



PROCESS
INDUSTRY
PRACTICES

TECHNICAL REVISION
September 2018

Machinery

PIP RESM003
Specification for Mixers and Agitators

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.

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Data Forms

RESM003-D – Mixers and Agitators Data Sheet (US Customary Units)
RESM003-DM – Mixers and Agitators Data Sheet (Metric Units)
RESM003-R – Documentation Requirements Sheet
RESM003-T – Inspection and Testing Requirements Sheet

1. Scope

This Practice describes the minimum requirements for permanently mounted, top-, bottom-, and side-entering mixers and agitators installed in pressurized or unpressurized vessels, with or without mechanical seals. This Practice does not cover requirements for portable and clamp-on light duty mixers or agitators, in-line mixers, jet-type mixers, or high-speed dispersers.

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 will be used herein where appropriate.

2.1 Process Industry Practices (PIP)

- Process Industry Practices (PIP)/American Petroleum Institute (API)
 - PIP REIE 686/API RP686 – *Recommended Practices for Machinery Installation and Installation Design*
 - PIP ELSMT01 – *AC Squirrel Cage Induction Motors (600 Volts and Below) Specification*
 - PIP REEE003 – *Guidelines for General Purpose Non-Lubricated Flexible Couplings*

2.2 Industry Codes and Standards

- American Gear Manufacturers Association (AGMA)
 - AGMA 2015-1-A01 – *Accuracy Classification System–Tangential Measurements for Cylindrical Gears*
 - AGMA 2015/915-1-A02 SUPP – *Accuracy Classification System–Tangential Measurement Tolerance Tables for Cylindrical Gears–Supplemental, Tables for AGMA 2015-1-A01*
 - AGMA 6013-A06 – *Standard for Industrial Enclosed Gear Drives*
- American Society of Mechanical Engineers (ASME)
 - ASME B1.1 – *Unified Inch Screw Threads (UN and UNR Thread Form)*
 - ASME B16.5 – *Pipe Flanges and Flanged Fittings (Steel)*
 - ASME B16.47 – *Large Diameter Steel Flanges*
- American Society for Testing and Materials (ASTM)
 - ASTM A269 – *Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service*
- ~~• Occupational Safety and Health Administration~~
 - ~~– OSHA 1910.212 – *Machinery and Machine Guarding, General requirements for all machines*~~
 - ~~– OSHA 1910.219 – *Machinery and Machine Guarding, Mechanical power transmission apparatus*~~
- International Organization for Standardization (ISO)
 - ISO 1940 – *Balance Quality of Rotating Rigid Bodies*