SIMPLICOOL™ GRS

INSTALLATION GUIDE

REFRIGERATION SIMPLIFIED
SimpliCool™
TECHNOLOGIES INTERNATIONAL, LLC

U.S. Patent# 5,809,789 and other patents pending

52007407

SIMPLICOOL TECHNOLOGIES INTERNATIONAL L.L.C.

Installation Instructions for
Simplicool GRS

Introduction :

The GRS is designed to be a universal refrigeration unit for vending machines, coolers, and visualizers, both in OEM and retro-fit applications. The design concept is a self contained modular refrigeration system sized (Figure 1.1) to fit the maximum amount of machines in the installed base while making the shape clean, giving OEM engineers an easy platform to design to. While this clean shape makes for infinite design possibilities, certain basic mounting protocols (Figure 1.2), must be observed to insure years of trouble free operation. Should your application require a deviation from any of these protocols, the engineering staff at Simplicool must be informed as to the nature of the deviation and proposed solutions. Any deviation in mounting or hook-up protocols, without written approval from Simplicool, will void any warranty, expressed or implied.

Internal cabinet air flow patterns must be designed/adjusted thru appropriate ducting to optimize your particular piece of equipment.

Specifications:

MODEL	VOLTS	AMPS	HZ	PHASE	OUTLET	TYPE	NOISE
GRS	115 VAC	6.5	60	SINGLE	3 PIN	GND	< 2 VAC

COMPRESSOR	REFRIGERANT	Charge	HIGH SIDE TEST	LOW SIDE TEST	WEIGHT
1/3 HP	R134a	8.5oz.	197	10	62 lbs.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
10.125	19.750	22.50	2.8125	1.250	8.375	2.875	2.875	14.250	9.375	3.375

ALL DIMENSIONS ARE IN INCHES

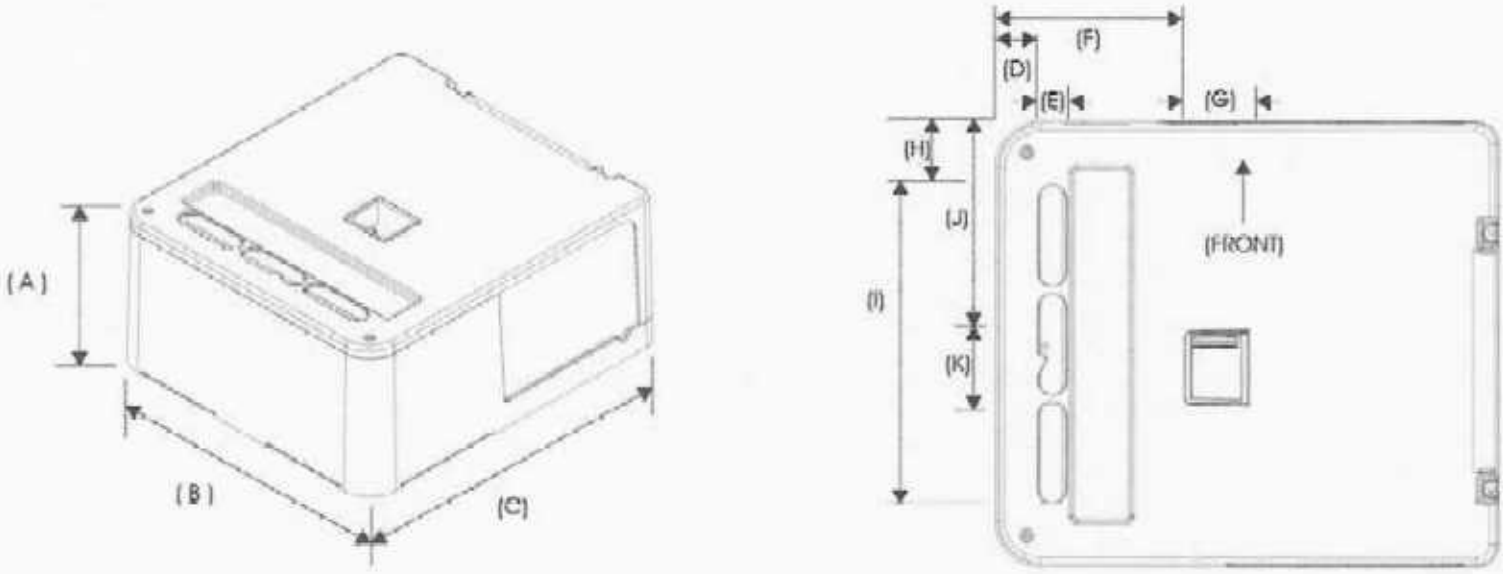

Figure 1.1

Startup Procedure:

Due to the unique design of the unit some components will react differently than expected. Before the unit is plugged in, check all sealing surfaces for a tight fit and that all the holes in the cabinet from the drain tube and refrigeration lines have been sealed. Check that all distribution hoses and vents are installed and secured. Double check the temperature setting switches are set to the desired cabinet temperature. (Note: these switches are only read during startup, changing the switches after power is applied will not affect the cabinet temperature.) To change the cabinet temperature, turn off the unit, change switches to the desired setting and restart. After the above checks are complete, plug in the unit and observe the indicator LEDS on the power panel. (Figure 1.6) All LEDS will flash in sequence as the controller goes thru it's system checks. After the system check is complete, the compressor will be delayed for 3 minutes before the cooling cycle begins. All components in the GRS unit are individually controlled and may start or stop at any time depending on ambient and cabinet temperatures, this is normal operation and should not be a cause for concern. The indicator LEDS will illuminate as each component is switched on, see Figure 1.6 for the designation of each LED.

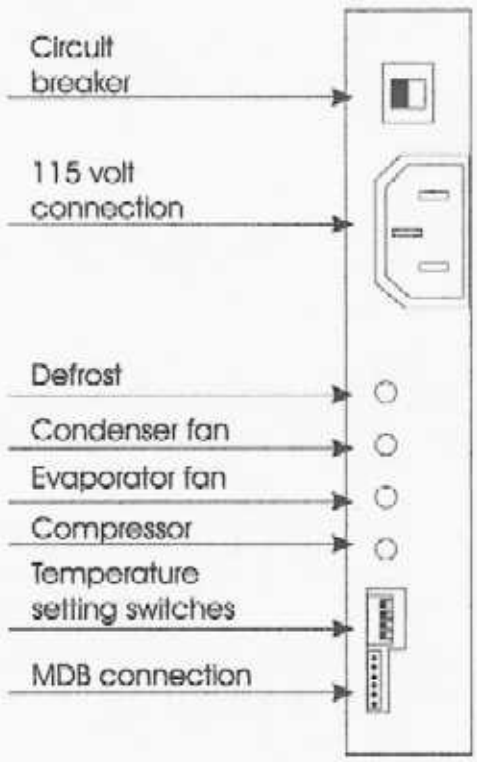

Figure 1.6

Air flow, Hot section:

Filtered air must be supplied to the inlet side of the unit, preferably from the front of the machine. The machine manufacturer must allow for not less then 6" of clearance between unit and any obstruction behind the machine. (Figure 1.4)

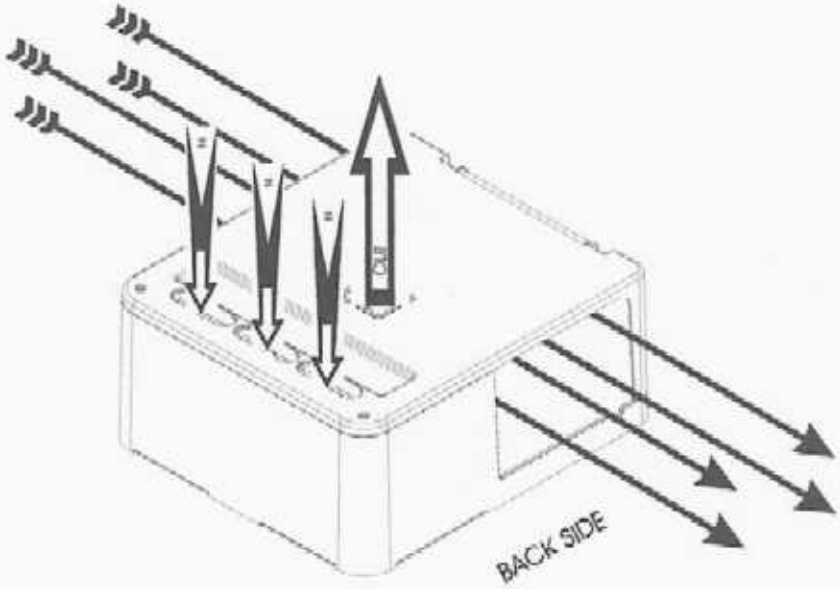

Figure 1.4

Air flow, Cold section:

Cabinet air may be ducted internally in any manner that provides good circulation in your particular cabinet. Outlet air flow should be as direct as possible, with any directional changes curved to maximize air flow.

Power connection :

Field wiring is to be provided using a Belden # 17520 supply cord or equivalent 16 AWG 3 wire UL approved cord.

Temperature control:

Cabinet temperature is adjusted using a 4 position DIP switch on the control board or thru the MDB interface. Adjust the set point to the desired level using the chart below (Figure 1.5). Differential is 6 degrees, 2 below set point and 4 above set point. (Note: freezer settings are for test purposes only.)

SET POINT IN DEGREE'S f

SWITCH #	-10	-3	+10	+34	+36	+38	+40	MDB
1			*	*		*		*
2	*			*		*	*	*
3		*		*			*	*
4								*

ON
*

Figure 1.5

Computer communication:

Computer communication is possible with the GRS utilizing an MDB Interface module (optional). Once installed, any Windows based computer running a terminal emulator program will receive constant updates on system temperatures and component status.

Mounting:

Recommended mounting conditions include a lift mechanism that exerts equal pressure across the entire base of the GRS. This lift should exert no more then 5 psi. when fully engaged. The lift should incorporate locating tabs on the sides and back to insure proper alignment with the cabinet inlet and outlet ducting. Care should be taken to avoid vibration or inadvertent contact with the lift causing the lift to lower and breaking contact with the cabinet seal. Minimum requirements for lift would be 3, 1" wide strips running the length of the GRS exerting equal pressure along their length of no more then 3 psi. Positioning of the strips are shown below (fig. 1.2). Locating tabs should also be incorporated. Some applications may not require a lift mechanism e.g., Top mount cooler, however, the same support points and pressures will apply.

(A)	(B)
10.50	12.00

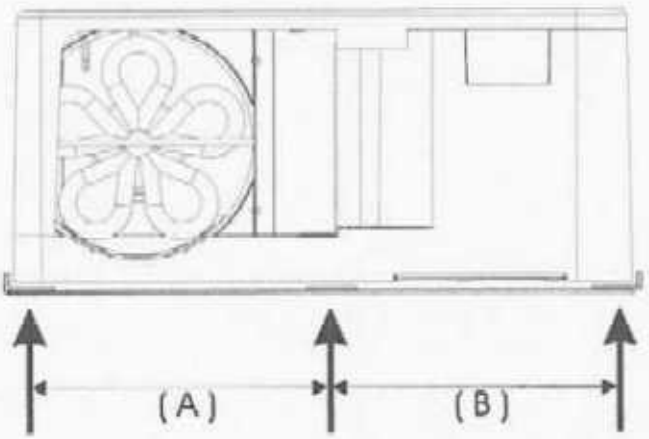

Figure 1.2

Cold section seals:

The seal between the cabinet may be accomplished in many ways with any acceptable material. A closed cell foam gasket across the entire top of the GRS works well but is not required so long as the entire top of the unit is supported evenly and air from the hot section is not allowed to infiltrate into the cold cabinet. (fig. 1.3)

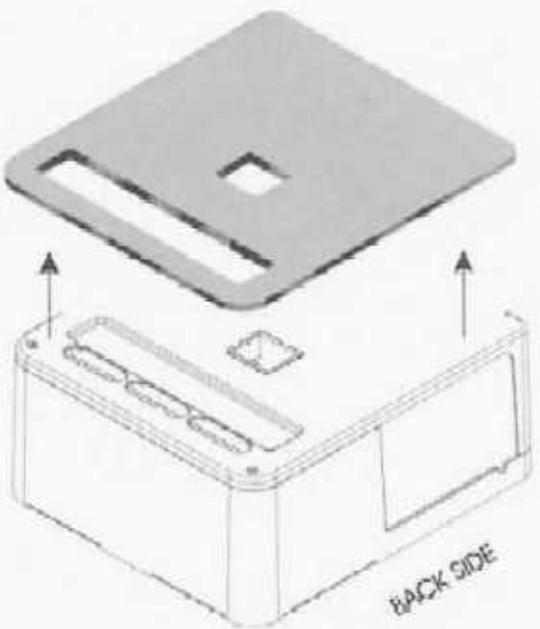

Figure 1.3