

**ASME B73.3-2015**  
(Revision of ASME B73.3-2003)

# **Specification for Sealless Horizontal End Suction Centrifugal Pumps for Chemical Process**

---

**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

**ASME B73.3-2015**  
**(Revision of ASME B73.3-2003)**

# **Specification for Sealless Horizontal End Suction Centrifugal Pumps for Chemical Process**

---

**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: December 15, 2015

This Standard will be revised when the Society approves the issuance of a new edition. There will be no written interpretations of the requirements of this Standard issued to this edition.

Periodically certain actions of the ASME B73 Committee may be published as Cases. Cases are published on the ASME Web site under the B73 Committee Page at [go.asme.org/B73committee](http://go.asme.org/B73committee) as they are issued.

Errata to codes and standards may be posted on the ASME Web site under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The B73 Committee Page can be found at [go.asme.org/B73committee](http://go.asme.org/B73committee). There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting "Errata" in the "Publication Information" section.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assumes any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which precludes the issuance of interpretations by individuals.

No part of this document may be reproduced in any form,  
in an electronic retrieval system or otherwise,  
without the prior written permission of the publisher.

The American Society of Mechanical Engineers  
Two Park Avenue, New York, NY 10016-5990

Copyright © 2015 by  
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS  
All rights reserved  
Printed in U.S.A.

# CONTENTS

Foreword .....	v
Committee Roster .....	vi
Correspondence With the B73 Committee .....	vii
<b>1 Scope</b> .....	<b>1</b>
<b>2 References</b> .....	<b>1</b>
<b>3 Alternative Designs</b> .....	<b>14</b>
3.1 Extended Length Pump Design .....	14
3.2 Close Coupled Design .....	14
3.3 Alternative Design .....	14
<b>4 Nomenclature and Definitions</b> .....	<b>15</b>
4.1 Definitions of Terms .....	15
4.2 Additional Definitions .....	15
<b>5 Design and Construction Features</b> .....	<b>15</b>
5.1 Pressure and Temperature Limits .....	15
5.2 Flanges .....	16
5.3 Casing .....	16
5.4 Impeller .....	17
5.5 Internal Drive Assembly .....	18
5.6 Containment Design .....	18
5.7 Bearings, Lubrication, and Bearing Frame (MDP) .....	20
5.8 Outer Magnet Assembly (MDP) .....	20
5.9 Stator Assembly (CMP) .....	21
5.10 Materials of Construction .....	21
5.11 Auxiliary Piping .....	21
5.12 Corrosion Allowance .....	21
5.13 Direction of Rotation .....	21
5.14 Dimensions .....	25
5.15 Miscellaneous Design Features .....	25
5.16 Monitoring Devices .....	26
<b>6 General Information</b> .....	<b>26</b>
6.1 Application .....	26
6.2 Performance Curves .....	27
6.3 Tests and Inspections .....	27
6.4 Nameplates .....	31
<b>7 Documentation</b> .....	<b>31</b>
7.1 General .....	31
7.2 Requirements .....	31
7.3 Document Description .....	31
7.4 Specially Requested Documentation .....	35
<b>Figures</b>	
5.3.5.1-1 Cooling and Heating Pipe Plans .....	17
5.5.5.5-1 Plan 114 Modified .....	19
5.16.4-1 CMP Vibration Measurement Locations .....	27
7.3.1-1 Pump and Driver Outline Drawing for Separately Coupled Magnetic Drive Pumps .....	32
7.3.1-2 Pump and Driver Outline Drawing for Canned Motor Pumps .....	33

<b>Tables</b>		
1-1	Pump Dimensions for Separately Coupled Magnetic Drive Pumps .....	2
1-2	Baseplate Dimensions for Separately Coupled Magnetic Drive Pumps .....	5
2-1	Baseplate Dimensions for Close Coupled Magnetic Drive Pumps .....	7
3-1	Pump Dimensions for Canned Motor Pumps .....	9
3-2	Baseplate Dimensions for Canned Motor Pumps .....	11
5.10.1.2-1	Magnetic Drive and Canned Motor Pump Material Classification Codes .....	22
5.10.1.3-1	ASTM Material Specifications .....	24
5.11.1-1	Minimum Requirements for Auxiliary Piping Materials .....	25
6.1.5-1	Approximate Hydraulic Coverage, 50 Hz .....	28
6.1.5-2	Approximate Hydraulic Coverage, 60 Hz .....	29
6.1.6.1-1	Minimum Continuous Flow .....	30
<b>Mandatory Appendix</b>		
I	ASME Sealless Centrifugal Pump Data Sheet .....	37
<b>Nonmandatory Appendix</b>		
A	Electronic Data Exchange .....	44