

Protection Agency, 401 M Street, SW., Washington, DC 20460.

- (b) * * *
- (1) * * * (i) * * *
- (ii) * * *

(iii) Thorough knowledge of the standards as they appear in appendix A and appendix B of this subpart, as applicable; and

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5. Section 82.40 is amended by revising paragraph (a)(2)(i) to read as follows:

§ 82.40 Technician training and certification.

- (a) * * *
- (2) * * *

(i) The standards established for the service and repair of motor vehicle air conditioners as set forth in appendix A and appendix B to this subpart. These standards relate to the recommended service procedures for the containment of refrigerant, extraction equipment, extraction and recycle equipment, and the standard of purity for refrigerant in motor vehicle air conditioners.

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6. Section 82.42 is amended by revising the last sentence of paragraph (a)(1)(iii) to read as follows:

§ 82.42 Certification, recordkeeping and public notification requirements.

- (a) * * *
- (1) * * *

(iii) * * * The certification should be sent to: MVACs Recycling Program Manager, Stratospheric Protection Division, (6205J), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

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7. Appendix B is added to subpart B to read as follows:

Appendix B to Subpart B—Standard for Recover Equipment

SAE J1989, Recommended Service Procedure for the Containment of R-12, as set forth under Appendix A, also applies to this Appendix B.

SAE J2209, issued June, 1992.

SAE Recommended Practice: CFC-12 (R-12) Extraction Equipment for Mobile Automotive Air-Conditioning Systems

Foreword

CFCs deplete the stratospheric ozone layer that protects the earth against harmful ultraviolet radiation. To reduce the emissions of CFCs, the 1990 Clean Air Act requires recycle of CFC-12 (R-12) used in mobile air-conditioning systems to eliminate system venting during service operations. SAE J1990 establishes equipment specifications for on-site recovery and reuse of CFCs in mobile air-conditioning systems. Establishing extraction equipment specifications for CFC-12 will

provide service facilities with equipment to assure that venting of refrigerant will not occur.

1. Scope

The purpose of this document is to provide equipment specifications for CFC-12 (R-12) recovery for recycling on-site or for transport off-site to a refrigerant reclamation facility that will process it to ARI (Air-Conditioning and Refrigeration Institute) standard 700-93 as a minimum. It is not acceptable that the refrigerant removed from a mobile air-conditioning system, with this equipment, be directly returned to a mobile air-conditioning system.

This information applies to equipment used to service automobiles, light trucks, and other vehicles with similar CFC-12 systems.

2. References

2. Applicable Documents—The following documents form a part of this specification to the extent specified herein.

2.1.1 SAE Publications—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J639—Vehicle Service Coupling
SAE J1990—Extraction and Recycle Equipment for Mobile Automotive Air-Conditioning Systems
SAE J2196—Service Hose for Automotive Air-Conditioning

2.1.2 ARI Publications—Available from Air-Conditioning and Refrigeration Institute, 1501 Wilson Boulevard, Sixth Floor, Arlington, VA 22209.

ARI 700-93—Specifications for Fluorocarbon Refrigerants

2.1.3 CGA Publications—Available from CGA, Crystal Gateway #1, Suite 501, 1235 Jefferson Davis Highway, Arlington, VA 22202.

CGA S-1.1—Pressure Relief Device Standard Part 1—Cylinders for Compressed Gases

2.1.4 DOT Specifications—Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

49 CFR, Section 173.304—Shippers—General Requirements for Shipments and Packagings

2.1.5 UL Publications—Available from Underwriters Laboratories, 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 1769—Cylinder Valves

3. Specifications and General Description

3.1 The equipment must be able to extract CFC-12 from a mobile air-conditioning system.

3.2 The equipment discharge or transfer fitting shall be unique to prevent the unintentional use of extracted CFC-12 to be used for recharging auto air conditioners.

3.3 The equipment shall be suitable for use in an automotive service garage environment as defined in 6.8.

3.4 Equipment Certification—The equipment must be certified by Underwriters Laboratories or an equivalent certifying laboratory to meet this standard.

3.5 Label Requirements—The equipment shall have a label "Design Certified by (company name) to meet SAE J2209 for use

with CFC-12. The refrigerant from this equipment must be processed to ARI 700-93 specifications before reuse in a mobile air-conditioning system." The minimum letter size shall be bold type 3mm in height.

4. Safety Requirements

4.1 The equipment must comply with applicable federal, state and local requirements on equipment related to the handling of R-12 material. Safety precautions or notices or labels related to the safe operation of the equipment shall also be prominently displayed on the equipment and should also state "CAUTION—SHOULD BE OPERATED BY CERTIFIED PERSONNEL." The safety identification shall be located on the front near the controls.

4.2 The equipment must comply with applicable safety standards for electrical and mechanical requirements.

5. Operating Instructions

5.1 The equipment manufacturer must provide operating instructions, necessary maintenance procedures and source information for replacement parts and repair.

5.2 The equipment must prominently display the manufacturer's name, address and any items that require maintenance or replacement that affect the proper operation of the equipment. Operation manuals must cover information for complete maintenance of the equipment to assure proper operation.

6. Functional Description

6.1 The equipment must be capable of ensuring recovery of the CFC-12 from the system being serviced, by reducing the system pressure to a minimum of 102 mm of mercury below atmospheric. To prevent system delayed outgassing, the unit must have a device that assures that the refrigerant has been recovered from the air-conditioning system.

6.1.1 Testing laboratory certification of the equipment capability is required which shall process contaminated refrigerant samples at specific temperatures.

6.2 The equipment must be preconditioned with 13.6 kg of the standard contaminated CFC-12 at an ambient of 21°C before starting the test cycle. Sample amounts are not to exceed 1.13 kg with sample amounts to be repeated every 5 minutes. The sample method fixture defined in Figure 1 of appendix A shall be operated at 24°C. Contaminated CFC-12 samples shall be processed at ambient temperatures of 10 and 49°C.

6.2.1 Contaminated CFC-12 sample.

6.2.2 Standard contaminated CFC-12 refrigerant, 13.6 Kg sample size, shall consist of liquid CFC-12 with 100 ppm (by weight) moisture at 21°C and 45,000 ppm (by weight) mineral oil 525 suspension nominal and 770 ppm (by weight) of noncondensable gases (air).

6.3 Portable refillable containers used in conjunction with this equipment must meet applicable DOT standards.

6.3.1 The container color must be gray with yellow top to identify that it contains used CFC-12 refrigerant. It must be permanently marked on the outside surface in black print at least 20 mm high "DIRTY R-12—DO NOT USE, MUST BE REPROCESSED".