

COUPLING INTEGRITY TEST FOR AIR CONDITIONING REFRIGERANT HOSES**Application**

This procedure is used to determine the coupling compatibility with the hose under varying time versus temperature stresses.

Apparatus Required**Temperature Test Chamber**

Thermotron or equivalent capable of holding -29 °C to 125 °C with a capability for programming cycles.

Oven

Blue M, or equivalent, maintained at 25 +/- 2 °C.

Balance

Balance capacity of 3000 g with an accuracy of +/- 0.1 g.

Canisters

Approximately 1260 cm³ with fittings.

Refrigerant Charging Stand**Materials Required****R-12 or R-134a Supply**

Refrigeration Oil - currently released (see General Information)

Test Specimen

All test specimens will have 7.6 cm of exposed hose material and 9.0 cm of metal tubing between the coupling bead lock to the Tube-O bead. All assemblies will be fitted with standard Tube-O fittings on both ends.

Date	Action	Revisions
2001 09 24	Revised	Editorial – no technical change A. Cockman
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Page 1 of 4

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Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure**A. Charging**

Determine the total internal volume of the canister plus hose assembly. Calculate the refrigerant charge by multiplying the system volume (cc) by the following density constants:

Test	Density Constant (g/cc)
R-12 at 125 °C and 1.7 Mpa	0.078
R-134a at 125 °C and 1.7 Mpa	0.059

Charge 10 +/- 1 cm³ of currently released refrigerant oil into the canister assembly. Evacuate and add R12 or R134a and record original weight. Check all fittings to insure against extraneous refrigerant leakage. This weighing and all subsequent weighings are to be made at 23 +/- 2 °C to the nearest 0.1 g. After charging, agitate the assembly to insure mixing with the oil and wetting of all internal surfaces.

B. Test Exposure

The assembly shall be oriented so that the liquid phase will always drain into the test coupling assembly. The test shall include eight (8) exposure intervals each followed by a weight loss leakage evaluation and in the event this has occurred before the next exposure.

The eight (8) exposure intervals in sequential order are as follows:

1. 96 hours at 125 °C with canister pressure at 1.7 MPa.
2. 48 hours thermal cycling composed of six cycles programmed as follows;

TEMPERATURE	TIME
Rise from 23 °C to 125 °C	120 minutes
Hold at 125 °C	60 minutes
Decline from 125 °C to -29 °C	180 minutes
Hold at -29 °C	60 minutes
Rise from -29 °C to 23 °C	60 minutes