

Accessory drives and mounting flanges (Metric sizes) —

Part 1: Design criteria

ICS 49.035; 49.050

National foreword

This British Standard reproduces verbatim ISO 8399-1:1998 and implements it as the UK national standard.

The UK participation in its preparation was entrusted to Technical Committee ACE/14, Aerospace details and parts, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO title page, page ii, pages 1 to 3 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

This British Standard, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 February 1999

© BSI 05-1999

ISBN 0 580 30327 6

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
National foreword	Inside front cover
Foreword	ii
1 Scope	1
2 Normative references	1
3 Installation and removal	1
4 Transfer tubes and locating and/or torque-reaction pins	1
5 Coupling clamps	1
6 Spline drives	1
7 Sealing	2
8 Spline lubrication	2
9 Rotation of the shaft	2
10 Agreements between manufacturers	2
11 Designation	2
Figure 1	3

INTERNATIONAL
STANDARD

ISO
8399-1

First edition
1998-12-01

**Aerospace — Accessory drives and
mounting flanges (Metric series) —**

Part 1:
Design criteria

*Aéronautique et espace — Fixation et entraînement des équipements
(série métrique) —*

Partie 1: Critères de conception



Reference number
ISO 8399-1:1998(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8399-1 was prepared by Technical Committee ISO/TC 20, *Aerospace*, Subcommittee SC 12, *Mechanical system parts*.

ISO 8399 consists of the following parts, under the general title *Aerospace — Accessory drives and mounting flanges (Metric series)*:

- *Part 1: Design criteria;*
- *Part 2: Dimensions.*

1 Scope

This part of ISO 8399 establishes the design criteria for accessory drives and mounting flanges with quick attach/detach provisions primarily intended for use in aircraft gearboxes or engine accessories.

NOTE Some design criteria are subject to agreement between the engine/gearbox manufacturer and the accessory manufacturer (see clause 10).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8399. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8399 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3601-1:1988, *Fluid systems — Sealing devices— O-rings — Part 1: Inside diameters, cross-sections, tolerances and size identification code.*

ISO 4156:1981, *Straight cylindrical involute splines — Metric module, side fit — Generalities, dimensions and inspection.*

ISO 8399-2:1998, *Aerospace — Accessory drives and mounting flanges (Metric series)— Part 2: Dimensions.*

ISO 9214:—, *Aerospace — V-retainer clamps for accessory drives and mounting flanges — Geometrical configuration and dimensions¹⁾.*

ISO 13715:1994, *Technical drawings — Corners — Vocabulary and indication on drawings.*

3 Installation and removal

3.1 In order to facilitate installation, the protrusion length of the splined drive shall be such that the splines are engaged by at least 5 mm before the transfer tube or locating pin becomes engaged in their respective housings.

3.2 It shall be possible to remove the accessories while the engine or gearbox remains installed.

4 Transfer tubes and locating and/or torque-reaction pins

4.1 All transfer tubes and locating pins shall be retained in the accessory flange.

The accessory flange manufacturer is responsible for the method of retention and supply of transfer tubes or locating pins.

4.2 Transfer tubes or locating pins shall accept torque reaction. If other devices are necessary, they shall be defined by agreement between the engine/gearbox manufacturer and the accessory manufacturer. The use of transfer tubes for torque reaction shall be limited to those applications where fluid flows, fluid pressure and reaction torque requirement are minor.

5 Coupling clamps

Specifications relating to coupling clamps are dealt with in ISO 9214.

The space envelope of coupling clamps and the corresponding accessibility required for their installation shall be taken into account.

6 Spline drives

6.1 The accessory shall be driven by an involute drive spline.

The dimensions of the shaft and splines shall be as specified in ISO 4156 and ISO 8399-2. The spline length shall be as specified in ISO 8399-2.

Corners are indicated in Figure 1 in accordance with ISO 13715.

6.2 The accessory is provided with a drive shaft with radial clearance.

6.3 The accessory shall be capable of being operated satisfactorily with the pitch diameter of the spline on its input shaft displaced by a maximum of 0,15 mm from the spigot diameter.

¹⁾ To be published.

Deviation from squareness caused by a maximum displacement of 0,15 mm, in any direction, of the drive shaft axis with respect to the axis defined by the bearing face and the spigot diameter shall not exceed $3//100$ (in accordance with Figure 1).

7 Sealing

7.1 Sealing rings with dimensions as specified in ISO 3601-1 shall be used for the sealing of transfer tubes and spigots.

The sealing ring size and material shall be selected by the engine/gearbox manufacturer.

7.2 If it is likely that oil leakage from the accessory onto the interface cavity may occur, the leakage shall not exceed a rate of 2 ml/h and if necessary the accessory shall be provided with the means for draining the engine or gearbox cavity.

7.3 Leakage from the drive shaft seal into the interface cavity shall not exceed 2 ml/h.

7.4 No provision for oil recovery or recirculation in the event of excessive leakage is specified for accessories in accordance with ISO 8399. However, should a draining device prove to be necessary, it shall be subject to agreement between the engine/gearbox manufacturer and the accessory manufacturer.

7.5 Seals shall be compatible with all fluid types present in the engine or gearbox cavity.

8 Spline lubrication

Arrangements concerning the lubrication of splines shall be subject to agreement between the engine/gearbox manufacturer and the accessory manufacturer.

9 Rotation of the shaft

The rotation of the shaft shall be defined as viewed looking at the bearing face (in accordance with Figure 1) and shall be indicated by one of the following markings:

- clockwise: CW
- counter-clockwise: CCW

10 Agreements between manufacturers

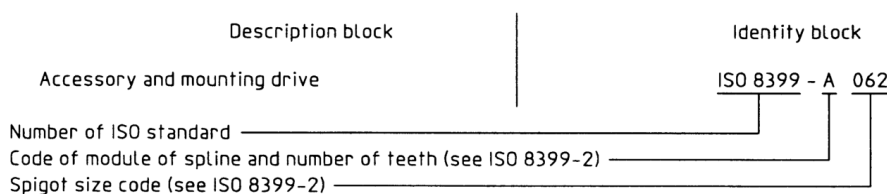
The following design criteria shall be subject to agreement between the engine/gearbox manufacturer and the accessory manufacturer:

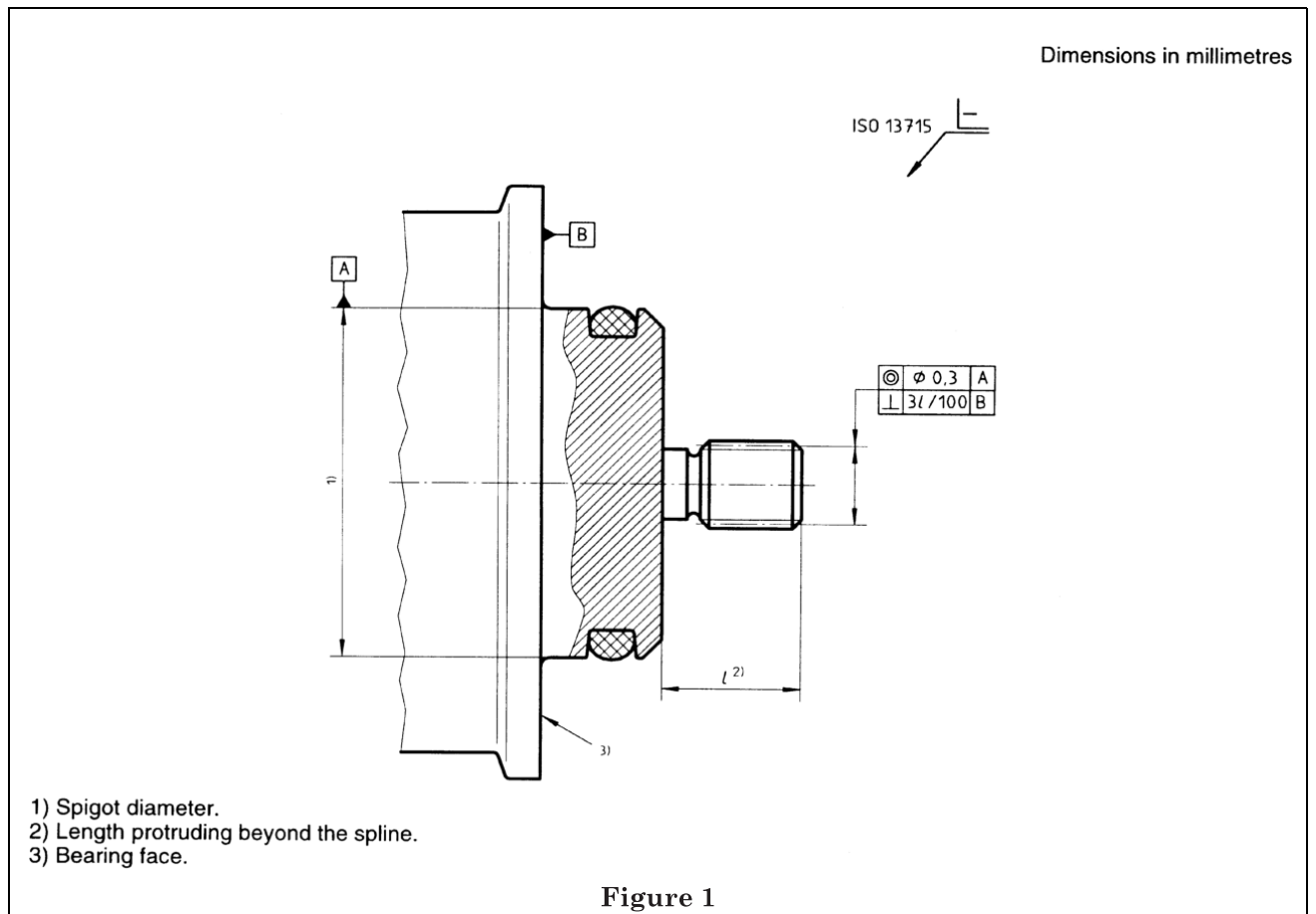
- a) angular spacing of oil transfer tubes or locating pins;
- b) requirements relating to torque reaction by other devices, if necessary (in accordance with 4.2);
- c) arrangements for lubricating the spline drive (in accordance with clause 8);
- d) the method for preventing drive overload;
- e) the location, in either the accessory or the drive, of the accessory/drive interface cavity (in accordance with 7.4).

11 Designation

Accessory drive and mounting flanges shall be designated by the identity block as shown in the following example

EXAMPLE





**BS A 328-1:
1999
ISO 8399-1:
1998**

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover.
Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre.
Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration.
Tel: 020 8996 7002. Fax: 020 8996 7001.

Copyright

Copyright subsists in all BSI publications. BSI also holds the copyright, in the UK, of the publications of the international standardization bodies. 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.

This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any other purpose than implementation then the prior written permission of BSI must be obtained.

If permission is granted, the terms may include royalty payments or a licensing agreement. Details and advice can be obtained from the Copyright Manager.
Tel: 020 8996 7070.

BSI
389 Chiswick High Road
London
W4 4AL