

hyperMILL®

© The helmet was programmed and produced by OPEN MIND

Release Notes

Copyright © 2019 OPEN MIND Technologies AG

This document applies to *hyperMILL* and *hyperMILL SHOP Viewer*.

It contains notes about recent changes that are not described in the manual. All rights reserved. Since we continuously work on further developments, we reserve the right to implement changes.

Last update: March 2019.



Table of Contents

1. Supported software	4
Operating systems	4
64-bit CAD platforms	4
32-bit CAD platforms (Windows 7 only)	4
Server operating systems (Licence Manager only)	4
NC interfaces	4
Interfaces Tool database	5
Use of third-party software	5
2. Installation and licensing	6
Supported languages	6
Parallel installations	6
3. Notes on functions	8
<i>hyperMILL</i> SHOP Viewer	8
5X strategies on machines with rotation axes not supporting endless rotation	8
Negative allowances	8
5X Simultaneous Machining	9
Supported tool types	9
Feedrates	9
3D and 5X Rework Machining - Linking job - Compound job	9
<i>hyperCAD</i> 2009.3: Select surfaces	9
TDM Systems Integration	9
4. Notes on older <i>hyperMILL</i> versions	10
Postprocessors	10
Thread Milling / Helical Drilling	10
2D Contour Milling	10
Toolpath segments with a Z component	10
5. Additions to the manual 2019.2	11
Turning - Parting - Tool	11
2D Chamfer Milling on 3D Model - Strategy	11
3D Profile Finishing - Strategy / Parameter	11
3D Profile Finishing - Boundary	11
3D Profile Finishing - Boundary	11
3D Z Level Shape Finishing - Boundary	11
3D Corner Rest Machining - Tool	12
3D and 5X Rework Machining	12
5X Form-Offset Finishing - Boundary	12
Internal Machine Simulation	12
Macro technology	12
Use for Additive	12
Tool Database	13
TDM Systems Integration	13
6. Additions to the manual 2019.2 Service Pack1	17
Back Boring - Final retract (Process # 6)	17
7. Bug Fixes <i>hyperMILL</i> 2019.2 Service Pack 1	18
<i>hyperMILL</i> + thinkdesign 2019.1	18
CAD Direct Interfaces	18
8. Hotfix 65362 - bug fixes	19



1. Supported software

hyperMILL exclusively supports 64-bit operating systems: For the latest information on hardware requirements and supported operating systems, please visit the website www.openmind-tech.com.

Operating systems

- Windows 7
- Windows 8.1
- Windows 10

64-bit CAD platforms

- *hyperCAD-S*
- Inventor 2017, 2018, 2019, 2020
- SolidWorks 2017, 2018, 2019
- thinkdesign 2018.1, 2019.1



NOTE

A mixed installation of thinkdesign 32- and 64-bit on one machine is not supported. *.e3 files based on thinkdesign 64-bit can not be imported in *hyperCAD-S*.

32-bit CAD platforms (Windows 7 only)

- *hyperCAD* 2009.3
- thinkdesign 2009.3, 2011.1, 2012.1, 2013.1, 2014.1, 2015.2, 2016.1

Server operating systems (Licence Manager only)

- Windows Server 2008 R2
- Windows Server 2012 R2
- Windows Server 2016

NC interfaces

- VERICUT from version 7.0



Interfaces Tool database

OPEN MIND Technologies AG	tdm systems
<i>hyperMILL</i> 2017.1 SP1 or higher	tdm 4.8 Hotfix 9 or higher and tdm 2017 Hotfix 5 or higher
License – Interface Walter TDM	CAM Mapping to <i>hyperMILL</i> Microsoft SQL Server
OPEN MIND Technologies AG	Zoller TMS
<i>hyperMILL</i> 2014.1 SP1 or higher	Version 1.14.6.0 or higher
License – Interface Zoller Tool Management	Interface for data exchange (one interface for each <i>hyperMILL</i> license). Microsoft SQL Server
OPEN MIND Technologies AG	WinTool AG
<i>hyperMILL</i> 2014.1 SP1 or higher	The compatibility of the version must be checked with WinTool.
License – Wintool Interface	Interface for data exchange (one interface for each <i>hyperMILL</i> license). Microsoft SQL Server or Access database (*.mdb)

Use of third-party software

If you work with third-party software that uses *hyperMILL* data (such as postprocessors and simulation tools), you should consider the following:

The format of all data generated by *hyperMILL* can be changed by OPEN MIND **without prior notice** and at any time for the purposes of further development. This primarily affects the output of machine- and control-neutral programs (POF format). OPEN MIND does not offer any guarantee for problems that are due to compatibility issues involving third-party software.

2. Installation and licensing



CAUTION

Due to necessary technical updates of our license management it is **mandatory** to always use the current license manager on the license server and the workstations in the future! You should therefore install the latest version immediately on your license servers and on all workstations on which OPEN MIND products are used. Otherwise, licensing will no longer be possible.

Please install the *hyperMILL* software according to the installation guide. Direct any questions you may have about the installation to our support service.

Please note that the installation requires that you have **administrator rights**.

The *hyperMILL* software is protected by an dongle or license server. Each licence is unique. Secure the licence against loss!

For further information, please refer to the installation guide, which can be found on your product DVD or on the OPEN MIND website.

<http://www.openmind-tech.com/en/service/support/useful-information.html>

To ascertain whether your licences are also valid for the 2019.2 version, please check in the Licence Manager to see whether the specified maintenance period includes the calendar year 2019.



NOTE

The following notes on configuring the License manager are relevant to you if you already have *hyperMILL* installed and use a network license server.

Configuration License Manager

By changing the dongle driver it is necessary to reconfigure the network server configuration of the licensing. Proceed as follows.

1. After installation, open License Manager **As administrator** and switch to the **Options** tab.
2. Remove the name of the license server and reenter it.
3. Close the License Manager and restart the computer to complete the configuration.

Supported languages

hyperMILL is available in the following languages: German, English, Italian, French, Dutch, Japanese, Chinese (Traditional and Simplified), Korean, Spanish, Czech, Russian, Polish, Slovenian and Portuguese (Brazilian).

Parallel installations

If several versions of *hyperMILL* are installed, it is possible to switch between versions using **hyperMILL Switch**.

Run **SwitchUi.exe** from the C:\Program Files\OPEN MIND\Settings Wizard directory.



Select the required *hyperMILL* version, the CAD system and the language. Afterwards, click **Switch**. Please close the software first!

3. Notes on functions

hyperMILL SHOP Viewer

Reusing SHOP Viewer data (also called SHOP Viewer Pack & Go data) in *hyperMILL* is intended for OPEN MIND support and analysis purposes only. If Pack & Go data are changed in *hyperMILL* and then saved with the **Save as** function, the usability of the resulting file can not be guaranteed.

5X strategies on machines with rotation axes not supporting endless rotation

OPEN MIND recommends defining the toolpath in such a manner that no tension-release rotations are necessary. It is possible that the geometry to be machined will need to be broken up into multiple jobs, or it may be necessary to define alternative toolpaths. This may increase the complexity of the toolpath definition.



WARNING

OPEN MIND recommends proceeding with extreme care with these toolpaths if tension-release rotations cannot be avoided. The entire sequence for the **tension-release toolpath** – from the retract movement from the workpiece up to the re-approach – **is not collision checked!**



WARNING

If a postprocessor run with stored solutions is performed, the NC file contains no rewind.

OPEN MIND additionally recommends taking appropriate measures to first successfully test and execute the tension-release toolpaths, such as for example test above or next to the part, or without the part in place. Jobs which include tension-release rotations should be run separately on the machine if possible (not as part of an NC program with multiple operations). Using additional verification software for NC programs can help increase safety.

These tips are intended to help successfully execute the defined toolpaths and prevent damage to the CNC machine. Please contact your OPEN MIND partner if you have further questions on this topic.

Negative allowances

The following restriction applies to all cycles: If the sum of the allowances is negative, the sum total must be less than the Tool radius - Machining tolerance.

Example:

Tool radius = 5.00 mm

Machining tolerance = 0.01 mm

Allowance = -3.0mm

Additional allowance XY must be greater than -1.99 mm, e.g. 1.98, because

$|-3.00 \text{ mm} + (-1.98 \text{ mm})| < 5.00 \text{ mm} - 0.01 \text{ mm}$

In this context, the area-based allowance is also taken into account as an allowance in the **Milling area > Definition** dialog. If several values are defined here, only the smallest value is taken into account.



5X Simultaneous Machining

Important note for 5X simultaneous users with controls without great circle interpolation:

The *hyperMILL* cutter path calculations for all 5 axes cycles (except 5X Multiblade) are based on a great circle interpolation between the tool orientations. If your control works with a different interpolation type and cannot be modified for great circle interpolation, please contact your OPEN MIND partner to have your *hyperMILL* configured accordingly. To see the interpolation type with which your control works, refer to the documentation of your control.

Supported tool types

hyperMILL generally only supports the tool types listed in the documentation. Other tool types, in particular, angle tools or angle heads are not supported.

Chamfered cutters

Specifying a nominal diameter of less than 0.001 mm or less than 0.0001 inches may prevent the activation of a tool radius correction. Please avoid specifying such diameters.

Feedrates

All feedrates in *hyperMILL* refer to the respective tool reference point. Therefore, feedrates can occur on single axes that deviate from the value of the tool reference point. A parametric feedrate output is generally not supported, particularly not for linking jobs if the underlying sub-jobs contain feedrate changes.

3D and 5X Rework Machining - Linking job - Compound job

Initial situation

Reference job: **Generate NC file** is disabled.

Rework job: **Generate NC file** is enabled.

1. Reference job and related Rework job are used within a Linking job. Generate NC file is automatically disabled in both jobs.
2. Reference job and related Rework job are moved from the Linking job into a Compound job. By doing so, the Generate NC file option is automatically enabled in both jobs. It has to be manually disabled within the Reference job again.

hyperCAD 2009.3: Select surfaces

For the **2D Contour Milling on 3D Model** cycle the surface selection function in *hyperCAD* 2009.3 / thinkdesign 2009.3 not available.

TDM Systems Integration

To provide features associated with feature / macro technology (intelligent macros), a synchronization service has been implemented to exchange data between TDM Systems and OPEN MIND. More information in section [TDM Systems Integration \(page 13\)](#).

4. Notes on older *hyperMILL* versions

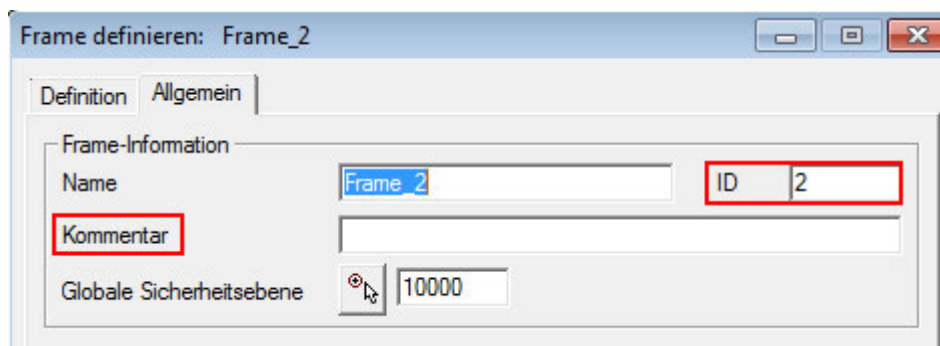
Information in this section is relevant for you if you have not updated from the previous release of *hyperMILL* to the latest version. This may be the case if

- you do not have a maintenance contract or
- you have purchased an update again after a longer period of time.

Postprocessors

Use the Frame ID

If your postprocessors require you to define a **Frame ID** or a frame **Comment**, your postprocessors are incompatible with toolpaths that were created using the *hyperMILL* Transformation function. For this reason, please use only toolpaths without transformations for these postprocessors.



Thread Milling / Helical Drilling

The **Path compensation** option must be made available by OPEN MIND separately and requires a prior check and possible update of your postprocessor (subject to a charge). Please contact your OPEN MIND partner. In the event of use without a postprocessor check, OPEN MIND cannot assume any guarantee for the output of a correct NC program.

2D Contour Milling

Spiral stepdown: If, while using this option, you see an error message on the Parameters tab during the postprocessor run, your postprocessor is not yet ready for this output and requires a prior check and, perhaps, update (for a fee). Please contact your OPEN MIND partner.

Toolpath segments with a Z component

All circular toolpath segments with a Z component (such as circular macros or spiral stepdowns) require a separate postprocessor adjustment. Please contact your OPEN MIND partner.

5. Additions to the manual 2019.2

Turning - Parting - Tool

For **Parting** the tool type **Recessing tool** is now also supported.

2D Chamfer Milling on 3D Model - Strategy

To avoid "redundant" error messages when editing with the strategy **Deburr/chamfer sharp edges** the collision check was changed, based on the geometry of the tool type **Chamfer cutter**. The chamfer of the tool may now violate the the part with the chamfer during deburring without error message.

3D Profile Finishing - Strategy / Parameter

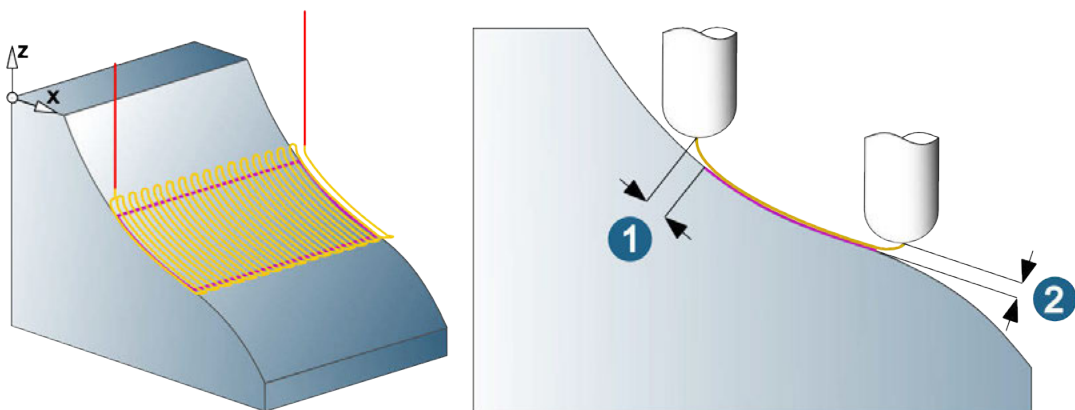
The **Machining mode** → **Smooth overlap** (previously only possible in combination with the **Horizontal in-feed mode** → **Constant stepover** option), can now also be used with the **Scallop height** and **Constant on curve projection** options.

3D Profile Finishing - Boundary

Boundary curve / Milling surfaces > Smooth overlap at boundary

For machining with manual Boundary (Option **Manual Boundaries**) active the **Use smooth overlap** function, if a high surface quality is to be achieved at the end of the machining area.

In the blending area between the machining area and neighboring surfaces, the tool gently lifts off from the workpiece. Define the length of the blending area with the parameter **Area length** (1). With the **Distance** (2) parameter, define the distance of the tool from the model.



3D Profile Finishing - Boundary

For the **Tool reference** → **Contact** the parameter **Boundary tolerance** is no longer available, when machining with the **Strategy** → **Boundary curve** and **Ball mill** or **Lollipop** because it is no longer necessary to calculate the toolpaths.

3D Z Level Shape Finishing - Boundary

The **Trim to milling area** function is now also available for the cycle **3D Z Level Shape Finishing**.

For machinings in the **Milling surface mode** → **Extension** the function **Trim to milling area** is automatically activated for compatibility reasons and can not be deactivated. The toolpath is automatically trimmed based on the selected **Milling surfaces**.

For machining with **Boundary curve** or with the **Milling surface mode** → **Standard** the toolpath is trimmed at the milling area with a standard **Offset (Machining tolerance * 2)**.

3D Corner Rest Machining - Tool

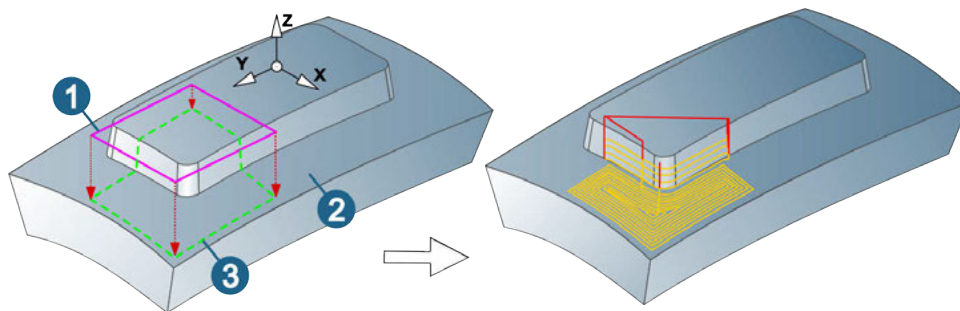
For machining, the tool types **Ball mill** and **Bullnose End Mill** are supported. As a reference tool the tool type **Ball mill** is supported.

3D and 5X Rework Machining

When copying the parameters from a **Reference job** to the Rework cycle, the **Boundaries** will not be copied.

5X Form-Offset Finishing - Boundary

Define a **Boundary** (1) to limit the machining area. The Boundary is projected onto the **Drive surfaces** (2) in the direction of the Z-axis of the frame and thus defines the milling area. Machining ends when the tool axis is on the projected boundary (3) (**Tool reference = On**). An **Offset** is possible. Positive values increase the boundary, negative values reduce it.



Internal Machine Simulation



CAUTION

For machines with a main spindle and a counter spindle, OPEN MIND recommends performing an additional collision check with *hyperVIEW*, after the simulation with the Internal Machine Simulation.

Macro technology

In the **Apply macro** dialogue a full-text search is possible now also.

Use for Additive

Activate the function **Use for additive** (Dialog page **General**) to use the toolpath as a reference for Additive Manufacturing. The following settings are automatically activated: no macros, no clearance G1 movements, larger machining tolerances, simple rapid movements, no generation of the NC file.

Tool Database

The technology parameter **Factor spindle RPM (n)** has been renamed in **Factor speed** and will now also be applied to the parameter **Cutting speed (Vc)** for turning tools.

The technology parameter **Factor F** has been renamed in **Factor feedrate**.

New technology parameters for inserts

The parameter **Infeed length (ap)** is now available for the following inserts:

Rhombic, Triangular, Round, W-Shape, Rectangular, Round Form and Free Form.

In addition, the parameter **Infeed width (ae)** is available for the following inserts: Round, Rectangular, Round Form and Free Form.

New variable for formula definition

For formula definition the variable **Corner radius (cr)** is now also available .

TDM Systems Integration

To provide features associated with feature / macro technology (intelligent macros), a synchronization service has been implemented to exchange data between TDM Systems and OPEN MIND.

For this purpose, a local service was developed by OPEN MIND, which can be controlled via a command line with different options. The program **hmTDMSyncService.exe**, that controls the service, is located under the following path (the path may vary depending on the installation and version):

```
C:\Program Files\OPEN MIND\hyperMILL\2019.2\addins\hmTDMSystems\hmTDMSyncService.exe
```

Set up the synchronization service

To set up the service after the installation of *hyperMILL*, follow these steps:

1. Open a command line with administrator rights. To do this, enter **cmd** in the Windows start menu, open the context menu on the **Command prompt** and select **Execute as administrator**.
2. Use **cd** to change to the directory `<C:\Program Files\OPEN MIND\hyperMILL\Version\addins\hmTDMSystems>` and call the synchronization service **TDMSyncService.exe** with the **/H** option.

```
Administrator: Eingabeaufforderung
Microsoft Windows [Version 10.0.16299.904]
(c) 2017 Microsoft Corporation. Alle Rechte vorbehalten.
C:\Users\Cneuner>cd "C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems"
C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe
Error: Missing database.
C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe -h
hmTDMSyncService [irshfqp]
Service to synchronize an OPEN MIND tool database with TDM.
Command line switches:
/i[install]: Installs and starts the service.
/r[remove]: Stops and uninstalls the service.
/h[elp]: Shows this message.
/f[older] P: Absolute path P to the folder where TDM Systems exports
tools to.
/d[atabase] D: Database D in which to import tools from TDM Systems.
C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>
```

3. A list of possible options for setting up the synchronization service appears:

Table 1. Options synchronization service

/i [install]	Installs and starts the service.
/r [remove]	Stops and uninstalls a running service.
/h [elp]	Display of available options.
/f [older]	Path to the folder where TDM Systems exports tools to. The folder must be empty and must not be a directory of a private user account.
/d [atabase]	Path to <i>hyperMILL</i> database to be synchronized. Possible database formats are: *DB, *.MDB or *DSN (SQL Server).

4. Example:

```
Administrator: Eingabeaufforderung
Microsoft Windows [Version 10.0.16299.904]
(c) 2017 Microsoft Corporation. Alle Rechte vorbehalten.

C:\Users\Cneuner>cd "C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems"
C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe
Error: Missing database.

C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe -h
hmTDMSyncService [irshfdp]
Service to synchronize an OPEN MIND tool database with TDM.
Command line switches:
/i[install]:  Installs and starts the service.
/r[remove]:  Stops and uninstalls the service.
/h[elp]:     Shows this message.
/f[older] P: Absolute path P to the folder where TDM Systems exports
             tools to.
/d[atabase] D: Database D in which to import tools from TDM Systems.

C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe /i /d "D:\Temp\TDM Sync\TDM_Sync.db"
/f "D:\Temp\TDM Sync\sync"
```

A completed call process including installation / start / path and naming the *hyperMILL* database for synchronization of TDM data can look like this:

```
Administrator: Eingabeaufforderung
Microsoft Windows [Version 10.0.16299.904]
(c) 2017 Microsoft Corporation. Alle Rechte vorbehalten.

C:\Users\Cneuner>cd "C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems"
C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe
Error: Missing database.

C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe -h
hmTDMSyncService [irshfdp]
Service to synchronize an OPEN MIND tool database with TDM.
Command line switches:
/i[install]:  Installs and starts the service.
/r[remove]:  Stops and uninstalls the service.
/h[elp]:     Shows this message.
/f[older] P: Absolute path P to the folder where TDM Systems exports
             tools to.
/d[atabase] D: Database D in which to import tools from TDM Systems.

C:\Program Files\OPEN MIND\hyperMILL\99.0.0\addins\hmTDMSystems>hmTDMSyncService.exe /i /d "D:\Temp\TDM Sync\TDM_Sync.db"
/f "D:\Temp\TDM Sync\sync"
```

The synchronization service can be controlled via the Windows Control Panel. To do this, enter **Control Panel** in the search box of the taskbar and call the service under **Administration** → **services** → **OPEN MIND TDM Synchronization Service**. In general, however, there is no need for this, because the service is started automatically each time the computer starts up.

Messages of the synchronization service (*.log file)

Below the path for the synchronization folder, the folder `log` is created. After starting the service, the file `hmTDMSyncService.log` is located here. The synchronization service writes messages about activities and any import problems that may occur into this file. Each time the service is started, a new *.log file is created.

The current file is then renamed `hmTDMSyncService_1.log`. Older files receive correspondingly higher indexes. A maximum of 100 files is stored. If the service is running continuously, new files will be created as soon as they exceed 1MB in size. If there are errors during the import, the causative files are moved in the subfolder `invalid`. Successfully imported files are automatically deleted.



NOTE

Rebuild the synchronization service: The synchronization service must be rebuilt, if an update of *hyperMILL* is performed, *hyperMILL* is uninstalled or installed on a new machine. In these cases, the service needs to be rebuilt, because the required parameters are no longer known. In order to simplify the rebuild of the service, the settings made during the first setting up should be documented, since they can not be automatically transferred from a pre-installation.

Prerequisites for installing the synchronization service

To set up the synchronization service, the following software requirements must be met:

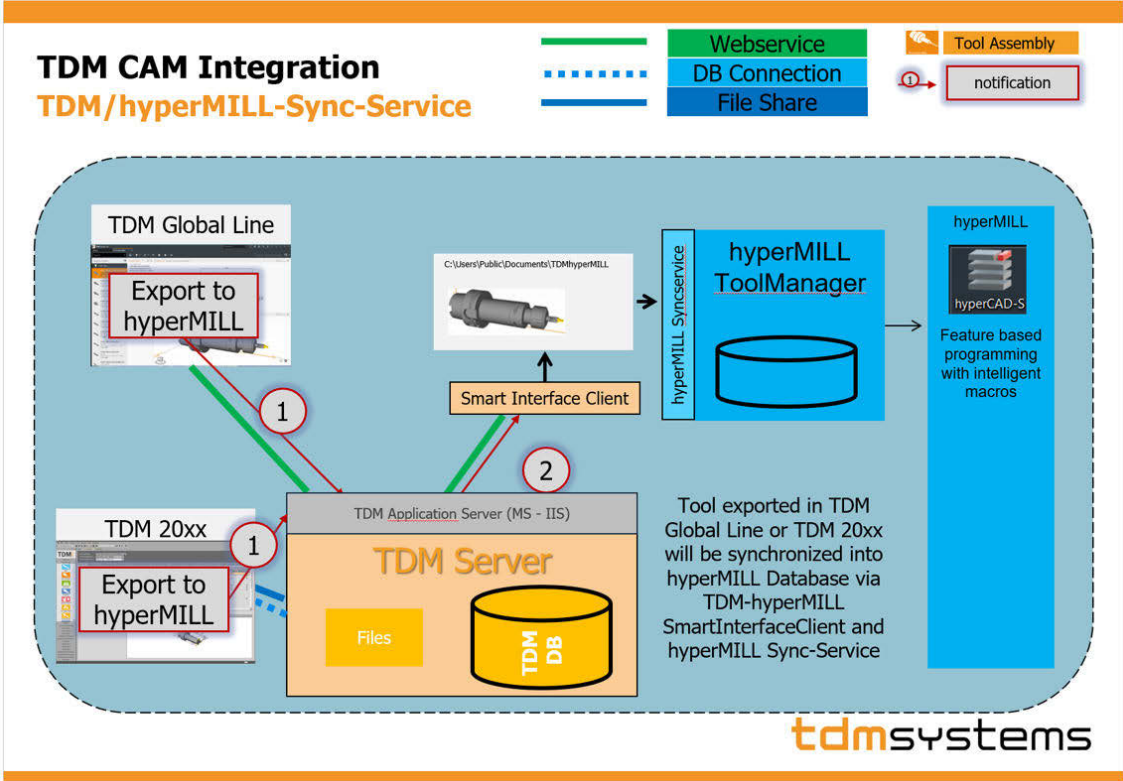
- **TDM Systems:** TDM 2018 HF5 + TDM Global Line *hyperMILL* interface (= Smart Interface Client). The installation of the Smart Interface Client must be installed on the same computer on which the synchronization service (`hmTDMSyncService.exe`) is installed. During installation of the Smart Interface Client specify the exchange directory; this corresponds to the directory already defined in the `hmTDMSyncService.exe`.
- **OPEN MIND:** *hyperMILL* 2019.2.

How the synchronization service works

The TDM user creates a new tool in TDM and exports it for *hyperMILL* (1).

The TDM Server informs all installed Smart Interface Clients (2) and stores corresponding files in the shared exchange directory.

The *hyperMILL* Sync Service uses these files and then creates the tool in *hyperMILL* Tool Manager.



IMPORTANT

Using the synchronization service in a local (document) database (*.hmc)

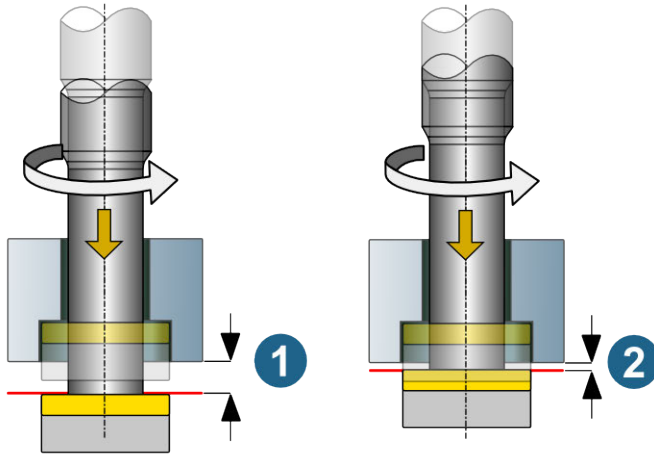
If you use TDM-Systems tools in a document database, make sure that the synchronized database is set up as default database in the hyperMILL **Settings** → **Database**. Avoid importing tools at the same time via the TDM Systems Plugin (see hyperCAD-S menu) **hyperMILL** → **Tools** → **Import TDM Systems tools**). This is the only way to ensure that all tools imported into the document database have a **unique ID**.

6. Additions to the manual 2019.2 Service Pack1

Back Boring - Final retract (Process # 6)

Only available for turning tools!

Move to retract distance: (1) / **Move to retract value:** (2) The tool moves either to **Retract distance** or **Retract value** before the spindle is turned off (process #8) and the tool moves eccentrically out of the drill hole (process #10).





7. Bug Fixes *hyperMILL* 2019.2 Service Pack 1

3D Complete Finishing: Problems caused by missing fillet radius fixed.

2D Chamfer Milling on 3D Model: Problems with using 2D contour feature fixed.

5X Multiblade Milling: Problems with lead angle in impeller machining solved.

Tool Database: Error in internal comparison of user-specific tool data fixed.

Stock chain: Fixed problems in the stock chain in mirrored component jobs.

NCSIMUL | Tool Interface: Error in tool data for Touch Probe tool removed.

Feedback graphics: Problems with feedback graphics of tools fixed.

hyperMILL + thinkdesign 2019.1

Integrating *hyperMILL* 2019.2 into the CAD system thinkdesign 2019.1 with the program **Settings Wizard** → **Switch** works now.

CAD Direct Interfaces

PTC Creo Parametric: Fixed issue with opening a file.

PTC Creo: Fixed issue, that prevented grouping of the same **Generic holes** with the **Feature Mapping (Hole)** function on an imported model.

Parasolid: Fixed issue with opening a file.

Step: Layer description is imported correctly

Step: Curves are imported correctly.

Step: Model surfaces are displayed correctly.

Siemens NX: Fixed issue with opening a file.



8. Hotfix 65362 - bug fixes

hyperVIEW: After editing the settings in the dialog **NC file properties** you can generate the NC file again.