SURFACE VEHICLE RECOMMENDED PRACTICE

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Identification and Installation of Air Brake System Components

RATIONALE

This document has been stabilized because it covers technology, products, or processes witch are mature and not likely to change in the foreseeable future.

STABILIZED NOTICE

This document has been declared “STABILIZED” by SAE Truck and Bus Brake Systems Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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1. Scope

This Recommended Practice covers air braked trucks, truck-tractors, trailers and buses. It enumerates the identification and installation of the air brake components not covered in other SAE recommended practices and standards.

1.1 Purpose

To provide a functional means to maximize the potential for correct installation and maintenance of air brake system components for proper actuation and operation of the braking system by providing a standard method of identification of air brake system valves, components and connections/ports.

1.2 Rationale

This document is to be updated in keeping with the five year review process. The Truck and Bus Systems Committee has determined that no changes will be made at this time.

2. References

2.1 Applicable Publications

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

2.1.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or at www.sae.org.

SAE J 844—Nonmetallic Air Brake System Tubing
SAE J1131—Performance Requirements for SAE J844 Nonmetallic Tubing and Fitting Assemblies Used in Air Brake Systems
SAE J1860—Labeling Air Brake Valves with their Performance (Input-Output Characteristics)
SAE J2494—Push-to-Connect Tube Fittings for Use in the Piping of Vehicular Air Brake

2.1.2 FMVSS PUBLICATION

Available from the Superintendent of Documents, U.S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9320.

FMVSS 121—Air Brake Systems

3. Components/Systems

3.1 Valve Port Identification

3.1.1 Components and valve port identification as defined in the SAE and/or ISO recommended procedures or standards pertaining to the respective components and valves shall be utilized. Those not covered in their respective standards will be compiled into this recommended practice at such time they are determined and it is deemed more effective for inclusion herein.

3.2 Air System – Connector Fitting Identification

3.2.1 An optional recommendation is any connector fittings that remain fully in place when tubing is removed be color or functional identification (I.D.) number coded to assist in proper placement of the tubing when it is installed/replaced. This would apply to push-to-connect fittings as well as other equivalent connectors. Colors or functional I.D. numbers utilized are to correspond with the Supply, Control/Service, Delivery or Other function and/or tubing to which they connect.

3.3 Air System – Air Line Identification

3.3.1 The various air brake systems and their basic components consist of supply, primary service, secondary service and emergency/parking. The following is a delineation of the terms used to describe the various systems and their respective definitions. These are based upon the commonly used industry terms, FMVSS 121 and manufacturer's literature for various air brake systems/components.

3.3.1.1 Supply System

The portion of the air system connecting the air compressor/source to the primary and secondary service air systems. This includes the air lines connecting to charging, control or conditioning components that control pressure, clean and/or dry the charge air. This will include but not be limited to components such as the governor, air dryer, etc. Trailer supply lines are not included and should be per Table 1 System Color-Function Number Coding.

3.3.1.2 Primary Service System

The portion of the air brake system, reservoirs, lines and components/chambers/actuators that deliver air/force to the brakes and are designated by the manufacturer as the primary service system and are directly or indirectly controlled by the driver.

3.3.1.3 Secondary Service System

The portion of the air brake system, reservoirs, lines and components/chambers/actuators that deliver air/force to the brakes and are designated by the manufacturer as the secondary service system and are directly or indirectly controlled by the driver.

3.3.1.4 Emergency/Parking System

The portion of the air brake lines, components and system that actuate the emergency and/or parking brake actuators/brake chambers and are designated by the manufacturer as the emergency or parking system and are directly or indirectly controlled by the driver or by automatic operation.

3.3.1.5 Other

This includes multiple components/systems that do not directly supply, control or actuate brake components. These can include but are not be limited to items such as the air suspension, fifth wheel slider, differential lock, etc.

3.3.2 AIR LINE COLOR

3.3.2.1 System Color-Function Number Coding – Table 1

This chart defines the colors of any nonmetallic tubing or coiled nonmetallic tubing to be utilized for the various accessories, brake components and brake systems for vehicles covered in the scope. It also defines the alternative functional identification numbers for individual valve ports such as supply, control, delivery, etc.

3.3.2.2 Nonmetallic Tubing Color Definition – Table 2

This chart defines the means of standardizing individual colors utilizing typical color identification for the nonmetallic tubing and connectors.

3.3.2.3 Accessory air lines may be any color so long as colors designated in Table 1 are not used except as follows: