

WeldCube

Operating Instructions

EN

Software



42,0426,0221,EN 002-14122015



Dear reader,

Introduction

Thank you for the trust you have placed in our company and congratulations on buying this high-quality Fronius product. These instructions will help you familiarise yourself with the product. Reading the instructions carefully will enable you to learn about the many different features it has to offer. This will allow you to make full use of its advantages.

Please also note the safety rules to ensure greater safety when using the product. Careful handling of the product will repay you with years of safe and reliable operation. These are essential prerequisites for excellent results.

Contents

General	5
Device concept	5
Application areas	5
Welding system requirements.....	5
Firmware versions.....	5
MICROSOFT software license conditions	5
The WeldCube user interface	6
The WeldCube user interface	6
Machines.....	7
General	7
Overview	8
Live view	10
Machine information page.....	10
Jobs - overview	11
Jobs: Display selected job	12
Jobs: Display history for selected job(s)	13
Jobs: Calculated Q-Master limits for selected job(s).....	13
Jobs: Reset selection.....	14
Jobs: Select all jobs	14
Component history.....	14
Welding operations	15
Components.....	16
General	16
Text filter	16
Filter wizard.....	16
Part report for arc welds.....	17
Part report for spot welds.....	19
Arc welding operations.....	21
General	21
Text filter	21
Filter wizard.....	22
Arc welds	22
Spot welding operations.....	24
General	24
Text filter	24
Filter wizard.....	25
Spot welds	25
Statistics.....	27
General	27
Statistics.....	27
Consumption figures	29
General	29
Consumption figures	29
Component administration	30
General	30
Calculating Q-Master limits	30
Add new component type / edit component.....	31
Materials	32
General	32
Welding wires.....	32
Gases.....	32
Others	33
Part monitoring.....	34
General	34
Part monitoring.....	34
Configurations.....	36
General	36
Machines.....	36
Part identification	36
System settings.....	37

Network.....	38
User administration.....	38
Notifications	39
Back-up.....	40
Recovery.....	40
Export.....	40
Updates.....	41

General

Device concept WeldCube is an industrial PC with special software for monitoring networked welding systems in manufacturing areas. The graphical user interface with self-explanatory symbols allows simple and clear management of up to 50 TPS or DeltaSpot welding systems that form part of a networked production line.
The location and status of each welding system can be seen at a glance. Tried and tested settings can be copied easily from one system to another.

Application areas The application area encompasses all digital devices from the Fronius product family in automated and manual applications

- MIG/MAG welding and brazing (CMT)
- TIG welding
- DeltaSpot - spot welding
- Plasma welding

Welding system requirements

- Digital power source
- Free LocalNet connection with "Ethernet" option on the power source

If no LocalNet connection is free:

- LocalNet passive splitter

For retrospective evaluation of welding data:

- RCU 5000i remote control
- or enable data documentation (Docu) and enable JobExplorer

For some functions, an RCU 5000i remote control must be connected to the respective power source.

Firmware versions The device firmware must always be kept up-to-date in order to be able to use all WeldCube functions without any restrictions.

Minimum requirements:

TS 4000 / 5000, TPS 2700 / 3200 / 4000 (CMT) / 5000 (CMT) / 7200 / 9000

- Power source firmware: OFFICIAL UST V4.33.21 or higher
OFFICIAL UBST V1.08.6 or higher
- RCU 5000i firmware: OFFICIAL RCU V1.15.127 or higher

MICROSOFT software license conditions Observe the software license conditions accessible via the following link:



<http://www.fronius.com/QR-link/0005>

The WeldCube user interface

The WeldCube user interface

After logging in to WeldCube, the following menu items are available in the menu on the user interface:

- Machines
- Parts
- Arc welds
- Spot welds
- Statistics
- Consumption figures
- Part administration
- Materials
- Part monitoring
- Configuration

Machines

General

In the "Machines" menu item, all the configured welding systems in a network are listed. Information on the individual welding systems, jobs, the components in use and the relevant welds can be called up.

Machines

Overview



Info (machine information page)

Jobs

Component history

Log book

Welds

...

Live view






The machines are displayed sub-divided by status.

Brief information

Machine information page

...

Status indicators used:

-  Machine is online, weld ok (no errors, no warnings)
-  Machine is not online
-  Fault on the machine
-  Machine is currently welding
-  The machine displays a warning

Overview

All the configured welding systems in a network are listed and the following data is displayed:

- Name *
- Serial number
- Model
- Location
- IP address
- Last welded



The devices listed can be sorted in ascending or descending order based on the data displayed.



When you click on the menu symbol, the sub-menu opens. The following data can be selected:



Info

when selected, the information page for the system is displayed



Jobs **

when selected, the jobs saved in the machine are displayed



Component history **

when selected, all changes made to the system are displayed, together with the date and time of the change:

- Addition of components
- Removal of components
- Updates



Log book**

when selected, the log book of the machine is displayed.

The

selection box can be used to specify the history time period:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

The

Show

selection box can be used to sort the log data displayed:

- All
- Jobs
- User
- Firmware
- Error

The date, type and details of the log data are displayed.

In the event of errors, the duration of the error is shown in the text if it is no longer present.

The duration of an error is calculated from the start of the error to the occurrence of the next error or an error reset.



Welds

when selected, the display switches either to the "Arc welds" menu item or the "Spot welds" menu item, depending on the welding process.

The following data is displayed:

Arc welds

- Machine name
- Machine serial number
- Model
- Location
- IP address
- Seam number
- Date
- Duration [s]
- Limit violations
- Errors
- Part serial number
- Part item number

Spot welds

- Machine name
- Machine serial number
- Model
- Location
- IP address
- Spot number
- Program number
- Date
- Part serial number
- Part item number
- Errors
- Limit violations

When a sub-menu item is selected, this is opened and displayed.

The other available sub-menu items can be selected in the upper section of the page.

* The information page for the machine is displayed by clicking on the device name.

** Only on TPS machines

Live view

Green area:

All active welding systems in a network are listed.

After clicking on the system required, the brief information is displayed with the following data:

- Serial number
- Name
- Model
- Location
- IP address
- Last welded

The information page for this machine can be called up from the brief information.

Orange area:

Status / Machine / Problems

All non-active welding systems or welding systems with errors within a network are listed. In the case of welding systems with errors, the error number and the corresponding error description are also shown.

After clicking on the required system, the brief information is shown with the following data:

- Serial number
- Name
- Model
- Location
- IP address
- Last welded

The information page for this machine can be called up from the brief information.

Machine information page

The machine information page shows the following data:

Name of system

- Serial number
- Model
- Location
- IP address

Operating status overview

- Ten most frequent errors (pie chart)
- Number of errors within the last week (bar chart)

Components

- Last update (date, time) *
- Valid since (date, time) *

* The format depends on the browser language used.

Clicking on the

Expand all

button displays all the available data for all components.

When activated, the

Display details

selection box displays additional information for troubleshooting (for the service engineer).

Data from individual components can also be displayed by clicking on the arrow symbols.

Jobs - overview

All jobs saved in a TPS welding system are sub-divided into groups by job number and name.

When a group is selected, all the jobs in this group are highlighted. The jobs can also be selected individually.

 **Display selected job** *

History for this job

- Date range
- Hide unchanged values
- Compare selection
- Reset selection

 **Display history for selected job(s)** *

- Date range

 **Calculated Q-Master limits for selected job(s)** *


- Date range
- Standard deviation factor
- Refresh
- Send all jobs to machine


Job name | Voltage [V] | Amperage [A] | Wire speed [m/min] | Voltage graphic Amperage graphic | Wire speed graphic | Recalculated error rate [%] | Send job to machine


 **Reset selection** *


 **Select all jobs** *



* Menu items in the upper section of the page

 The views can also be called up by clicking on the menu symbols:

 Details for this job

 History for this job

 History for selected jobs (only if multiple jobs are selected)

-  Calculate Q-Master limits for this job
-  Calculate Q-Master limits for selected jobs (only if multiple jobs are selected)



NOTE! Modifying a job can be time-consuming. The transmitting of changed values to the machine can be checked in the job history.

Jobs: Display selected job

When jobs are selected individually, the

 **Display selected job**

button is activated.

When you click on the button, the job data are shown in various groups depending on the device, e.g.:

- General
- Process
- Process parameters
- Process pre-sets
- Mode
- Mode pre-sets
- Job correction
- Q-Master
- Documentation

Using the

History for this job

button, the history of the job from creation to the latest version can be displayed, including all changes.

Changes are highlighted in yellow.

The

Date range

selection box can be used to specify the history time period:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

In the job history view, unchanged values can be hidden by enabling the

Hide unchanged values

selection box.

If multiple entries are highlighted, these can be compared using the

Compare selection

button. The selected entries are listed alongside one another.

Changes are highlighted in yellow.

Using the

Reset selection

button, the selection that has been made can be reset.

Jobs: Display history for selected job(s)

The history of jobs can also be displayed by clicking on the

 **Display history for selected job(s)**

button.

The

Date range

selection box can be used to specify the history time period:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

Jobs: Calculated Q-Master limits for selected job(s)

Click on the

 **Calculated Q-Master limits for selected job(s)**

button to display the calculated Q-Master limits for the welds of the machine and the relevant jobs from the last seven days with three times the standard deviation. A progress display is shown.

The

Date range

selection box can be used to specify the history time period:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

The

Standard deviation factor

input field can be used to enter the standard deviation factor.

Click on the

Refresh

button to display and recalculate the values.

The following values are displayed:

Job name | Voltage [V] | Amperage [A] | Wire speed [m/min] | Voltage graphic Amperage graphic | Wire speed graphic | Recalculated error rate [%] | Send job to machine*

Click on the

Send all jobs to machine

button to transmit all recalculated Q-Master limit values to the machine simultaneously.

*

After refreshing, a

 **Send job [no.] to machine**

button is generated for each job.

Click this button to transmit the calculated Q-Master limit values for each job to the machine.

Jobs: Reset selection

Using the

 **Reset selection**

button, the selection that has been made can be reset.

Jobs: Select all jobs

Click on the


 **Select all jobs**


button to select and mark all jobs.


Component history

The history for all components in a TPS welding system is displayed in a time line with the date and time.

Here, the display shows whether a component or a module has been added or removed and whether an update has been carried out on a component or a module.

 Component added [green font]

 Component removed [orange font]

 Component has been updated [blue font]

The next column shows

- which component was updated
- the previous version and the updated version

The initial machine status is displayed at the lower end of the time line.

Welding operations

When selected, WeldCube switches either to the "Arc welding" menu item or the "Spot welding" menu item, depending on the welding process.
The following data is displayed:

Arc welding operations

- Machine name
- Machine serial number
- Model
- Location
- IP address
- Seam number
- Date
- Duration [s]
- Limit violations
- Complete
- Component serial number
- Component item number

Spot welding operations

- Machine name
- Machine serial number
- Model
- Location
- IP address
- Spot number
- Program number
- Date
- Component serial number
- Component item number
- Errors
- Limit violations

Further information is contained in the "Arc welding" and "Spot welding" sections.

Components

General

The "Parts" menu item shows all the parts that have been welded in a system configured as the user wishes within a network.

The part serial numbers and part item numbers are displayed.

A text filter and a filter wizard are available to simplify the part search.

Click on the

Show more results

button to double the number of search results.

Text filter

When you click on **Help**, the possible search parameters are displayed.

To search:

- 1 Enter the required search parameters
- 2 Select the search parameter
- 3 Enter value
- 4 Click **OK**

The components are displayed and sorted accordingly.

Example

Search for the device serial number

serialnumber: 12345678 ==> OK

All components welded at the power source with serial number 12345678 are displayed.

Filter wizard

When you click on **Filter wizard**, the possible search parameters of the filter wizard are displayed.

The filter wizard's search parameters are identical to the search parameters of the text filter.

General

- Component serial number
- Component item number
- Serial number
- Machine name
- Model
- IP address
- Machine location
- Faulty (Yes / No)

Date/Time

- from
- to

1st field:

entry of day, month, year from calendar

2nd field:

time

To search:

- 1 Select the required search parameters
- 2 Enter value
- 3 Click the **Save** button

The components are displayed and sorted accordingly.

Part report for arc welds



When you click on the eye symbol, the part report for the selected part is displayed.

The part report for arc welds shows the following data:

Status of part

- Part serial number
- Part item number
- Part name

- Configured processing steps

- Number of welds
- Number of OK welds*
- Number of faulty welds*
- Number of missing welds*
- Number of multiple welds*
- Number of unconfigured welds*

- Arc time [s]
- DeltaSpot weld time [s]

- Number of limit value violations

* incl. pie chart

Images of the part

(if images for the part have been saved in "Part administration")

Processing steps

Expand all

Button for displaying all processing steps

Collapse all

Button for hiding all displayed processing steps

Chart scaling mode selection box

Automatic / machine

Not OK (processing step numbers)

Processing step number | Status

Seam

- Weld details (linked to the arc welds of the part)
- Seam number
- Weld date
- Errors
- Duration [s]
- Limit violations

Machine

- Name *
 - Machine serial number
 - Model
 - Location
 - IP address
-

Graphical depiction of the welding history

The following parameters are displayed over the time axis:

for arc welds

- Wire speed [m/min] - green
- Amperage [A] - red
- Voltage [V] - blue
- Welding speed [cm/min] - yellow

for spot welds

- Force [kN] - blue
- Amperage [kA] - red
- Voltage [V] - green
- Resistance [μ Ohm] - khaki

Average voltage

Average current

Average wire speed

Welding history of the individual weld sections

(e.g. for a MIG/MAG weld)

Command values

- Welding mode
- Duration
- Job number **
- Gas consumption
- Reference number of weld characteristic
- Wire speed [m/min]
- Arc length correction [%]
- Pulse correction [%]
- U approximately [V]
- I approximately [A]

Limits

- Current command value [A]
 - Voltage command value [V]
 - Wire speed command value [m/min]
 - Max. duration of current deviation [s]
 - Max. duration of voltage deviation [s]
 - Max. duration of wire speed deviation [s]
 - Reaction
-

* displayed as a link; opens machines / info page for the machine

** displayed as a link; opens machines / jobs / displayed job no.

Part report for spot welds



When you click on the eye symbol, the part report for the selected part is displayed.

The part report for spot welds shows the following data:

Description

- Part serial number
- Part item number
- Part name
- Status

Configured processing steps

- Number of welds
- Number of OK welds
- Number of faulty welds
- Number of missing welds
- Number of multiple welds
- Number of unconfigured welds
- Arc time [s]
- DeltaSpot weld time [s]
- Number of limit value violations

Images of the part

(if images for the part have been saved in "Part administration")

Processing steps

Processing step number | Status

Item

- Spot number
- Program number
- Date
- Errors
- Limit violations

Machine

- Name
- Serial number
- Model
- IP address
- Location

Graphical depiction of the welding history

The following parameters are displayed over the time axis:

- Force [kN] - blue
 - Amperage [kA] - red
 - Voltage [V] - green
 - Resistance [μ Ohm] - khaki
-

Welding history of the individual weld sections
(e.g. for a MIG/MAG weld)

Command values

- Welding mode
- Duration
- Job number
- Gas consumption
- Reference number of weld characteristic
- Wire speed [m/min]
- Arc length correction [%]
- Pulse correction [%]
- U approximately [V]
- I approximately [A]

Limits

- I approximately [A]
 - Lower current limit [-A]
 - Upper current limit [+A]
 - Voltage command value [V]
 - Lower voltage limit [-V]
 - Upper voltage limit [+V]
 - Wire speed command value [m/min]
 - Lower wire speed limit [-m/min]
 - Upper wire speed limit [+m/min]
 - Max. duration of current deviation [s]
 - Max. duration of voltage deviation [s]
 - Max. duration of wire speed deviation [s]
 - Reaction
-

* displayed as a link; opens machines / info page for the machine

** displayed as a link; opens machines / jobs / displayed job no.

Arc welding operations

General

The "Arc welding operations" menu item shows all arc welding operations that have been carried out on a system configured as the user wishes within a network.

The following are displayed:

- Machine name
- Machine serial number
- Model
- Location
- IP address
- Seam number
- Date
- Duration [s]
- Limit violations
- Complete
- Component serial number
- Component item number

A text filter and a filter wizard are available to simplify the search.

Click on the

Show more results

button to double the number of search results.

Text filter

When you click on **Help**, the possible search parameters are displayed.

To search:

- 1** Enter the required search parameters
- 2** Select the search parameter
- 3** Enter value
- 4** Click **OK**

The welding operations are displayed and sorted accordingly.

Example

Search for the device serial number

serialnumber: 12345678 ==> OK

All welding operations carried out on the power source with serial number 12345678 are displayed.

Filter wizard

When you click on **Filter wizard**, the possible search parameters of the filter wizard are displayed.
The filter wizard's search parameters are identical to the search parameters of the text filter.

General	Date/Time
- Id	- from
- Serial number	- to
- Machine name	
- Model	1st field:
- Machine location	entry of day, month, year from calendar
- IP address	
- Component serial number	2nd field:
- Component item number	time
- Seam number	
- Welding mode	Limit violations
- Job number	- Upper current limit exceeded
- Complete (Yes / No)	- Lower current limit undercut
- Faulty (Yes / No)	- Upper voltage limit exceeded
	- Lower voltage limit undercut
	- Upper wire feed speed limit exceeded
	- Lower wire feed speed limit undercut
	- Upper welding speed limit exceeded
	- Lower welding speed limit undercut
	(Yes / No in each case)

To search:

- 1 Select the required search parameters
- 2 Enter value
- 3 Click the **Save** button

The welding operations are displayed and sorted accordingly.

Arc welds



When you click on the eye symbol, the selected arc weld is shown.

The following data is displayed:

Seam

- Seam number
- Date
- Complete
- Duration
- Limit violations

Machine

- Name *
- Serial number
- Model
- IP address
- Location

Part

- Item number
 - Serial number
-

Actual values (graphical depiction of the welding history)

The following parameters are displayed over the time axis:

- Wire speed in m/min (green)
 - Amperage in A (red)
 - Voltage in V (blue)
 - Welding speed in cm/min (yellow)
-

Welding history of the individual weld sections
(e.g. for a MIG/MAG weld)

Command values

- Welding mode
- Duration
- Job number **
- Gas consumption
- Reference number of weld characteristic
- Wire speed
- Arc length correction
- Pulse correction
- U approximately
- I approximately

Limits

- I approximately [A]
 - Lower current limit [-A]
 - Upper current limit [+A]
 - Voltage command value [V]
 - Lower voltage limit [-V]
 - Upper voltage limit [+V]
 - Wire speed command value [m/min]
 - Lower wire speed limit [-m/min]
 - Upper wire speed limit [+m/min]
-

* displayed as a link; opens machines / info page for the machine

** displayed as a link; opens machines / jobs / displayed job no.

Spot welding operations

General

The "Spot welding operations" menu item shows all spot welding operations that have been carried out on a spot welding system configured as the user wishes within a network.

The following are displayed:

- Machine name
- Machine serial number
- Model
- Location
- IP address
- Spot number
- Program number
- Date
- Component serial number
- Component item number
- Errors
- Limit violations

A text filter and a filter wizard are available to simplify the search.

Click on the

Show more results

button to double the number of search results.

Text filter

When you click on **Help**, the possible search parameters are displayed.

To search:

- 1 Enter the required search parameters
- 2 Select the search parameter
- 3 Enter value
- 4 Click **OK**

The welding operations are displayed and sorted accordingly.

Example

Search for the device serial number

serialnumber: 12345678 ==> OK

All spot welding operations carried out on the power source with serial number 12345678 are displayed.

Filter wizard

When you click on **Filter wizard**, the possible search parameters of the filter wizard are displayed.
The filter wizard's search parameters are identical to the search parameters of the text filter.

General	Date/Time
- Id	- from
- Component serial number	- to
- Component item number	1st field:
- Serial number	entry of day, month, year from calendar
- Machine name	2nd field:
- Model	time
- Machine location	Limit violations
- IP address	- Has a limit violation
- Spot number	- Upper current limit exceeded
- Program number	- Lower current limit undercut
- Faulty (Yes / No)	- Upper force limit exceeded
	- Lower force limit undercut
	(Yes / No in each case)

To search:

- 1 Select the required search parameters
- 2 Enter value
- 3 Click the **Save** button

The spot welding operations are displayed sorted accordingly.

Spot welds



When you click on the eye symbol, the selected spot weld is shown.

The following data is displayed:

Item

- Spot number
- Program number
- Date
- Errors
- Limit violations

Machine

- Serial number
- Name *
- Model
- IP address
- Location

Part

- Item number
 - Serial number
-

Electrode

- Spot counter (moveable arm)
 - Spot counter (fixed arm)
 - Type (moveable arm)
 - Type (fixed arm)
 - Limit (moveable arm)
 - Limit (fixed arm)
-

Process tape

- Length used (moveable arm)
 - Length used (fixed arm)
 - Type (moveable arm)
 - Type (fixed arm)
 - Length (moveable arm)
 - Length (fixed arm)
 - Process tape consumption (moveable arm)
 - Process tape consumption (fixed arm)
-

Actual values (graphical depiction of the spot welding history)

The following parameters are displayed over the time axis:

- Wire speed in m/min (green)
 - Amperage in kA (target current ... bright red, actual current ... dark red)
 - Force in kN (target force ... light blue, actual force... dark blue)
-

* displayed as a link; opens machines / info page for the machine

General

In the "Statistics" menu item, statistical evaluation of all welding operations carried out on a welding system available in the network takes place.
A wide range of filter and grouping options are available.
The statistical values can be output as a bar chart, a line diagram or a matrix diagram.

Statistics

The criterion for the statistical evaluation is determined in the

Value to be displayed

selection list:

- Energy
- Gas consumption
- Wire consumption (weight)
- Wire consumption (length)
- Process tape consumption
- Process tape consumption (moveable arm)
- Process tape consumption (fixed arm)
- Process duration
- Welding operation error rate
- Section error rate
- Total number of welding operations
- Total number of sections
- Number of welding operations with errors
- Number of sections with errors
- Gas costs
- Wire costs

The time period for the statistics can be defined using the

Date range

selection list:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

The statistics can be grouped using the

grouped by

selection list.

The following grouping options are available:

- Hour
- Day
- Week
- Month
- Year
- Machine name
- IP address
- Machine serial number
- Machine location
- Component item number
- Job/program number
- Seam/spot number
- Gas
- Wire
- Wire type
- Wire diameter
- Process tape (moveable arm)
- Process tape (fixed arm)
- Process tape

Click on the button



to remove the grouping.

Click on the button

 **Add another group**

to add a second group to the statistics.

Pressing the



button allows the sequence of the groupings to be changed.

Click on the button

 **Define filter criteria**

to enter the following filter criteria:

- Machine serial number
- IP address
- Machine name
- Machine location
- Component item number
- Job/program number
- Seam/spot number
- Section number

The statistical result can be depicted in graphical form:

Bar chart (stacked)
Bar chart (grouped)
Line diagram
Matrix diagram

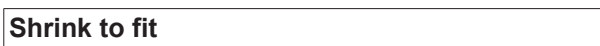
With the matrix diagram, the following sorting options can be specified using the

 **Sort diagram data by**

selection list:

- default
- descending series total
- descending category total
- descending series and category total

Using the

 **Shrink to fit**

button, the matrix diagram is shown smaller, so that it can be displayed in full on screens of various sizes.

Consumption figures

General

In the "Consumption figures" menu item, costs by part item number and a cost report are displayed if prices were saved for individual materials in the "Materials" menu item.

Consumption figures

The

Date range

selection box is used to specify the time period for the consumption figures:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

Costs by part item number

- Part item number
- Part name
- Total costs [€]
- Average costs by part [€]
- Costs by process step [€]
 - Wire (linked to statistics / wire costs)
 - Gas (linked to statistics / gas costs)

Cost report

Bar chart of total costs [€] by date

Component administration

General

Parts can be managed in the "Part administration" menu item.

The item number and name of the part are displayed, new parts can be added.



The sub-menu is opened by clicking on the menu symbol:



Edit

When this is selected, the **Edit part type** page is displayed.



Duplicate

When this is selected, the part is copied and the **Edit part type** page is displayed.



Remove

When this is selected, a security question is displayed. Following confirmation, the part is deleted.



Calculate Q-Master limits

When this is selected, the Q-Master limits are calculated for the corresponding part

Calculating Q-Master limits

When calculating the Q-Master limits, the relevant parts from the last seven days are calculated using three times the standard deviation.

A progress display is shown.

After the calculation is finished, the following data is displayed for the new limits:

- Progress step number
- Section number
- Voltage [V]
- Amperage [A]
- Wire speed [m/min]
- Graphical overview of voltage
- Graphical overview of amperage
- Graphical overview of wire speed
- Recalculated error rate [%]
(error rate in percent for the welds with updated limit values)

The

Date range

selection box can be used to specify the calculation time period:

- Unlimited
- Last 7 days
- Last 30 days
- Today
- Specific (from/to, calendar entry, click on the "Apply" button to display)

The

Standard deviation factor

input field can be used to enter the standard deviation factor.

Click on the

Refresh

button to display and recalculate the values.

Add new component type / edit component

After clicking on the

 **Add new component type**

button, the **Edit component type** page is displayed:

Description

- Item number *
- Component name *
- Rejection costs **

* must be entered for new components

** must be a figure between 0 and 10,000

Processing steps

 **Add new processing step**

1 - max. 20 characters



Remove processing step

Image x / x

 **Back**

to navigation between multiple images

 **Next**

 **Add new image**

 **Remove image**

Use the button



to transfer a processing step into an image:
click on the button for the processing step and drag it to the required image position (drag & drop)

To apply the newly created component or the changes, click on the

Save

button.

Cancel

Newly created components or changes will not be saved.

Materials

General

In the "Materials" menu item, data on the welded materials can be recorded.

Data for welding wires, gases and other data can be entered.

Welding wires

The following data is displayed for the welding wires:

- Wire designation
- Diameter [mm]
- Density [kg/m³]
- Costs [€/kg]

Values for density and costs can be entered.

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Gases

The following data is displayed for the gases:

- Gas designation
- Gas [€/l]

Values for gas can be entered.

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Others

The following data is displayed under "Others":

- Energy costs [€/kWh]
- Efficiency for Tps [%]
- Efficiency for DeltaSpot [%]

Values can be entered.

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Part monitoring

General

In the "Part monitoring" menu item, the welding history of a welding system that is currently welding is displayed.
The status of the welded part, the time of the last process and the process steps marked in any available images are updated automatically.

Part monitoring

The desired welding system that is currently welding can be selected in the selection box.

Click on the



buttons to start or interrupt the display of the welding history for the selected welding system.

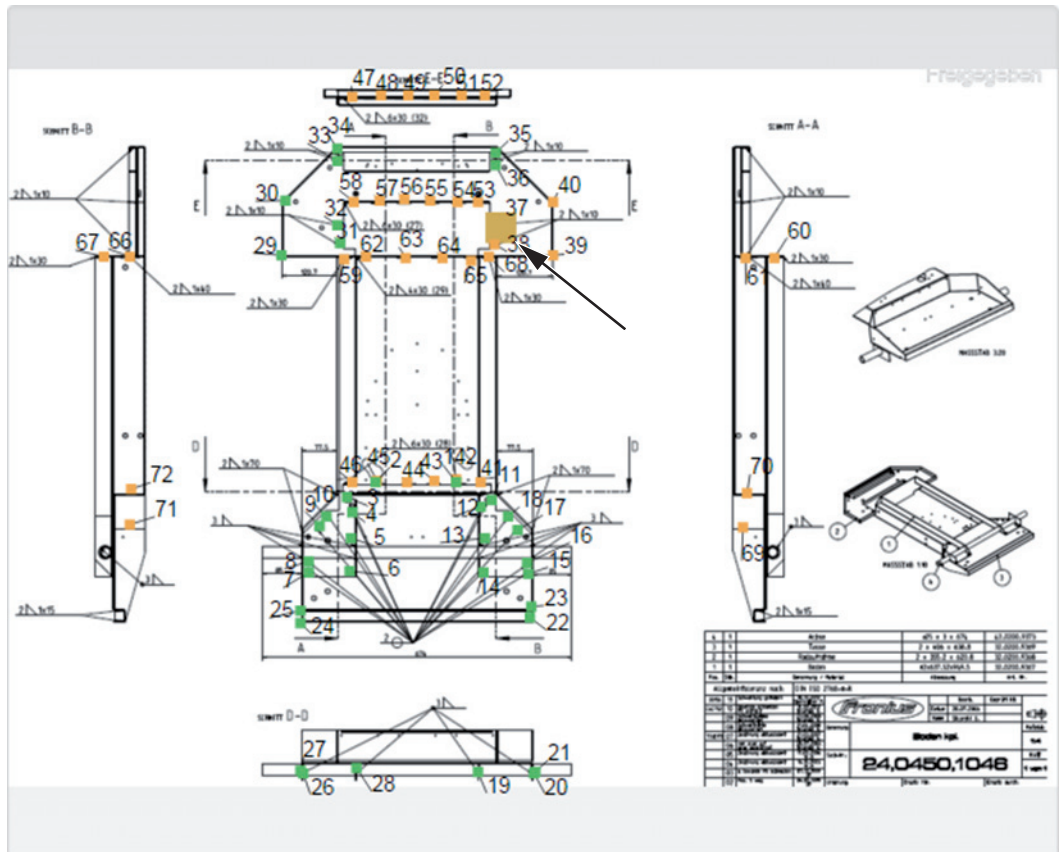
The Start button is always active, unless the display of the welding history has been interrupted by clicking the Pause button.

Part

- Display part report (linked to the relevant part report)
- Part serial number
- Part item number
- Status
- Last welded

Process steps that have already been welded are displayed in green in an available part image; process steps still to be welded are displayed in orange.

This is pointed out visually before the welding of a process step begins.



For example: Part image with welded process steps (green), process steps still to be welded (orange) and process steps currently being welded (orange, bold)

Configurations

General

In the "Configuration" menu item, data can be specified for the following areas:

- Machines
- Part identification
- System settings
- Network
- User administration
- Notifications
- Back-up
- Recovery
- Export
- Updates

Machines

Collating information

- Synchronise machine times On / Off
- IP addresses for TPS machines (can be entered in the field)
- IP addresses for DeltaSpot machines (can be entered in the field)

To apply the changes, click on the

button.

Changes will not be saved.

Machine accessibility

Enter IP address or host names in the box and click on the Test button

The network checks whether the specified IP address or host name is reachable. A corresponding confirmation or error message is displayed.

Machine visibility

Determine whether a welding system available in the network is shown.

For the available welding systems, the serial number, name, IP address and "Visible" selection box are shown.

When the "Visible" selection box is enabled, the welding system is displayed in WeldCube.

Part identification

Useful evaluations require precise allocation of welds to parts and thus part types.

For example, if a part type is defined by the item number in the WeldCube, a serial number defines a specific example of this type.

If there are no serial numbers available for parts in various processes, serial numbers can be generated by the WeldCube.

Serial and item numbers can be specified by the power source or WeldCube.



Displayed user interface

TPS



When settings are changed on one machine, the changes are applied to all machines.

If the selection box is activated, the changes to one machine are applied to all machines.

- Machine
- Item number source 
(machine / WeldCube)
- Serial number source 
(machine / WeldCube)
- Configuration

, (comma)
 ; (semicolon)
 / (slash)

Selection box for specifying the separator

 If the cursor is moved over the symbol, a help message will be displayed.

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Possible combinations for generating serial and item numbers

Item number source	Serial number source	Application
Machine	Machine	Automated applications: robot specifies both values
Machine	WeldCube	Manual applications: manual serial number increment on the RCU 5000i
WeldCube	Machine	Automated applications without part counter in the robot program
WeldCube	WeldCube	Manual applications: serial number increment on the RCU 5000i
WeldCube	WeldCube	Automated applications in which only one part type/item is welded (no implementation in robot program)

System settings

Date & time

- Date (entry of day, month, year from calendar)
- Time (hour, minutes - selection list)
- Time zone (selection list)
- Synchronise with time server (On / Off)
- Time server (direct entry)

System restart

- Restart now (button)

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Network

IMPORTANT! Changes and settings in the "Network" sub-menu require knowledge of network technology.

- Information on the existing network connection
- MAC address
- DHCP (activated / deactivated)
- IP address (direct entry)
- Subnet mask (direct entry)
- Default gateway (direct entry)
- Obtain DNS automatically (activated / deactivated)
- DNS address (direct entry)
- Alternative DNS address (direct entry)

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

User administration

User

Click on the button

Create user

to enter a new user:

- Enter user name
- Select user role
- Enter e-mail address
- Enter password (5-20 characters)
- Confirm password
- Click the "OK" button



The sub-menu is opened by clicking on the menu symbol:



Edit user

When this is selected, the **Edit user** page is displayed.



Delete user

When this is selected, a security question is displayed. Following confirmation, the user is deleted.

User roles

Click on the button

Create user role

to enter a new user role:

- Enter user role name (3-40 characters)
- Activate required roles

Configuration (Machines / System settings / Network / User administration / Messages / Back-up / Recovery / Export / Updates)

Machines

Materials

Parts (Part administration / Part report)

Spot welding

Statistics

TPS

- Click the "OK" button



The sub-menu is opened by clicking on the menu symbol:



Edit user role

When this is selected, the **Edit user role** page is displayed.



Delete user role

When this is selected, a security question is displayed. Following confirmation, the user role is deleted.

LDAP configuration

- Enter LDAP server (IP address)

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Notifications

System error notifications

- Enter mail server (direct entry)
- Enter the address that should be used as the sender (direct entry)
- Enter e-mail recipient (direct entry)

To send a test message, click on the

Test

button.

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Back-up

"Back-up" specifies where and how often a back-up of the available WeldCube data should take place.

Last successful back-up: [Date]

Storage location

- Enter path (direct entry)
- Enter user name (direct entry)
- Enter password (direct entry)

To change the entries, click on the

Edit

button.

To save a test back-up, click on the

Test

button.

Schedule

- Activate week day
- Select time (hour + minute, selection list)

To apply the changes, click on the

Save

button.

Cancel

Changes will not be saved.

Recovery

"Recovery" specifies the location from which back-up data should be drawn for recovering data to WeldCube.

Storage location

- Enter path (direct entry)
- Enter user name (direct entry)
- Enter password (direct entry)
- Restore system settings (Yes / No)

To recover back-up data to WeldCube, click on the

Start recovery

button.

Cancel

no recovery

Export

Export specifies the location to which WeldCube data is exported.

Export possible (on / off)

Storage location

- Enter path (direct entry)
- Enter user name (direct entry)
- Enter password (direct entry)

To change the entries, click on the

Edit

button.

To carry out a test export, click on the

Test

button.

Automatic clean-up

- Activated (On/Off)
- Enter deletion after xx months (direct entry of months)

To export WeldCube data, click on the

Save

button.

Cancel no data export

Updates

Application

- Search for update file
- Click the "Start Update" button

Operating system image

- Search for update file
- Click the "Start Update" button



FRONIUS INTERNATIONAL GMBH

Froniusplatz 1, A-4600 Wels, Austria

Tel: +43 (0)7242 241-0, Fax: +43 (0)7242 241-3940

E-Mail: sales@fronius.com

www.fronius.com

www.fronius.com/addresses

Under <http://www.fronius.com/addresses> you will find all addresses
of our Sales & service partners and Locations