PROCESS INDUSTRY PRACTICES

TECHNICAL REVISION
September 2018

Machinery

PIP RESP003H
Specification for High Power Horizontal Centrifugal Pumps for Water Service

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.

PUBLISHING HISTORY

October 1997	*Issued*	*October 2010*	*Editorial Revision*	*September 2018*	*Technical Revision*
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February 2010	*Complete Revision*	*October 2013*	*Complete Revision*		

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Data Forms

RESP003H-D – Horizontal Centrifugal Pumps for Water Service (U.S. Customary Units)

RESP003H-DM – Horizontal Centrifugal Pumps for Water Service (SI Units)

1. Scope

This Practice provides requirements for design and manufacture of horizontal centrifugal pumps of 150 kW (200 HP) or greater used for general water services.

Comment: General water services include condensate, cooling water, demineralized water, utility water, produced water, treated water, etc.

This Practice covers pumps with service conditions within the following limits:

a. Maximum discharge pressure 35 Barg (500 psig)

b. Minimum pumping temperature 0°C (32°F)

c. Maximum pumping temperature 150°C (300°F)

d. Maximum rotational speed 3,600 rpm

Comment: For services within the capabilities of ANSI/ASME pumps, use PIP RESP73H.

Pump types covered by this Practice are broadly classified as overhung or between-bearings.

The following pump types are not included in the scope of this Practice.

a. Close coupled (i.e., impeller mounted on the motor shaft)

b. Two-stage overhung

c. Double suction overhung

Fire water pumps are covered by *NFPA 20* and are not covered by this Practice.

2. References

Applicable parts of the following Practices and industry codes and standards 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 are used herein where appropriate.

2.1 Process Industry Practices (PIP)

– PIP REDP003 - *Documentation Requirements for Centrifugal Pumps for Water Service*
– PIP REIE003 - *Guidelines for General Purpose Non-Lubricated Flexible Couplings*
– PIP REEP006 - *Pump Selection Guidelines*
– PIP REIE686A - *Machinery Installation and Installation Design Annex*
– PIP RESP002 - *Design of ASME B73.1 and General Purpose Pump Baseplates*
– PIP RESP73H - *Application of ASME B73.1 – 2012 , Specification for Horizontal End Suction Centrifugal Pumps for Chemical Process*

2.2 Industry Codes and Standards

- American Gear Manufacturers Association (AGMA)
  – AGMA 9002 - *Bores and Keyways for Flexible Couplings (Inch Series)*