



WELDCUBE PREMIUM

RELEASE 2.9

RELEASE DESCRIPTION

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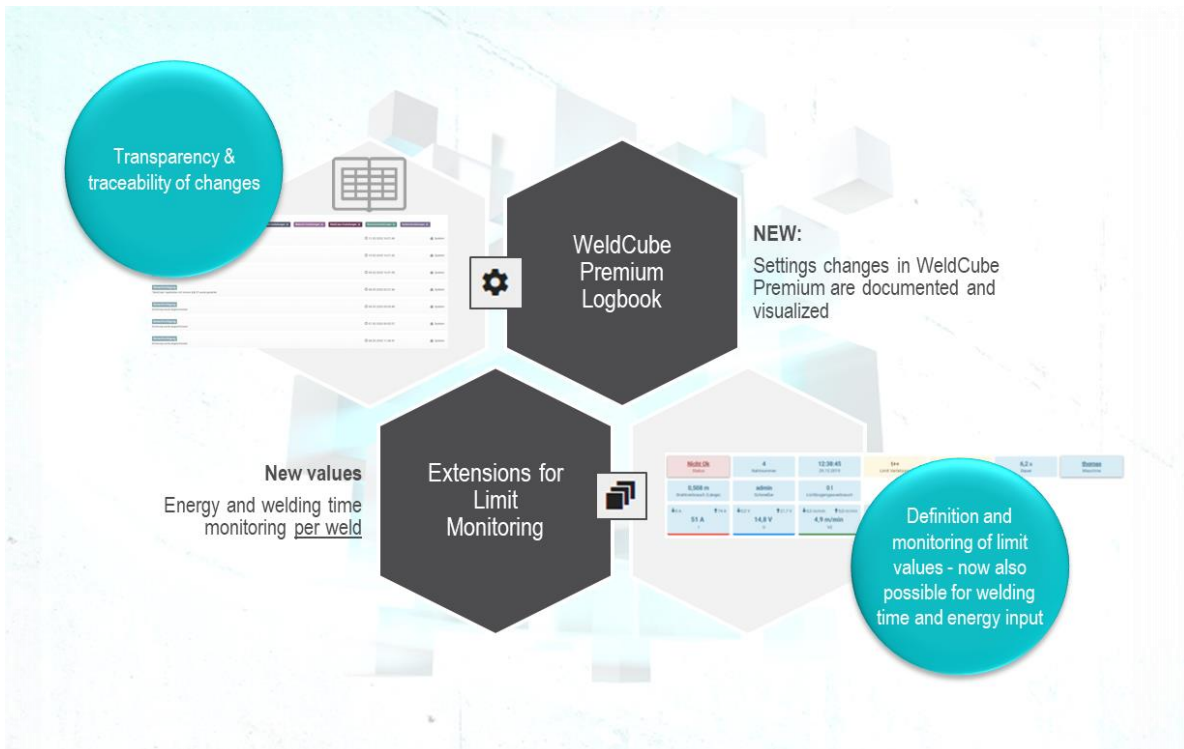
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1 OVERVIEW: NEW FUNCTIONS

Releases 2.7, 2.8 and 2.9 provide new functions, extensions and improvements for WeldCube Premium. Prerequisite for using the full functionality of release 2.8 or higher with TPS/i is **TPS/i firmware version 2.3.0 or higher**.

If TPS/i Release 2.3.0 or higher is used with WeldCube Premium, a WeldCube Premium Version from 2.5.97 is required, otherwise welds in WeldCube Premium - although they are present - will not be displayed.

The 2 main new possibilities are shown within the following picture:



The following list provides an overview of all news / changes functions with release 2.7, 2.8 and 2.9:

- / General
 - / WeldCube Premium logbook
 - / WeldCube Premium user management – activate / deactivate all rights together
 - / Adjustments to submenu texts in the administration
- / Set values
 - / Display of job name in several visualisations
 - / Characteristic curve property for jobs added
- / Actual values
 - / Adapted tiles for weld details
 - / Energy value display for welds
- / Part management & reporting
 - / Part monitoring now within the menu item parts
- / Limit values / limit monitoring
 - / Limit monitoring for welding duration and energy
- / Data interface / API / file export
 - / Limit monitoring for welding duration and energy
 - / Improvement for welding file export

2 GENERAL

2.1 WeldCube Premium logbook

To document changes in the settings of WeldCube Premium there is now the new logbook with release 2.7. System starts and changes in the settings of the automatic cleaning are documented, extensions are planned.

The logbook can be found in the administration menu under "Info" "Logbook" and is available in all WeldCube Premium languages:

The screenshot shows the WeldCube Premium logbook interface. The left sidebar contains the 'Administration' menu item, which is highlighted with a red box. A red arrow points from this box to the 'Logbook' option in the 'Info' dropdown menu at the top right. The main content area displays the 'LOGBOOK' with a date range filter set to 'Last 7 days' and a list of log entries categorized by type (Error, Notification) and time.

Design changes may still occur in the course of the planned extensions.

2.1.1 System start-up

An entry is made at each system start-up:

The screenshot shows a logbook entry for system start-up. The entry is a notification titled "Application "WeldCube" started with version 2.9.9" with a timestamp of 4/14/2020 9:35:34 AM and the source "System".

2.1.2 Restart / shutdown

As soon as a restart or shutdown is triggered, a logbook entry is also created:


The screenshot shows a logbook entry for system restart. The entry is a notification titled "Restart of the WeldCube was triggered" with a timestamp of 4/14/2020 9:34:50 AM and the source "admin".

This entry is already written before the actual command, so that it can happen that an entry exists but the system cannot be started due to an error.

It is technically impossible to write the entry afterwards because of the short time until a restart (accessibility of the database).

2.1.3 Host name

If the host name is changed or the WeldCube Url is modified, a logbook entry is created:


Host name 🕒 4/15/2020 9:53:29 AM  admin

Number of differences: 1 ^

"Hostname" was changed from **weldcube** to **alpha-weldcube**

2.1.4 Machine configuration

If changes are made to the machine connection (previously "Machine configuration" - for details see chapter 2.3), logbook entries are created:


Machine connections 🕒 4/15/2020 9:57:42 AM  admin

Number of differences: 1 ^

Added TPS/i-ip: **10.5.112.3**

2.1.5 Machine visibility

If the visibility status of machines is changed, this can be seen in the logbook:

Machine visibility 🕒 4/15/2020 10:03:52 AM  admin

Number of differences: 1 ^


Machine visibility of TPS/i-machine **28157932** was changed to **visible**

2.1.6 Machine events: error, warning, notification

All machine events that occur in a system notification are recorded in the logbook. For this purpose, the system notifications have been extended to hold and translate more data:

Categories **All** | None

- Notifications X
- Warnings X
- Errors X

Error 🕒 4/14/2020 8:25:03 AM  System

There were problems reading the welding data of TPS/i with serial number **28157932**, which may cause an incomplete welding documentation. Make sure that the machine software is up to date. If the problem persists please consider contacting support.

2.1.7 Hall plan administration

Logbook entries are made when creating, editing and deleting hall plans:

Hall plan administration Number of differences: 1 ^	🕒 4/21/2020 9:06:52 AM	👤 admin
Hall plan Test Lab - "Image" was changed		

2.1.8 Settings for automatic clean-up

If changes are made to the settings for automatic clean-up, an entry is made in the logbook:

Automatic cleanup Number of differences: 1 ^	🕒 4/21/2020 9:09:45 AM	👤 admin
"Delete after" was changed from 12 to 13 months		

2.1.9 Backup & backup settings

If a backup is performed, an entry is created. And logbook entries are also created for all changes in backup settings:

Backup Number of differences: 1 v	🕒 4/21/2020 9:14:22 AM	👤 admin
---	---------------------------	---------

2.1.10 Restore settings

WeldCube Premium restore operations are logged as follows: when triggering the restore, an auxiliary file is created with all data. During the restore process, the status in this file is adjusted. At the next normal start-up, the file is read out and the logbook entry is created - depending on the status, there will be a(n)

- / notification
- / warning
- / error

Notification An application restore was executed successfully with settings: "Path" <code>\path\to\backup</code> , "Username" admin and "Restore system settings" deactivated	🕒 4/21/2020 11:35:23 AM	👤 admin
--	----------------------------	---------

2.1.11 Updates

There are several triggers for updates:

- / Upload & start of an application update
- / Changing the settings for automatic updates
- / Finding an update

Notification An update was installed successfully.	🕒 4/21/2020 9:36:51 AM	👤 System
Notification The system is currently being updated to a newer version.	🕒 4/21/2020 9:35:30 AM	👤 System
Notification Software update for "WeldCube" from version 2.9.9 to version 2.9.48 was triggered	🕒 4/21/2020 9:35:30 AM	👤 admin

2.1.12 Network settings

Changes in network settings result in logbook entries:

Network Number of differences: 1 ^ "Alternate DNS address" was changed from 10.1.1.60 to 10.1.1.2	🕒 4/21/2020 9:42:20 AM	👤 admin
--	---------------------------	---------

2.1.13 Web API settings

Web API setting changes are also documented in the logbook:

Web API Number of differences: 1 ^ API Key 9b92****24c6 "Notes" were changed from - to API Notes	🕒 4/21/2020 9:18:49 AM	👤 admin
---	---------------------------	---------


2.1.14 PDF export

Changes to settings for PDF exports (e.g. part report) are recorded in the logbook:

Part report export Number of differences: 1 ^ "Trigger - Scheduled" type was changed from Time of day to After hours of inactivity	🕒 4/21/2020 9:47:52 AM	👤 admin
---	---------------------------	---------

2.1.15 Statistics report settings

Logbook entries are created for all changes in the settings for statistics reports:


Statistics reports 🕒 4/21/2020 9:51:24 AM  admin

Number of differences: 5 ^

- Statistics report with "Id" 19bf****dec4 and "Name" **Report 1** was created
- Statistics report **Report 1** - "Recipients" initially set to -
- Statistics report **Report 1** - "Interval" initially set to **Daily**
- Statistics report **Report 1** - "Measurement system" initially set to **Metric**
- Statistics report **Report 1** - "Language" initially set to **German**

2.1.16 Welding export

When editing the export settings, a logbook entry is made for each change:

Welding file export 🕒 4/21/2020 9:57:17 AM  admin

Number of differences: 1 ^


- XML Export - "Filename pattern" was changed from - to `\{MachineSerialNumber}\{Date}\{SeamNumber}_{PartSerialNumber}_{PartArticleNumber}_{DateTime}`

2.1.17 Part administration & identification

Administration


A logbook entry is made for the following activities in the part administration:

- / Creating new parts
- / Changing parts
- / Deleting parts

Part administration 🕒 4/21/2020 10:00:14 AM  admin

Number of differences: 2 ^

- Part type with "Item number" 2004 was changed
- "Part name" was changed from **Fahrradrahmen** to **Cycleframe**

Part administration 🕒 4/21/2020 10:03:41 AM  admin

Number of differences: 1 ^

- Part type with "Item number" **Validation part** was removed


2.1.18 User administration

User configuration

The following changes to users are tracked:

- / Create
- / Delete
- / Change

Only the most important information is saved (including changes made using Central User Management). User settings such as language, standard or measuring system are NOT saved.


User administration 🕒 4/21/2020 10:12:51 AM  admin

Number of differences: 1 ^

User **testUser** with "Email" -, "Role" **User** and Ldap enabled was created

User roles

Changes to user roles are saved - even those made using Central User Management:

User roles 🕒 4/21/2020 10:16:47 AM  admin

Number of differences: 43 ^

User role with "Name" TestRole was created	"Configuration" was initially Enabled
"Configuration - Machines" was initially Enabled	"Configuration - Machine visibility" was initially Enabled
"Configuration - Part administration" was initially Enabled	"Configuration - Part identification" was initially Enabled
"Configuration - Welding wires" was initially Enabled	"Configuration - Welding gases" was initially Enabled
"Configuration - Process tape" was initially Enabled	"Configuration - Backup location" was initially Enabled
"Configuration - Restore" was initially Enabled	"Configuration - Welding file export" was initially Enabled
"Configuration - Automatic cleanup" was initially Enabled	"Configuration - Updates" was initially Enabled
"Configuration - Part report export" was initially Enabled	"Configuration - Notification" was initially Enabled
"Configuration - Web API" was initially Enabled	"Configuration - Statistics reports" was initially Enabled
"Configuration - User administration" was initially Enabled	"Configuration - User roles" was initially Enabled
"Configuration - LDAP" was initially Enabled	"Configuration - Central User Management" was initially Enabled
"Configuration - Date & time" was initially Enabled	"Configuration - Currency" was initially Enabled
"Configuration - Restart/Shutdown" was initially Enabled	"Configuration - Network" was initially Enabled
"Configuration - Host name" was initially Enabled	"Configuration - Logbook" was initially Enabled
"Show personal data" was initially Enabled	"Machines" was initially Enabled

LDAP

LDAP setting changes are documented with a logbook entry:

LDAP

Number of differences: 1 ^

"LDAP server" was changed from - to **10.1.1.60**

🕒 4/21/2020 10:25:27 AM

👤 admin

Central User Management configuration

Changes to Central User Management configuration settings are visible as a log entry:

CENTRUM

Number of differences: 1 ^

"CENTRUM server url" was changed from **https://centrum.fronius.com:4431/** to -

🕒 4/21/2020 10:27:55 AM

👤 admin

2.1.19 Currency settings

If the currency is changed / exchanged, a logbook entry is made:

Currency

Number of differences: 1 ^

"Currency type" was changed from € to \$

🕒 4/21/2020 10:39:12 AM

👤 admin

2.1.20 Date and time

Logbook entries are created for all changes on the Date & time page:

Date & time

Number of differences: 1 ^

"Synchronise with time server" was **deactivated**

🕒 4/21/2020 10:40:16 AM

👤 admin

2.1.21 Welding wires

Logbook entries are created when settings for welding wires are changed:

Welding wires

Number of differences: 4 ^

"Costs" of wire **AZ61A[Ø 1.2]** were changed from 0 to 5

"Density" of wire **AZ61A[Ø 1.2]** was changed from 0 to 1

"Costs" of wire **Steel[Ø 1]** were changed from 0 to 3.7

"Density" of wire **Steel[Ø 1]** was changed from 0 to 7850

🕒 4/21/2020 10:52:06 AM

👤 admin

2.1.22 Welding gases

If settings are made for welding gases, log book entries are created:

Welding gases

Number of differences: 1 ^

"Costs" of gas C1 100% CO2 were changed from 0 to 0.1333

🕒 4/21/2020 10:37:37 AM

👤 admin

2.1.23 Notification settings

Changing notification settings creates the following logbook entry:

Notifications

Number of differences: 3 ^

"Sender address" was changed from - to *****@fronius.com

"Email recipients" was changed from - to *****@fronius.com

"Mail server" was changed from - to *****

🕒 4/21/2020 11:13:11 AM

👤 admin

2.2 WeldCube Premium user management

2.2.1 Differentiation in case of user changes

Since when using Central User Management to manage - among other things - WeldCube Premium users, this system can also make changes, the following user changes are distinguished with release 2.8:

- / Changes by user
- / System changes
- / Central User Management changes

2.2.2 Activating / deactivating all rights together

It is now possible to activate or deactivate all rights for a user role together. With "All" all rights are set, with "None" no rights are set.

Role name *

All | None

2.3 Adjustments to submenu texts in the administration

Menu texts have been adapted in the administration submenu with release 2.7:

- / Corrections singular / plural
- / Remove irrelevant entries for drop downs
- / Renaming of the "machine configuration" to "machine connections"

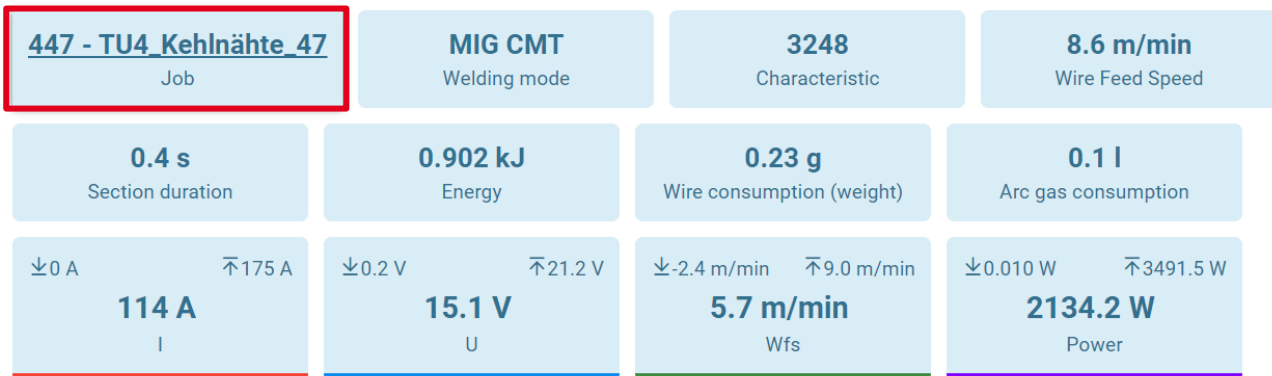
3 COMMAND VALUES

3.1 Display of job name in various visualizations

3.1.1 Welding details

In addition to the job number, the job name (if available) is now also displayed on the detail page of welds - next to the respective sections:

Section 1



Note:

- / With WeldCube Premium Release 2.7, this function is available for TPS/i
- / With WeldCube Premium Release 2.8, this feature is available for TPS/i and TPS.

3.1.2 Welding details PDF export

In the PDF export of welds, the job name is also displayed with each section summary. The maximum length is limited to 17 characters. If this maximum number of characters is exceeded, an abbreviation with "..." is used.

Section 1

Section values

Job name	TU4_Kehlnähte_47
Job number	447
Wire consumption (length)	0.038 m
Wire consumption (weight)	0.23 g
Arc gas consumption	0.1 l
Welding mode	MIG CMT
Characteristic	3248
Wire Feed Speed	8.6 m/min
Arclength correction	1.0
Pulse/dynamic correction	0.0
Section duration	0.4 s
Energy	0.902 kJ
I	114 A
U	15.1 V
Wfs	5.7 m/min
Power	2134.2 W

Limit monitoring

Welding current command value	166 A (37 A/-37 A)
Max. duration of current deviation	0.2 s
Voltage command value	16.7 V (2.0 V/-2.0 V)
Max. duration of voltage deviation	0.2 s
Wire speed command value	7.6 m/min (2.9 m/min/-2.9 m/min)
Max. duration of wire speed deviation	0.2 s
Reaction	Warning

3.1.3 File export

- / The CSV export has been extended by job number & name - this brings a version increase to version 5
- / JSON & XML have already exported the whole job so far - no adjustment was necessary

3.2 Characteristic curve property added for jobs

The "property" value of the characteristic curve is visible in the "job details" and "edit job" views with release 2.7:

3.2.1 Detailed view

[← Back to overview](#) [🔍 Find welds](#) [☰ History](#) [✎ Edit](#)

Common	
Name	yard naehte
Gas	I1 100% Ar
Wire	CEN: AISi 5, AWS: ER 4043
Wire diameter	1.2 mm
Characteristic	3041
Property	universal

3.2.2 Editing mode

[← Back to overview](#) [Cancel](#)

Common	
Name	<input type="text" value="yard naehte"/>
Gas	I1 100% Ar
Wire diameter	1.2 mm
Wire	CEN: AISi 5, AWS: ER 4043
Characteristic	3041
Property	universal

4 ACTUAL VALUES

4.1 Adjusted tiles for welding details

On the welding details page the tiles have been adjusted as follows with release 2.7:

- / A new tooltip should explain what is behind the values
- / Changed icons for Min and Max

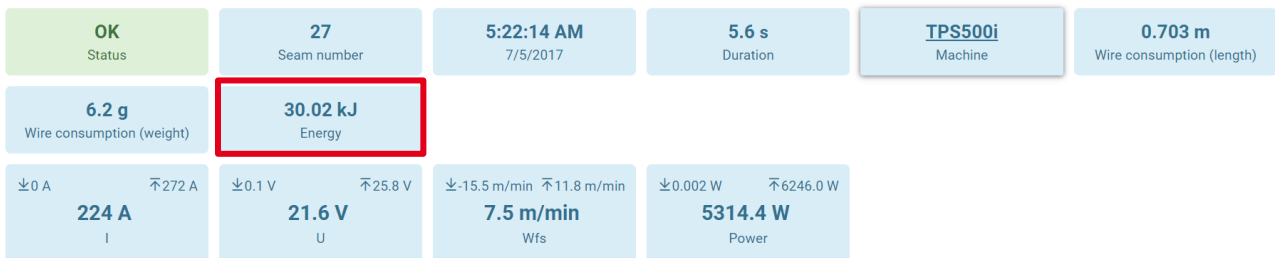


4.2 Energy value display for welds

Important note: this is ALWAYS the arc energy, NOT the energy input per unit length!

4.2.1 Energy tile within welding details

On the welding details page there is a new tile for the arc energy with release 2.8:



4.2.2 Energy within exports (PDF, CSV, JSON, XML)

In the available exports PDF, CSV, JSON and XML the energy information is also available with release 2.8.

PDF:

Processing step number: 27 Ok

Seam

Welding state	OK
Weld details	Details
Weld date	7/5/2017 5:22:14 AM +02:00
Duration	5.6 s
Wire consumption (length)	0.703 m
Energy	30.02 kJ
Wire consumption (weight)	6.2 g

CSV:

	A	B	C	D	E	F	G	H	I	J	K
1	Id	Weld date	Seam number	Part serial number	Part Item number	Machine serial number	Model	Welder	Error code	Arc gas consumption [Energy [kJ]
2	dee4e1e2-6f1d-4496-953a-f453caa0f3b8	2017-07-05T03:22:14.215779Z	27				26285092 TPS 500i PULSE /MV/nc				30.02
3	Type	Version									
4	TPSI		6								

JSON/XML:

```
{
  "Id": "23bb2dc4-dcfa-4546-8c87-d504fce9882f",
  "PartItemNumber": "1",
  "PartSerialNumber": "1",
  "SeamNumber": 7,
  "MachineSerialNumber": "00001382",
  "Model": "TPS500i",
  "Welder": "admin",
  "TimeStamp": "2020-03-02T08:42:25.597103Z",
  "Duration": 0.5,
  "Units": {
    "WeldingData": {
      "Stats": {
        "SectionData": [
          "SingleStats": [
            {
              "Name": "Arc gas consumption",
              "Value": 0.0,
              "Unit": "l"
            },
            {
              "Name": "Energy",
              "Value": 0.5,
              "Unit": "kJ"
            }
          ]
        ]
      }
    },
    "ErrorCodes": [],
    "IsCompleted": true
  }
}
```


5 PART MANAGEMENT & REPORTING

5.1 Part monitoring now within the menu item parts

The function "part monitoring" can now be found in the menu item "parts" (release 2.8). The main menu has been reduced in size and thus more clearly arranged - 2 related topics have been merged:

The screenshot shows a software interface with a sidebar menu on the left and a main content area on the right. The sidebar menu includes items like Dashboard, Machines, Parts, Arc welds, Spot welds, Statistics, WeldOptimizer™, Consumption figures, and Maintenance. The 'Parts' item is highlighted with a red box. The top navigation bar has 'Overview' and 'Live view' tabs, with 'Live view' also highlighted by a red box. Below the navigation bar, there is a search filter section with a text input field containing 'partitemnumber: HGDFGFG' and a search button. Below the search filter is a table with three columns: 'Part serial number', 'Part item number', and 'Part name'. The table contains three rows of data.

Part serial number	Part item number	Part name
2165468	HGDFGFG	
16sdds	HGDFGFG	
7	HGDFGFG	

6 LIMIT VALUES / LIMIT MONITORING

6.1 Limit monitoring welding duration and energy

With TPS/i firmware version 2.3.0, 2 additional values are available for limit monitoring:

- / Weld duration
- / Energy

For the documentation and display in WeldCube Premium, corresponding adjustments have been made (available with WeldCube Premium Release 2.6 or higher).

6.1.1 Job editor

Jobs have been extended with the new parameters. These are displayed both in the job editor and on the job details page in WeldCube Premium:

Welding duration command value	<input type="text" value="5.0"/> s	Energy command value	<input type="text" value="1.0"/> KJ
Lower welding duration limit	<input type="text" value="-1.0"/> s	Lower energy limit	<input type="text" value="-1.0"/> KJ
Upper welding duration limit	<input type="text" value="1.0"/> s	Upper energy limit	<input type="text" value="6.0"/> KJ
Welding duration monitoring	<input type="text" value="off"/>	Energy monitoring	<input type="text" value="off"/>

6.1.2 Welding details

On the welding details page, an energy or duration limit violation is displayed by tiles (like the already known limit violations).

If the reaction "error" is set in the job, the resolved errors are also displayed as tiles:

<input type="checkbox"/> On 5.0 s Welding duration ↑ -0.5 / +0.5	<input type="checkbox"/> On 5.0 kJ Energy ↑ -1.0 / +1.0	t-- Limit violation	E++ Limit violation
--	---	-------------------------------	-------------------------------

Within the API and in the file export the necessary adjustments were made as well (see chapter 7).

7 DATA INTERFACE / API / FILE EXPORT

7.1 Limit monitoring welding duration and energy

With TPS/i firmware version 2.3.0, 2 additional values are available for limit monitoring:

- / Weld duration
- / Energy

For the documentation and display in WeldCube Premium, corresponding adjustments have been made (available with WeldCube Premium Release 2.6 or higher).

7.1.1 API

In the WeldCube Premium API - Version 2 (v2) the new limit monitoring information is also taken into account.

In the job details the set parameters are displayed:

[GET/api/v2/Machines/{machineSerialNumber}/Jobs/{JobNumber}](#)

In the welding details, the new limit violations are listed, if any have occurred

[GET/api/v2/Welds/{weldId}](#)

The set limits are also output in the section details:

[GET/api/v2/Welds/{weldId}/Sections/{sectionNumber}](#)

7.1.2 File exports

PDF-export weld details

In the weld detail PDF, the new limit monitoring types are displayed in text form, a detailed display is currently not planned.

CSV, JSON and XML

These exports do NOT take the new Limit Monitoring types into account. The reason is that welds are represented here as a sequence of actual values at certain points in time - the two new types do not logically fit into this approach.

7.2 Welding file export

With Release 2.9, changes have been made in the back end to improve the behaviour. Each export type (CSV, JSON, XML) now has its own error handling: e.g. if a CSV could be exported successfully but the XML could not, only the XML export will be restarted.

In the database, the tables for each machine type are summarized in one table. On the export page, a toolbox on the right side shows if exports could not be performed successfully 5 times. There you have the possibility to place them into a new queue to try an export again or to delete them completely:

The screenshot displays the 'WELDING FILE EXPORT' configuration page. At the top, there is a navigation bar with dropdown menus for 'Machines', 'Parts', 'Materials', 'WeldCube', 'Users', 'System', and 'Info'. The 'WeldCube' menu is currently selected.

The main content area is titled 'WELDING FILE EXPORT' and features three tabs: 'CSV', 'JSON', and 'XML'. Below the tabs, there are several input fields and buttons:

- Storage location:** A text field for 'Path' containing '\\Server\Share\Directory'.
- User name:** A text field containing 'DOMAIN\Username'.
- Password:** A text field containing '(not shown)'.
- Buttons for 'Edit' and 'Test' are located below the password field.
- Buttons for 'Cancel' and 'Save' are located at the bottom of the form.

On the right side, there is a 'Filename pattern' section with a text field containing '\\(MachineSerialNumber)\(Date)\(SeamNumber)_(PartSerialNumber)_(P'. Below this, there are several buttons for selecting different patterns: 'Standard', 'Machine serial number', 'Date', 'Date & time', 'Seam number', 'Part item number', and 'Part serial number'. A backslash button is also present.

A dark notification box titled 'Failed Exports' is overlaid on the right side. It contains the following text: 'Weldings could not be exported to the network location. Each export was tried 5 times but unfortunately didn't succeed. See the WeldCube logbook to find a solution. You can either re-enqueue the exports or drop them.' Below the text are two buttons: 'Re-enqueue' and 'Delete all'.