

# CGA

Compressed Gas Association

The Standard For Safety Since 1913

**CGA C-23—2018**  
**STANDARD FOR INSPECTION**  
**OF DOT TC 3 SERIES AND**  
**ISO 11120 TUBE NECK**  
**MOUNTING SURFACES**

SECOND EDITION

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Work Item 15-004  
Cylinder Specifications Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

NOTE—Appendix B (Normative) is a requirement.

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## 1 Introduction

The design details of tube trailers, tube modules, and tube bundles (equipment) vary depending on the specific manufacturer of the unit. In the United States and Canada, tube bundles used to transport high pressure gases usually have a steel bulkhead at each end of the tube bundle. This bulkhead provides structural support for the tubes. The connection between the bulkhead and the tubes is typically affected by the use of a mounting flange that threads on to the neck of the tube and is subsequently bolted to the bulkhead of the trailer (see Figure 1).

For additional information on design considerations for tube trailers, see CGA TB-25, *Design Considerations for Tube Trailers* [1].<sup>1</sup>

Regardless of the specific mounting configuration, the effects of environmental corrosion on the threaded interface coupled with the dynamic loading and vibration caused by over-the-road transportation can result in the gradual degradation of the mounting threads on the tube. If left unchecked, this gradual degradation can lead to excessive wear on the mounting threads that can drastically reduce the structural strength of the threaded connection creating a potentially unsafe condition. This is especially true in designs where these mounting threads are the primary means of restraint for the tube.

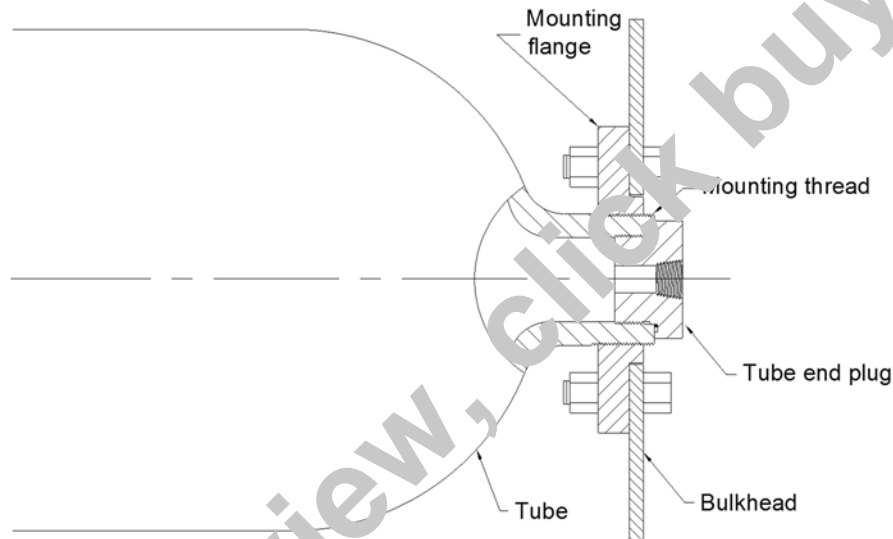


Figure 1—Illustration of mounting of tube using mounting flange

## 2 Scope

This publication applies to the inspection and evaluation of DOT/TC 3-Series and ISO 11120 tubes 12 ft (3.7 m) or longer with an outside diameter greater than or equal to 18 in (457 mm) that are supported by the neck mounting surface. It provides methods to assess the integrity of tube necks including, but not limited to, mounting threads, pin or hex screw marks, and other damage to identify rejectable tubes. Tubes with a smaller diameter are outside the scope of this publication.

This publication also applies if a saddle unit is being reconfigured into a unit supported by mounting threads.

<sup>1</sup> References are shown by bracketed numbers and are listed in order of appearance in the reference section.