



# **WELDCUBE PREMIUM** **RELEASE 2.5**

**RELEASE-DESCRIPTION**

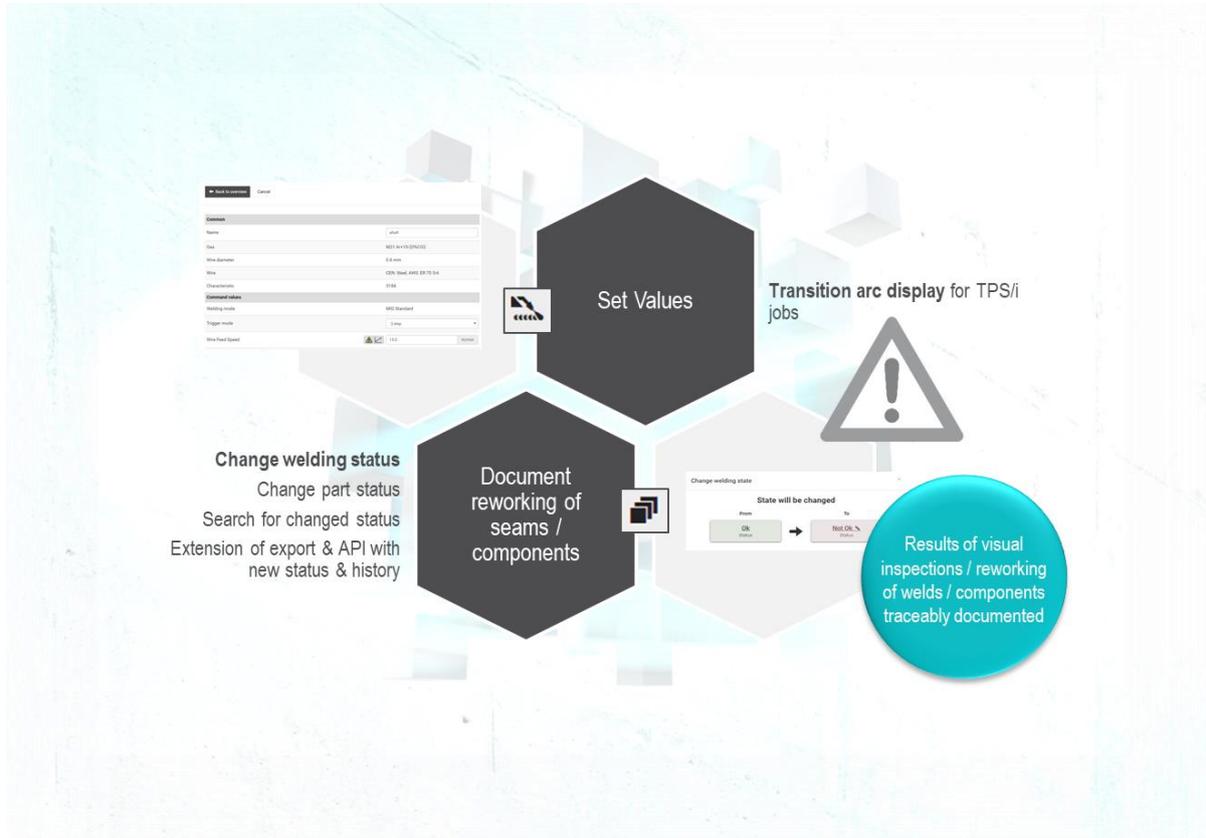
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# 1 OVERVIEW: NEW FUNCTIONS

Release 2.5 provides new functions, extensions and improvements of WeldCube Premium. Prerequisite for using release 2.5 with TPS/i is **TPS/i firmware version 2.0.0 or higher**.

The following charts shows the two most important new possibilities with this release:



The following list provides an overview of all news / changes functions with release2.5:

- / Set values
  - / Transition arc display for TPS/i jobs
- / Actual values
  - / Change welding status - after inspection / reworking
  - / Welding list extension: search for welds with changed status
- / Part management & reporting
  - / Change part status - after inspection / reworking
  - / Component list extension: search for components with changed status
  - / PDF export extension: new status & history
- / Data Interface / API
  - / Query changes to welding / part status via API

## 2 SET VALUES

### 2.1 Transition arc display for TPS/i jobs

The job details of a TPS/i now contain a new icon, which shows the user the transition arc area. These data are stored in the new characteristic curves, so this feature is only available with a TPS/i with firmware version 2.2.0 or newer.

The screenshot displays the 'JOB 151' configuration page. The left sidebar contains navigation options: Dashboard, Machines, Parts, Arc welds, Statistics, WeldOptimizer™, Consumption figures, Maintenance, Part monitoring, and Administration. The top navigation bar includes a search field with 'michi', and links for Info, Function packages, Component history, and Jobs. The main content area is titled 'JOB 151' and features a 'Back to overview' button and a 'Cancel' button. The configuration is organized into sections: 'Allgemein' (General) and 'Soll-Werte' (Desired Values). The 'Allgemein' section includes fields for Name (JobNr. 151), Gas (M21 Ar+15-20%CO2), Drahtdurchmesser (0.6 mm), Draht (CEN: Steel, AWS: ER 70 S-6), and Kennlinie (3184). The 'Soll-Werte' section includes Welding mode (MIG Standard), Trigger mode (2-step), Wire Feed Speed (15.0 m/min), Current (115 A), Voltage (21.5 V), and Material Thickness (4.0 mm). A red box highlights a warning icon (a yellow triangle with an exclamation mark) next to the Wire Feed Speed field.

Allgemein	
Name	JobNr. 151
Gas	M21 Ar+15-20%CO2
Drahtdurchmesser	0.6 mm
Draht	CEN: Steel, AWS: ER 70 S-6
Kennlinie	3184

Soll-Werte	
Welding mode	MIG Standard
Trigger mode	2-step
Wire Feed Speed	15.0 m/min
Current	115 A
Voltage	21.5 V
Material Thickness	4.0 mm

## 3 ACTUAL VALUES

### 3.1 Change welding status

In order to be able to include the work/results of a rework station (visual check of seams / parts or repair welds) in the documentation of actual data, it is now possible to retroactively consider already performed and documented welds to be good or bad. This is done by manually changing the welding status from "OK" to "not OK" or "not OK" to "OK".

Thus, the status possibilities of a weld have been extended from

- / OK
- / Not OK

to

- / WeldCube OK (OK)
- / WeldCube Not OK (Not OK)
- / User OK (OK edited)
- / User Not OK (Not OK edited).

The status of a processing step can still be one of the following:

- / OK
- / Error
- / Missing
- / Multiple
- / Not Configured

#### 3.1.1 Procedure for changing the welding status

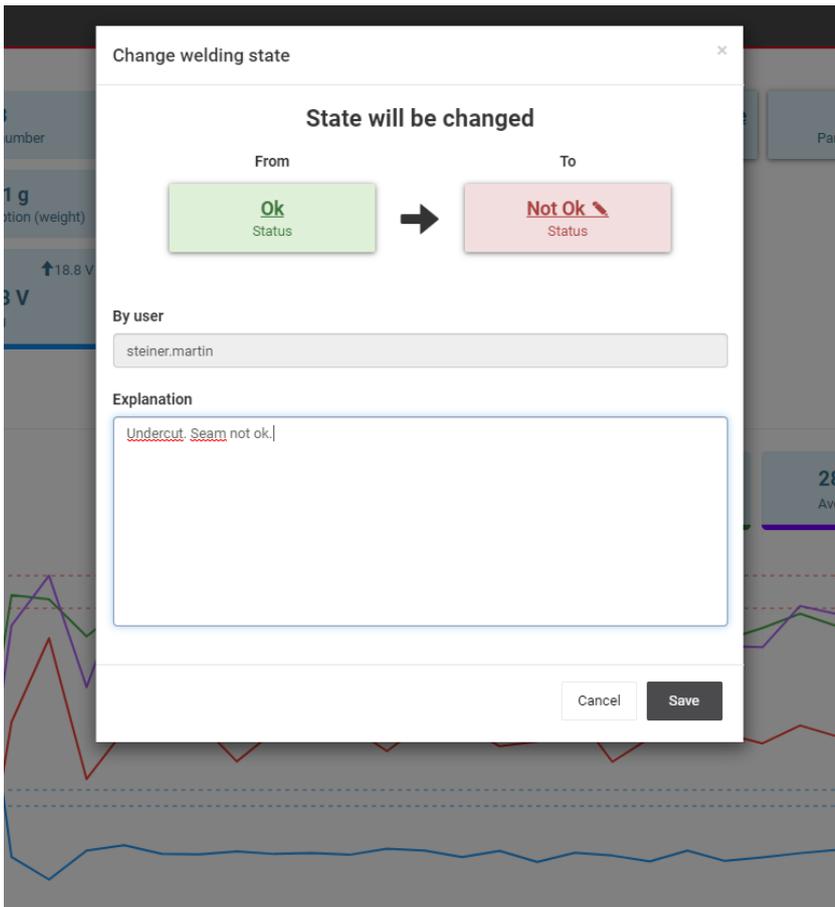
In the welding details, you can now click on the status of the weld to start the modification process:

The screenshot shows the Fronius WELDCUBE Premium v2.5.79 interface. On the left is a navigation menu with options: Dashboard, Machines, Parts, Arc welds (selected), Spot welds, Statistics, and WeldOptimizer™. The main content area displays the following data:

<b>Ok</b> Status	<b>13</b> Seam number
<b>0.324 m</b> Wire consumption (length)	<b>2.86 g</b> Wire consumption (weight)
↓202 A      ↑202 A <b>202 A</b> I	↓23.9 V      ↑23.9 V <b>23.9 V</b> U

Below the data is the label **Actual values**.

In the dialog that then appears, the status change is displayed. The name of the user making the change is also shown. A reason must be entered for the status change:



With saving, the status of the weld is changed and this change is displayed in the history. The history can be found at the bottom of the page.

#### State change history

9/17/2019 3:33:24 PM

The user **steiner.martin** changed the state of the welding to **Not Ok** ⚡!

Explanation:

Undercut. Seam not ok.

### 3.2 Welding list extension: search for welds with changed status

The welding list can now be searched for welds with a changed status:

The screenshot shows the software interface for Fronius WELDCUBE Premium v2.5.79. On the left is a navigation menu with the following items: Dashboard, Machines, Parts, Arc welds (highlighted), Spot welds, Statistics, WeldOptimizer™, Consumption figures, Maintenance, Part monitoring, and Administration. The main area displays search filters for welds:

- Job number
- Welder
- Error code
- Has errors
  - Yes  No
- Welding state changed
  - Yes  No

The 'Welding state changed' filter and its radio buttons are enclosed in a red rectangular box. At the bottom of the filter area are 'Cancel' and 'Ok' buttons.

# 4 PART MANAGEMENT & REPORTING

## 4.1 Change part status

In order to be able to include the work/results of a rework station (visual check of seams / parts or repair welds) in the documentation of actual data, it is now possible to retroactively approve already completed and documented parts. This is done by manually changing the part status from "not OK" to "OK". A change from "OK" to "not OK" in part management is not possible, as individual welds would have to be processed here. This can be done by changing the welding status (see 3.1)

A part can thus have the status:

- / WeldCube OK (OK)
- / WeldCube Not OK (Not OK)
- / User OK (OK edited)
- / User Not OK (Not OK edited)

### 4.1.1 Changed visualization of the part report page

On the part side, the status tile has been moved to the top to be easier to find. Additionally, the processing steps have been redesigned and grouped by status:

**Fronius WELDCUBE Premium** v2.5.79

**PART REPORT FOR ITEM NUMBER 108392 - PICKUP CARRIAGE** SERIAL NUMBER 62093337

**Part is OK**  
Status

<b>72</b> Total number of welds	<b>9/18/2019 9:32:45 AM</b> Start time	<b>4min 11s</b> Process time	<b>1</b> Number of limit violations	<b>2min 26s</b> Arc time
------------------------------------	---	---------------------------------	--	-----------------------------

**Processing steps**

**Error**

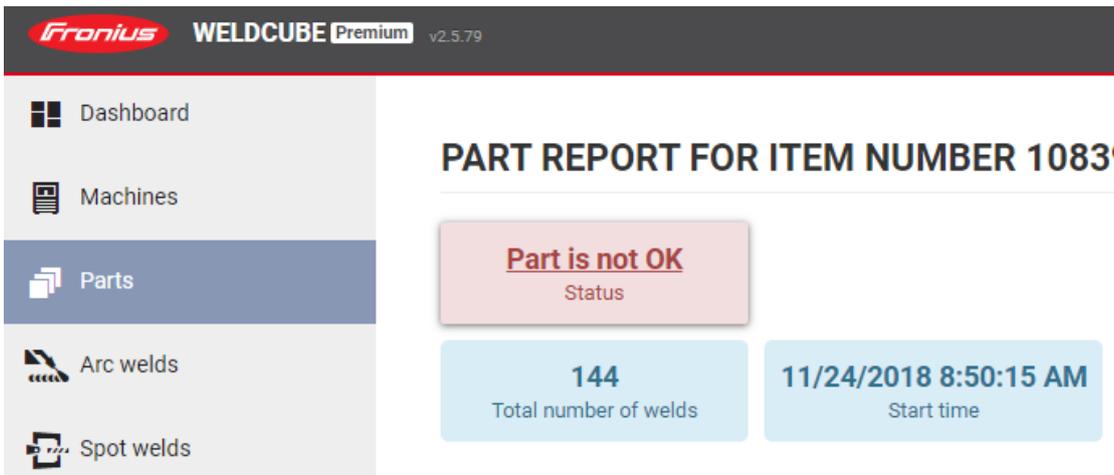
- 66 Not Ok

**Ok**

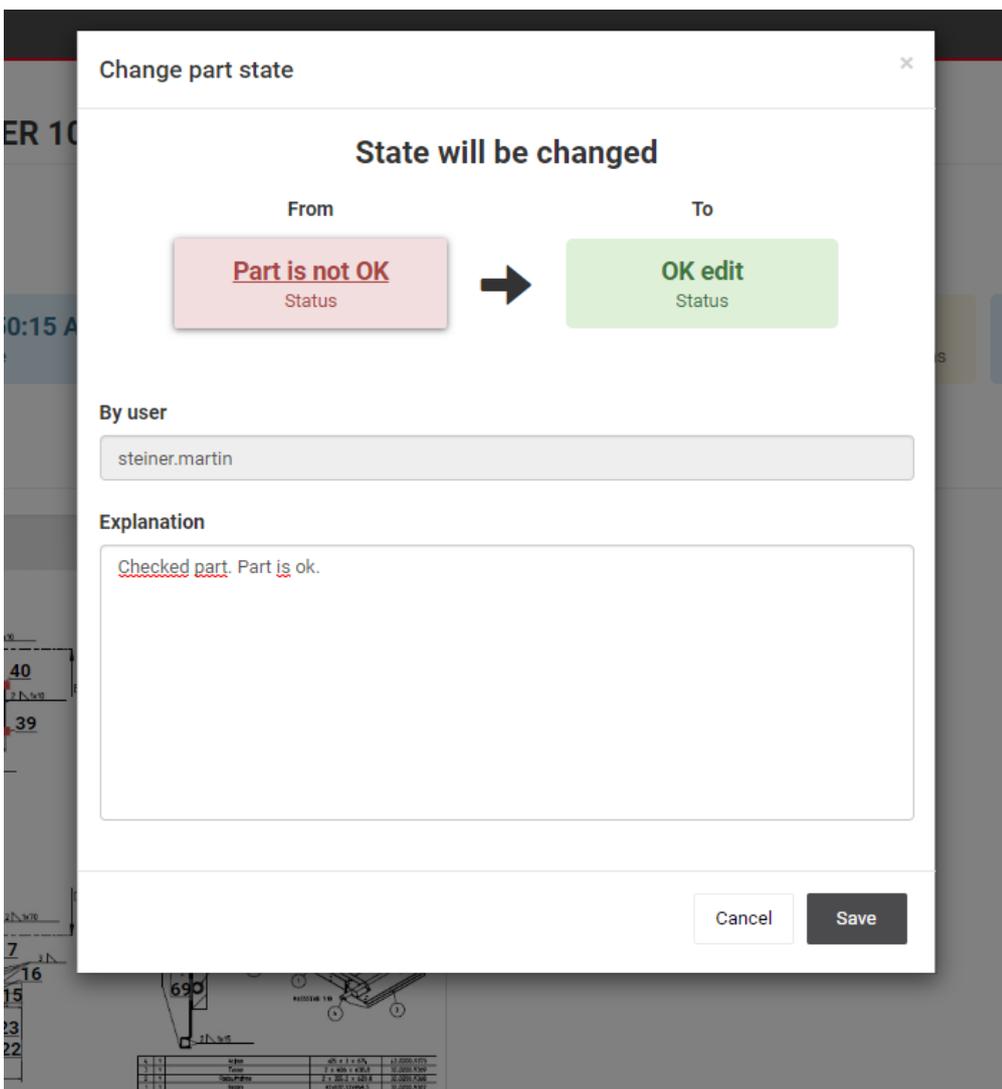
1 Ok	2 Ok	3 Ok	4 Ok
5 Ok	6 Ok	7 Ok	8 Ok

#### 4.1.2 Procedure for changing the part status

You can now also click on the status of a part to start the modification process:



The displayed dialog is similar to the one when changing the welding status. A reason must be entered again for the status change:



By saving, the status of the part is changed from "not OK" to "OK" and all errors on the part and its welds are corrected in the background.

This way you can get to the history of the part faster - here's an example of how to fix multiple welds:

**FRONIUS WELDCUBE Premium v2.5.79**

Dashboard  
Machines  
**Parts**  
Arc welds  
Spot welds

### PART REPORT FOR ITEM NUMBER 108392 -

<b>OK edit</b> Status	<b>Checked the part. Part is ok.</b> Explanation
<b>144</b> Total number of welds	<b>10/16/2018 12:10:15 PM</b> Start time
	<b>3</b>

As soon as a part has been changed to "OK", the list of processing steps is no longer displayed, but can be expanded.

Processing steps ☰

#### State change history

9/17/2019 3:47:31 PM

Processingstep "1" got it's multiple state resolved by user "steiner.martin".

Explanation:  
Checked part. Part is ok.

[Show details](#)

Under "Show details" you can see how the fault "Multiple Welds" was fixed - in this case the two welds were linked together:

#### State change history

9/17/2019 1:34:00 PM

Processingstep "11" got it's multiple state resolved by user "steiner.martin".

Explanation:  
Checked the part. Part is ok.

[Show details](#)

##### Welding Id

c63289bc-3821-49fe-b4cc-e5d92ad61501

ae9e99e6-3ef8-4e27-9602-baf91c0c6f21

## 4.2 Component list extension: search for components with changed status

Parts with changed status can now be searched for in the parts list:

Text filter   Filter wizard

### Generic

- Part serial number
- Part item number
- Serial number
- Machine name
- Model
- IP address
- Machine location
- Has faulty welds
  - Yes  No
- Part state changed
  - Yes  No

### Date/time

- From
  - Date (yyyy-MM-dd)
  - Time of day (HH:mm:ss)
- To
  - Date (yyyy-MM-dd)
  - Time of day (HH:mm:ss)

Cancel   Ok

### 4.3 PDF export extension: new status & history

The new status and history have been added to the part PDF export. In the export dialog, the histories of welding and component can be configured:

**File name** ?  
PartReport\_(ItemNumber)\_(SerialNumber)

**Paper format**  
A4 (210 x 297 mm) ▼

**Measurement system**  
Metric ▼

**Language**  
English ▼

**Cover page**  
 Cover page

**Part report summary**  
 Values  
 Images

**Processing steps**  
 Show personal data  
 Status of processing steps  
 Seam details  
 Machine details  
 State change history  
 Charts

**TPS**                      **TPS/i**                      **Spot welding**

Section values       Section values       Electrode details  
 QMaster settings       QMaster settings       Process tape details

**Jobs**  
 Jobs

**Part state changes**  
 Part state changes

**Additional documents**  
 Additional documents

New info in PDF-Report:

#### State change history

Date	Welding state	User name	Explanation
9/17/2019 12:35:44 PM	Ok edited	quest	Seam ok

## 5 DATA INTERFACE / API

In WeldCube Premium 2.5, the REST-API has been extended by functions for reading welding and part status, increasing the **API version to "v2"**. Version "v1" is still available. Under "Parts", the following information has been added:

### Parts

Show/Hide | List Operations | Expand Operations

GET /api/v2/Parts/{partItemNumber}/{partSerialNumber} Get the report of specific part

**Implementation Notes**  
Returns a report of a part

**Response Class (Status 200)**  
Model | Example Value

```
PartReportResponseModel {
  ItemNumber (string, optional),
  SerialNumber (string, optional),
  Name (string, optional),
  State (string, optional) = ['NotOk', 'Ok', 'OkEdited', 'NotOkEdited'],
  ProcessingSteps (Array[ProcessingStepEvaluationModel], optional),
  PartPerformance (PartPerformanceModel, optional),
  ChangeEvents (Array[PartStateChangeEventModel], optional),
  ResponseMetadata (ResponseMetadata, optional)
}

ProcessingStepEvaluationModel {
  ProcessingStepNumber (string, optional),
  ProcessingStepState (string, optional) = ['Ok', 'Missing', 'Multiple', 'NotConfigured', 'HasError'],
  Welds (Array[WeldInfoModel], optional)
}

PartPerformanceModel {
  SpecifiedWelds (integer, optional),
  Welds (integer, optional),
  GoodWelds (integer, optional),
  MissingWelds (integer, optional),
  ErrorWelds (integer, optional),
  NotConfiguredWelds (integer, optional),
  MultipleWelds (integer, optional),
  ArcDuration (string, optional),
  SpotWeldDuration (string, optional),
  QuantityLimitViolations (integer, optional),
  StartTime (string, optional),
  ProcessDuration (string, optional)
}

PartStateChangeEventModel {
  EventType (string, optional) = ['Missing', 'Unconfigured', 'Multiple'],
  PartItemNumber (string, optional),
  PartSerialNumber (string, optional),
  ProcessingStepNumber (string, optional),
  EventId (string, optional),
  Timestamp (string, optional),
  Explanation (string, optional),
  User (string, optional),
  PartState (string, optional) = ['NotOk', 'Ok', 'OkEdited', 'NotOkEdited'],
  UnconfiguredWeldingId (string, optional),
  PreviousMultipleResolvedEventId (string, optional),
  ResolvedMissingEventId (string, optional),
  WeldingIds (Array[string], optional)
}
```

The API function "Welds" has been extended by the following properties:

**GET** /api/v2/Welds/{weldId} Gets the weld details

**Implementation Notes**  
Gets the weld details

**Response Class (Status 200)**  
Weld details

Model | Example Value

```
WeldResponseModel {
  WeldId (string, optional),
  PartItemNumber (string, optional),
  PartSerialNumber (string, optional),
  ProcessingStepNumber (string, optional),
  MachineSerialNumber (string, optional),
  MachineType (string, optional) = ['Tps', 'SpotWelding', 'Tpsi'],
  Model (string, optional),
  Welder (string, optional),
  TimeStamp (string, optional),
  Duration (number, optional),
  WeldData (WeldData, optional),
  Errors (Array[ErrorModel], optional),
  IsCompleted (boolean, optional),
  Units (inline_model, optional),
  ActualValues (string, optional),
  ProgramNumber (integer, optional),
  State (string, optional) = ['Ok', 'NotOk', 'OkEdited', 'NotOkEdited'],
  Changes (Array[WeldStateChangeEventModel], optional),
  ResponseMetadata (ResponseMetaData, optional)
}

WeldData {
  Stats (Array[MinMeanMaxModel], optional),
  LimitViolations (Array[LimitViolationModel], optional),
  Sections (Array[SectionModel], optional),
  SingleStats (Array[SingleStatModel], optional)
}

ErrorModel {
  ErrorCode (string, optional)
}

WeldStateChangeEventModel {
  WeldingId (string, optional),
  State (string, optional) = ['Ok', 'NotOk', 'OkEdited', 'NotOkEdited'],
  User (string, optional),
  Explanation (string, optional),
  TimestampUtc (string, optional),
  EventId (string, optional)
}
```