**COMPLETE REVISION**
*April 2007*

Process Industry Practices
Machinery

# PIP RESP73V
# Application of *ASME B73.2 - 2003 Specification for Vertical In-Line Centrifugal Pumps for Chemical Process*

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.



**PRINTING HISTORY**

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# Application of *ASME B73.2 - 2003*
# *Specification for Vertical In-Line Centrifugal Pumps for Chemical Process*

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## Introduction

### Purpose

This Practice supplements *ASME B73.2 – 2003*, *Specification for Vertical In-Line Centrifugal Pumps for Chemical Process*. Together, this Practice and *ASME B73.2 - 2003* provide requirements to the manufacturer for design and manufacture of vertical in-line centrifugal pumps.

### Scope

This Practice describes additions, changes, and/or deletions to the requirements in *ASME B73.2 - 2003.* The section/paragraph numbers and the associated headings used in this Practice correspond to those used in *ASME B73.2-2003.* Because this Practice does not take exception to all the requirements in *ASME B73.2-2003*, the section/paragraph numbers in this Practice may not be sequential.

## References

Applicable parts of the following Practices, industry codes and standards, and references shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles will be used herein where appropriate.

### Process Industry Practices (PIP)

- PIP ELSMT01 - *AC Squirrel Cage Induction Motors (600 Volts and Below) Specification*
- PIP REIE686/API RP686 - *Recommended Practices for Machinery Installation and Installation Design*

### Industry Codes and Standards

American Gear Manufacturers Association (AGMA)

- AGMA 9000-C90 Flexible Couplings – Potential Unbalance Classification
- AGMA 9002-A86 - *Bores and Keyways for Flexible Couplings*

- American Society for Mechanical Engineers (ASME)
  - ASME B73.2 - 2003 - *Specification for Vertical In-Line Centrifugal Pumps for Chemical Process*
  - ASME B16.1 - *Cast Iron Pipe Flanges and Flanged Fittings*
  - ASME B16.5 - *Pipe Flanges and Flanged Fittings*
- American Society for Testing and Materials (ASTM)
  - ASTM A53 - *Specification for Pipe, Steel, Black, and Hot-Dipped, Zinc-Coated Welded and Seamless*
  - ASTM A193 - *Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service*

  - ASTM A269 - *Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service*
  - ASTM A276 - *Specification for Stainless and Heat-Resisting Steel Bars and Shapes*

- Deutsches Institut fur Normung (DIN)
  - DIN 50018 - *Testing In A Saturated Atmosphere In The Presence of Sulfur Dioxide*
- Hydraulic Institute
  - *Hydraulic Institute Standard HI 1.1*
- International Standards Organization (ISO)
  - ISO 1940 - *Mechanical Vibration, Balance Quality Requirements of Rigid Rotors*
- U.S. Department of Labor
  - 29 CFR 1910 - *Occupational Safety and Health Standards*

## 2. Alternative Design

***Modification - To Read as Follows:***

2.1 The quotation shall be in accordance with this Practice and purchaser's addenda. As an option, an alternate quotation may be offered if the following two conditions are met:

2.1.1 If there is a significant process or delivery advantage, a superior, more reliable pump design may be offered. The technical justification shall be provided.

2.1.2 Alternate quotation shall indicate deviations from the requirements in this Practice. Complete details of deviations shall be submitted to purchaser for review.

2.2 If the quotation indicates no deviations from the requirements in this Practice, it shall be assumed by the purchaser that the pump quoted complies fully with this Practice. Deviation to the dimensional standards shall be noted in the proposal and shall be noted on supporting dimension drawings.

## 3. Nomenclature and Definitions

3.1.1 Addition: This term is used to introduce requirement(s) that is/are additional to the requirements in *ASME B73.2- 2003.*

3.1 Auxiliary process fluid piping is piping or tubing that includes drain lines, product flushing lines, and lines for injection of external fluid.

3.2 Auxiliary cooling (heating) fluid piping is piping or tubing connected to the bearing frame, jackets, or pump supports of mechanical seal glands for the purpose of removing (adding) heat from (to) the system.