APPLICATIONS NOTICE

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Form NS 006

TO: AUTHORISED DEALERS/DISTRIBUTORS
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APPLIC. NOTICE GENERAL LIST

ISSUE NO. : 07/01

DATE : 1 October 2001
FROM : T King/K Edwards

SUBJECT: HIGH SENSIBLE HEAT APPLICATIONS

UNITS: SPLIT SYSTEM & PACKAGED UNITS

NOTE : This Notice Supersedes The Now Obsolete Issue 02/85.

We are still receiving a fair amount of client feedback on installations where standard split system and packaged units have been installed in rooms and offices containing computers or other high sensible heat loading machinery. Most of the calls we receive involve Hi-Wall Split units and Cassette Splits that have a ball of ice on the indoor coil.

Beware, this is mis-applying standard equipment, we have a range of units (the temptronic range) designed specifically for this application, with cooling duties from 10kW to 80kW. We also can mix and match various split unit combinations to achieve high sensible cooling loads when requested.

The use of standard equipment in these types of applications where the heat load is predominantly sensible, as opposed to latent heat, has inherent drawbacks :

1. The inside coils and air flows are designed for operation with sensible heat ratios of 0.7 or thereabouts and will remove too much moisture.

2. There is rarely a head pressure control fitted as standard though it is an option for retro-fitting.

3. There is no re-humidification available.

The problems associated with this mis-application will be evident from the following symptoms :

1. Icing up of the inside coil, particularly during the Winter if the unit is running on the cooling cycle for long periods.

2. The relative humidity in the conditioned space will fall too low possibly causing static electricity problems.

3. The condenser coil will over-condense causing low operating head pressures, during low ambient outside temperatures.

4. The operating suction pressure will fall even lower as a result of the low operating head pressure, insufficient air flow across the inside coil, icing on the indoor coil and the falling room humidity, leading to a more rapid rate of icing occurring.

The remedies that can be tried to eliminate or reduce the problems are :

1. Ensure the indoor unit is on the highest fan speed available. Investigate whether there is another fan motor available with higher speeds. This would obviously increase the noise level of the indoor unit.

2. Fit some form of head pressure control, i.e.

   Head Pressure Fan Speed Control or Condenser Pressure Regulating Valve

3. Adding a de-ice cycle for defrosting the inside coil.

4. Install a humidifier and associated controls.

You may find there is no easy answer at all.

The real answer is to use equipment suitable for the application or build the extra controls or unit modifications in at the time of quotation and subsequent installation. It is very difficult to correct the situation afterwards.

For any high sensible heat application contact the nearest temperzone Sales Office.