CGA C-23—2012

INSPECTION OF TUBE NECK MOUNTING SURFACES

FIRST EDITION

COMPRESSED GAS ASSOCIATION, INC.

DEDICATION

This publication is dedicated in memory of Andrew Lee, who served as chair of the task force that developed this publication.

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Work Item 07-155
Cylinder Specifications Committee

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 effected 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].[1]

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.

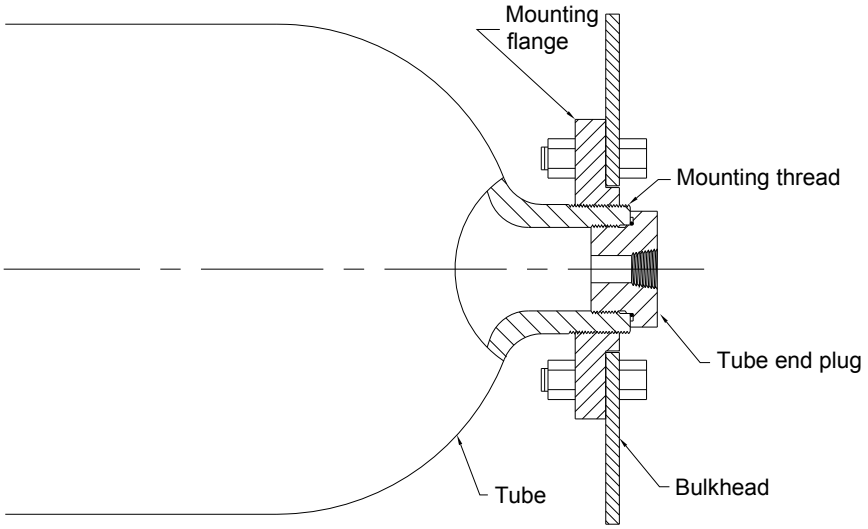

Figure 1—Illustration of mounting of tube using mounting flange

2 Scope

This publication applies to the inspection and evaluation of tubes 12 ft or longer with an outside diameter greater than or equal to 18 in that are supported by the neck mounting surface. Tubes with a smaller diameter are outside the scope of this publication. It provides methods to assess the integrity of tube necks including but not limited to mounting threads, pin or set screw marks, and other damage to identify rejectable tubes.

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

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Bulkhead

Vertical steel plate located at one or both ends of the tube bundle on the equipment that provides structural support for the mounting of the tubes.

[1] References are shown by bracketed numbers and are listed in order of appearance in the reference section.