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SURFACE VEHICLE RECOMMENDED PRACTICE

An American National Standard

SAE J318

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(R) Automotive Air Brake Line Couplers (Gladhands)

1. ***Scope—***This SAE Recommended Practice is intended to provide design, interchangeability dimensions, testing procedures, performance requirements, and minimum identification for gladhand-type air line couplers used to connect the brake systems of trucks, truck-tractors, trailers, and dollies when these vehicles are joined to operate as a combination unit.

1.1 **Purpose—**The purpose is to provide coupler halves for brake lines on one vehicle that will be identified and compatible with the coupler halves on the brake lines of another vehicle.

2. ***References***

2.1 **Applicable Publication—**The following publication forms a part of the specification to the extent specified herein.

2.1.1 ASTM PUBLICATION—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B117—Standard Method of Salt Spray (Fog) Testing

3. ***Design and Interchange Ability Dimensions***

3.1 Design is limited only to those areas having dimensions that insure interchangeability. Any material may be used, providing that the coupler meet the performance requirements. Other devices may be included in the gladhand, such as a quick-release valve or shut-off valve. Recommended practices for these devices are not included in this document.

3.2 General design and interchangeability dimensions are shown for polarized and non-polarized couplers as follows in Figures 1 to 3.

Use of non-polarized couplings is not recommended because they will mate with either polarized couplings which could result in incorrect connections between vehicles.

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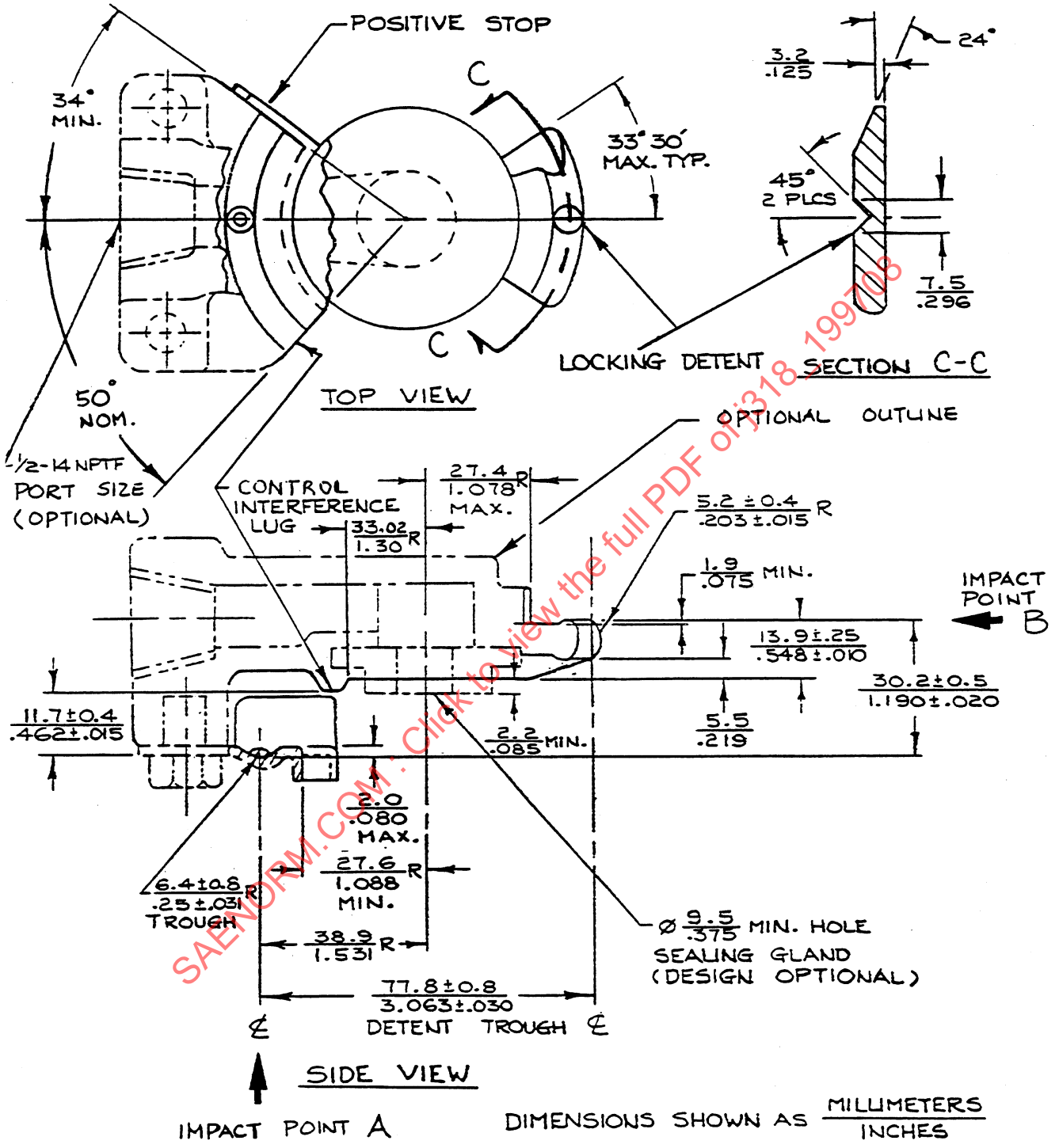

FIGURE 1—CONTROL (SERVICE) AIR BRAKE COUPLER

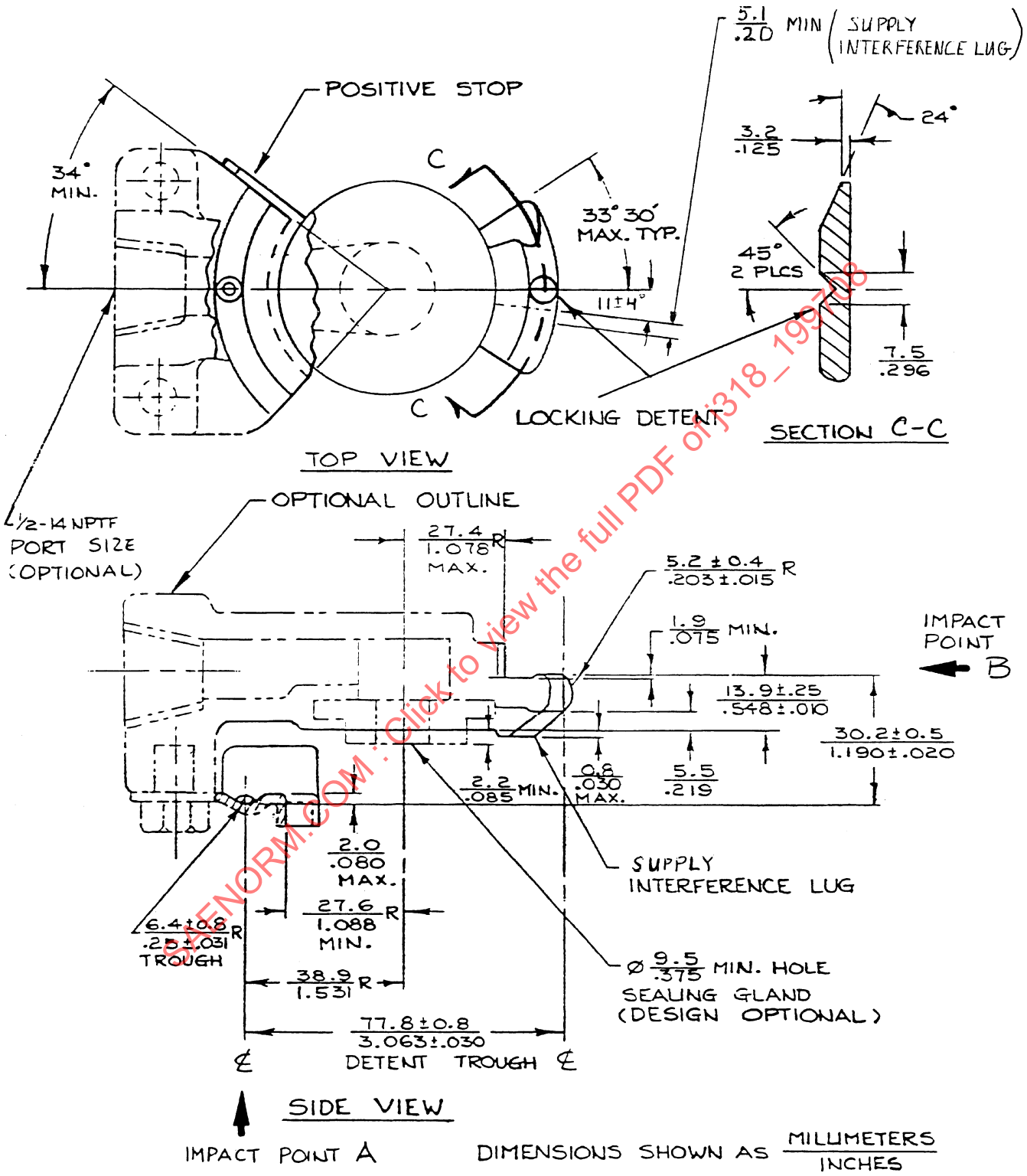

FIGURE 2—SUPPLY (EMERGENCY) AIR BRAKE COUPLER

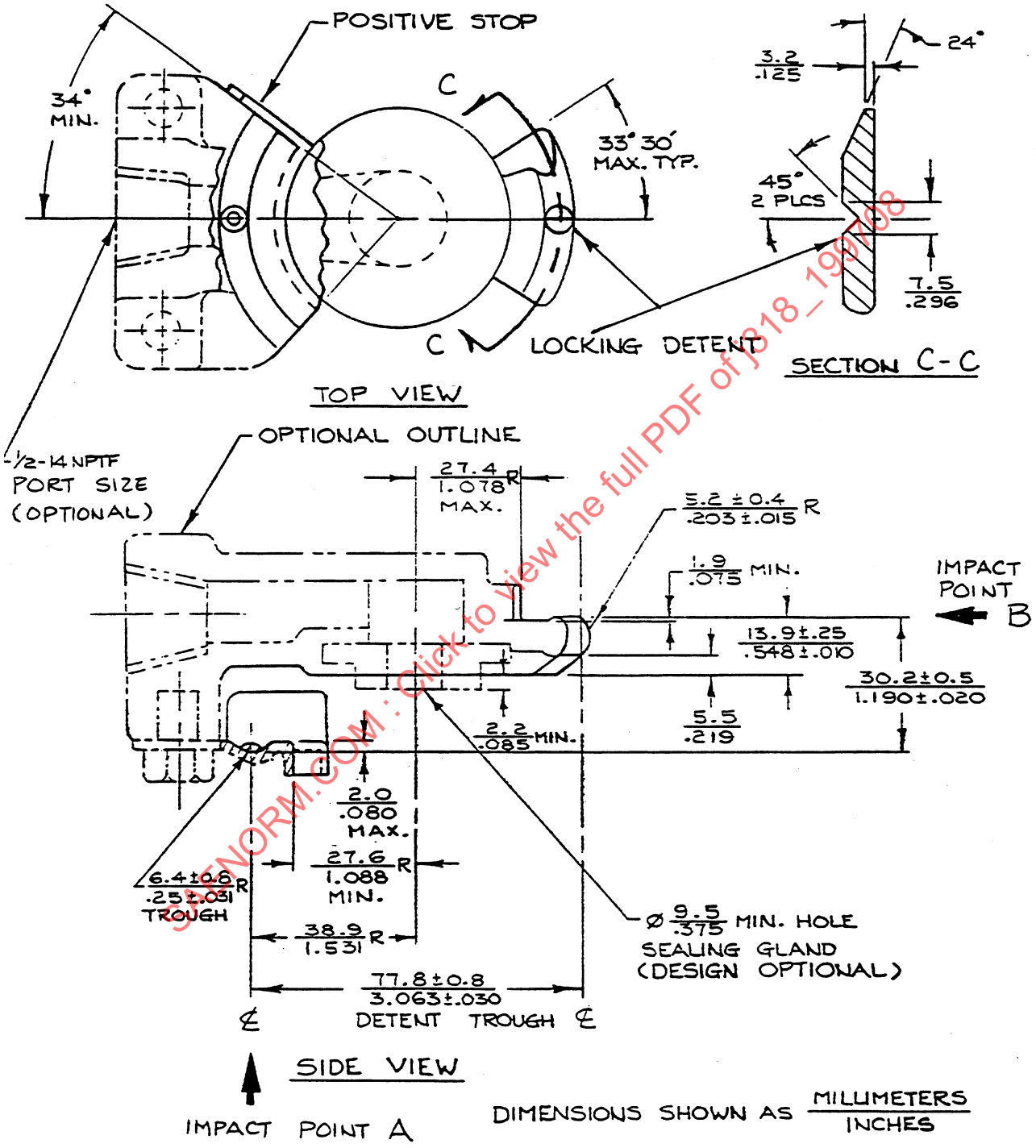

FIGURE 3—UNIVERSAL AIR BRAKE COUPLER

4. Test Procedure

4.1 Corrosion Resistance Test—Two new pairs of couplers (one pair properly coupled with the threaded ports(s) plugged and without internal pressure, and one pair uncoupled) shall be subjected to ASTM B117 for 96 h.

4.2 Endurance Test—A new pair of couplers shall be coupled and uncoupled in the normal manner for 2500 complete cycles at a rate (speed) of 15 to 25 cycles per minute. One complete cycle shall consist of one coupling and one uncoupling.

4.3 Break Away Test—Properly joined, a new pair of couples shall be pulled apart (10) times when connected to a line having 827 kPa ± 34 kPa (120 psi ± 5 psi) air pressure under a gradually applied load of not less than 222 N (50 lbf) nor more than 1334 N (300 lbf) along the hose axis.

4.4 Drop Test—Two new couplers shall be dropped from 1.8 m (6 ft) minimum onto concrete surface immediately after exposure to a temperature of –40 °C ± 3 °C (40 °F ± 5 °F) for a minimum of 6 h. Orientation of the couplers shall be such that the couplers impact the concrete surface at points A and B as indicated in Figures 1 to 3.

4.5 Elevated Temperature—Two new pairs of couplers (one properly coupled and one uncoupled) shall be exposed to a temperature of +70 °C ± 3 °C (+158 °F ± 5 °F) for a minimum of 24 h.

4.6 Low Temperature—Two new pairs of couplers (one properly coupled and one uncoupled) shall be exposed to a temperature of –40 °C ± 3 °C (–40 °F ± 5 °F) for a minimum of 6 h.

***5. Performance Requirements*—**After standard completion of each test procedure shown under Section 4, the coupler(s) shall satisfy each of the following performance requirements.

5.1 Coupling and Uncoupling Torque Performance—The torque required to uncouple a pair of couplers in a normal manner at an ambient temperature of +24 °C ± 8 °C (+75 °F ± 15 °F) and at 689 kPa ± 34 kPa (100 psi ± 5 psi) air pressure shall be 11.3 Nm ± 5.6 Nm (100 lbf-in ± 50 lbf-in). The torque required to couple and uncouple a pair of couplers at an ambient temperature of +24 °C ± 8 °C (+75 °F ± 15 °F) and at 0 kPa (0 psi) air pressure shall be 11.3 Nm ± 5.6 Nm (100 lbf-in ± 50 lbf-in).

5.2 Leak Rate—A pair of coupler halves, when joined properly is allowed a maximum leak rate of 50 SCCM of free air at 827 kPa ± 34 kPa (120 psi ± 5 psi) air pressure and ambient temperature of +24 °C ± 8 °C (+75 °F ± 15 °F).

6. Performance Test

6.1 Corrosion Resistance—After being tested per 4.1, the couplers shall meet the coupling and uncoupling torque requirements per 5.1 and leak rate requirements per 5.2.

6.2 Endurance Cycle—After being tested per 4.2, the couples shall meet the coupling and uncoupling torque requirements per 5.1 and leak rate requirements per 5.2.

6.3 Breakaway—After being tested per 4.3, the couplers shall meet the coupling and uncoupling torque requirements per 5.1 and leak rate requirements per 5.2.

6.4 Drop Test—After being tested per 4.4, the couplers shall meet the coupling and uncoupling torque requirements per 5.1 and leak rate requirements per 5.2.

6.5 Elevated Temperature Test—While still at temperature, after being tested per 4.5, the couplers shall meet the coupling and uncoupling torque performance per 5.1 on the uncoupled pair and the leak rate performance per 5.2 on the coupled pair.