



BSI Standards Publication

# **Aerospace series — Cable outlet accessories for circular and rectangular electrical and optical connectors**

Part 038: Manual installation tool, style Z, for installation of stainless steel shield termination band EN 3660-033, to cable outlet accessories — Product standard

**National foreword**

This British Standard is the UK implementation of EN 3660-038:2013.

The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013.  
Published by BSI Standards Limited 2013.

ISBN 978 0 580 80151 8

ICS 49.060

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2013.

**Amendments issued since publication**

Date	Text affected
------	---------------

---

EUROPEAN STANDARD

**EN 3660-038**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2013

ICS 49.060

English Version

**Aerospace series - Cable outlet accessories for circular and rectangular electrical and optical connectors - Part 038: Manual installation tool, style Z, for installation of stainless steel shield termination band EN 3660-033, to cable outlet accessories - Product standard**

Série aéronautique - Accessoires arrière pour connecteurs circulaires et rectangulaires électriques et optiques - Partie 038: Outil d'installation manuel, style Z, pour l'installation de bande en acier inoxydable EN 3660-033, pour accessoires arrière - Norme de produit

Luft- und Raumfahrt - Endgehäuse für elektrische und optische Rund- und Rechtecksteckverbinder - Teil 038: Handzange, Bauform Z, Installation, Edelstahl-Schirmanschlußband, EN 3660-033 an Endgehäuse - Produktnorm

This European Standard was approved by CEN on 27 October 2012.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

Page

Foreword.....	3
1 <b>Scope</b> .....	4
2 <b>Normative references</b> .....	4
3 <b>Terms and definitions</b> .....	4
4 <b>Characteristics</b> .....	4
5 <b>Identification</b> .....	7
6 <b>Marking</b> .....	7

## Foreword

This document (EN 3660-038:2013) 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 2013, and conflicting national standards shall be withdrawn at the latest by July 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard defines a manual banding tool style Z, for terminating steel banding bands according to EN 3660-033 to cable outlet accessories, securing individual and/or overall screens.

## 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 3660-001:2006, *Aerospace series — Cable outlet accessories for circular and rectangular electrical and optical connectors — Part 001: Technical specification*

EN 3660-033, *Aerospace series — Cable outlet accessories for circular and rectangular electrical and optical connectors — Part 033: Stainless steel banding band, style Z, for attachment of individual and/or overall screens to cable outlets — Product standard*<sup>1)</sup>

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 3660-001:2006 apply.

## 4 Characteristics

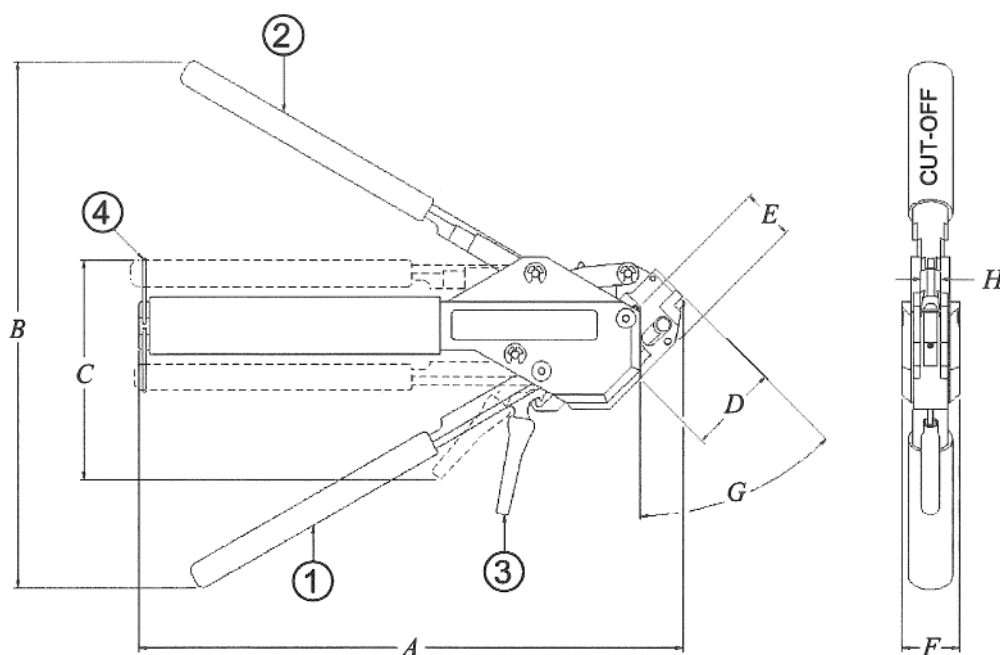
### 4.1 Dimensions and mass

Tool, see Figure 1 and Table 1.

Verification inspection gauge, see Figure 2 and Table 2.

---

1) In preparation at the date of publication of this standard.



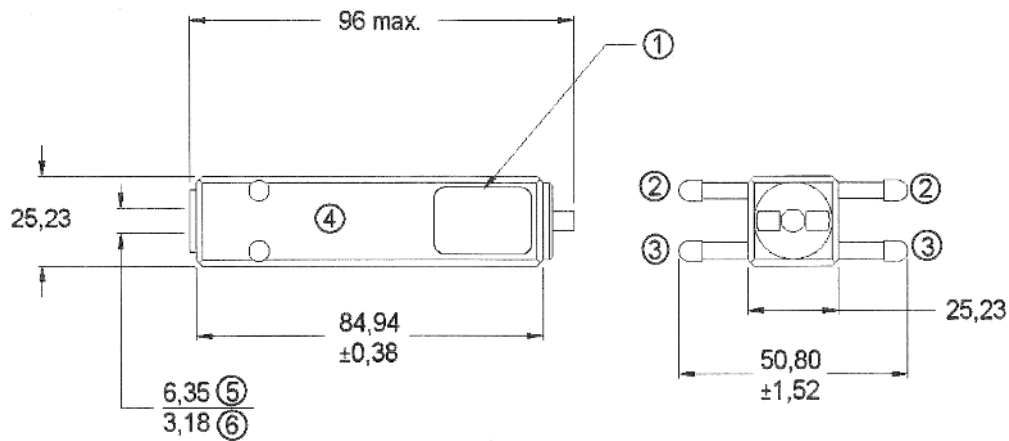
**Key**

- 1 Operation handle
- 2 Cut-off handle
- 3 Tension release lever
- 4 Two hinges to facilitate storage

**Figure 1**

**Table 1 — Tool variant**

Variant No.	Open position		Closed position <i>C</i> nom. mm	<i>D</i> nom. mm	<i>E</i> nom. mm	<i>F</i> nom. mm	<i>G</i> nom. degrees	<i>H</i> nom. mm	Mass g max.	Used to terminate EN3660-033 band variants
	<i>A</i>	<i>B</i>								
01	171,5	170,4	74,4	35,6	20,6	23,4	45°	11,4	1 000	A + B
02	171,5	170,4	74,4	35,6	20,6	23,4	45°	5,08	1 000	C + D



### Key

- 1 Inspection sticker (use to check the hand tool to value noted on calibration sticker)
- 2 Red 2 places
- 3 Green 2 places
- 4 Verification, inspection gauge
- 5 Dimension applicable to EN3660-38-01A verification inspection gauge.
- 6 Dimension applicable to EN3660-38-02B verification inspection gauge.

Figure 2

Table 2 — Verification inspection tension gauge data

Code letter	Description
A	verification inspection tension gauge for EN3660-038-01 band installation hand tool
B	verification inspection tension gauge for EN3660-038-02 band installation hand tool

## 4.2 Tool-operation

Band tool normal linear force with a double wrapped band is  $(667 \pm 22)$  N for the Variant 01 tool and  $(356 \pm 22)$  N for the Variant-02 tool.

Both automatically stop the tightening process as soon as the preset linear force value has been reached. Thereafter the excess band is cut and folded up using the second tool handle.

## 4.3 Characteristics

4.3.1 The tool shall have no protrusions, sharp edges, or sharp corners.

4.3.2 The tool shall be designed to terminate EN 3660-033 bands without the use of another tool or device to complete the connector cable outlet band termination process.

4.3.3 Life cycle except the total number of tension cycles shall be 10.000.



- 4.3.4** The operation handle shall be designed with a mechanical means to allow the operation handle to return to the open position, shall facilitate grasping, and the grasping portion of the handle shall be of a contrasting colour.
- 4.3.5** The operation handle shall be designed so it locks into place once the predetermined tension is reached and remain locked until the cut-off operation is complete.
- 4.3.6** The cut-off handle shall be designed to facilitate grasping, and the gripping portion of the handle shall be of a contrasting colour.
- 4.3.7** The tool shall be designed with a thumb actuated tension release lever for easy repositioning of the band during installation.
- 4.3.8** The tool shall not produce any metal shavings during band installation tensioning or during the cut-off operation. The spent band material shall be retained in the tool until manually removed.
- 4.3.9** The tool shall be calibrated to a predetermined tension setting and provide a means to periodically check and re-calibrate as required.
- 4.3.10** The tool shall provide a handle means to facilitate storage in a minimum amount of space with said means requiring a manual operation to retain the handles in a closed position and allow the handles to retract when said means are released.
- 4.3.11** Spring return of handle during band installation process.
- 4.3.12** Band gripping device.
- 4.3.13** Operation instructions shall be provided with the band tool and with the verification inspection tension gauge.
- 4.3.14** inspection tension gauge is supplied as a separate part number. Refer to Table 2 for part number ordering information.

EXAMPLE EN3660-038-1A = only the verification inspection tension gauge is supplied for use with the EN3660-038-01 band installation tool.

## 5 Identification

EXAMPLE

Description block	Identity block
<b>BANDING TOOL</b>	<b>EN3660-03801A</b>
Number of this standard _____	
Tool variant No., see Table 1 _____	
Verification/inspection gauge, see Table 2 _____	

## 6 Marking

See EN 3660-001.





# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [bsmusales@bsigroup.com](mailto:bsmusales@bsigroup.com).

## BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

## Useful Contacts:

### Customer Services

**Tel:** +44 845 086 9001

**Email (orders):** [orders@bsigroup.com](mailto:orders@bsigroup.com)

**Email (enquiries):** [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscriptions

**Tel:** +44 845 086 9001

**Email:** [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com)

### Knowledge Centre

**Tel:** +44 20 8996 7004

**Email:** [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright & Licensing

**Tel:** +44 20 8996 7070

**Email:** [copyright@bsigroup.com](mailto:copyright@bsigroup.com)



...making excellence a habit.™