



Thermon South Africa (Pty) Ltd.

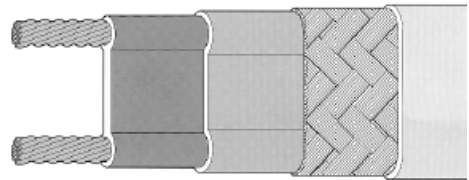
HEAT TRACING FOR THE REFRIGERATION INDUSTRY

THERMON TRACE HEATING CABLES

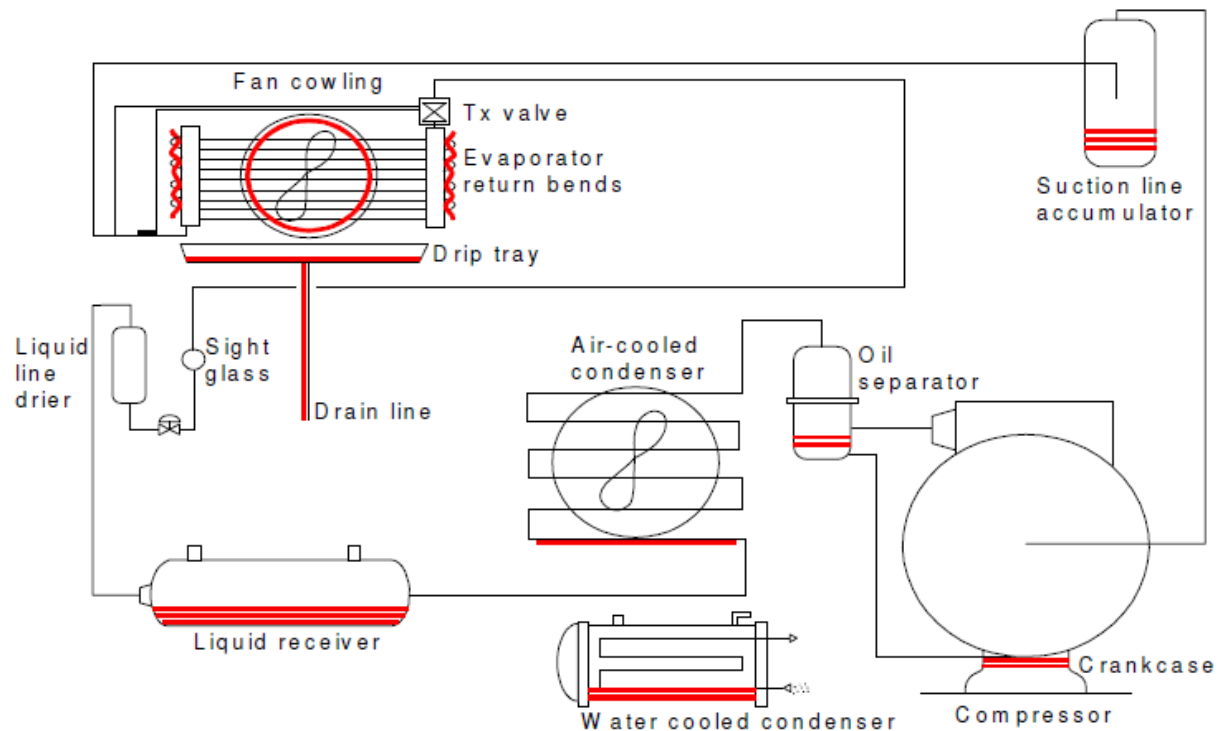
THERMON self regulating trace heaters cover the complete range of applications from frost protection to high temperature industrial installations.

This leaflet outlines applications in the freezer industry where THERMON trace heating cables can be utilised. These cables together with a complete range of components have been specifically designed for low temperature use in the freezer industry.

The Self Regulating design renders the heater burnout proof particularly at 'cross-overs' as the output will vary over its entire length depending on temperature.



TYPICAL REFRIGERATION PLANT



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The schematic diagram above shows many applications where THERMON heat tracing cables may be used on refrigeration plant.

In outdoor installations, particularly in cold climates it is most important to maintain minimum operating temperatures to ensure that refrigerant gases remain as a vapour.

The following application notes describe where the heater cables may be used on refrigeration plant, cool rooms, and commercial freezer cabinets. Thermon will be pleased to provide assistance on the selection of heater cables to suit your application.

All heater cables operate on 240Vac power supply. Low voltage designs are available on request.

HEAT TRACING APPLICATIONS FOR THE REFRIGERATION INDUSTRY

LIQUID RECEIVER

A heater cable may be required in cold climates to maintain refrigerant liquid temperature for optimum system efficiency.

OIL SEPARATOR

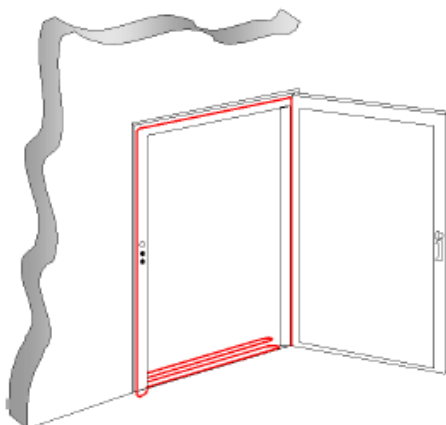
A heater cable may be required to prevent liquid refrigerant returning to the compressor by maintaining it as a vapour.

SUCTION LINE ACCUMULATOR

A heater will assist boil off and ensure that the refrigerant remains as a vapour back to the compressor.

*Suitable Heater cables for these applications are **CSR**, **BSX**, **RSX 15-2**, **CCH** crankcase heater with strap or **CDH** condensate drain heater.*

COLD ROOM DOORS & COLD ROOM THRESHOLD



Warm air entering a cool room will condense and freeze upon contact with a cold surface.

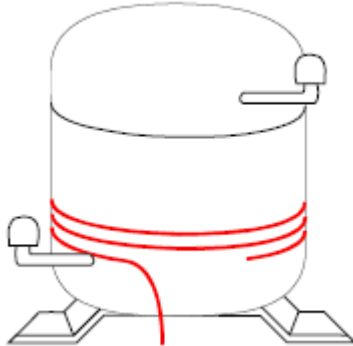
Heater cable installed in the doorway architrave or sliding door seal increases the surface temperature above 0°C and prevents ice forming between frame and door.

Ice may also form at the cool room threshold where warm air enters, condenses, and freezes. This is prevented by running three or four runs of heater cable in floor channels, conduits, or sawn slots directly in the concrete.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable or **CSR** Heater Cables are recommended.*



COMPRESSOR CRANKCASE HEATER

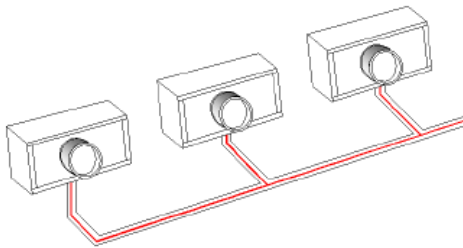


Compressors may be damaged by the formation of refrigerant liquid in the crankcase particularly after long 'off' periods.

It may be necessary to heat the crankcase to evaporate the refrigerant trapped in the oil, particularly outdoor installations in cold climates.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable or purpose made crankcase heater for compressors, type **CCH** complete with strap.*

DRAIN LINES



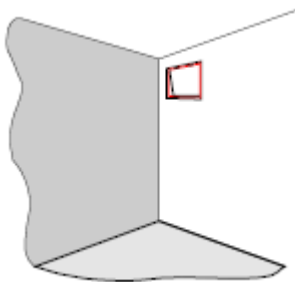
The drain line from the drip trays also requires heat tracing to prevent ice formation. The heater may be attached to the underside of the pipe in one straight run, or spiralled if required.

On plastic pipes the heater cable should be covered with aluminium foil tape to assist heat dispersion. The heater cable may also be run inside the pipe provided the connection and end seal are external.

The drain line must be insulated with minimum thickness of 25mm.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable or purpose made **Condensate Drain** heater for drains, type **CDH**.*

PRESSURE RELIEF PORTS, OR SAFETY VENTS



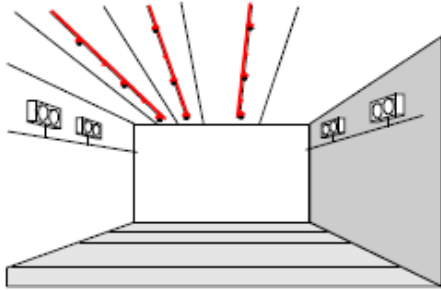
These are mounted in the cool room wall and used to maintain normal atmospheric pressure allowing air to enter or exhaust as required.

They typically comprise a box section with moving vanes which must not become frozen.

Heater cable is spiralled around the box section at approximately 80mm centres and preferably insulated.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable*

FIRE PROTECTION SPRINKLERS

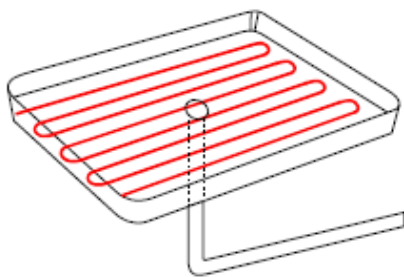


Where these are installed in cool rooms trace heating will be required to prevent freezing on exposed pipe work and fittings.

The heater cable rating will depend on the cool room temperature, pipe size, and insulation thickness.

Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable

DRIP TRAYS

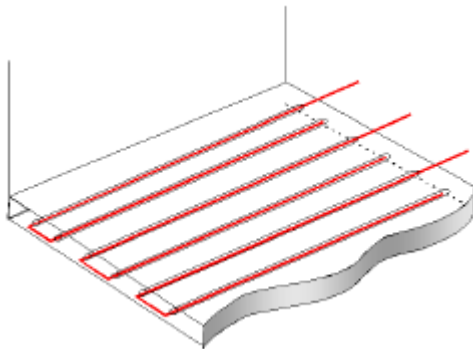


Drip trays are required to collect water droplets from the evaporator coils during defrost cycles.

Formation of ice may be prevented by laying a heater cable in the tray, alternatively, attached under the tray. The spiral pitch should be 150-200mm, and the underside of the tray should have a minimum of 25mm insulation.

Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable

FROST HEAVE PREVENTION

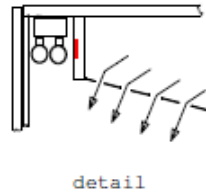
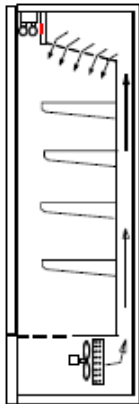


The substrata of freezer floors will withstand cold temperatures for a period of time, however if the ground temperature will eventually drop below freezing. At that point if water is present in the substrata frost heave of the freezer floor will occur. If severe, this will damage the foundation slab with the formation of cracks.

Design and installation guides are available for these applications and Thermon staff is available to assist with the design process.

Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable

SUPERMARKET FROZEN FOOD CABINETS

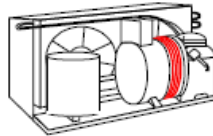
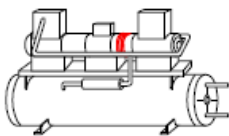


Wherever warm air is in contact with cold surfaces such as the 'frost-line' or rail on open chest freezers then condensation will occur. Similarly with display cabinets, around doors and light fittings.

Trace heaters, or 'anti-sweat' heaters successfully overcome these problems.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable or **Thermon CSR** Heater Cable*

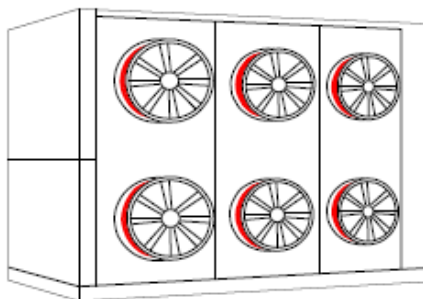
AIR OR WATER COOLED CONDENSERS



Where these are installed outdoors in cold climates a trace heater may be required to prevent freeze-up. Insulation should be applied over the heater

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable*

FAN COWLINGS

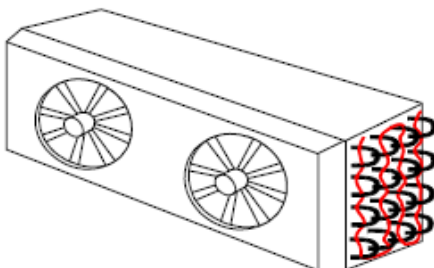


Fan cowlings on evaporator-blowers may 'ice up' and cause fan seizure.

This may be avoided by spiralling heater cable around the cowlings at 50-80mm centres. Aluminium foil tape and insulation over the heater would assist.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable*

EVAPORATOR BENDS



Defrost heaters in evaporators may not always extend to the bends, and therefore these may be traced with heater cables to assist the defrost operation.

*Recommendation: **THERMON RSX 15-2** Self Regulating Heater Cable*

