

Installation Manual

TruTops products Part 1: System requirements

Version 2.26

Installation manual

TruTops products

Part 1: 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)	8.0	TruTops 3.0
TruTops Fab	15.0	10.0
TruTops Monitor	15.0	10.0
Job Order Interface	9.0	1.0
WebCalculate	15.0	-
TruTops Cell	8.3	All versions
TruTops Unfold	5.0	All versions
TruTops Calculate	15.0	All versions
3D tube construction¹	8.0	All versions
Enhanced shop floor programming	7.4	3.2
TruTops Boost	6.0	2.0

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.



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

Optionally, the DVD 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 data copied from the DVD 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 deactivate 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

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").



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. 10). 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.
- Use via terminal server**
- In current versions, TruTops products can be used via Terminal Server.²
- Domain controller**
- It is not possible to install TruTops Server, TruTops Fab Server or TruTops Boost Server on a domain controller.
- The installation on a Windows Server 2008 R2 as ReadOnlyDomainController (RODC) ist not possible.

² with the exception of TruTops Fab, TruTops Monitor, Job Order Interface option

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 7		Windows 8 and 8.1 ³	Windows 10 ³	Windows Server			
					2008 R2 ⁴		2012 (also R2) ⁴	2016 ⁴
Service-Pack	SP 1				R2 SP1 or higher			
Edition	Professional Ultimate Enterprise		Pro Enterprise	Pro Enterprise	Standard Enterprise Datacenter SBS ⁵		Standard Datacenter Foundation	Standard Datacenter Foundation
Bit-Version	32bit	64bit	64bit	64bit	32bit	64bit	64bit	
TruTops Client	X	X	X	X	∅	∅	X	X
TruTops Server	∅ ⁶	∅ ⁶	∅ ⁶	∅ ⁶	X	X	X	X
Enhanced shop floor programming	X	X	X ⁷	-	-	-	-	-
TruTops Fab/Monitor Client	X	X	X	X	∅ ⁸	∅ ⁸	∅	∅
TruTops Fab Server	-	-	-	O	-	X ⁸	X	X
TruTops Monitor Server	-	X	X	X	-	X ⁸	X	X
Job Order Interface	X	X	X	-	X ⁸	X ⁸	X	∅
WebCalculate	-	-	-	-	-	X ⁸	X	∅
TruTops Cell Client	X	X	X	X	-	-	-	-
TruTops Cell Server	X	X	X	X	X	X	X	-
TruTops Calculate Client	X	X	X	X	∅	∅	X	∅
TruTops Calculate Server	X	X	X	X	-	X ⁸	X	X
TruTops Unfold	-	X	X	-	-	-	-	-
Tube Design	-	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

³ In Windows 7, 8, 8.1 and 10 the EHT converter must be executed with administrator rights when started for the first time.

⁴ The ".NET Framework" server feature must be activated before installation in the server manager. Installation on RODC is not possible.

⁵ Small Business Server 2008 and 2011.

⁶ Up to 3 clients max., due to performance problems.

⁷ Windows 8 is not supported. Windows 8.1 as of TruTops 4.6.

⁸ Installation is only possible on Windows Server 2008 R2

TruTops Boost

Operating system (64 bit only)	Service pack	Editions	TruTops Boost Client	TruTops Boost Server
Windows 7	SP 1	Professional / Ultimate / Enterprise	X	X
Windows 8		Pro / Enterprise	-	-
Windows 8.1		Pro / Enterprise	X	X
Windows 10		Pro / Enterprise	X	X
Windows Server 2008 ⁴	SP 1	Standard / Enterprise / Datacenter / Small Business Server	-	-
Windows Server 2008 R2 ⁴	SP 1	Standard / Enterprise / Datacenter / Small Business Server	∅	X
Windows Server 2012 ⁴		Standard / Datacenter / Foundation	∅	X
Windows Server 2012 R2 ⁴		Standard / Datacenter / Foundation	∅	X
Windows Server 2016 ⁴		Standard / Datacenter / Foundation	∅	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 environment (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.

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

- a) to use a real physical computer as license server
- b) 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.

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 Microsoft SQL Server 2005 Express Edition tools cannot be installed parallel to the corresponding Microsoft SQL Server 2008 R2 Express Edition tools. If the Microsoft SQL Server 2005 Express tools are installed on the computer, they have to be uninstalled before installing the Microsoft SQL Server 2008 R2 Express Edition.⁹
- If Microsoft Visual Studio is installed on the computer, it has to 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 2008 R2 Express Edition is limited to the use of 1 GB RAM maximum.

If an SQL Server 2008 R2 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.

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 TruTops Calculation TruTops Cell TruTops Fab TruTops Monitor Server TruTops Boost

Table 4

⁹ This is checked before the installation of the Microsoft SQL Server.



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).

TruTops Fab Server The TruTopsFab 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

TruTops Fab Module Storage	Slightly different requirements apply in the case of TruTops Fab Module Storage (see section 5.5, p.17).
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	Intel® Core™2 Duo (at least 2.8 GHz) or comparable	Intel® Core™ i5 2.6 GHz or comparable
Server	AMD Opteron™/Intel® Xeon®, 2 cores or comparable	AMD Opteron™/Intel® Xeon®, 4 cores or comparable

Processors

Table 5

5.2 Internal memory

	Required	Recommended
Client (single application)¹⁰	2 GB RAM ¹¹	8 GB RAM
Client (multiple applications)¹²	2 GB RAM	8 GB RAM
TruTops Server (without client)	2 GB RAM	8 GB RAM
TruTops Fab/Monitor Server (without client)	2 GB RAM	8 GB RAM
TruTops Fab Server + TruTops Server	3 GB RAM	8 GB RAM

Internal memory

Table 6

Notes

- Due to a large number of standard services, Windows Vista tends to have a higher memory usage compared with other systems.

¹⁰ e.g. only TruTops Laser

¹¹ TruTops Unfold and TruTops Fab Clients can be operated with just 1 GB RAM.

¹² e.g. TruTops Laser + TruTops Punch

- If multiple technology modules are used simultaneously in TruTops, the recommended memory capacity should be used.
- The 32 bit versions of Windows operating systems have an approximate maximum capacity of only 3 GB RAM. However, it is still recommended to use 4 GB RAM in 2 x 2 GB modules, as modern mainboards can use the so-called "dual-channel mode" in such a case. This mode enables considerably faster access times.

5.3 Screen

	Required	Recommended
Client	17", 1280x1024	20 ", 1600 x 1200
Server	1280x1024	

Screen/Resolution Table 7

5.4 Graphics card

Windows Vista/Open GL Some TruTops products (see Table 8, p. 16) require hardware-based Open GL support via the graphics card (a software emulation is not sufficient). Especially in Windows Vista, 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
Other products	128 MB	1 GB

Graphics card/graphics memory Table 8

Server PC

	Required
TruTops Fab/Monitor	Minimum resolution 1280x1024
Other products	No special requirements.

Graphics card Table 9

5.5 Special system requirements for TruTops Fab Module Storage

Only the differences of TruTops Fab Module Storage 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 TruTops Fab software with Module Storage 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 TruTops Fab 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 TruTops Fab 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
- Honeywell:
- Voyager 9540

5.7 Special system requirements for TruTops Fab and TruTops Monitor in connection with TruTops Fab App

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

- TruTops Fab and TruTops Monitor**
- Windows Server 2008 R2, 2012, 2012 R2, 2016
 - TruTops Fab Server
 - Module Quickjob.
 - Optional: Module Customer for customer view.
- or:*
TruTops Monitor Server
- 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).
- 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.

- TruTops Fab server**
 - Version 9.0 or higher.
 - Windows Server 2008 R2, 2012, 2012 R2, 2016

- Web server**
 - Microsoft IIS (will be installed automatically)
 - Can be installed on the TruTops Fab server.

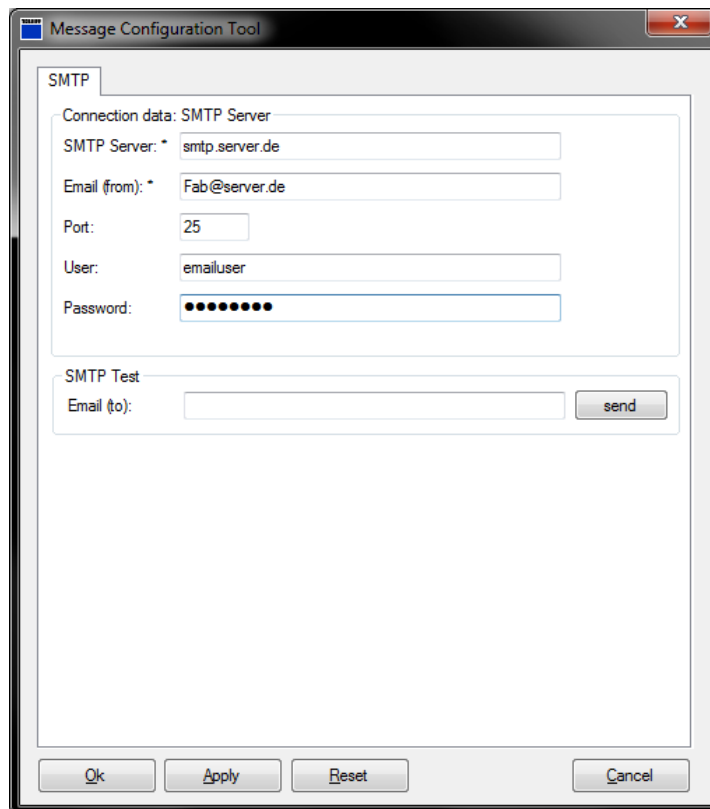
- Internet connection**
 - Min. 512K bit/s download/upload data transfer rate

- e-mail transmission**
 - see 5.9: special system requirements TTFMessageService.

5.9 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.

TruTops Fab Server	Version 10.x or newer.
Internet access	Min. 512 Kbit/s download/upload speed
Network share	Will be created automatically.

5.10 Special system requirements TruTops Boost

		Required	Recommended
Processor	Client	Dual Core	Quad Core
	Server	Dual Core	Quad Core
RAM	Client	8 GB	>=16 GB
	Server	8 GB	>=16 GB
Resolution	Client	1280x1024	1920x1200
	Server	no special requirements	no special requirements
Graphic card	Client	1 GB DirectX 9C, Shader 2.0,	2 GB DirectX 9C, Shader 2.0,
	Server	no special requirements	no special requirements
Hard disk	Client	15 GB free memory	more than 15 GB free memory
	Server	15 GB free memory	more than 15 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 10

5.11 Special system requirements TecZone Fold

	Required	Recommended
Operating System	Windows 7 SP1 Windows 8 Windows 8.1 Windows 10	Windows 7 SP1 Windows 8 Windows 8.1 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

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
TruTops Fab/Monitor	36 GB	1 GB
TruTops Cell	4 GB	1 GB
TruTops Unfold	-	3 GB
TruTops Calculate	15 GB	2 GB
Tube Design	-	3 GB
TruTops Boost	15 GB	15 GB

Required hard drive space

Table 11

Notes

- The memory capacity requirements for database backups¹³ 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 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.

¹³ The requirements are based on empirical values. The space requirements for large archives may be greater.

7. Version compatibility

7.1 TruTops Fab

TruTops Monitor TruTops Fab and TruTops Monitor can **not** be installed together on one computer.

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

			TruTops Fab								
			15.0.0	14.0.0	13.0.0	12.0.0	11.0.0	10.0.0	9.0.0	8.0.0	7.0.0
TruTops Version	PDM Version	File-system									
8.0.0	14.0	x	x	x	x	x	x	-	-	-	-
7.2.0	13.0	x	x	x	x	x	x	-	-	-	-
6.0.0	12.0	x	-	-	x	x	x	x	x	-	-
5.0.0	11.0	x	-	-	-	-	-	x	x	-	-
4.0.0	10.0	x	-	-	-	-	-	-	-	x	x ¹⁴
TruTops Calculate											
15.0.0			x	-	-	-	-	-	-	-	-
14.0.0			-	x	x	-	-	-	-	-	-
13.0.0			-	-	x	-	-	-	-	-	-
12.0.0			-	-	x	x	x	-	-	-	-
11.0.0			-	-	x	x	x	-	-	-	-
10.0.0			-	-	-	-	-	x	x	-	-
9.0.0			-	-	-	-	-	-	x	x	x
8.0.0			-	-	-	-	-	-	x	x	x
7.0.0			-	-	-	-	-	-	x	x	x
6.0.0			-	-	-	-	-	-	x	x	x
TruTops Boost											
6.0.0			x	-	-	-	-	-	-	-	-
5.0.0			-	x	-	-	-	-	-	-	-
4.0.0			-	-	x	-	-	-	-	-	-
3.0.0			-	-	-	x	-	-	-	-	-
2.0.0			-	-	-	-	x	-	-	-	-
1.0.0			-	-	-	-	-	-	-	-	-

TruTops Fab/TruTops compatibility

Table 12

¹⁴ TruTops Fab Patch 4 oder höher erforderlich.

7.2 3D tube construction

TruTops must be completely installed for 3D tube construction. The following version dependencies apply here:

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

Version dependencies for 3D tube construction

Table 13

7.3 Job Order Interface

TruTops version 8.0.0 is compatible with Job Order Interface version 9.3.0.

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