

What's new?

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TOC

Basics	15
Service Pack 2 2017 (V 2202).	
Changed licensing	
HiCAD VI/AV	15
KNTPAR.DAT -> Configuration Editor	
HiCAD Education Edition.	
Opening of HiCAD documents from opened HELiOS dialogues.	
New test options in the Design Checker	
Enhanced display of keyboard layout in the UserInterfaceEditor	
New 'Part variables' docking window	
Service Pack 1 2017 (V 2201).	
Further extension of product range	
Parameter Configuration with security prompt.	
Extended options for saving of parts	
Enhanced information for 3-D lines	
Extended Selection	
Enhanced Design Checker	
Preview for point options	
Major Release 2017 (V 2200)	
New file format for 2-D files.	
Revised "Drawing" tab	
Access to BIMcatalogs.net by CADENAS.	
Article number configuration for assemblies.	
Faster build-up of part structure in the ICN	
Absolute / relative point options- facilitated entry	
Point options when sketching	
Redraw body - removed from Data structure menu	
Enhanced Save part function.	
Modified default settings for drawing derivation.	
2-D	33
GRAPAR.DAT settings moved to Configuration Editor.	
Major Release 2017 (V 2200) New file format for 2-D files.	
Variable dimensionings.	
Renamed function tooltips.	
Point options during sketching.	
i one options during soluting	
3-D	
Service Pack 2 2017 (V 2202).	
Model / process parts	

Deform - New 'Local' option Edge functions - 'Insert polyline' function with Feature log entry	
Views	
Display of old sectional/detail views and cut-outs.	
Sketch lines and axes.	
No sketch elements and axes in (main) assemblies.	
Simulation	
New options for video creation.	
Service Pack 1 2017 (V 2201)	
3-D Dimensioning + Text	
Annotations by part type	
Sketches. Create spirals.	
Processing and reuse of spirals.	
Move points.	
Process/model parts	
Change assembly type	
Simplify	
Delete structure parts	
Views. Panorama default settings.	
Hide/Show processing planes.	
Major Release 2017 (V 2200)	
Views	
Hide/show edges: Assembly points and weld seam edges	
Sketches	
Revised "Spirals" function.	
Point options during drawing of sketches.	
Dimensioning	
Changed 3-D Dimensioning + Text tab.	
Designate edge state	
Model/Process parts	
Envelope part	
Standard Parts / Standard Processings.	
Purchased parts / Factory standard parts.	
italogue Editor	
Service Pack 2 2017 (V 2202)	
New Titgemeyer parts standard parts	
Service Pack 1 2017 (V 2201)	
New FISCHER standard parts.	
Retaining rings acc. to DIN 9925 and 9926.	
New ALUCOBOND® semi-finished products.	
ZETA profiles	
New Usage.	
Major Release 2017 (V 2200).	
Transfer standard parts to HELiOS.	
Transion stanuaru parts to HELIOS	JJ

Purchased parts / Fa	ctory standard parts	
New factory standard	l parts and tables.	
Semi-finished produc	cts-dependent part colour	
Feature Technology		61
Service Pack 2 2017	7 (V 2202)	
	ctions - Insert polyline	
-	Mirror transformation.	
	7 (V 2201)	
	n for identical parts	
	(V 2200).	
	lentifying rotation axes of cylinder and torus surfaces	
	ttach flange	
	-	
Configuration Managem	ent.	
Service Pack 2 2017	7 (V 2202)	
KNTPAR.DAT settings	s moved to Configuration Editor	64
Mounting drawings -	Rearrangement of views upon update	64
Service Pack 1 2017	7 (V. 2201).	65
GRAPAR.DAT settings	s moved to Configuration Editor	
-		
-	ns. n for assemblies without usage	
	e sectional views	
	dimensions when updating drawings.	
	cessed sheets	
	for sheets with identical cross-sections M (Excel) - Distinguishing unprocessed and processed	
	essed sheets	
•	ns in mounting drawings	
-	D DXF	
New parameter "Plan	n types"	
Workflow status in IC	:N	
Generation of STEP fi	iles separately for beams, plates etc.	67
Major Release 2017	(V 2200).	
Sheet developments.		68
Changed settings for	r Management+BIM	
Configuration of the	assembly article number	68
Hide/Show edges		69
Designate edge state	2	
	for visualisation.	
	tingo in Configuration Editor	
	tings in Configuration Editor t Metal parts	

Specify position of BOM Automatic sectional view creation for attached parts	
HiCAD drawing frames in P+ID.	
-	
Parametrics (HCM)	
Service Pack 2 2017 (V. 2202)	72
New symbols for positional HCM constraints.	
Major Release 2017 (V 2200)	
Taking into account of switched off external references in the Sketch HCM.	73
Bill of Materials / Report Manager.	
Service Pack 2 2017 (V 2202).	
Configuration of attribute transfer for BOMs from product structures.	74
Service Pack 1 2017 (V 2201).	
Parameter configuration / Steel Engineering BOMs.	
Steel Engineering BOM (Excel) - Differentiating between unprocessed and processed sheet metal	75
Expanded short shipping list	
Major Release 2017 (V 2200)	
Cut symbols in Excel BOMs via product structure.	
Expanded BOM template for Steel Engineering	
Faster BOM creation	
Automatic creation of images of Sheet Metal parts.	
Viewer	02
Major Release 2017 (V 2200).	
Viewing of 2-D files	82
Sheet Metal	83
Service Pack 2 2017 (V 2202).	
Enhanced 3-D development	
Simplify	
Representation in developments	
Manual moving of auxiliary texts.	
Favourites for developments	
Error message for incorrect bending simulations and sheet developments.	
Sheet from sketch	
Welded corner	
Deleting flanges and bend zones.	
Transform / Clone flanges and bend zones.	
Settings for sectional views of sheets in production drawings.	
Service Pack 1 2017 (V 2201).	
Create new base sheet	
Insertion via points.	
Sheet parameters	
General	

Apply / discard inputs	
Editor for allowance methods.	
Unprocessed and processed sheets	
Production drawings for sheets with identical cross-sections.	
Steel Engineering BOM (Excel) - Distinguishing unprocessed and processed	
CAM data for unprocessed sheets.	
Sheet development	
Auxiliary text with leader line	
Apply sheet development immediately.	
Export sheet development as DXF file.	
Process development with 3-D functions.	
Coating according to NCS.	
Major Release 2017 (V 2200).	
3-D development	
Develop sheet	
Development parameters.	
Update	
Export. Old functions for 2-D developments.	
"Clone feature" for "Attach flange" function	
Without allowance method	
Tear-open edge in analytical development	
"Drawing" tab changed	
Composite panels as semi-finished products.	
Steel Engineering	
Service Pack 2 2017 (V 2202)	
Grids	
Manual annotation for grid sub-systems	
Timber construction	
Design Variants for timber construction.	
Mounting drawings	
Mounting drawings - Rearranging views when updating	
Fit DIN frame	
Optimised performance when calculating boxes of a mounting drawing	
Production drawings	
Assembly points	
Settings for sectional views of sheets	
New and enhanced dimensioning rules.	
Rules for sectional views Dimensioning of processings depending on position to beam axis	
Distinguishing of hidden / unhidden sub-parts.	
Connections. Cam joint (2104).	
Column connection, Frame corner (2203).	
Stairs and Railings.	
Concrete stairs	
Vertical rods	
Railings with individual post distribution.	
Service Pack 1 2017 (V 2201).	120

Insertion of beams and profiles	
Production drawings	
Placing of annotations.	
Suppress sheets with identical cross-section.	
Drawing frames for output of assemblies with main and sub-parts.	
Default Configurations for assemblies without usage	
Sheet development	
Avoiding multiple sectional views.	
Structured display of dimensioning rules in Editor.	
Deleted dimensions when updating.	
Designation tags for sub-parts on back, bores and boltings.	
Designation for identical processings /bores.	
Separate dimension chains for bores and subtractions.	
Separate dimensions according to part type for position of sub-parts.	
Not considering connected elements in Metal Engineering.	
Mounting drawings	
Placing of annotations.	
Connections / Design variants.	
New design variant - Column connection, Frame corner 2203.	
Assignment of boltings.	
Connections with filler plates. Horizontal / vertical switching of connection values.	
•	
Railing Configurator	157
Infill, glass element.	
Posts - Handrails: All connections equal	
Post connection, top - different distances for horizontal and oblique fixing	
Post connection, lateral - different fixing heights for each section.	
Post connection, lateral - new connections for posts and base plates.	
Vertical infill	160
Steel Engineering BOM (Excel)	
Differentiating between unprocessed and processed sheet metal.	
Expanded short shipping list	
Others.	
Parameter Configuration	
Major Release 2017 (V 2200)	163
User interface	
"Settings" menu changed	
Functions for detail drawings moved	
Settings / Options	
Settings for dimensioning.	
Changed default setting for visualisation	
Mounting drawings	
Placing of annotations. Automatic creation of axonometric view.	
Production drawings	
Development of Sheet Metal parts.	
Hide boltings.	
Specify position of BOM	

Automatic sectional view creation for attached parts	
Connections / Design Variants	
New Design Variants for stiffeners	
Assigning of boltings. Repeated deletion of connections.	
Revised Base plate + Anchor plate connection.	
Cross-bracing - Slotted plate with clearance.	
Staircase / Railing Configurator.	
Railing with framework	
New Design Variant for glass railings Corner and transition infill for railings	
Updating of staircases and railings.	
NCX: Output series beams as one part	
Steel Engineering - Management + BIM	
Service Pack 2 2017 (V 2202)	
Mounting/customer drawings - Change detail	
Mounting drawings - Rearrange views upon update	
Customer drawings - Itemisation no longer mandatory	
Locked customer drawings with old parts	
Clean up project - Delete unused external documents.	
Production drawings for unprocessed beams depending on machine processing.	
Targeted itemisation control	
Service Pack 1 2017 (V 2201)	189
Customer drawings for approval	
Mounting drawings	
Revised Ribbon tab.	
Parameter configuration with new message.	
Workflow status in the ICN	
Generation of STEP files separately for beams, plates, sheets etc.	
Suppress unprocessed Sheet Metal parts in production drawings	
CAM data for unprocessed sheets.	
Major Release 2017 (V 2200)	193
Changed settings for referencing	
New "Information" function group.	
Expanded setting options for output of external part and drawing data	
FORMAT attribute	
Metal Engineering	
Service Pack 2 2017 (V 2202)	
Import of LogiKal glass panes with circular arc-shaped frames.	
Changed licensing.	
Automatic creation of View Coordinate Systems.	
Service Pack 1 2017 (V. 2201).	
Taking over of LogiKal item name into Part attributes mask	
Create part via part catalogue.	
Workshop drawing - No taking into account of connecting elements in Metal Engineering	

Major Release 2017 (V 2200).	
Direct call of eluCad from HiCAD.	
Apply insertion direction for several foils	
Plant Engineering	
Service Pack 2 2017 (V 2202)	
Part insertion.	
New connection types / asymmetric flange connections.	
Changed function dialogues.	
Parts for food ducts.	
Create and modify guidelines Changed function dialogues	
Easy drawing of parallel guidelines.	
New symbols during drawing of guidelines.	
Assign guideline remainder to another pipeline.	
Part Tools.	
Connect pipes	
Service Pack 1 2017 (V 2201).	
Part Insertion / Create Pipelines.	
Highlighting connection points during part insertion	
Adopt pipeline name from P+ID	
Part Tools.	
Divide pipe.	
Pipeline Tools.	
Close gaps within a pipeline. Use pipeline colour as edge colour.	
Guideline Tools.	
Deleting edges of a guideline	
Merge guidelines	
Isometry and Pipe Spool Drawing.	
Switching off identical part search when assigning PE item numbers.	
New format for connection item numbers	
Automatic dimensioning settings.	
Major Release 2017 (V 2200)	
New variants.	
SWAGELOK - Metering valves, Plug valves, Pipes	
Ermeto valves.	
New database entries.	
New attributes. Expanded search masks.	
HELIOS as Part Data Source.	
Use the Guideline Route for the Restriction of Part Selection.	
Pipeline Tools.	
Change route.	
Pipeline Isometry / Pipe Spool Drawing	
Less disk space required for drawings with implied connected elements.	
Separately removing auxiliary lines for dimensioning	
Associative dimensions and auxiliary lines for dimensioning in the pipe spool drawing.	
Part insertion	
Placing of parts on guidelines	

Flanges.	
Pipe-dependent placing of loose flanges.	
Other enhancements. Performance.	
P+ID	
Service Pack 2 2017 (V 2202)	
Sheet master data modified	
Product structure.	
Store part data in P + ID library.	
Set dummy article automatically. Product structure transfer from a P + ID.	
Attributes for product structure transfer from $P + ID$	
Links from symbols to other sheets will be updated.	
Service Pack 1 2017 (V 2201)	
Adjustable sheet dialogue	
Major Release 2017 (V 2200).	
Direct access to the master data of a P+ID sheet.	
Utilisation of any HiCAD frame in P+ID.	
Hide current paths.	
Interfaces.	
Service Pack 2 2017 (V 2202).	
IFC - Enhanced attribute mapping	
NCX-Export - New setting options.	
DSTV-NC interface - New options for letterings	
DSTV-BOM - Suppress output of bolts and screws.	
Service Pack 1 2017 (V 2201).	
Update to CADfix 11 SP1	
IFC export: Transfer part structure.	
Only export visible parts (for CADfix formats).	
NCX export of unconnected multi-part beams (via HiCAD or HELiOS Spooler)	
3-D DXF/DWG: Import texts	
DXF: Export sheet developments.	
Parts4cad / BimCatalogs.	
Major Release 2017 (V 2200).	
Update to CADfix 11	
Access to BIMcatalogs.net by CADENAS.	
Direct call of eluCad from HiCAD	
3DVS export for Kisters 3DViewStation	
NCX: Output series beams as one part	
IFC import without feature data	
DSTV-NC export - Now with Favourites Management.	
STEP export: Powder marking line output and fits information.	

HELIOS Desktop	
Service Pack 2 (V 2202)	
Displaying of attributes of linked objects in masks and result lists.	
Result list button for opening of documents.	
Revised Serial document input dialogue window.	
Expanded HELiOS-URLs	
HELiOS Options: Avoid unwanted printing of notes documents.	
Service Pack 1 (V 2201).	
Use of articles: Filter options and increased performance.	
Favourites: Displayed index	
Generate item numbers	
Restore notes documents.	
Major Release 2017 (V 2200)	
Print documents.	
Print result lists	
New Folder and Project selection dialogues.	
Indication of new indices in structure versions.	
Result list configuration.	
Result list options	
Export and Import of settings	
Display of notes documents in result lists	
New option for linked articles on 'Display' tab	279
Notes on license configuration of ERP interfaces.	
HELIOS in HiCAD	280
Service Pack 2 (V 2202).	
Loading of HiCAD drawings from HELiOS dialogue windows.	
Service Pack 1 2017 (V 2201).	
NCW export	
Major Release 2017 (V 2200)	
Marking of newer indices in the product structure	
Load with index selection.	
Performance	
New data format - Conversion required for updates	
HELIOS Spooler	
Service Pack 2 (V 2202)	
Support of multiple identical printer drivers	
Conversions for SOLIDWORKS, AutoCAD and Inventor.	
Service Pack 1 (V 2201).	
HELiOS Spooler Admin Tool: Job statuses	
NCW export	
HELiOS PrintClient: New options	
Major Release 2017 (V 2200)	
major Nordase 2017 (¥ 2200)	

Server settings	
Other export formats	
HELIOS MS Office Interface	
Major Release 2017 (V 2200)	
Edit Documents	
Support of external references in Excel	
HELIOS Vault Server.	
Service Pack 1 (V.2201)	
Enhanced replication options with VSKonfig.exe.	

Basics

Service Pack 2 2017 (V 2202)

Changed licensing

• The functions for drawing derivations is now generally available and not, as in previous versions, only in conjunction with the **HiCAD Sheet Metal professional**.



- The minimum requirement for the **HiCAD Metal Engineering** module is now **HiCAD creator + HiCAD Beam**-**s+Profiles**.
- The minimum requirement for the HiCAD Steel/Metal Engineering module is now HiCAD creator.
- The HiCAD Plant Engineering suite premium now also contains the modules Steel Engineering and Stairs + Railings. This allows you to configure staircases and railings create complex beam structures and use smart connections.

HiCAD VI/AV

The **New drawing** function is now no longer locked in the VI/AV mode. This allows a loading KRA files in the VI/AV mode via **Drawing > Insert Part > ...**.

KNTPAR.DAT -> Configuration Editor

In previous versions the settings for the graphical representation of 3-D edges and surfaces were specified in the system file KNTPAR.DAT. From HiCAD 2017 SP2 onwards this file is no longer available. Its setting options have been moved to the Configuration Editor at **System settings > Visualisation > 3-D**.

HiCAD Education Edition

 Drawing files (.SZA) and part files (.KRA) saved with the HiCAD Education Edition cannot be read by the HiCAD Standard Edition. If you attempt to open such files with the HiCAD Standard Edition, the following message will be displayed.



• In the title bar of the HiCAD UI the note *HiCAD Education Edition: Not for commercial use* will be shown.

						1				
🛖 🗋 🗁 - 📙 🔍 - Ja	= (⊕ (°) =			HiCAD	Education Ed	dition: Not f	or commercial	use - C:\Hi	iCAD\szenen\D	RAWING1.SZA
	Sheet Met Steel Engii Meta	Eng Profile Inst 3-D [Dimen Sketch	Views	Simplify	2-D Part	2-D Geom 2-0	Dimen	3-D FFS Infor	matio Plant Er
Sweep × Sweep × Sweep × Extruded ×	BoltScrew Bolting Weld	Add *	Bore/Thr. Bore	Thread	Fillet Ch	amfer		Move	Rotate Mirror	Move Ro
New	Standard Parts	Process with sketch	Standard Proce	ssings		Process		Т	ransform	Cl

• The plot stamp will be omitted on printouts.



Opening of HiCAD documents from opened HELiOS dialogues

You can now directly load HiCAD documents into HiCAD that have been opened in HELiOS dialogues within HiCAD. Opened HELiOS dialogues are automatically closed, and actions blocking the process will be cancelled, so that the opening of the documents can take place.



New test options in the Design Checker

The Steel Engineering checks

- Max. dimensions and weight of assemblies and
- Max. length and weight of beams

have been enhanced.

You have now the option to perform the check depending on the usage of assemblies or on the beam types. For this purpose the setting options in the Configuration Editor have been expanded accordingly:

ISD Configuration Editor - HiCAD 22.2.0.359 [C:\ProgramData	ISD	Sof	tware und Systeme\HiCAD 2017\H	licad	.cfgdb				
File Edit View Extras ISD									
/ 🕥 🔁 📲 🗠 🔢 🖤			AA @ _	User	Admi	nistrato	or	- 🧟	
4 🖽 Analysis	*	1	Description				Value	Comment	
DesignChecker Max. dimensions and weight of assemblies			Maximum dimension and weigh	t acc.	to usag	je			
Max. length and weight of beams			Maximum height				0		
Max. dimensions and weight of glass panes			Maximum length				0		
Interfaces			Maximum width			0			
D 📰 PDM	_		Maximum weight				0		
Compatibility	-								
System settings									
Configurations	*								
ISD Configuration Editor - HiCAD 22.2.0.359 [C:\ProgramData\ File Edit View Extras ISD	,ISD	Sof	ware und Systeme\HiCAD 2017\H	licad	.cfgdbj				
			AA 🛛 💿 👝	User	Admi	nistrato	or	- 28	
🔺 🥅 Analysis	*	2	Description	١	/alue	Com	ment		
 End DesignChecker Max. dimensions and weight of assemblies 			Maximum length and weight acc to beam type						
Max. length and weight of beams			Maximum length	- 13	000				
Max. dimensions and weight of glass panes			Maximum weight	0	F.				
Interfaces									
 PDM Compatibility 	=								
System settings									
▷ I Configurations	+								
Analysis > DesignChecker > Max. length and weight of beams									

Clicking the esired maximum values, e.g.:

eam/Profile type	Maximum length	Maximum weight	
E	 2000	200	
EA (DIN 1025-3)	 1000	140	

Enhanced display of keyboard layout in the UserInterfaceEditor

In the **Shortcuts** dialogue window of the UserInterfaceEditor (see also Customizing the User Interface), the **System shortcuts** are now displayed, in addition to the **User-defrined shortcuts**.

Shortcuts		×
User-defined shortcuts		
Function	Shortcut	
🥬 View all	Ctrl+G	
🏷 Undo	Ctrl+Z	
🧲 Redo	Ctrl+Y	
System shortcuts		
Function	Shortcut	*
Variables memory	Ctrl+D6	Ξ
Create macro	Ctrl+D7	
Execute macro	Ctrl+D8	
Execute script	Ctrl+J	
Reuse detail as Bitmap	Ctrl+W	
Save detail/copy to clipboard	Ctrl+Alt+W	
Move 3-D CS representation	Ctrl+K	
Activate Help	F1	
Dynamic zoom	F2	
Show/hide 3-D CS	F3	-
		Close

The system shortcuts cannot be changed!

New 'Part variables' docking window

A new docking window for part variables is now available. In this docking windows the part variables of the active part and (if any) also those of the superordinate parts are displayed.

Name	Value	Comment		
Assembly 1 (Asse	value	comment	PART_VARIABLES	
al a0	150.000000	Assembly variable 0	Sketch {} {} =	
 Assembly 2 (A 		, and a second sec	Assembly 2 (Assembly) {}	
🛃 a1	200.000000	Assembly variable 1	Part 1 (} {) Feature	д×
🧾 a2	300.000000	Assembly variable 2		
			3D-Part structure 2D-Part structure	
e c	5.000000	Number of corners	(1) Prism	
🛃 h	30.000000	Height	Height: 30 (h)	
i hollow	0.000000	Type		
🧾 r	60.000000	Radius	No. of corners: 5 (c)	
			Constraint: 1	
			Visualisation: -1	
			(2) Insertion Position	
			(2) Insertion Position	

The symbols in front of the Part variables indicate the type of the variable.

0.5	Number	0	Part
-	String	۲	Point
1	Edge		List
	Surface	1	Structure

With the functions of the docking window you can

- add new variables,
- change values of variables and comments, and
- delete variables.

To show the docking window, choose **Settings > Docking windows** and activate the **Part variables** entry in the sub-menu.

Service Pack 1 2017 (V 2201)

Further extension of product range

- The new Element Installation module allows an utilisation of individually parameterized elements as installation elements or inserts.
- A new Standard Parts package for **ALUCOBOND® tray panels** is now available.
- Four new **HiCAD suites** are now available:

HiCAD ALUCOBOND® exclusive Standard	HiCAD ALUCOBOND® exclusive Premium	HiCAD ALUCOBOND® hybrid Standard	HiCAD ALUCOBOND® hybrid Premium
Sheet Metal suiteBeams + Profiles	 Sheet Metal suite	 Sheet Metal	 Metal Engin-
	premium	suite	eering suite
module Element Installation 	 Beams + Profiles	 Beams + Pro-	 Sheet Metal pro-
	module	files module	fessional mod-
module (without cus- tomer-specific tray panels)	 Element Installation module (without cus- tomer-specific tray 	 Element Install- ation module ALUCOBOND® 	ule Element Install- ation module
 ALUCOBOND® tray panels 	panels) ALUCOBOND® tray 	tray panelsCustomer-spe-	 ALUCOBOND® tray panels
 Report Manager pro-	panels Report Manager pro-	 cific tray panels Report Manager pro-	 Customer-spe-
fessional	fessional	fessional	cific tray panels





ALUCOBOND tray panel SZ-20 and ALCUBOND suspended

Parameter Configuration with security prompt

When you close the HiCAD Parameter configuration dialogue window with OK, the following message will appear:

ParConfig		×
The changes to the configuration will now be app or HiCAD drawing frames may be overwritten. Th you have made backups of your files beforehand	erefore, please check w	
	ОК	Cancel

If you confirm this message with **OK** certain system files in the HiCAD sys and szenen directory will be replaced by files supplied in the templates directory, which are adjusted to the selected module and the activated checkboxes (e.g. DSTV or Management + BIM). These could be, for example:

- HiCAD masks for part attributes (*.HDX)
- HELiOS masks for projects, documents and articles (*.MSK)
- several configuration files (*.HDB)
- template files for designation (*FTD) and
- drawing frames with adjusted title block.

Therefore you should save all files which you have individually modified or contact your ISD branch.

The operation can be closed without a change of configuration by selecting **Cancel**.

Extended options for saving of parts

Parts and processings from the Element / Profile installation can now be saved, with the help of the Reference

Part, Save, Detail drawing function, to the corresponding catalogues beneath Installation planning - Parts and Processings.

Browse For Folder	x
File directory:	
Werksnormen Baureihen BIM Formwerkzeuge Gewoelbte Boeden Gutmann Hilti Image Logikal Musterbohrungen Praegewerkzeuge Stahlbau Stanzwerkzeuge Symbole Werksprofile	Parts and Processings
Eolder: Werksnormen Make New Folder OK Cand	4
	OK Cancel

Enhanced information for 3-D lines

The Line function at Information > 3-D, Further... has been enhanced. Layer, colour and line type of the selected line are now also displayed in the dialogue, e.g.:



Extended Selection

The dialogue of the Extended selection I function has been improved.

Part selection	X
🔘 Via geometry	
Superordinate p	art (RMB)
🜔 Via name	CUBOID_0
Execute	
C	OK Cancel

Enhanced Design Checker

The Design Checker now offers the additional option to check which part(s) of your model drawing are BOM-relevant but have no article master. Standard parts (incl. standard beams and profiles) will not be considered in the process.

Design Checker	X
- Available checks	
▲ 🗹 Steel Engineering	-
Invalid item numbers	
Mountability check for boltings	
Non-BOM-relevant main parts	
Non-BOM-relevant assemblies with main parts	
Assemblies below BOM-relevant assemblies	1
SE parts below SE parts	
BOM-relevant assemblies without main parts	
→ I BOM-relevant parts (except for standard parts) without article master	
Maximum length and weight of beams and profiles	
Maximum dimensions and weight of assemblies	•
 No errors or warnings detected. 	9
Test execution	
Drawing OSelection list	
Check:	
Total progress:	
Start	Close

Preview for point options

For certain point options, for which user entries are required, no preview will be displayed. This applies e.g. to the insertion and transformation of parts for the point options with value input, like

- R Relative cooridantes
- D Distance from start of line/edge
- P Absolute angle and distance

as well as options for succeeding points

- M2 Midpoint between two points
- FL Perpendicular Point -> Line/Edge

Major Release 2017 (V 2200)

New file format for 2-D files

Similar to the .KRA files in 3-D, figure archive files also exist for 2-D with the file name extension .FGA. These contain the previous 2-D data (.FIG), the DB attributes (.FIG.DBA2) as well as the attribute container data (.FIG.ATC) and thus replace the previous 2-D files. Furthermore, the new .FGA format allows a displaying of the 2-D files in a Viewer and contains the 2-D HCM data.

Please use only the new .FGA format! For the conversion of existing 2-D FIG files you can use the **Converter_FIG_To_FGA.exe** tool in the HiCAD\exe directory. You can also install this converter form the installation DVD.

When you perform an update to HiCAD 2017, the 2-D parts that are supplied with HiCAD by default (e.g. drawing frames) will be switched from FIG to FGA in different locations of the installation directory. Before their conversion, the data are saved in their original state in a folder or ZIP archive, respectively, to the "Szenen" and "Kataloge" directories. A LOG file in each directory records all converted files.

When you create an interface between HiCAD 2017 and HELiOS you will be prompted after a new or an update installation to adjust the database accordingly. The search for and management of 2-D parts will only be possible after a successful adjustment of the database and the conversion of the existing FIG files.

Please also read the information given in the Installation Notes!

Revised "Drawing" tab

- The detail drawing functions for marked Steel Engineering parts can now be found at Drawing > Itemisation/Detailing > Derive... > Detail drawing....
- At Drawing > Itemisation/Detailing > Attr... you will now find the following functions:



Document master, Detail drawing

• You can now find this function via **Drawing > Itemisation/Detailling > Dim...**

Edit dimensioning rules

These functions were previously found at Steel Engineering > Further functions > Settings >

Access to BIMcatalogs.net by CADENAS



Access to 3-D BIM CAD models has been made even more comfortable. You can now use the **BIMcatalogs** function (Drawing > Insert Part > Exp **S**...) to access 3-D BIM CAD models in the product catalogue BIM catalogs.net by CADENAS. The 3-D BIM CAD models can be imported rapidly and easily to HiCAD by Drag & Drop, where can they processed further.

This easy way of access spares you a lot of time that would otherwise be spent on searching for the right model, and increases the productivity of your Engineering department.



Article number configuration for assemblies

When creating new assemblies, forming assemblies from existing parts and automatically creating assemblies (e.g. for Steel Engineering), the prefix **Assembly** will be suggested as the default value for the article number. This setting can now be changed in the Configuration Editor at **Steel Engineering > Assembly**.

A CHICAD		Description	Value		Comment	
 Experimental Active configuration (Base configuration) Drawing 	Article number for assemblies		TEXTE	_STB325	Default value during creation/forming of amblies omatically create assembly points when using m assembly" function?	
 Automatic drawing derivation Modelling 	Automatic creation of assembly points		-	ext key : Assemb		
 Steel Engineering Assembly Usage 		_				

The ISD default setting is the text stored in the HiCAD text key TEXTE_STB325, i.e. the string "Assembly".

If you want to use your own text instead, simply enter it into the field after deactivating the Text key checkbox.



Faster build-up of part structure in the ICN

The development of the part structure in the ICN has been accelerated noticeably. This affects in particular large drawings, e.g. after updating a connection in Steel Engineering.

Absolute / relative point options- facilitated entry

Relative coordinates / relative angles

If no reference point is used for point options R, Relative Coordinates, and Relative Angle W / WX / WY, you can enter the coordinates – or angles and lenghts – all in one step separated by spaces.

R [X-distance] [Y-distan	ce] [Z-di
R 50 100 75	
	(A.
789+	
4 5 6	sin cos tan
	×2 \[T]
OK <u>C</u> ancel	Delete all

If an exact reference point or reference line was to be used (i.e. after activating the point options you immediately pressed the left mouse button or the RETURN key), previously you had to enter each value separately and confirm each value with 'OK'. This procedure has now changed and thus allows you to enter the coordinates – or angles and lengths – all in one step separated by spaces.

Absolute angles

You can also enter angles and lengths in one step - separated by spaces - for the Absolute Angle + Distance P, PX, PY point options.

Point options when sketching

When the sketching function is activated, e.g. when creating a 2-D sketch or a plane sketch in 3-D, for a numeric point option (A, D, K, N, P, R, W) the keys now open the menu for the entry of point options automatically. The distance menu will only be displayed via the spacebar.

Redraw body - removed from Data structure menu

The **Redraw body, Active part** function and **Redraw body, All parts** function are no longer available in the Data structure menu and can only be accessed via the

- 3dinfo_krpneuaufbau1.mac) (only active part) or
- 3dinfo_krpneuaufnau2.mac)(entire drawing)

macros. The macros can be found in the MAKROS3D directory in the HiCAD installation. The macro call is effected via CTRL+8.

As of HiCAD 2018 these functions (macros) will no longer be available. If you know of concrete problems which still need macros to be resolved please contact the Hotline immediately in order for these problems to be taken into consideration in the cutoff.

When selecting the macros mentioned above the following message will appear:

2	
	Due to internal, automatically executed correction mechanisms this function has become obsolete and will therefore no longer be available in HiCAD 2018; it can already no longer be applied to parts with feature log. If there are cases where this functionality is still required, please report them to the ISD Hotline.
Sup	press message
	ОК

If the message shall not be displayed in active HiCAD sessions you can activate the corresponding checkbox.

Enhanced Save part function

Part from the Profile Installation area can now be saved to designated catalogues under Profile Installation + Parts

and Processings via the Reference Part, Save, Detail drawing function



Modified default settings for drawing derivation

In the Configuration Editor the settings for **Production drawing** have been modified - depending on the parameter configuration.

Path	Parameter	old	new *1	new ^{*2}
Production drawing > Drawing	Leave external draw- ing open	Close drawing	Close drawing	Leave drawing open, switch to ori- ginal drawing
Production drawing > Drawing	Centre individual view group			
Production drawing > Drawing > Drawing frames	Frame height / Frame width	0/0	410/ 584	410/584
Production drawing > Annotations > Grid annotations	Grid annotation: Line type of axis	1	5	5
	Grid sub-system annotation: Line type of axis	1	5	5
Production drawing > Annotations > Grid annotations > Font	Font	HiCAD 01: ANSI_ KON	Arial	Arial
Production drawing > Annotations > Grid annotations > Sub-system, Font	Font	HiCAD 01: ANSI_ KON	Arial	Arial
Production drawing > Devel- opment	Dimension bend lines			V

*1 Default template: Steel Engineering / Metal Engineering / Management + BIM

*2 Default template: Mechanical / Plant Engineering as well as user-defined template: ISD Default

2-D

Service Pack 1 2017 (V 2201)

GRAPAR.DAT settings moved to Configuration Editor

In previous versions, the size of isolated points could be specified in the GRAPAR.DAT file. As of HiCAD 2017 SP1 this file will no longer be available. Its setting options have been moved to the Configuration Editor at System settings > 2-D Lines > Enlargement factor: Isolated points and Enlargement factor for assembly points, respectively.

New file format for 2-D files

Similar to the .KRA files in 3-D, figure archive files also exist for 2-D with the file name extension .FGA. These contain the previous 2-D data (.FIG), the DB attributes (.FIG.DBA2) as well as the attribute container data (.FIG.ATC) and thus replace the previous 2-D files. Furthermore, the new .FGA format allows a displaying of the 2-D files in a Viewer and contains the 2-D HCM data.

HiCAD 2017 comes with the new 2-D figures archive with the file name extension .FGA. Please use only this new .FGA format for conversion of existing 2-D .FIG files! For this purpose, use the new **Converter_FIG_To_FGA.exe** tool in the HiCAD\exe directory.

When you update to HiCAD 2017, the 2-D parts that are supplied with HiCAD by default (e.g. drawing frames) will be converted from FIG to FGA in various folders in the installation directory. Before their conversion, the data will be saved in their original state in a folder or ZIP file, respectively, to the "Szenen" and "Catalogue" directory. Also, a LOG file recording the conversion will be saved to both directories.

Please also read the information given in the Installation Notes!

Variable dimensionings

The **Individual dimension**, **Variable** menu combines a multitude of individual dimensioning functions. It allows a rapid creation of

- axially parallel and free linear dimensions,
- angular dimensions,
- arc dimensions and
- circle, radius and diameter dimensions

with only one function. Depending on the selected element, e.g. line, circle or point, the correct dimensions will be immediately created here or - if different dimensions are possible - a selection option will be displayed.

The individual dimensions for lines, angles arcs and circles can now be found in one menu.

Renamed function tooltips

In the **Surface/Tolerances** function groups the tooltips of the following functions have been changed as follows:

	Old	New
0.03	New symbol	Form/Positional tolerances
\checkmark	Characters	Insert symbol
∛	Symbols	Surface characters+symbols

Point options during sketching

If the sketching mode is active, e.g. during drawing of a 2-D sketch or a planar sketch in 3-D, the corresponding point option dialogue window will always be opened when you press a key for a numerical point option (A, D, K, N, P, R, W). The Distance input menu instead of the point option dialogue will now only be displayed when you press the space bar.

3-D

Service Pack 2 2017 (V 2202)

Model / process parts

Deform - New 'Local' option

The **Deform** allows a bending, twisting, tapering and stretching of 3-D parts along an existing sketch. The sketch plane determines the neutral axis for the deforming process. This means that the part area to be deformed is determined by the planes that run perpendicular to the start point and end point of the sketch. In previous versions, the complete area of the part that was located between these two planes was deformed.

From SP2 onwards you have also the option to perform local deformations. In the vicinity of the corresponding axis it will be attempted to select the smallest possible area from all the areas/connected elements of the part that are located between the two planes, and apply the deformation only there.

For this purpose the new Local checkbox has been added in the Deform dialogue window.

The image below shows the difference for the bending:


(1) Part; (2) Sketch; (3) Bending, local; (4) Bending, global

Furthermore, HiCAD will now check whether your inputs result in unwanted self-intersections before carrying out the deformation. If this is the case, the following message will be displayed:



Edge functions - 'Insert polyline' function with Feature log entry

The "2 points" function at **3-D Standard > Tools > Edge** > New, Insert... has been renamed to Insert polyline. Also, the created polyline will receive a Feature log entry called Isolated edges.



Views

Display of old sectional/detail views and cut-outs

Before HiCAD 2017 SP2, sectional views, detail views and cut-outs that are not up to data were only indicated in the ICN by strikethrough view names. From SP2 onwards, such views are also indicated by a red cross in the drawing.



If you do not want the crossed-out representation in the drawing, you can change this in the Configuration Editor at System settings > Visualisation > Views, where you can deactivate the Cross out old cut outs, sectional views and detail views in graphic checkbox.

Visualisation	Description	Value	Comment
	Horizontal distance between views during view arrangement	20	
Workstation background	Vertical distance between views during view arrangement	20	
Workstation illumination Stereoscopy	Cross out old cut outs, sectional views and detail views in graphic		
▷ III Views	Scale for new detail views	Increment scale	•
III View group (3-D)	Include new parts in list views	No	 Hide created new parts in views with hidden parts? in the active view, new parts will always be shown.

Sketch lines and axes

No sketch elements and axes in (main) assemblies

Assemblies are normally used for creating a logical part structure. Apart from assembly points you will rarely be provided with any geometries as auxiliary parts for the CAD structure. Therefore, the creation of sketch lines while the assembly is active will no longer be possible (as with 3-D surfaces and edges) from HiCAD 2017 SP2 onwards. In this way an accidental placing of sketch lines in assemblies will be automatically prevented. An insertion of

assembly points and isolated points, however, is possible. Of course, you can still create a new sketch with the func-

tions Sketch \int and 3-D Sketch \int while the assembly is active. Please note however that the sketch will then become the active part to which the subsequently line elements will be assigned.



Axes created with 3-D Standard > Tools > Crossh \heartsuit cannot be inserted if the active part is an assembly or main assembly. In such cases the following message will be displayed:

		×
No edges mu	st be inserted in assemblies and main assemblies!	
	ОК	

Simulation

New options for video creation

Additional options are now available for video creation.



- At the start and at the end of the simulation a still image can be shown before (Pre-video time) and after (Post video time) the video. Specify the duration of the still image.
- Also new is the option to repeat simulations in a video. To do this, activate the **Repeat** checkbox. You can then specify how many times the simulation is to be repeated in the video. The following directions are possible:

\rightarrow	forward Each repetition begins with the start of the selected time interval.
	backward Each repetition begins with the end of the selected time interval.
Û	forward/backward Each repetition consists of one simulation in forward, and one in backward direction. The repetition begins with the start of the selec- ted time interval.
Ţ	backward/forward Each repetition consists of one simulation in backward, and one in forward direction. The repetition begins with the end of the selected time interval.

For the directions **forward / backward** and **backward / forward** you have the option to add an additional pass of the simulation after the last repetition by activating the corresponding checkbox. Additional still images can be inserted between the .individual repetitions.

Service Pack 1 2017 (V 2201)

3-D Dimensioning + Text

Annotations by part type

The automatic annotations by part type have been modified in the Itemise part 🗰 function.



If this option is active it will be proceeded as follows: a template will be automatically selected for the respective part type. The following templates are assigned to the part types:

- Steel Engineering plates: PosNummerStb_Blech.fdt
- Steel Engineering beams: PosNummerStb_Profil.fdt
- Sheet Metal: PosNummer_Kantblech.fdt
- General parts: PosNummer_Allg_Bauteil.fdt

For all other parts the PositionsNummer.fdt template will be used.

Sketches

Create spirals

If you select a planar cylinder barrel surface or a coordinate system axis to determine the spiral axis, no reasonable axis length can be assigned. Therefore, the **Axis length** checkbox will be greyed out in such cases as of SP1.

Processing and reuse of spirals

Spirals are automatically parameterised upon their creation, i.e. a corresponding HCM model will be generated. Via this HCM model spirals can be changed subsequently. If the spiral is saved as a 3-D part (KRA), it will be saved together with the HCM model. This means that once created, spirals can be reused and individually adjusted in any model drawings.

In the ICN the 3-D sketch will be marked with the 🔣 symbol.



The associated HCM model will be displayed in the HCM window.

HCM	φ×
12 13 11 7	
 □ □ (1) Spiral □ (11) Spiral:3-D Sketch {} {} {} □ (13) Point:3-D Sketch {} {} {} □ (12) Point:3-D Sketch {} {} {} {} □ (10) Spiral:3-D Sketch {} {} {} {} {} □ (10) Spiral:3-D Sketch {} {} {} {} {} {} {} {} {} {} {} {} {}	
Feature HCM Graphic Properties	

To modify a spiral subsequently you use the **Change parameters** function of the HCM context menu. To open the menu, right-click on the HCM entry **Spiral**.



Move points

When selecting single lines or lines in a rectangle, neighbouring points will be automatically selected with the Move

points function. If an already selected line is selected again, only the single line will be selected. In order to deselect neighbouring points you have to click on them again. Full circles and full ellipsis do not have any visible seam point.

An example:

If the line (1) is selected in the image, the neighbouring points will be selected, too, i.e. 3 elements are selected (2). If the line is selected again (3), the line will disappear from the selection; however, the neighbouring points remain selected (4).



Process/model parts

Change assembly type

Use this function to change the assembly type of individual or multiple assemblies.

To do this, activate the desired assembly or, via multiple selection (CTRL + left-click), several assemblies. Right-

click the selected assembly or assemblies and choose **Properties > Assembly type** HiCAD will then display the **Convert assembly** dialogue window.

C	onvert assembly
- Pa	art type
Ass	embly 🔹
i	Main assembly and locked assemblies will not be considered.
	OK Cancel

There you can choose the new assembly type from a listbox.

Click OK to close the window and apply the new assembly type.

Please note that the assembly type cannot be changed for main assemblies and locked assemblies.

Simplify

Delete structure parts

The "Delete superordinate parts" function has been revised and renamed to Delete structure parts

When executing the function, please note the following:

- 1. The function will always be applied to the complete model drawing.
- 2. The subsequently listed parts will always be deleted, irrespective of whether they are superordinate or subordinate parts:
 - Assemblies and main assemblies even if they contain, e.g. assembly points,
 - Dummy parts,
 - · Point parts (parts with isolated points) and
 - Plant Engineering parts without geometry, i.e. empty Plant Engineering parts containing only points.
- 3. All parts not mentioned in Point 2. will be preserved. Besides classic solids, the following parts will remain, i.e. they are treated like solids:
 - Edge parts (parts with free edges / 3-D sketches),
 - Surface parts (parts with free surfaces),
 - Sheet Metal main parts,

- Superordinate parts of multi-part beams and profiles (e.g. series beams/profiles), and
- Bolting groups.
- 4. The parts to be deleted will not only be deleted as superordinate parts, but even if they are subordinated to parts that are not to be deleted (see 2.) - for example, if a dummy part is subordinated to a solid or to a Sheet Metal main part.
- 5. If parts that are not to be deleted are located beneath solids, they will be moved to the uppermost level of the part structure.
 - For example, if a solid is located directly beneath a dummy part, and beneath the dummy part there is another solid, the dummy part will be deleted and the solid beneath it will be moved to the uppermost level.
 - This rule also applies to solids which are located directly beneath other solids.
 - Excluded from this rule are solids beneath Sheet Metal parts, multi-part beams/profiles, and bolting groups (see 3.) The solids contained therein, e.g. flanges and bend zones beneath Sheet Metal parts, will be preserved.

Points 4. and 5. also concern parts beneath referenced parts. After calling the function you can specify in the dialogue window shown below how to proceed here:



Leave

Break

This is the ISD default setting.

parts

if

unchanged

referenced

referencing

required

up If parts beneath referenced parts are deleted or moved to the uppermost level, the referencing and the link to HELiOS (if any) will be removed.





3-D

If parts to be deleted are located beneath non-referenced parts that are only locked via HELiOS, and the **Break up referencing if required** option has been selected, the links to HELiOS will be removed. This will also happen if in the Configuration Editor at System settings > Referencing the Lock parts against processing if HELiOS article master is locked checkbox is active.



Views

Panorama default settings

The default setting in the Panorama tab of the **Visual effects** docking window has been changed. The ISD default panorama is set to DREIZINNEN.

Hide/Show processing planes

To hide and show processing planes in active views, open the context menu for views by right-clicking the pink dashed view frame. Open the **Others** sub-menu beneath **Hide/Show parts** and choose one of the following functions:



Processing planes - Hide



Processing planes - Show

Major Release 2017 (V 2200)

Views

Hide/show edges: Assembly points and weld seam edges

The Show/hide edges in view function now also allows a hiding and showing of assembly points and symbolic weld seam edges in the active view. The dialogue window has been expanded accordingly for this purpose.

Hide/show elements, Overlap edges			
Show elements Centre lines Cover in HiddenLine mode Centre crosses Cover in HiddenLine mode Steel Eng Axes Cover in HiddenLine mode Steel Eng Tracing lines Cover in HiddenLine mode Steel Eng Bar elements Cover in HiddenLine mode Free edges Cover in HiddenLine mode Hatchings Cover in HiddenLine mode Collinear sheet edges Polyhedron -Tessellation lines Weld seams	Hide Hide individual lines Select edges Remove selection for part list Remove selection for all parts Hide via limiting angle ANGLE: Set angles for parts in list Set angles for all parts		
 Assembly points Mesh diagonals Mesh in m-direction Mesh in n-direction 	(Sectional view)		
	OK Cancel		

The default settings for this dialogue window can be changed in the **Configuration Editor**, at **Drawing > Views > Hiding and overlapping of edges**.

Sketches

Revised "Spirals" function

The Spirals

function has been revised and features a redesigned dialogue window:

🥦 Spiral		×		
- Base parameters				
Select axis				
	Select start point			
Diameter:	10 🔻	Automatic		
Direction of windings:				
Start angle:	0 🗸			
Height:	100 🔹 🗸	Axis length		
Windings:	10			
Lead:	12 🔹 🗸			
- 🗸 Extended settings		<u> </u>		
Form:	30 July			
	End diameter:	10 🔻		
- Ends:				
Both equal	✓ Start	✓ End		
Height:	30 🔹 <	20 🔹 <		
Windings:	2.5	3.33333333333		
Mode:	Constant 🔹	With flat end 🔹		
End lead:	11 *	11 💌		
	(MN)	380		
	ок с	ancel Apply		

Besides greater user-friendliness, the new dialogue offers the following advantages:

- The spiral will be immediately visualized dynamically.
- More accurate curves are created.
- Besides cylindrical spirals, conical spirals can be created.
- Start and end of the spiral can be modified.

The creation of spiral-shaped curves as polygon lines or compound curves can be achieved by a subsequent applying of the Replace line function

Point options during drawing of sketches

If the sketching tool is active during drawing of sketches, and you press one of the keys for calling of a numerical point option (A, D, K, N, P, R, W), the corresponding point options menu for value input will now be opened. The Distance menu will now only be displayed when pressing the space bar.

Dimensioning

Variable dimensions

The new Variable dimensions function is a smart, variable dimensioning function that combines a multitude of individual dimensioning functions.

It is thus possible to quickly create

- axially parallel or free linear dimensions,
- angular dimensions between two edges,
- arc dimensions as well as
- circle, radius and diameter dimensions

with only one function. Depending on the selected element, e.g. edge, full circle or point, it directly creates the "correct" dimension or, if several dimensions are possible, allows you to choose the desired dimension.

Example: Full circle

Here, one of the bores (1) has been selected. In this case, the function will suggest the dimensioning types diameter dimension (2), radius dimension and angular dimension.



The following table pro		we were the possible dimensions for the dimerent base point
Base point	Dimension	Selection
2 points	Linear dimension	Linear dimension, axially parallelLinear dimension, free
Edge	Linear dimension	Linear dimension, axially parallelLinear dimension, free
Edge + point	Distance between edge and point	Linear dimension, axially parallelLinear dimension, free
2 parallel edges	Distance between edges	Linear dimension, axially parallelLinear dimension, free
2 intersecting edges	Angle between edges	 Angular dimension
3 points	Angular dimension	 Angular dimension
Full circle	Diameter dimension, axially par- allel	 Diameter dimension, axially parallel Diameter dimension Radius dimension, axially parallel Radius dimension Angular dimension
Full circle + edge	Distance between circle and edge	Linear dimension, axially parallelLinear dimension, free
Circular arc	Radius dimension, axially par- allel	 Radius dimension, axially parallel Radius dimension Diameter dimension, axially parallel Diameter dimension Arc dimension Angular dimension
A surface of a sphere, a cylinder, a cone or a torus	Diameter dimension, axially par- allel	 Diameter dimension, axially parallel Diameter dimension Radius dimension, axially parallel Radius dimension

The following table provides an overview over the possible dimensions for the different base points.

Changed 3-D Dimensioning + Text tab

Individual dimensions

As the new variable dimensioning combines many of the previous individual dimensions the respective functions have been removed from the tab. These are the following functions (incl. subfunctions):

- Circle, radius dimension
- Diameter dimension
- Radius dimension
- Arc dimension
- Linear dimension, axially parallel
- Linear dimension, free

All individual dimension functions that are not covered by Variable dimensioning can be found under **Individual** dimensions.

	icitu		
Variable Chain Parallel R			
Individual dimensions			
Linear dimensions			
With reference axis			
Angular dimensions			
Taxis X-axis			
15 Y-axis			
T-axis			
15 With axis			
Arc dimension			
Via centre/start/end			
Via 2 points projected onto circle			
Via 3 points on arc			
Half-section dimension			
Axially parallel			
Free			

The Individual dimensions menu

Surface/Tolerances

The Surface/Tolerances function group has been renamed to Surface/Edge.

The **Surface characters** function has been renamed to Surface finish.

The functions for Symbols can now be found in the Surface characters menu (at 3-D Dimensioning + Text > Surface/Edge > Surf... \checkmark > ...).

The Edge state function is a new function.

Designate edge state

Workpieces are not infrequently produced with unwanted burrs or undercuts (missing material). You can use the

Edge state function to describe the condition the inner and outer edges of a workpiece according to ISO 13715.

P Edge state (3-D)	×
Dimension type: + ±0,01 -0,1 -0,5 ± ▼ 0.3000000 ▼ Burr/undercut direction: XX ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	±0.3
- Extended settings Font: Attack of annotation tag: Automatic Right Left	
	OK Cancel



(1) Inner edge - Transition (from 0,3 to 0,5)

(2) Outer edge, no burrs (from 0 to 0,3)

(3) Outer edge, sharp (with or without burrs, from 0 to 0,3)

The pre-settings for the designation of edge states can be specified in the Configuration Editor at **Drawing > Annota**tions > Edge state.

Model/Process parts

Envelope part

When you select the Envelope parts function, a progress bar will now be displayed both for Preview and Apply. Furthermore, the message *Unknown problem* has been replaced with the more precise message *Part could not be generated*.

Standard Parts / Standard Processings

Purchased parts / Factory standard parts

At 3-D Standard > Standard Parts > BoltScrew > Others >... you will find the new

Purchased / Factory standard parts

function.

Use this function to insert parts from the catalogue **Factory standards > Purchased/Factory standard parts** into your drawing, e.g. end caps or glass holders. When you are working with HELiOS, these parts will always preserve their article master, irrespective of the project to which they belong, i.e. these parts will behave like standard parts.

These parts are of particular significance when working with the **Management + BIM** module, as it must be ensured here that the parts/assemblies with the manually created/assigned article masters will preserve their article masters when being inserted in an existing project. Furthermore, sub-parts in assemblies must not be BOM-relevant here.

Catalogue Editor

Service Pack 2 2017 (V 2202)

New Titgemeyer parts standard parts

New Titgemeyer standard parts can be found in the catalogue Factory standards > User-defined nuts > Titgemeyer:

- Flat head blind rivet nut RIV TI, open
- Flat head blind rivet nut RIV TI



Service Pack 1 2017 (V 2201)

New FISCHER standard parts

New FISCHER standard parts can be found in the catalogue Factory standards > User-defined fasteners:

- User-defined anchors > Fischer > Anchor rod RG M and
- User-defined dowels > Fischer > Universal dowel UX.

Retaining rings acc. to DIN 9925 and 9926

The catalogue Fasteners > Retaining rings contains new retaining rings according to DIN 9925 and DIN 9926.

The matching grooves can be found in the catalogue **Processings, general > Shaft processing > Grooves for retaining rings**.

New ALUCOBOND® semi-finished products

In the **Factory standards** catalogue, further tables for ALUCOBOND® semi-finished products and coatings are available:

- Semi-finished products at Factory standards > Sheets > Alucobond
 - ALUCOBOND Anodized Look
 - ALUCOBOND Ligno
 - ALUCOBOND naturAL
 - ALUCOBOND Spectra & Sparkling Colours
 - ALUCOBOND Terra
 - ALUCOBOND Urban
- Coatings at Factory standards > Surface treatment > Alucobond
 - Coating ALUCOBOND Anodized Look
 - Coating ALUCOBOND Ligno
 - Coating ALUCOBOND naturAL
 - Coating ALUCOBOND Spectra & Sparkling Colours
 - Coating ALUCOBOND Terra
 - Coating ALUCOBOND Urban

ZETA profiles

At Factory standards > Series > Profile installation > SBE you will now also find ZETA profiles which are frequently used as roof transoms for steel halls.



New Usage

In the catalogue Factory standards > Usage > Civil Engineering > Steel Engineering you can find a new usage in the Railing table:

Designation: GLASS

CONFIGKEY: GLASSPANE

This usage will now be automatically assigned to glass elements created with the Railing Configurator.

Major Release 2017 (V 2200)

Transfer standard parts to HELiOS

The transfer of standard parts to HELiOS now takes place must faster.

Purchased parts / Factory standard parts

A new catalogue is available at **Factory standards > Purchased/Factory standard parts**. When you are working with HELiOS, these parts will always preserve their article master, irrespective of the project to which they belong, i.e. these parts will behave like standard parts.

These parts are of particular significance when working with the **Management + BIM** module, as it must be ensured here that the parts/assemblies with the manually created/assigned article masters will preserve their article masters when being inserted in an existing project. Furthermore, sub-parts in assemblies must not be BOM-relevant here.

Use the new Purchased/Factory standard parts

New factory standard parts and tables

Numerous new standard parts - especially for roof, wall and facade elements - have been added to the **Factory** standards catalogue:

User-defined bolts + screws

- ALOCUBOND
- Ejot
- Hilti
- SFS

Sheets > ALUCOBOND

Composite panel*

* with assigned colours

User-defined materials

Compound material ALUCOBOND

Surface treatment > Profile installation > ALUCOBOND

- Metallic colours
- Solid colours

Factory beams > ALUCOBOND

- End profiles
- Cover profiles
- Corner connector profiles
- Profile edgings
- Window connection profiles





- Hat profiles
- Transversal connection profiles
- Joint profiles
- Mounting profiles
- Support profiles
- Reinforcement profiles

Factory beams > Schrag profiles

- C-profile
- CL-profile
- T-profile
- Z-profile

User-defined nuts

- Folko
- Titgemayer

User-defined countersinks for rivets

Titgemeyer

User-defined countersinks for blind rivet nuts

Folko

User-defined bores for blind rivet nuts

- Folko
- Titgemeyer

User-defined anchors

FISCHER Bolt anchor FBN II

Purchased / Factory standard parts

- End caps
- Corner glass holder
- Glass holder
- ALUCOBOND Spring clip

Usage > Profile Installation > ALUCOBOND

- ALUCOBOND Tray panels
- ALUCOBOND composite panel

Semi-finished products-dependent part colour

The catalogues at Factory standards > Sheets contain columns that allow the assigning of a special part colour to semi-finished products, e.g. for coated sheets. Furthermore, you can assign a manufacturer-specific code, e.g. an internal colour code for ALUCOBOND sheets, which will also be considered in BOMs.



Feature Technology

Service Pack 2 2017 (V 2202)

Feature for edge functions - Insert polyline

The **Insert polyline** function at **3-D Standard > Tools > Edge** > **Insert > ...** now also generates entries in the Feature log. The creation of polylines will obtain a Feature log entry called **Isolated edges**.

Clone processings - Mirror transformation

The **Clone processing** function now offers a new cloning pattern, namely, the **Mirror transformation**. This allows you to mirror clonings on a defined plane.



Service Pack 1 2017 (V 2201)

Feature recalculation for identical parts

Identical parts will now only be calculated once in Feature recalculations, which reduces the calculation time for variants significantly.

Major Release 2017 (V 2200)

Clone processings: Identifying rotation axes of cylinder and torus surfaces

The **Clone processings** function now allows a direct identifying of rotation axes of cylinder and torus surfaces. To do this, simply identify the surface of the element the rotation axis of which you wish to use.

Clone processings: Attach flange

The list of processings that can be copied with the **Clone processings** function now also includes the Sheet Metal function **Attach flange**.

Configuration Management

Service Pack 2 2017 (V 2202)

KNTPAR.DAT settings moved to Configuration Editor

The settings from the KNTPAR.DAT file have been moved to the Configuration Editor. You can now find the settings at **System settings > Visualisation > 3-D**.

Mounting drawings - Rearrangement of views upon update

As with production drawings, you can now also switch off the automatic rearranging of views upon update in mounting drawings created with the **Management + BIM** module. makes sense if, for instance, you have deliberately moved some views and want to keep their new position.

This setting can be specified in the Configuration Editor at PDM > Management+BIM > Production drawings > Rearrange views when updating mounting drawings.

Service Pack 1 2017 (V. 2201)

GRAPAR.DAT settings moved to Configuration Editor

The settings from the GRAPAR.DAT file have been moved to the Configuration Editor. You can now find the settings at **System settings > Visualisation**.

Production drawings

Placing of annotations

Annotations of beams and plates in production drawings can take place with or without leader lines. This behaviour can be specified at **Automatic drawing derivation > Production drawing > Annotation > Placing of annotation**.

Default configuration for assemblies without usage

You can now also define default configurations (usage-dependent settings) for detail drawing (production drawing for one view group) creation for assemblies to which no usage has been assigned. The selection of part types at **Automatic drawing derivation > Production drawing > Usage assignment** has been expanded accordingly for this purpose.

Avoiding of duplicate sectional views

You can now specify at **Automatic drawing derivation > Production drawing** that sectional views with identical contents are to be created only once in the workshop drawing. To do this, activate the Avoid multiple sectional views checkbox.

Behaviour of deleted dimensions when updating drawings

If you delete an automatically generated dimension (e.g. one that is based on a dimensioning rule) in a view of a workshop drawing, this dimension will not be restored when you update the workshop drawing!

If you do not want this behaviour, you can switch it off: Go to System settings > Annotations > Dimensioning, 3-D and deactivate the Correction when deleting workshop drawing dimensions checkbox.

Dease note:

The new behaviour works only in new workshop drawings created with HiCAD 2017 SP1 or with updated workshop drawings!

Unprocessed and processed sheets

One distinguishes between sheets with identical cross-sections (unprocessed sheets) and processed sheets.

- As "cross-sectionally identical" (unprocessed) are considered all sheets with at least one bend zone, parallel front edges of the flanges (width of flange) <u>and</u> without any further processings such as bores, subtractions etc. For these sheets, no drawing is normally required, but only a BOM.
- All other sheets are considered non-identical and processed. For these sheets a drawing is required.

Production drawings for sheets with identical cross-sections

The output of cross-sectionally identical sheets can now be suppressed in the workshop drawing. To do this, open the Configuration Editor, go to **Sheet Metal** and activate the checkbox for the parameter **Suppress production drawings for sheets with identical cross-sections...** The checkbox is deactivated by default.

Steel Engineering BOM (Excel) - Distinguishing unprocessed and processed

To be able to distinguish between unprocessed and processed sheets in the BOM, the following settings are required:

- 1. In the Configuration Editor at Sheet Metal, the Special treatment for sheets with identical cross-section checkbox must be active (default).
- 2. The new template HiCAD_Stahlbau.2201.0 must have been selected for BOM creation.

An additional Excel sheet will then be created for unprocessed sheets.

CAM data for unprocessed sheets

In the Configuration Editor at PDM > Management + BIM > External production drawings > CAM data for unprocessed sheets you can specify whether the "unprocessed" sheets are to be considered for the creation of the CAM data or not.

Placing of annotations in mounting drawings

Annotations of beams and plates in mounting drawings can take place with or without leader lines. This behaviour can be specified at **Automatic drawing derivation > Mounting drawing > Annotation > Placing of annotation**. The checkboxes is activated by default, i.e. the annotations will be placed directly onto the plates or next to the beams, respectively. If there is not enough space, the annotation will be placed with a leader line.

If the checkboxes are deactivated, the annotation will always be applied with leader lines.

Import texts from 3-D DXF

When importing 3-D files from AutoCAD (DXF, DWG) you have the option to transfer the annotations of the AutoCAD model to HiCAD by activating the **Take texts from model** option. In the Configuration Editor you can change the pre-setting for the parameter at **Interfaces > General 3-D interfaces > Take texts from model**.

New parameter "Plan types"

The new parameter "Plant type" (at **PDM > Management + BIM**) determines which customer drawing creation options are to be offered when choosing the new BIM function "Customer drawing".

Workflow status in ICN

Parts from released drawings and parts from drawings in "Checkup" status are marked accordingly in the ICN. These indicators of the Workflow status were automatically updated in previous versions.

In order to speed up the build-up of the ICN structure of very large model drawings or in case of very slow connections to HELiOS, you have now the option to specify the frequency of this automatic updating at PDM > Management + BIM > Workflow status in ICN.

Generation of STEP files separately for beams, plates etc.

The generation of part data in STEP format can now also take place separately for beams, profiles, plates, sheets glass panes and gratings. This separation was previously only possible for assemblies.

For this purpose the settings at PDM > Management + BIM > External production drawings > Collect part types for STEP export have been expanded accordingly.

Major Release 2017 (V 2200)

View mode

The View mode enables the precise displaying of changed settings in the Configuration Editor.

Normal	All settings will be displayed in the Configuration Editor.
Only changed values	Only changed values of the current user profile, which are marked with the pencil icon \swarrow , will be displayed.
Only changed	This view mode is only activated if settings in the ISD profile were changed in an update and differ from the company-specific default settings in the Administrator profile.
default settings	If you load the company-specific Administrator profile after the update and select the Only changed default settings function only the changed settings will be displayed. The values of the changed settings stem from the company-specific Administrator profile.

Sheet developments

The settings in the **Create sheet development** dialogue window can now be saved as Favourites and re-used at any time.

You can load the Favourites in the Configuration Editor at **Sheet Metal > Sheet development > Default settings** as pre-settings for new drawings.

Changed settings for Management+BIM

If you have activated the **Management + BIM** checkbox in the **HiCAD Parameter configuration** dialogue window, the **Lock parts for other users via HELiOS article master** checkbox will be deactivated in the Configuration Editor at **System settings > Referencing**.

Configuration of the assembly article number

For creating new assemblies, creating assemblies from already existing parts and the automated creation of assemblies - e.g. in Steel Engineering - the ISD default value suggestion is Assembly. This setting can now be changed in the Configuration Editor via Steel Engineering > Assembly.

Description	Value	Comment
Article number for assemblies	TEXTE_STB325	Default value during creation/forming of amblies
Automatic creation of assembly points	✓ Text key Previ: Assembl	omatically create assembly points when using rm assembly" function?
	Previ: Assembl	у

The ISD default setting is the highlighted text in the HiCAD text key, TEXTE_STB325.

If you want to use a customized Text you can simply enter it into the field. However, the **Text key** checkbox has to be deactivated.

Hide/Show edges

Via the Hide/Show edges function it is also possible to hide or display assembly points as well as symbolic weld seam edges.

The default settings for this dialogue window can be changed in the Configuration Editor via Drawing > Views > Hiding and overlapping of edges.

Designate edge state

The pre-settings for the designation of edge states can be specified at **Drawing > Annotations > Edge state**.

Itemisation

In HiCAD 2017 you can change the Itemisation mode via the Configuration Editor. One distinguishes between

•Itemisation up to HiCAD 2017 (current itemisation) and

• Standard (will replace this itemisation with the release of HiCAD 2017 SP 1).



Please note that the itemisation mode **Standard** has not been officially released yet and will only be made available for test purposes and in agreement with staff members of the ISD! Therefore, the current default itemisation mode is the **Itemisation up to HiCAD 2017** mode.

Changed presetting for visualisation

When you open the **Computer Parameter Configurator** (HiCAD\exe\ParKonfigComp.exe)tool and choose the default template **Steel/Metal Engineering** there, the parameter **Vertical axis during dynamic rotation about 3-D point** in the Configuration Editor at **System settings > Visualisation** will be set to **Greatest rise, spatial**. This setting will affect the vertical rotation axis when performing multiple rotations with the Rotate view dynamically about 3-D

point function.

Production drawings

Changed default settings in Configuration Editor

The default settings at **Automatic drawing derivation > Production drawing** have changed (depending from the current parameter configuration).

Path	Parameter	old	new *1	new *2
Production drawing	Leave external draw- ing open	Close drawing	Close drawing	Leave drawing open, switch to ori- ginal drawing
Production drawing > Drawing	Centre individual view group		•	
Production drawing > Drawing > Drawing frames	Height / Width	0/0	410/ 584	410/584
Production drawing > Annotations > Grid annotation	Grid annotation: Line type of axis	1	5	5

Path	Parameter	old	new *1	new *2
	Grid sub-system annotation: Line type of axis	1	5	5
Production drawing > Annotations > Grid annotation > Font	Font	HiCAD 01: ANSI_ KON	Arial	Arial
Production drawing > Annotations > Grid annotation > Sub-system, Font	Font	HiCAD 01: ANSI_ KON	Arial	Arial
Production drawing > Devel- opment	Dimension bend lines			V

1* Default template: Steel/Metal Engineering / Management+BIM

2* Default template: Mechanical Engineering / Plant Engineering and User-defined template: ISD Default

Development of Sheet Metal parts

In the **Views for sheets** dialogue window you can now specify the position of the development in the view group. The development can be arranged at the top, the bottom, on the right or left in the view group.

When working with usage-dependent configuration templates, the arrangement chosen in the corresponding template will be preset. This presetting can be changed in the Configuration Editor at **Automatic drawing derivation > Production drawing > Usage-dependent >** *name* > **View group**, with *name* being the name of the relevant template. There you can choose the desired arrangement via the parameter **Sheet development: Position in view group**.

Hide boltings

The visibility of boltings can now be separately set for each usage in the Configuration Editor, namely, at **Automatic** drawing derivation > Production drawing > Usage-dependent > > Views .

Specify position of BOM

Position and layout of the BOMs can be specified separately for each usage at **Automatic drawing derivation > Production drawing > Usage-dependent > ... > View group**. If the drawing parameters are loaded from a configuration that has been saved to the Configuration Editor, the corresponding settings from the Configuration Editor will be pre-set in the dialogue window. Automatic sectional view creation for attached parts

According to the ISD default setting, sectional views are automatically created for Steel Engineering plates running transversely or diagonally to the main part axis. When working with configuration templates, you can specify for each usage which sectional views are to be created for attached parts. The setting can be defined in the Configuration Editor at Automatic drawing derivation > Production drawing > Usage-dependent > name > View group, with name being the name of the relevant template.

HiCAD drawing frames in P+ID

In the Configuration Editor at **Plant Engineering > P+ID > DIN frame in P+ID** you can specify which HiCAD frames should be used instead of the P+ID frames. In particular, you can specify the text entries for HiCAD frames here.

Parametrics (HCM)

Service Pack 2 2017 (V. 2202)

New symbols for positional HCM constraints

The symbols for positional HCM constraints have been revised. They now look as follows:



In the **Configuration Editor** at **System settings > Annotations > HCM_Symbol** you can influence the display of these symbols: Besides symbol and background colours you can also specify the size of the symbols here.

The previously available setting options at System settings > Annotations > Dimensioning, 3-D > HCM dimensions > HCM symbols have been removed.
Major Release 2017 (V 2200)

Taking into account of switched off external references in the Sketch HCM

For instance, if a part has been created as an extruded part from a sketch that contains external references (e.g. distance constraints to a different part), these used to be considered in older versions - even if the taking into account of such external references was explicitly switched off for the extruded part.

This behaviour has been corrected in Version 2200; in such cases the external references will be ignored as requested.

Bill of Materials / Report Manager

Service Pack 2 2017 (V 2202)

Configuration of attribute transfer for BOMs from product structures

When generating a BOM from a product structure you have now the option to determine which attributes are to be transferred to the Report Manager in the process. In previous versions, a change in the 2D3DREPORTMANAGER.MAC file was required for this.

From SP2 onwards, this setting can be specified in the Configuration Editor at **System settings > HELiOS**, where you will find the parameter **Attributes for BOM via product structure**.

Edit View Extras ISD				
🕥 🖉 🚏 📴 🔢 🍞		A 0,		User Administrator - 🧟
System settings	*	Description	Value	Comment
III HCM sketch		DB project	From documer 💌	Database project
Itemisation		Check default DB links	Check with que 🔻	Check database connection (and correct if required)
Processing plane		HELIOS/HiCAD Default Solution	V	
Sketches Start configuration		Handling of article master	Query •	Handling of manually assigned article master during exchanging of semi-finished products
 Directories Load/Save Data save 		Taking over of semi-finished product attributes	Collection	Which semi-finished product attributes are to be taken over to manual article masters ? (Format : Semi- finished product attribute;Article attribute)
 Identification Referencing 		Attributes for BOM via product structure	Only selected a 🔻	Selection of attributes to be transferred for BOM transfer via product structure
Annotations				
Calculations				
📰 Graphic				
Visualisation	=			
III Feature				
2-D Lines				
D 📰 Text				
III Miscellaneous				
Catalogue				
E Standard Parts				
I HELIOS	-			
	•			

If you have chosen the **Only selected attributes** setting here, only those attributes will be transferred that are specified in the PV_KONFIG.DAT file.

For new installations this parameter is set to **Only selected attributes** by default; for update installations it is set to **All attributes**. The previous setting from 2D3DREPORTMANAGER.MAC will not be applied.

Service Pack 1 2017 (V 2201)

Parameter configuration / Steel Engineering BOMs

If the **Steel / Metal Engineering** option has been set in the HiCAD Parameter configuration dialogue window, the Steel Engineering-specific BOM configuration **HiCAD_Stahlbau.rms** will be used as default configuration.

Steel Engineering BOM (Excel) - Differentiating between unprocessed and processed sheet metal

For Sheet Metal parts you now distinguish between sheets with identical cross-sections (unprocessed) and processed sheets. Unprocessed sheets with identical cross-sections are characterised by at least one bend zone, parallel front edges of the flanges (width of flange) <u>and</u> no further processing, e.g. subtractions, bores etc. For these sheets a drawing is not necessary, only a BOM. All other sheets count as unalike and processed.

In order to differentiate between unprocessed and processed sheets in the BOM

- 1. the **Special treatment for sheets with identical cross-sections** checkbox has to be activated in the Configuration Editor under **Sheet Metal** (by default deactivated).
- 2. the new template **HiCAD_Stahlbau.2201.0** has to be used when creating a BOM.

In this case an additional spreadsheets for unprocessed sheets will be added in the Excel BOM.

Moreover, for sheet metal and unprocessed sheets you can optionally view images of the sectional view (with dimensions) in the BOM. To do so, go to the spreadsheet **Settings** in the **HiCAD_Stahlbau.2201.0.xslx** template, then to the **Create** column and change the value for **Sheet Metal parts with image** to **true**. The ISD default setting is **false**.

For unprocessed sheets with identical cross-sections only one image will be created.

The depiction with images can be found in the spreadsheets:

- Unprocessed sheets
- Unprocessed sheets with image

A	В	С	D	E	F	G
1 Script file	HiCAD Stahlbau.2201.0.cs	-				
2 Export raw data	false					
3 Language	en					
4						
5 Consider site assembly	false	If active.	boltings inserted	on-site will be de	clared as loose parts in the shipping	1
6 Projection method for cut symbols	1		an Projection		1 11 3	
7 Assembly image height	150			es in shipping lists	, 0: Deactivate image output	
8 Assembly image width	0): Total table width	
9 Assembly image representation	QuickHiddenLine		, ,			
0 Sheet metal part height	150	Height of	Sheet Metal par	t images in Sheet	Metal part list	
11		5		5		
12						
13 Bills of Materials	Name	Create	Structure Lis	Filter attribute	Filter criteria	Exclusion filte
4	Structure List	true	true			false
5	Quantity List	true	false	H %10	27,31,32,46,47,48,49,50,51	true
16	Profile totals list	true	false	H %10	1	false
.7	List of sawn beams	true	false	H %10	1	false
8	Bolt screw list	true	false	H %10	6,14,30,57,58	false
19	Bolt screw list			H_\$PTK	Elbow, Tensioning elements, Turnbuckle	true
20	Shipping list	true	true			false
21	Shipping list, short	true	false	%Stufe	1,2	false
22	Plates	true	false	H %10	2	false
23	Sheet Metal	true	false	H %10	33	false
24	Sheet Metal parts with image	true	false	H %10	33	false
25	Unprocessed sheets	true	false	H %10	33	false
26	Unprocessed sheets with image	true	false	H %10	33	false
.7	Steel plates and metal sheets	true	false	H %10	2,33	false
8	Gratings	true	false	H_%10	56	false
29	Glazing	true	false	H_%10	55	false
80	Bar list	true	false	H_%10	1	false
31	Bar - Summary	true	false			false
32	5	false	false			false

Example:

The displayed drawing contains 5 aluminium sheets. Sheet 5001 and 5002 have different sheet depths, but they have identical cross-sections and are unprocessed. This does not apply to sheet 5000 as it has a subtraction, thus it is processed. Analogous to that, sheet 5003 is unprocessed and sheet 5004 is processed due to the subtraction.



If the **Special treatment for sheets with identical cross-sections** checkbox is active, sheet 5001, sheet 5002 and sheet 5003 will receive special treatment in the BOM and two spreadsheets will be added.

	A	В	С		D	Е	F	G	н	1	J	К
	Shee	et M	etal									
	Drawing No	D.			Customer						ÌCA	
	Order No.				Created by						104	D
	Order text				Created on						Lot	
4	Designatio	n										
1	Item 1	lumber	Designa		Dev. Width (mm)	Dev. Length (mm)	hickness (mr	Material	Designation	rface area (i	Weight (kg)	otal weig
					r,							
	5001	1/	Alublech 3mm	ľ ™⇒	127	100	3,0	Al99,0		0,03	0,10	0,1
	5002	1	Alublech 3mm	*	70 70	127	3,0	A199,0		0,02	0,07	0,
	5003	1/	L Alublech 3mm		90	70	3,0	A199,0		0,01	0,05	0,
				<i>\</i>	1							
L			C C	K	l							
Ĺ	5004		Alublech 3mm		90	70	3,0	Al99,0		0,01	0,04	0,0
Ĺ		5								0,10		0,3

Example - Spreadsheet Sheet Metal parts with image

А	В	С	D	E	F	G	Н	1	J	К
She	eet M	etal								
Drawing	Ne		Customer							
Order N			Created by						Č A	_
Order te			Created by Created on						CA	n
Designa			Created on						ST	
Designa	lition									
Item	Number	Designation	Dev. Width (mm)	Dev. Length (mm)	hickness (mr	Material	Designation	rface area (V	Veight (kg)To	otal weig
		LA								
5003		Alublech 3mm	U 90	70	20	A199,0		0,01	0,05	0,0
3003	1	ANDIECH SITIIT	30	7	5,0	A135,0		0,01	0,05	0,0
	1							0,01		0,0
5001	1	Alubiech 3mm	127	100	30	A199.0		0.03	0.10	0.1
5001 5002		Alublech 3mm Alublech 3mm	127	100		A199,0 A199,0		0,03	0,10	
5001 5002	2 1	Alublech 3mm Alublech 3mm	127 70	100		Al99,0 Al99,0		0,02	0,10	0,0
										0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,11 0,03 0,18
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0
	2 1							0,02		0,0

Example - Spreadsheet Unprocessed Sheet Metal parts with image

Expanded short shipping list

For bigger drawings you oftentimes need more than the first level of the part structure in the short shipping list. This can now be modified by using the filter attribute **%Stufe** in the setting file for Excel BOMs (e.g. HiCAD_Stahlbau.2201.0.xlsx). You can for example set the filter criteria to **1**,**2** and set the exclusion filter to **false**, which means that the shipping list contains level 1 and 2 of the part structure.

Name	Create	Structure Lis	Filter attribute	Filter criteria	Exclusion filter
Structure List	true	true			false
Quantity List	true	false	H_%10	27,31,32,46,47,48,49,50,51	true
Profile totals list	true	false	H_%10	1	false
List of sawn beams	true	false	H_%10	1	false
Bolt screw list	true	false	H_%10	6,14,30,57,58	false
Bolt screw list			H_\$PTK	Elbow, Tensioning elements, Turnbuckle	true
Shipping list	true	true			false
Shipping list, short	true	false	%Stufe	1,2	false
Plates	true	false	H_%10	2	false
Sheet Metal	true	false	H_%10	33	false
Sheet Metal parts with image	false	false	H_%10	33	false
Unprocessed sheets	true	false	H_%10	33	false
Unprocessed sheets with image	false	false	H_%10	33	false
Steel plates and metal sheets	true	false	H_%10	2,33	false
Gratings	true	false	H_%10	56	false
Glazing	true	false	H_%10	55	false
Bar list	true	false	H_%10	1	false
Bar - Summary	true	false			false

Major Release 2017 (V 2200)

Cut symbols in Excel BOMs via product structure

Cut symbols are now available in Excel BOMs created via product structures: In your template, use the variables !table!Bauteil.COMPONENT_CUTTYPE_WEB! or !table!Bauteil.COMPONENT_CUTTYPE_FLANGE!, respectively (instead of !table!H_\$09! and !table!H_\$10!).

Click here for further information on special attributes for Excel BOMs created from product structures.

Expanded BOM template for Steel Engineering

The supplied Excel template for Steel Engineering Bills of Materials has been slightly modified. On the **Shipping list** sheet, the **Qty./Assy.** column that indicates the number of parts per assembly has been added to the right of the **Total qty.** column that indicates the total number of parts.



Shipping list

Faster BOM creation

Data transfer to the Report Manager has been speeded up significantly. The increased speed becomes particularly apparent when working with large model drawings consisting of very man parts.

Automatic creation of images of Sheet Metal parts

When generating Excel BOMs you have now the option to create images Sheet Metal parts and insert them into the BOM automatically. This function is by default only contained in the template HiCAD_Stahlbau.2200.0.xlsx and is deactivated there. To activate it, open the file SYS\HICAD_STAHLBAU.EN.2200.0.XLSX. Open the Settings sheet and, in the Bills of Materials table, switch the Create value for the Sheet Metal parts with image row from von false to true:

13	Bills of Materials	Name	Create	Structure Lis	Filter attribut
14		Structure List	true	true	
15		Quantity List	true	false	H_%10
16		Profile totals list	true	false	H_%10
17		List of sawn beams	true	false	H %10
18		Bolt screw list	true	false	H_%10
19		Bolt screw list			H_\$PTK
20		Shipping list	true	true	
21		Shipping list, short	true	false	
22		Plates	true	false	H %10
23		Sheet Metal	true	false	H %10
24		Sheet Metal parts with image	true		H %10
25		Steel plates and metal sheets	true	false	H_%10
26		Gratings	true	false	H_%10
27		Glazing	true	false	H_%10
28		Bar list	true	false	H_%10
29		Bar - Summary	true	false	
30			false	false	
31			false	false	
32			false	false	
33					
34					
35		The BOM configuration	on table must	be a named area	
36		"BOMTemplateConfig	" (area withou	it column header	s).
37					

Viewer

Major Release 2017 (V 2200)

Viewing of 2-D files

Similar to the .KRA files in 3-D, there are now also figure archives in 2-D with the file extension **.FGA**. These contain the previous 2-D data (.FIG), the database attributes (.FIG.DBA2) and the attribute container data (.FIG.ATC) and replace the previous 2-D files.

The new .FGA format now also allows the displaying of the 2-D figures in the HiCAD Viewer.



Sheet Metal

Service Pack 2 2017 (V 2202)

Enhanced 3-D development

Simplify

Use the new **Simplify** function to show corners and relief grooves in the 3-D development within the circle of the specified snap radius in simplified representation.

Right-click on the 3-D development, choose **Process development > Simplify**. Enter the radius for the snap circle. Via the Feature log you can change the radius, deactivate or delete the feature.



Representation in developments

The representation of bore patterns, punches and mouldings in the 3-D development can be specified in the **Sheet development default settings** dialogue (Extended settings > Extended representation) during creation or modification of the 3-D development.

Use the Planar representation for mouldings to show bore patterns, punches and mouldings in 2-D.

Tool number

You can now output a tool number (WZNR column) from the Catalogue Editor for punching, moulding and embossing tools in the 3-D development.

When you create or change a development, activate the **Punching, moulding and embossing tools** checkbox.

The tool number will then (depending on the chosen position in the Text Editor) at the respective processing of the sheet.



Manual moving of auxiliary texts

If you move the cursor over a text in the 3-D development, the text will be highlighted in magenta. If you now press and hold down the left mouse button you can move the text. When you update the development the text will be moved back to its original position.

Favourites for developments

The settings of the **Sheet development** dialogue window can be saved as Favourites and be reused at any time. To do this, right-click on the symbol.

The default setting for COBUS NCAD has now been predefined and saved as Favourite.

COBUS NCAD reduces the startup costs for new CNC machines due to the possibility to pass the CNC master data to the machines.

Error message for incorrect bending simulations and sheet developments

If a bending simulation or a sheet development cannot be correctly calculated, an appropriate error message will be issued. A disrupted calculation can, for instance, be caused by non-tangential transitions or edges between flange and bend zone.

The error message appears next to the **OK** button.

While sheet developments will be cancelled, bending simulations will still be performed as far as possible.

	Auxiliary text		
		Serror: The top facets of the developed sheet do not lie in one plane. Function cannot be executed !	
	Preview	Apply immediately DK Cancel Apply	
T			
\leq			5

The blue edges are tangential edges(green (convex) and red (concave) edges are non-tangential edges).

Sheet from sketch

The **Sheet from sketch** function has been enhanced and now offers the following advantages:

- a preview is displayed
- the sketch can be modified during the creation process
- you can double-click the Feature and change input data in the dialogue window.

As before, you can find the **New sheet from sketch** functions for main parts and sub-parts in the **New** function group of the **Sheet Metal** tab. Select the **New sheet from sketch** function.

The **Sheet from sketch** dialogue window will be displayed:

(Sheet from sketch	x
	- Sketch	
	Sketch	
	Delete sketch after creation	Process sketch
	- Sheet parameters	New sketch in plane
	Use semi-finished product	
	BI 1 - AI99,0	
	Thickness: 1	
\leq	Fitting direction: +Z	
	- General	
	Referenced	
	Create feature	
J	Article No.: BI 1	
	OK Cancel A	Apply

- 1. Sketch
- 2. Sheet parameters
- 3. General
- 4. Apply/discard changes

If your drawing contains only one sketch, this sketch will be automatically chosen for the creation of the new sheet. If there are several sketches, you need to select the sketch from which you wish to create the sheet. You can also

call click the symbol and choose the **New sketch in plane** function, and ten draw a new closed polyline with the **Draw** functions on the **Sketch** tab.

As soon as you have identified the sketch, a preview of the new sheet will be shown. If you prefer a different sketch

for sheet creation, click the *local* icon beneath **Sketch** and identify a new sheet.

If the sketch contains several, closed polylines, a sheet with flange will created from them. If there are polylines that are not closed, an error message will be displayed:

Sheet from sketch	
- Sketch	
Sketch Sketch	
✓ Delete sketch after creation	
Serror: C-edges in sketch have self-intersections.	
Stainless steel sheet 2mm	/ 7
Thickness: 2	

To modify the sketch, click the symbol and choose **Process sketch**. You can then process the sketch using the functions of the **Sketch** tab. You end sketch processing via the processing dialogue and will be redirected to the **Sheet from sketch** dialogue window.

		Process sketch
	P Chamfer	Apply sketch Cancel
	Length: 10 💌	
1	− HCM ✓ Create dimensional constraints	
	Equate dimensional constraints	
	Retain corners with HCM constraints	
	OK Cancel Apply	

Even if you delete the sketch from the part structure, you have still the option to change the sketch via the feature log.

The standard for semi-finished products can be taken from the HiCAD Catalogue Editor by clicking the icon. The selection of a semi-finished product influences the sheet thickness, the material and the article number. If you double-click the feature **Sheet from sketch** you have the option to activate or deactivate the semi-finished product later.

By specifying the fitting direction you determine the direction for the applying of the sheet thickness (+ or – Z-axis).

Frequently used part are often saved as referenced parts. Such parts will then be additionally saved as individual parts at the end of the function-related process, and will not be integrated as a "fixed" part into the drawing. If any changes are then applied to this part, it can then be updated in the drawing.

To deactivate Feature logging during sheet creation, deactivate the **Create feature** checkbox. By default, this checkbox is active $\mathbf{\overline{M}}$.

The name of the sheet will be generated automatically. You can overwrite it in the **Article No.** text field if you have not activated the **Use semi-finished product** checkbox.

Once you have entered all required data, you can create the new sheet. Click **Apply** to insert the sheet, while the dialogue window remains open, allowing you to make further changes if desired. Click **OK** to insert the sheet and close the dialogue window. Click **Cancel** to close the dialogue window and discard all inputs, without creating the sheet.

Example:



Welded corner

Use the revised **Welded corner** function to create a welded corner between two flanges of a Sheet Metal part. The flanges can have different lengths and bend angles. For such cases you can choose between different types of transitions.

When you activate the function the following dialogue window will be displayed:

Velded corner	4
- Edges	
(1) Edge	1
(2) Select edge	
 Sheet parameters ✓ Use semi-finished product 	///
BI 1 - AI99,0	
(3) Sheet thickness: 1 (4) Angle: 60 ▼	
(5) Bend radius: 0 -	
(6) Clearance: 0 -	
Allowance method: DIN6935	
Adjust bend zone Method: Bulgy (inside)	
Preview OK Cancel Apply	

Proceed as follows:

1. Identify the two sheets, each at one of the two longitudinal edges of the front side.

If you want to identify a different front side, click the *list* icon in the **Edge** area of the dialogue for identification.

2. Enter the angle for the welded corner.



(1) 60° angle of welded corner

- (2) 45° angle of welded corner
- 3. Specify the **Clearance** for the weld material.
- 4. Enter a **Bend radius** for the bend zone.
- 5. If the flanges have different lengths, specify the handling of the bend zones in the in the **Adjust bend zones** field.

The following options are available for a processing of flanges with different lengths or angles:

7	No adjust- ment	The front surface remains unchanged.
	Planar	The front surface of the bend zone will be pulled back perpendicular to the axis.
1	Linear	The front surface of the bend zone connects both flanges. The result is a planar front surface.
	Bulgy (inside)	The front surface of the bend zone connects both flanges. The result is a con- cave front surface.
	Hollow (out- side)	The front surface of the bend zone connects both flanges. The result is a convex front surface.

6. Enter the sheet thickness.

The standard for semi-finished products can be taken from the Catalogue Editor with a click on the **E**icon. The selection of the semi-finished product influences the sheet thickness, the material and the article number. With a double-click on the **Welded corner** Feature you can later activate or deactivate the semi-finished product.

7. Choose and Allowance method.

To preserve the development of the welded corner, HiCAD offers you developments according to various calculation methods - so called allowance methods - which take into account the material-dependent length changes of the workpiece that occur during the bending process. You can choose between the most common, practice oriented empirical allowance methods in HiCAD.

Each allowance method is represented by one particular system file, which have been appropriately prepared. In practice, however, users will often want to create his/her own, user-defined methods. Before applying the welded corner you can select a system file here.

8. Confirm your entries with **OK**.

Once you have entered all required data, you can create the welded corner. Click **Apply** to insert the welded corner, while the dialogue window remains open, allowing you to make further changes if desired. Click **OK** to insert the welded corner and close the dialogue window. Click **Cancel** to close the dialogue window and discard all inputs, without creating the welded corner. Click **Preview** to update the welded corner after changes in the dialogue window.

Example:

	Velded corner		3	
Feature 2	(1):	Edge	2	
\$1.12 13 \$1.	(2):	Edge	3	·
Image: (1) Base sheet Image: (3) Attach flange Image: (4) Attach flange Image: (5) Welded corner Image: (5) Welded corner Image: (5) Welded corner Image: (6) Attach flange Image: (7) Trim to surface Image: (6) Attach flange Image: (7) Trim to surface Image: (8) Adjust bend zone Image: (2) constraint: 1 Image: (3) Constraint: 1 Image: (2) constraint: 1 Image: (3) Constraint: 1 Image: (4) Constraint: 1 Image: (3) Constraint: 1 Image: (4) Constraint: 1 Image: (4) Constraint: 1 Image: (4) Constraint: 1 Image: (5) Constraint: 1 Image: (6) Constraint: 1 Image: (6) Constraint: 1 Image	- Parameters (3) Angle: (4) Clearance: (5) Bend radius: Adjust bend zone: (6) Sheet thickness: Allowance method: Preview	60 0.1 0 Bulgy (inside) ✓ Use semi-finished product BI 1 - Al99,0 Without allowance OK Cancel	▼ ▼ ■ ■ ■	

(1) Welded corner

(2) Feature log

(3) Double-click the Welded corner Feature to open the dialogue window

Deleting flanges and bend zones

The **Delete** function cannot be applied to end zones or flanges in Sheet Metal parts with feature log.

If you activate a flange or bend zone and choose the **Delete object** function, the following message appears:

Flanges and bend zones cannot be deleted if the feature log is active. The complete Sheet Metal part will be deleted.

Click OK to delete the complete sheet.

Click Cancel to end the function without deleting anything.

To avoid repeated display of the message, activate the **Suppress message** checkbox.

If a Sheet Metal part has no feature log, the flange of bend zone will be deleted immediately, without any further queries.

Transform / Clone flanges and bend zones

When an attempt is made to transform or move the bend zone of a sheet with features, the following message was displayed in previous versions:

Function not allowed for selected part/assembly. Apply function to superordinate part/assembly?

This message will no longer be displayed. The function will now be applied directly to the Sheet Metal main part.

For Sheet Metal parts without features a moving of flanges and bend zones is allowed.

Settings for sectional views of sheets in production drawings

New in the **Drawing derivation** dialogue window is the **Sectional views of sheets** button. When you click this button, the following dialogue window will be displayed:

Settings for sectional views of shee	ts
Scale of sectional views	1:10 💌
Angular dimensions in sections	Without
Offset go-side	5
ОК	Cancel

The following options are available:

- Scale of sectional views
- Angular dimensions in sections Via this parameter you determine whether angular dimensions are to be created in sectional views or not.
- Offset go-side

For coated surfaces you can specify the distance for the go-side line.

Service Pack 1 2017 (V 2201)

Create new base sheet

The **Create base sheet** function has been revised. You can now choose between the options Insertion via value and Insertion via points. As soon as your value inputs are sufficient, a preview of the new sheet will be displayed.

A rectangular base sheet can be created as a main part or a sub-part. To create a sub-part, you first need to create a main assembly with a subordinate assembly. If the assembly is then active, the base sheet is subordinated to the assembly once you have selected the function.

Proceed as follows:

1. Choose the **Base sheet**, or **Base sheet > Sub-part** function, respectively.

This will open the **Base sheet** dialogue window.

Base sheet	
Insertion point	
Sheet parameters Width (x): 150 Depth (y): 3 100 Thickness (z): 3 J Use semi-finished product Aluminium sheet 3mm I General Referenced Q Create feature Article No.: Sheet Close window after creation Apply immediately OK Cancel Apply	

- 1 Insertion via value
- 2 Insertion via points
- 3 Sheet parameters

4 General

5 Apply / discard inputs

Insertion via value



3. Enter the dimensions beneath Sheet parameters.

A preview of the new sheet will be displayed.

4. Identify an insertion point in your drawing.

If you want to change the insertion point, click the *icon*. Right-click and choose the **Origin** of the active coordinate system as the fitting point, or change the fitting point on the base sheet.

If you choose the **Select fitting point** function, the base sheet will be shown as a glass model. Identify the new point.

Base sheet	×	
- Insertion point -		
- Sheet parameters - Width (x):	100 •	

If the **Apply immediately** checkbox has been activated $\mathbf{\mathbb{N}}$, the new sheet will be immediately inserted (provided that the value inputs are correct), and can then be changed via the Feature log.

If the Close window after creation checkbox has been activated \mathbf{M} , the dialogue window will be closed after the generation of the base sheet.

Insertion via points

+e

When you choose the **Insertion via points** option you must first identify the insertion point of the base sheet in your drawing. Then, you can define your base sheet dynamically by dragging. The second point can then be freely selected in space and will be projected onto the base sheet.

The sheet parameters **Width** and **Depth** will be greyed out during dynamic dragging of the sheet. They will be calculated from the model drawing and can later be changed via double-click on the feature.

💌 Base sheet	X	
- Insertion point -		
Insertion point	() •••	
Selec	t second point 💦	•
- Sheet parameter	s	
Width (x):	150	
Depth (y):	100	
Thickness (z):	3 🔹	

Sheet parameters

If you have created the base sheet with the **Insertion via value** option, you can modify all sheet parameters. If you have chosen the **Insertion via points**, the **Width** and **Depth** fields will be greyed out. In this case you need to modify the parameters via the Feature log.

If you use a semi-finished product \checkmark from the Catalogue Editor, you will not be asked to specify the sheet thickness. The **Sheet thickness**, the **Material** and the **Article number** for the base sheet will then be taken from the Catalogue Editor.

Semi-finished products can also be activated/deactivated or changed subsequently. To do this, double-click the **Base sheet** feature. The dialogue for base sheet creation will be opened. You can then activate or deactivate the

Use semi-finished product checkbox, or click the icon to choose a different semi-finished product. Click OK to confirm your changes and apply the changes.

General

Frequently used parts should be saved as referenced parts. The part will then saved additionally as an individual part at the end of the process and not incorporated as a "fixed" part in the drawing. If this individual part is modified, you can then update the part in the drawing.

To deactivate the feature creation during the sheet creation, deactivate the Create feature checkbox \Box . This checkbox is activated by default \blacksquare .

The **Article number** of the sheet is automatically generated. You can overwrite it in the text field if you have deactivated the **Use semi-finished product** checkbox.

Apply / discard inputs

After entering all required data you can create the new sheet. If you click **Apply**, the new sheet will be inserted, and the dialogue window remains open. If you click **OK**, the new sheet will be inserted and the dialogue window will be closed. If you click **Cancel**, your value inputs will be discarded and the dialogue window will be closed. If you have activated the **Apply immediately** option, the data will be instantly applied (provided that all value inputs were correct). If you have activated the **Close window after creation** checkbox, the input window will be closed after generation of the sheet.

Please note:

Incorrect inputs will be marked with a Symbol. If you move the cursor over the symbol, an error description will be displayed.

If the function cannot be executed due to incorrect value inputs, a 🕕 symbol will be displayed on the **OK** button. If you move the cursor over the symbol, an error description will be displayed.

Editor for allowance methods

For the creation and/or editing of the files you use the ABWEditor tool in the EXE directory of your HiCAD installation.

ABWEditor						6 🖬 🗟 🛃
ACP	File name : ACP.a	bw	3			4
CP_outside	Data table Con	mant	-			
urora				-		
hamfer in6935	Type of allowance	e method: Z	•	5		↓ ■ •
aemmerl aemmerle	Sheet thickness	Bend angle	Inner radius	Correction summand	Notes	2
ELLMICH	899.000	45.001	899.000	-0.83		
aiser	899.000	50.001	899.000	-0.96		
	899.000	55.001	899.000	-1.09		
	899.000	60.001	899.000	-1.22		
	899.000	65.001	899.000	-1.35		
	899.000	70.001	899.000	-1.48		
	899.000	75.001	899.000	-1.61		
	899.000	80.001	899.000	-1.74		
	899.000	85.001	899.000	-1.87		
	899.000	90.001	899.000	-2.00		
	899.000	95.001	899.000	-1.14		
	899.000	100.001	899.000	-0.85		
	899.000	105.001	899.000	-0.18		
	899.000	110.001	899.000	0.58		
	899.000	115.001	899.000	1.42		
	899.000	120.001	899.000	0.00		

In the left column (1) of the Editor you can see the names of the ABW files that are stored in the corresponding HiCAD system directory (../MAKROABW). Only the files stored in this folder will be recognized by HiCAD as available allowance methods and offered for selection in the corresponding dialogue.

When you click on an allowance method in the list, the content of the file will be shown in tabular form on the right hand side (2) of the Editor.

This format-bound table has 4 columns and interval limits of 999.000. For method **F** (5) only 2 columns are relevant. For all other methods, all 4 columns are relevant.

The columns have the following meaning for the allowance method:

- Column 1 Interval for included sheet thickness
- Column 2 Included bend angles
- Column 3 Included inner radiuses
- Column 4 Correction summand in mm (normally < 0)

Click the column headers to sort the column contents in ascending or descending order. The records of an ABW file must have a particular order, which will be automatically applied upon saving. You can click the **Sort data records**

icon to restore the correct sorting order. The **Copy data record** function inserts a marked table row once

more. If a sorting of the table has already been done, this new row will be inserted as the next row; otherwise, it will be inserted as the last row.

The displayed **File name** (3) can be overwritten, as well as the individual numbers in the data records. The **Type of allowance method** (5) can also be edited. The following types have currently been implemented:

F	Factor Method, e.g. DIN6935	F determines the stretched length across the neutral fibre, which is corrected in the direction of the arc interior for small radii. Factor 1 means an arc length on the neutral fibre, while factor 0 reflects the arc length on the interior.
Z	The Standard Allowance Methods with External Refer- ence Lengths, e.g. Heuschen, also Dubbel	Z is the most frequently used method. The reference lengths for an obtuse angle are the imaginary intersection points of the sides on the flange exterior; in the case of acute angles, the reference dimension is formed via the tangent perpendicular to the dimension direction. This corresponds to the practical measurement of a workpiece using the calliper gauge. The stretched length is then the sum of the lengths determined in this way plus the allowance values per bend.
I	A Modified Allowance Method with Internal Refer- ence Lengths, e.g. Kaiser	I is similar to Z, the difference being that it is not the exterior, but the interiors of the sides that define the reference lengths. The practical significance of this method is that the user often sets all allowances to zero and obtains a simple method with acceptable calculation results for appropriate bend radii.
Η	A Modified Allowance Method with Interpolation, e.g. Haem- merle	H is similar to Z , with two modifications: First, the intersection points of the sides bound the reference line here even for angles above 90 degrees. Second, the allow-ance value is interpolated linearly in the interval of the angles.
	Polyhedral Developments	The above explanations apply only to genuine sheet developments, but not to poly- hedral developments. In these cases, only the existing surfaces are transformed to the plane if INT/thickness = 1000. If a thickness <1000 is specified, the stretched length resulting from the geometric middle of the specified imaginary thickness is shortened.

The **Comment** (4) can be edited on the second tab of the dialogue.

The comment in the ABW files that are supplied with HiCAD consists of a description of the method and the meaning of the individual columns.

ABWEditor	
🖻 🗋 🗙 🕜	6 🖬 🗟 🖸
ACP	File name : ACP.abw
ACP_outside aurora	Data table Comment 4
Chamfer din6935 haemmerl HELLMICH kaiser	HiCAD - Sheet Metal Development # Allowance method for the calculation of developed lengths # Method for composite panels #
	This file provides the data which need to be added to outer mass leg lengths during the development. -> Column 1: to sheet thickness - -> Column 3: to bending angle including -> Column 3: to inner radius - <- Column 4: correction summand in mm (usually less than zero) Columns 1,2 and 3 need to be sorted in ascending order first after column 1, then column 2 and finally column 3! Columns 1, 2 and 3 need to be ended each with 999.000! 899.000 45.001 899.000 -0.83 899.000 55.001 899.000 -0.935 899.000 51.001 899.000 -1.165

The two cogwheels next to the file name indicate that this is a system file, i.e. an ABW file that is stored in the HiCAD system directory.

If you want to load a different file (e.g. by clicking a different system file in the list or by creating a new file) you will be asked whether you want to save the changes to the current file.

In the top right corner of the Editor (6) you can find the following icons:

	Save	Use this function to save the current file to its default storage location.
	Save as	Use this function to save the current file to a storage location of your choice.
X	Save as system file	Use this function to save the file as a system file. This function is particularly relevant for files the storage location of which is not the system folder for ABW files, or for new files.
	Restore	If you modify a system file and save it with its current file name, the ABWEditor will create a copy of the original file in the background. This function will then be active, i.e. not greyed out. You can then use this function to restore the original version of the file.

With the help of the icons (7) at the top left you can manage the ABW files:

Ö	Open file	Use this function to open an ABW file which is not located in the HiCAD system folder (/MAKROABW).
	New file	This function creates a new, user-speific ABW file.
×	Delete file	This function deletes the current ABW file after a security prompt.

Unprocessed and processed sheets

One distinguishes between sheets with identical cross-sections (unprocessed sheets) and processed sheets.

- As "cross-sectionally identical" (unprocessed) are considered all sheets with at least one bend zone, parallel front edges of the flanges (width of flange) <u>and</u> without any further processings such as bores, subtractions etc. For these sheets, no drawing is normally required, but only a BOM.
- All other sheets are considered non-identical and processed. For these sheets a drawing is required.

Production drawings for sheets with identical cross-sections

The output of cross-sectionally identical sheets can now be suppressed in the workshop drawing. To do this, open the Configuration Editor, go to **Sheet Metal** and activate the checkbox for the parameter **Suppress production drawings for sheets with identical cross-sections...** The checkbox is deactivated by default.



Example:

The model drawing shown below contains 5 aluminium sheets. The sheets 5001 and 5002 have different depths, but the same cross-sections and are unprocessed. This does not apply to sheet 5000, which has a processing in the form of a material subtraction. Likewise, sheet 5003 is unprocessed, and sheet 5004 has a processing in the form of a subtraction.



If the **Suppress production drawings for sheets with identical cross-sections...** checkbox has been activated, only the sheets 5000 and 5004 will be considered for drawing derivations.

Steel Engineering BOM (Excel) - Distinguishing unprocessed and processed

To be able to distinguish between unprocessed and processed sheets in the BOM, the following settings are required:

- 1. In the Configuration Editor at Sheet Metal, the Special handling of sheets with identical cross-sections checkbox must be active (default).
- 2. The new template HiCAD_Stahlbau.2201.0 must have been selected for BOM creation.

An additional Excel sheet will then be created for unprocessed sheets.

CAM data for unprocessed sheets

In the Configuration Editor at PDM > Management + BIM > External production drawings > CAM data for unprocessed sheets you can specify whether the "unprocessed" sheets are to be considered for the creation of the CAM data or not.

Sheet development

Auxiliary text with leader line

The Auxiliary text - Positioning setting in the Create sheet development now offers the additional Outside, with line option.



If you choose **Inside** or **Outside**, the dimensions and the article number and, in some cases, the item number, will be displayed by default. The text will be composed of the part attributes of the Sheet Metal main part. If you choose **Text with leader line**, the text will be applied as a tag with a leader line.

Apply sheet development immediately

To achieve a after sheet development, the dialogue window now offers the new **Apply immediately** checkbox. If you have activated the checkbox \checkmark , the development will be immediately created after specifying the fitting point in the drawing. Clicking the **Apply** button will no longer be necessary.

Export sheet development as DXF file

Due to the switching to the new 3-D development (Version 2200) the valid development parameters of the model drawing will be used when performing exports with the functions of the DXF: Complete menu.

The development parameters, e.g.

- Powder marking lines
- Bend lines
- Bend zones
- Bend radius
- Tool info
- Dimensioning
- Processing direction symbol

can be specified with the **Default setting** function (Sheet Metal > Sheet development > Update > ...).

Process development with 3-D functions

The 3-D processing functions for sheet developments can be accessed by right-clicking on the development and choosing **Process development**.



The processings will be recorded in the Feature log and can be changed there. Changed edge parameters will be recorded in the **Appearance** feature.

Coating according to NCS

Use the **Coating** function to define the type (outer side, inner side, edge), the colour and the description of a coating.

Besides the RAL colours and the system colours you can now also choose NCS colour codes from the catalogue for coating colours.

The Natural Colour System (NCS) is a standardized colour system based on the human perception of colours. Currently it comprises 1950 colours that are arranged logically according to their tone and saturation. All colours that are listed in the NCS system as theoretical values can also be created in practice. They are designated by means of a combination of numbers and letters.

Coat sheet	X	
	pating for both sides	
- 🗹 Outer side		
Colour: NCS 0580-G30Y	Paint NCS 0580-G30Y	×
Description: Paint NCS 0580-G30Y		
Inner side Colour: RAL 1000 Green Bei Description: Paint RAL 1000 Iske outer side Like outer side Like inner side OK Car	Surface treatment Profile installation Paint NCS Paint RAL	BZ Paint NCS 0575-G40Y Paint NCS 0575-G60Y Paint NCS 0575-G70Y Paint NCS 0575-G90Y Paint NCS 0575-G90Y Paint NCS 0580-G30Y Paint NCS 0580-G30Y Paint NCS 0580-Y Paint NCS 0580-Y10R Paint NCS 0580-Y20R Paint NCS 0580-Y20R Paint NCS 0580-Y30R Paint NCS 0580-Y30R Paint NCS 0580-Y60R Paint NCS 0580-Y00R Paint NCS 0580-Y00R Paint NCS 0580-Y30R Paint NCS 0580-Y30R Paint NCS 0580-Y30R Paint NCS 0580-Y30R Paint NCS 0585-Y30R Paint NCS 0585-Y30R Paint NCS 0585-Y30R Paint NCS 0585-Y50R Paint NCS 0585-Y50R
		K Cancel

Major Release 2017 (V 2200)

3-D development

The new functionality for creating and processing of 3-D developments replaces the 2-D development function that was available until HiCAD 2016.

Develop sheet

The **Develop sheet** pull-down menu in the **Sheet development** function group provides various functions for developing of Sheet Metal parts.

Use this function to create the 3-D development of a Sheet Metal part. You can choose between an automatic alignment of the sheet or an alignment via edges.

You can derive several developments with different parameter settings from one Sheet Metal part. The parameter settings will be saved with the development. For each development a new view will be created. The view and the Sheet Metal part are linked to each other. If the Sheet Metal part is deleted, the view of the development will also disappear.

You have the option to specify the development parameters during creation of the development. The functions for the changing of the parameters can be found at **Sheet Metal > Sheet development > Update** $> \dots$ When you call the function, the following dialogue window will be displayed:

P Create sheet development	×			
- Sheet parameters				
~				
Sheet metal main part				
Direction/Upper side (Selection	n priorities) (j)			
1. I Direction symbol				
2. 🗹 Coated side				
3. Vumber of powder man	rking lines and letterings			
4. Direction acc. to: Longes	t edge 🔹			
Place devel	opment			
- Representation	- Dimensioning			
Bend lines	Dimension			
Bend zones	Outer contour			
Subordinate parts	Bend lines			
- Annotation				
Bend line texts	Both angles equal 🗸			
Positive and negative and ne	ngles 📝			
Interrupted bend lines:	All bend lines 🔻			
Cross-break height				
Cross-break angle				
Punching, moulding and en	nbossing tools			
Auxiliary text				
Positioning:	Outside 👻			
	¢			
Preview OK	Cancel Apply			

Create sheet development dialogue window

Automatic



To determine the alignment of the sheet automatically, click this icon **at the top of the Create sheet development** dialogue window.

After identifying the sheet, a transparent preview of the 3-D development will be shown at the cursor. The options for the selection of direction and upper side (Direction symbol, Coated side, ...) can be changed by activating or deactivating the corresponding checkboxes. The priority results from the ascending order of the active options. If the upper side is determined by the coating or the number of powder marking lines and letterings, the alignment will be horizontally to the longest edge or bend line, respectively.

Manual

To determine the alignment of the sheet via manual selection of an edge bordering on a top facet, click this icon



at the top of the **Create sheet development** dialogue window. Then, identify the edge.

After identifying the sheet, a transparent preview of the 3-D development will be shown at the cursor. The identified edge determines the upper side and will be aligned horizontally in the development. Specify an insertion point for the development in your drawing.



Upper side and alignment are determined by the identified edge.



Development parameters

The following functions for the determining of development parameters are available:





Use this function to change the parameters of all developments and the pre-setting in the drawing.

Use this function to change the pre-setting of the parameter for new developments in the drawing.

Representation

The Bend lines and Bend zones beneath Representation can be activated or deactivated. Length, distance to

outer contour, line type and colour can be specified in the **Extended settings** on the **Bend lines** tab. Positive and negative bend lines can be configured separately.

Activate the Subordinate parts checkbox if you also want to show parts that are subordinated to a flange (e.g. welded nuts, 3-D parts).

Dimensioning

If you activate the **Dimension** checkbox, only the greatest extension in X- and Y-direction will be dimensioned.

If you activate the **Outer contour** checkbox, the complete contour will be dimensioned.

If you activate the **Bend lines** checkbox, the bend lines running parallel to the outer contour will be dimensioned, independent of the other dimensioning settings.

Annotation

Here you can configure annotations for developments (bend lines, cross-breaks, punchings). Also, you can define additional texts, e.g. for the production. You can either define the texts manually, with the help of the Annotation

Editor, or load the annotations for Bystronic or LVD via the Favourites

To start the Annotation Editor, click the 🗾 icon next to the option. For each annotation, the attributes for evaluation will be displayed. These can also be supplemented by additional, user-defined comments. You can assign to each text block the properties Font, Character set, Font size, Line spacing, Font colour, Aspect ratio/Inclination (only for HiCAD fonts) and the orientation of the text (left, centred, right).

Favourites

The settings of the dialogue window can be saved as favourites and re-used at any time. To do this, click on the

symbol at the bottom left of the window.

The settings for LVD, Bystronic and Lantek Expert have been predefined and saved as favourites.

More information on Favourites Management can be found in the Manage Favourites topic of the HiCAD Basics Help.

Favourites can be loaded as default settings for new drawings in the Configuration Editor at Sheet Metal > Sheet development > Default setting.

Apply/discard settings

After entering all required data you have the following options: If you choose **Apply** the development will be inserted into your drawing, but the dialogue window will remain open, allowing you to make adjustments if required. If you choose OK, the development will be inserted and the window will be closed. If you choose Cancel, the window will be closed and the specified settings will be discarded. Click Preview to update the development after making changes to the settings in the dialogue. For this to happen, the development must have been placed in the drawing.

Example



(1) Bend radius and bend angle with different font parameters

(2) Different colours for interrupted bend lines and bend zones

(3) Dimension

(4) Cross-break with red height and black angle

(5) Punch with tool number

Update

The processing functions for 3-D sheet developments can be activated with a right-click on the development.

	0	
2	Suppress sheet update	Use this function to lock the sheet development against changes on the sheet, i.e. any changes that are applied to the sheet will not be taken over into the sheet development.
- 🦻	Allow sheet update	Use this function to deactivate the locking of the sheet development against changes on the sheet. Changes to the sheet will be taken over into the sheet development again.
	Update development	Use this function to take changes to the sheet over into the sheet development.
	Change development	Use this function to call the Development parameters. A preview of the changes will be shown when you click the Preview button. Click OK to apply the changes.
X	Delete	Use this function to delete the development.

Export

The **Sheet development** function group contains the **Extras** menu with various management functions. Here you will find the following export functions for section contours and developments:

Functio	n	Description
	Export section contours of devel- opment as DXF file	Exports the section contour of a development.
Ext	iras	
DXF 유민 입미 🚽	All developments (DXF: Section contours)	Generates a section contour from all developments and exports them, provided that they are:
		BOM-relevant and
		 have an item number.
		The current pre-settings for the drawing will be used for gen- eration.
	All sheets (DXF: Section con- tours)	Generates a section contour from all sheets and exports them.
		The current pre-settings for the drawing will be used for generation.
	Sheets from list (DXF: Section contours)	Generates section contours from selected sheets and exports them.
		The current pre-settings for the drawing will be used for gen- eration.
DXF	Development (DXF: Complete)	Exports the sheet development of a development.
DXF PD BD	All developments (DXF: Com- plete)	Generates an export file from all developments, provided that they are:
		■ BOM-relevant and
		■ have an item number .
		The development parameters of the drawing will be evaluated for the generation.
DXF PD BD	All sheets (DXF: Complete)	Generates developments of all sheets and exports them.
		The development parameters of the drawing will be evaluated for the generation.
DXF PD BD	Sheets from list (DXF: Complete)	Generates developments of selected sheets and exports them.
		The development parameters of the drawing will be evaluated for the generation.

Old functions for 2-D developments

The functions for the processing of old 2-D developments that could be created with HiCAD up to Version 2016 can finden Sie unter Sheet Metal > Sheet development > Update > Up to HiCAD 2016 > From HiCAD 2017 onwards, only 3-D developments can be created.
"Clone feature" for "Attach flange" function

The **Attach flange** function can now be cloned via the feature log by means of the **Clone feature** function. This means that you can now execute the **Attach flange** function multiple times as a "pattern" with the help of HiCAD's Feature Technology.

When you call the function the following dialogue window will be displayed:

Feature		
🚛 🔲 (1) Sheet from	sketch	
🛃 🚺 (3) Attach flang	e	
📓 🔲 (8) Clone proce	ssings	
- 🔲 (2) Insertion	Position	
Pattern		
-		
- Rotatory pattern		
Axis:	Select axis	
Clones:	2 -	
Individual angle	▼ 45 ▼	
Also rotate	Select point	
Individual distance	▼ 0 ▼	-
Ĭ		
Omissions		€-⊙
01113310113		
		lone, one-sided Cancel
Preview	OK 🕕	

Available are the pattern types Linear [1000], Rotatory [1000], Along polyline [1000] or Linear+Rotatory [1000] for the cloning of the **Attach flange** function. If desired, you can also combine several patterns in a row.

If you want to exclude any particular clonings, you can delete them in the $\ensuremath{\mathsf{Omissions}}$ area.



Rotation axis = Centroid of base sheet; 5 clonings; Individual angle 60°, Individual distance 0

Without allowance method

If you have not chosen an allowance method during the creation of new sheets or the attaching of flanges, this will be indicated by a corresponding entry in the feature log. You can double-click this entry to open a window allowing you to select an allowance method.



Tear-open edge in analytical development

You have now the option to change the Layer, the Colour and the Line type of tear-open edges when using the **Surface** ... (analytical) development functions. This can be useful, for example, if you want to create a temporary development to calculate costs for pipe machinings.

You change the parameters of the tear-open edge in the system file ABWCOL.DAT. If you remove the "minus" preceding the parameters, the Layer, the Colour and the Line type will be evaluated.

Kanteneigenschaften für Aufreißkanten beim analytischen Abwickeln; Schicht(0-999), Farbe(0-9), Stärke (0-9), Art(0-9); < 0:Kanteneigenschaften von Aufreißkanten werden nicht gesetzt [Edge properties for tear-open edges during analytical development; Layer(0-999), Colour(0-9), Weight(0-9), Type(0-9); < 0:Edge properties of tear-open edges not set]

1711



In this example the tear-open edge is green

TEXT

"Drawing" tab changed

- The functions for the detail drawings of selected Steel Engineering parts can now be found at Drawing > Itemisation/Detailing > Derive >Detail drawing
- At Drawing > Itemisation/Detailing > Attr. you will now find the following functions:

💼 🗎 Edit part annotation templates

- Article master, Itemisation
 - 📜 Document master, Detail drawing
- At Drawing > Itemisation/Detailing > Dim. you will find the following functions:



These functions were previously available on the **Steel Engineering** tab at **Further functions > Settings** >

Composite panels as semi-finished products

Composite panels are now available as semi-finished products in the Catalogue Editor.

These composite panel consist of two 0,5 mm aluminium cover sheets with a mineral core. In HiCAD the plate is represented simplified as a one-layer sheet. Since the weight calculation is done based on a homogeneous material, an own material is assigned to the panel.

The file ACP.ABW is used for the allowance method. In exceptional cases, for bent sheets with outside millings, you can use the allowance method ACP_outside.ABW instead.

Bend radius (BRAD): 0.01 (Standard, for inside millings)

Bend radius, milled outside (BRAD_OUT): 1.50 (Exception, for outside millings)



(1) Milled, inside

(2) Milled, outside

In the Catalogue Editor you can find the composite panels at Factory standards > Sheets.

Steel Engineering

Service Pack 2 2017 (V 2202)

Grids

Manual annotation for grid sub-systems

Besides the automatic annotation for grid sub-systems in derived drawings you have now the additional option to annotate the grid sub-systems manually. To do this, choose **Steel Engineering > Further functions > Settings**

> Grid annotation - Individual

After calling the function, select the edge of the grid sub-system. The annotation will be created immediately. The settings specified at Drawing > Annotations > Grid annotation will be considered for its representation.

Please note:

- The article number of the grid sub-system will only be written into the text box of the annotation tag, if in the Configuration Editor, at **Drawing > Annotations > Grid annotation**, the **Show name** checkbox has been activated.
- When annotating the sub-systems manually, a designating of connecting points with symbols is not possible.
- If you choose a different edge or two points instead of the edge of a grid sub-system, an annotation tag of the grid plane will be created.

Use the functions of the context menu to edit and move the annotations. You open the context menu with a rightclick on an annotation:



When editing manually created annotations of grid sub-systems, please note that the settings beneath **Symbol** only apply to automatically created annotations!

The setting options in the dialogue window correspond to the same-named parameters in the Configuration Editor.

Timber construction

Design Variants for timber construction

HiCAD now also offers Design Variants for the following timber constructions:

- Front joint,
- Front+heel joint,
- Straight scarf,
- Oblique scarf (scarf joint).

These Design variants can be found in the Civil Engineering functions docking window at Timber construction.

Civil Engineering functions	ąΧ
Steel Engineering	
Civil Engineering, general	
Metal Engineering / Facade Engineering	
Beet Metal	
Element installation	
Timber construction	
 Front joint and front+heel joint 	
Straight and oblique scarf (Scarf joint)	
Size: (Small icons)	



(1) Front joint, (2) Front+heel joint, (3) Straight scarf, (4) Oblique scarf (scarf joint)

Mounting drawings

Mounting drawings - Rearranging views when updating

After opening the Update mounting drawing function you have the option to decide whether the views in the mounting drawing should be rearranged after updating (if necessary) or not. To do so the following dialogue window will be displayed:

Drawing	derivation
	Rearrange views after update of drawing?
	Yes No

If the views of the active sheets should not be rearranged, for example to preserve previous manual rearranging of views, select **No**.

For mounting drawings which have been created with the **Management + BIM** functions, the rearranging of views after updating the drawing will be determined in the Configuration Editor. Via **PDM > Management + BIM > Pro-duction drawings** you can find the **Rearrange views when updating production drawings** parameter.

Fit DIN frame

If you choose the **Fit DIN frame** option while a sheet contains only one view group, the frame size will always be recalculated when the drawing sheet is updated.

Optimised performance when calculating boxes of a mounting drawing

The performance of the calculation of transparent preview boxes for view groups in a mounting drawing has been greatly improved.

Production drawings

Assembly points

Assembly points will now <u>always</u> be hidden in the derivation of production drawings.

Settings for sectional views of sheets

New in the **Drawing derivation** dialogue window is the **Sectional views for sheets** button. Click this button if you want to specify the settings for sectional views of Sheet Metal parts.

Settings for sectional views of shee	ts 📃	×
Scale of sectional views	1:10	•
Angular dimensions in sections	Without	•
Offset go-side	5	
ОК	Cancel	

The following settings are possible:

- Scale of sectional views
- Angular dimensions in sections Use this parameter to determine whether angular dimensions are to be created in sectional views or not.
- Offset go-side

Fore coated sheets, use this parameter to specify the distance of the projection line for the go-side.



Example: Workshop drawing of a coated sheet

New and enhanced dimensioning rules

Rules for sectional views

For sectional views in production drawings, new and enhanced dimensioning rules are available for beams which are attached parts.

The following rules are new:

146 PROFILE_LENGTH_IN_SECT

Length of beam sub-parts in sectional views

Recommended settings

 146: Length of beam sub-parts in sectional views 		
ID:	146: Length of beam sub-parts in sectional views	
Type of dimension:	Individual dimensions	
Position of dimension chain:	Тор	
Dimension chain reference:	Direct, without reference	
Direction of dimension chain:	Parallel to beam axis	

147 PROFILE_WIDTH_IN_SECT

Width of beam sub-parts in sectional views Recommended settings

 147: Width of beam sub-parts in sectional views 		
ID:	147: Width of beam sub-parts in sectional views	
Type of dimension:	Individual dimensions	
Position of dimension chain:	Right	
Dimension chain reference:	Direct, without reference	
Direction of dimension chain:	Perpendicular to beam axis	

148 PROFILE_HEIGHT_IN_SECT

Height of beam sub-parts in sectional views

Recommended settings

148: Height of beam sub-	parts in sectional views
ID:	148: Height of beam sub-parts in sectional views
Type of dimension:	Individual dimensions
Position of dimension chain:	Right
Dimension chain reference:	Direct, without reference
Direction of dimension chain:	Perpendicular to beam axis
Direction of dimension chain:	Perpendicular to beam axis



Example: Rule 146-148

149 PROFBORES_IN_SECT

Bores of beam sub-parts in sectional views

Recommended settings:

149: Bores of beam sub-parts in sectional views

149: Bores of beam sub-parts in sectional views
Chain dimensions
Right
Upper + Lower edge
Perpendicular to beam axis

149: Bores of beam sub-parts in sectional views

ID:	149: Bores of beam sub-parts in sectional views
Type of dimension:	Chain dimensions
Position of dimension chain:	Тор
Dimension chain reference:	Beam without attached parts
Direction of dimension chain:	Parallel to beam axis



150 PROF_POSITION_IN_SECT

Position of beam sub-part in sectional views (determined by one bore or outer edge and the reference part)

Recommended settings:

150: Position of beam sub-part in sectional views

ID:	150: Position of beam sub-part in sectional views
Type of dimension:	Chain dimensions
Position of dimension chain:	Automatic
Dimension chain reference:	Upper edge
Direction of dimension chain:	Perpendicular to beam axis

150: Position of beam sub-part in sectional views

ID:	150: Position of beam sub-part in sectional views
Type of dimension:	Chain dimensions
Position of dimension chain:	Automatic
Dimension chain reference:	Upper edge
Direction of dimension chain:	Parallel to beam axis

Example: Rule 150



The following rules had only been available for attached parts in **Sheet Metal** before but can now be used for beams, too.

53 BORE_DIAMETER_IN_SECT

Diameter of simple bores in sheets/plates (sub-parts) in sectional views

Recommended settings

53: Diameters of simple bores in sheets/plates (sub-parts) in sectional views		
ID:	53: Diameters of simple bores in sheets/plates (sub-parts) in sectional views	
Type of dimension:	Diameter dimension	
Position of dimension chain:	Bottom	
Dimension chain reference:	Direct, without reference	
Direction of dimension chain:	Parallel to beam axis	

54 NORMBORE_DIAMETER_IN_SECT

Diameter of standard part bores in sheets/plates (sub-parts) in sectional views

Recommended settings

part bores in sheets/plates (sub-parts) in sectional views	
54: Diameter of standard part bores in sheets/plates (sub-parts) in sectional views	
Diameter dimension	
chain: Bottom	
Dimension chain reference: Direct, without reference	
Parallel to beam axis	

55 CONNECTION_DIAMETER_IN_SECT

Durchmesser von Verschraubungen in Blechnebenteilen in Schnittansichten

Recommended settings



Example Rule 53 and 54

Dimensioning of processings depending on position to beam axis

Processings on beams can be dimensioned depending on the position to the beam axis. In the process it is irrelevant whether the processings (bores) have been created by inserting a bore pattern or individual bores.

The following rules are new:

151

PROFBORES_

INUPPERFLANGE_

SEPERATED

Bores in upper flange of beam, separated by position with regard to beam axis

Recommended settings:

151: Bores in upper flange of beam, separated by position with regard to beam axis

ID:	151: Bores in upper flange of beam, separated by position with regard to beam axis		
Type of dimension:	Chain dimensions		
Position of dimension chain: Automatic			
Dimension chain reference: Beam without attached parts			
Direction of dimension chain: Parallel to beam axis			

152 PROFBORES_INLOWERFLANGE_SEPERATED

Bores in web of beam, separated by position with regard to beam axis

Recommended settings: See above

153 PROFBORES_INWEB_SEPERATED

Bores in web of beam, separated by position with regard to beam axis

Recommended settings: See above

Rules 151, 152 and 153 only apply for dimensioning parallel to the beam axis, since other separation mechanisms exist for dimensionings perpendicular to the beam axis. Only bores that are located in the view plane will be considered.

If **Position of dimension chain: Automatic** has been selected, the chains will be pulled out upwards or downwards, depending on the position of bores.



Rules 151 - 153, Example: (1) Front view, (2) Top view

Distinguishing of hidden / unhidden sub-parts

In the file STW_DIMSETTINGS.XML you can specify how base points on hidden parts are to be handled when using dimensioning rules. To do this, enter the following string into the file:

</PARAM><PARAM Name="IGNOREHIDDENSUBPARTANDBORES" Typ="INT" Value="0">

If **Value** has been set to 1, base points that are located on hidden sub-parts will not be considered for dimensioning in all dimensioning rules.

Connections

Cam joint (2104)

Analogous to Sheet Metal, it is now possible to insert cam joints for Steel Engineering plates quickly and conveniently. The respective design variant for Steel Engineering plates can be found in the **Civil Engineering func-**tions docking window under **Steel Engineering > General**.

First select the **outer** edge of the first Steel Engineering plate for the cam joint and then the surface of the second Steel Engineering for the subtraction.

Cam joint (2104)	
Configuration Default Cam parameters Number: 4 (1) Length: 10 10	
Via catalogue: ISD Cam settings (3) Projection: 2 (4) Edge distance: 5 (5) Clearance: 0.2 (6) Clearance: 0.1 (9) Clearance: 0.2	
- Corner processing 1. Sheet 2. Sheet (7) Diameter / Width: 0.5 • 0.5 • (8) Depth: 1 • 1	
	Preview OK Cancel

Afterwards, enter the desired parameters in the Cam Joint (2104) dialogue window.

Example:

The two displayed Steel Engineering plates shall be connected. To do so, the outer edge (1) of the first plate will be selected as well as the surface (2) of the second plate.





- (a): Corner processing 1st and 2nd plate: subtract rectangle
- (b) Corner processing 1st plate: none, 2nd plate: slot shape
- (c) Corner processing 1st and 2nd plate: Bore out

Column connection, Frame corner (2203)

The dialogue window for the Column connection, Frame corner (2203) Design Variant has been modified and enhanced.

• The haunch can now be subdivided into several segments, i.e. it can consist of up to 3 haunched plates. To do this, enter the required number of segments and their width, and choose the required semi-finished product.



• The settings for additional stiffeners on the column and the ribs on the transom have been separated.

(1)	(2)
Type of insertion: Flush to 1st beam	Type of insertion: Flush to 1st beam
Semi-finished productBI 15 (S235JR)- Type 	- Ribs H F_X F_Y I

(1) Parameters for stiffeners, (2) Parameters for ribs

Stairs and Railings

Concrete stairs

The dialogue for creating concrete stairs has been revised and now provides the option to create concrete stairs according to DIN.

Concrete stairs (1001)	X
Configuration Default Default Default Default Default Default Default Rule Editor O Length+Angle Length+ Heig (1) Width: 1000 (4) Angle: 30 (3) Length: 2000 Total number of rises: 10 (5) Podium length: 800 (7) Podium length: 1000	
Direction of stairs (Maximum)	as sub-part Preview OK Cancel

- Instead of the number of stairs the total number of rises is entered.
- The length of the staircase can either be measured in stair direction or horizontally, i.e. the horizontal length between the first and the last step.
- The thickness of stairs can either apply to
 - the Direction of stairs (Minimum)
 - the Direction of stairs (Maximum) or
 - the vertical direction.

The following image shows concrete stairs with 8 rises and the different staircase parameters.



(1) width, (2) height, (3a) length of the stair direction, (3b) horizontal length, (4) angle, (5) podium length, (6) podium thickness, (7a) thickness in direction of stairs (minimum), 7(b) thickness in direction of stairs (maximum), 7(c) thickness in vertical direction)

Vertical rods

For vertical rods with booms you can now you can now specify whether the booms on the posts and the filling rods on the booms are to be trimmed.







Vertical rods with booms - untrimmed (left) and trimmed (right)

Railings with individual post distribution

The post distribution can also take place manually, i.e. with different distances between the individual posts. For this purpose the **Post distribution** tab has been expanded accordingly.

- Distribution of posts
O Evenly, with max. dist.
Evenly, with number of posts
○ Fixed distance, with rest
Patch at start
Patch at end
Distribute patch at both ends
Distance: 1200 👻
Number: 5 🔻
Individual Auto->Individual

When you click the button, the settings that were last specified on the **Post distribution** tab of the dialogue window will be displayed as defaults for individual post distribution. This includes the definition of the distances at the start and the end of the walking line, the corner distance and the transition distance with concrete values. Therefore, the **Individual** option is initially greyed out. The settings can then be modified as described below.

After a click on the **Auto->Individual** button the **Individual** option will be available. You can then (while the dialogue is open) switch between the other options beneath **Distribution of posts** and the individual distribution.



Left: Last settings; Right: Individual post distribution after clicking



If you activate the **Auto** checkbox, all distances will be recalculated. If you want to define individual distances, deactivate the corresponding **Auto** checkbox and enter the required distance. All distances with an active checkbox will continue to be calculated automatically.

When you move the cursor over the entries for the posts, the corresponding post will be highlighted in green in the drawing. Distances between posts are highlighted in red, all other distances in blue.

Distance: 150 A	uto	
Post		
Distance: 867 V A	uto	
Post		
Distance: 867 🗹 A	uto	
Post		
Distance: 867 V A		
Post		
Distance: 867 🗹 A	uto	
Post		
Distance: 500 A	uto	

In the post distribution list you can also add new posts and distances with the help of functions the icons of which become visible when you move the cursor over the **Segment**, **Distance** and **Post** rows.



The meaning of the symbols:

Segment						
New distance at start of segment						
Adds a new auto-distance at the start of the segment. All other distances with a Auto checkbox will be recalculated.			ces with active			
	New Adds a new	post post at the star	at t of the segmer	start nt.	of	segment
, *	New Allows the ir	nsertion of a nev	post, w post at a defi	via ned point.		point
Distance						
1 *	New post					

~

 Adds a new post after the current distance.

 Delete distance

 Post

 Move post, via point Moves the current post to a defined point. Specify the point on the segment.

 Image: Section 10 (Section 10 (Secti

The **Distance** and **Post** rows can be moved by Drag & Drop.

If the post distribution cannot be applied with the specified data, e.g.

- because no distance between 2 posts has been defined, or
- because a post would be located outside the segment due to the entered data,

this will be indicated accordingly on the **OK** and **Preview** buttons by the **i** symbol, and in the post distribution section by the **symbol**. If you move the cursor over the symbols, a short explanation of the error will be displayed, e.g.:

Preview OK Cancel Invalid input values	
Segment 1 Distance: 1000 Auto	
Data for individual post distributions are incorrect! In section '1' the post '5' is located after the end (=456.4)!	
	Segment 1
	Distance: 124.149999 Auto
Data for individual post distributions are incorrect! In section '1' the posts '1' and '2' have no distance (= 0)!	Post
	Post

Service Pack 1 2017 (V 2201)

Insertion of beams and profiles

Beams/profiles from sketches

When you choose the functions



Multi-part beam from sketch and

Beam from sketch

you can now also use the **Insert along c-edge** option. This allows a placing of simple beams or multi-part beams derived from a sketch along composite edges consisting of straight lines and circular arcs.





The beam (3) was derived from a sketch (1) and inserted along a c-edge (2)

Production drawings

Placing of annotations

Annotations for beams, plates and sheets in workshop drawings can be applied with or without leader lines. This can be adjusted in the Configuration Editor under **Automatic drawing derivation > Production drawing > Annota-tions > Placing of annotations**. The checkboxes are activated by default. This means that the annotations are placed direction on the sheet or beam. If there is not enough space to do so, the annotations will be done with leader lines.

If the checkboxes are deactivated, the annotations are categorically produced with leader lines.

Description	Value	Comment
Plate/sheet annotations without leader line		If possible, the annotation will be placed directly on the part and without a leader line. If there is not enough space, an annotation with leader line will be applied
Beam annotation without leader line		If possible, the annotation will be placed directly at the part and without a leader line. If there is not enough space, an annotation with leader line will be applied

Suppress sheets with identical cross-section

Sheet metal is distinguished between sheets with identical cross-sections (unprocessed) and processed sheets.

- Unprocessed sheets with identical cross-sections are characterised by at least one bend zone, parallel front edges of the flanges (width of flange) and no further processing, e.g. subtractions, bores etc. For these sheets a drawing is not necessary, only a BOM.
- All other sheets count as unalike and processed. These sheets require drawings.

The output of sheet metal parts with identical cross-sections can be suppressed in the workshop drawing. To do so, the **Suppress production drawings for sheets with identical cross-sections when deriving drawing** checkbox has to be activated in the Configuration Editor under **Sheet Metal**.



Example

The displayed drawing contains 5 aluminium sheets. Sheet 5001 and 5002 have different sheet depths, but they have identical cross-sections and are unprocessed. This does not apply to sheet 5000 as it has a subtraction, thus it is processed. Analogous to that, sheet 5003 is unprocessed and sheet 5004 is processed due to the subtraction.



If the **Suppress production drawings for sheets with identical cross-sections when deriving drawing** checkbox is active, only sheet 5000 and sheet 5004 will be considered in the drawing derivation.

Drawing frames for output of assemblies with main and sub-parts

When generating production drawings with the options

- Sheet selection: New sheet for each assembly,
- Drawing parameters:
 From configuration,
- View groups to be created for:
 - Main parts as assembly
 - Main parts, individually
 - Sub-parts, individually,

the drawing frames assigned to each assembly will be used. Up until now this has only been the case if only the assembly (main parts as assembly) has been detailed in the drawing.

An example:

The drawing contains the following parts:

Object	Usage-dependent settings	Assigned drawing frame
Assembly with the usage: Girder (beam) assembly	ASSEMBLY_BEAM	DIN_A2
I-Beam (main part)	DFEAULT(I_PROFILE)	DIN_A4H_BLECHE
Plate (sub-part)	DEFAULT(Bleche)	DIN_A4H_PROFILE

If the production drawing is now be created as follows,

Drawing derivation				
(Drawing target)				
To existing drawing				
Externally generated drawings				
Leave open, switch back to original dr	rawing			
Detail drawing for each sub-part				
Sheet selection	Alignment of assemblies			
New sheet for each assembly 💌	Processing position			
Part selection	Views to be created for:			
Ali				
✓ Assemblies, Railings	Assembly			
V Beams	Beams			
V Plates	Plates			
V Sheet Metal	Sheet Metal			
🥅 General parts	General parts			
View groups to be created for:	(Settings for:)			
✓ Main parts as assembly	Drawing sheets			
🔽 Main parts, individually	View groups			
✓ Sub-parts, individually	Views			
	Sheet developments			
	Kantblech-Schnittansichten			
(Drawing parameters)				
From configuration	🔘 Set in dialogue			
Configuration	Settings file			
Save Load	Save Load			
	OK Cancel			

the drawing frame of the production drawing will be DIN_A2.

Default Configurations for assemblies without usage

For assemblies which do not have an assigned usage it is now also possible to define default configurations (usagedependent settings) for the creation of detail drawings (production drawing for a view group). In the Configuration Editor via **Automatic drawing derivation > Production drawing > Usage assignment**, the selection of part types has been expanded.

Part type	Usage-dependent setting	
All	▼ MC_STRIP	
General		
All		
Sheet Metal		
All assemblies		Ξ
Assembly		
Welded assembly (Worksh	lop)	
Bolted assembly (Site)		
Glazing assembly		
Mullion assembly		
Transom assembly		
Glass assembly		
Insert assembly		
Planning grid		
Structure assembly		
Catalogue	_	
A1 Girder Factory standards > IN-HOUSE_PROF	TLES > Frankstahl	
A3 Steel bar Factory standards > IN-HOUSE_PROF	TLES > Frankstahl	
R1 Commercial tuber sea	mless	*

The configurations need to have the following names:

Assembly type	Name of the default configuration
All assemblies	DEFAULT(ASSEMBLY)
Assembly	DEFAULT(COMMON_ASSEMBLY)
Welded assembly (Workshop)	DEFAULT(WELD_ASSEMBLY)
Bolted assembly (Site)	DEFAULT(MOUNTING_ASSEMBLY)
Glazing assembly	DEFAULT(GLAZING_ASSEMBLY)
Mullion assembly	DEFAULT(MULLION_ASSEMBLY)
Transom assembly	DEFAULT(TRANSOM_ASSEMBLY)
Glass assembly	DEFAULT(GLASS_ASSEMBLY)
Insert assembly	DEFAULT(INSERT_ASSEMBLY)
Planning grid	DEFAULT(PLANNINGGRID_ASSEMBLY)
Structure assembly	DEFAULT(STRUCTURE_ASSEMBLY)

When creating a detail drawing (drawing parameters from configuration) for an assembly without assigned usage, HiCAD will check whether a default configuration is available for the respective assembly type. If this is not the case, the DEFAULT configuration will be used.

Sheet development

in HiCAD 2017 (2200.0) the 2-D development which has been valid up until HiCAD 2016 has been replaced by a new function for creating and modifying 3-D developments. This also affects the settings for sheet development in workshop drawings.

Sheet development parameters	x		
- Sheet parameters			
Direction/Upper side (Selection priorities)			
1. 🗹 Direction symbol			
2. 🗹 Coated side			
3. Vumber of powder marking lines and letterings			
4. Direction acc. to: Longest edge 💌			
- Representation - Dimensionin	ng		
✓ Bend lines Dimension			
Bend zones Outer cont	tour		
Subordinate parts Bend lines			
- Annotation			
Bend line texts Both and	gles equal 🗸		
✓ Positive and negative angles			
Negative angle			
Interrupted bend lines: All bend lines	•		
Cross-break height			
Cross-break angle			
Punching, moulding and embossing tools			
✓ Auxiliary text			
Positioning: Outside	•		
	\$		
OK Cancel	Apply		
Avoiding multiple sectional views

You can now specify in the Configuration Editor at **Automatic drawing derivation > Production drawing** that sectional views with the same content in the workshop drawing are to be created only once. For this to happen, activate the **Avoid multiple sectional views** checkbox.

Sectional views are interpreted as "equal", if

- the visible (displayed) parts in the sectional views have the same valid item numbers and
- the sectional views contain the same geometries.

Sectional views for sheets beyond the beam end (front plate, top plate, base plate meaning the same) are generally different.

Structured display of dimensioning rules in Editor

In the Dimensioning Rule Editor the dimensioning rules are now displayed in groups for a clearer selection.

1014: Angle Post - Handrail	▼ All ▼	
		<u> </u>
No dimension Annotation template		
System dimensions		
1: Length between system axes Internal designation: SYSTEMLENGTH		
71: Sub-system in upper flange area Internal designation: SUBSYSTEM_UPPERFLANGE		
72: Sub-system in lower flange area Internal designation: SUBSYSTEM_LOWERFLANGE		
73: Sub-system in web area Internal designation: SUBSYSTEM_WEBFACE		
74: Sub-system in upper flange and lower flange area Internal designation: SUBSYSTEM_FLANGES		
75: Sub-system in upper flange, lower flange and web area Internal designation: SUBSYSTEM_WEB_AND_FLANGES		
Dimensions of assemblies		
2: Assembly length Internal designation: ASSEMBLYLENGTH		i

If not all groups are to be shown it is also possible to modify the display by selecting one group in the list box on the side.

1014: Angle Post - Handrail	▼ All ▼
Individual dimensions	All
Тор	System dimensions
System axes	Dimensions of assemblies
System axes	Dimensions of beams
Parallel to beam axis	Position of beam sub-parts
	Processing of beams
	Dimensions of plates
	Processing of plates
	Bore diameters in beams and plates
	Position of assembly sub-parts relative to each other
	Processing of assembly sub-parts
	Sheet Metal

New dimensioning rules

New dimensioning rules are at disposal for dimensioning attached parts via bores (if desired and available) or
via the outer edges of the attached part. For attached parts located before or behind - or above and below - the
axis of the main part, a chain of dimensions will be created.

Rule		Internal designation
138	Attached parts via bores (also perpendicular to view) or outer con- tours, located before the axis of the main part	ATTACHING_PARTS_ VERT_BEFORE_AXIS
139	Attached parts via bores (also perpendicular to view) or outer con- tours, located behind the axis of the main part	ATTACHING_PARTS_ VERT_BEHIND_AXIS
140	Attached parts via bores (also perpendicular to view) or outer con- tours, located above the axis of the main part	ATTACHING_PARTS_ VERT_ABOVE_AXIS
141	Attached parts via bores (also perpendicular to view) or outer con- tours, located below the axis of the main part	ATTACHING_PARTS_ VERT_BELOW_AXIS

If no bores exist, dimensioning will take place via the outer contour. If bores exist and the dimensioning is still to take place via the outer contour, open the **Drawing** tab and choose **Itemisation/Detailing > Dim... > Dimensioning Settings > Bores/Boltings > Chains of dimensions for sub-parts: Without bore(s)**. **An example**:

The image below shows a beam main part and a plate with 2 bores as attached part (1). In the configuration the Dimensioning rule 138 has been applied as shown below (2). (3) and (4) show the front view in the workshop drawing. In (3) the attached parts are dimensioned via bores, in (4) via the outer contour.



Processings at the girder/sheet should often be dimensioned with regard to the location of the processing. This
means that when the chain of dimensions should be aligned parallel to the axis, its position is guided by the position of the girder's axis. If the chain of dimensions is to be aligned perpendicularly, the chain of dimensions is
oriented to the middle of the girder.

Rule		Internal designation
32	Bores in sheets/plates, right side	SHEETBORES_RIGHT
33	Bores in sheets/plates, left side	SHEETBORES_LEFT
35	Bores in sheets/plates, upper half	SHEETBORES_ABOVE
36	Bores in sheets/plates, lower half	SHEETBORES_BELOW
38	Outer contour of sheet/plate, right side	SHEETOUTLINE_RIGHT
39	Outer contour of sheet/plate, left side	SHEETOUTLINE_LEFT
40	Outer contour of sheet/plate, right or left side	SHEETOUTLINE_RIGHTANDLEFT
41	Outer contour of sheet/plate, upper half	SHEETOUTLINE_ABOVE
42	Outer contour of sheet/plate, lower half	SHEETOUTLINE_BELOW

For sheets and plates this is already given by the following dimensioning rules:

For beams the following rules are now available:

Rule		Internal design	ation
142	Beam processings, located in front of the axis of the main part	PROFBORES_ AXIS	BEFORE_
143	Beam processings, located behind the axis of the main part	PROFBORES_ AXIS	BEHIND_
144	Beam processings, located above the axis of the main part	PROFBORES_ AXIS	ABOVE_
145	Beam processings, located below the axis of the main part	PROFBORES_ AXIS	BELOW_

These rules create separate chains of dimensions depending on the position of the processing with regard to the beam axis. If perpendicular dimensions should be extended to the left or right depending on the processing regarding the beam middle, this can be done by selecting **Position:Automatic**.

The image below shows a hollow profile with 4 bores: (1) Bore through front side, (2) Bore through rear side, (3) Bore above profile axis, completely through, (4) Bore below profile axis, completely through. For the front view of the workshop drawing the new new dimensioning rule 142 to 144 have been used.



Deleted dimensions when updating

Deleted dimensions when updating

Deleted dimensions when updating

If an automatically generated dimension, i.e. a dimension based on dimensioning rules, is deleted in one view of the workshop drawing, this dimension will not re-appear when updating the workshop drawing!

More specifically the procedure will be as follows as of HiCAD 2017 SP1:

- The selected dimension will be deleted and will not re-appear when updating the drawing.
- The dimensioning rules set saved in the workshop drawing data for the view groups of the selected dimension will be adjusted so that the dimensioning rule for that dimension will be omitted in the respective direction and view. HiCAD will point this out by showing the following message:



If this message should no longer be displayed during the current HiCAD session, please activate the **Suppress message** checkbox.

• All other dimensions of the view which were created with the same dimensioning rule and in the same direction as the deleted dimension will be transformed into interactive dimension and remain when the drawing is

updated.

If you do not want this behaviour you have the possibility to turn it off in the Configuration Editor under System settings > Annotations > Dimensioning, 3-D by deactivating the Rework when deleting workshop drawing dimensions checkbox. This is recommendable if a loss of performance can be noted in workshop drawings with many views.

The new behaviour only works with workshop drawings which were created or updated in HiCAD 2017 SP1!

Designation tags for sub-parts on back, bores and boltings

You now have the opportunity to select that the designation tags of sub-parts, bores and boltings on the back

should not be displayed. For this purpose the Dimensioning Settings F 🗎 function has been expanded respectively.

Dimensioning Settings		
Chains of dimensions		
Bores/Boltings	Designation tags	X
Designation tags	- Settings for designation tags	
Dimension type	 Designation tags for bores: 	Bore designation 🔹
General	Designation tags for bores.	
	Auxiliary text (max. 20 characters):	
OK Can	Designation tags for slots:	Diameter x Distance betweer 🔻
	Auxiliary text for slots (max. 20 characters):	Langloch
	Specify number of bores	
	- Line types for designation tags	
	of sub-parts on back:	v
	of bores on back:	V
	of boltings on back:	

In the **Designation tag** dialogue window the checkbox next to the respective selection box for line types determines whether the designation tags of sub-parts, bores and bolting on back should be displayed or not. This checkbox is activated by default, i.e. the designation tags will be displayed.

The deactivation of the checkbox for bores is e.g. useful in the hidden line mode, because in this case the bores are not visible and it does not make sense to label them.

This setting affects not only conventional dimensioning but also the dimensioning rules.

Designation for identical processings /bores

If the **Specify number of bores** checkbox is activated in the Designation Settings Under **Designation tags**, bores which are the same but do not belong to the same bore pattern will be combined.

However, this will only apply under the following conditions:

- The bores belong to one part.
- The bores lie on the same side of the main part.
- The bores have the same diameter.
- It is a single bore and not a bore pattern and
- ALL bores of the part meet these conditions.

Separate dimension chains for bores and subtractions

In the Dimensioning Settings it is now possible to determine under **Bores/Boltings** that separate chains of dimensions should be created for bores (through holes and standard bores) and subtractions. For this purpose there is the **Separate dimension chains for bores and subtractions** checkbox.

For new installations or when the dimensioning settings file STW_DIMSETTINGS.xml is not yet available, the stab3-par.dat option can be switched on and off under

Maßketten für Lage der Bohrungen/Ausnehmungen trennen nach Bohrungen und Ausnehmungen 1:ja, 0:nein

If the STW_DIMSETTINGS.xml file is available, the line

</PARAM><PARAM Name="DEVIDEBORESANDCUTS" Typ="INT" Value="1">

has to be added.

This settings will not yet be saved in the workshop drawing at this point!

Example - Separate chains of dimensions for bores and subtractions

The depicted drawing (1) contains several through holes bores and one rectangular subtraction. (2) separate chains of dimension, (3) one chain of dimensions for bores and subtractions



Please note that this setting also affects the following dimensioning rules:

12	Bores in web of beam	PROFBORES_INWEB
15	Bores in upper and lower flange of beam	PROFBORES_INFLANGES
34	Bores in sheets/plates, right or left side	SHEETBORES_RIGHTANDLEFT
37	Bores in sheets/plates, upper or lower half	SHEETBORES_ABOVEANDBELOW
49	Outer contour of sheets/plates, right and left side, in sectional views	SHEETOUTLINE_RIGHTANDLEFT_ IN_SECT
50	Outer contour of sheets/plates (sub-parts), top and bottom side, in sectional views	SHEETOUTLINE_ ABOVEANDBELOW_IN_SECT
85	Beam processing in web, incl. processings in side view	PROFBORES_INWEB_VERT
88	Beam processings in upper and lower flange, incl. processings in side view	PROFBORES_INFLANGES_VERT
98	Bores in web of relevant beam sub-parts	PROFBORES_INWEB_RELVPROFS
101	Bores in flanges of relevant beam sub-parts	PROFBORES_INFLANGES_ RELVPROFS

Separate dimensions according to part type for position of sub-parts

In the Dimensioning Settings it is now possible to determine under **General** that attached parts (beams) will be dimensioned according to the **Part type** attribute in the different chains of dimensions. A respective checkbox is available in the dialogue window. In this way it is possible to dimension hollow profiles / attached parts separately from round steel / attached part, thus improving the dimension structure.

This setting affects dimensioning rules for chains of dimensioning of relevant parts.

For new installations or when the dimensioning settings file STW_DIMSETTINGS.xml is not yet available, the stab3-par.dat option can be switched on and off under

Separated chain dimensions according to part type for position of sub-parts 1:yes, 0:no - Getrennte Massketten nach Teileart fuer Einbausituation von Nebenteilen 1:ja, 0:nein

If the STW_DIMSETTINGS.xml file is available, the line

</PARAM><PARAM Name="SEPERATEDSUBPARTPOSITION_PT" Typ="INT" Value="0">

has to be added.

Not considering connected elements in Metal Engineering

If a drawing contains connected elements which have been created with functions under **Metal Engineering > 3-D section**, these will not be considered in the workshop drawing. This also applies if the parts are BOM-relevant.

Mounting drawings

Placing of annotations

The annotations of beams and sheets in workshop drawings can be made with or without leader lines. This can be adjusted under **Placing of annotations**. The checkboxes are activated by default. This means that the annotations are placed direction on the sheet or beam. If there is not enough space to do so, the annotations will be done with leader lines.

If the checkboxes are deactivated, the annotations are categorically produced with leader lines.

Description	Value	Comment
Plate/sheet annotations without leader line		If possible, the annotation will be placed directly on the part and without a leader line. If there is not enough space, an annotation with leader line will be applied
Beam annotation without leader line		If possible, the annotation will be placed directly at the part and without a leader line. If there is not enough space, an annotation with leader line will be applied



Connections / Design variants

New design variant - Column connection, Frame corner 2203

In the installation of frame corners the new design variant 2101 replaces the former variant 203.

With this variant two beams are connected with a bolted or welded beam frame corner. You can create the frame corner with or without stiffeners, haunched plates or other components, e.g. flange plates, web reinforcements and reinforcement plates or filler plates. It is also possible to insert ribs as additional stiffeners at the front plate and tension plate, and also weld seams as well as to apply galvanization holes.



Example - (1) tension plate, (2) front plate

Assignment of boltings

Boltings will be compromised under the name **Bolting** for various connections. If the assembly should not be a part of the welded assemblies, i.e. if the **Loose parts** option is activated in the settings, the **Bolting** assembly - as well as filler and reinforcement plates - will be assigned to the **Loose part** assembly.

This applies as of HiCAD 2017 SP1 for the following design variants:

- Base plate / Anchor plate (2101)
- End plate (2102)
- Purlin joint, 2 plates with mitre cut (2201)
- Front plate connection to web/flange (2320)
- Front plate connection to web, double-sided (2322)
- Front plate connection to flange (2330)

Connections with filler plates

For all connections with filler plates the hole clearance now refers to the bolting and not to the bores.



(1) Bolt diameter, (2) Two-piece filler plate, (3) Hole clearance This applies to the following connections:

- Base plate / Anchor plate (2101)
- End plate (2102)
- Purlin joint, 2 plates with mitre cut acc. to DAST-IH (2201)
- Front plate connection to web/flange (2320)
- Front plate connection to web, double-sided (2322)
- Front plate connection to flange (2330)

Horizontal / vertical switching of connection values

The following connections:

- Base plate / Anchor plate (2101)
- End plate (2102)
- Purlin joint, 2 plates with mitre cut acc. to DAST-IH (2201)
- Front plate connection to web/flange (2320)
- Front plate connection to web, double-sided (2322)
- Front plate connection to flange (2330)
- Beam to web with 2 plates + stiffener (1211)

allow a horizontal and vertical switching of values, i.e. the switching of right and left, and top and bottom. For instance, this can be done for

- Bore grid distances, grid references,
- Plate distances, plate references, or
- Other references.

Process Front	t plate Bolting	ıs Bore grid Gal	vanizati		Process	Front plate	Boltings	Bore grid	Galvar	nizat
Semi-finished	produe BI 10 (S235JR)	II		Semi-fin	ished produ	BI 10 (S2	35JR)		Ĩ
Vertical:	Projections	beyond 1st beam	•		Vertical:	Pro	jections be	eyond 1st b	eam	•
(1) Height:		100	-		(1) H	eight:			100	Ŧ
(2) Top:		10	•		(2) To	op:			10	•
(3) Bottom:	:	10	•		(3) Bo	ottom:			10	•
✓ Refer distar	nces to notches				✓ Refer	distances to	notches			
Horizontal:	Projections	beyond beam	•	=	Horizont	tal: Pro	jections be	eyond beam	1	•
(4) Width:		100	-		(4) W	/idth:			100	Ŧ
(5) Left:		20	-		(5) Le	eft:			10	•
(6) Right:		10	•	\rightarrow	(6) Ri	ght:			20	•
Clearance to b	eam:	1	•		Clearanc	e to beam:			1	•
 Fillet corner 	rs	Radius: 10	•		✓ Fillet	corners		Radius:	10	•
Fillet corner ront plate 2nd p Top left Bottom left Diameter: 1) Minimum dista 2) Minimum dista	plate Stiffener		Galvanization		Front plate 2nd Top left Bottom left Diameter: (1) Minimum dis (2) Minimum dis	I plate Stiffen	Top rig Bottom	Bore grid	Galvaniza	

-

+1

Railing Configurator

Types of usage for assembly main parts

A usage will now be automatically assigned to the main parts of the posts, handrails and skirting board assemblies.

Assembly	Type of Usage for assembly	CONFIGKEY	Type of usage of main part	CONFIGKEY
Post	Post	POST	Post profile	POSTPROFILE
Handrail	Handrail	HANDRAIL	Handrail profile	HANDRAILPROFILE
Skirting board	Skirting board	SKIRTING	Skirting board profile	SKIRTINGPROFILE

Infill, glass element

When using Infill with glass elements the new usage type **Filling** was previously automatically assigned to the glass elements. As a result, no production drawings were created for these elements, since in the FILLING configuration the default setting for this usage is **Perform drawing derivation = No**.

From Version 2017 SP1 onwards, no usage will be assigned to glass panes. This enables you to use the DEFAULT (GLASSCHEIBEN) configuration for the workshop drawing.

0

The usage FILLING will be assigned to the assembly of the infill.

Posts - Handrails: All connections equal

In the settings for the connection of posts and handrails the option **All connections equal** checkbox is now available. This way it is possible to select the same setting for all posts with only one click.

Post connection, top - different distances for horizontal and oblique fixing

In the **Post - Substructure** tab you can now enter different distances for the horizontal or oblique fixing for **Post connection, top**. This applies to all bore grids.



Post connection, lateral - different fixing heights for each section

Depending on the kind of the selected beams they will be divided into different sections. The first beam belongs to section 1. HiCAD checks whether the next beam lies on the same plane. If so, it also belongs to section 1. If it does not lie on the same plane, section 2 will start with this beam and so forth. For the lateral post connection the **Distance, plate centre** can be set individually for each section and thus the fixing height. If the distance should be the same for all areas, activate the **All same** checkbox.

Post connection, lateral - new connections for posts and base plates

Regarding the lateral post connection there are two new possibilities available for connecting posts and base plates:

Post, mitre cut

Instead of a distance plate, the same beam as for the post will be generated and a mitre cut will be applied to the newly created beam and the post beam.

Distance element

A distance element for the post beam and - if desired - an end cap will be installed. The excess length of the post can be determined. If the distance element should be trimmed to the post, the respective checkbox has to be activated and the width of the obtuse end has to be entered.



Left: with distance element (trimmed) and end cap, right: post mitre cut

Vertical infill

There are now more options for vertical rods:

- Vertical rods can now be rotated during the installation.
- Depending on the type of the chosen variant the connections will be with the beam, with the handrail, the post or the boom. For example: the vertical rods can be inserted in the handrails or can be trimmed at the handrails, with or without contour.



(1) Inserted in the handrails with gap, (2) without trim, (3) trim with contour

• Corner infills can now be aligned with the angle bisector of the corner.



Example of a corner infill: (1) corner rod, bisecting alignment, (2) corner rod, no bisecting alignment

Steel Engineering BOM (Excel)

Differentiating between unprocessed and processed sheet metal

Sheet metal is now distinguished between sheets with identical cross-sections (unprocessed) and processed sheets. Unprocessed sheets with identical cross-sections are characterised by at least one bend zone, parallel front edges of the flanges (width of flange) and no further processing, e.g. subtractions, bores etc. For these sheets a drawing is not necessary, only a BOM. All other sheets count as unalike and processed.

In order to differentiate between unprocessed and processed sheets in the BOM

- 1. the **Special treatment for sheets with identical cross-sections** checkbox has to be activated in the Configuration Editor under **Sheet Metal** (by default deactivated).
- 2. the new template HiCAD_Stahlbau.2201.0 has to be used when creating a BOM.

In this case an additional spreadsheets for unprocessed sheets will be added in the Excel BOM:

A	В	С	D	E	F	G
1 Script file	HiCAD Stahlbau.2201.0.cs					
2 Export raw data	false					
3 Language	en					
4						
5 Consider site assembly	false	If active,	oltings inserted	on-site will be de	clared as loose parts in the shippin	q
6 Projection method for cut symbols	1	1: Europe	an Projection			
7 Assembly image height	150	Height of	assembly image	es in shipping lists	, 0: Deactivate image output	
Assembly image width	0				D: Total table width	
9 Assembly image representation	QuickHiddenLine					
0 Sheet metal part height	150	Height of	Sheet Metal par	t images in Sheet	Metal part list	
1						
12						
13 Bills of Materials	Name	Create	Structure Lis	Filter attribute	Filter criteria	Exclusion filte
4	Structure List	true	true			false
.5	Quantity List	true	false	H_%10	27,31,32,46,47,48,49,50,51	true
.6	Profile totals list	true	false	H %10	1	false
.7	List of sawn beams	true	false	H_%10	1	false
8	Bolt screw list	true	false	H_%10	6,14,30,57,58	false
19	Bolt screw list			H_\$PTK	Elbow, Tensioning elements, Turnbuckle	true
20	Shipping list	true	true			false
1	Shipping list, short	true	false	%Stufe	1,2	false
22	Plates	true	false	H %10	2	false
3	Sheet Metal	true	false	H %10	* 33	false
24	Sheet Metal parts with image	true	false	H %10	33	false
25	Unprocessed sheets	true	false	H %10	33	false
26	Unprocessed sheets with image	true	false	H %10	33	false
.7	Steel plates and metal sheets	true	false	H %10	2,33	false
8	Gratings	true	false	H_%10	56	false
29	Glazing	true	false	H_%10	55	false
80	Bar list	true	false	H %10	1	false
31	Bar - Summary	true	false			false
32	-	false	false			false

Dease note:

- For sheet metal and unprocessed sheets you can optionally view images of the sectional view (with dimensions) in the BOM. To do so, go to the spreadsheet **Settings** in the **HiCAD_Stahlbau.2201.0.xslx** template, then to the **Create** column and change the value for **Sheet Metal parts with image** to **true**. The ISD default setting is false.
- For unprocessed sheets with identical cross-sections only one image will be created.

The display with images is on the spreadsheets

- Sheet Metal parts with images or
- unprocessed Sheet Metal parts with images

Expanded short shipping list

For larger model drawings you often need more than the first level of the part structure in the short shipping list. This can now be modified by using the filter attribute **%Stufe** in the setting file for Excel BOMs (e.g. HiCAD_Stahlbau.2201.0.xlsx). You can for example set the filter criteria to **1,2** and set the exclusion filter to **false**, which means that the shipping list contains level 1 and 2 of the part structure.

Name	Create	Structure Lis	Filter attribute	Filter criteria	Exclusion filter
Structure List	true	true			false
Quantity List	true	false	H_%10	27,31,32,46,47,48,49,50,51	true
Profile totals list	true	false	H %10	1	false
List of sawn beams	true	false	H %10	1	false
Bolt screw list	true	false	H %10	6,14,30,57,58	false
Bolt screw list			H_\$PTK	Elbow, Tensioning elements, Turnbuckle	true
Shipping list	true	true			false
Shipping list, short	true	false	%Stufe	1,2	false
Plates	true	false	H_%10	2	false
Sheet Metal	true	false	H_%10	33	false
Sheet Metal parts with image	false	false	H %10	33	false
Unprocessed sheets	true	false	H %10	33	false
Unprocessed sheets with image	false	false	H %10	33	false
Steel plates and metal sheets	true	false	H %10	2,33	false
Gratings	true	false	H %10	56	false
Glazing	true	false	H %10	55	false
Bar list	true	false	H %10	1	false
Bar - Summary	true	false			false

Others

Parameter Configuration

If the **Steel / Metal Engineering** option is selected in the Parameter Configuration, the BOM configuration **HiCAD_ Stahlbau.rms** will be set as the default configuration.

NCX export of unconnected multi-part beams

It is now possible to treat itemized, unconnected multi-part beams as one part for NCX exports when generating the NCW files.

Major Release 2017 (V 2200)

User interface

"Settings" menu changed

The functions:

	Edit templates for part annotation
A	Templates, Attribute assignment
*	Article master, Itemisation
*	Document master, Detail drawing
×	Edit dimensioning rules
×	Dimensioning Settings

can now be found at Drawing > Itemisation/Detailing > Attr.. and Drawing > Itemisation/Detailing > Dim., respectively.

Functions for detail drawings moved

The functions for detail drawing derivation for marked Steel Engineering parts can now be found at Drawing > Itemisation/Detailing > Derive > Detail drawing -

Settings / Options

Settings for dimensioning

As of HiCAD 2016 SP2 it is possible to adjust

- 1. whether chain dimensions, which describe the fitting situation of parts, have separated chains for each type of usage or not,
- 2. whether both contact points or only the first contact point of the chain should be measured for attached plates as well as plates and beams which border on relevant beams

via the STW_DIMSETTINGS.XML file

		Possible values	Default
1.	<param name="SEPERATEDSUBPARTPOSITION" typ-<br=""/> p="INT" Value="1">	1 = separate 0 = do not separate	1
2.	<param name="SUBPARTPOSITION" typ="INT" value-<br=""/> e="1">	1 = only the starting point 3= starting and end point	1

To do so the following adjustments have to be made in these rows:

As of HiCAD 2017 these settings can also be changed via the **Dimensioning Settings** *i* linction.

🥦 General	X			
- General				
Distance of dimension line to part:	10 • mm			
Distance of dimension lines to each other:	8 • mm			
Chains of dimensions perpendicular to beam axis in web, regarding:	Upper + Lower edge 🔹			
Chains of dimensions perpendicular to beam axis in flange, regarding:	Upper + Lower edge 🔹			
Dimensioning of cutting angle:	Perpendicular to beam axis 💌			
Mark auxiliary dimension:	Do not annotate 🔹			
✓ Dimension front plates parallel to beam axis with sub-parts				
Dimension front plates perpendicular to beam axis with sub-parts				
\checkmark Separate dimension chains according to usage for fitting situation of su	ub-parts 🕂			
Chains of dimensions for sub-parts:	Only start point 🔹			
	OK Cancel			

Changed default setting for visualisation

If you start the **Computer Parameter Configurator** (HiCAD\exe\ParKonfigComp.exe) tool and choose the Steel/Metal Engineering option there, the parameter **Vertical axis during dynamic rotation about 3-D point** in the Configuration Editor at **System settings > Visualisation** will be preset to **Greatest rise, spatial**. This setting affects

the vertical rotation axis during multiple rotations using the Rotate view dynamically about 3-D point function.

Multiple rotating means that you

- rotate the active view into the required position,
- take over the current view with the cursor by a mouse click, and then
- call the Rotate view dynamically about 3-D point function again

The **Greatest rise, spatial** setting changes the rotation axis, i.e. the axis that has the greatest rise in the current view will always be used. This allows a free rotation of the axis.

Mounting drawings

Placing of annotations

The annotations of beams and sheets in workshop drawings can be made with or without leader lines. This can be adjusted under **Automatic drawing derivation > Mounting drawing > Annotations > Placing of annotations**. The checkboxes are activated by default. This means that the annotations are placed direction on the sheet or beam. If there is not enough space to do so, the annotations will be done with leader lines.

If the checkboxes are deactivated, the annotations are categorically produced with leader lines.

Description	Value	Comment
Plate/sheet annotations without leader line		If possible, the annotation will be placed directly on the part and without a leader line. If there is not enough space, an annotation with leader line will be applied
Beam annotation without leader line		If possible, the annotation will be placed directly at the part and without a leader line. If there is not enough space, an annotation with leader line will be applied



Automatic creation of axonometric view

Besides the projection types Front, Back Bottom, Left, Right, Top, Bottom you have now the additional option to automatically create the axonometric view when generating mounting drawings. The selection window has been

expanded accordingly for this purpose.

- View group (3-D))			
Frames around view groups:		Always insert 🔹		
Horiz. dist. betw. vi	ews:	10 vertical: 10	•	
Views:		☆ -		
	Front	✓ Front Back	Ахо	
View		🔽 Left 📃 Right		
Visualisation	🗊 H	🔲 Top 📃 Bottom	ne, dashed 🔻	
Scale	1:10	▼ 1:10	-	

Production drawings

Modified default settings in the Configuration Editor

In the Configuration Editor the settings for **Production drawing** have been modified - depending on the parameter configuration.

Path	Parameter	old	new *1	new ^{*2}	
Production drawing	Leave external draw- ing open	Close drawing	Close drawing	Leave drawing open, switch to ori- ginal drawing	
Production drawing > Drawing	Centre individual view group				
Production drawing > Drawing > Drawing frames	Frame height / Frame width	0/0	410/ 584	410/584	
Production drawing > Annotations > Grid annotations	Grid annotation: Line type of axis	1	5	5	
	Grid sub-system annotation: Line type of axis	1	5	5	
Production drawing > Annotations > Grid annotations > Font	Font	HiCAD 01: ANSI_ KON	Arial	Arial	
Production drawing > Annotations > Grid annotations > Sub-system, Font	Font	HiCAD 01: ANSI_ KON	Arial	Arial	
Production drawing > Devel- opment	Dimension bend lines		~	2	

*1 Default template: Steel Engineering / Metal Engineering / Management + BIM

*2 Default template: Mechanical / Plant Engineering as well as user-defined template: ISD Default

Development of Sheet Metal parts

In the **Views for sheets** dialogue window you can now specify the position of the sheet development view within the view group. at the top, the bottom, on the right or left within the view group.

Views for sheets	×
(View group (3-D))	
AXO landscape	Arrange at bottom
AXO portrait	Arrange at left side 👻
🔽 Top View	Bottom view
Front View	Back view
View from left	Side view, from right
☑ Development	Arrange at bottom
Cut perpendicular to longest	Arrange at top Arrange at bottom Arrange at left side
Cut parallel to longest edge	Arrange at right side
	OK Cancel

When working with usage-dependent configuration templates, the arrangement chosen in the corresponding template will be preset. This presetting can be changed in the Configuration Editor at **Automatic drawing derivation > Production drawing > Usage-dependent >** *name* **>** View group, with *name* being the name of the relevant template. There you can choose the desired arrangement via the parameter **Sheet development: Position in view** group.

Hide boltings

You have now the option to specify in the HiCAD dialogue whether boltings are to be displayed in the production drawing or not. The Settings for views dialogue window has been expanded accordingly for this purpose.

Settings for views	×
(Dimensioning) O not create	Designation tags
Conventional	Annotate, Default
Dimensioning rules	Sub-parts
(Beam annotations)	Annotate, Default
Create beam/profile texts	Annotate boltings Views
Text position relative to beam length 0.2	Designate standard parts Views
	Annotate bores
Shortened view	Annotate weld seams
Shortening factor, percental 80 Minimum shortening length 100	Symbols System axes
	Restrict search
Show other views as shortened views	(Part environment)
Minimum width of shortening area	Show environment
Distance to relevant geometry 5	Settings
(Sectional views)	Visualisation
Distance of cutting plane 0.1	Hide boltings Hide none Hide none
	Hide all Hide only "Site bolts"

Beneath **Visualisation** you can specify whether boltings are to be shown in the views of the production drawing or not.

The following settings are possible:

Hide none

No bolts will be hidden. This setting corresponds to the behaviour before HiCAD 2016 SP1.

- Hide all All bolts will be hidden.
- Hide only "Site bolts"

Only bolts with the property "Site assembly" or "Site production" will be hidden.

You can preset the visualisation for each usage in the **Configuration Editor**, at **Automatic drawing derivation > Production drawing > Usage-dependent > > Views**. If the drawing parameters are loaded from a configuration that has been saved in the Configuration Editor, the corresponding settings from the Configuration Editor will be will be preset in the dialogue window. Please note that these settings do not apply for bolts within structure assemblies (e.g. in the case of boltings that have been inserted as "loose parts"). These bolts will <u>not</u> be displayed in the workshop drawing. When you update a production drawing, the settings that were active during creation of the drawing will be used..

Specify position of BOM

The dialogue window for view groups has been expanded. You can now specify whether a BOM is to be placed into the view group of an assembly and if so, the position of that BOM.

The following settings are possible:

Do not insert

No BOM will be inserted.

Always within view group

A BOM will be inserted within the view group. The position of the BOM is specified via the setting in the **Position in view group** listbox.

Position in view group	Bottom left 💽
Position in drawing frame	Top left Top, centre Top right Bottom left
rame	Bottom, centre Bottom right

Within drawing frame if only 1 view group

If only one view group is created, the BOM can also be placed in the drawing frame.

Position in drawing frame	Bottom right				
rame	Top left Top right Bottom left Bottom right				

Position and layout of the BOM can be defined separately for each usage in the **Configuration Editor** at **Automatic drawing derivation > Production drawing > Usage-dependent > > View group**. If the drawing parameters are loaded from a configuration that has been saved in the Configuration Editor, the corresponding settings from the Configuration Editor will be will be preset in the dialogue window.

 Eactive configuration (Base configuration) Eactive configuration 		Representation type for sectional views	Hidden Line 🔻	Representation (0: Glass model, 1: Hidden Line, 2: Hidden Line dashed 3: Shaded with edges)
A Gammatic drawing derivation A Production drawing		Representation type en for axonometric views	Shaded with edge 🔻	Representation (0: Glass model, 1: Hidden Line, 2: Hidden Line dashed 3: Shaded with edges)
 Image: The second second	=	Adjust scale of axonometric view		AutoAdjust scale of axonometric view
Annotations Development		View shortening in axonometric views		Only for beams/profiles
 Usage assignment Usage-dependent 		Position: AXO, landscape	Bottom •	Position of horizontal axonometric view relative to view group
Template		Position: AXO, portrait	Left •	Position of vertical axonometric view relative to view group
 Image Default Image DEFAULT (BETONSTAHL) Image Drawing frames 		Sheet development: Bosition in view group	Bottom	Position of sheet development view within view group
annotation	->	🖙 Insert BOM	In view group 🔹	Type of BOM insertion
B View group (3-D) ▷ B Views	-	BOM: Position in view group	Bottom left 🔹	Position of BOM within view group
R View type assignment, Parts	>	BOM: Position in drawing frame	Bottom right 🔹	Position of BOM within drawing frame
Wiew type assignment, Part environment		🖙 File name: BOM	hicad_stahlbau	Must exist as *.rms file in HiCAD path "Z"
Set of dimensioning rules		Frames around view groups	Always insert 🔹	Display view group frames
 □ □ DEFAULT(BLECHE) □ □ DEFAULT(C_PROFILE_KALT) ▷ □ □ DEFAULT(FLACHSTAHL) 		Arrangement of sectional views	Aligned •	Arrangement method for sectional views (1: aligned, 2: in columns (left), 3: in rows (top), 4: in columns (right), 5: in row (bottom)

To change the position of the BOM in the view group subsequently, open the **Drawing** tab and choose **Itemisa**tion/Detailing > Derive > Change settings - Active view group, provided that a BOM had been created in this view group.

Automatic sectional view creation for attached parts

If the **Sectional views** checkbox has been activated for in the Views for assemblies dialogue window, you can specify in the settings for view groups whether sectional views are also to be created for attached parts. This is possible for:.

- Steel Engineering plates running transversely or diagonally to the main part axis,
- Steel Engineering plates running longitudinally to the main part axis and
- Beams running perpendicular to the main part axis.

According to the ISD default setting, sectional views are automatically created for Steel Engineering plates running transversely or diagonally to the main part axis. When working with configuration templates, you can specify for each usage which sectional views are to be created for attached parts. The setting can be defined in the Configuration Editor at **Automatic drawing derivation > Production drawing > Usage-dependent >** *name >* **View group**, with *name* being the name of the relevant template.

Sectional views for plates, transversal or diagonal to main part axis	Sectional views are created for attached "Plates" the plane of which runs transversal or diagonal to the main part axis.
Sectional views for plates, longitudinal to main part axis	Sectional views are created for attached "Plates" the plane of which runs longitudinal to the main part axis.
Sectional views for beams, perpendicular to the main part axis	Sectional views are created for attached "Beams", the axis of which runs perpendicular to the main part axis.

Connections / Design Variants

New Design Variants for stiffeners

Stiffeners can now be inserted via the new Design Variant Stiffener (2401) in the **Civil Engineering functions** docking window - with chamfered or filleted corners (internal or external), one-sided or double-sided, as partial stiffeners or full stiffeners, with or without weld seams. In this way it is possible to change the stiffeners via the feature log entries.



Stiffener (2401)	
onfiguration	
fault	•
Rule	Editor
eometry Others	
Semi-finished product	
BI 14 (S235JR)	
- Type	
Full stiffener Partial stiffener	
Dimensions	
(1) Width: 🗸 Auto 🛈 100 👻	6 5
(2) Height: 100 🔻	
(c) neight	(2)
- Internal corner	
Type: Chamfered	
(3) Chamfer/Radius: 🗹 Auto 10	
External chamfer	
O Without (4) Fx: 10 -	- Others
© Fx, Fy (5) Fy: 10 🐨	(7) Clearance:
○ Fx, Angle (6) Angle: 60 🔻	Positioning: Front side
🔿 Fy, Angle	
- Fitting	
One-sided Double-sided Right	▼
O Perpendicular to reference point	Select reference point
O Link and align to reference edge	Select edge
Distance from beam end	100 👻
-	
	Preview OK Cancel

Stiffener dialogue window

Assigning of boltings

In various connections the elements of a bolting are combined into an assembly called **Bolting**. If you do not want these assemblies to be part of the welded assemblies, i.e. if the Loose part option has been activated in the settings, the **Bolting** assembly will not be assigned to the **Loose parts** assembly.

For the particular cases, this means:

Front plate connection to web/flange (2320)

The front plate and the weld seams will be assigned to the assembly of the beam to be connected (1st beam). Filler plates will be combined separately into a structure assembly (on the same level as the assembly of the 1st beam) called **Loose parts**. The bolting will be inserted as an assembly called **Bolting**. The assignment of this bolting and the reinforcement plates depends on the settings on the **Boltings** tab. There you can specify, next to **Assignment**, whether this bolting group and the reinforcement plates are to be assigned to the assembly of the 1st beam, or inserted as "loose parts". If the **Loose part** option has been activated, the **Bolting** assembly will be inserted as an independent assembly on the same level as the assembly of the 1st beam. The reinforcement plates will be combined into a structure assembly called **Loose parts** that also contains filler plates. This structure assembly is located on the same level as the assembly of the 1st beam.

Front plate connection to web, double-sided (2322)

The front plate and the weld seams will be assigned to the corresponding assembly of the 1st beam and 2nd beam, respectively. Filler plates will be combined separately into a structure assembly (on the same level as the assemblies of the 1st and the 2nd beam) called **Loose parts**. The bolting will be inserted as an assembly called **Bolting**. The assignment of this bolting depends on the settings on the **Boltings** tab. There you can specify, next to **Assignment**, to which assembly the boltings and the reinforcement plates are to be assigned. If the **Assembly 1st beam/ Assembly 2nd beam** option has been activated, the **Bolting** assemblies will be assigned to the assembly of the 1st beam or the 2nd beam, respectively. If the **Loose part** option has been activated, the **Bolting** assemblies will be inserted as independent assemblies on the same level as the assemblies of the 1st/2nd beam.

Front plate connection to flange (2330)

The front plate and the weld seams will be assigned to the assembly of the beam to be connected (1st beam). Filler plates will be combined separately into a structure assembly (on the same level as the assembly of the 1st beam) called **Loose parts**. The bolting will be inserted as an assembly called **Bolting**. The stiffeners and the corresponding weld seams will be assigned to the assembly of the 2nd beam. The bolting will be inserted as an assembly called **Bolting**. The stiffeners and the corresponding weld seams will be assigned to the assembly of the 2nd beam. The bolting will be inserted as an assembly called **Bolting**. The assignment of this bolting and the reinforcement plates depends on the settings on the **Boltings** tab. There you can specify, next to **Assignment**, to which assembly the boltings and the reinforcement plates are to be assigned. If the **Assembly 1st beam** has been activated, the boltings and the reinforcement plates will be assigned to the assembly of the 1st beam. If the **Loose part** option has been activated, the **Bolting** assembly will be inserted as an independent assembly on the same level as the assembly of the 1st beam. The reinforcement plates will be combined into a structure assembly called **Loose parts**. this structure assembly is located on the same level as the assembly of the 1st beam. If filler plates have been inserted as well, filler plates <u>and</u> reinforcement plates will be located in this assembly.

Angle connection, one-sided (1305) / double-sided (1306)

For Angle connection 1305 up to 3 bolting groups called **Bolting** are created. The assignment of these bolting groups and the reinforcement plates depends on the settings on the **Boltings** tab. If you have selected the production type **Workshop** for one of the beams there, you can specify next to **Assignment** whether the boltings are to be assigned to the assembly of this beam or combined into a structure assembly (on the same level as the assembly of the beam) called **Mounting screws**. The L-brackets of the connection will be assigned to the assembly of the beam with the production type **Workshop**. If you have chosen the production type **Site**, the L-brackets and the and the boltings will be combined into a structure assembly called **Loose parts**. For Angle connection 1306 up to 6 bolting groups called **Bolting** are created. The assignment of these boltings and the L-brackets depends on the settings on the **Bolting** tab.

Purlin joint, 2 plates with mitre cut acc. to DAST IH (2201)

The front plate and the weld seams will be assigned to the assembly of the corresponding beam. Filler plates are not assigned to this assembly, but are combined into a separate structure assembly called **Loose parts**. The assignment of the boltings depends on the settings on the **Boltings** tab. There you can specify, next to **Assignment**, to which assembly the boltings are to be assigned: If the **Loose part** option has been activated, the boltings will be combined into a separate assembly called **Bolting**. Otherwise, the **Bolting** assembly will be assigned to the assembly of the first or the second beam.

End plate (2102)

The end plates and the weld seams will be assigned to the assembly of the beam. Filler plates are not assigned to this assembly, but are combined into a separate structure assembly called **Loose parts**. The base will be entered into the part structure as a separate part called **Base**. The assignment of the boltings depends on the settings on the **Boltings** tab. There you can specify, next to **Assignment**, to which assembly the boltings are to be assigned: If the **Loose part** option has been activated, the boltings will be combined into a separate assembly called **Bolting**. If you have chosen the **Assembly** option, the **Bolting** assembly will be assigned to the assembly of the selected beam.

Beam to web, with 2 plates and stiffener (1211)

The front plate and the weld seams of the first connecting plate will be assigned to the assembly of the first beam to be connected. The second plate and the stiffener including the weld seams for the second plate will be assigned to the assembly of the beam to which the connection is to be made. The bolting will be inserted as an assembly called **Bolting**. The assignment of the boltings depends on the settings on the **Boltings** tab. There you can specify, next to **Assignment**, whether this bolting will be assigned to the assembly of the 1st beam or as a "loose part". If you choose the "Loose part" option, the **Bolting** will be inserted as an independent assembly on the same level as the assembly of the 1st beam.

Repeated deletion of connections

Connections can now also be deleted "repeatedly", i.e. after deletion of one Design Variant-based connection, the

Delete **W** function remains active. If you then select another edge belonging to a connection, further connections can be deleted immediately.

To end the function, press the middle mouse button or the ESC key.

Revised Base plate + Anchor plate connection

The new, revised Design Variant Base plate + Anchor plate (2101) replaces the old variant 1101.

You use this variant to insert base plates and anchor plates for columns (vertical beams). Insertion can take place with welded plates and anchor plates, complete with shear connectors and head studs or anchors with inserts. The insertion of ribs as additional stiffening elements on flanges and webs, or the applying of galvanization holes are also possible.



(1) Base plate, (2) Filler plates, (3) Welded plate, (4) Anchor plate, (5) Ribs, (6) Bolting, (7) Insert, (8) Shear connector, (9) Head studs, (10) Galvanization holes



Base plate + Anchor plate (2101) dialogue

Cross-bracing - Slotted plate with clearance

When inserting a Cross-bracing (1602) you have now the option to define a clearance for the slotted plate (strap on gusset plate for the fixing of the round steel bars):



Staircase / Railing Configurator

Railing with framework

If you select the infill variant **Vertical rods with frame** in the Railing Configurator, you have now the option to omit the rods; to do this, deactivate the **Rods** checkbox on the Infill tab. As a result, railings consisting only of a frame will be created.

Infill —	
Variants: Ve	ertical rods with frame 👻
(1) Lateral: (2) Top: (3) Bottom: (4) Distance:	$50 \bullet \hline 2 \hline 2 \hline 1 \bullet \hline 1 \bullet \bullet \hline 1 \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet $
(5) Distance:	
✓ Trim to post (6) Width:	
Frame:	FI 15x8 - S235JR
Rods:	VKT 10 - S235JR
Distance piece:	VKT 10 - S235JR

Inputs for vertical rods with frame



(1) Rods + Frame, (2) Only frame

New Design Variant for glass railings

The Infill, glass element variant has been revised completely. Allowed glass elements (material and glass structure) are the glass panes from the catalogue Factory standards > Glass panes, the glass holders can be taken from the catalogue Factory standards > Purchased/Factory standard parts.

Insertion can take place with or without glass holder, with or without bores in the glass elements and with selection of processings on the beam. Furthermore, you can specify whether the glass holders are to be pre-mounted or not.

ariants: In	Infill, glass element 🔹		
Glass holder	 ✓ Top Glass holder t=6 (R48.3) - AlCuMg1 ✓ Bottorr Glass holder t=6 (R48.3) - AlCuMg1 ✓ Values from glass holder catalogue Pre-mounted 		
Glass	VSG 6-1 - Bores, top Bores, bottom Bore diameter: 12		
Processing of po Offset	st DIN 13-M8 -		
 (1) Lateral: (2) Top: (3) Bottom: (4) Distance: (5) Distance: (6) Distance: (7) Clearance 			

Inputs for glass elements

For corners and transitions you can use individual infills if desired. Please note however that this is only possible if no corner posts or transition posts have been used.



Example of a glass railing with individual corner infill
Corner and transition infill for railings

For corners or transitions, the same infills as specified in the **Infill** tab will be used by default. If you want to use individual infills here, activate the corresponding checkbox. Please note however that this will only be possible if no corner posts or transitions posts are used.

ost - Substructure	Post - Handrail	Handrai	l - Handrail	Skirting boar	d - Skirting board
) Walking line	2) Post distribution	3) Post	4) Handrail	5) Infill	6) Skirting board
 Infill Variants: Int (1) Top: (2) Bottom: (3) Width: Number of knee ration ✓ Distribute even ☐ Trim to post Knee rail: 		• (1) • (2) • S235JRH (
Infill, corner	er infill				
Variants: Int	fill, kneerails	Ŧ			
1. the guideli	n only be defined if: ne has transitions on posts are created (see	'Post distribu	tion')		

Updating of staircases and railings

- Stairs and railings with deleted parts can no longer be updated! However, this concerns only new stairs and railings created with HiCAD 2017 (Version 2200) or higher.
- Stairs and railings created with older HiCAD versions (as of Version 2101.0) can be updated or changed if you
 have subsequently deleted parts that have been created by the relevant variant. However, these parts will be regenerated by the variant again upon updating if they are required due to the parameters and geometrical situation.

NCX: Output series beams as one part

If you have activated the NCX export option **Output itemized series beams as one part** at the bottom of the dialogue window, series beams that have been subordinated to the assembly will not be exported as individual parts, but as one part, provided that an item number has been assigned.

NCX Interface					x
Selected parts Selection list All parts					
General			(Letterings)		
Maximum bore diameter:	10	·]	and the second se		
Maximum bore diameter.	Jio	mm	🔘 Ignore		
Milling cutter width for free tool paths	0	mm	 Write 		
Machine type:			Milling cutter width	1	mm
💿 Camprox 🛛 Camaeleon			Milling depth	1	mm
Angle			(Thread description)		
 View angle 			OPitch		
🔘 Machine angle			🔘 With core hole		
		J	💿 Without core hole		
Name of NCX file					
Write all parts into one file					
Order number or Drawing name + Item number					
🔘 Only item number	Only item number				
💿 From FTD file					
(Name of DXF cross-section file:)					\equiv
Cross-section designation + Item num	ber				
Only cross-section designation					
📀 Only item number					
💿 From FTD file					
Behaviour for two cut planes					\equiv
Theoretical lengthening of one cut pla	ane + Saw cut				
Two saw-cuts					
Output itemized series beams as one	part				
	Jan				
			ок	Cano	

Steel Engineering - Management + BIM

Service Pack 2 2017 (V 2202)

Mounting/customer drawings - Change detail

Use the new **Series** Detail function in the **Mounting/customer drawing** function group to subsequently change details of mounting and customer drawings that were created with the **Management + BIM** module.

When you call the function, a dialogue window with a list of the mounting and customer drawings belonging to the model drawing will be displayed.



To change a detail of a mounting/customer drawing, first choose the desired drawing in the displayed list (1). Then, specify the new detail using one of the functions available in the drop-down list at the top right of the dialogue window (2).

After closing the dialogue window with **OK** the changes will be applied. To update the corresponding mounting and customer drawings, the model must be itemized and saved beforehand. If you have changed only customer drawings, saving of the model drawing will suffice.

2 th

Then, choose Automatically update...

Mounting drawings - Rearrange views upon update

As for production drawings, you can now also switch off the automatic rearranging of views upon update in mounting drawings created with the **Management + BIM** module. makes sense if, for instance, you have deliberately moved some views and want to keep their new position.

This setting can be specified in the Configuration Editor at PDM > Management+BIM > Production drawings > Rearrange views when updating mounting drawings.

The default setting is **Rearrange**.

Customer drawings - Itemisation no longer mandatory

In previous versions, an itemisation and saving of customer drawings was mandatory (as with workshop and mounting drawings). After this, the itemized source model was also defined, preventing a working with individual construction sections (Concurrent Engineering).

Now, an itemisation of the model is no longer required for the creation of customer drawings.

Locked customer drawings with old parts

If released customer drawings with old parts exist for the current model drawing, the following message will be dis-

Auto

played when y	ou call the Automatically update	e 📴 🕂 function
2		×
	Locked customer drawings with old (parts
Sup	press message	
	ОК	

This will, for instance, be the case if, after a release of customer drawings, changes are applied to parts in the 3-D model that belong to one of these customer drawings. After clicking **OK**, a list of the old parts will be displayed.

Output					
Drawing No.	Index	Designation	Status	Document	Document No.
001	V	iew group 1	Released	Customer drawing	DN-003411
					Close

To be able to update these customer drawings, you first need to call the **Revision index** function and choose the corresponding customer drawing to remove the Release again. Then, choose the **Drawing**

Carden R

function to update the customer drawing. The status of the drawing will then be reset to **In progress**. With the functions in the **Customer...** pull-down menu you can then request an approval and release the drawing again.



Use the **Locked old drawings** function to check whether locked customer drawings with old parts exist.

Clean up project - Delete unused external documents

The Clean-up project 🚟 function has been enhanced.

• After successful clean-up the following message will be displayed:

2	×
Clean-up completer	d i
Suppress message	
ОК	

If unused external documents exist in the selected project, such as DXF, DSTV-NC, STEP or NCW files, these
will be removed during project clean-up. Unused files can be created, for instance, when you delete documents
of production drawings in the HELiOS Desktop, and the above files belonged to these production drawings.

Production drawings for unprocessed beams depending on machine processing

Drawing creation for unprocessed beams can now also be controlled depending on later machine processing. For this purpose,

- the new HiCAD attribute Processing note \$BHW and,
- in the Configuration Editor at PDM > Management + BIM > Production drawings, the new parameter Processing notes for unprocessed beams

are available.

For instance, you can achieve via this attribute that a production drawing is created for unprocessed beams that need to be laser-cut, despite the current **Production for unprocessed beams** setting. For this to happen, the corresponding processing notes must be entered into the Collection Box of the **Processing notes for unprocessed beams** parameter, e.g.:

St	tring Collection Editor	?	x
	Enter the strings in the collection (one per line):		
	Laser-cut Welded		*
			-
]∢ ov. l	, ,	
	<u></u> OK	Cancel	

The following additional adjustments are required:

1. In the system files H_BHW.TXT (in the HiCAD sys directory) the processing notes must be added, too:

1	::TYP="WSTRING"::DROPDOWNLIST="YES"
2	Laser-cut
3	Welded
4	

It is important that the spelling of the texts must be identical with those in the Collection Box (please also attention to case-sensitivity!).

 In the system files BRW_3DTeil_Profil.HDX and BRW_3DTeil_Profil_H.HDX (in the HiCAD sys directory) the attribute \$BHW must be activated. If you have set the Parameter Configuration to Steel/Metal Engineering and Management + BIM, the corresponding definition has already been provided in the files; only the # character at the start of the entry needs to be deleted:



3. The attribute \$BHW must be made item-relevant. To do this, open the Management + BIM tab, choose Parts >

Item... > ... with options 1... and, in the dialogue window, click the **Configuration** button. In the displayed window, activate the attribute \$BHW:

Attribute designation	T (Attribute name	(Туре	
✓ LV Item 2	DSTV_08	INTEGER	
✓ LV Item 3	DSTV_09	INTEGER	
✓ LV Item 4	DSTV_10	INTEGER	
✓ LV Item 5	DSTV_11	INTEGER	
Length	§03	DOUBLE	
🗹 Main Part No.	DSTV_22	INTEGER	
Number of bores	DSTV_15	INTEGER	
Number of section schema	\$06	WSTRING	
✓ One-sided	%12	INTEGER	
Part type	\$05	WSTRING	
Processing note	\$BHW	WSTRING	
Production line	DSTV_12	INTEGER	
🔲 Qty. per part	%01	INTEGER	
🗹 Quantity 1	§11	DOUBLE	
✓ Quantity 2	§12	DOUBLE	
🗹 Quantity 3	§13	DOUBLE	
Special weight [kg/m,St]	DSTV_26	DOUBLE	
Store	DSTV_17	WSTRING	
Substance/Material	\$07	WSTRING	
Surface	§10	DOUBLE	
Surface per length	§17	DOUBLE	
System notes	\$04	WSTRING	
•	III		Þ

Targeted itemisation control

The HELiOS link Itemized enables you to find out in which model the parts have been itemized.

You can use the document attribute **ITEMISATIONMODEL** to explicitly control in which model parts are to be itemized. For this purpose you use the **Itemisation** checkbox in the dialogue window.

Enter document; Folde	er-independent		×
Document Project No.: Constr. sectior Drw. No.:	concurrent, ,	Index: Sheet Itemisation:	

By default, this checkbox is activated for the model and deactivated for the derived drawings.

In certain cases, however, deactivating the checkbox can be useful, for instance, if you want to subdivided complex model drawings into assemblies and individual construction sections, and distribute them to several workstations ("concurrent engineering"). In such cases, the processing, itemisation and drawing derivation in the Management + BIM module will not take place in the original model drawing, but in the detail drawings of the assemblies. Of course, changes in the assemblies will be also be transferred to the original model drawing due to referencing. To prevent itemisation in the original drawing, deactivate the **Itemisation** checkbox in the document master of the original model drawing. To deactivate the checkbox properly, two clicks may be required - otherwise, the checkbox may only be greyed out, but not deactivated.

Service Pack 1 2017 (V 2201)

Customer drawings for approval

Besides the creation of mounting, workshop and production drawings you can use the **Customer drawing** function to create various customer drawings for approval, e.g. builders' or architects' plans. The procedure is largely similar to that for the creation of mounting drawings.

In contrast to the mounting drawing, however, you have the option to choose a **Drawing type** here. You can specify the drawing types that are to be offered for selection via the **Plan types** parameter. The ISD default setting is the drawing type "Kundenzeichnung" (=Customer drawing).

Customer drawings created with the **Management + BIM** module have their own Workflows, i.e. separate functions for a setting to the Checkup and Released status are available.



Customer drawing, Request Approval



Customer drawing, Reject Approval



Customer drawing, Release



Customer drawing, Revision index

Mounting drawings

HiCAD 2017 SP1 also supports the Workflow for **Mounting drawings**. These can now also be set to the Checkup and Released status.

The corresponding functions can be found at Management + BIM > Drawings > MntDrw >



Mounting drawing, Request Approval



Mounting drawing, Reject Approval



Mounting drawing, Release



Mounting drawing, Revision index

Revised Ribbon tab

The **Management + Ribbon** tab has been expanded to include the new functions for mounting drawings and customer drawings.



Parameter configuration with new message

When you confirm a new setting in the **HiCAD Parameter configuration** dialogue window with **OK**, the following message will now be displayed:

ParConfig	
The changes to the configuration will now be or HiCAD drawing frames may be overwritten. you have made backups of your files beforeha	Therefore, please check whether
	OK Cancel

After confirming this message with **OK**, attributes, settings in the Configuration Editor, BOM templates, annotation templates, drawiong frames and HELiOS masks will be automatcally configured for the Management + BIM module.

In the process, various system files in the HiCAD sys and Szenen directory will be replaced with the files supplied in the HiCAD templates directory (for Management + BIM these are the folders TEMPLATES\MODULE_3DSTEEL\BIM\sys and TEMPLATES\MODULE_3DSTEEL\BIM\szenen). These contain, for instance:

- HELiOS masks for projects, documents and articles (*.MSK),
- Various configuration files (*.HDB),
- Template files for annotations (*.FTD)
- Drawing frames with BIM-specific title blocks.

Therefore, you should always make backups of the files that you want to adjust, or contact your nearest ISDoffice before making the adjustments.

Click **Cancel** to discard the changes to the configuration.

Workflow status in the ICN

Parts from released drawings and parts in "Checkup" status are marked accordingly in the ICN. In previous versions, these markings of the Workflow status had been automatically updated in case of changes.

To speed up the build-up of the ICN in case of a slower interface to HELiOS or very large drawings, the conditions for these updates can be set in the Configuration Editor at PDM > Management + BIM > Workflow status in ICN.

Possible settings are:

Always	The workflow status will always be directly updated for all parts.
Always (without standard parts)	The workflow status will be updated for all parts except for standard parts.
Upon saving	The workflow status will only be updated for all parts after saving.
Upon saving (without standard parts)	The workflow status will only be updated for all parts except for standard parts after saving.

The ISD default setting is Always.

Generation of STEP files separately for beams, plates, sheets etc.

The generation of the part data in STEP format can now be performed separately for beams, plates, glass panes and gratings. In previous versions, only a separate generation according to assemblies was possible.

For this purpose the setting options in the Configuration Editor at PDM > Management + BIM > External production drawings > Collect part types for STEP export have been expanded accordingly.

X
Assembly
Assemblies, Workshop
Assemblies, Site
Glazing assemblies
Mullion assemblies
Transom assemblies
Glass assemblies
Inserts assemblies
Beam
Plates
Sheet Metal
Glazing
Gratings
OK Cancel

Suppress unprocessed Sheet Metal parts in production drawings

One distinguishes between sheets with identical cross-sections (unprocessed sheets) and processed beams. If desired, you can suppress the output of sheets with identical cross-sections in the workshop drawing. To do this, choose **Sheet Metal** and activate the **Suppress productions drawings for sheets with identical cross-sections...** checkbox. The checkbox is deactivated by default. Click here for further information.

If you change this setting in the Configuration Editor, already itemized sheets need to be re-itemized and saved!

CAM data for unprocessed sheets

One distinguishes between sheets with identical cross-sections (unprocessed sheets) and processed sheets.

- As "cross-sectionally identical" (unprocessed) are considered all sheets with at least one bend zone, parallel front edges of the flanges (width of flange) and without any further processings such as bores, subtractions etc.
- All other sheets are considered non-identical and processed.

The CAM data for unprocessed sheets parameter in the Configuration Editor at PDM > Management + BIM > External production drawings allows you to determine whether the "unprocessed" sheets are to be considered for the creation of the CAM data or not.

Major Release 2017 (V 2200)

Changed settings for referencing

If you have activated the **Management + BIM** checkbox in the **HiCAD Parameter configuration** dialogue window, the **Lock parts for other users via HELiOS article master** checkbox will be deactivated in the Configuration Editor at **System settings > Referencing**.

New "Information" function group

The new Information function group has been added to the Management+BIM Ribbon tab.



Use the new functions to display BIM-relevant information for the active assembly and check the active drawing for invalid parts.

The following functions are available:

Information, All parts in active assembly

This function displays BIM-relevant information for the active part or assembly.

Information, BOM-relevant parts

Lists the BOM-relevant parts of the active assembly.

Information, Production-relevant parts

- Lists the production-relevant parts of the active assembly.
- Information, Non-project parts
 - Lists the parts that do not belong to the active project.

Correction, Invalid parts

This function searches in the active drawing for parts with invalid part masters. If such parts are found, these will be listed here. When you close the list you will have the option to remove these art-icle masters.



Correction, Invalid BOM-relevant parts

This function searches in the active drawing for parts with invalid BOM-relevent part masters, i.e. for parts that must not be BOM-relevant.

Expanded setting options for output of external part and drawing data

- DXF part data can now also be generated exclusively for Steel Engineering plates. The selection menu in the Configuration Editor at PDM > External production drawings > External part data > Create DXF data has been expanded for this purpose.
- You have also the option to generate DWG, DXF and PDF data of a production drawing exclusively upon its release. The selection menu in the Configuration Editor at PDM > External production drawings > External part data > Create DWG files for production drawings > ... has been expanded accordingly.

I III HICAD	Description	Value	Comment	
Active configuration (Base configuration)	External part data			
 Image: Image and the second sec	Create CAM data	Manual 🔻	When should	CAM data be created?
Modelling	CAM data for unprocessed beams	Yes 🔹	Create CAM o	lata for unprocessed beams?
Steel Engineering	Create DSTV-NC data	No 🔹	For which par	ts do you want to create NC data ?
🖻 🥅 Metal Engineering	Create DXF data	No 🔻	For which par	ts do you want to create DXF data ?
 Roof/Wall/Facade Plant Engineering 	Create NCW/NCX data	No	which par	ts do you want to create NCW/NCX data?
Plant Engineering Sheet Metal	Create STEP data	All sheets + plat	late STEP d	lata for parts?
Assembling simulation	Collect part types for STEP export	Only Sheet Meta Only SE plates		ts do you want to generate STEP data?
Analysis	External drawing data	only se places	-	
 Interfaces PDM 	Create DWG files for production drawings	No 🔻	Create DWG f	iles for production drawings?
Management+BIM	Create DXF files for production drawings	No		for production drawings?
Production drawings	Create PDF files for production drawings	Upon Checkup a		for production drawings?
External production drawings	Postprocessor for PDF creation	Upon creation ar Upon Release	nd update	or PDF creation
Individual part type III Revision clouds ▷ IIII HiCAD-HELiOS interface		- Upon Release		

Compatibility
 System settings
 Configurations

FORMAT attribute

During generation of production drawings the HiCAD attribute **Article number (\$BB)** of the drawing frame will be transferred to the HELiOS document attribute **FORMAT**.

Part name	DINA3		BON	-relevant							
Article No.	DrwFra	me 💊	Edit de	cument master							
Item No.			A	cument master							-
Weight			A Docume	ent							
Width			InA								
Length	<u> </u>		An	Project No.:	bim_info		In	dex:			٦
				Constr. sectio			s	heet		I-S-D 🕥	ì
Height	<u> </u>				AP1-004						-
Dimension 1				Drw. No.:	AF 1-004			emisation:	V		
ubstance/Material				Document							_
Usa	ige 📃			Designation:	Item No. 1		- R	elease:	In Pro	ogress	
Designation 1				Document typ		ewing		ocument typ		D Drawing -	
Designation 2				bocument typ				ocument typ	e [nica	to brawing -	
Comment	·				Date:	Name:			_		
				Created:	02.02.2017	Designer1	D	ocument No.	DN-0	00587	
System notes				Checked:			S	cale:	1:1		
Part type				Standar			Fo	ormat:	DrwF	irame	
ocuments X		Annly changes									
🔊 👿 🍓 Stand		- V	Document type	Release status	File changed on	Creation date	User	Locked by	Locked on	Links with designation	Forma
SI DN-000580				In Progress	02.02.2017 11:05:41	02.02.2017	Designer1	Designer1)))Bauteil-Konstruktion	
SI DN-000581		Item No.: 1	HiCAD Drawing	In Progress	02.02.2017 10:48:41	02.02.2017	Designer1)))Bauteil-Konstruktion	
SI DN-000583		Item No.: 101	HiCAD Drawing	In Progress	02.02.2017 10:48:48	02.02.2017	Designer1)))Bauteil-Konstruktion	
SI DN-000584		Item No.: 102	HiCAD Drawing	In Progress	02.02.2017 10:48:52	02.02.2017	Designer1)))Bauteil-Konstruktion	
SI DN-000585		Item No.: 103	HiCAD Drawing	In Progress	02.02.2017 10:48:55	02.02.2017	Designer1)))Bauteil-Konstruktion	
SI DN-000586		Item No.: 104	HiCAD Drawing	In Progress	02.02.2017 10:48:58	02.02.2017	Designer1)))Bauteil-Konstruktion	
SI DN-000587		Item No. 1	HiCAD Drawing	In Progress	02.02.2017 11:05:56	02.02.2017	Designer1			Bauteil-Konstruktion	DrwFra
SI DN-000588		Item No.: 100		In Progress	02.02.2017 13:02:37	02.02.2017	Designer1))) Bauteil-Konstruktion	

Metal Engineering

Service Pack 2 2017 (V 2202)

Import of LogiKal glass panes with circular arc-shaped frames You have now the option to import glass panes from LogiKal with circular arc-shaped frames:



To ensure an error-free import, please update LogiKal to the most recent version beforehand.

Changed licensing

The licensing requirements for the Metal Engineering module have changed:

Minimum requirements for the HiCAD Metal Engineering module now comprise HiCAD creator and HiCAD Beams+Profiles. A prerequisite for the HiCAD Steel/Metal Engineering module is the existence of HiCAD creator. Automatic creation of View Coordinate Systems

When inserting a LogiKal facade in HiCAD, a View CS will now be set automatically.

Service Pack 1 2017 (V. 2201)

Taking over of LogiKal item name into Part attributes mask

For beams, profiles and glass panes that have been imported from the LogiKal item database to HiCAD, the LogiKal item name will be shown as a HiCAD part attribute in the in the **Part attributes** dialogue window.

You will find the corresponding attribute in the LogiKal item name field:

🞝 Part attributes					_ D _ X
Article No.	SC 224606		BOM-relevant	V	
Standard			Total quantity	3	
Drawing No.			Qty. per part	1	
Item No.	167	Item text			
LogiKal item name	P001				
Length	3207.5	Width	leight		
Angle bottom/left - XZ	0.0	۸.	ala 6. 11		

Create part via part catalogue

When you called the **Create part via part type catalogue, as main part p** function via the context menu for sketches in older versions, you were prompted to select the sketch again. T

This step will be omitted as of SP1, since the sketch has actually already been selected via the right-click.

	Sketch
-	Options
ď	Extended selection
	Visualisation
	88 🐼
	New
	● \$ \$ \$ \$ \$ \$ \$ \$ \$ • •
	Create part via part type catalogue, as main part (2-D/3-

Workshop drawing - No taking into account of connecting elements in Metal Engineering

If your model drawing contains connecting elements that have been created with the **3-D section** functions, these will not be considered in the workshop drawing - even if these elements are BOM-relevant.

Major Release 2017 (V 2200)

Direct call of eluCad from HiCAD

0

Use the **eluCad** function to transfer parts directly to the eluCad software. The transfer takes place externally via export of the parts to the NCX format. The restrictions of the NCX format apply here, too: An export of assemblies is not possible and only BOM-relevant parts will be exported. Other export settings will be the default values of the NCX interface:

CX Interface					×
Selected parts					
Selection list					
O All parts					
General			(Letterings)		
Maximum bore diameter:	10	mm	🔘 Ignore		
Milling cutter width for free tool paths	0	mm	 Write 		
Machine type:			Milling cutter width	1	mm
Camprox O Camaeleon			Milling depth	1	mm
Angle			Thread description		
View angle			Pitch		
🔘 Machine angle			O With core hole		
			O Without core hole		
Name of NCX file					
Write all parts into one file					
 Order number or Drawing name + Ite Only item number 	m number				
From FTD file					
Name of DXF cross-section file:					
 (Name of DXP cross-section file.) (i) Cross-section designation + Item nur 	nber				
 Only cross-section designation 					
 Only closs section designation Only item number 					
 From FTD file 					
Behaviour for two cut planes					
Theoretical lengthening of one cut p	lane + Saw c	cut			
🔘 Two saw-cuts					
Output itemized series beams as one	e part				
				ĸ	Cancel
			<u> </u>		

For further information on the NCX format please refer to the Online Help for Interfaces .The installation of eluCad will be found automatically, no configuration will be required.

Apply insertion direction for several foils



The dialogue for the specification of the insertion direction of foils now features the additional option **Apply insertion direction for the following edges**. If you want to insert a foil along several edges, you can activate this function to apply the insertion direction of the first edge to the following edges in one go instead of having to specify the direction for each of the edges one by one.

Plant Engineering

Service Pack 2 2017 (V 2202)

Part insertion

New connection types / asymmetric flange connections

HiCAD Plant Engineering now also supports asymmetric flange connections, i.e. connections of flanges with different shapes. For this purpose, the following new connection types are available:

- 21000 (Flange with groove) and
- 22000 (Flange with notch).

One example for an asymmetric flange connection is a connection of a flange with groove to a flange with notch according to DIN 11853-2.

The **Connection types** dialogue window has been expanded accordingly. To open this dialogue window, choose **Plant Engineering > Settings > Settings**. In the **Plant Engineering Settings** dialogue window, open the **Part search** tab and click the **Connection types** button at the bottom right. The default setting looks as follows:

Connection types Definition of allowed connection type combinations No connection (0) Butt-welded (10000) Flange (20000) Flange with groove (21000) Flange with groove (21000) Flange with notch (22000) Screwed, nipple (31000) Screwed, socket (32000) Plugged, nipple (41000) Plugged, socket (42000) Socket-welded, nipple (51000) Socket-welded, socket (52000)						
Default setting					OK	Cancel

If connection type combinations of from older HiCAD versions (before HiCAD 2017 SP2) exist when you start HiCAD, the following message will be displayed:



Changed function dialogues

To limit the number of matching counter-flanges for asymmetric flange connections, the following functions have been revised:

- Pipe parts (PE)
 Concerns the part-dependent insertion type Connect when inserting a flange
- Pipe parts (PE) Insertion option AutoFlange
- AutoPlace parts on guidelines (PE)
 If the Insert connecting pieces option has been activated (Plant Engineering Settings, Fasteners tab), with flanges as fasteners.

Fasteners for asymmetric flanges may have the Connection type 20000, so that they can be provided on both sides of the flange connection during part insertion.

Parts for food ducts

HiCAD now also supports the construction of food ducts. For this purpose the standard part inventory has been expanded accordingly. The archive file list **foodline.lst** in the HiCAD-directory **PlantParts** lists the new variants. To be able to use the new parts, perform a part data synchronization with the database or the HiCAD catalogue, respectively.

Example



Example with Isometry





Food ducts	Variant
DIN EN 10357-A (replaces DIN 11850 Series 2)	EN 10357- A.vaa
DIN EN 10357-B (replaces DIN 11850 Series1)	EN10357- B.vaa
DIN EN 10357-C (corresponds to ISO dimensions)	EN 10357- C.vaa
DIN EN 10357-D (corresponds to OD and SMS dimensions)	EN 10357- D.vaa
DIN 11866-A (corresponds to DIN EN 10357 dimensions)	N11866-A.vaa
DIN 11866-B (corresponds to DIN EN ISO 1127 dimensions)	N11866-B.vaa
DIN 11866-C (corresponds to ASME-BPE 2009 dimensions)	N11866-C.vaa
Standard parts acc. to DIN EN 10217-7 (replaces DIN 17457) also fall into the "Food ducts" category	EN 10217-7- 1.vaa

Duct fittings acc. to DIN 11852	Variant
Reducer, concentric	N11852-RK.VAA
Reducer, excentric	N11852-RE.VAA
Elbow 45°	N11852-BS-45.VAA
Elbow 90°	N11852-BS-90.VAA
Elbow 90°, long	N11852-BL-90.VAA
Elbow 180°	N11852-BS-180.VAA
T-piece, short	N11852-TK.VAA
T-piece	N11852-TS.VAA
Reduced T-piece, short	N11852-TK-RED.VAA
Reduced T-piece	N11852-TS-RED.VAA
T-bend	N11852-TBEND.VAA
Y-bend	N11852-YBEND.VAA
Cross, short	N11852-XK.VAA
Cross	N11852-XS.VAA

Releasable connections comprise pipe unions, flange connections and clamped connections. Due to the special construction of these connections, they have been modelled according to connection types **21000** and **22000**, i.e. they are internally regarded as flange connections. For each of these connections, a "complete" version exists, modelling this connection as one single part. The complete versions are "Other parts".

Pipe unions acc. to DIN 11853-1	Variant
Screwed pipe union, complete (DIN 11853-1)	N11853-1_ RV.VAA
Threaded socket, short (DIN 11853-1)	N11853-1_ GS.VAA
Socket with notch, short (DIN 11853-1)	N11853-1_ BS.VAA
Threaded dummy socket (DIN 11853-1)	N11853-1_ GBS.VAA
Dummy socket with notch (DIN 11853-1)	N11853-1_ BBS.VAA
Slotted nut (DIN 11851)	N11851_ NUT.VAA
Sealing ring (DIN 11851)	N11851_ OR.VAA

Please note:

- In the HiCAD standard parts inventory, the sockets have been modelled as "flanges". This allows an automatic insertion of sealing rings as flange seals. For this to happen, the via DICHTUNG attribute option must have been activated on the Part selection tab of the Plant Engineering Settings dialogue window.
- The slotted nut has been modelled as an asymmetric fastener and made available accordingly in the connection type attributes of the sockets. To ensure their automatic insertion, the options Insert fasteners and Selection via connection type attribute must have been activated on the Fasteners tab of the Plant Engineering Settings dialogue window.

Flange connections acc. to DIN 11853-2	Variant	
Flange connection, complete (DIN 11853-2)	N11853-2_ FV.VAA	
Flange with groove (DIN 11853-2)	N11853- 2_ NF.VAA	
Flange with notch (DIN 11853-2)	N11852- 2_ BF.VAA	
Blank flange with groove (DIN 11853-2)	N11853- 2_ BNF.VAA	
Blank flange with notch (DIN 11853-2)	N11853- 2_ BBF.VAA	
O-ring (DIN 11853)	N11853_ OR.VAA	Asymmetric flange connection

0

For an automatic insertion of the O-ring, activate (as you would do for the pipe unions), the **via DICHTUNG attribute** option in the **Plant Engineering Settings**.

Clamped connections acc. to DIN 11853-3	Variant
Clamped connection, com- plete	N11853-3_ KV.VAA
Clamped socket with groove	N11853-3_ NK.VAA
Clamped socket with notch	N11853-3_ BK.VAA
Clamped dummy socket with groove	N11853-3_ BNK.VAA
Clamped dummy socket with notch	N11853-3_ BBK.VAA
O-ring	N11853-3_ OR.VAA
Clamp	N11853-3_ KL.VAA

The clamped connections, too, have been modelled according to the connection types 21000 and 22000, to enable the automatic insertion of the O-ring as seal **via DICHTUNG attribute**. The clamp is an asymmetric fastener.

The following valves with connection parameters according to DIN 11852 for butt-welded pipes on both connections (SS) are now contained in the standard parts inventory:

Valves acc. to DIN 11852	Variant
Disc valve SS, hand-operated	N11852_BUTTERFLYVALVE.VAA
Disc valve SS, pneumatic	N11852_BUTTERFLYVALVE_PNEU.VAA
Ball valve SS, hand-operated	N11852_BALLVALVE.VAA
Ball valve SS, pneumatic	N11852_BALLVALVE_PNEU.VAA
heco orbital welding ball valve	N11852_HECO_BALLVALVE.VAA

Pipe clamps acc. to DIN EN 10357 A	Variant	
Pipe clamp	EN10357-A_RS.VAA	
Pipe clamp with shank	EN10357-A_RSS.VAA	
Pipe clamp, foldable	EN10357-A_RS_K.VAA	
Pipe clamp with shank, foldable	EN10357-A_RSS_K.VAA	
Pipe holder	EN10357-A_RT.VAA	
Pipe support	EN10357-A_RA.VAA	

Create and modify guidelines

Changed function dialogues

Normally, the **Work with guideline** mode must have been activated if you want to use the **Guideline Tools** functions. In previous versions, a message was displayed if this was not the case.



You had to confirm with **OK**, change the Plant Engineering settings accordingly and call the function again.

As of HiCAD 2017 SP2 you have the option to activate the **Work with guideline** mode directly in the dialogue window.

The function is only available if the setting "Work with guideline" has been activated. Activate now? "No" will end the function.
Yes No

If you click **Yes**, the **Work with guideline** mode will be activated in the Plant Engineering Settings and the function will be continued immediately. This also applies to the functions Exchange parts and Change pipe class and/or nom-inal diameter of all parts.

Easy drawing of parallel guidelines

The Guideline Editor allows the determining of axes onto which points specified with the help of the graphic cursor can be projected. This method simplifies the construction of guidelines along defined directions. In older versions these projections were only possible for free points, but not for points determined via snap options, or point options such as I, J, M etc. This made a drawing of guidelines running parallel to existing structures rather difficult.

As of HiCAD 2017 SP2 the Guideline Editor offers the additional **Always project points on axes** checkbox. If you activate this checkbox you can project any point that you want.

irid size .ctivate axes ir 7 XY 🛛 🖡	100.000	
Always proj xes:	ect points on axes ┥	
1.000	0.000	0.000
0.000	1.000	0.000
0.000	0.000	1.000
0.000	1.000	1.000
	2.000	0.000
✓ 1.000		

An example on how this new option works can be found here.

New symbols during drawing of guidelines

During the drawing of guidelines the next selected point will be symbolized as a slightly smaller blue circle.

Grid : Activ	rate axes in th Y		10	
Axes	(<u>×</u> 1.000 0.000 0.000	0.000 1.000 0.000	0.000 0.000 0.000 1.000	Offset: 10.00 0.00, 30.00; 10.0
Coord	finates: (X 0.000 0.000	(Y 0.000 30.000	(Z 0.000 0.000	Z1
	0.000	30.000		¥1 X1

Assign guideline remainder to another pipeline

The Assign guideline remainder to another pipeline ジ function has been revised.

Proceed as follows:

1. Select the segment of the guideline that you want to assign to another pipeline. The position of the graphic cursor determines which segment of the guideline will be selected. Please note that the selected segment must not contain any parts!



2. Select the target pipeline. The selected guideline section will be assigned to this pipeline (if the pipeline to which you want assign the guideline remainder does not exist yet, create it using the **Create pipeline** function).



Please note:

- The original pipeline can also be used as target pipeline. This will only divide the guideline, but not assign it otherwise.
- You can also select the entire guideline as one section, provided that no parts have been placed on it yet. This allows you to assign the entire guideline to a different pipeline.

Part Tools

Connect pipes

The **Connect pipe** function has been revised. The function connect pipes that can belong to different pipelines and may have different diameters.

In older versions the procedure was as follows:

- 1. Selection of the thicker pipe,
- 2. Selection of connecting point,

3. Selection of the thinner pipe.

Then, HiCAD checked whether the connection actually made sense. For this to happen, the connecting point must already have been located on the centre line of the thicker pipe. If this was the case, the pipe was connected, i.e. an connecting point was applied to the thicker pipe and the thinner pipe was trimmed accordingly.

As of HiCAD 2017 SP2 the order of the pipe selection does no longer matter. Also, the connecting point of the thinner pipe does no longer need to be already located on the centre line of the thicker pipe. If required (and possible), the connection point of the thinner pipe will now be moved towards the connection by means of a route change.

An example:

In this example the straight pipe (1) is to be connected to the seamless steel tube (2).



Select the straight pipe (1) and the elbow (2).



HiCAD detects the possible connecting points - here, two of them - and prompts you to choose the desired point. Select the lower point. The function will be executed.



If you had chosen the upper connecting point instead, the connection could not have been created. In this case, HiCAD would have displayed the following message:



Service Pack 1 2017 (V 2201)

Part Insertion / Create Pipelines

Highlighting connection points during part insertion

If the reference point during part insertion is chosen freely with the Connection from graphic option, a full-screen preview of the part will be displayed. In addition to that, the connection points will be highlighted and the point names will be shown.





Adopt pipeline name from P+ID

When creating a pipeline and assigning a pipe class from the P+ID, the pipeline name will also be adopted from P+ID.



Part Tools

Divide pipe

With the new Divide pipe 📕 function it is possible to divide a single pipe into two separate pipes.

Select a point on a dividable pipe. This can be a straight pipe or a straight section of a bent pipe.

The point selection is restricted to a grid depending on the pipe length, similar to the one you can find during part installation. If you move the cursor over the pipe, the active point will be visualised graphically. By clicking the left mouse button, the pipe will be divided into two at this point.



If you prefer selecting the point via the point options, you can do so by activating the context menu. In this case the cursor should always be over the part which you want to divide. The part which will be divided at the selected point will be additionally highlighted in the point option mode.
Pipeline Tools

Close gaps within a pipeline

When replacing parts or also after automatically placing parts on guidelines, gaps might occur in the pipeline route. At the latest when an isometry drawing should be created the pipeline route has to be connected. There are other functions which depend on a continuous pipeline route, e.g. the Divide pipeline function.

The Close gaps It function marks gaps in the chosen pipeline route and offers you to close them.

In the displayed pipeline there is for example a small gap between the elbows. It is highlighted with arrows.



If you move the cursor over the arrows a text will appear which suggests that gaps can be closed by clicking on them. The results of closing gaps can vary, depending on the arrows you choose. Only the side of the selected arrow will be modified.

Use pipeline colour as edge colour

Via the Change pipeline colour vill the pipeline colour will now not only be used as surface colour but as edge colour as well. This means that all parts of the chosen pipeline will receive the pipeline colour for surface and edge colour.

This can also be edited in the Plant Engineering settings, by activating the **Set edge colour to pipeline colour** checkbox in the Part insertion tab.

Bills of Materials Part search P+ID attribute as	signment Weld gap Straight pipe
Part placing on branching points Y Fastener	s Flange connection, bolted
Part insertion Part selection P+ID symbol assignment	Link to P+ID Actions during Load/Save
Vork with guideline	
(Insert part as)	(Representation type)
🚫 Sub-part	Hollow body
Main Part	Solid body
Part of active pipeline	Hollow bodies + Symbols
	Solid bodies + Symbols
V Use part copies for Variants	Hollow body, with all details
Delete all copies	Nominal diameter output
Take over pipeline colour	in mm and inches
Set edge colour to pipeline colour	only in mm
Take over pipeline layer	O only in inches
Check attribute assignment	
Calculate missing weights from geometry	
(Line colour for symbolic representation)	
Specify for pipes and elbows	
Specify for all other parts	Default setting
	OK Cancel

Guideline Tools

Deleting edges of a guideline

If the guideline is broken up into several sections by deleting edges, the guideline will now be divided into separate parts.

For example, if edges (1) and (2) are deleted in the displayed guideline, three separate guideline parts will emerge.



Merge guidelines

When creating and editing guidelines it may be that a pipeline contains two guideline parts with overlapping end points.



Via the Merge guidelines function these constellations can be found and merged. This function merges all possible guidelines of a pipeline.

Isometry and Pipe Spool Drawing

Switching off identical part search when assigning PE item numbers

With the Plant Engineering itemisation you can have a distinct item number assigned to each part. To do so the Item numbers tab has been expanded by a checkbox.

Assign unique item number to each part (no identical part search)

If this checkbox is activated, parts of a kind will not be combined in one item. As an example, this could be used in order to itemise parts of a pipeline along the flow direction.

New format for connection item numbers

Itemising the connections of a pipeline now includes item numbers, which use the part's item number as prefix and only count up the item of the connection in second place. For that reason, the Connections tab of the Isometry and pipe spool drawing settings has been expanded by a checkbox.

Symbols	Text objects	Text objects 2-D Drawing elements		
Automatic dimensionin	g Texts/Lines	Optimise positioning	Connections	Lists
Connection type	Welded	•		
	🔽 Assign item nu	mbers		
	🔶 📄 Use "Part.Con	nection" format		

Please note that the setting have to be modified for each connection type. You can e.g. itemise welded connections in this way and socket-welded connections in the previous way.

The part which provides the prefix is always the one directly before the connection in flow direction.



An example with displayed flow direction and parts itemised along the flow direction (identical part search: off):

Automatic dimensioning settings

On the **Automatic dimensioning** tabs of the Isometry and Pipe Spool Drawing settings dialogue windows the "Relative" option beneath Draw angular dimensions is no longer available.

Major Release 2017 (V 2200)

New variants

SWAGELOK - Metering valves, Plug valves, Pipes

New SWAGELOK parts are now available. The following feature variants (.VAA) have been created:

SWAGELOK Metering valves	SWAGELOK Plug valves	SWAGELOK Pipes
SWAGELOK_MVALVE	SWAGELOK_PVALVE	SWAGELOK_PIPE
SWAGELOK_MVALVE_31	SWAGELOK_PVALVE_FNPT	SWAGELOK_PIPE_METRIC
SWAGELOK_MVALVE_31_METRIC	SWAGELOK_PVALVE_ISO_FEMALE	
SWAGELOK_MVALVE_3W	SWAGELOK_PVALVE_METRIC	
SWAGELOK_MVALVE_90	SWAGELOK_PVALVE_MNPT	
SWAGELOK_MVALVE_90_31	SWAGELOK_PVALVE_MNPT_FNPT	
SWAGELOK_MVALVE_90_31_METRIC	SWAGELOK_PVALVE_MNPT_INCH	
SWAGELOK_MVALVE_90_FNPT		
SWAGELOK_MVALVE_90_METRIC		
SWAGELOK_MVALVE_90_MNPT		
SWAGELOK_MVALVE_90_MNPT_INCH		
SWAGELOK_MVALVE_FNPT		
SWAGELOK_MVALVE_METRIC		

When you perform an update, these parts must be entered, via the DBPlantDataImport or PartDataAutoSync tools, into the database or the HiCAD catalogue, respectively. The corresponding archive file lists are as follows:

- Metering valves: Swagelok_Metering_Valves.lst
- Plug valves: Swagelok_Plug_Valves.lst
- Pipes: Swagelok_Pipes.lst

SWAGELOK_MVALVE_MNPT

Ermeto valves

The following new variants (.VAA) for Ermeto valves are available:

Ermeto Ball valves	Ermeto Valves
EO_KH_3W_L	EO_DV_L
EO_KH_3W_S	EO_LD_S
EO_KH_L	EO_VDHA_S
EO_KH_S	EO_WV_L



The Ermeto variants have been grouped according to series in the following three archive list files:

- EO_LL.lst
- EO_L.lst
- EO_S.lst

The new valves have been added to the matching .lst file.

New database entries

New attributes

If you are using the PDM system HELiOS as part data source you have the option to use the route of the guideline as a restriction for part selection. The following attributes which will be analysed during the part insertion are available for this purpose:

- PLANE_RESTRICTION and
- BENDING_RESTRICTION

When you start the DbPlantDataImport.exe tool for the configuration of your database and click the **Update HELiOS for Plant Engineering** button, both attributes will be added to the database.

Expanded search masks

The new ANSCHLUSSART2 (CONNECTION_TYPE2) field has been added in the search mask for valves. This allows the support of parts like the "Swagelok Plug valve P4T/P6T NPT male thread on tube fitting in inches" with a screwed connector at one end, and a plugged connector at the other end.

P Find article	
- Search conditions	
Article Classification Valve	Ŭ
Connection 1 mm inch Connection type:	
Connection 2	$[] \cdots] ()] + \cdots + ((+ + + + + +$
Connection type: 42000	
Area of application & Dimensions — Fitting —	
Pressure: Preferred type:	
Temperature: Seal:	
Installation height (Accessory set:	
Installation height (P+ID symbols	000
•	
- Search result	
↔ 🗟 🐞 Standard -	
Re Number In Designation	Desigr Standard de Part type
Swagelok Plug valve P4T/P6T tube fitting in inches	(SWAGELOK
Swagelok Plug valve P4T/P6T tube fitting in inches	(SWAGELOK
	F
Number of data records: 2	
	Grind OK Cancel

Search masks for valves

• The new **DRUCK** (PRESSURE) field has been added to the search mask for fasteners. This allows the support of parts like the glass fiber reinforced polyester resin pipe fittings, for which the pressure is a relevant factor.

Find article		-	Co. and	-	- 30 -					- 0	X
- Search conditions											-
	stener, symmetric										0
							_				
Connections									Π		
Nominal diamet	er: 80.	000000) mm		inch		T T				
Outer diameter	(1):				2	9					
Connection type	e: '20	*"									
Connection type						•					
Pipe part propertie Pressure: Wall thickness (F	itting Preferred type: (Seal: (Accessory set: (•						
- Search result - Search result	•										
Re Number In	Designation	Design	Standard de Part ty	pe	Release statu	Creation dat	User	Nomi	NPS (Outer	с
📀 🕥 SN-027776	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa	art+Pla	In Progress	07.10.2016	Administrator	80		76 4	1
📀 🕥 SN-027777	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa	2		07.10.2016	Administrator	80		77 4	1
🔂 🕥 SN-027778	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa	art+Pla	In Progress	07.10.2016	Administrator	80		78 4	1
📀 🕥 SN-027779	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa		-	07.10.2016	Administrator	80		76 4	.1
📀 🕥 SN-027780	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa			07.10.2016	Administrator	80		77 4	-
📀 🕥 SN-027781	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa	art+Pla	In Progress	07.10.2016	Administrator	80		78 4	.1
📀 🕥 SN-027782	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa	art+Pla	In Progress	07.10.2016	Administrator	80		76 4	
📀 🕥 SN-027783	JACOB Pull-ring wit		(JACOB_SPAN Raw-pa		-	07.10.2016	Administrator	80		77 4	_
0 SN-027784	JACOB Pull-ring wit		(JACOB SPAN Raw-pa	art+Pla	In Progress	07.10.2016	Administrator	80		-	1
Number of data records: 14											
		E			▼ Q₁•	0	🔍 Find	0	K	Can	cel

Search mask for fasteners

HELiOS as Part Data Source

Use the Guideline Route for the Restriction of Part Selection

If you are using the PDM system HELiOS as part data source you have the option to use the route of the guideline as a restriction for part selection. The following attributes which will be analysed during the part insertion are available for this purpose:

Attribute name	Designation
PLANE_RESTRICTION	Bend plane
BENDING_RESTRICTION	Bending direction

If the route of the guideline does not match the attribute value of the part that is to be installed the part will be ignored.

These attribute are useful if you want to restrict the part selection options for more extensive pipe classes when inserting the parts, so that only one, unique selection is possible and no search mask will appear.

PLANE_RESTRICTION

This attribute encompasses the following values:

- 0 no restriction
- 1 Only make part available for selection if the guideline's bend or branch runs horizontally based on the world coordinate system to the fitting position.
- 2 Only make part available for selection if the guideline's bend or branch runs vertically based on the world coordinate system to the fitting position.

This attribute is currently being analysed for T-pieces.

BENDING_RESTRICTION

This attribute encompasses the following values:

- 0 no restriction
- 1 Only make part available for selection if the guideline's bend based on the world coordinate system curves upwards.
- 2 Only make part available for selection if the guideline's bend based on the world coordinate system curves downwards.

This attribute is currently being analysed for the part type knee.

These attributes are not in use in any of the part variants supplied by the ISD, thus the supplied HELiOS masks do not contain them either. Both attributes are useful for reducing the part selection when installing parts in extensive pipe classes so that the selection becomes definite and no search mask appears.

UV If you are using the DbPlantDataImport.exe tool for the configuration of your database, select the Update HELIOS for Plant Engineering button and both attributes will be added to the database.

Pipeline Tools

Change route

A new function is available via **Plant Engineering > Pipeline Tools > Change**:



With this function it is possible to change the route of an already installed pipeline. It only takes into account those segments of the pipeline whose length can still be modified. In general this includes straight pipes, straight segments of bent pipes and guidelines. Guidelines and parts are treated equally. Parts will not be deleted and angles will not be modified.

After clicking on the function HiCAD will prompt you to select the point that is to be shifted. When moving the cursor over the drawing's pipeline all eligible points will be marked in the respective colour (Special Colour Marking 1). Select the desired point. In the drawing this point (Special Colour Marking 3) together with the respective pipeline will be coloured. Left-click to adapt this point. HiCAD will ask you to specify the target point of the changed route.

When HiCAD requests a target point the display of the pipeline changes. It is layered with a line representation which shows the route of the pipeline. This line representation consists of grey and coloured segments. The grey segments are unchanged in their width while the coloured segments can be stretched or compressed. You can denote the coloured segments as unchangeable at any time via selecting the corresponding function from the context menu.

Apart from the line representation two points will be coloured. The light point (Special Colour Marking 2) is the point that you have selected to be moved. The dark point is the so-called fixed point. Fixed points are points whose position in the room are is unchangeable. After selecting the point that will be moved HiCAD suggests a fixed point automatically.

If you are content with the current cursor position press the middle mouse button. The changed route will be processed.



(1) point that is to be moved, (2) target and fixed point, (3) result



In order to determine the target point a context menu with further functions is available:

Pipeline Isometry / Pipe Spool Drawing

Less disk space required for drawings with implied connected elements

If the Indicate connected elements option is activated when generating a pipeline isometry those connected elements used to be taken over in the newly constructed drawing. These elements are often times very complex, which leads to more disk space being required in an isometry drawing. A few examples are vessels with many nozzles or measuring tools that are displayed in great detail.

These parts will be simplified from now on, which drastically reduces the size of an isometry drawing in many cases.

Separately removing auxiliary lines for dimensioning

The **Add/remove element** function in isometries and pipe spool drawings now allows the separate removal of auxiliary lines for dimensioning - regardless of whether the Auxiliary lines for arcs checkbox is activated or not.

Please select the elements you want to add/remove:
 Coordinate axes North arrow Dimensioning Auxiliary lines for arcs Rise triangles Part numbers Connection numbers Connection symbols Part list Length list Connection list
Change pipe spool drawing
Please select the elements you want to add/remove:
 Dimensioning Auxiliary lines for arcs Part numbers Connection numbers Part list Length list Connection list

Associative dimensions and auxiliary lines for dimensioning in the pipe spool drawing

Dimensions in the pipe spool drawing now derive the dimension figure "from drawing", i.e. the figure determined in the drawing will be used as dimension figure. This means that the dimensions and auxiliary lines for dimensioning

are now associative. If there is no isolated point at a dimension base point an auxiliary point will be created and assigned to an appropriate part.



Part insertion

Placing of parts on guidelines

During interactive part insertion, some parts require the specification of the insertion position on the guideline with the cursor. In older versions, the cursor could only be moved along the guideline.

In HiCAD 2017 the placing of parts on guidelines has been made more flexible: The cursor can now be moved freely, also allowing the selection of points outside the guideline for the specification of the insertion position. In these cases the insertion position is the projection of the selected point onto the guideline. This method makes part alignment much easier in many cases.

In the image below, a pipe clamp (4) is to be mounted on the Part (1). After selecting the pipe, it will be hidden (2) and the insertion position can now be freely selected (3).

Flanges

Pipe-dependent placing of loose flanges

Loose flanges can be placed manually or automatically on the connecting point of straight pipes. In the process, the first connecting point of the loose flange will be placed on the connecting point of the straight pipe. Sometimes, however, it is desirable to move the representation of the loose flange slightly away from the connecting point, e.g. in cases where the straight pipe ends with a flanged edge which is not to be overlapped by the geometry of the loose flange.

To achieve this, you can define a suitable distance in the feature variables of the straight pipe. This distance must be stored in the Variable F1 for the first connecting point, and in the Variable F2 for the second connecting point.

Even if the end of the pipe is a flanged end, the required connection type will be 10000 (welded connection).

The result will look as follows:



(1) Straight pipe, (2) Loose flange, (3) Collar piece, modelled as straight pipe defining a distance of the loose flange via F1 for the first connecting point.

After insertion of the loose flange, its first connecting point will still be located at the end of the straight pipe, but the part geometry and the second connecting point have been moved away from the connection by the value F1.

During manual placing of loose flanges, please bear in mind that the Guideline mode must be switched off, and that **Connection 1 on target connection** must have been selected during insertion.

Other enhancements

Performance

Performance could be increased in the following areas:

- In older versions an UNDO backup for the entire pipeline was made, which is now limited to the guideline only. This increases the speed of the function significantly.
- After executing the Move points function (for the correction of pipe routes by the moving of points)
 HiCAD performs various "clean up" actions. The time required for these actions could be reduced to about a seventh of the time that was previously required.
- The Delete part function is used for the repeated deletion of parts from pipelines. In previous versions an UNDO step for the entire pipeline was created after each part selection. From HiCAD 2017 onwards the UNDO step will be limited to the affected parts. As a result, the time for the deletion of Plant Engineering parts could be reduced significantly (up to 50% according to various tests).

P+ID

Service Pack 2 2017 (V 2202)

Sheet master data modified

It is possible now to enter empty entries for the sheets in the **Combo boxes** of the freely configurable attributes for the title block dialogue via the functions **New sheet** or **Edit master data**.

			Index	Change	Date	Name
+ID project name:	RI_SCHEMA1					
ïle name (sheet):	S0000001					
iheet number:	1					
iheet index:	0					
B project number:						
esignation (all):						
esignation (sheet):						
ocument No.	(automatically)			[
)rigin:]	🔽 Attrib	outes with free value:	s:	
eplacement for:			Reserve	• R01 🗖		
eplace by:			Reserve Reserve			
	Date N	ame	Reserve	eR03	lí —	
Processed:			Reserve	R05		
Checked:			Reserve			
itandard:			Kommer	ntar 🗖]	

In addition, you can switch on and off the assignments and edits of the freely configurable attributes by clicking on the checkbox above the block.

			Index	Change		Date	Name
P+ID project name:	RI_SCHEMA1						
File name (sheet):	S0000001						
Sheet number:	1						
Sheet index:	0						
DB project number:							
Designation (all):							
Designation (sheet):							
Document No.	(automatically)						
Origin:			Attr	ibutes with fre	e values:		
Replacement for:			Reserv	/e R01	-		
Replace by:			Reserv	/e R02	Ī		
	Date	Name	Reserv	/e R03			
Processed:			Reserv	/e R04	- I		
Checked:			Reserv	/e R05	-		
Standard:			Comme	ent	-		

Product structure

Store part data in P + ID library

It is now possible to assign part data to symbols of P+ID libraries. For this purpose, the buttons **Part data** and **Delete part assignment** have been added to the symbol mask.

Symbol name:		B04
Symbol type:		General type 00775-A
Row C	ode	Dialogue type Default dialogue text
	40	Comment (1)
2	40	Comment (2)
3	1	Plant code
4	5	Plant unit
5	6	Plant/Plant unit
E L	9	Aggregate BB000
	16	Plant/Plant unit/Aggregate
8	3	Location
9	2	Function
10	4	Code B
Inse	rt row	Part data OK

If there is no data base part ID stored yet, select the button **Part data** to open the article search mask. In case of a pre-selection of the article search mask a potentially given Part type ID within a symbol mask will be considered.

Article: TN-01	497								(
/lask X D	ocuments × Graphic	× Targets	× Use × F	roduct structure	×				4
	Article No.:	TN-01497	Ind	ex:	I-S-N	1	>		
	Project No.:			_					
	Folder No.:								
	Article								
		xample vessel 1	Release:	In Progre	155				
	Designation 2:		Part type:		t+Plant-desig	In			
		BEH1)	Drawing/Mai						
	Standard. (i		Drawing/ma	iui					
	Article info								
	Material:		Order quant	ity: Piece					
	Weight:	[kg]	Resourcing:						
	Dimensions :		Order note:	ISD Vess	el 1				
	Comment:								
	Index		Created:	23.06.20	00 Adm	ninistrato			
	Index date:		Origin:	23.00.20	Adir	minouald	<u> </u>		
	Index text:		Based on:				-		
earch result —— 7 🧟 🍓 Stand	ard 🔻								
	In Designation	Desige Standard de		Creation dat	User	Prefer	P+ID Vo	olun Oute	r Lengt
			P+ID base syr In Progress	14.09.2017	Administrator				
SN-025942	Vessel		Contraction of the second se	22.05.2000					
Number SN-025942	Vessel Example vessel 1 Example vessel 2	(BEH1) (BEH2)	Raw-part+Pla In Progress Raw-part+Pla In Progress	1	Administrator Administrator				

However, if a database part ID is available, the part data will be displayed and can be deleted via the button **Delete** part assignment.

Symbol na	ime:	B01		Vessel
Symbol typ	be:	General type		00631-A
Row	Code	Dialogue type		Default dialogue text
8	3	Location	-	-
9	2	Function	-	
10	4	Code	-	В
>> 11	80	Database Part ID	-	B00DH4×ULBEB5J000000BV 000000
12	81	Database Document ID	•	B00DH4×ULBEB5J0000000D 000000
13	434	Part type ID	•	9100001
14	500	* User-defined 1	•	
15	501	* User-defined 2	-	
16	502	* User-defined 3	•	
17	503	* User-defined 4	-	
	Insert row	Part data		ОК

Set dummy article automatically

The P + ID supports dummy articles. Basically, dummy articles are articles without assigned attributes but which are assigned to the part type (COMPONENT TYPE) R+I-dummy article. Such articles are useful during adjustment with the product structure from the P + ID, since they represent a place holder for actual articles. On that note, it is for example possible to create intermediate BOMs without defining any concrete articles.

Dummy articles are created automatically by the program **DbPlantDataImport.exe** for each Plant Engineering classification in HELiOS.

The ISD Configuration Editor allows activating automatic assigning of dummy articles:

le Edit View Extras ISD			
° 🕥 🖉 🕴 🖳 🕄 🕄 📲	AA 🛛 🞯 🖕		User Administrator -
HiCAD	Description	Value	Comment
A E Active configuration (Base configuration)	Use DMO filter during symbol insertion	1	
Drawing	Set templates article when inserting symbol		
 E Automatic drawing derivation E Modelling 	Restore last state of editing after crash		Searching for files of a previous session in P+ID working directory
 Image: Steel Engineering Image: Image: Image:			
Profile installation			
🔺 📰 Plant Engineering			
Accessory parts			
Isometry and Pipe Spool Drawing			
C-edge			
▲ III P+ID			
DIN frame in P+ID			
Text key representations			
🔢 Symbol Editor			
Sheet Metal			
Assembling simulation			
Analysis			
Interfaces			
D D PDM			
Compatibility			
System settings			

If the automatic allocation is active, the fitting dummy article will be determined always when inserting a symbol with a part type ID from a P + ID library to a P + ID scheme.

A link to the dummy article will be written onto the attribute **Data base part ID** if it is available and blank. An already used data base part ID attribute will not be overwritten.

Product structure transfer from a P + ID

It is now possible to transfer a P + ID or parts of it to HELiOS in the form of a product structure. You can determine which attributes are to be transferred to the product structure.

First, create a new 2-D assembly via the function **Main assembly** ture, move the symbols beneath the assembly to ensure that the assigned articles (=part data) of the symbols will belong to the product structure of the assembly.



Now, assign an article master to the assembly. This takes places via the context menu (right-click on the entry in the 2D-Part structure, then choose HELiOS > Article Master new + assign or ...select + assign. Here, the text Article for assembly will be entered in Designation 1:



Now a transfer of the product structure to the article is possible, once again via the context menu (right-click on the entry, then choose **HELIOS** and **Transfer structure**, **one level**). If applicable, attributes **Function** (PID_FUNCTION) and **Code** (PID_GERAET) need to be configured in the product structure. Click on the article with RMB and choose **Configure...** Then, click **Add attributes** and select from the appearing list **Function** (PID_FUNCTION and **Code** (PID_GERAET). Leave the list by clicking **OK** and select **Save as standard**. Confirm here with **OK**, too. Afterwards, the product structure must be opened once again.



As you can see, the codes of the symbols (B1, B2, V1) are transferred as item attributes. You decide which item attributes to transfer.

Part structure from CA	D		- HELiOS product struc	ture
, 1, TN-01	Part, , In progress (497, , Example vessel 1, (BEH1), In progress, , , , B1 (497, , Example vessel 1, (BEH1), In progress, , , , B2 (015, , Valve, (GAV803F), In progress, , , V1	↓a ↑a, ◆ 理	, 1, TN-	
Properties × Utilize	d articles X		Properties X Utiliz	ed articles × Utilized items ×
Properties X Utilize Description	d articles ×		Properties X Utiliz Description	ved articles × Utilized items ×
	Value	-		Value
Description elease status			Description	
Description	Value Status: In Progress, Workflow: part (R)	-	Description Release status	Value OStatus: In Progress, Workflow: part (R)
Description Lelease status Jumber Designation	Value Status: In Progress, Workflow: part (R) SN-025978	-	Description Release status Number	Value OStatus: In Progress, Workflow: part (R)
Description Release status Jumber	Value Status: In Progress, Workflow: part (R) SN-025978	-	Description Release status Number Index:	Value OStatus: In Progress, Workflow: part (R) OSN-025978
Description lelease status lumber Designation Designation 2	Value Status: In Progress, Workflow: part (R) SN-025978		Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978
Description lelease status lumber Designation Designation 2 tandard designation	Value Status: In Progress, Workflow: part (R) SN-025978	*	Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978
Description elease status lumber esignation esignation 2 tandard designation art type lanufacturer's drawing	Value Status: In Progress, Workflow: part (R) SN-025978		Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978
Description elease status lumber esignation esignation 2 tandard designation art type lanufacturer's drawing esignation	Value Status: In Progress, Workflow: part (R) SN-025978		Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978
Description elease status lumber elesignation elesignation 2 tandard designation art type fanufacturer's drawing lesignation faterial number	Value Status: In Progress, Workflow: part (R) SN-025978		Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978
lelease status lumber esignation lesignation 2 tandard designation art type Anufacturer's drawing Designation Aterial number iEWICHT	Value Status: In Progress, Workflow: part (R) SN-025978		Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978
Description lelease status Jumber Designation Designation 2 tandard designation art type	Value Status: In Progress, Workflow: part (R) SN-025978		Description Release status Number Index: Designation	Value OStatus: In Progress, Workflow: part (R) OSN-025978

Thus, attributes are also available in BOM, which are created via HELiOS Report Manager. Click with RMB on the

article in HELiOS Product structure and activate Output to Report Manager	
atticle in Ticlios Froduct si ucture and activate Output to Report Manager	

	10.8762301 BB	iew ?		_					1
HICAE		Save Save set, Lo	済 🚯 🚴 [ad s Save as Settings Str	uct Quanti	Print Exp	🗶 🧏	Dia Com Taut	S 211 Exp.HT Sort	
	Open	Save Save set. Lo	ad s Save as Settings Str	uct Quanti	Print Exp	o.Ex Exp.Hi.	Exp. Text	Exp.HT Sort	
🔲 (PF	RODUCT_S	tahlbau_01	•						
Qty.	Item	Designation	Standard designation	Bauteil.M	Produkt.PID	Total weigh	Surf.[m*]		
1	0	Example vessel 1	(BEH1)	0	B2	0.0	0.0		
1	0	Example vessel 1	(BEH1)	0	B1	0.0	0.0		
1	0	Valve	(GAV803F)	C	V1	0.0	0.0		
Σ						0.0	0.0		

By using the item attributes and dummy articles, you have the possibility to create BOM at a time when the final specifications of articles are not fixed yet.

Attributes for product structure transfer from P + ID

The function Manage Plant Engineering Data in HELiOS of the program DBPlantDataImport.exe performs further steps which prepare

- the use of dummy articles in P + ID
- the transfer of P + ID attributes into a HELiOS product structure

Unlike the other modifications which **Manage Plant Engineering Data in HELiOS** makes, these are dependent on the entries in the file **attrcadhelios.dat** stored in the HiCAD system directory.

This file generally determines which attributes are transferred to HELiOS when transferring a product structure. As an example, the content may look as follows:

<TBDATEI 1> @SOURCEPROG="helios" @DOCFILENAME="" @SOURCEDOC="CCadHeliosAttrKonfig" <COLUMNS> @ATTR="HEL CADSYSTEM",@TYP="STRING", @ATTR="HEL ATTRCAD",@TYP="STRING", @ATTR="HEL ATTRHELIOS",@TYP="STRING", @ATTR="HEL HICADTYPE",@TYP="STRING", <DATA> "hicad"; "% anzahl"; "HEL_ANZAHL"; "INTEGER"; "hicad"; "% menge1"; "MENGE1"; "DOUBLE"; "hicad"; "%posnr"; "POSITIONSNUMMER"; "INTEGER"; "hicad";"HICAD PID GERAET";"PID GERAET";"STRING"; "hicad"; "HICAD_PID_FUNKTION"; "PID_FUNCTION"; "STRING"; <DATAEND>

The entries on HICAD_PID_GERAET and HICAD_PID_FUNKTION are P + ID specific. The three entries above refer to attributes which are generelly part of 2D parts.

Only in case if **attrcadhelios.dat**-file contains P + ID specific content, the modifications will be carried out as described.

Modification 1: Create dummy article

Every part type is classified in HELiOS. For each of the plant engineering classifications one article master is created, whose component type is (COMPONENT TYPE) a P + ID dummy article. The type identifier is **K**; the appropriate workflow is used.

The attribute Component type (COMPONENT_TYPE) will be extended to type P + ID dummy article accordingly.

Modification 2: Create additional item attributes

For each P + ID attribute, which should be transferred to a HELiOS product structure, an appropriate item attribute must be available on the part of HELiOS. Because of a high amount of P + ID attributes, only those are being created as item attributes which appear, as already mentioned, in **attrcadhelios.dat**.

For example, if attrcadhelios.dat contains the row

"hicad";"HICAD_PID_GERAET";"PID_GERAET";"STRING";

the item attribute PID_GERAET is created by type VARCHAR. The designation of the item attributes are freely selectable. The type illustration is as follows:

STRING VARCHAR

INTEGER INTEGER DOUBLE FLOAT

 $HICAD_PID_GERAET$ is one attribute key among many others which links to an P + ID attribute. In the Appendix topic you will find lists with valid attribute keys.

When item attributes are being created, they are provided with language-depending labels. The texts are read with the file **fldlgcode.txt** which can be found in AttDef-directory of PID/Libs-folder.

Summary

To prepare HELiOS for the transfer of the P + ID product structure including dummy articles, the following approach is necessary:

- 1. Determine which P + ID attributes should be used as item attributes
- 2. Create entries in attrcadhelios.dat-file for the item attributes

3. Open Manage Plant Engineering Data in HELiOS from DBPlantDataImport.exe

A schematic presentation of the processes described in Step 3 can be found here.

Links from symbols to other sheets will be updated

If you change a sheet number, for example when inserting a new sheet between already existing ones, the link on the discontinuation symbol will be changed automatically on this sheet.

Service Pack 1 2017 (V 2201)

Adjustable sheet dialogue

In the Create sheet dialogue beneath **Attributes with free values** you can now specify 6 own attributes. For this purpose the combo box contains attributes that can be used for title block symbols, but do not yet exist in the dialogue.

Create sheet: Enter mas	ster data		×
		Index Change	Date Name
P+ID project name:	ANRIBSP3		
File name (sheet):	\$000002		
Sheet number:	2		
Sheet index:	0		
DB project number:	02.06.2017		
Designation (all):			
Designation (sheet):			
Document No.			
Origin:		Attributes with free values:	
Replacement for:			
Replace by:		Comment Conjoint designation (RDS)	
	Date Name	Conjoint designation BL1	
Processed:		Conjoint designation BL1(L Conjoint designation BL2	
Checked:		Conjoint designation BL2(C	
Standard:			
ОК	Cancel Get sheet	Preset	

			Index	Change		Date	Name
P+ID project name:	ANRIBSP3						
ile name (sheet):	S0000003						
Sheet number:	3						
Sheet index:	0						
)B project number:	02.06.2017						
Designation (all):							
esignation (sheet):							
ocument No.							
Drigin:			Attribute	es with free value	s:		
Replacement for:			Reserv	ve R01	•	Exp1	
Replace by:			Reserv	ve R02	Ī	Exp2	
	Date	Name	Reserv	ve R03	Ī	Ехр3	
Processed:			Reserv	ve R04	·	Exp4	
Checked:			Reserv	ve R05	-	Exp5	
Standard:			Comme	ent	•	200.101.345	
OK							

The example below shows a selection of attributes from the combo box with specific values in the associated input fields.

Description)	Source Symbol Library: UNKNOWN_						
Symbol type) Title block	Symbol name: [Symbol version:]	SFDINA3 1					
Dialogue type	Dialogue text		–				
Changed on 8							
Changed by 8							
Reserve R01	Exp1						
Reserve 02	Exp2						
Reserve 03	Exp3						
Reserve 04	Exp4						
Reserve 05	Exp5						
Reserve 06							
Reserve 07							
Reserve 08	[
		01					
		Can		02.06.2	017		
				Exp1 Exp2	¥Exp4 Exp5	240	
		CAO SI0000894-Fast	19	Exp3	200.101.34	5	Page
							1.
4	Index Changes 5	Date Name Origin 6		Repl.1. 7		Repl.b.	1.0

This has the following effects on the symbol mask and the title block:

The contents of the attributes appear in the title block, since text points have been appropriately set for the chosen

attributes. You can set the text points with the **Position dialogue text** function (P+ID > Symbol > Edit... >...). After calling the function, click on the title block. In the displayed list, choose the desired dialogue, e.g. Reserve R01. Specify a fitting point in the title block.

Major Release 2017 (V 2200)

Direct access to the master data of a P+ID sheet

You have now the option to edit the master data of a P+ID sheet without having to call the **Load sheet** dialogue. You have two options to open the master data dialogue:

• Via the context menu of a P+ID sheet (right-click on drawing frame)



• Via the pull-down menu of the Process function in the P+ID Sheet function group.



In both cases the dialogue window for the editing of the P+ID sheet master data will be displayed.

Utilisation of any HiCAD frame in P+ID

You can now use any HiCAD frame instead of the P+ID frames: To do this, activate the Use HiCAD frame checkbox I on the P+ID drawing tab of the Settings dialogue:

Libraries Database	
Drawing No. / P+ID drawing / Visualis	ation
(P+ID sheet format)	
O DIN A0 O DIN A1 ✓ Use HiCAD frame	
O DIN A2	
 DIN A3 Draw current paths DIN A4 portrait 	
DIN A4 landscz	
O User defined	

Which HiCAD frames instead of the P+ID frames are to be used can be set in the Configuration Editor. There you can also specify the text key representation in the HiCAD frames.

For each P+ID frame in DIN format you can find one entry in the configuration structure (Plant Engineering > P+ID > DIN frame in P+ID):



Now you can enter the location of the frame that you want to use instead of the P+ID frame into the data record.

Also, please note that the ID of the text key representation (the assignment of the HiCAD attributes used in the title block to the P+ID dialogue types) must be unique! These text key representations with their IDs can be found at **Plant Engineering** > P+ID > Text key representation.



To view and change the assignment, you need to display the list by clicking the ... button at Assignment >



The following syntax is used in the list: The string starts with the HiCAD attribute (text point key) of the HiCAD frame, followed by a semicolon and the dialogue type of a P+ID attribute. The dialogue types for the P+ID attributes cab be found in the List of Dialogue Types.

You have the option to generate and use your own text key representations (with a unique, unambiguous ID) according to the above described syntax.

The HiCAD frames prepared in this way will behave like normal P+ID frames.

Hide current paths

If desired you can suppress the representation of current paths in the P+ID. For this to happen, deactivate the Draw

current paths checkbox on the P+ID drawing tab of the Settings dialogue. This change will affect all sheets of the project.

Interfaces

Service Pack 2 2017 (V 2202)

IFC - Enhanced attribute mapping

For the configuration of IFC exports and imports with the **Configuration Editor** at **Interfaces > IFC > Attribute mapping configuration** you have now the option to assign individual mappings for each IFC type.

In the IFC object hierarchy you can find new nodes beneath **Elements** (IfcRoot objects) and **Element types** (IfcObjectType objects).

The hierarchy level will be considered in the process; that is, for instance, a mapping for. "IfcElement.Name" will affect all elements in the hierarchy beneath "IfcElement", a mapping for "IfcBeam.Name" will only affect "IfcBeam".



NCX-Export - New setting options

The NCX Interface dialogue window now offers some new options.

NCX Interface					×
Selected parts Selection list All parts					
General					
Maximum bore diameter:	10	mm	🔵 Ignore		
Milling cutter width for free tool paths	0	mm	Write		
Maximum bore depth	0	mm	Milling cutter width	1	mm
Machine type:			Milling depth	1	mm
Angle View angle		8	Thread description		
			With core hole		
🔘 Machine angle					
			🖉 Without core hole		
Name of NCX file					
Write all parts into one file					
Order number or Drawing name + Iten	n number				
💿 Only item number					
💿 From FTD file					
Name of DXF cross-section file:					
Cross-section designation + Item num	ber				
Only cross-section designation					
💿 Only item number					
💿 From FTD file					
Behaviour for two cut planes					
Theoretical lengthening of one cut pla	ane + saw cut				
⊘ Two saw-cuts					
Output itemized series beams as one	part				
🔽 Comments 🔫					
			ОК		ancel

Maximum bore depth

This parameter enables you to separately define processings through two walls. To do this, you enter a distance from which the processings are to be applied, e.g. from a beam thickness of 20 mm 2 bores are to be created.

Comments

If you deactivate this checkbox, the output of comments in the lines of the NCX file will be suppressed. This can make sense in particular cases, e.g. if the software used for the import of the files cannot read comments (e.g. UNLINK).

DSTV-NC interface - New options for letterings

When generating the NC data, the position of the lettering can now also be at the **Bottom (Flange)** and the **Back** (Web). The dialogue window now offers additional options for this:

- Letterin	9			- Letterin	ig		
Parts:	✓ Beams+Profiles	✓ Plates	Contact surfaces	Parts:	Beams+Profiles	✓ Plates	Contact surfaces
Position:	Web 🔻	Front -		Position:	Flange 🔻	Тор 🔻	
	x: 300	Front			x: 300	Тор	
	x: 500	Back			x: 500	Bottom	
Text:	Item number		•	Text:	Item number		•
Font size:	10			Font size:	10		

DSTV-BOM - Suppress output of bolts and screws

The dialogue window for the output of DSTV-BOMs contains the new Write S records checkbox.

		IG1.SZA						
Bolt assignment file:								
	Not	olt config	uration file sele	ected				
		Jok Coring						
e name: 💿 HiCAD-	File Name	O F	IELiOS-Docur	ment Number + Inc	de 💿 HELiOS-Part Number + Inde>			
ettings: Number of (pre-)	decimal pla	ces/Lengt	hs		(Further settings:)			
Order No.:		8 💿	Free 🔘	(DSTV: 8)	Separator:	3 🔘	# 🧿	& 🔘
Б. : N	20	4 🔘	Free 🔘	(DSTV: 3)	Write N records:			1
Drawing No.:	3 💿	40	1100	(0011.0)	White N Tecolus.			
Drawing No.: Comment:	3 🔘	6 💿	Free O	(DSTV: 6)	Write S records:			v
- Comment:	3 🔘							
- Comment: Designation:	3 🔮	6 🔘	Free 🔘	(DSTV: 6)	Write S records:			J
Comment: Designation: NC file name:	3 🔮	6 💿 35 💿	Free 🔘 Free 🔘	(DSTV: 6) (DSTV: 35)	Write S records: Write only separator in record 0:			V
	3 🔘	6 (a) 35 (a) 11 (a)	Free () Free () Free ()	(DSTV: 6) (DSTV: 35) (DSTV: 11)	Write S records: Write only separator in record 0: Write zero values:			V

This checkbox determines whether bolts and screws are to be output (activated) or not (deactivated).
Service Pack 1 2017 (V 2201)

Update to CADfix 11 SP1

With the CADfix update to Version 11 Service Pack 1 the following format versions are available in HiCAD: NX 11, Creo 4, SOLIDWORKS 2017.

Also, the export to the formats DXF and DWG has been speeded up significantly for large files.

IFC export: Transfer part structure

For IFC exports you can ensure by activating the **Transfer part structure** option that the hierarchy of the part structure will be preserved. If the option is deactivated, the structure will be broken up.

Only export visible parts (for CADfix formats)

You can now activate the **Export displayed parts only** to export only parts that are visible in the active HiCAD view. With the release of Service Pack 1 this option has been integrated in all CADfix formats. These comprise STEP, AutoCAD (*.dxf und *.dwg), IGES, VDAFS, CatiaV4 and CatiaV5, ACIS, Parasolid, ProE, JT and PLMXML.

5TEP	*
Parts to be exported: All	
- Thread body	
🔘 Do not transfer	
O As separate parts	
United with parent part	
🔲 One file per part	
Break up part hierarchy	
Split up unconnected parts	
Transfer layers	
✓ Transfer colours	
Unite sheets	
Export free points	
Export free edges	
Export sketches	-
Export standard parts	
Export fits information via surface colour	
Export displayed parts only	+
▼ STEP (*.stp)	•
Save Cancel	=

NCX export of unconnected multi-part beams (via HiCAD or HELiOS Spooler)

For NCX exports you have now the option to treat itemized, unconnected multi-part beams as one single part when generating the NCW files.

For this to happen, you need to activate the **Output itemized series beams as one part** option at the bottom of the dialogue window.

NCX Interface					×		
Selected parts Selection list All parts							
(General)			(Letteringe)				
	40				1		
Maximum bore diameter:	10	mm	🔘 Ignore				
Milling cutter width for free tool paths	0	mm	 Write 				
Machine type:			Milling cutter width	1	mm		
🖲 Camprox 🔿 Camaeleon			Milling depth	1	mm		
Angle			(Thread description)				
💿 View angle			Pitch				
🔘 Machine angle			With core hole				
			💿 Without core hole				
Name of NCX file			<u>к</u>		\equiv		
Write all parts into one file							
Order number or Drawing name + Iten	n number						
💿 Only item number							
💿 From FTD file							
Name of DXF cross-section file:							
Cross-section designation + Item num	ber						
Only cross-section designation							
💿 Only item number							
💿 From FTD file							
(Behaviour for two cut planes)							
Theoretical lengthening of one cut pla	ane + Saw cut						
Two saw-cuts							
	_						
Output itemized series beams as one	part						
			(ок		Cancel		
		_					

The export to the NCX format can now also be performed via the **HELiOS Spooler**.

3-D DXF/DWG: Import texts

When importing 3-D files from AutoCAD (DXF, DWG) you can activate the **Take texts from model** checkbox to transfer the annotations of the AutoCAD model to HiCAD.

AutoCAD
Convert FFS to analytical surfaces
Import layers
Import colours
🔲 AutoOptimise
Take texts from model
AutoCAD files (*.dxf, *.dwg)
Open Cancel

The texts will be imported as part annotations with leader line. Before the import, their appearance can be influenced via the annotation settings for texts with leader lines in the file ...\sys\DXF_Importext.ftd (choose **3-D Dimensioning + Text > Text > Part annotation, with free text and leader line**).

DXF: Export sheet developments

Due to the switch to the new 3-D development (Version 2000), the current development parameters of the model drawing will be used when performing exports with the **DXF - Complete** functions.

The development parameters, e.g.

- Powder marking lines
- Bend lines
- Bend zones
- Bend radii
- Tooling info
- Dimensioning
- Processing direction symbols



Further information about sheet developments as DXF export can be found in the Online Help of the **Sheet Metal** module.

Parts4cad / BimCatalogs

The updating of manufacturer catalogues has been made easier. Clicking the **Refresh** button in the dialogue window removes old manufacturers and adds new ones in all catalogues in less than one minute.

Catalogues of particular manufacturers can be updated with the corresponding context menu function, which also takes less than one minute).

Major Release 2017 (V 2200)

Update to CADfix 11

With the update to CADfix 11 the following format versions will be available in HiCAD: CATIA V5 2016 (R26), SOLIDWORKS 2016, ACIS R26 (2016.0.1) and

Parasolid 28.0.

Access to BIMcatalogs.net by CADENAS

Access to 3-D BIM CAD models is now even easier. If you have Internet access, the product catalogue **BIM catalogs.net** by CADENASPartSolutions will be available to you. To access the catalogue, open the **Drawing** tab and

choose Insert Part > Exp. > BIMcatalogs

In this way, 3-D BIM CAD models can be conveniently imported to HiCAD by Drag & Drop, where they can then be processed further. The easy, intuitive operation spares you a lot of time that would otherwise be spent on searching for the right model, and increases the productivity of your Engineering department.



Direct call of eluCad from HiCAD

Use the eluCad state fu

ad **E** function to transfer parts directly to the EluCad software.

The transfer takes place externally via export of the parts to the NCX format. The restrictions of the NCX format apply here, too: An export of assemblies is not possible and only BOM-relevant parts will be exported. Other export settings will be the default values of the NCX interface.

The installation of eluCad will be found in the system automatically, no configuration will be required.

3DVS export for Kisters 3DViewStation

The 3D ViewStation Desktop of the Viewer provider KISTERS is a universal 3D-CAD viewer for native formats. Files from different CAD applications can be converted into common 3-D and 2-D formats (3D-PDF, IGES, JTOpen, 2D-PDF) and visualized in the 3DViewStation.

With HiCAD 2017 you can export drawings to the 3DVS format and exchange them for viewing purposes.



Also, a direct integration of the HiCAD file format (SZA and KRA) into the 3DViewStation has been achieved in cooperation with KISTERS.



NCX: Output series beams as one part

If you have activated the NCX export option **Output itemized series beams as one part** at the bottom of the dialogue window, series beams that have been subordinated to the assembly will not be exported as individual parts, but as one part, provided that an item number has been assigned.

NCX Interface					x
Selected parts Selection list All parts					
General	0.830				
Maximum bore diameter:	10	mm	🔘 Ignore		
Milling cutter width for free tool paths	0	mm	Write		
Machine type:		Milling cutter width	1	mm	
💿 Camprox 🔿 Camaeleon			Milling depth	1	mm
Angle			Thread description		
 View angle 			Pitch		
🔵 Machine angle			🔘 With core hole		
			🖉 Without core hole		
Name of NCX file					
Write all parts into one file					
Order number or Drawing name + Iter	m number				
💿 Only item number					
💿 From FTD file					
(Name of DXF cross-section file:)					
Cross-section designation + Item num	ber				
Only cross-section designation					
🔘 Only item number					
💿 From FTD file					
Behaviour for two cut planes					
Theoretical lengthening of one cut pl	ane + Saw o	cut			
Two saw-cuts					
	_				
Output itemized series beams as one	part				
			ОК	Ca	ncel
		_			

IFC import without feature data

For the import of IFC files you can deactivate the **Create feature** checkbox if you do not want to save the feature data after creation of the part in HiCAD. During IFC export, parts are generated via feature calculation. After creation of the part the feature data will be discarded if this option has been deactivated beforehand. This can be useful in large drawings, where the feature data may decrease the overall performance.

DSTV-NC export - Now with Favourites Management

The settings for DSTV export can now be saved as Favourites and re-used at any time. To do this, click the icon at the bottom left of the window. The Favourites for DSTV-NC export will be saved as XML files to the directory **Configuration**, **Favourites**, **SteelEngineering**, **DSTV-NC** of your HiCAD installation.

Favourites are saved to the same-named sub-folder of the directory in which the HiCAD Configuration database is also located. If you have installed HiCAD from the red DVD with the ISD default settings, this will be the folder ProgramData\ISD Software und Systeme\HiCAD *nnnn*, with *nnnn* being the HiCAD version, e.g. 2017.

More on Favourites Management can be found in the Manage Favourites topic of HiCAD Basics Help.

STEP export: Powder marking line output and fits information

Powder marking lines are now output by default in the STEP export. If you do not want this, you can deactivate this behaviour.

Furthermore, you can activate or deactivate the output of fits information via surface colour via a checkbox in the dialogue window. On the exported STEP part the diameter of the corresponding bore will be highlighted.

HELiOS Desktop

Service Pack 2 (V 2202)

Displaying of attributes of linked objects in masks and result lists

Various enhancements of the HELiOS Deskop allow an easy displaying of attributes of linked objects in masks or result lists.

The **New Articles and Documents tab (combined)** result list can be added to the UI in the Project or Folder Explorer and contains an overview of the attributes of linked articles and documents in one row.

	New Articles tab									
New Documents tab										
	New Articles and Documents tab									
New Objects tab										
	New Folder	s tab								
	New Article	s and Documents tab (combi	ned)							
Article / Docur	ment (Combined) ×	Documents × Articles	× Objects ×							
s 🐱 👼	Standard	• Y 🐺 🖳								
 ✓	Standard Document No.	P R Designation	Link designation with icon							
			Link designation with icon							
Image: Marked Signal Article No. SN-000001 SN-000001	Document No.	Designation	-							
SN-000001	Document No.	Designation Slip-on gear mechanism								

Two new virtual attributes of the result list configuration show the project and folder assignments of objects in article or document result lists.

[1	🚺 🔽 🔮 Document No.		VA_DocumentNumberWithIcon						
[٢	Release status	VA_DocumentReleaseStatus				
1	✓	V		۲	Folder assignments	VA_NamesOfAssignedFolders				
	v	~		۲	Project assignments	Project assignments VA_NamesOfAssigned				
[٢	Changed on	VA_ObjectChangedDate				
[Changed by				Changed by	VA_ObjectChangedUser				
47			St	anda	rd 🔹	▼ ¥ 🖳				
Rel	Do	ocum	ent N	lo.	Project assignments	Folder assignments	Open + Edit			
-	S DN-000001 PN-01-06-K		AN-100/06	(Free)						
O S		DN-0	00000	1	PIN-01-00-K	AN-100/00	-			
OS OS			00000	-	PN-01-06-K PN-01-06-K	AN-100/00				

The Mask Editor now offers the option to create article data fields in document masks and document data fields in show attributes article masks. in order to of linked objects in (detail) masks. This can be done with the context menu function New article data field (for document masks) or New document data field (for article masks), respectively.

Document No.	Document No. (HEL DOKUNUMMER)*	
Project No.:	Project assignment (PROJEKTZUORD)	Cut
Folder No.:	FOLDER ASSIGNMENT (MAPPENZUC	Copy Paste
ocument		Copy mask contents
Designation:	Designation (BENENNUNG)*******	Delete mask contents
		Select mask colour
	Date: Name:	Copy mask colour
Created:	Creation date User (HEL_U	Apply mask colour
Checked:	Checked on Checked by	Transfer mask colour to texts
Standard:	Standard cre Standard cre	New data field
idex		New article data field
iuex		New text field
Index creator:	Index creator (New list attribute
Index date:	Index date (IN	Properties
Index text:	Index text (INDEXTEXT)	

Result list button for opening of documents

To speed up access to documents, HELiOS now offers the option to assign document result lists of the Project Explorer or Folder Explorer context to buttons which allow an opening of documents with one click - either for editing or in read-only mode - in the linked application.

Doc	uments	×	Artic	:les	×	Objec	ts		×
47	e	Sta	andar	d		•	Y	K	ą
Rel	Documer	nt N	o. (Open +	Edit	Open,	read	-only	y
Os	OS DN-000001			6					
O S	DN-000	2	D						

For this purpose, the two attributes **UI_OpenEditItem** and **UI_OpenItemReadOnly** have been created, which simply need to be activated in the result list configuration.

Ava	ailab	le at	tribute	25	
ilter	:				×
) 0	ocur	ment			
•			Туре	Designation	Attribute name
				Sender	SENDER
				Subject	SUBJECT
v	~		۲	Open + Edit	UI_OpenEditItem
v	-		۲	Open, read-only	UI_OpenItemReadOnly
			۲	File size	VA_DocumentFileSize
1	-	-	۲	Redline	VA_DocumentHasAnnotat
1	1	1	٢	Document No.	VA_DocumentNumberWit

Revised Serial document input dialogue window

The Serial input function for documents has been redesigned and expanded.

Besides project selection you can now also assign folders and workflows directly via the settings of the dialogue windows.

You can specify via checkboxes whether imported source files are to be preserved or deleted in their original location. You can also specify whether the document data input mask is to be called for each individual file, or whether the serial input is to be done automatically without the mask.

Serial input	×
- Document N Number Ge User define Fixed text: Preview for 1st	d Start value for numbering: 1
- Configuratio	on for attribute initialization ————————————————————————————————————
- Further initia	alizations
Project: Folder:	PN-01-06-K, Order, Construction Documents 🛄 🚺 Folder-independent
Workflow:	general document (R)
Designation: Document type	e:
Show input	
	OK Cancel

The **Configuration for attribute initialization** can be expanded by the user, allowing him/her to select various configurations from the pull-down menu. In this way, recurring initialization patterns can be assigned with a few mouse clicks, avoiding manual definitions.

If ZIP files are to be added to HELiOS via serial document input, the input dialogue will provide an additional section for this purpose:

- ZIP archive	<u> </u>
Take over as one document	
Take over contained files as separate documents	
Take over archive and its files	

Expanded HELiOS-URLs

When using the HELiOS URL for object types, folders, user-defined types (materials, customers) and pipe classes are now also supported.

HELiOS Options: Avoid unwanted printing of notes documents

In some cases you may not want documents with created or accepted notes documents to be printed.

For such cases a new option has been added on the Print tab of the HELiOS Options dialogue window:

- Notes document:
- Document must be explicitly selected if a notes document for it has been created or accepted

The corresponding documents in the Print dialogue will be marked as such, are excluded from printing, and will only be printed after their explicit selection.

Print								
4	🐻 St	andard		•				
Print	Redlin	Document No.	She	Ind	Project			
1		DN-000211			20170805	×		
✓		DN-000212			20170805	×		

Service Pack 1 (V 2201)

Use of articles: Filter options and increased performance

The result lists for the use of parts or assemblies (parts where-used lists) can now be further refined by means of user-defined filters.

This allows you, for instance, to save search templates that will show you in which currently released assemblies a particular part with a particular index is directly or indirectly contained, or in which pre-mounted facade parts a particular sealing element has been used throughout different projects.

As is the case with the combined search, article classes and links can be considered. The latter is, for instance, relevant for a filtering for mechatronical items in mechanical engineering or electrical engineering BOMs, since mechanical engineering article are normally linked to a CAD document.

Also, a performance increase could be achieved here.

General Assignment	ts Input / Output					
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Configure filter for resu	ult list					
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Article info		Order quantity:				Aounting drawingpart WG drawing up to dat WG drawing not up to Aounting drw. released
Weight: Dimensions :	[kg]	Resourcing: Order note:				∕lounting drw. checkup└ 'art released 'art checkup 'ipeline-Isometry
						ipeline-Spool ipeline-Layoutplan
Index creator:		Created: Origin: Based on:				Drawing up to date Drawing released Drawing checkup Drawing not up to date Deleted Drawing part
4						

Favourites: Displayed index

If you click on the **Show objects** symbol in the **Favourites** window, the **Displayed object state** dialogue window will be displayed. Here you can choose whether the objects in the Favourites window are to be displayed with the index with which they had been added, or with their highest index (if any).

	Favourites			▼ +⊐ X
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	Re Number	Designation	Show objects	
-	Article (2)		1	
_		Gear wheel assembly	Konstrukteur1	
1	😳 😳 SN-000006	Gearbox housing	Konstrukteur1	
-	Document (2) -			
4	📀 🖻 DN-000005	Assembly drawing	Konstrukteur1	
4	🕑 🖻 DN-000007	Assembly drawing	Konstrukteur1	
Displayed object	ct state	5 4 1	1 DE	X
Only objects with	the below restrictio	ns for the utilized index v	will be shown. Other ob	ojects will not be shown.
Current state: C	Objects with the mo	st recent/highest index		
Concrete index				
				OK Cancel

Generate item numbers

The **Generate item numbers** function in the context menu for items of the product structure allows you to create item numbers for multiple selections of objects, with the option to specify a start value and an increment for this value.

Generate item numbers	×
Start value: 1	Increment: 1
E	OK Cancel

This procedure replaces the one used in connection with the "Product Editor" of older HELiOS versions.

Restore notes documents

The range of functions for Notes documents has been expanded by the option to restore rejected notes documents again.

In this way, changes can be applied to the first rejected and then accepted notes document without having to create a new notes document to be accepted.

Documents X	Notes document	Create notes document
😏 🐺 讷 Standard	Mark-up	Show notes document
Relei Document No.	Export file Import file	Edit notes document Delete notes document
€ Sta DN-000383	Assignments	Reject notes document
OSta [™] DN-000384 OSta [™] DN-000402	Classification	Accept notes document
OSta ■DN-000404 ON-000001	Create assignments Remove assignments	Restore notes document

Major Release 2017 (V 2200)

Print documents

The new Print dialogue window for Documents enables you to send print jobs for Documents from (also multiple selections) from one central and configurable dialogue:

DN-0000011DraughtHiCAD DrawingIn ProgreDN-0000213-D modelHiCAD Part/VariarCheckupDN-000031Assembly drawingHiCAD DrawingIn ProgreDN-0000413-D modelHiCAD Part/VariarIn ProgreDN-000051Assembly drawingHiCAD DrawingIn ProgreDN-0000613D ModelHiCAD DrawingIn ProgreDN-000071Assembly drawingHiCAD DrawingIn ProgreDN-0000813-D modelHiCAD DrawingIn ProgreDN-000091Production drawingHiCAD DrawingIn ProgreDN-00001013-D modelHiCAD Part/VariarIn ProgreDN-00001113-D modelHiCAD DrawingIn ProgreDN-00001213-D modelHiCAD DrawingIn ProgreDN-00001213-D modelHiCAD DrawingIn ProgreDN-00001213-D modelHiCAD DrawingIn ProgreDN-00001213-D modelHiCAD Part/VariarIn Pr	ocumentin	lo. She	Ind	Designa	ation	Document type	Release	123	Create derivatio	n with link
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DN-000004 1 3-D model HiCAD Part/Variar In Progre DN-000005 1 Assembly drawing HiCAD Drawing In Progre DN-000006 1 3D Model HiCAD Drawing In Progre DN-000007 1 Assembly drawing HiCAD Drawing In Progre DN-000008 1 3-D model HiCAD Part/Variar In Progre DN-000008 1 3-D model HiCAD Drawing In Progre DN-000009 1 Production drawing HiCAD Drawing In Progre Show Version Management DN-000010 1 3-D model HiCAD Part/Variar In Progre DN-000011 1 Production drawing HiCAD Drawing In Progre DN-000012 1 3-D model HiCAD Part/Variar In Progre DN-000012 1 3-D model HiCAD Part/Variar In Progre Print Document No. Sheet Index Project Folder Article View V DN-00003 1 PN-01-06-K	DN-000002	2 1		3-D mo	del	HiCAD Part/Varian	Checkup		Create follow-or	n sheet
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DN-000010 1 3-D model HiCAD Part/Variar In Progreprice DN-000011 1 Production drawing HiCAD Drawing In Progreprice DN-000012 1 3-D model HiCAD Part/Variar In Progreprice Convert Print Image: Standard	DN-000009	9 1		Product	ion drawing	HiCAD Drawing	In Progre	D	Sond file by E. M	-
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Print Standard • Print Document No. Sheet Index Project Folder Article View Image: Standard • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • <t< td=""><td>DN-000011</td><td>1 1</td><td></td><td>Product</td><td>ion drawing</td><td>HiCAD Drawing</td><td>In Progre</td><td></td><td>Print</td><td></td></t<>	DN-000011	1 1		Product	ion drawing	HiCAD Drawing	In Progre		Print	
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	Print Print Print Dc	2 1 Standard ocument No.		3-D mo • et Index	del Project	HiCAD Part/Variar	In Progre	Arti	icle	View
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	Print De V P V V V V V V V V V V V V V V V V V	2 1 Standard ocument No. DN-000003 DN-000004 DN-000005		3-D mod • et Index 1 1 1	Project PN-01-06-K PN-01-06-K PN-01-06-K	HiCAD Part/Variar	In Progre	Arti	icle	View [

In the process you can specify which documents are to be printed and which context (Article, Folder, Project) is to be relevant for the filling in of the title block.

OK

Cancel

A multitude of individual steps that would otherwise be required for the printing process can thus be done in one go. For instance, you have the option to directly print documents that are linked to a selected article:

€ SN-026026	1	Edit article master		
📀 🕥 SN-000001	0	Preselect article	F	roduct
📀 🕥 SN-000002	+	Add to favourites	4	Assembly
📀 🕥 SN-000003	100		1	Assembly
📀 🕥 SN-000004	686	Edit Workflow status	4	Assembly
📀 🕥 SN-000005	6	Assign roles	4	Assembly
📀 🕥 SN-000006	6	Edit attribute values	I	ndividual
📀 🕥 SN-000007	-944		I	ndividual
Number of data reco	-	Assignments	11	
	1	Classification	-	
Documents X		Assignments		
🖘 🐱 🍓 Stand		Where-used lists		
Re Document No.		Links 🕨	pe	Release
ON-000001		Input	g	In Progra
DN-00002	0	Create index	ariar	Checkur
DN-00003	0	Create index, with link	g	In Progra
DN-000004		and the second second	arian	In Progra
DN-000005	12	Create drawing index	g	In Progr
DN-000006	0	Create derivation	g	In Progra
DN-000007	0	Create derivation, with link	g	In Progr
DN-00008		•	ariar	In Progra
DN-000009	10	Output	g	In Progr
DN-000010	1	Show Version Management	ariar	In Progr
ON-000011		Print linked document	g	In Progra
DN-000012	6	Call report	ariar	In Progr
DN-000013	"NE	Call report	10	In Progra

The exact behaviour of the dialogue depends on the settings specified on the **Print** tab of the HELiOS Options dialogue window.

Print result lists

The function for the printing of result lists from the HELiOS Desktop via the Report Manager has been improved.

In the process, all attributes will be considered which have been assigned on the Report tab of the corresponding result list (configuration).



While attributes that are only shown in the result list of the are listed according to the print job, "hidden" attributes can be subsequently added in the Report Manager if desired.

In this way, "detours" via older template files can be avoided, which have therefore been removed from the system.

,	Assemt	olies in p	rogress	• 7	K 🛯								
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File Da	ata View	?											
<mark>≫</mark> HiCAD) Open	Save	Save set.	لمج Load s	Save as	Settings	Struct	L Quanti			Ex Exp.Hi	Exp.Text	Exp.HT
					-								
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S. DN-0	00002	1		3-D mode	1	Hi	CAD Part/V	ariant Ch	ckup	02	2.10.2006 15:58	02.10.2	006
S. DN-0	000026	1		Gear whe	Settings								X
S. DN-0	000025	1		Productio	Gettings								
S. DN-0	000023	1		Productio				Cortion		(Structure L	iati		
S. DN-0	000021	1		Productio		Identical e	art ee arela (O)				tical part search	Chushus	(a)
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S. DN-0	000017	1		Productio		ort - Text	· · · · · · · · · · · · · · · · · · ·	icrosoft Ex		Export - HT	and the second second	- HiCAD	Print
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S. DN-0	000011	1		Productio		iden Teilename		/ Z-A		C			
S. DN-0	000009	1		Productio			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				se status		
S. DN-0	000007	1		Assembly		Stücklister Stufe	relevant				ment No.		
S. DN-0	000006	1		3D Mode						AB Sheet			
S. DN-0	000005	1		Assembly		Positionsn Positions-				48 Index	12		
S. DN-0	000003	1		Assembly		Positions- Guid	Id			AB Desig			t
S. DN-0	000001	1		Draught			1000		X		ment type		
						Bauteilken	inung		-		se status		
					13	Anzahl					hanged on		
										48 Creat	ion date		
										AB User			

New Folder and Project selection dialogues

On the left hand side of the Folder and Project selection window you can now find three new tabs that allow you to assign Articles or Documents to Projects or Folders, as well as the assigning of Projects or Folders within their corresponding Project or Folder structures.

	Enter article					X
	Article					
		Pro	oject selection			
	Article No.: Project No.:		PN-01-06-K	Deinstein	→ ↓a, ↑a,)
	Folder No.:		🛛 🔋 bim_test3	Project type DXF drawing	Designation bim_test3	
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	Article info —	E			E	
	Material: Weight:					•
	Dimensions Comment:					
	Index —	Find			E	
	Index creato Index date: Index text:	3			nis	trator
	Index text.				F	
	C 2	List			D	Apply
-	Draft				OK Cancel	
			In Progres 22.09.	2016 19:27:51	22.09.2016 Administrato	

The **Structure** tabs show the hierarchical structure of the Projects or Folders, as shown in the corresponding Explorer.

If you click on the **Find** tab, the already Project or Folder search mask will be displayed. Here you can enter specific search criteria and choose an object by double-clicking the corresponding entry in the result list.

The List tab shows an alphabetical list of all Projects or Folders (without any hierarchical dependencies).



This new feature replaces the setting options for the list form and structure of Projects and Folders on the Display tab of the HELiOS Options.

Indication of new indices in structure versions

In the Product structure versions dialogue window, a yellow star symbol indicates whether there are indices for structure items at **Temporary** / **Highest Index** in the database that are newer than the ones that are shown in the currently displayed structure.

- Temporar Displayed o	y bject index:
	بال
	47 (
= 6)	SN-000002, , Clamping element, , In Progress
0	, 1, TN-51648, , Hex-socket set screw with flat point, DIN 913-M 10x12-
Ő	, 1, TN-51648, , Hex-socket set screw with flat point, DIN 913-M 10x12-
Ő	, 1, TN-51648, , Hex-socket set screw with flat point, DIN 913-M 10x12-
Ő	, 1, TN-51648, , Hex-socket set screw with flat point, DIN 913-M 10x12-
Ő	1, 1, SN-000010, , Guide sleeve, , In Progress, ,
Ő	2, 1, SN-000012, , Lock ring, , In Progress, ,
Ő	3, 1, SN-000013, , Protecting cap, , In Progress, ,
- Ö	4, 1, SN-000011, a, Spring guide sleeve, , In Progress, ,
50	Newer index 0014 Surfacing oin In Progress

Result list configuration

Besides the generally increased performance for result list configuration, some new options are now available:

In the window for result list configuration ("Adjust result list...") you can now load all result list representations created by the user with one mouse click via the **Result list display** pull-down menu and configure them in the window. It is no longer necessary to take the intermediate step via "Manage...".

You can use Drag & Drop to change the position of elements in result lists. When dragging columns, HiCAD will automatically scroll horizontally in the process.

Also, you can specify whether the attributes are to appear in centred, right aligned or left aligned position in the cell of their result list row.

Result list options

The new input field **Number of data records up to which the content is moved when scrolling** on the Result list tab of the HELiOS Options dialogue window allows you to specify how many result list entries are to be moved during scrolling. If the limit is reached, new displayed result list rows will be called in a "frozen" state.

HELiOS Options	×
General Input	Settings for result lists
Display Result lists Project and Folder structures Print Import/Export Workflow	 Show attributes of classification masks Show status info in object status column of linked objects list Allow direct editing in result list Show confirmation after direct editing of result list Number of data records up to which the content is moved when scrolling:
Log Database Document type Help	Object-specific Sort sequence of attributes: The sequence of attributes: Attribute
	 Load objects in list if "project-independent" was selected Query Always load Show objects Row height
	OK Cancel

This setting options makes sense as a "fluent" scrolling can be very performance-intensive in very long result lists.

General nput	Settings for result	lists	
Display	Show attributes of classi	Easting mealer	
les <mark>ult</mark> lists			
Project and Folder structures		ct status column of linked objects li	st
Print	Allow direct editing in re	esult list	
mport/Export	Attribute selection		x
Vorkflow	Type: Document	Filter:	
og	Designation	Attribute name	P
Jatabase	DOCUMENT_TYPEKEY	DOCUMENT_TYPEKEY	
Ocument type	DOCUMENT_WSDTYPE	DOCUMENT_WSDTYPE	-
łelp	Drawing origin	ZNRURSPRUNG	
	Drawing type	ZEICHNART	
	DRAWINGNUMBER	DRAWINGNUMBER	
	DRAWINGNUMBER TEXT	DRAWINGNUMBER_TEXT	
	DV STR Update	HEL_DV_STR_UPDATE	
	EPLAN_FILENAME	EPLAN_FILENAME	
	File changed by	HEL_FILE_GEAENDERT_USER	
	File changed on	HEL_FILE_GEAENDERT_DATUM	
	File name	HEL_DATEINAME	
	Format	FORMAT	
	HEL_ORIGINALFILENAME	HEL_ORIGINALFILENAME	
	Attribute description: -))))
		OK Canc	el

Also, the **Attribute selection** dialogue window for the specification of sort sequences in result lists has been revised.

Export and Import of settings

Individual settings of the HELiOS UI can be conveniently distributed among other users and workstations by selecting View > Settings > Export.



In the following selection dialogue you can specify for which UI areas the settings are to be exported:

Export
Select the components that you want to export:
Tab layout and Positions Tab layout and window positions (e.g. for Project Explorer, favourites list etc.) in main window of HELiOS Desktop.
Tab layout Tab layout within the windows (e.g. tab in detail dialogue, document tab in project Explorer etc.)
 Tab layout Tab layout Within the windows (e.g. tab in detail dialogue, document tab in project Explorer etc.) Result list templates Result list templates and contained result list representations for all result lists. QuickAccess Toolbar Commands on QuickAccess toolbar in HELIOS Desktop. Favourites Context sesult list in HELIOS Desktop. Context menu edits Context menu modifications
QuickAccess Toolbar Commands on QuickAccess toolbar in HELiOS Desktop.
Favourites Contents of favourites result list in HELiOS Desktop.
Context menu edits Context menu modifications
OK Cancel

After confirming with **OK** a .zip file containing all relevant system files will be stored.

Via **Settings > Import** this .zip file can be loaded on all other HELiOS workstations and thus be used as the new default UI configuration.

You can also specify during import in the dialogue for which UI areas the settings are to apply, and select only particular elements from a "complete package". For instance, you can import Favourites from one workstation or user without changing your result list settings or window arrangements. Furthermore, you have the option to import UI configurations when installing the HELiOS Desktop. In the Extended settings dialogue window of the installation mask you can import a UI configuration:

HELIOS HELIOS Interfaces		General			
System	data source	HeliosBauteil			
User		hicad			
Password		•••••			
√ Use	Vault Server	Address localho	st P	ort 9000	
SmartSe	earch-Server	Configuration			
Use	Spooler	Server			
Use Application Server		Address	P	ort	
, UI Configuration					

Display of notes documents in result lists

If you work with notes documents, the status of an existing notes document will be indicated in the document result list via the attribute Redline (VA_DocumentHasAnnotation) by means of an icon.

Docume	ents X Articles	s × Objects
4	Standard	•
Redline	Document No.	Creation dat
9	DN-000243	24.01.2017
	DN-000244	24.01.2017

Possible icons are:

033333

- A notes document exists for the document.
- The notes document linked to the document has been accepted.
- Image: The notes document linked to the document has been rejected.

New option for linked articles on 'Display' tab

On the **Display** tab of the **HELIOS Options** dialogue window you can now specify by activating or deactivating the **Detect linked articles for preview of documents** checkbox whether for the graphic preview of a document the list of all linked documents is to be loaded by default. Since this loading behaviour is very performance-intensive, you have the option to switch it off. In this case an article-independent graphic will be displayed.

HELiOS Options		×
 HELiOS Options General Input Display Result lists Project and Folder structures Print Import/Export Workflow Log Database 	Settings for display of windows Object detail Always show in foreground Show in foreground in search windows Show tabs for classification masks Show new contents in same window Article detail Shown usage levels:	
Document type Help	All Last set levels Graphic Indext Control of Contro	

Notes on license configuration of ERP interfaces

If you use HELiOS in conjunction with ERP interfaces, please note the following change:

- The license module "PPS Interface" has been renamed to ERP Connect".
- The module "PPS Special" is no longer available.

HELIOS in HiCAD

Service Pack 2 (V 2202)

Loading of HiCAD drawings from HELiOS dialogue windows

In older versions a direct loading of documents from HELiOS dialogue windows into HiCAD via the context menu function **Open + Edit** was not possible.



In such cases an error message was displayed, saying that the action is not possible.

From HELiOS 2017 Service Pack 2 onwards this action can be carried out without any problems.

If any modal HELiOS dialogues are still open, blocking the opening of documents, a message will be shown, asking you whether these dialogues should be closed to enable the opening of the documents:

Close modal dialogues and continue loading		
To be able to load the document in the current application process must be closed. Cancel or close modal HELiOS dia	n, all modal dialogues b alogues and continue lo	olocking the ading?
	Yes	No

Service Pack 1 2017 (V 2201)

NCW export

From Service Pack 1 onwards, a conversion of CAD parts to the NCW format via the HELiOS Spooler will be possible.

A new installation of HELiOS will automatically provide this option. For an update installation to SP1, a manual adding of the corresponding entry in the system file Hel_fileconvert.ini may be required (see also Notes on Conversion of .SZA Files via the Spooler.

Major Release 2017 (V 2200)

Marking of newer indices in the product structure

When transferring the product structure to HELiOS, or when displaying the **Product structure versions** dialogue, newer indices will be marked with a yellow star-shaped symbol.

Product structure versions	- • • 💌
- Temporary-	Original
Displayed object index: 💿 Highest index 🔘 Released index	Current state of product structure as saved
► 4 ►	ع 💽 🔸 الم الم
SN-025671 •	1 () SN-025671 • • •
SN-025671,,,,In progress	🖻 💣 SN-025671,,,,In progress
0, 1, SN-025672, a, Cylinder, In progress, ,	💭 0, 1, SN-025672, a, Cylinder, Released, ,
0, 1, SN-025672, a, Cylinder, In progress, ,	0, 1, 5N-025672, a, Cylinder, Released, ,
Newer index	

Load with index selection

When loading Documents and Articles via the **Combined search** dialogue you have now the option to activate the **Load, with index selection** checkbox.

If older indices exist for a selected document, they will then also be loaded into HiCAD via the following dialogue window.

	ssification	Document Classific	ation			Links
Proje	ument No. ect No.: er No.:	PN-01-06-K, Orde Folder-independe	er, Co		C -11 (Bauteil-Teilegeometrie Bauteil-Konstruktion Bauteil(e)-Konstruktion Documentation Part-Document Without drawing
			1.1			
Canrob regult						
Search result -						
	Standard	•				
	Standard QIndex	• • Designation	Standard designation	©Release status		Document No.
🔸 🕃 🐚 S		• Designation Pinion	Standard designation	©Release status In Progress	[_]Link description with icon ● Bauteil-Konstruktion	Document No.
↔ 🥃 💩 9 ②Article No. SN-000009			Standard designation	-		
** Image: Constraint of the second seco		Pinion	Standard designation	In Progress	4 ▶ Bauteil-Konstruktion	DN-000015
** Image: Control of the second		Pinion Guide sleeve	Standard designation	In Progress In Progress	 ▲ Bauteil-Konstruktion ▲ Bauteil-Konstruktion 	DN-000015
Image: Simple of the second		Pinion Guide sleeve Spring guide sleeve	Standard designation	In Progress In Progress In Progress		DN-000015 DN-000017 DN-000019
Image: Simple of the second		Pinion Guide sleeve Spring guide sleeve Lock ring Protecting cap	Standard designation	In Progress In Progress In Progress In Progress	 4▶ Bauteil-Konstruktion 4▶ Bauteil-Konstruktion 4▶ Bauteil-Konstruktion 4▶ Bauteil-Konstruktion 	DN-000015 DN-000017 DN-000019 DN-000021
Image: Second		Pinion Guide sleeve Spring guide sleeve Lock ring	Standard designation	In Progress In Progress In Progress In Progress In Progress	 ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion 	DN-000015 DN-000017 DN-000019 DN-000021 DN-000023
↔ 🐱 🐞 :		Pinion Guide sleeve Spring guide sleeve Lock ring Protecting cap Surfacing pin	Standard designation	In Progress In Progress In Progress In Progress In Progress In Progress In Progress	 ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion ◆ Bauteil-Konstruktion 	DN-00015 DN-00017 DN-00017 DN-00019 DN-00021 DN-00023 DN-00025
Image: Second state		Pinion Guide sleeve Spring guide sleeve Lock ring Protecting cap Surfacing pin Sealing washer	Standard designation	In Progress In Progress In Progress In Progress In Progress In Progress Released	 ◆ Bauteil-Konstruktion 	DN-00015 DN-00017 DN-00017 DN-00019 DN-00021 DN-00023 DN-00025 DN-00033

Performance

For standard parts transfer from the HiCAD catalogue to HELiOS a performance increase of up to 25% could be achieved.



The performance for the filling in of title blocks in drawing frames with HELiOS data has also been increased.

New data format - Conversion required for updates

HiCAD 2017 comes with the new 2-D figures archive with the file name extension .FGA. Please use <u>only</u> this new .FGA format. For the conversion of existing 2-D FIG files you can use the Converter_FIG_To_FGA.exe tool in the HiCAD\exe directory. You can also install this converter form the installation DVD.

When you perform an update to HiCAD 2017, the 2-D parts that are supplied with HiCAD by default (e.g. drawing frames) will be switched from FIG to FGA in different locations of the installation directory. Before their conversion, the data are saved in their original state in a folder or ZIP archive, respectively, to the "Szenen" and "Kataloge" directories. A LOG file in each directory records all converted files.

When you create an interface between HiCAD 2017 and HELiOS you will be prompted after a new or an update installation to adjust the database accordingly. The search for and management of 2-D parts will only be possible after a successful adjustment of the database and the conversion of the existing FIG files.

If you manage the HiCAD files in HELiOS, the following message will appear when you start HiDAD for the first time after a new or update installation of HiCAD 2017:

?	When you switch the CAD workstations to HiCAD 2017 you need to convert the format
4	of the saved 2-D parts from FIG to FGA Two steps are required for the conversion:
	1. Conversion of the database by confirming this dialogue.
	 Conversion of the saved 2-D parts with the "Converter_FIG_To_FGA.exe" program.
	Further information can be found in the Help
	Start database update for 2-D parts?
	Start database update for 2-D parts?

Click **Yes** to start the conversion of data in the database. This means that the linked 2-D part name contained in the data set will be changed from *.FIG to *.FGA. The database will then only search for FGA files. Therefore, the 2-D parts now need to be converted to FGA files by means of the Converter_FIG_To_FGA.exe tool.

If you have installed HiCAD 2017 for test purposes, you need to click **No** here. Older versions (before HiCAD 2017) cannot load FGA files. Please note that the database adjustment cannot be revoked!

HELiOS Spooler

Service Pack 2 (V 2202)

Support of multiple identical printer drivers

From HELiOS 2017 Service Pack 2 onwards you can install multiple ISD FilePrinters on the same system.

This allows an easy selection of different receivers and postprocessing of print jobs, without having to choose printers and postprocessings separately.

Conversions for SOLIDWORKS, AutoCAD and Inventor

From HELiOS 2017 Service Pack 2 onwards the HELiOS Spooler supports direct conversions from SOLIDWORKS, AutoCAD and Inventor into formats such as DXF, DWG, STEP and 3DPDF.

In AutoCAD the configuration file format PC3 (DevMode) is supported and, in Inventor, the creation of DXF files for Sheet Metal parts via the Spooler.

Service Pack 1 (V 2201)

HELiOS Spooler Admin Tool: Job statuses

If any print or conversion jobs that have been sent to the HELiOS Spooler cannot be processed, another attempt will be started half an hour later. The concerned jobs will first obtain the status **Failed** and will then be set to **Retry**:

PN-01-06-K: DN-000001	SZA	Chief designer	09.05.2017 08:52:18	09.05.2017 08:53:55	🚹 Failed	Conversion job
PN-01-06-K: DN-000003	SZA	Chief designer	09.05.2017 09:45:43	09.05.2017 09:51:03	Retry	Conversion job

NCW export

From Service Pack 1 onwards, a conversion of CAD parts to the NCW format via the HELiOS Spooler will be possible.



A new installation of HELiOS will automatically provide this option. For an update installation to SP1, a manual adding of the corresponding entry in the system file Hel_fileconvert.ini may be required (see also Notes on Conversion of .SZA Files via the Spooler.

The conversion to the NCX format is only possible for itemized Steel Engineering parts.

HELiOS PrintClient: New options

The HELiOS PrintClient now offers two additional setting options that allow to sent print jobs multiple times or send them as batches:

HELiOSPrintClient	
😻 PrintPlot 📄 Log	
Document	Output-date-time
Document No. Type Format Status	Immediate 04.05 - 11:03:21
PN-01-06-K: DN-000384 Adobe PDF - Document .PDF	C Options
	04 May 2017
	Bill of Materials (BOM)
	Quantity List
Remove jobs after sending Send jobs as batch	Banner
	Output banner
	Host name : DEDTM129
Output device	User : Administrator
C Assign printer automatically	
Receiver : DEFAULT	
C Use default printer	
\\Srv011\dedtm-mfp01	Time V Insertion point E abc
C Options	Iransparent M
Printer name : ISD FilePrinter PS	Тент тент тент Кесеіver
Paper size : Automatic selection	
Paper tray : Automatically Select	Priority Margins [cm]
ICD El-Dista DC (Perturnation)	1 Left: 0.00
ISD FilePrinter PS (Postprocessing)	1 (min) - 99 (max) Right: 0.00
Configuration: No postprocessing	1 (min) - 99 (max) Right: 0.00 A
Orientation Scale Copies	Colour Bottom: 0.00
A Portrait Auto	
C Landscape 1:	Colour 🔽 Set to minimum
C Auto Scale line widths	C B/W
End	
criu	

Remove jobs after sending

If this checkbox has been activated (default setting), print jobs will be deleted from the list after their sending and processing. Deactivate this checkbox if you want print jobs to remain in the list after their sending and processing. This allows you to repeat the print job directly in the PrintClient dialogue window.

Send jobs as batch

If this checkbox has been activated, series of print jobs sent from your Client will be sent and processed as a batch, without interfering with print jobs of other Clients.

Major Release 2017 (V 2200)

Server settings

The Server settings of the HELiOS Spooler Admin Tools have new options that allow you to define how to proceed with the deletion of done print jobs from the system.

- Auto-cleanup of done jobs -	
Clean-up check interval (min.)	: 60
Max. number of jobs:	100
Max. days for jobs:	7
Remove failed jobs	

Other export formats

The following formats can now be exported via the Spooler: 3dvs, VRML, U3D und STL.

HELiOS MS Office Interface

Major Release 2017 (V 2200)

Edit Documents

If a read-only document has been opened in an Office application, you can click **Edit** to set it to an "In progress" state. In this state the document will be locked against editing by other users.



Support of external references in Excel

The HELiOS-MS Excel interface now also supports external references.

If an Excel document contains references to external files, these can be recognized by HELiOS and the structure can be taken over accordingly.

HELiOS Vault Server

Service Pack 1 (V.2201)

Enhanced replication options with VSKonfig.exe

If you are using a network of several Vault Servers exchanging replicated files, one of them must be defined as the central Vault, and the other ones as secondary Vaults.

For this purpose the VSKonfig.exe tool now contains the additional options: In the **Replication mode** pull-down menu on the **Remote Servers** tab you can define a Vault as **Central Vault** or **Secondary Location**, and specify whether no replication is to be performed or an attribute-controlled one.

VSKonfig			
ervice Manager L	ocal Server Re	mote Servers	
Replication mode			No replication
Logical name	Address	Port	Central Vault
ISDVAULT_DE	Test012	9000	Secondary location Attribute-controlled replication
<			>
			Add Edit Delete
			OK Cancel





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