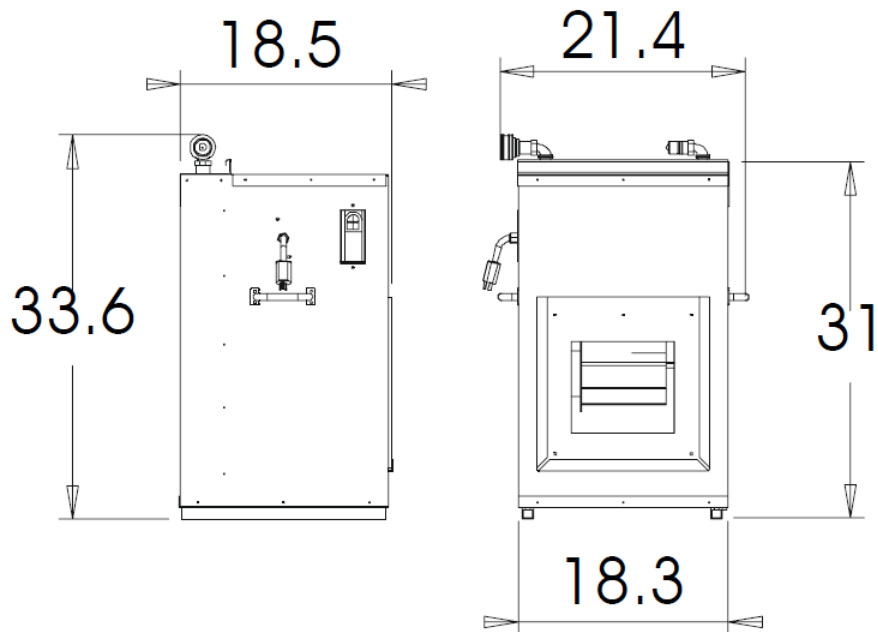


Figure 21 - Model 80 Dimensions

Model 200

Weight = 210lbs (95kg)

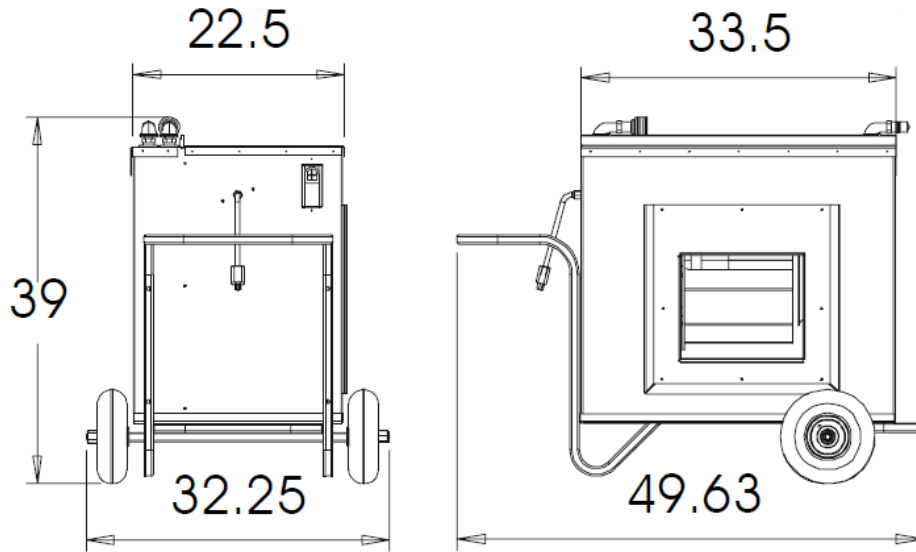


Figure 22 - Model 200 Dimensions

Model 600

Weight = 560lbs (254kg)

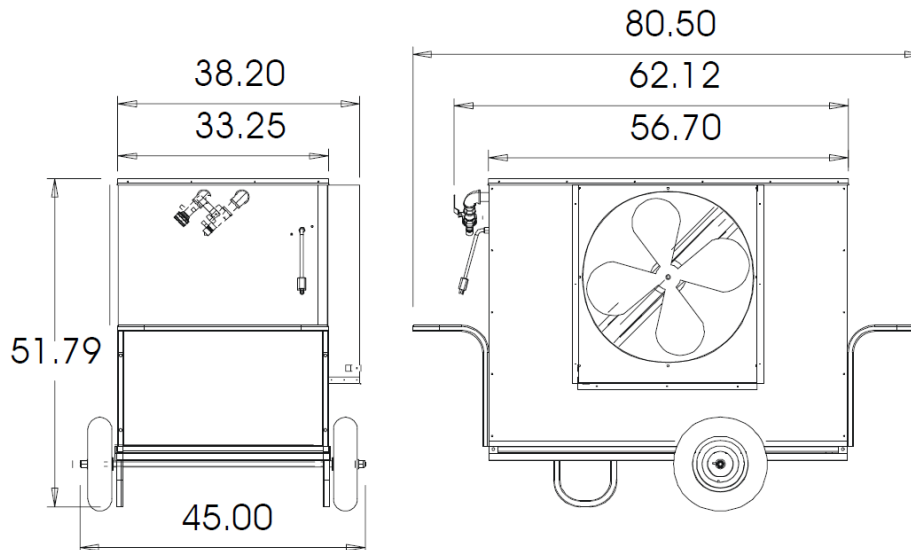


Figure 23 - Model 600 Dimensions



Material Safety Data Sheets

The Material Safety Data Sheets (MSDS) included with this manual have been provided by DRYAIR's suppliers.