

Aerospace series - Tie rod with integrated bolts - Part 2:  
Overview construction kit

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 4691-2:2018 sisaldab Euroopa standardi EN 4691-2:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 4691-2:2018 consists of the English text of the European standard EN 4691-2:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.01.2018.	Date of Availability of the European standard is 10.01.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 49.035

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

**Aerospace series - Tie rod with integrated bolts - Part 2:  
Overview construction kit**

Série aérospatiale - Bielle avec axes intégrés - Partie 2:  
Vue d'ensemble

Luft- und Raumfahrt - Zug-Druck Stange mit  
integrierten Bolzen - Teil 2: Baukastenübersicht

This European Standard was approved by CEN on 25 June 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>		<b>Page</b>
<b>European foreword</b> .....		<b>3</b>
<b>Introduction</b> .....		<b>4</b>
<b>1</b>	<b>Scope</b> .....	<b>5</b>
<b>2</b>	<b>Normative references</b> .....	<b>5</b>
<b>3</b>	<b>EN 4693: Assembly code A, B and C</b> .....	<b>5</b>
<b>4</b>	<b>EN 4694: Assembly code D, E and F</b> .....	<b>7</b>
<b>5</b>	<b>EN 4695: Assembly code G, H and K</b> .....	<b>8</b>
<b>6</b>	<b>EN 4692: Locking clips</b> .....	<b>9</b>
<b>Annex A (informative) Standard evolution form</b> .....		<b>12</b>

## European foreword

This document (EN 4691-2:2018) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2018 and conflicting national standards shall be withdrawn at the latest by July 2018.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom

## Introduction

Aerospace and Defence Standardization (ASD-STAN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent:

- USA: US 8371767;
- China: CN 10104431;
- Japan: JP 4885140;
- Russia: RU 2389914;
- South Africa: ZA 2007/03913;
- Canada: 2584387;
- South Korea: 7011559.

ASD-STAN takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured ASD-STAN that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ASD-STAN. Information may be obtained from:

GMT Gummi-Metall-Technik GmbH  
Liechtersmatten 5  
D-77815 Bühl

TRIGUM Engineering GmbH  
Brunskamp 4  
D-21220 Seevetal/Maschen

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. ASD-STAN shall not be held responsible for identifying any or all such patent rights.

## 1 Scope

This European Standard presents the construction kit of rod assemblies for aerospace applications with two adjustable ends with integrated bolts for interior and sub structure in the temperature range  $-55\text{ }^{\circ}\text{C}$  to  $85\text{ }^{\circ}\text{C}$ .

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 4692, *Aerospace series — Tie rod with integrated bolts — Locking clip*

EN 4693, *Aerospace series — Tie rod with integrated bolts — Assembly code A, B and C*

EN 4694, *Aerospace series — Tie rod with integrated bolts — Assembly code D, E and F*

EN 4695, *Aerospace series — Tie rod with integrated bolts — Assembly code G, H and K*

## 3 EN 4693: Assembly code A, B and C

Assembly code A, B and C are shown in Figure 1, Figure 2 and Figure 3. These parts are designed for lower tension and compression loads, rod diameter  $d_1 = 20\text{ mm}$ .

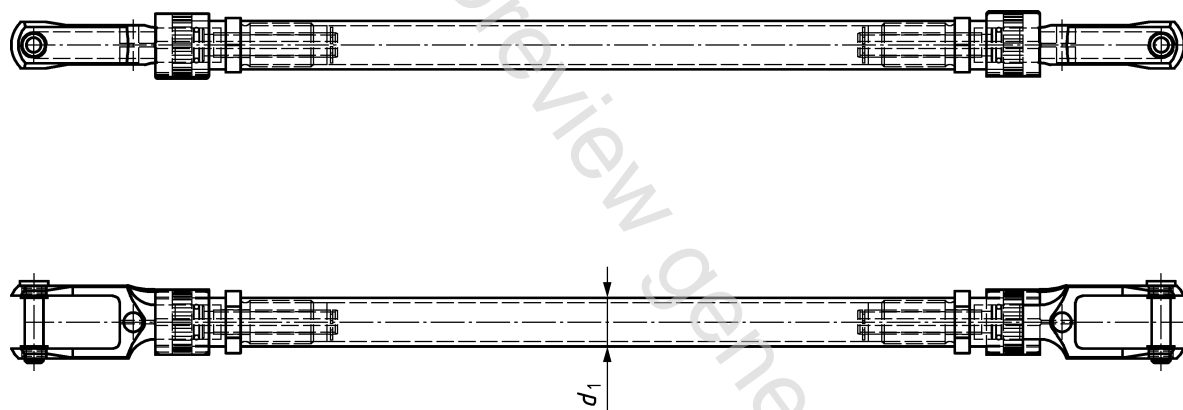


Figure 1 — Assembly code A