Manitowoc® Service Communicator

Subject: S Model Traditional Remote Ice Machine Usage with Non-Manitowoc Multi-Circuit Condensers

WARRANTY

The sixty (60) month compressor warranty, including thirty six (36) month labor replacement warranty, **shall not apply** when the remote ice machine is not installed within the remote specifications. The foregoing warranty shall not apply to any ice machine installed and/or maintained inconsistent with the technical instructions provided by Manitowoc Ice, Inc. Performance may vary from Sales specifications. S-Model ARI certified standard ratings only apply when used with a Manitowoc remote condenser.

If the design of the condenser meets the specifications, Manitowoc's only approval is for full warranty coverage to be extended to the Manitowoc manufactured part of the system. Since Manitowoc does not test the condenser in conjunction with the ice machine, Manitowoc will not endorse, recommend, or approve the condenser, and will not be responsible for its performance or reliability.

Important

Manitowoc warrants only complete new and unused remote packages. Guaranteeing the integrity of a new ice machine under the terms of our warranty prohibits the use of pre-existing (used) tubing or condensers.

HEAD PRESSURE CONTROL VALVE

Any remote condenser connected to a Manitowoc S- Model Ice Machine must have a head pressure control valve #836809-3 (available from Manitowoc Distributors) installed on the condenser package. Manitowoc **will not accept** substitute "off the shelf" head pressure control valves.

⚠ Caution

Do not use a fan cycling control to try to maintain discharge pressure. Compressor failure will result.

FAN MOTOR

The condenser fan must be **on** during the complete ice machine freeze cycle (do not cycle on fan cycle control). The ice maker has a condenser fan motor circuit for use with a Manitowoc condenser. It is recommended that this circuit be used to control the condenser fan(s) on the multi-circuit condenser to assure it is on at the proper time. **Do not exceed the rated amps for the fan motor circuit listed on the ice machine's serial tag.**

INTERNAL CONDENSER VOLUME

The multi-circuit condenser internal volume must not be less than or exceed that used by Manitowoc (see chart on next page). **Do not exceed internal volume and try to add charge to compensate, as compressor failure will result.**

CONDENSER ΔT

ΔT is the difference in temperature between the condensing refrigerant and entering air. The ΔT should be 15 to 20°F (8.3 to 11.1°C) at the beginning of the freeze cycle (peak load conditions) and drop down to 12 to 17°F (6.6 to 9.4°C) during the last 75% of the freeze cycle (average load conditions).

REFRIGERANT CHARGE

Remote ice machines have the serial plate refrigerant charge (total system charge) located in the ice maker section. (Remote condensers and line sets are supplied with only a vapor charge.)

⚠ Caution

Never add more than nameplate charge to ice machine for any application.

QUICK CONNECT FITTINGS

The ice machine and line sets come with quick connect fittings. It is recommended that matching quick connects (available through Manitowoc Distributors) be installed in the multi-circuit condenser, and that a vapor "holding" charge (5 oz.) of proper refrigerant be added to the condenser prior to connection of the ice machine or line set to the condenser.

Continued on next page....

NON-MANITOWOC MULTI-CIRCUIT CONDENSER SIZING CHART

Ice Machine Model	Refrigerant		Heat of Rejection		Internal Condenser Volume (cu ft)		Design Pressure	Quick Connect Stubs-Male Ends		Head Pressure Control Valve
	Type	Charge	Average Btu/hr	Peak Btu/hr	Min	Max		Discharge	Liquid	
S500	R-404A	6 lbs.	7,000	9,600	0.020	0.035	500 psig (3447 kpa) (34.47 bar) safe working pressure	coupling P/N 83-6035-3	coupling P/N 83-6034-3	Manitowoc P/N 83-6809-3
S600	R404A	6.5 lbs.	9,000	13,900	0.045	0.060				
S850	R-404A	8.5 lbs.	12,000	18,000	0.045	0.060	2,500 psig (17237 kpa) (172.37 bar) burst pressure			
S1000	R-404A	8.5 lbs.	16,000	22,000	0.045	0.060				
S1400	R-404A	11 lbs.	19,000	28,000	0.085	0.105		mounting flange P/N 83-6006-3	mounting flange P/N 83-6005-3	**no substitutes**
S1600	R-404A	11.5 lbs.	21,000	31,000	0.085	0.105				
S1800	R-404A	12.5 lbs.	24,000	36,000	0.085	0.105				

Additional Refrigerant Charges

For line sets between 50’ - 100’.

Series	Nameplate Charge	Refrigerant to be added for 50’ - 100’ line sets	Maximum System Charge Never Exceed
S500	6 lb. (96 oz.)	1.5 lb. (24 oz.)	7.5 lb. (120 oz.)
S600	6.5 lb. (104 oz.)	1.5 lb. (24 oz.)	8.0 lb. (128 oz.)
S850/S1000	8.5 lb. (136 oz.)	2 lb. (32 oz.)	10.5 lb. (168 oz.)
S1400	11 lb. (176 oz.)	2 lb. (32 oz.)	13 lb. (208 oz.)
S1600	11.5 lb. (184 oz.)	2 lb. (32 oz.)	13.5 lb. (216 oz.)
S1800	12.5 lb. (200 oz.)	1 lb. (32 oz.)	13.5 lb. (216 oz.)