

# WELCOME TO HYGEARS 4.0

## SETTING UP HYGEARS 4.0

As for most Windows software, HyGEARS comes with an automated installation procedure.

The “*SetupHyGEARS40-xxx.yy.exe*” program which is downloaded from the [www.HyGEARS.com](http://www.HyGEARS.com) website, [Downloads](#) page, will create the required subdirectory on the designated hard disk, install system and help files, and create a program group and a program item to run HyGEARS from the Windows Start Menu.

The screenshot shows the HyGEARS V 4.0 website. The navigation bar includes Home, Gear Types, Main Features, Advanced, and Downloads. The main header reads 'HyGEARS™ V 4.0' and 'Cylindrical / Bevel / Hypoid Gear Design, Analysis and Production Control Software with 3, 4, 5Axis CnC Gear Manufacturing'. The 'Downloads' section is active, showing 'Information Sheets' (HyGEARS 4.0 information package, HyGEARS Setup, HyGEARS User Documentation), 'Demo Version' (HyGEARS 4.0 Demo), and 'Updates'. The 'Updates' section lists several updates, with the most recent, 'HyGEARS 4.0.406.10 Update', highlighted by a red box. The footer includes 'HyGEARS THE GEAR PROCESSOR™' and 'Copyright (C) 2021 Involute Simulation Softwares Inc. All Rights Reserved'.

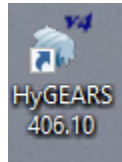
Update	Date
HyGEARS 4.0.405.60 Update	17 October 2016
HyGEARS 4.0.405.70 Update	17 January 2017
HyGEARS 4.0.405.80 Update	9 April 2017
HyGEARS 4.0.405.90 Update	29 November 2017 (reposted on 16 Sept 2020)
HyGEARS 4.0.406.00 Update	09 September 2020 (reposted on 16 Sept 2020)
HyGEARS 4.0.406.10 Update	09 September 2020 (reposted on 28 Feb 2021)

On the [Downloads](#) page, the most recent HyGEARS releases are shown in ascending order. Simply choose the most recent one at the bottom of the list, as shown above.



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The HyGEARS icon which will be installed on your desktop and in the HyGEARS group is as shown below. The “xxx.yy” number following the HyGEARS name refers to the current build version.



**To run Setup:**

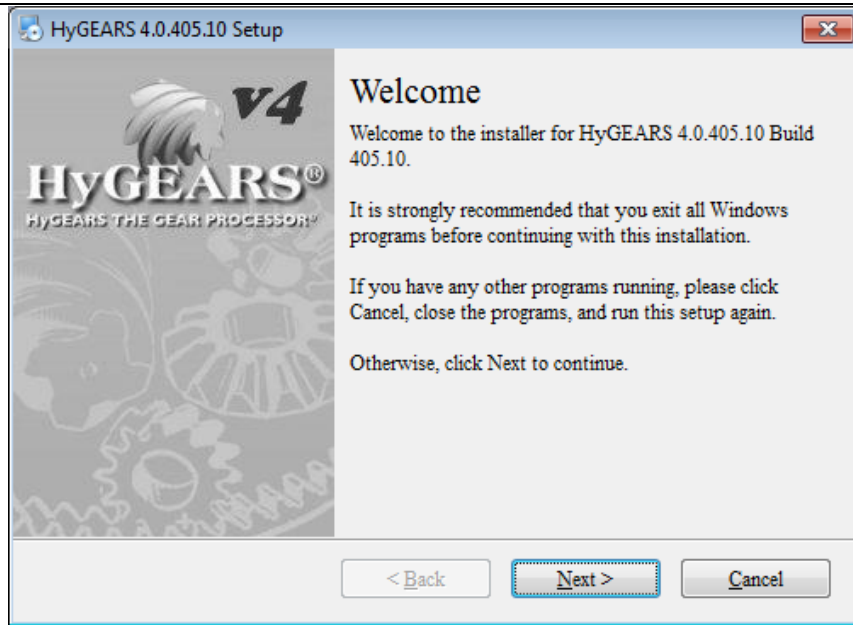
1. Download the latest HyGEARS XX.XX Update file from [www.HyGEARS.com](http://www.HyGEARS.com), [Downloads](#) page.
2. From the folder where the Setup file was downloaded, right click and select “Run as Administrator”.
3. Follow the Setup instructions. Basically, several screens will be shown, with “self-explaining” instructions.

The first installation screen is as follows. Here, the HyGEARS Setup program waits until you instruct it to proceed with the installation by clicking on the OK command button. You can always exit at this point and proceed at a later stage by clicking on the “Exit Setup” command button instead.

**Important Note:**

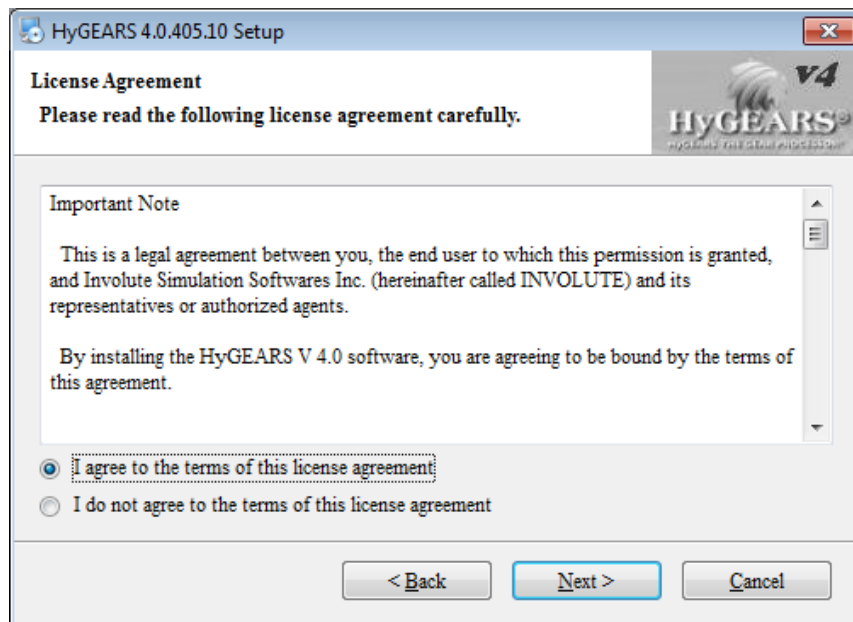
The HyGEARS Setup program must be “Run as Administrator” in order to install some components on the computer’s system. Failure to do so will prevent HyGEARS from working.



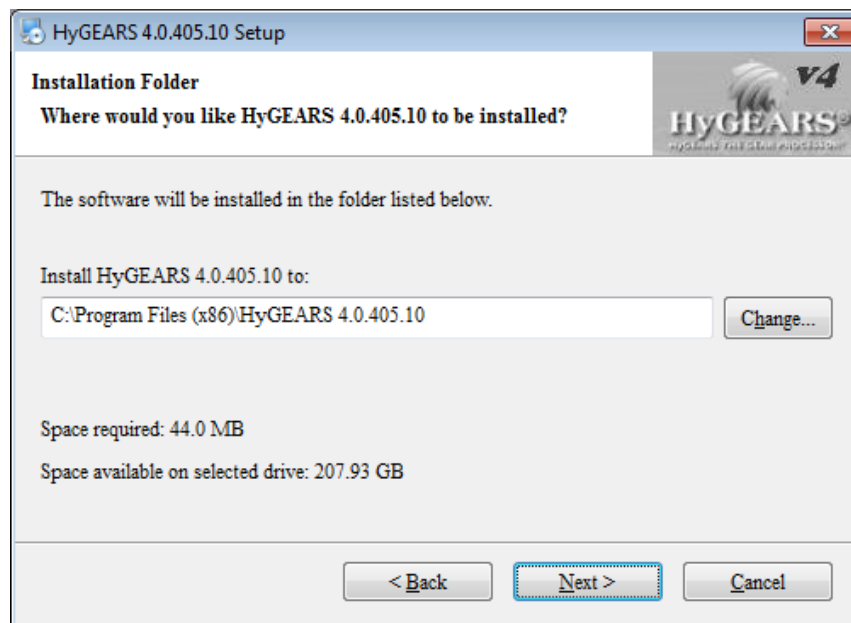


The next screen requires that you accept the EULA (End User License Agreement) binding you as a user and Involute Simulation Softwares as the owner of all rights on HyGEARS 4.0.

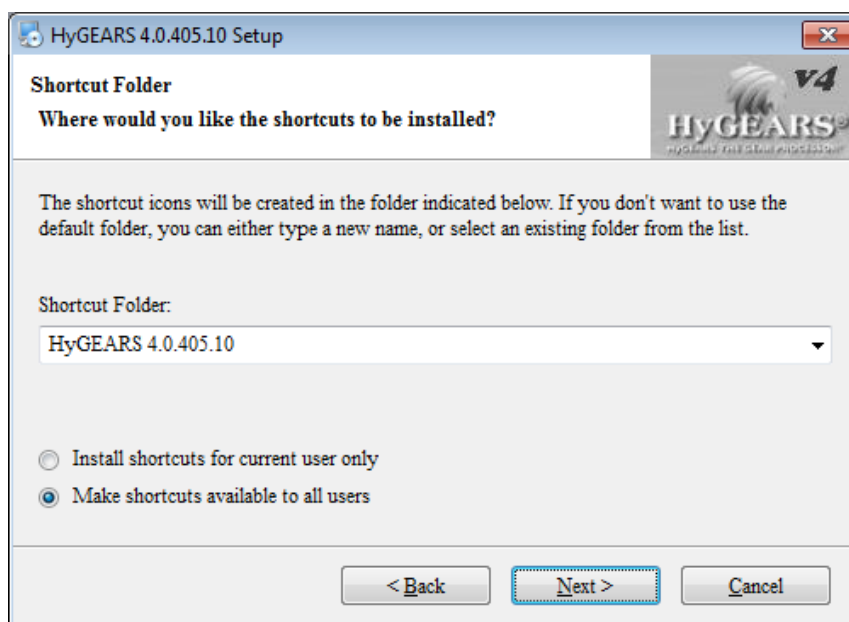
Although most people skip this step, it is a good habit to read its content as it is a binding agreement between the User and Involute Simulation Softwares Inc.



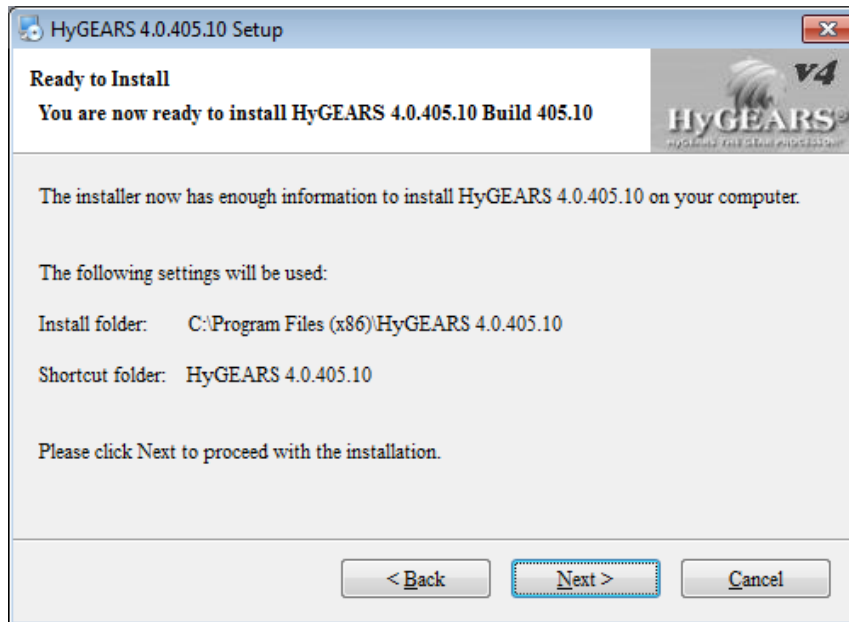
The next screen offers the choice of the installation directory. If you click on the “Change ...” command button, a directory selection window will be shown where you can either choose an existing directory, or type in the name of the desired directory which will be then created by Setup. Normally, unless your C: disk is nearly full, it is preferable to install HyGEARS in the default directory as shown below (this is the recommended procedure).



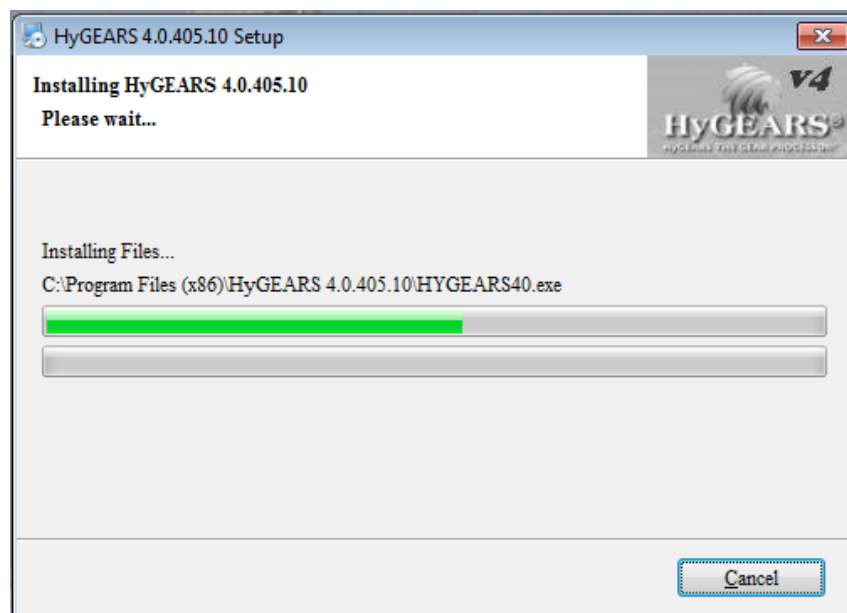
The next screen requests the name of the Program Group to be created that will contain items, such as the HyGEARS executable file, to be added by the Setup utility.



The next screen displays a reminder of the choices made for installation. Click on the Back button to make any change, or on the Next button to start the installation.

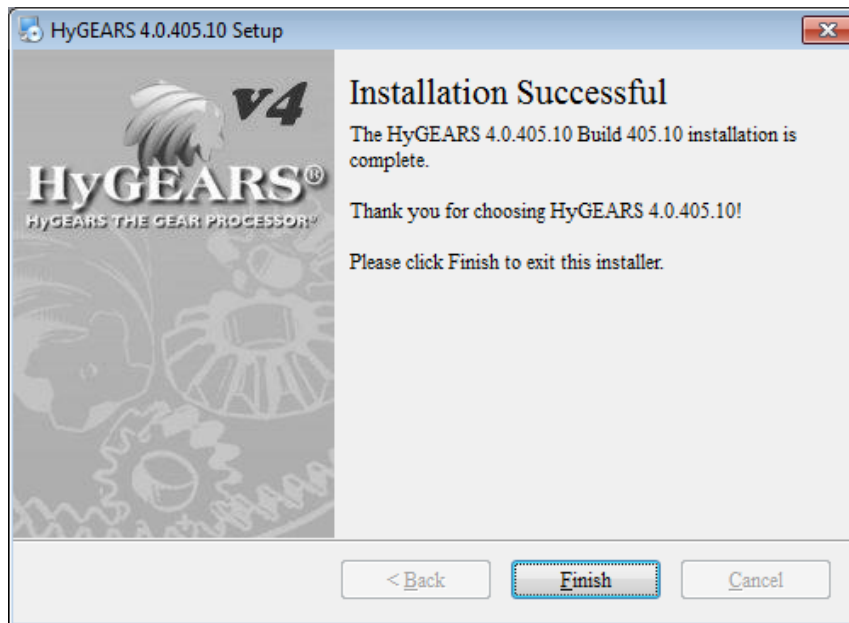


The next screen displays the progress of the installation until it is completed.



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When the installation is completed, a confirmation screen is shown as below.



## HARDWARE LOCK KEY DRIVER:

Once HyGEARS has been installed, a driver must be installed to allow communication between HyGEARS and the USB Hardware Lock key which is required to run HyGEARS; this driver depends on the operating system your computer uses. The following sequence describes how to install the appropriate driver on a Windows computer.

### Important Note:

This driver is to be installed on all computers on which HyGEARS will run. For Network use, a specific driver is also to be installed on the server computer – see the next section below.

1. On the [www.HyGEARS.com](http://www.HyGEARS.com) website, [Downloads](#) page, click on the “[Hardlock Key driver](#)” link to download the required driver for your computer.

Home Gear Types Main Features Advanced Downloads

## HyGEARS™ V 4.0

Cylindrical / Bevel / Hypoid Gear Design, Analysis and Production Control Software  
with 3, 4, 5Axis CnC Gear Manufacturing

### Downloads

#### Information Sheets

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[HyGEARS Setup](#) Pdf document with instructions how to install HyGEARS.  
[HyGEARS User Documentation](#) Pdf document with the printable User Documentation.

#### Demo Version

[HyGEARS 4.0 Demo](#) a HyGEARS executable (Build 406.00) valid for 15 days.  
Some [features](#) are restricted.

#### Updates

Latest changes to HyGEARS [Build 400.00 through 405.80](#)  
[Build 405.90 and on.](#)

**Hardlock Key driver** HyGEARS needs a Hardlock Key specifically programmed for each customer.  
Download & install this driver to allow HyGEARS to communicate with the Hardlock Key.

**Network Hardlock Key driver** A special Network Hardlock Key and Driver are needed to run HyGEARS in a  
networked environment, i.e. the Hardlock Key is physically attached to a server,  
different from the computer on which HyGEARS is running. Download & install  
this driver to allow HyGEARS to communicate with the Key in Network mode.

[HyGEARS 4.0.405.60 Update](#) 17 October 2016  
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2. From the folder where the “Hardlock Key driver” was downloaded, right click on the SentinelSystemDriverInstaller7.5.9.exe file and select “Run as Administrator”.



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- Simply follow the instructions of the Sentinel System Driver Installer program. Make sure to choose “Complete” installation when required to do so.



**Important Note:**

It is not possible to simply copy the files from the distribution disk onto the hard disk, as these files have been compressed in order to save space. Therefore, they cannot be run before they have been decompressed, which is exactly what Setup does.

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## NETWORK SERVER DRIVER:

Using HyGEARS in a network environment requires the installation of a Server Driver on a “server” computer. The USB Network Hardware Lock key must be connected to the “server” and is thus visible and accessible to users connected to this network.

The physical shape of the Network Hardware Lock Key is shown in the figure below.



Depending on your HyGEARS license, 1 to 10 concurrent users can run HyGEARS on different computers at the same moment.

Note that in a network environment, two instances of HyGEARS cannot be run on the same computer at the same time.

The Server Driver, called *SentinelProtectionInstaller7.6.8.exe*, offers several options and must be installed in a specific way on the server.

The Server Driver can be downloaded from [www.HyGEARS.com](http://www.HyGEARS.com), [Downloads](#) page, through the link *Network Hardlock Key driver*, as shown in the figure below:

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[Gear Types](#)
[Main Features](#)
[Advanced](#)
[Downloads](#)

# HyGEARS™ V 4.0

Cylindrical / Bevel / Hypoid Gear Design, Analysis and Production Control Software with 3, 4, 5Axis CnC Gear Manufacturing

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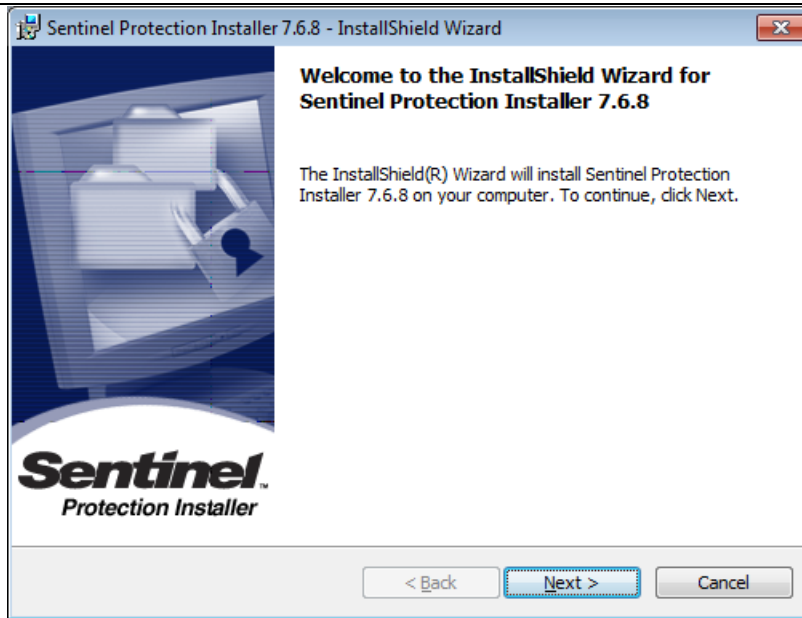
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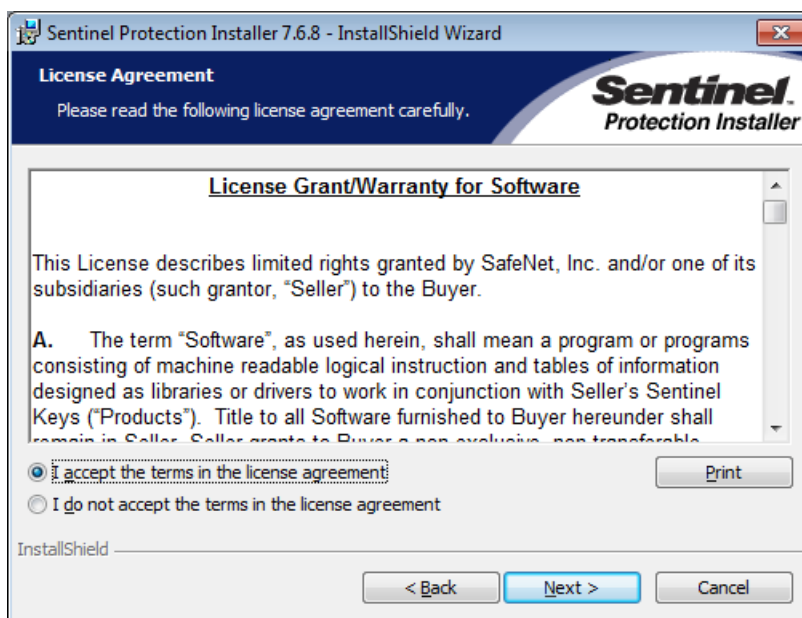
The Server Driver must be “Run as Administrator” since some components need be installed on the server computer.

The 1<sup>st</sup> screen, below, identifies the proper release of the Server Driver.

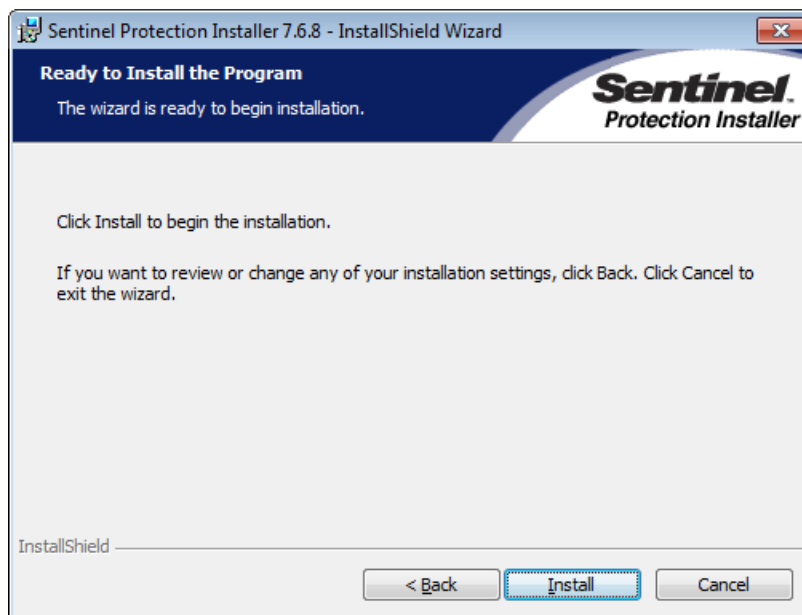
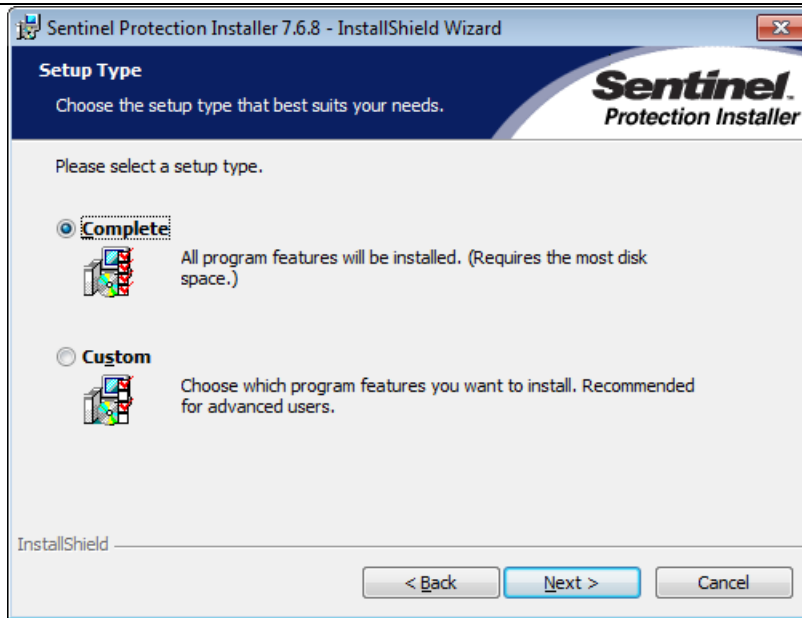




Clicking on the “Next >” button displays the next screen, figure below, where the End User License Agreement (EULA) is displayed and must be accepted for the installation to proceed.

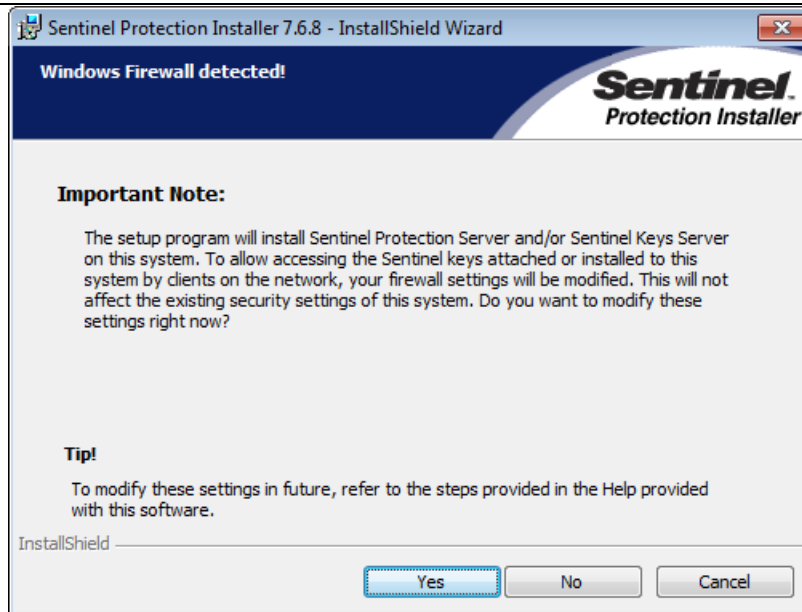


Clicking on the “Next >” button displays the 3<sup>rd</sup> screen, figure below, where the type of installation is chosen. Select the “**Complete**” option and click on the “Next” button.



Clicking on the “Install” button displays the last screen before installation begins. This screen warns the installer that the Firewall on the network server will be modified to allow access to the Hardware Lock key to HyGEARS clients on the network.

If in doubt, click on “No”; if the Hardware Lock key is not visible when connected to a server USB port, re-install and this time click on “Yes”.



### **Important Note:**

In case of a Server crash, HyGEARS will stop running on the client computer because the Network Hardlock Key is no longer visible.

Since HyGEARS keeps track of several things on the Network Hardlock Key, the very same client computer must be used first to run HyGEARS again once the Server is back on-line, otherwise an error will occur as the License on the Network Hardlock key will not be released.

The same applies when HyGEARS or the client computer crashes: the same client computer must be the 1<sup>st</sup> computer to run HyGEARS again after restarting.

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## CLIENT AND SERVER ON DIFFERENT SUBNETS:

The HyGEARS V 4.0 application must be installed on the Client Workstation in all cases, i.e. it is not to be installed on the server where the Network Hardlock key will reside.

When the Client Workstation uses a license from a server in a different subnet or across a subnet, either one of the following steps is to be applied:

1. Set the IP address (NSP\_Host) of the server in the *Environment Variables* on the client computer to access the license;
2. Define the server IP\_Address in the *sntlconfig.xml* configuration file in the client computer in the application folder. Place the IP address in between “<access code>” and “</access code>” in the *sntlconfig.xml* configuration file.

Steps to set the Environment Variable are explained below. Also detailed is the content of the *sntlconfig.xml*.

The Sentinel Protection Server service must be running on the Network Hardlock key server computer.

According to the SuperPro Design, the Network Hardlock key will only be found by the application when the Sentinel Protection Server, the Network Hardlock key, and the client system are all on the same subnet.

However, when there is a requirement to access a server which is not present on the same Subnet, there are 2 options as listed below:

1. Define the server IP\_Address in the *sntlconfig.xml* configuration file.
2. Set the environment variable NSP\_HOST on the client PC. Below is the description of the NSP\_HOST variable. In all cases, an access mode set through code (or with the RNBOSetContactServer API call) will override an access mode set via the environment variable.) NSP\_HOST tells the protected application which server to look for when it needs to access a Network Hardlock key.

The possible values for this variable are as follows:

- a. *no-net*: this tells the application to act as a stand-alone application. The application will look for a Network Hardlock key only on the client machine. If the key is not found, the application will not send a broadcast message to the network looking for a server and Network Hardlock key.
- b. *server host name, IP address or IPX address*: this tells the application to act as a network application. The application will look for a Network Hardlock key only on the selected server. If the selected server is not found, or a key is not found on the



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selected server, the application will not send a broadcast message to the network looking for another server and key.

To set the NSP\_HOST variable:

- I. From the Start menu, select: Settings > Control Panel;
- II. Double click on the System icon;
- III. The System Properties dialog box will appear. Click on the Advanced tab, and then the Environment variables button. Lists of existing system and user variables will appear.
- IV. In the Systems Variable field, enter NSP\_HOST and in the Value field, enter one of the following:
  - the Network Hardlock key Server's host name or
  - the Network Hardlock key Server's IPX address.

NOTE:

*Network broadcast* does not work for finding a server on a different subnet. Also note that direct call (using NSP\_HOST or *sntlconfig.xml*) does not work in ALL MODES. In case of ALL modes, the Network Hardlock key should be present on the same subnet. However, in the case of “Network Mode” either NSP\_HOST or *sntlconfig.xml* can be used.

#### Content of the *sntlconfig.xml* file:

```
<?xml version="1.0" encoding="UTF-8"?>

<!--

This is the configuration file for the applications run
using a Sentinel key. You can set the values prescribed
below or contact your software vendor for details.

Notes for using this file:

1. It is not necessary to set all the tag values.
2. Remove this file if you do not want to apply these settings.

-->

<SentinelConfiguration>
  <SuperPro>
    <!-- To discard the values set in this file, remove the comment signs from the
    following tag -->
    <!-- <ConfigDiscard/> -->

    <!-- Type the following constant between the Protocol tag: NSPRO_TCP_PROTOCOL -
    ->

    <Protocol>

    </Protocol>

    <!-- Type the workstation name/IP address (of the system where the key is
    attached or installed)
```



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or an access mode (as specified by your software vendor) between the AccessMode tag -->

<AccessMode>

</AccessMode>

<!-- Type a value ranging between 60 and 2,592,000 seconds, or type 0xFFFFFFFF (or -1) for an infinite heartbeat interval -->

<HeartBeat>

</HeartBeat>

<!-- Type a value for the server port, the default port is 6001 -->

<ServerPort>

</ServerPort>

<!-- Type SP\_USBONLY between the SearchMode tag if you want to access SuperPro hardware key of USB form factor and SuperPro software key. SuperPro hardware key of parallel form factor shall not be accessed if this option is set.  
Note: SP\_USBONLY option is for RNBO\_STANDALONE and RNBO\_SPN\_DRIVER access modes only. It will be ignored for other access modes. -->

<SearchMode>

</SearchMode>

</SuperPro>

</SentinelConfiguration>

## NETWORK LOG FILE:

HyGEARS can save in a Log file which user is currently logged to the Network Hardlock key; when started, HyGEARS will be looking for an environment variable called HYGEARSLOGPATH; if found, HyGEARS will look for the HyGEARSLog.txt file in the folder pointed to by the HYGEARSLOGPATH environment variable; if the file is not found, HyGEARS will attempt to create it.

The file content is as shown below:

\*\*\* HyGEARS Log File \*\*\*

-----

ENTRY: 2018-01-29 - 8:21 PM | IP#: 192.168.2.34 | Name: CGOSSELICA  
EXIT : 2018-01-29 - 8:21 PM | IP#: 192.168.2.34 | Name: CGOSSELICA



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The IP address is obtained from the user's computer in IPV4 format; the computer's name is also saved, including entry and exit time. Therefore, should the Hardlock Key be unavailable because the last licence is being used, the Network administrator can track who is using the Hardlock Licence and ask to release the licence by exiting his/her HyGEARS session..

## TO RUN HYGEARS:

Using the mouse, click on the Start Menu in the Taskbar; click on Programs, and then on the HyGEARS V 4.0 Group entry, and then on the HyGEARS entry.

To make HyGEARS more easily accessible, a shortcut resting on the Desktop has been created.

Please refer to your Windows user documentation for more details on creating and editing shortcuts.

### **Important Note:**

HyGEARS will only operate if the USB port Hardware Lock key and the appropriate driver are properly installed. Failure to do so will prevent HyGEARS from starting up, or will stop HyGEARS altogether if the hardware lock is removed during operation.

**During installation,** Setup will require that you enter the following information:

- i. The name of the subdirectory where HyGEARS is to be installed. The name proposed by default is C:\Program Files\HyGEARS40xxx.yy, where "C:\" is the hard disk name, and xxx.yy is the release number, and should be used unless strong preferences prevent doing so.

**After installation,** when running HyGEARS for the 1<sup>st</sup> time, you will have to enter the following information:

- i. The name of the main user, or system manager.
- ii. The address of your company (the company name is preprogrammed, and cannot be changed).



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**Important Notes:**

All the above data must be entered otherwise the installation procedure will abort.

The Company name is embedded within HyGEARS as an additional protection against unauthorized copy, and it is therefore not an editable field.

The files installed onto your hard disk include, but are not limited to:

HyGEARS40.exe	the main program;
HyGEARS40.chm	the on-line help file;
*.dll	several dynamic link libraries used by HyGEARS;
english.bng	HyGEARS English language file.
francais.bng	HyGEARS French language file.
material.fil	HyGEARS materials definition file.
Machine.fil	HyGEARS multiaxis CnC machine file.
oil.fil	HyGEARS oil definition file.
*.tpl	HyGEARS template files, used for the pre-defined Display Pages.

Several other files will also be installed on your computer, as HyGEARS needs several support files and programs.

***ENJOY HYGEARS 4.0 !***

