

CCE COORDINATION BULLETIN

BULLETIN NUMBER 2011-3
July 1, 2011

DIN STANDARDS FITTINGS COMPLIANCE

The following guidance shall be used by CCEs when performing TPV evaluations. This guidance is effective immediately upon receipt and shall be used until revoked or included in an update of the *TPV Manual*.

INTRODUCTION

This CCE Coordination bulletin, prepared by Andy Timperley, is for use by CCEs as guidance when inspecting DIN Standard fittings for compliance with 3-A Sanitary Standards for Fittings and Connections, Number 63-, where such fittings are to be provided as end connections or pipe fittings options on equipment undergoing a TPV.

SCOPE

This bulletin defines specific inspection criteria, as applicable, with illustrations, to assist CCEs when conducting TPV inspections on equipment, including pipe fittings and end connection options, according to DIN Standards in order to verify that the design is in conformance with 3-A Sanitary Standard 63-. This bulletin does not change any provisions of 3-A Sanitary Standard for Fittings and Connections, Number 63-, nor is it intended to assist in the granting of any DIN fitting authorization to independently display a 3-A Symbol.

REFERENCES (Informative)

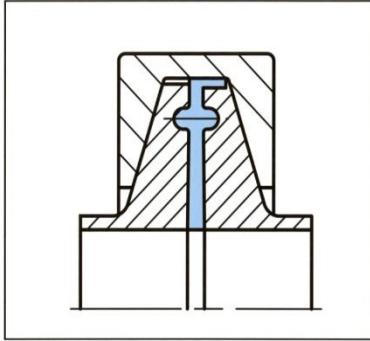
1. Position paper of the EHEDG Test Methods Subgroup: Hygienic process connections to use with hygienic components and equipment. Latest revision available from: www.ehedg.org
2. Presentation given by Andy Timperley entitled 'Sanitary Couplings' at the Annual 3-A Education Day during the 3-A Annual Meeting in May 2010. Available from: 3-A SSI Staff.

SUMMARY OF DIN STANDARD CONNECTIONS WITH REQUIRED INSPECTION CRITERIA

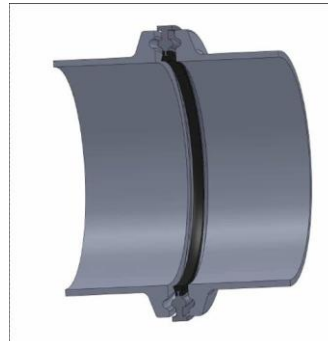
The following list is not exhaustive, but includes the most commonly encountered DIN Standard connections used in hygienic applications.

DIN 32676

Design is based on proprietary ‘Tri-Clamp’ fittings, similar to ISO 1127, ISO 2852 (ASME BPE), BS4825 Part 3, etc., and this Standard differs only in ferrule dimensions for mating with metric specification tube diameters. Clause D6.3 in Standard 63- allows for non-standard ID tubing to be used for special applications, as identified in Clause 6.2.2, provided the dimensions are selected to mate with the internal diameter of the connected equipment or counterpart. These connections require no supplemental inspection criteria in addition to those already prescribed in Standard 63-.



General arrangement, not to scale.

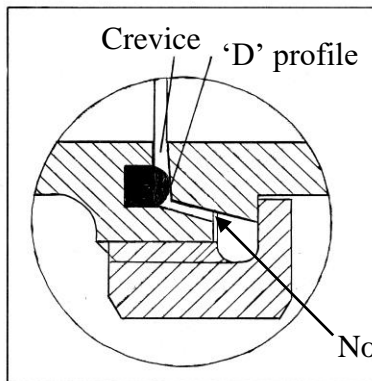


T-seal gasket from Combifit International B.V.

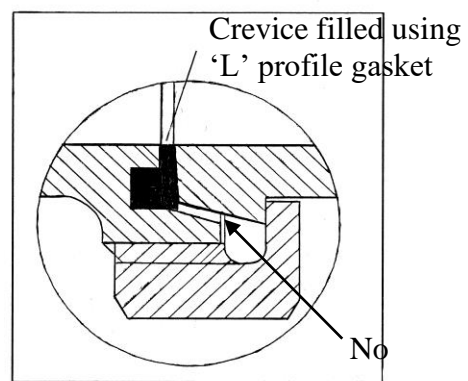
Note: These connections fitted with T-seal gaskets control gasket compression and provide positive alignment to create a substantially flush joint within $\pm 1/124$ inch (± 0.2 mm).

DIN 11851

Design is based on a profile seal retained in a groove and does not comply with Standard 63- when assembled with the following gasket profiles:



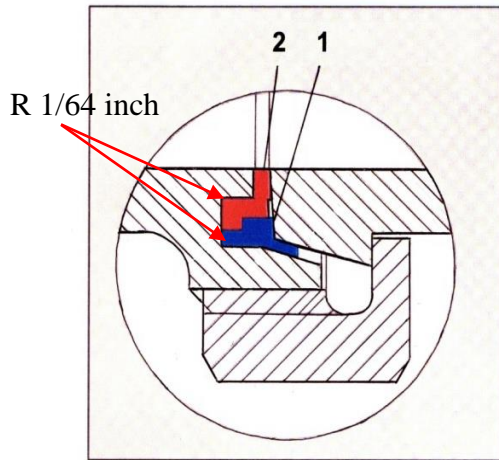
Crevice evident in assembly and no alignment



Crevice filled with ‘L’ profile gasket but no alignment

Note: Can be over tightened to create metal to metal contact on left-hand version or cut gasket lip off to enter product stream on right hand version.

DIN 11851 connections may be fitted with commercially available ‘upgrade’ gaskets in order to comply with the requirements of Standard 63- as illustrated in the following diagrams. However, the gasket retaining groove profile may or may not contain the required radius of 1/64 in. (0.397 mm) as manufactured. CCEs shall determine that the correct groove radius has been applied in the areas, as indicated on the following drawings, using a suitable radius gauge.



1: AIST 316L support ring 2: Moulded elastomer gasket

Diagrams of gasket System from Siersema Komponenten System (S.K.S.) B. V., the Netherlands, showing two-part ‘upgrade’ gasket assembly for Standard DIN 11851 ferrules and radius inspection points in gasket retaining groove.

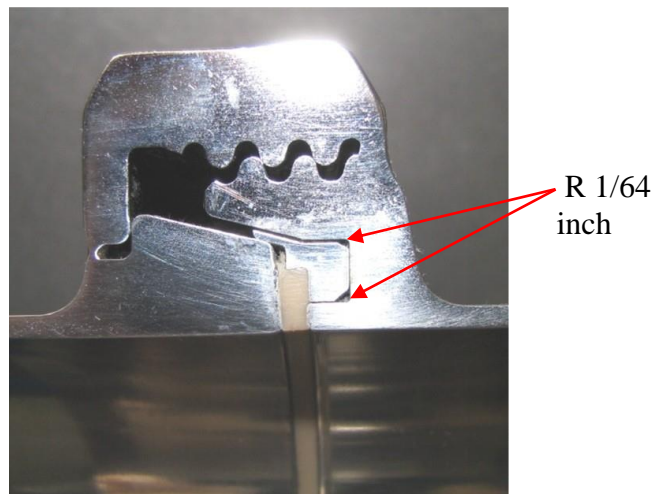


Diagram of ASEPTO-STAR k-flex gasket from Kieselmann GmbH, Germany, showing one-piece bonded ‘upgrade’ gasket for Standard DIN 11851 ferrules and radius inspection points in the gasket retaining groove.

DIN 11864 Form A

Design is based on an O-ring seal retained in a high precision groove formed between two ferrules. The assembly is held together with a threaded nut, bolted flanges or a 'V' clamp; these assembly methods are designated -1, -2 and -3, respectively. The O-ring groove profile is designed for use with O-rings having 3.5 mm or 5.0 mm diameter, depending on ferrule diameter, and both versions have a radius provided in both parts well in excess of the minimum groove radii requirements of Standard 63-. These connections require no supplemental inspection criteria in addition to those already prescribed in Standard 63-.

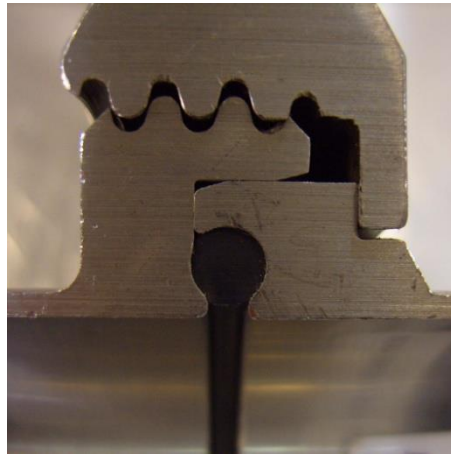
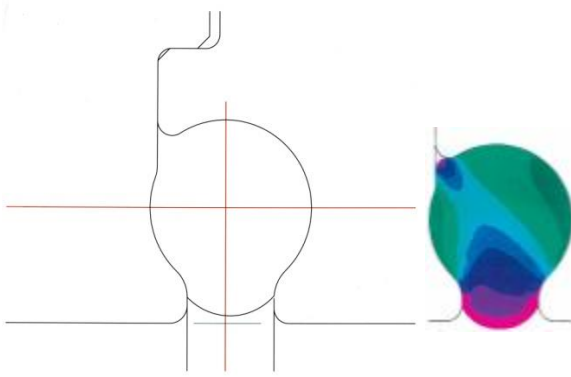


Diagram of DIN 11864-1: 2008, Form A, screwed version.

DIN 11864 Form B

Design is based on a profile seal retained in a high precision groove formed between two ferrules. The assembly is held together with a threaded nut, bolted flanges or a 'V' clamp; these assembly methods are designated -1, -2 and -3 respectively. The gasket retaining groove profile may or may not contain the required radius of 1/64 in. (0.397 mm) as manufactured. CCE's shall determine that the correct groove radius and locating recess radius has been applied in the areas indicated on the illustration using a suitable radius gauge.

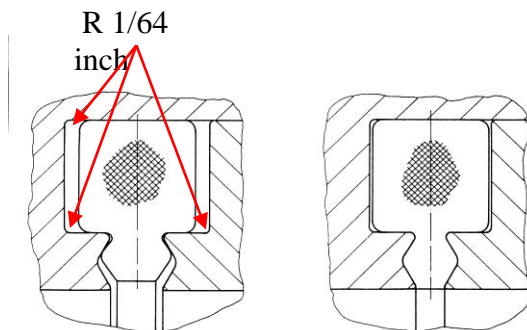


Diagram of DIN 11864-2: 2008, Form B, flanged version and radius inspection points.

SUMMARY

The aforementioned DIN Standard fittings and connections comply with the requirements of 3-A Sanitary Standard 63- when constructed correctly in accordance with the specific inspection criteria noted on the preceding diagrams and fitted with the correct gaskets. Finally, The CCE shall determine whether the manufacturer of the equipment supplies accompanying gaskets with the fittings and/or the equipment and ensure that they specify in the Instruction Manual the continuing use of the correct gasket variants, constructed from 3-A compliant product contact materials, as applicable to maintain 3-A Symbol Authorization.