

Installation Manual

TRUMPF CAD/CAM products System requirements

Version 2.59

Installation manual

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System requirements

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C332en

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1. General requirements

Versions The system prerequisites described in this document apply to the following TruTops products and versions:

TruTops product	From Version	Minimum version required for update
TruTops (CAD, Nest, Laser, Punch, Tube, Bend)	12.0	TruTops 3.0
Oseon	1.0	TruTopsFab 10.0
WebCalculate	18.0	-
TruTops Cell	8.3	Alle Versionen
TruTops Cell (SW48)	1.0	1.0
TruTops Calculate	16.1	13.0
3-D-Rohrkonstruktion ¹	10.0	Alle Versionen
TruTops Boost	14.0	2.0
TecZone Bend Standalone	22.02	-
TruTops Weld ²	7.0	7.0
Programming Tube	1.0	1.0

Valid versions

Table 1

Knowledge The installation of a TruTops product requires basic knowledge of the operating system and the network structure used.

User rights Local administrator rights are required for installation.

Restart It may be necessary to restart the computer during installation. Make sure that after restart the same user is logged in as when installation started.

For an installation on a production server, the necessary arrangements need to be made before the server is restarted.

¹ Can only be used together with a full version of TruTops.

² See special requirements: 0



Installation medium TruTops products are supplied on a DVD-ROM or USB drive as standard and can be installed directly from this.

TruTops Cell (SW48) is downloaded by default via an Online Update Portal. An Internet connection is required for installation and online update. The installation starts after the download is complete.

Optionally, the content can be copied to a local drive or network drive and installed from there.

In the case of a network installation, the following points must be observed:

- The copied data must be accessed via a connected network drive (not via a UNC path).
- If a new network drive is connected to for installation, make sure that, even after performing a restart, the drive retains the same drive letter assigned to it when installation was started.
- The network path must not contain any blanks.

2. Installation environment

Virus scanner The use of a virus scanner can lead to a loss in performance during the installation and operation of TruTops products. We therefore recommend to disable the virus scanner during the installation and set it in such a way that live operation of TruTops products is affected as little as possible (specification of exceptions, full scan outside utilization time, etc.).

Personal fire walls In order to guarantee trouble-free operation of TruTops products, the processes will need free access via the fire wall settings. More specific information regarding files and processes to be enabled will be displayed during the installation and can also be seen in the installation manual.

Network The network must fulfill the following conditions when being operated in PDM mode or when carrying out network database installation:

- Active TCP/IP protocol
- Functional name resolution.
- Transmission rate at least 100 Mbit/s
- Latency < 1ms

If the computer is not being run on the network (e.g. Notebook), the so-called "Microsoft Loopback Adapter" must be installed (see "Installation manual for TruTops, Part 2: Installation and backup of data").

Dedicated Runtime Environment We suggest using a system that is reserved only for TRUMPF software products. The installation includes several third-party-products that are required for the correct operation of the TRUMPF software but may interfere with other software products running on the same system.



3. Operating system

3.1 General notes

- Server operating system**
- Client applications should not be run on a server operating system.
 - For a client/server operation with more than 4 clients, a server operating system should be installed on the server computer.

Service packs All TruTops products are tested with the current service packs of the respective operating systems prior to release (see Table 2, p. 11). If another service pack is published after printing this document, it will promptly be released. Operability cannot be guaranteed until release.

- PDM data storage** The following specifications apply for the data storage of PDM data:
- If possible, the data should be stored on the PDM server PC.
 - The hard drive of the data storage must be formatted in the "NTFS" file system otherwise losses in performance could occur.
 - PDM data cannot be accessed via SAMBA.
 - TruTops Boost and TecZone Bend Standalone doesn't support the PDM mode.

Use via terminal server In current versions, TruTops products can be used via Terminal Server.³

Domain controller It is not possible to install TruTops Server, Oseon Server or TruTops Boost Server on a domain controller.

The installation on a Windows Server 2008 R2 as ReadOnlyDomainController (RODC) is not possible.

³ with the exception of TruTops Boost, Oseon and TecZone Bend Standalone

3.2 Supported operating systems

Note

The operability of TruTops products is only guaranteed for the versions, editions and service packs listed below. The installation of TruTops products on non-listed and non-approved systems, as well as the installation of non-approved service packs on existing TruTops installations, is at the user's own risk.

	Windows 8.1 ⁴	Windows 10 (1607-1803)	Windows 10 (1809 and up)	Windows 11	Windows Server		
					2016 ⁵ Fehler! Textmarke nicht definiert.	2019 ⁵	2022 ⁵ Fehler! Textmarke nicht definiert.
Edition	Pro Enterprise	Pro Enterprise	Pro Enterprise	Pro Enterprise	Standard Datacenter Foundation	Standard Datacenter Foundation	Standard Datacenter
Bit-Version	64bit	64bit	64bit		64bit	64bit	
TruTops Client	-	X	X	X	X	X	X
TruTops Server	-	∅	∅	∅	X	X	X
Oseon Client	-	X	X	X	∅	∅	∅
Oseon Server	-	O	O	O	∅	X	X
WebCalculate	-	-	-		∅	X	
TruTops Cell Client	X	X	X		-	-	-
TruTops Cell Server	X	X	X		-	-	-
TruTops Cell (SW48)	-	X	X	X	-	-	-
TruTops Calculate Client	X	X	X		∅	∅	
TruTops Calculate Server	X	X	X		X	X	
Tube Design Client	-	X	X	-	-	-	-
Tube Design Server	-	X	X		X	X	X
TecZone Bend Standalone	X	X	X	X	-	-	
TruTops Weld	X	X	X		-	-	
Programming Tube Client	-	X	X		-	-	
Programming Tube Server	-	X	X		X	X	

Supported operating systems

Table 2

- Key**
- X = Installation possible and enabled
 - O = Installation possible but not enabled
 - ∅ = Installation possible but not recommended
 - - = Installation not possible

⁴ In Windows 8.1 and 10 the EHT converter must be executed with administrator rights when started for the first time.

⁵ The ".NET Framework" server feature must be activated before installation in the server manager. Installation on RODC is not possible.

TruTops Boost

Operating system (64 bit only)	Service pack	Editions	TruTops Boost Client	TruTops Boost Server
Windows 10		Pro / Enterprise	X	O
Windows 10 (1809 and up)		Pro / Enterprise	X	X
Windows 11		Pro / Enterprise	X	X
Windows Server 2016 ⁵		Standard / Datacenter / Foundation	∅	X
Windows Server 2019 ⁵		Standard / Datacenter / Foundation	∅	X
Windows Server 2022 ⁵		Standard / Datacenter	∅	X

Operating systems supported by TruTops Boost

Table 3

- Legend**
- X = Installation possible and released
 - O = Installation possible but not released
 - ∅ = Installation possible but not recommended
 - - = Installation not possible

3.3 Installation on virtual systems

TruTops products can also be operated in a virtual environment⁶ (e.g. VMware Workstation/ESX). However, due to the numerous variants and basic requirements for virtual systems, operability cannot be guaranteed.

Support TRUMPF also deals with support requests relating to TruTops products installed in a virtual system environment.

Please note:

- TRUMPF is not obliged to provide solutions for problems arising from the operation in a virtual system environment.
- If problems arise during operation in a virtual system environment, the customer must prove that the problem has **not** arisen due to operation in the virtual system environment.
- The TruBend Cell 7000 machine cannot be programmed in a virtual system environment.
- TruTops Boost Client is not released for operation in a virtual system environment.
- TruTops Cell (SW48) is not approved for operation in a virtual system environment.

Licensing Licenses must not be activated on virtual systems. We recommend instead,

- to use a real physical computer as license server
- or, if the license server is to be run in a virtual environment, to use the additional "CmDongle" (hardware dongle) which can be ordered from our sales department.

⁶ TecZone Bend Standalone cannot be operated in a virtual environment.



4. Database

4.1 Microsoft SQL Server

Compatibility A version of "Microsoft SQL Server Express Edition" is also installed when the server installation of a TruTops product takes place. Which version

During installation on the server PC, the following points must be observed:

- The tools of an earlier Microsoft SQL Server edition cannot be installed in parallel with the corresponding tools of a newer version.⁷
- If Microsoft Visual Studio is installed on the computer, it has to at be updated with a specified Service Pack level before the MS SQL Server Express Edition can be installed.¹⁰

New instance The Microsoft SQL Server Express Edition is installed in its own instance. This ensures that existing SQL Server instances are not affected.

If there is already a TRUMPF product installed on the computer which uses the Microsoft SQL Server 2000/2005/2008R2, the corresponding SQL Server instance ("TRUMPF" or TRUMPFSQL1) remains installed and running. It can be turned off or uninstalled at any time as long as it is no longer needed by a product.

Microsoft SQL Server 2019 Express Edition is limited to the use of 1,4 GB RAM maximum.

If an SQL Server 2019 already exists, it can also be used for TruTops. However, in this case it is also necessary to install a separate TRUMPFSQL1 (or TRUMPFSQL2) instance. For more information please contact TRUMPF CAD/CAM Support.

⁷ This is checked before the installation of the Microsoft SQL Server.



Installed SQL Server	Microsoft SQL Server 2014 Express Edition with Advanced Services
SQL Instance	TRUMPFSQL2
Depended version of Visual Studio	Visual Studio 2010
Special system requirements	64bit
Installed with the following products:	TruTops Calculation TruTops Cell

Table 4

Installierter SQL Server	Microsoft SQL Server 2019 Express Edition
SQL-Instanz	TRUMPFSQL2
Spezielle Systemanforderungen	64bit
Wird installiert bei:	TruTops Oseon TruTops Boost

Tabelle 5



4.2 Backup of data

Note

The user alone is responsible for the backup of data, databases, users and the backup of the complete system. When selecting a data backup software, please bear in mind, that it will need to support the data backup of SQL databases (MS SQL Server).

Oseon Server The Oseon Server backs up its data in a background service.

Further information The installation manual of the TruTops product contains detailed information on backing up data.

TRUMPF also recommends protecting hardware against power failure by using an uninterruptible power supply (UPS).

5. Hardware requirements

- Oseon Module Logistics** Slightly different requirements apply in the case of Oseon Module Logistics (see section 0, p.20).
- TruBend Cell 7000** For using the TruBend Cell 7000, the minimum requirements for processor and memory are specified in “Recommended”.
- TruTops Boost** For TruTops Boost apply special hardware requirements. See section 5.10.

5.1 Processor

A powerful processor of the current generation is recommended for all TruTops products, regardless of the operating mode.

	Required	Recommended
Client	2GHz, Dual Core	3 GHz, Quad Core
Server	AMD Opteron™ / Intel® Xeon®, 8 Core	AMD Opteron™ / Intel® Xeon®, 12 Core

Processors

Table 6

5.2 Internal memory

	Required	Recommended
Client (single application) ^{8 9}	8 GB RAM	16 GB RAM
Client (multiple applications) ¹⁰	8 GB RAM	16 GB RAM
TruTops Server (without client)	8 GB RAM	16 GB RAM
Oseon Server (without client) ¹¹	32 GB RAM	64 - 128 GB RAM
Oseon Server + TruTops Server ¹¹	32 GB RAM	64 - 128 GB RAM
TecZone Bend Standalone	4 GB RAM	8 GB RAM

Internal memory

Table 7

Notes

- If multiple technology modules are used simultaneously in TruTops, the recommended memory capacity should be used.

5.3 Screen

	Required	Recommended
Client	1280x1024	1600 x 1200, 1920x1080 or higher
Server	1280x1024, 1920x1080 or higher	

Screen/Resolution

Table 8

⁸ e.g. only TruTops Laser

⁹ Oseon Clients can already be operated with 4 GB RAM.

¹⁰ e.g. TruTops Laser + TruTops Punch

¹¹ Recommended amount of memory depends on the number of clients

5.4 Graphics card

Open GL Some TruTops products (see Table 9, p. 19) require hardware-based Open GL support via the graphics card (a software emulation is not sufficient). Check if the graphics card supports this mode. Compatible chip sets can be found on the SolidWorks website (www.solidworks.com). For TruTops, TRUMPF recommends Nvidia graphic cards, also recommended by SolidWorks. ATI/AMD graphic cards are not supported.

Client PC

	Required	Recommended
TruTops Cell TruTops Bend TruTops Unfold Tube Design	1 GB Open GL, 3D modes, hardware-supported	2 GB Open GL, 3D modes, hardware-supported
TecZone Bend Standalone	Open GL 4.0	Open GL 4.0
Other products	128 MB	1 GB

Graphics card/graphics memory

Table 9

Server PC

	Required
Oseon	Minimum resolution 1280x1024
Other products	No special requirements.

Graphics card

Table 10

5.5 Special system requirements for Oseon Module Logistics

Only the differences of Oseon Module Logistics to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- Server**
- In the special case of the server being serially linked to the storage control system, a serial interface (RS-232) is required for each automatically connected storage system.

- Virtualization**
- The following basic requirements apply when using a virtual server:
- "VMware ESX" must be used as the virtualization software.
 - The customer is responsible for "VMware ESX" software support and administration.
 - The pre-installation of Oseon software with Module Logistics on the ESX server is carried out by TRUMPF via remote diagnostics. Additional assistance at the customer's premises could result in additional costs.
 - The virtual server must be accessible in the network via a fixed IP address.
 - Within the network, the virtual server must be integrated into the domain like a computer.
 - The virtual Oseon server must be connected to the storage control system via a TCP/IP network connection.

5.6 System requirements for connecting the bar code reader

The bar code reader can be connected via a serial interface (RS-232) or via a USB interface at the Oseon Client. If you want to use a USB interface, a USB-COM driver must be available for the bar code reader.

The following devices have been tested successfully by TRUMPF:

- Bar code reader**
- Datalogic:
- Heron D130
 - Gryphon GD4100
 - Gryphon GD4400
 - PM 9500
- Honeywell:
- Voyager 9540
 - Hyperion 1300g

5.7 Special system requirements for Oseon in connection with Oseon App

Only the differences of Oseon in connection with Oseon App to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- Oseon**
 - Oseon Server
 - Modules Preparation / Fabrication.
 - Optional: Module Transaction customer order management for customer view.
 - Optional: public (valid) SSL/TLS certificate for the access to the web service on the Microsoft IIS.

- Mobile devices**
 - Apple iPad, iPhone, iPod touch with iOS 8 or higher.
 - WiFi-Scanner: Skorpio X3 (with Microsoft Windows Embedded Handheld 6.5 and WiFi), Skorpio X4 (with Windows CE and WiFi).

- Wireless network**
 - Connection to web server (Microsoft IIS in the customer network). A VPN-Connection is required for accessing the web server via internet.
 - Min. 1MBit bit/s download/upload data transfer rate

- Others**
 - Network camera with motion JPEG (MJPEG) support (optional, the manufacturer AXIS is recommended).
A VPN-Connection is required for accessing the camera via internet. Alternatively the camera must use the same IP-Address configuration for WLAN and internet.
 - Machine control with RCI 1.4 or higher.

- Remote Control**

To use the "Remote Control" (machine option „MobileControl App“) function of the machine, the following requirements must be fulfilled:

 - The "MobileControl App" option must be enabled on the machine (not available on all machines).
 - The machine must be accessible via "Teleservice via internet"
(internet connection via customer network required).
 - A VPN-Connection is required for accessing from outside the company network.



5.8 Special system requirements for WebCalculate

Only the differences of WebCalculate to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- | | |
|----------------------------|---|
| Oseon server | <ul style="list-style-type: none">• Version 10.0 or higher. |
| Web server | <ul style="list-style-type: none">• Microsoft IIS (will be installed automatically)• Can be installed on the Oseon server. |
| Internet connection | <ul style="list-style-type: none">• Min. 512K bit/s download/upload data transfer rate |
| e-mail transmission | <ul style="list-style-type: none">• see 5.9: special system requirements TTFMessageService. |

5.9 Special system requirements for Oseon Client

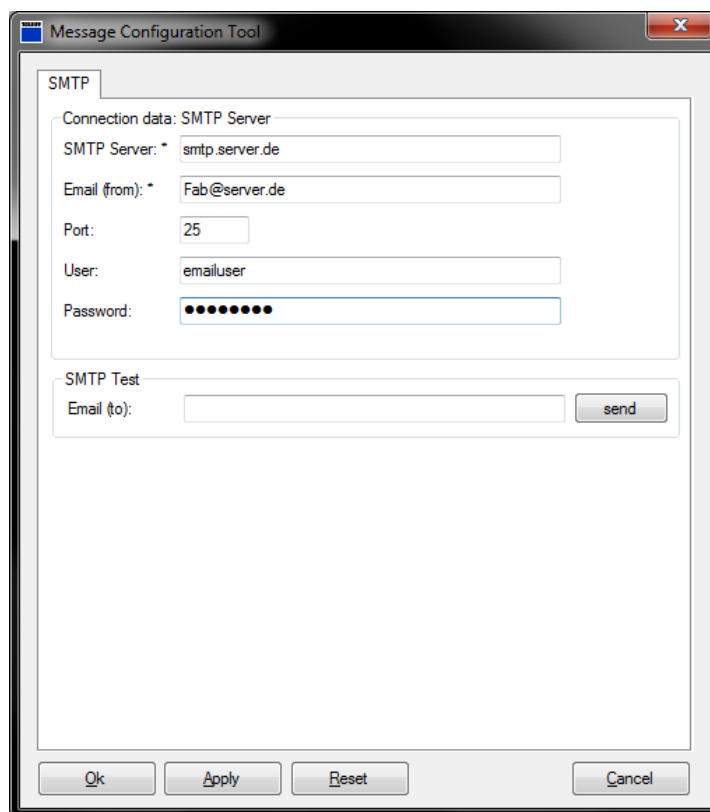
Only the differences of Oseon Client to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- | | |
|--------------------|---|
| Web Browser | The Oseon Client (Webclient) requires Google Chrome version 98.0 or higher. |
|--------------------|---|

5.10 Special system requirements for TTFMessageService

We will only list the differences between the TTFMessageService and the requirements of the other TruTops products. In all other cases, the requirements of the TruTops products apply.

The TTFMessageService sends e-mails via an SMTP server. After the TTFMessageService has been installed on a server, you will only need to maintain the SMTP connection data by means of the TTFMessageConfTool.



In addition, the required file share will be installed. You will only need to specify the path for the file share (TTFOutbox) on the Fab server. You can find the settings in CellPM.Nachrichtendienst.Postausgang.

If the SMTP server is not in the internal network (e.g. hosting by provider), the server on which the TTFMessageService is installed, must have access to the internet.

Fab/Oseon Server Version 10.x or newer.

Internet access Min. 512 Kbit/s download/upload speed

Network share Will be created automatically.

5.11 Special system requirements TruTops Boost

		Required	Recommended
Processor	Client	2 GHz, Dual Core, supporting AVX instructions	3 GHz, Quad Core, supporting AVX instructions
	Server	Dual Core	Quad Core
RAM	Client	16 GB	32 GB
	Server ¹²	16 GB	32 - 64 GB
Resolution	Client ¹³	1280x1024, 32-bit color depth	1920x1080, 32-bit color depth
	Server	no special requirements	no special requirements
Graphic card	Client	512MB, DirectX 11, Shader 5.0, Open GL 4.5	1 GB, DirectX 11, Shader 5.0, Open GL 4.5 Nvidia discrete GPU
	Server	no special requirements	no special requirements
Hard disk	Client	15 GB free memory	25 GB free memory
	Server	20 GB free memory	25 GB free memory
Mouse	Client	Mouse with mouse wheel	Mouse with mouse wheel optional SpaceMouse
	Server	no special requirements	no special requirements

TruTops Boost hardware requirements

Table 11

Internet connection An Internet connection is required to display the online help.

5.12 Special system requirements TecZone Bend Standalone

	Required	Recommended
Operating System	Windows 10	Windows 10
RAM	4 GB	8 GB
Resolution	1024x768	1920x1080
Graphic card	Open GL 4.0 Support	Open GL 4.0 Support
Mouse	Mouse with mouse wheel	Mouse with mouse wheel optional SpaceMouse

¹² Recommended amount of memory depends on the number of clients

¹³ limited HiDPI support

5.13 Special system requirements TecZone Cut stand-alone

Required	Client	Server
Operating System	Windows 8 x64 Windows 8.1 x64 Windows 10 x64	Windows Server 2012 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019
Supported database servers		SQL Server 2008 R2 Express SQL Server 2008 R2 Standard SQL Server 2012 Express SQL Server 2012 Standard SQL Server 2014 Express SQL Server 2014 Standard SQL Server 2016 Express SQL Server 2016 Standard SQL Server 2017 Express SQL Server 2017 Standard SQL Server 2019 Express SQL Server 2019 Standard
Processor	Intel Core i5 / i7 3 GHz or higher or AMD Phenom II X6 3.3 GHz or higher	Intel Xeon® quad-core 3 GHz or higher or AMD Opteron eight core 2.3 GHz or higher
RAM	8 GB	8 GB
Hard Drive	7 GB	50 GB The space in the hard disk may be bigger depending on the quantity of content to be stored
Resolution	1280x1024	
Graphic card	a 512 MB DirectX or OpenGL capable graphic card is recommended	

5.14 Special system requirements TruTops Weld

	Required	Recommended
Operating System (64-bit for all)	Windows 10 version 1607, 1703, and up	
Processor	64-bit Intel or AMD, 2.4 GHz or faster	Intel Core-i7 or Xeon, 3.2 GHz or faster
RAM	8 GB	32 GB and over
Hard Drive	250 GB HDD, 20 GB free	250 GB SSD, 20 GB free
Resolution	1920x1080	1920x1080
Graphic card	Open GL 3.2 Support, with 1 GB graphics memory. Note: No RADEON cards	NVIDIA Quadro graphics card with 2 GB dedicated graphics memory (or higher)

5.15 Special system requirements Programming Tube

	Erforderlich	Empfohlen
Operating system (64-Bit for all)	Windows 10 Version 1607, 1703 oder höher.	
Server operating system	Windows Server 2012 R2, Windows Server 2016, Windows Server 2019	
RAM	8 GB	32 GB
Hard drive	10 GB free	SSD, 20 GB free
Resolution	1920x1080	1920x1080
Graphic card	1 GB, 3D-Modi hardware-supported, DirectX 11	2 GB, 3D-Modi hardware-supported, DirectX 11

5.16 Special system requirements for Online Postprocessor

The online post-processor is a component of TruTops Laser that is necessary to create NC programs for the new platform machines L76, L78, L81 and L88. For this purpose, all required data is transferred from TruTops Laser via the internet to a web service creating the NC program. An internet connection is therefore a prerequisite for creating NC programs for platform machines with TruTops Laser.

System Requirements Online Postprocessor requires TruTops Version 10.X or higher.

Internet There is a working connection to the internet required.

Firewall Configuration The online post-processor requires access to the internet. It communicates via HTTP (TCP port 80) and HTTPS (TCP port 443). The TruTops installation sets the corresponding Windows Firewall rule for the executable file „OnlinePostProcessor.exe“.

If an additional firewall is in use on the target system, it is possible that the system administrator has to set the required authorization rules.

The online post-processor is available via the following internet address:

<https://opp.api.trumpf.com>

The current status of the service can be checked on the following status page:

<https://status.opp.api.trumpf.com>

In addition, this status page contains a list of all maintenance operations and currently known problems.

5.17 Special system requirements for TruTops Cell (SW48)

TruTops Cell (SW48) TruTops Cell (SW48) is not supported on virtual platforms. The following Hardware requirements apply to TruTops Cell (SW48).

	Required	Recommended
Processor	Dual Core, Support AVX Command Set	Quad Core, Support AVX Command Set
Memory	8 GB	>=16 GB
Resolution	1280x1024, 32 bit color depth	1920x1080, 32 Bit Color Depth
Graphics card	512MB, DirectX 9c, Shader 3.0,Open GL 4.0, Dedicated graphics card (no On-Board-GPU)	1 GB, DirectX 11, Shader 3.0,Open GL 4.0, Dedicated graphics card (no On-Board-GPU)
Hard drive	8 GB of free space	over 15 GB of free space
Mouse	Mouse with 2 buttons and mouse wheel	Mouse with 2 buttons and mouse wheel optional SpaceMouse

6. Required Hard Drive Space

The required hard drive space depends on the product installed, the type of installation (client, server), the operating mode (PDM, file system) and the customer data accrued.

Space required for installation

The values listed below show the minimum amount of memory required during installation.

	Server	Client
TruTops	15 GB	5 GB
Oseon	36 GB	1 GB
TruTops Cell	6,5 GB	9 GB
TruTops Cell (SW48)	-	8 GB
TruTops Calculate	15 GB	2 GB
Tube Design	-	3 GB
TruTops Boost	20 GB	15 GB
TecZone Bend Standalone	-	1 GB
TruTops Weld	20 GB	20 GB
Programming Tube	10 GB	20 GB

Required hard drive space

Table 12

Notes

- The memory capacity requirements for database backups¹⁴ have already been taken into account.
- When installing client and server or several products on a computer, add the values together.
- "MS SQL Server" is always installed on the boot drive and requires approx. 1.5 GB memory. If a server is not installed on the boot drive, the 1.5 GB can be subtracted from the values given in the table. 1.5 GB must, however, be available on the boot drive.

Space required for productive use

During productive use, in addition to installation files, space is required for user data (e.g. drawings, NC programs, sheet layouts) as well as for the PDM database which increases in size parallel to the user data.

The space requirements depend greatly on the type of saved files. For example, files from 3D models (TruTops Unfold or

¹⁴ The requirements are based on empirical values. The space requirements for large archives may be greater.

TruTops Cell) require considerably more space than simple GEO files.

For a typical file storage it can be assumed that 100,000 files will require approx. 15 GB memory as a rough average, whereby large deviations above or below this value cannot be ruled out in individual cases.

TruTops Boost will require approximately 75 GB for 100000 3D parts.

7. Version Compatibility

7.1 Oseon

TruTops products The following table shows which Fab/Oseon version can be used with which TruTops products and versions.

		Oseon 1.0	22.0.0	21.0.0	20.0.0	19.0.0	18.0.0	17.0.0	16.0.0	15.0.0
TruTops Version	PDM Version									
11.0.0	17.0	x	x	x	x	x	x	x	x	x
10.0.0	16.0	x	x	x	x	x	x	x	x	x
9.0.0	15.0	x	x	x	x	x	x	x	x ¹⁵	x
8.0.0	14.0	x	x	x	x	x	x	x	x	x
7.2.0	13.0	x	x	x	x	x	x	x	x	x
TruTops Calculate										
21.0.0		x	x	x	-	-	-	-	-	-
20.0.0		-	-	x	x	-	-	-	-	-
19.0.0		-	-	-	x	x	-	-	-	-
18.0.0		-	-	-	-	x	x	-	-	-
17.0.0		-	-	-	-	-	x	x	-	-
16.0.0		-	-	-	-	-	-	x	x	-
15.0.0		-	-	-	-	-	-	x	x	x
14.0.0		-	-	-	-	-	-	x	x	x
TruTops Boost										
14.0.0		x	-	-	-	-	-	-	-	-
13.0.0		-	x	-	-	-	-	-	-	-
12.0.0		-	-	x	-	-	-	-	-	-
11.0.0		-	-	-	x	-	-	-	-	-
10.0.0		-	-	-	-	x	-	-	-	-
9.0.0		--	-	-	-	-	x	-	-	-
8.0.0		-	-	-	-	-	-	x	-	-
7.0.0		-	-	-	-	-	-	-	x	-
6.0.0		-	-	-	-	-	-	-	-	x

Oseon/TruTops compatibility

Table 13

¹⁵ Support of TruTops Tube starting with TruTops Fab V16.0.0, Oseon V1.0.0, TruTops V9.0.0

7.2 3D Tube Construction

As of version V11.0.0 3D tube construction does not need any prior installations. Previous versions needed TruTops to be completely installed.

The following version dependencies applied:

3D tube construction	TruTops version
1.0.0	1.2.0 / 1.2.1 / 1.2.2 / 1.2.3 / 1.2.10
1.1.0	1.2.11 / 2.0.0
1.1.1	2.0.1 / 2.0.2
1.2.0	2.1.0
1.2.1	2.1.1
1.3.0	2.2.0 - 2.9.0
2.0.0	3.x.0
3.0.1	4.0.0
4.0.0	4.7.0
5.0.0	5.0.0
6.0.0	6.11.0 / 7.0.0
7.0.0	6.11.0 / 7.0.0 / 8.0.0
8.0.0	7.0.0 / 8.0.0
9.0.0	8.0.0 / 9.0.0
10.0.0	8.0.0 / 9.0.0 / 10.0.0
10.0.1	8.0.0 / 9.0.0 / 10.0.0 / 11.0.0

Version dependencies for 3D tube construction

Table 14

7.3 Job Order Interface

Job Order Interface is compatible with the following TruTops versions.

TruTops version	Job Order Interface
7.10	9.3.0 / 16.0.0 / 17.0.0 / 18.0.0 / 19.0.0 / 20.0.0 / 21.0.0 / 22.0.0
9.1.0	16.0.0 / 17.0.0 / 18.0.0 / 19.0.0 / 20.0.0 / 21.0.0 / 22.0.0

For newer versions please see [7.1 Oseon](#)

7.4 TecZone Bend Standalone

TruTops Boost and TecZone Bend Standalone can be operated in parallel.





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