

MasterShip Model Exchanger

User manual

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MasterShip Software BV

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What the Model Exchanger does

The MasterShip Model Exchanger converts a MasterShip 3D model into a **JT file**: the exchange format used by shipyards, class societies and their customers to view and check a model without needing AutoCAD or MasterShip.

The JT is not an empty shape. Every plate part and every stiffener in it carries the data from your project database, so the recipient can click a part in a JT viewer and see what it is made of.

What ends up in the JT

Every plate part carries its identification, type, material and thickness. Every stiffener carries its identification, profile code, profile type, description and material. On top of that you can add any other column from the project database - section number, sub-assembly, drawing name, length, and so on. This is described under *Additional metadata*.

How a conversion runs

A conversion goes through four stages. Knowing them helps when you read a log file.

1. **Binding** - the assembly drawing and everything it references are combined into one set of drawings. AutoCAD does this in the background, without a window.
2. **Export to IGES** - each drawing is exported to IGES. Several run at the same time, which is why this is the stage that uses the machine hardest. On a large model it is also the longest stage by far.
3. **Metadata** - the parts and profiles are looked up in the project database and their data is attached to the model.
4. **Writing the JT** - the model is written out, optionally faceted and optionally zipped.

A conversion of a large model takes several minutes. Almost all of that is stage 2.

Two ways to run it

	Model Exchanger UI-window	Command line
Used for	Everyday exports, trying out settings	Scheduled and unattended exports
Settings	Filled in on screen, saved as a <i>job</i>	Taken from the same job
Progress	Progress bar, Windows task bar, live log	Written to the log file
Result	Message on screen	Exit code, so a scheduled task sees a failure

Both run exactly the same conversion, from exactly the same job. Anything you set up and test in the window can be scheduled without changing a thing.

Installing

What you need

- **AutoCAD** with `accoreconsole.exe`. This is part of every normal AutoCAD installation. AutoCAD 2026 is the default; older versions work when you correct the path (see *Settings for the whole machine*).
- **MasterShip**, with access to `OrganiserMain.mdb` and to the project database of the models you convert.
- A valid **MasterShip license** for the Model Exchanger.
- Windows 10 or later, 64 bit.

Installing

5. Close AutoCAD.
6. Run `ShipModelExchanger-<customer>-<version>.exe`. Administrator rights are needed, because the program is installed for all users.
7. The installer places the plug-in in the Autodesk plug-in folder:

```
C:\Program Files\Autodesk\ApplicationPlugins\ShipConverter.bundle\
```

8. Start the program from the start menu: **MasterShip Model Exchanger**.

AutoCAD picks up the plug-in by itself the next time it starts. Nothing has to be loaded by hand.

Upgrading

Run the new installer over the old installation. Your jobs and settings are not touched: they are not kept in the installation folder but under your own Windows profile. See *Where your jobs are kept*.

Uninstalling

Uninstall through Windows, *Apps and features*. This removes the program but leaves your jobs and settings behind, so they are still there after a re-install. To remove those as well, delete this folder by hand:

```
%APPDATA%\MasterShip\Model Exchanger
```

The Model Exchanger window

The job bar

Everything you fill in is stored together as a **job**: one project with its output and its settings. Give a job a name and it comes back exactly as you left it, next week and next year.

Button	What it does
New	Start an empty job
Save	Save the job under its own name
Save as...	Save under a new name, or somewhere else
Delete	Remove the job
Job folder...	Open the folder the jobs are kept in

The drop-down list at the left holds the jobs saved on this machine. The window title shows which job is open and whether it has changes that are not saved yet. The job you had open last comes back the next time you start the program.

A job saved with *Save as...* in a folder other than the job folder - the project folder, for instance - keeps its own location. That is the way to share one job between several people: put it on the network next to the project. It does not appear in the drop-down list; you open it from the file itself.

Tab: Main

Input

- **Assembly DWG** - the assembly drawing of the model.
- **Main database** - `OrganiserMain.mdb`.

The project database is found automatically next to the drawing and does not have to be filled in. The Model Exchanger expects the standard MasterShip layout: the drawing one level below the project folder, and `ProjectDatabase.mdb` in the Data folder of that project.

Output

- **Folder** - where the JT is written. May be given relative to the assembly DWG, for example `..\JT`. That keeps the job usable when the project is moved or copied.
- **File name** - the base name, for example `jtOut`.
- **Prefix with date and time** - puts `yyyyMMddHHmm-` in front of the name, so runs never overwrite each other and the output folder reads as a history. A run on 11 August 2026 at 09:05 produces `202608110905-jtOut.jt`.
- **Also write a zip** - writes a `.jt.zip` next to the JT. A JT compresses well, which matters when it has to be e-mailed or uploaded.
- **Keep the IGES files** - copies the intermediate IGES files to the output folder. Off by default; switch it on when a recipient asks for IGES or when you want to check what went into the JT. The first IGES file is given the same name as the JT.

- **Write log file** - writes the full log of the run to a file. **Leave the folder empty and the log is written in the output folder, next to the JT.**

The status line under the progress bar always shows the name the next run will produce, so you can see the effect of these settings before starting.

Tab: Conversion settings

Solid output

This decides how the curved faces of solids are written to the JT.

Setting	What comes out
Same as input model	The solids keep the smooth arcs they were modelled with. This is the default and what earlier versions always did.
Faceted (tessellated)	The curved faces are replaced by flat facets, to a maximum deviation you set yourself.

Maximum deviation is the largest distance, in millimetres, between the original arc and the flat facets that replace it. Smaller means finer facets, a more accurate shape and a larger JT file. 0.10 mm is a sensible starting point.

Pick *Faceted (tessellated)* when the receiving system prefers or requires faceted geometry - some viewers and downstream production systems handle facets better than exact surfaces. Leave it on *Same as input model* otherwise.

This affects the JT only. The model itself, the production parts and the solid-only DWG that SHIPBINDSOLIDMODEL writes are not touched and stay smooth. That is exactly the point of the setting: the JT can be faceted while the parts you cut steel from stay exact.

If you previously set `bCreateSolidsForJTExport = 1` in your company settings file to get faceted output, that is no longer necessary and is not recommended. That setting works at the moment the parts are *created*, so it changes the production parts as well. Leave it at 0 and use *Faceted (tessellated)* here instead.

Additional metadata

Every plate part and every stiffener already carries the standard data described at the start of this manual. Whatever you tick here is added **on top of that**.

Press **Choose...** to see the columns available in the project database of the selected model. Fill in the assembly DWG first: the list is read from the project that belongs to it, so the choice always matches the model you are actually converting.

The list only offers what is worth adding. Columns that are already part of every export, and columns that mean nothing outside MasterShip, are left out.

Every added column ends up as a property on every part in the JT. Adding a handful of useful columns costs nothing worth mentioning; adding everything makes the JT larger and the property list in the viewer harder to read. Pick what the recipient actually asks for.

Advanced

These two settings apply to the whole machine, not to one job. See *Settings for the whole machine*.

Running a conversion

Press **Start**. While the conversion runs:

- The progress bar and the **Windows task bar button** show how far it is. You can carry on in another program and check the task bar from the corner of your eye.
- The log appears in the window as it happens.
- The task bar button **blinks** when the run finishes or fails, so a conversion that takes minutes does not need watching.

Cancel stops the run and closes the AutoCAD processes that were started for it.

Afterwards, *Open log* and *Open output folder* take you straight to the result.

Running jobs from the command line

A job made in the window can be run without the window. That is how you schedule an export: nightly, weekly, or after a milestone.

The command

```
ShipConverter.exe -job "Nightly export"
```

ShipConverter.exe sits next to the Model Exchanger:

```
C:\Program Files\Autodesk\ApplicationPlugins\ShipConverter.bundle\Contents\Bin\
```

Everything about the conversion comes from the job: the model, the output folder and name, the metadata, the solid output, and whether a log file is written. Change a setting in the window and the scheduled run follows automatically. There is nothing to keep in step by hand.

Command	What it does
ShipConverter.exe -job "<name>"	Runs a job saved on this machine
ShipConverter.exe -job "<path.msxjob>"	Runs a job file kept anywhere, for instance next to the project
ShipConverter.exe -job "<name-A>" -job "<name-B>"	Runs several jobs, one after the other
ShipConverter.exe -list	Shows the jobs saved on this machine
ShipConverter.exe -?	Shows all of the above

The name is the one in the drop-down list in the window. Put it in quotes when it contains spaces.

Exit codes

The program reports the result as an exit code, which the Windows Task Scheduler shows as the **last run result**. A failed export is therefore visible without opening a single log file.

Code	Meaning
0	Finished
1	A conversion failed - the reason is in the log
2	A job could not be started: not found, or something in it is missing or wrong
3	No license

Code 2 means nothing ran, so there is no log to look in. The reason is printed on screen instead: which job, and what is wrong with it.

Scheduling with the Windows Task Scheduler

9. Open **Task Scheduler** and choose *Create Task* (not *Create Basic Task*, which offers fewer options).
10. On the **General** tab, give the task a name and choose *Run whether user is logged on or not*. Read the note below about which account to use.
11. On the **Triggers** tab, add a trigger, for example daily at 02:00.

12. On the **Actions** tab, add a *Start a program* action:
 - Program: C:\Program Files\Autodesk\ApplicationPlugins\ShipConverter.bundle\Contents\Bin\ShipConverter.exe
 - Arguments: -job "Nightly export"
13. On the **Settings** tab, switch off *Stop the task if it runs longer than* or set it generously. A large model takes minutes, and a machine that is busy takes longer.

Which account the task runs as matters. Jobs and settings are stored per Windows user. A task that runs as a different account than the one that made the job will not find it, and reports exit code 2. Either run the task as the user who made the job, or save the job to a shared location with *Save as...* and give the task the full path to the .msxjob file. The second is the better choice for a server.

The account also needs to be able to reach the model, the databases and the output folder. Where those are on a network share, use a domain account, not SYSTEM.

Using a batch file instead

If you prefer a batch file, runjob.bat in the same folder does the same thing. Copy it, put the job name at the top, and schedule the copy:

```
SET JOB=Nightly export
```

The batch file passes the exit code on, so the Task Scheduler still shows a failed export.

For existing convert.bat users

Earlier versions were driven by convert.bat, with every setting repeated as a SET line at the top. **That still works** - existing scheduled tasks keep running and need no change.

It is no longer the recommended way. In convert.bat every setting exists twice: once in the batch file and once in the window, and the two drift apart. With -job there is one set of settings, used by both.

To move over: build the same export as a job in the window, run it once to check the result matches, then point the scheduled task at ShipConverter.exe -job "<name>". The old batch file can stay where it is until you are satisfied.

Settings for the whole machine

These two live under *Conversion settings, Advanced*. They belong to the installation, not to a job, and are shared by every job on the machine.

Setting	What it is for
accoreconsole	The path to accoreconsole.exe of the AutoCAD you use. Correct this after an AutoCAD upgrade, or when several versions are installed and the conversion has to use a particular one.
Working folder	Where the intermediate drawings and IGES files are put. Leave it empty and a temporary folder is used and cleaned up afterwards. That is what you want.

Fill in a working folder only when you want to inspect the intermediate files, for instance to find out why a part is missing from the JT. Note that the folder is **emptied at the start of every run**, so never point it at a folder holding anything else.

After an AutoCAD upgrade the old path stops existing and every conversion fails immediately with *File not found*. Correcting the **accoreconsole** path is the fix. This is the single most common cause of a conversion that used to work and suddenly does not.

Where your jobs are kept

Jobs and settings are stored under your Windows profile:

%APPDATA%\MasterShip\Model Exchanger\ Jobs\<name>.msxjob		one file per job
settings.json		accorreconsole path, working folder, last opened job

This is deliberately outside the installation folder. The installer unpacks over its own folder and the uninstaller removes it whole, so anything kept there would be lost at every upgrade. Here, your jobs survive both an upgrade and an uninstall.

Two things follow from this:

- **Include this folder in your backup.** It is small, and it holds work you would otherwise have to set up again.
- **Jobs are per Windows user.** A colleague on the same machine, and a scheduled task running under another account, do not see your jobs. To share a job, save it with *Save as...* to a folder both can reach, and open it from there.

A .msxjob file is a small text file. It can be copied, e-mailed, and put under version control next to the project.

When something goes wrong

Switch on **Write log file** and keep it on. The log holds everything the conversion and AutoCAD reported, and is what MasterShip Support will ask for.

What you see	What it usually is
File not found: ...accoreconsole.exe	AutoCAD was upgraded, moved or removed. Correct the path under <i>Advanced</i> .
The assembly DWG was not found	The model was moved or renamed, or a network drive is not connected.
No project database found at ...	The drawing does not sit in a MasterShip project, or ProjectDatabase.mdb is missing from the Data folder.
No license available	The license is missing or expired. Contact MasterShip Support.
Exit code 2 from a scheduled task	The task cannot find the job. Almost always the account: see <i>Scheduling with the Windows Task Scheduler</i> .
Conversion takes far longer than usual	Stage 2 runs several AutoCAD processes at once. Another heavy program on the same machine, or a slow network share, will show up here.

When contacting support, send the log file of the failed run and the .msxjob file. Together they say exactly what was run and what happened.

Appendix: the settings in convert.bat

For installations still using convert.bat. New exports are better set up as a job; this appendix is here so an existing batch file can be read and maintained.

convert.bat sits in the Contents\Bin folder of the installation. It is meant to be copied to your project and edited there. The settings at the top:

```
SET INFILE=assembly.dwg
SET OUTFILEBASENAME=jtOut
SET ASSEMBLYNAME=assembly_name
SET LOGGING=1
SET OUTPUTPATH=..\JT\
SET LOGPATH=..\JT\Logs
SET PARTS_METADATA= SectionNumber, Subassembly, DrawingName
SET PROFILES_METADATA= Length, DrawingName
SET MAINDB=D:\Data\OrganiserMain.mdb

:: 0 = smooth arcs (as modelled), 1 = faceted arcs
SET FACETED_SOLIDS=0

:: Maximum deviation in mm. Only used when FACETED_SOLIDS=1. Decimal point, not a comma.
SET MAX_CURVE_DEVIATION=0.1
```

Setting	Same as in the window
INFILE	Assembly DWG
MAINDB	Main database
OUTPUTPATH, OUTFILEBASENAME	Output folder and file name
LOGGING, LOGPATH	Write log file, and its folder
PARTS_METADATA, PROFILES_METADATA	Additional metadata, as database column names
FACETED_SOLIDS	Faceted (tessellated)
MAX_CURVE_DEVIATION	Maximum deviation
ASSEMBLYNAME	No equivalent - the window handles this itself

FACETED_SOLIDS and MAX_CURVE_DEVIATION are the two settings added in version 2.1. A convert.bat from an earlier version that does not have these two lines keeps working and produces smooth solids, exactly as before.

Column names in PARTS_METADATA and PROFILES_METADATA are typed by hand here, and a misspelled one fails the whole run. In the window the columns are picked from a list read out of your project database, which is the main reason to move over.

Support

MasterShip knowledge platform: www.mastership.support

There you will find this manual, the release notes and the other MasterShip documentation.