

# USE AND INSTALLATION OF TURNKEY CABINET COOLING ENCLOSURE



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## 1. OPERATION OF COOLING

The AiRTX Cabinet Cooling Enclosure is factory set to deliver the maximum cooling needed to maintain a desired temperature inside your control panel.

At 80 psi, 17.5 cfm (70% of 25 cfm) of cold air will exit from the Model 70025 Cabinet Cooler into the panel, providing 1800 BTU of cooling.

The bladder valve, located at the base of Cabinet Cooler, will automatically release hot air from the cabinet, maintaining a positive pressure inside the cabinet of 10" water column. The automatic release of air through the bladder valve enables you to close off open conduit entrances, louvers and air leaks. A sealed cabinet is also more efficient, as the cold air enters only the cabinet and doesn't escape to the atmosphere, decreasing compressed air usage. A sealed cabinet also eliminates potential condensation from forming on the components. The bladder valve keeps the integrity of a Nema 4, 4x, or 12 cabinet. The construction allows for wash-down situations. "UL Listing is for use on a flat surface of a type 1 enclosure". The Adjustable thermostat can be ordered from the factory at different temperature settings.

## 2. USE OF TURNKEY CABINET COOLING ENCLOSURE:

The last 2-numbers of the Cabinet Cooler models indicate the cfm usage at 100 psi. The generators determine the volume of air through the Cabinet Cooler. These generators are rated 8, 15, 25, and 35 cfm. To ensure that your air compressor can generate these volumes, the (horse power) of the compressor can be multiplied by four to determine the cfm capacity. A multiplier of 5 can be used on newer compressors over 30 horsepower.

The standard TURNKEY CABINET COOLER MODEL 70325CC is equipped with a 25 cfm generator and 8' of vinyl ducting to route the cold air inside the cabinet. This will provide 1800 BTU of cooling. This is sufficient to cool a cabinet that is 6 ft. x 6 ft. x 2 ft. from a 150°F maximum inside temperature to 90°F., provided 80 psi air is available going into the AiRTX Cabinet Cooler.

When 80 psi is not available, the potential BTUs of cooling must be reduced by 25% at 60 psi, or 50% at 40 psi. The Model 70008 will cool cabinets of 4' x 3' x 1' or smaller.

All thermostat models are very useful at controlling compressed air usage as it only operates when internal cabinet temperature exceeds 90°F. Each thermostatic model includes the Cabinet Cooler and following components: Auto Drain Air Filter, Ducting Kit, Adjustable Thermostat and 110V Solenoid Valve.-OTHER VALVES CAN BE REQUESTED

## THE TEMPERATURE SETTING OF THE THERMOSTAT FROM THE FACTORY IS 90°F.

### THIS IS DONE FOR 2 MAIN REASONS:

1. If the setting of the inside of the control cabinet is 70°F for example, then on a hot 90°F day, sweating could occur on the outside of the cabinet.
2. The critical temperature for electronic controls is 100 to 104°F. 20% of the life of the controls is lost at temperatures higher than 104°F. A factory setting of 90°F allows for a safe operating temperature, prevents excessive condensation, and conserves air usage.

## 3. COMPRESSED AIR SUPPLY

Air supplies are plagued with condensed water vapor and droplets in the air lines. This condensation leads to rust and dirt in the air lines. Also, some compressors will allow oil or oil vapor to enter the air line. Small orifices in the AiRTX Cabinet Cooler may become clogged with rust, dirt, and water droplets.

The 5-micron filter model 90175 will separate 99% of the foreign material and water from the air supply, allowing virtually maintenance free operation. The use of an oil filter with an effective filtration of 0.01 ppm will remove the oil droplets for an even cleaner air supply. Use oil filter part # 91173.

Keep in mind that the current line or air hose might contain dirt or oil and should be blown out before installation. Also, pipe thread sealant or tape must be carefully applied to avoid clogging product orifices.

## COMPRESSED AIR SUPPLY LINE SIZE

To obtain maximum performance from the AiRTX products, adequate amounts of air pressure and volume must be present.

Line pressure of 70-90 psi can be available without a sufficient volume (cfm) of air. To ensure that both pressure and volume are available to efficiently operate the AiRTX Coolers, a line size of 1/4" pipe or 1/2" hose should be used for applications up to 10 ft. from the compressed air main header. Use 3/8" pipe or 3/4" hose up to 20 ft. and 1/2" pipe or 1" hose up to 50 ft. from the header. The compressed air supply to the Turnkey System is connected to the 1/4" NPTF inlet on the side of the installed 5 micron automatic drain filter.

## 4. INSTALLATION AND MOUNTING FOR ALL CABINET COOLER MODELS

The drawing suggests a way the Cabinet Cooling Enclosure can be mounted regardless of which Model you ordered. The Cabinet Cooler requires a 1" hole for the cooler and a 11/16" hole for the thermostat. The Turnkey Cabinet Cooling Enclosure can be mounted on top of your electrical Cabinet or on the side as long as the air filter is in an upright position to expel condensation. We can provide an adapter to mount to the side of your electrical cabinet. After drilling the holes remove the washer from the thermostat and the nut from the cooler. Place the box on top of the cabinet and replace the washer and the nut inside the cabinet to secure the Turnkey Cabinet Cooling Enclosure. Connect the electric power cord compressed air line and ducting hose to distribute the cold air inside the cabinet.

## 5. POWER WIRING TO THE TURNKEY CABINET COOLING ENCLOSURE

This unit is equipped with a 110 Volt normally closed solenoid. The 3 prong electrical power cord is installed through the grip tight connector and to the screw terminals.

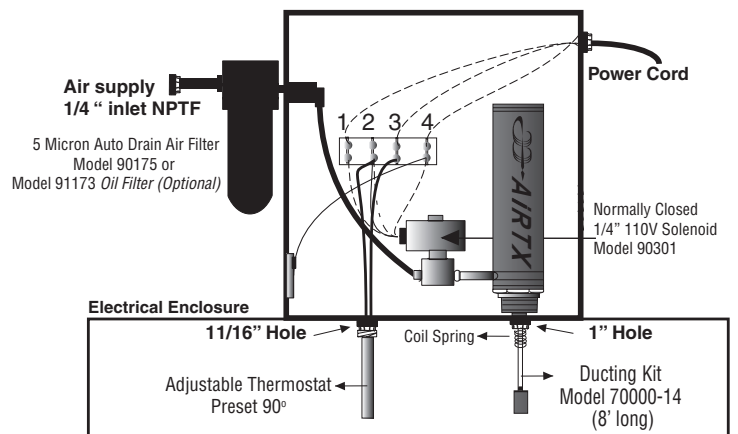
Terminal 1 is for the power cord (U.S. Black) (E.U. Brown)

Terminal 2 is blank

Terminal 3 is the common cord U.S. White) (E.U. Blue)

Terminal 4 is ground (U.S. Green) (E.U. Green)

## TURNKEY CABINET COOLING ENCLOSURE



Electrical conduit can be attached to the system box but requires a suitable connector rather than the grip tight connector

Part number	Description
70000-14	Stainless Steel Cooler
90300	8' vinyl ducting with muffler
90300	Thermostat preset 90°F (32°C)
90175	1/4" 5 micron auto drain filter
90301	1/4" normally closed 2-way 110V solenoid

## 6. INSTALLING THE DUCTING KIT INCREASES COLD AIR DISTRIBUTION AND EFFICIENCY OF THE CABINET COOLER

The 8 ft vinyl ducting connects to the cold end of the cabinet cooler inside electrical the cabinet. The ducting distributes the cold air to hot spots.

1. Push the open end of the clear vinyl ducting over the extension tube of the Cabinet Cooler. There is no need for a clamp as the tubing will remain in place.
2. Using a knife, cut small holes in the tubing to allow cold air to escape along the 8' length of the tubing. Let the cold air blow directly on hot relays or motor controls to keep them from getting overheated.
3. Use the three enclosed clips to hold the tubing in place throughout the cabinet.
4. Let the excess tubing with the muffler attached fall to the bottom of the cabinet. As the cold air escapes and picks up heat from the electronics, the hotter air will rise and be exhausted through the bladder valve on the Cabinet Cooler and exit outside the Cabinet.

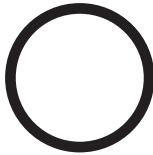
## 7. CLEANING AND MAINTENANCE

The AiRTX Cabinet Cooler has no moving parts. Clean, compressed air moving through the tube will not cause wear on the parts and will provide you with the same reliable service for an indefinite period of time.

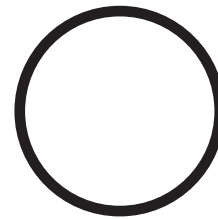
Occasionally, dirt, water, or oil may enter the tube from the compressed air supply and hinder the performance. If this happens, simply take the unit apart, clean the parts, and reassemble, tightly replacing the cold end cap to properly seat the generator.

# TurnKey Cabinet Cooling Enclosure Template

THERMOSTAT



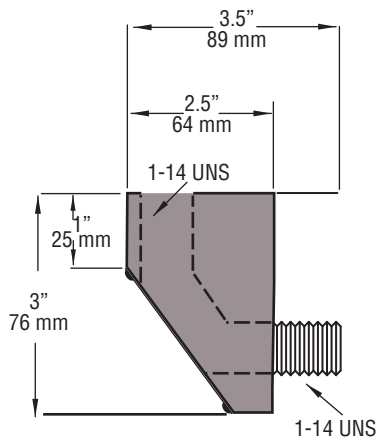
CABINET COOLER



## ALSO AVAILABLE

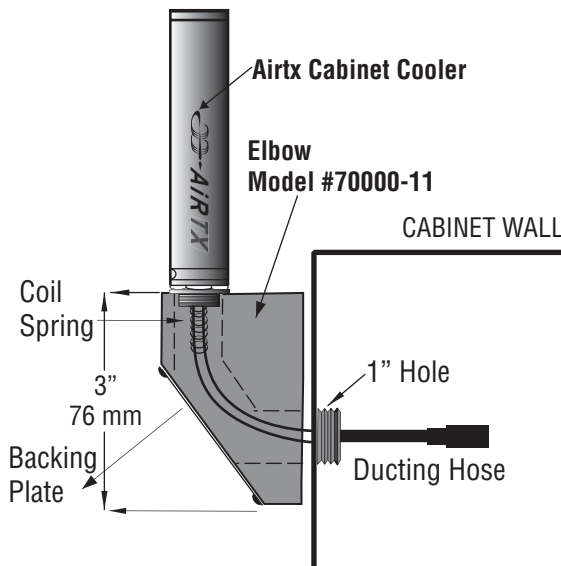
### ELBOW MODEL 70000-11

The Mounting Elbow is available for tight spaces and upright positioning.



UNS=Unified National Standard

### INSTALLATION MOUNTING ELBOW MODEL 70000-11



The AiRTX Cabinet Cooler can be mounted in any place and work just as efficiently. The Model 70000-11 is attached to the Cabinet wall through a 1" hole. O rings seal the mounting Elbow maintaining the integrity of a NEMA 4 or 12 Cabinet.

**(Must Request  
"Side Mount Enclosure")**

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