
**End-suction centrifugal pumps —
Dimensions of cavities for mechanical
seals and for soft packing**

*Pompes centrifuges à aspiration en bout — Dimensions des logements de
garnitures mécaniques et de tresses*

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 3069:2000

<https://standards.iteh.ai/catalog/standards/iso/ea5ef060-9fc7-4c5d-9e38-630669f03a14/iso-3069-2000>



Reference number
ISO 3069:2000(E)

© ISO 2000

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 3069:2000

<https://standards.iteh.ai/catalog/standards/iso/ea5ef060-9fc7-4c5d-9e38-630669f03a14/iso-3069-2000>

© ISO 2000

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Specification of dimensions of seal cavity and seal gland plate attachments	3
4.1 Dimensions of stuffing box and seal cavity attachments for general-purpose duties (designated ISO 3069-S).....	3
4.2 Dimensions of seal cavity and seal gland plate attachments for heavy-duty process applications (designated ISO 3069-H)	5
5 Design requirements for seal cavities	7
5.1 Vent and drain	7
5.2 Squareness and concentricity of surfaces	7
Annex A (informative) Dimensions of cavities for cartridge mechanical seals for general-purpose duties (designated ISO 3069-C).....	8
Bibliography	10

iTech Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 3069:2000

<https://standards.iteh.ai/catalog/standards/iso/ea5ef060-9fc7-4c5d-9e38-630669f03a14/iso-3069-2000>

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3069 was prepared by Technical Committee ISO/TC 115, *Pumps*, Subcommittee SC 1, *Dimensions and technical specifications of pumps*.

This second edition cancels and replaces the first edition (ISO 3069:1974), which has been technically revised by having a broadened scope and the inclusion of an alternative heavy-duty seal cavity. The previously published cavity dimensions have not been amended, but the sizes available have been increased. To meet the growing demand for cartridge mechanical seals, an informative annex has been included to assist in the rationalization of seal cavity dimensions for this product group. The dimensional recommendations have been applied to seal chambers with parallel bores, although reference is made, where appropriate, to the equivalent performance of conical shaped seal chambers.

Annex A of this International Standard is for information only.

<https://standards.iteh.ai/catalog/standards/iso/ea5ef060-9fc7-4c5d-9e38-630669f03a14/iso-3069-2000>

End-suction centrifugal pumps — Dimensions of cavities for mechanical seals and for soft packing

1 Scope

This International Standard specifies the dimensions of the seal cavity for step-balanced mechanical seals, mechanical seals suitable for straight shafts, and for soft packing, to be used with horizontal end-suction centrifugal pumps, including those conforming to ISO 2858. Although applicable to general-purpose and heavy-duty process applications, this International Standard is not intended for use in processes with slurries or with high levels of solids.

This International Standard offers two options:

- a) a range of stuffing boxes suitable for soft packing or mechanical seals for general-purpose duties up to a seal chamber limit of a gauge pressure of 16 bar;
- b) a range of larger cavities suitable for mechanical seals, including cartridge mechanical seals, for general and heavy-duty process applications, up to a seal chamber limit of a gauge pressure of 40 bar.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5199, *Technical specifications for centrifugal pumps — Class II*.

ISO 9905, *Technical specifications for centrifugal pumps — Class I*.

ISO 9908, *Technical specifications for centrifugal pumps — Class III*.

EN 12756, *Mechanical seals — Principal dimensions, designation and material codes*.

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

3.1

cartridge mechanical seal

a completely self-contained unit (including mechanical seal, gland plate, sleeve, and mating ring), pre-assembled and preset before installation

3.2

flush

flow of fluid introduced into the seal cavity on the process fluid side, in close proximity to the sealing faces, and usually used for cooling the mechanical seal and continuously removing vapour and/or contaminants from the seal cavity

3.3

gland face

mounting arrangement and equipment surface to which the seal gland plate is clamped

NOTE This is normally the seal end of the seal chamber.

3.4

seal cavity

fluid-filled space contained by the seal chamber

NOTE The mechanical seal rotates in the seal cavity.

3.5

seal chamber

component, either integral with or separate from the pump case, forming the containment between the shaft and casing

NOTE The mechanical seal is installed in the seal chamber.

3.6

seal gland plate

end plate connecting the stationary assembly of a mechanical seal to the seal chamber

3.7

spigot

male part of a joint used for accurate radial location of two machined components

3.8

stuffing box

cylindrical seal chamber, designed for the use of soft packing, for the purpose of reducing leakage along the shaft

3.9

total axial run-out tolerance

tolerance zone limited by two parallel planes, a defined distance apart, and perpendicular to the shaft datum axis

NOTE It can be measured by securing a dial indicator to the shaft, rotating it against a specified perpendicular surface (normally the gland face) and measuring the full indicated movement over several revolutions.

3.10

total radial run-out tolerance

tolerance zone limited by two coaxial cylinders, the defined radial distance apart, whose axes coincide with the datum axis

NOTE It can be measured by securing a dial indicator to the datum axis component (the shaft or seal chamber, depending on the tolerance zone to be recorded) and measuring the full indicated movement against the specified adjacent cylindrical surface over several revolutions.