



SURFACE VEHICLE STANDARD	J2064™	AUG2015
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Superseding J2064 FEB2011		
Coupled Automotive Refrigerant Air-Conditioning Hose Assemblies		

RATIONALE

SAE J3062 has been issued to separate requirements for the hose used in SAE J2064 Coupled Refrigerant Automotive Air-Conditioning Hose Assembly Requirements into its own standard.

Changes made to this document include:

- Title: This will now be a “coupled” hose assembly standard.
- Scope: Changed to reflected “coupled” hose assemblies and removed hose only references. Added the requirement that an SAE J2911 hose must be used in the assembly which meets the requirements of SAE J3062 Automotive Air-Conditioning Hose.
- References: Added SAEJ2911 and SAEJ3062.
- Manufacture: Deleted this section which is related to hose and is now part of SAEJ3062.
- Identification: Changed from “Hose Identification” to “Hose Assembly Identification”. Deleted “Bulk Hose” section and removed hose marking references from “Hose Assembly Identification”.
- Testing: Removed “Age Test”, “Cold Test”, “Vacuum Flattening”, “Length Change”, “Extraction Test”, “Ozone Test” and “Moisture Ingression” tests. Removed listing these test results from Table A1 “Certification Table” shown in Appendix A. These are now requirements of SAEJ3062.

1. SCOPE

The Scope of SAE J2064 covers coupled hose assemblies intended for containing and circulating lubricant, liquid and gaseous R134a and/or R-1234yf refrigerant in automotive air-conditioning systems. Historically, requirements for the hose used in coupled automotive refrigerant air conditioning assemblies was included in SAE J2064. SAE J2064 has been changed to establish the requirements for factory and field coupled hose assemblies. SAE J3062 has been issued to define requirements for the hose used in these assemblies into its own standard. SAE J2064 also provides the necessary values used in SAE J2727 Mobile Air Conditioning System Refrigerant Emission charts for R-134a and R-1234yf. The certified coupling of MAC hose assemblies is required in meeting certain regulatory requirements.

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A hose which has met the requirements of SAE J3062 and certified in J2911 must be used as part of the coupled assembly. A hose which meets the requirements of SAE J3062 does not insure the assembly will meet the requirements of SAE J2064. It is the hose assembly manufacturer's responsibility to confirm that the assemblies meet the specified acceptance criteria for this specification. The hose assembly shall be designed to minimize permeation of the refrigerant, contamination of the system, and to be functional over a temperature range of -30 to 125 °C. Specific construction details are to be agreed upon between user and supplier.

Bulk hose produced prior to the release of this standard could be labeled "SAE J2064" and may not meet the requirements of SAE J3062.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J639 Safety Standards for Motor Vehicle Refrigerant Vapor Compression Systems

SAE J3062 Automotive Air Conditioning Hose

SAE J2911 Procedure for Certification that Requirements for Mobile Air Conditioning System Components, Service Equipment, and Service Technician Training Meet SAE J Standards

SAE J2727 Mobile Air Conditioning System Refrigerant Emission Charts for R-134a and R-1234yf

2.1.2 ASTM Publication

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D 380 Methods of Testing Rubber Hose

3. HOSE ASSEMBLY IDENTIFICATION

A hose coupling marked or tagged "J2064" signifies that it has been coupled, tested, and has met the requirements of SAE J3062 and SAE J2064 for the marked refrigerant(s). These hose assemblies shall be certified per SAE J2911 for SAE J3062 and SAE J2064. Metal stamping on coupling shall include SAE J2064 and shall be at least 2mm minimum height and must be durable and readable. In lieu of the metal stamping on the coupling, a durable tag must be attached to each hose assembly. The tag shall be metal or mylar with a protective plastic cover. The tag information and must be at least 2mm minimum height, durable and readable and shall include the following information:

- SAE J2064
- (2) Name of hose assembly manufacturer

3.1 Hose Assembly

Hose Assemblies may be fabricated by the manufacturer, an agent for or customer of the manufacturer, or by the user. Fabrication of permanently attached fittings to refrigerant hose requires specialized assembly equipment. Refrigerant hose from one manufacturer may not be compatible with fittings supplied by another manufacturer. Similarly, assembly equipment from one manufacturer may not be interchangeable with that of another manufacturer.

4. TESTING

The test procedures described in the current issue of ASTM D 380 shall be followed whenever applicable.

4.1 Sample Conditioning

Charged Samples shall be stabilized for 24 h at $23\text{ °C} \pm 2\text{ °C}$ prior to testing. Samples shall be checked to ensure specified charge and identify charge loss.

4.2 Coupled Assembly Permeation Emission Test

4.2.1 Test Specimens - 107 cm Samples

The test specimens are to consist of four coupled hose assemblies that have $107\text{ cm} \pm 1.2\text{ cm}$ of exposed hose between couplings. Three of the coupled hose assemblies are to be used for determining the permeation rate through the hose at a specific temperature. The fourth coupled and plugged hose assembly is to be used for a control hose.

One end of each hose assembly is to be fitted with a capped charge fitting. The other end is to be attached to a canister (optional) or plugged with a fitting. If a canister is used, the coupled hose assemblies are to be connected to canisters each having an internal volume of $510\text{ cm}^3 \pm 25\text{ cm}^3$ and having a minimum burst strength of 8.6 MPa.

4.2.2 Charging Procedure and Initial Weights

The coupled hose assemblies are to be weighed and recorded to 0.01 g to establish an initial weight prior to charging. The test samples (control sample not charged) are to be evacuated then charged with refrigerant to $70\% \pm 3\%$ of the internal volume of the assembly and then reweighed. Cooling of samples is recommended for ease of charging.

4.2.3 Temperature Exposure

The test temperature is $80\text{ °C} \pm 2\text{ °C}$.

4.2.4 Establish Constant Loss Rate

Weigh the samples at the end of the first 24 h temperature exposure and weighing at periodic intervals (minimum period must be 24 h). The weighings shall be reported in net loss of grams, charged sample weight loss minus control sample weight loss. The net weight loss versus time shall continue to be recorded until steady state is reached. Steady state is reached when the last four readings are within 10% of the lowest reading or after 25 days, whichever comes first.

4.2.5 Loss Rate Determination

No charged specimen may lose more than 40 g during the first 24 h period. The permeation rate for each specimen may be determined as follows:

- a. For Samples that meet the 10% Rule - Establish the slope of steady-state net loss in grams per day for the 107 cm length specimen and multiply by factors in Table 1 to obtain permeation rate.
- b. For Samples that Run for 25 Days - The final weighing period, in which the data recorded will be used to determine the permeation rate, shall be the last 5 days or 7 days of the test period. The samples during the final period shall be weighed 5 times at least 24 h apart. The total net weight loss for the final period, divided by the number of days in the period is multiplied by the factors in Table 1 to obtain the permeation rate.

At the end of the temperature exposure period, the refrigerant charge remaining shall be 50% of the original charge minimum. At the conclusion of the test, the refrigerant charge in each specimen shall be exhausted to a suitable reclamation container.