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**Installation and
Authorization Guide**

 *Hydraulic*
INSTITUTE
Creating Pump Standards Since 1917

www.Pumps.org

Welcome to ANSI/HI Pump Standards Version 2.2

Your CD contains the full library of *ANSI/HI Pump Standards*. Each standard includes a linked *Table of Contents* and *Index* to help you locate the information you need fast. Don't know where to look? Browse the *Master Index* by topic to find the standard(s) and page(s) you need. Your *ANSI/HI Pump Standards Version 2.2* includes:

Centrifugal Pumps

- Nomenclature and Definitions (ANSI/HI 1.1-1.2)
- Design and Application (ANSI/HI 1.3)
- Installation, Operation, and Maintenance (ANSI/HI 1.4)
- Centrifugal Pump Tests (ANSI/HI 1.6)
- Sealless Centrifugal Pumps (ANSI/HI 5.1-5.6)
- Submersible Pump Tests (ANSI/HI 11.6)
- Rotodynamic (Centrifugal) Slurry Pump (ANSI/HI 12.1-12.6)

Vertical Pumps

- Nomenclature and Definitions (ANSI/HI 2.1-2.2)
- Design and Application (ANSI/HI 2.3)
- Installation, Operation, and Maintenance (ANSI/HI 2.4)
- Vertical Pump Tests (ANSI/HI 2.6)

Centrifugal/Vertical General Guidelines

- General Guidelines (ANSI/HI 9.1-9.5)
- NPSH Margin (ANSI/HI 9.6.1)*
- Allowable Nozzle Loads (ANSI/HI 9.6.2)
- Allowable Operating Region (ANSI/HI 9.6.3)*
- Vibration Measurements and Allowable Values (ANSI/HI 9.6.4)
- Guideline for Condition Monitoring (ANSI/HI 9.6.5)
- Rotodynamic Pumps for Pump Piping (ANSI/HI 9.6.6)
- Effects of Liquid Viscosity on Rotodynamic Pump Performance (ANSI/HI 9.6.7)
- Pump Intake Design (ANSI/HI 9.8)

Reciprocating Pumps

- Nomenclature, Definitions, Application, and Operation (ANSI/HI 6.1-6.5)
- Reciprocating Pump Tests (ANSI/HI 6.6)
- Controlled-Volume Metering Pumps (ANSI/HI 7.1-7.5)
- Direct Acting (Steam) Pumps (ANSI/HI 8.1-8.5)
- Air Operated Pump (ANSI/HI 10.1-10.5)
- Air Operated Pump Test (ANSI/HI 10.6)

Rotary Pumps

- Nomenclature, Definitions, Application, and Operation (ANSI/HI 3.1-3.5)
- Rotary Pump Tests (ANSI/HI 3.6)
- Sealless Rotary Pumps for Nomenclature, Definitions, Application, Operation, and Test (ANSI/HI 4.1-4.6)

* Standard has been withdrawn; included for historical reference only

Before You Begin

The electronic version of *ANSI/HI Pump Standards Version 2.2* requires the use of Adobe® Reader® version 6.0 or higher. To use all available functionality when viewing the Standards, Adobe Reader 9.0 or higher is recommended. You can download this free software by visiting www.adobe.com, clicking on the “*Get Adobe Reader*” link, and following the installation instructions.

After you have finished installing Adobe Reader, follow the instructions in this guide to install and authorize your copy of the *ANSI/HI Pump Standards*.

The files on this CD-ROM have been encrypted to prevent unauthorized use. Decryption of the files takes place during the authorization of the Standards on your hard drive.

Important Note: To decrypt the files, you will need your 10-character alphanumeric Order ID, printed on the sticker affixed to the CD jacket. Note that Order IDs include only upper-case alphabetic characters and the zero is distinguished from the upper-case O by a diagonal slash through it.

You may use the same Order ID if you want to install the Standards for your own use on a second portable device, such as a laptop computer. It is not our intent that you use the Order ID a second time to provide a copy of the Standards to another user. Your license agreement specifically denotes you as the sole authorized user of this product.

Why are ANSI/HI Standards Encrypted?

The Hydraulic Institute has encrypted the *ANSI/HI Pump Standards Version 2.2* in PDF format to prevent their unauthorized use and/or distribution. HI develops Standards in the public interest, and relies on revenue from the sale of standards and guidelines to support the on-going activities of the Institute. Encryption is not done because of a lack of trust in HI standards users. Encryption is a necessary precaution in the age of instant communications and willingness to freely share electronic files.

ANSI/HI Pump Standards Version 2.2 — Installation and Authorization

It is strongly recommended that you close all other applications before proceeding with the installation.

1. **Please note:** Installation and authorization of the standards is specific to a single machine and login. If there are multiple users of the workstation on which the standards are installed, be sure to login to the designated userid/password when installing and accessing the standards. If you do not have administrative privileges on your computer, **Step A** and **Step B**, described below, may be completed by your administrator but **Step C**, which does not require administrative privileges, must be completed while logged in as the user who will access the standards.
2. If your computer is not connected to the Internet, please connect now before beginning the installation.
3. Place the CD-ROM in your CD drive. Installation will begin automatically in a few seconds.

If installation does not begin automatically, use Windows Explorer to navigate to the root directory of the CD-ROM and double-click the file named AUTORUN.EXE.

4. The installation software displays the Welcome screen which outlines the 3-step installation process. You must successfully complete all 3 steps — **A**, **B**, and **C** — before you will be able to view the standards on your computer.
5. Click on the link to **Step A** to install the Adobe-approved FileOpen plug-in which will enable you to authorize and view the decrypted standards once the installation is complete. Please note that you must complete this step even if you have installed an earlier release of the *ANSI/HI Pump Standards*. This is the most recent version of the plug-in and is required by the Version 2.2 release.

A pop-up will indicate that the plug-in has been installed successfully. Click **OK** to close the pop-up window. If your security policy does not allow running of Java applets, FileOpen provides alternative installation procedures at plugin.fileopen.com/all.html.

6. Returning to the Welcome screen, click on the link to **Step B** to initiate the Setup Wizard which will install the encrypted *ANSI/HI Pump Standards* on your computer. Verify that you have closed all other applications and click **Next** to proceed.
7. The *Setup Wizard* will walk you through the steps needed to install the standards on your PC.
8. When you have completed the installation, click **Finish** to return to the *Welcome* screen.
9. Click on the link to **Step C** to authorize your copy of the *ANSI/HI Pump Standards*. You will need to provide the 10-character alphanumeric Order ID exactly as it is printed on the sticker affixed to the back of the CD jacket. The authorization window also requests your e-mail address. You must be logged in with the login and password of the user who will access the standards and must be connected to the Internet in order to successfully complete this step. The installation software will launch your copy of Adobe Reader and display the authorization window. Enter the Order ID and your e-mail address and click **Authorize**.
10. If you have provided a valid Order ID and the authorization process is successful, the system will open a *ReadMe PDF*. If you receive an error message, refer to the *Troubleshooting* section.
11. You have successfully completed the installation and authorization of the *ANSI/HI Pump Standards Version 2.2*. You may wish to print the *ReadMe PDF* before closing.
12. You can access the standards either by clicking on the *desktop icon*, if you elected to create one during Setup, or by clicking the *Start button* on the *Taskbar*, then selecting *Programs, Hydraulic Institute* and *HI Standards*. Note that if you have multiple versions of Adobe Reader or Acrobat installed, you may right-click either the *desktop icon* or the *HI standards link* on the *Start menu* and click **Open With** to select the Adobe product and version you wish to use.

Transferring ANSI/HI Standards to Another Computer or Recovering from Accidental Deletion of the Standards

If the standards have been removed or made otherwise inaccessible on your computer, you will need to contact HI Technical Support at info@Pumps.org or 973.267.9700 x117 to have your authorization reset before you can re-install the standards on your computer or transfer them to another computer. You will need to provide the **Order ID** and the **email address** that were entered during the original authorization.

Transferring the standards from one computer to another is a 2-step process. First you must remove the authorization on your old computer and then you can install and authorize your standards on your new computer. When the *ANSI/HI Pump Standards Version 2.2*, were installed on your computer an *Unauthorize program* was included. From your *Program menu*, select **Hydraulic Institute** and **Unauthorize HI Standards**. You will be prompted to provide your **Order ID**. If the authorization is removed successfully a PDF will open with instructions on how to proceed with the installation.

Installation instructions vary depending upon whether your *Version 2.2* is a full install or an upgrade from an earlier version. Upgrade users will need to first install and authorize their earlier version and then apply the *Version 2.2* upgrade. Users of the full *Version 2.2* will simply install it on the new computer following the instructions provided in this guide. Detailed instructions for both types of installation are available online:

Full Version 2.2 Install: estore.Pumps.org/xfer2-2.aspx

Version 2.2 Upgrade Install: estore.Pumps.org/xfer2-2upgrade.aspx

Removing ANSI/HI Standards from Your Computer

Your *ANSI/HI Pump Standards Version 2.2* installation included an uninstaller module. From your *Program menu* select **Hydraulic Institute** and **Uninstall HI Standards**. The program will ask you to confirm your intention to uninstall and, if you agree, will remove the program group and icons from your *Program Manager/Start Menu* and delete the *Hydraulic Institute folder* from your hard disk. **Note:** if you intend to transfer the standards to another computer you should complete the authorization removal before you uninstall the standards.

Troubleshooting

Installation/Upgrade/Authorization Errors and Warnings

Error Msg: Unable to verify an authorized installation of *ANSI/HI Pump Standards 2.1* on this machine, which is required for upgrade to version 2.2.

Solution: Contact HI Technical Support.

Error Msg: The Order ID you entered is not valid. Note that the Order ID must be in upper-case. Please try again.

Solution: The Order ID provided includes only upper-case alphabetic characters and must be entered as given. The zero is distinguished from the upper case letter O by a diagonal slash through it. If repeated attempts to authorize your standards are unsuccessful, contact HI Technical Support.

Error Msg: You must enter a valid Order ID exactly as provided on the CD jacket. Please try again.

Solution: You have neglected to enter your Order ID in the authorization dialog box. Repeat the authorization step and provide your Order ID and email address as prompted. If you are upgrading to Version 2.2 you will need to provide the Order ID you were given with your original installation.

Error Msg: Authorization denied. This copy of the *ANSI/HI Pump Standards* has already been authorized on two machines.

Solution: Contact HI Technical Support to resolve.

Usage Errors:

Error Msg: This printer is not allowed for secure printing. Do you want to change your choice?

Solution: You have attempted to print a standard to an Adobe PDF printer. This is not permitted by your End User License Agreement. Select a different printer if you wish to print the Standard.

Problem: You have recently upgraded to a new version of Adobe Reader or Acrobat and some of the standards functionality is missing (ex. Print icon is not available).

Solution: Download an updated copy of the FileOpen plug-in from FileOpen Systems, Inc. at plugin.fileopen.com.

Error message not documented above:

Visit www.Pumps.org/cd_2.2 for the latest version of this guide. If you are still unable to resolve your problem please contact HI Technical Support at 973.267.9700 x117 or info@pumps.org. Include your Order ID and a detailed description of the problem.

Four Guide Books from HI



Identifying which component is causing a drop in pump suction performance or determining why vibration levels have increased can be time-consuming endeavors.

Hydraulic Institute has 4 books that inform and educate. More than 70 industry experts contributed to the thorough yet concise content of these guide books for pumping systems.

Put them in your reference library. Use them to:

- Understand how components work as a system
- Reduce the amount of energy your system uses
- Increase *Mean Time Between Repairs* (MTBR)
- Keep your liquids flowing at the required rate
- Troubleshoot new symptoms of failure
- Select the correct replacement part
- Protect the quality of your product
- Avoid unanticipated shutdowns

Order at
eStore.Pumps.org/Deal
or phone
973.267.9700 x118

Variable Speed Pumping: A Guide to Successful Applications	\$95
Pump Life Cycle Costs: A Guide to LCC Analysis for Pumping Systems	\$125
Mechanical Seals for Pumps: Application Guidelines	\$195
Optimizing Pumping Systems: A Guide to Improved Efficiency, Reliability, and Profitability	\$195

PACKAGE DEAL—All 4 for \$510—Save \$100!