



WELDCUBE PREMIUM

RELEASE 2.16

RELEASE DESCRIPTION

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1 OVERVIEW: NEW FUNCTIONS

The following list provides an overview of all news / changes functions in releases 2.14, 2.15 and 2.16 for the WeldCube Premium:

Release 2.14

- / Automatically detect machine type
- / Extended consumption figures (gas, wire consumption)
- / Browser compatibility update
- / Gas, wire consumption figures per welded part
- / Energy per unit length

Release 2.15

- / Grouping of job parameters
- / Maintenance link to logbook page

Release 2.16

- / Seam length at set welding speed
- / Extension of LiveView by number of machines
- / Deactivate time offset service
- / Improvement of Copy-Paste function @ TPS/i and iWave
- / Improvement of CopyTo function @ TPS/i and iWave
- / Enhancement of CopyTo function: Target job numbers variable
- / Improved job functions
 - / Fast switching of jobs
 - / Comparing jobs
 - / Comparing jobs - Different machines
 - / Export job(s) as Pdf: Export job list, export individual jobs
 - / Job parameters grouping on/off

2 GENERAL (R2.14)

2.1 Updated browser compatibility

The versions of the previously supported browsers have been increased to ensure the correct display of all web pages in WeldCube Premium. In addition, the check has been extended to include the "Microsoft Edge" browser.



Figure 1: Error message and overview of supported browsers

2.2 Improved configuration of power sources

The machine configuration page was updated with a focus on improved usability.

1. The individual sections have been rearranged.
2. The IP address can now only be entered in a single input field. The machine type is automatically determined by the WeldCube itself.

MACHINE CONNECTIONS

Synchronise with time server

Off Synchronize TPS/MW/TT machine times

Off Propagate time server to supported machines

Machine accessibility

IP address

Data collection ⓘ

Machine IP-Addresses

10.5.138.231

Advanced ...

Figure 2: Improved configuration of power sources

Attention: For automatic detection of the machine type the power source must be accessible via standard port (4711) and UDP port 15000 (for TPS/TPSi/WCC/WIG01/WIG02) or for Deltaspot UDP 1320. If this is not the case, the power source can be connected in the conventional way. The corresponding input fields can be found under "Advanced".

Data collection ⓘ

Machine IP-Addresses

10.5.138.231

Advanced ...

IP addresses for TPS/MW/TT machines

IP addresses for TPS/i machines

IP addresses for spot welding machines

Figure 3: Advanced power source configuration

3 CONSUMPTION VALUES (R2.14)

3.1 Supplement gas and wire consumption

In the consumption figures, total (Σ) and average (\emptyset) gas and wire consumption are available per component.

Part Item number	Part name	Σ Arc Gas Consumption	\emptyset Arc Gas Consumption	Σ Wire Consumption	\emptyset Wire Consumption	Σ Costs	\emptyset Costs/part	\emptyset Costs/processing step
165d9755-7722-4bb9-8f3d-f4be3aa8a0e4		6.18 l	6.18 l	0.97 m 0.00 kg	0.97 m 0.97 kg	30.92 €	30.92 €	Wire Gas

Figure 4: Consumption values

The total consumption values of gas and wire consumption can be broken down in more detail in relation to the types used. For this, the cursor must point to the desired field.

Note: To calculate the total consumption values, the base values must be entered under "Administration" in the "Material settings".

121.87 l
I1 100% Ar: 63.4 l
M12 Ar+2-5%CO2: 15.8 l
M13 Ar+2-5%O2: 26 l
M21 Ar+15-20%CO2: 6.6 l
no Gas: 10.1 l

Figure 5: Detailed breakdown of consumption values

3.2 Gas and wire consumption per component

Until now, it was only possible to find out an average consumption value of all welded components of a certain component number (item number) via the statistics. As of Release 2.14, for each new weld with valid part information (item number & serial number), the consumption values for gas and wire are stored in the database aggregated by type.

Note: Old welds are not processed afterwards.

The new consumption values can be found in the component report under the process steps. In addition, the data is available in the component report PDF and in the API v3.

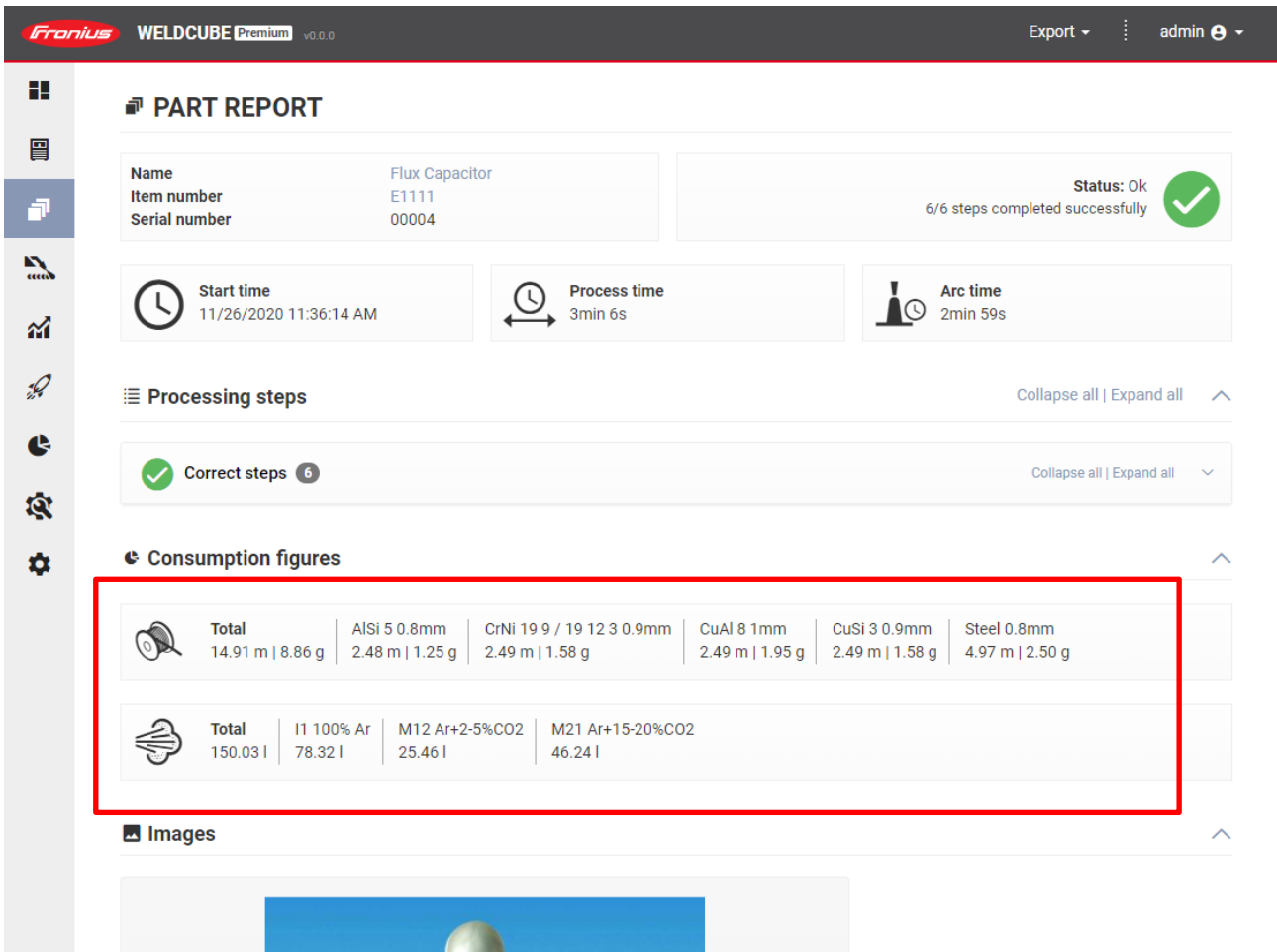


Figure 6: Advanced consumption figures in the WeldCube

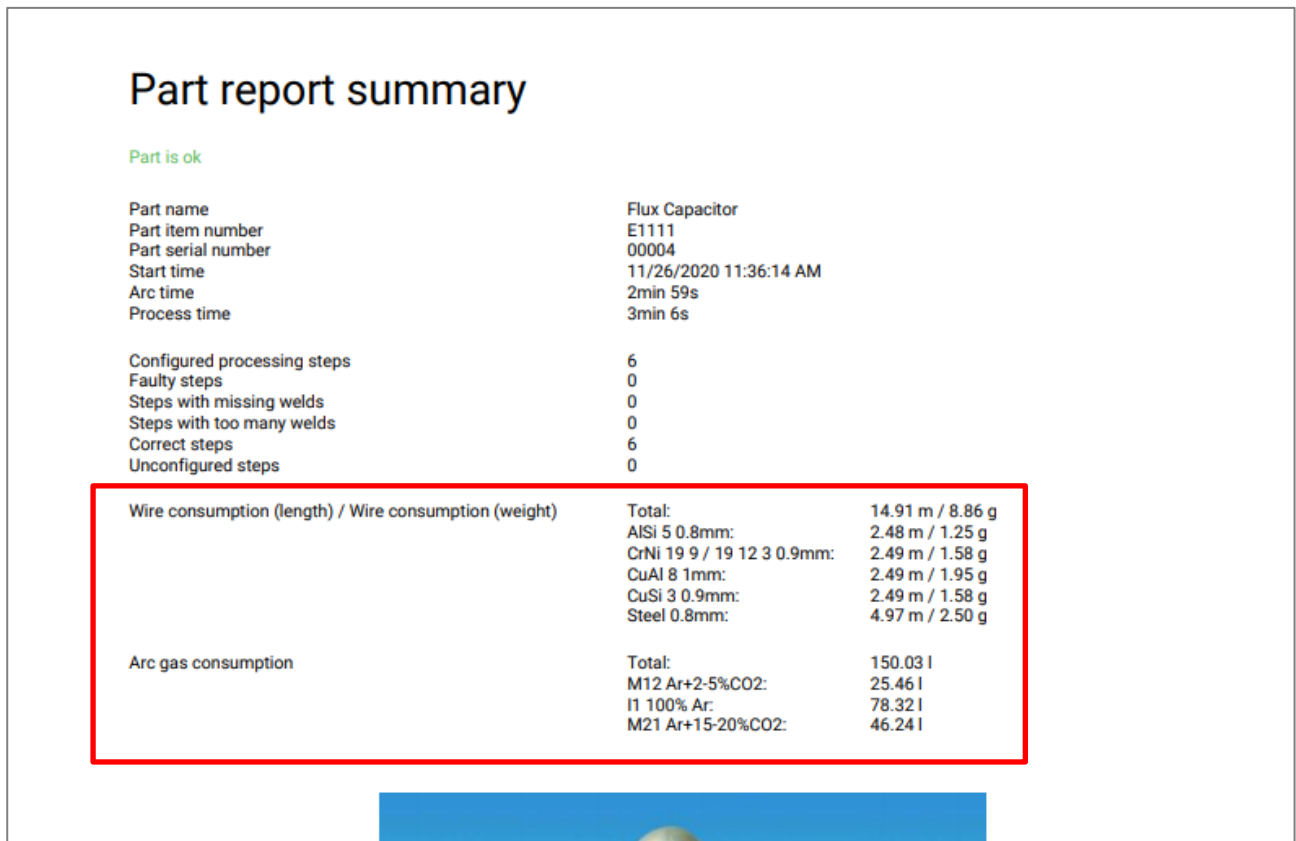


Figure 7: Extended consumption figures in PDF report

```
/api/v3/Parts/{partItemNumber}/{partSerialNumber}

"PartConsumptions": {
  "GasConsumptions": [
    {
      "Label": "M12 Ar+2-5%CO2",
      "Volume": 25.4642124
    }
  ],
  "WireConsumptions": [
    {
      "Label": "Steel",
      "Diameter": 0.8,
      "Length": 4.96918726,
      "Mass": 2.5
    }
  ],
  "UsedUnits": [
    {
      "Dimension": "Diameter",
      "Unit": "mm"
    },
    {
      "Dimension": "Length",
      "Unit": "m"
    },
    {
      "Dimension": "Mass",
      "Unit": "g"
    },
    {
      "Dimension": "Volume",
      "Unit": "l"
    }
  ]
},
```

Figure 8: Extended consumption figures in the API v3

If the density is entered in the material settings for wire types, the weight is also displayed in addition to the consumed wire length. This also applies to the total wire consumption if a density has been stored for each type.

4 ENERGY PER UNIT LENGTH (R2.14)

If the documentation provides the welding speed, the line energy (kJ/cm or kJ/inch) is displayed on the welding detail page.

Note: The welding speed can be sent to the welding machine via a fieldbus robot interface during welding.

The energy per unit length [kJ/cm] is calculated based on the average welding speed v [cm/min] of the whole weld, the instantaneous energy IE [kJ] and the welding time t [s]. The thermal resistance of the welding process is not included!

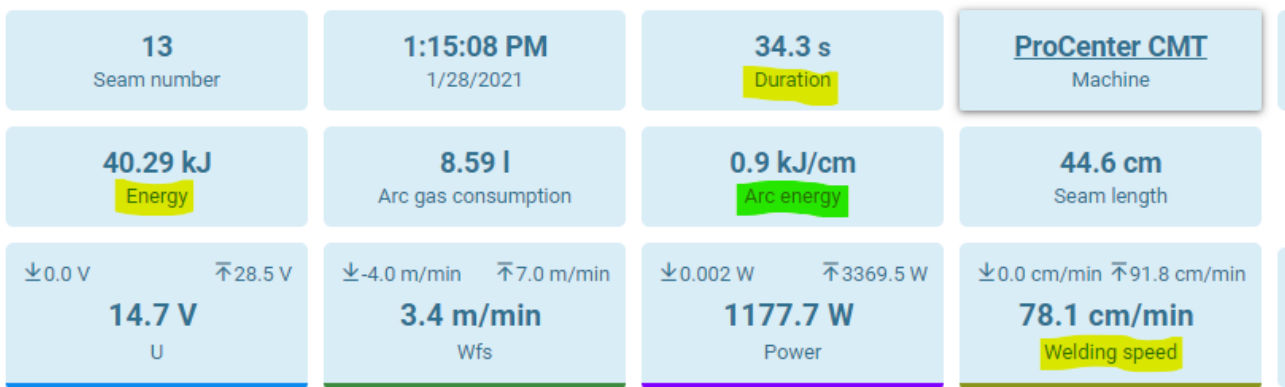


Figure 9: Energy per unit length on the weld detail side in the WeldCube

```
</SingleStats>
<SingleStats>
  <Name>Arc energy</Name>
  <Value>10.946566581726074</Value>
  <Unit>kJ/cm</Unit>
</SingleStats>
<SectionData>
```

Figure 10: Energy per unit length in the Json export

```
{
  "Name": "Arc energy",
  "Value": 10.946566581726074,
  "Unit": "kJ/cm"
}
```

Figure 11: Energy per unit length in XML export

```
<SingleStat>
  <Name>Arc energy</Name>
  <Unit>kJ/cm</Unit>
  <Value>10.94657</Value>
</SingleStat>
```

Figure 12: Energy per unit length in the API

5 GROUPING OF JOB PARAMETERS (R2.15)

All parameters of the job types (MIG, MIG Manual, MMA, TIG, TIG (extended), CEL) are currently displayed grouped in the job detail view, as well as on the machine.

Common	
Welding mode	MIG Standard
Name	MigStdUnivSteel06M21
Gas	M21 Ar+15-20%CO2
Wire	EN: Steel, AWS: ER 70 S-6
Wire diameter	0.6 mm
Characteristic	3184
Property	universal
Upper power correction limit	0 %
Lower power correction limit	0 %
Upper arc length correction limit	0.0
Lower arc length correction limit	0.0
Welding parameters	
Trigger mode	2-step
Wire Feed Speed	5.0 m/min
Current	47 A
Voltage	17.0 V
Material Thickness	1.0 mm
Arclength correction	0.0
Weld-Start/ Weld-End	
Starting current	135 %

Figure 13: Grouping of job parameters on the job detail page

6 MAINTENANCE LINK (R2.15)

With release 2.15 it is possible to switch directly from the machine logbook page to the maintenance page. The serial number of the current power source and the set filters of the logbook will be transferred.

Filters that are taken from the logbook on the maintenance page:

- Entry type (all, error, warning, notification)
- Date range (last month, last 7 days, ...)
- Machine serial number

Important: The link to the maintenance page is only available for the entry types all, error, warning and notification.

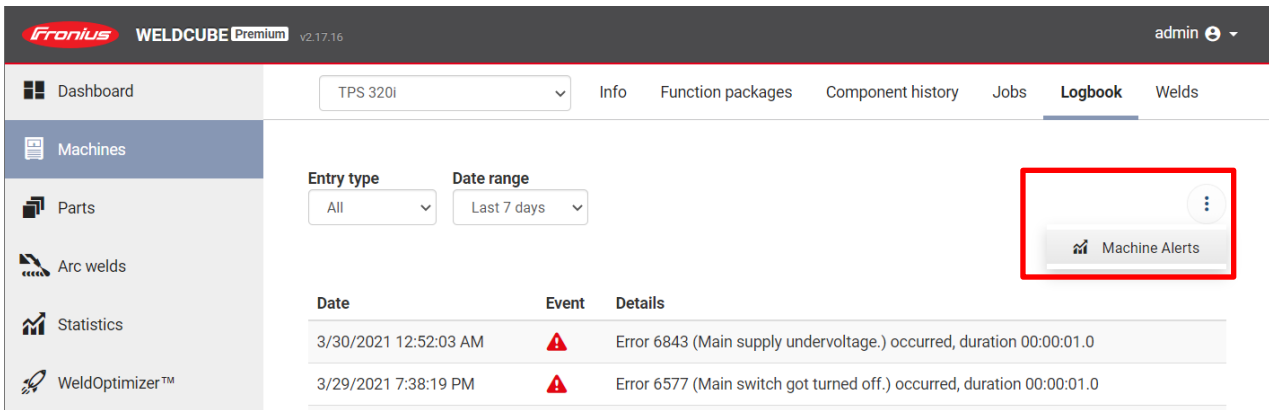


Figure 14: Link to the maintenance page on the machine logbook page

7 ADDED/IMPROVED DISPLAYS (R2.16)

7.1 Seam length

As of Release 2.16, the seam length is displayed on the weld detail page.

By default, it is displayed metrically in centimeters. If the seam length is longer than 1000 cm, the value is displayed in meters. In the imperial system of units, the seam length is consistently represented in inches.

Note: Documentation of the weld with duration and welding speed is a requirement. The welding speed can, for example, be provided by the robot via a data interface.

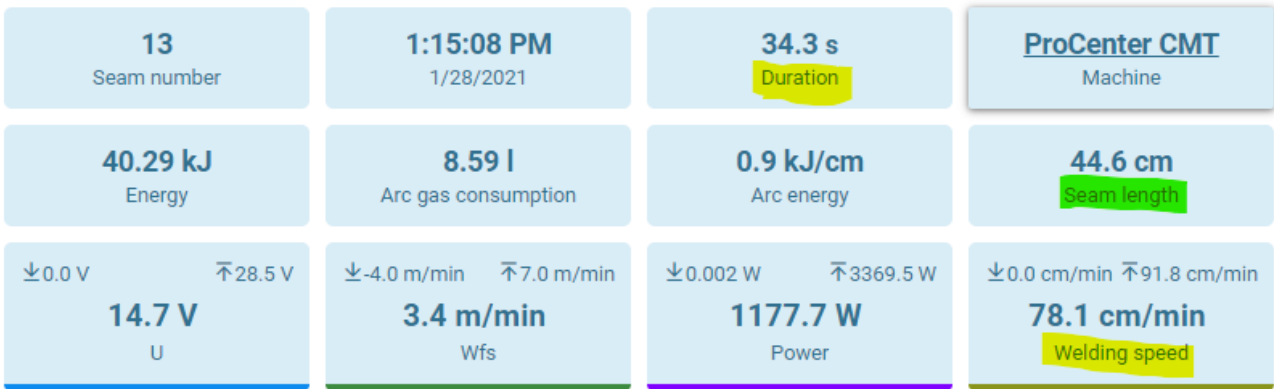


Figure 15: Seam length on the weld detail side

7.2 Number of machines in the LiveView

In the Machine Live view, the number of machines is displayed above the respective panel. In addition, improvements have been made to the design, and the sorting of machines has been adjusted (Status → Type → Name).

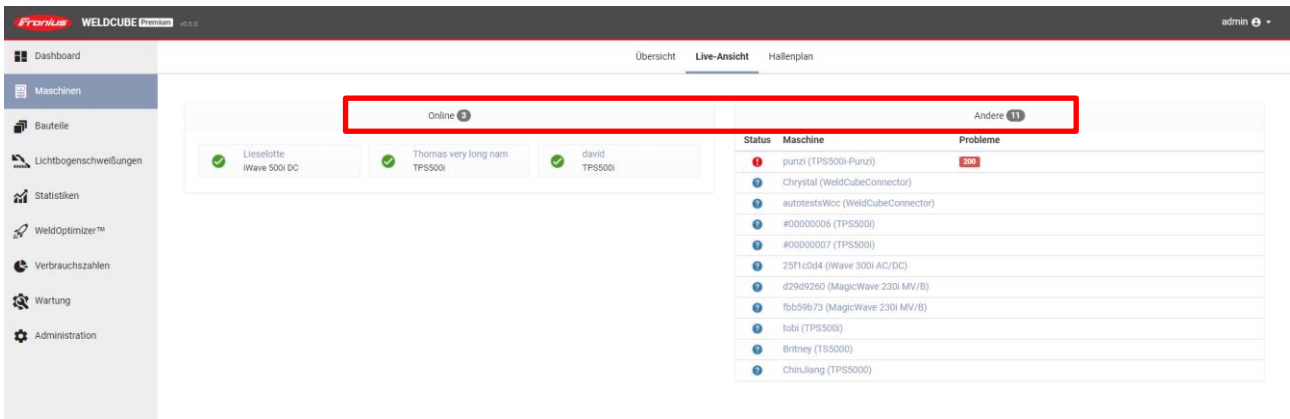


Figure 16: Revised LiveView

8 GENERAL (R2.16)

8.1 Timeoffset Service deactivated

The function for correcting the time difference machines to WeldCube has been disabled due to recurring problems with welds in the future. The function can be reactivated via the featuretoggle "timeoffsetservice".

9 COPY FUNCTIONS FOR JOBS (R2.16)

9.1 Copy-Paste-Function (TPS/i, iWave)

In the job list for TPS/i and iWave, all free job slots are now also displayed with Release 2.16. This makes it possible to copy jobs to a free slot using the copy/paste function.

In the table at the top right, the "free" slots can be hidden.

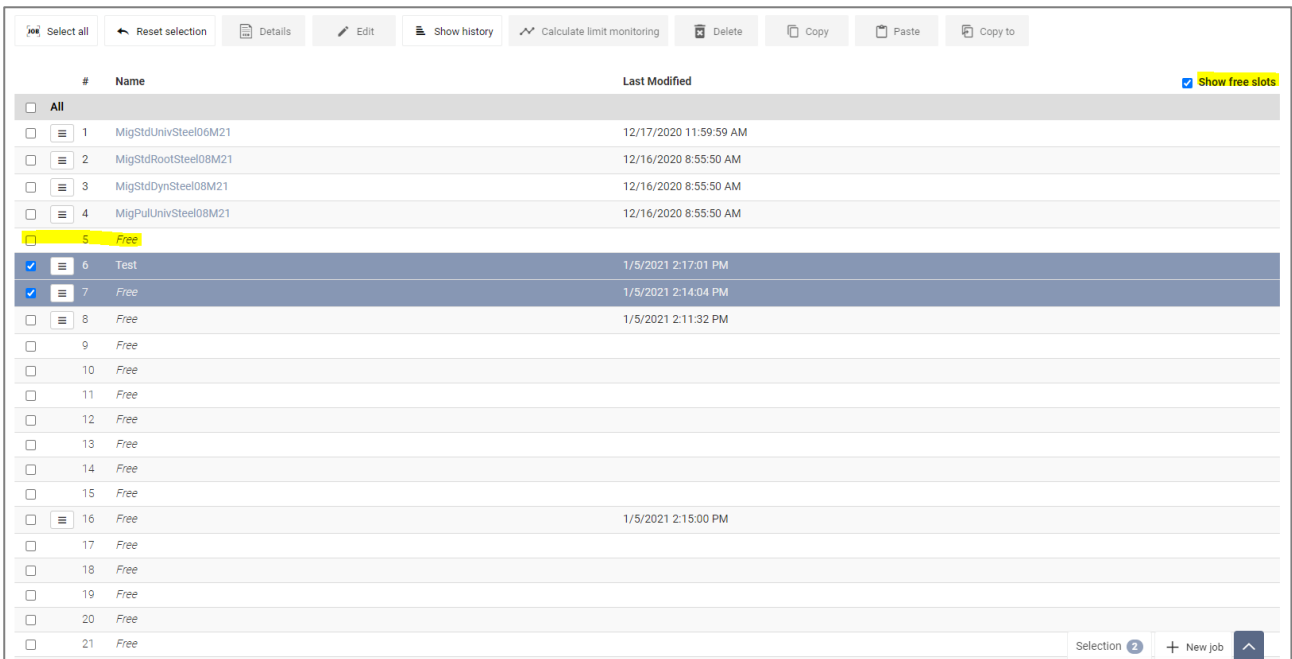


Figure 17: Copy-paste function for TPS/i and TIG

Additional improvements regarding usability:

- Button bar at the top stays fixed when scrolling down
- With just one click on the job name, the detail page can be opened immediately.
- Scroll up function
- "Create job" button always on screen
- Display of the currently selected elements in the list (number)
- Help dialog with hint to keyboard shortcuts for copy and paste (Ctrl + C, Ctrl + V)

9.2 Improvement CopyTo-function (TPS/i, iWave)

The "Copy To" function can still be used to copy jobs to other machines. The "current" machine (on which the displayed jobs are located) is no longer listed in the dialog.

Note: The copy/paste function should be used to copy the jobs on your own machine. (see 9.1 Copy/Paste function (TPS/i, iWave))

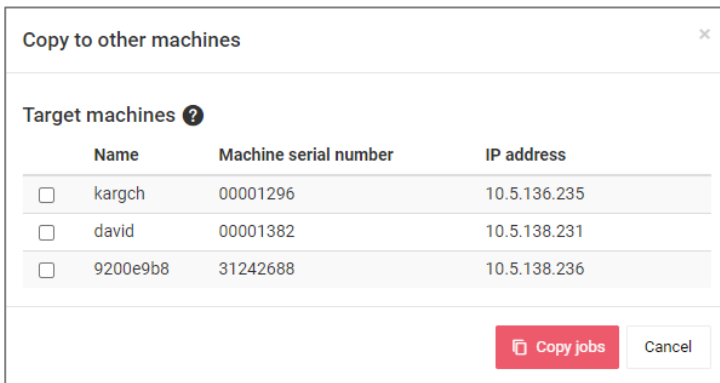


Figure 18: Copy jobs to another machine

Additional improvements regarding usability:

- Element arrangement
- Error handling improved

9.3 CopyTo function: extension of variable target job numbers

The "Copy-To" function has been extended and now supports two different modes to define which job numbers should be used on the target machine.

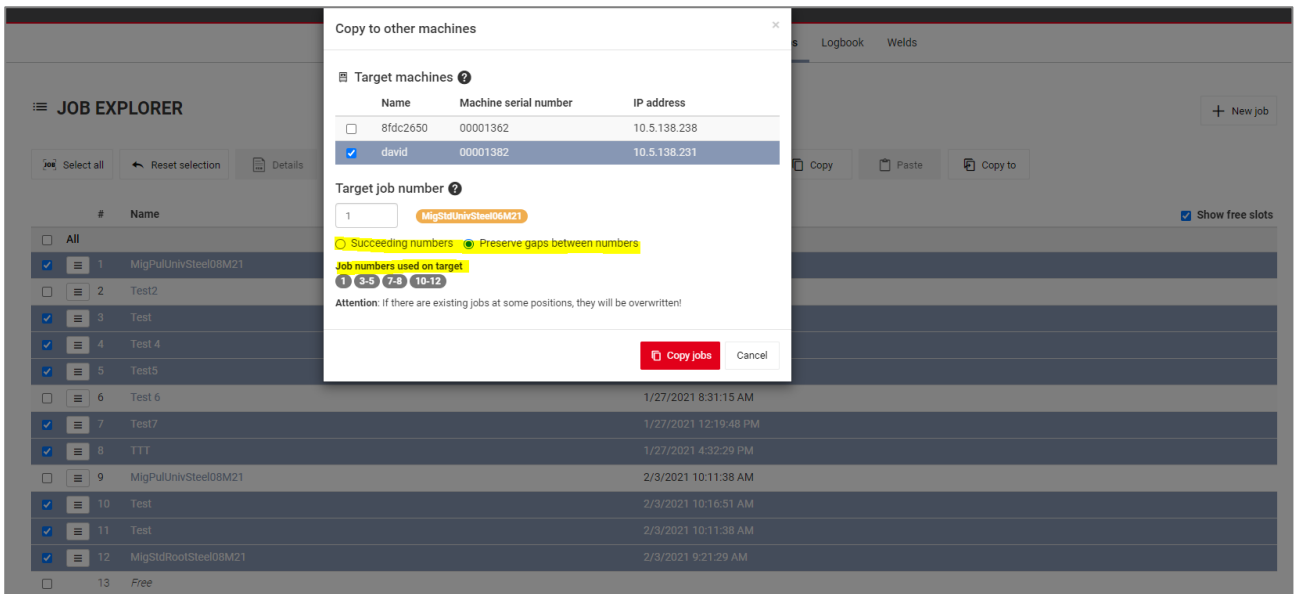


Figure 19: Variable target job numbers in CopyTo function

Modi:

- Succeeding numbers: Selected jobs are copied in direct succession starting from the specified target job number
- Preserve gaps between numbers: Selected jobs are copied starting from the specified target job number, but the original gaps between the jobs are taken into account

Below the mode selection the used target job numbers are displayed. In addition, a message appears that existing jobs will be overwritten if there are any.

10 IMPROVED JOB FUNCTIONS (R2.16)

10.1 Navigation between jobs

The pages for viewing and editing a job have been combined so that it is now possible to switch dynamically between viewing/editing on the job page.

For quick and easy navigation between jobs, the table of all existing jobs is displayed on the right side of the screen.

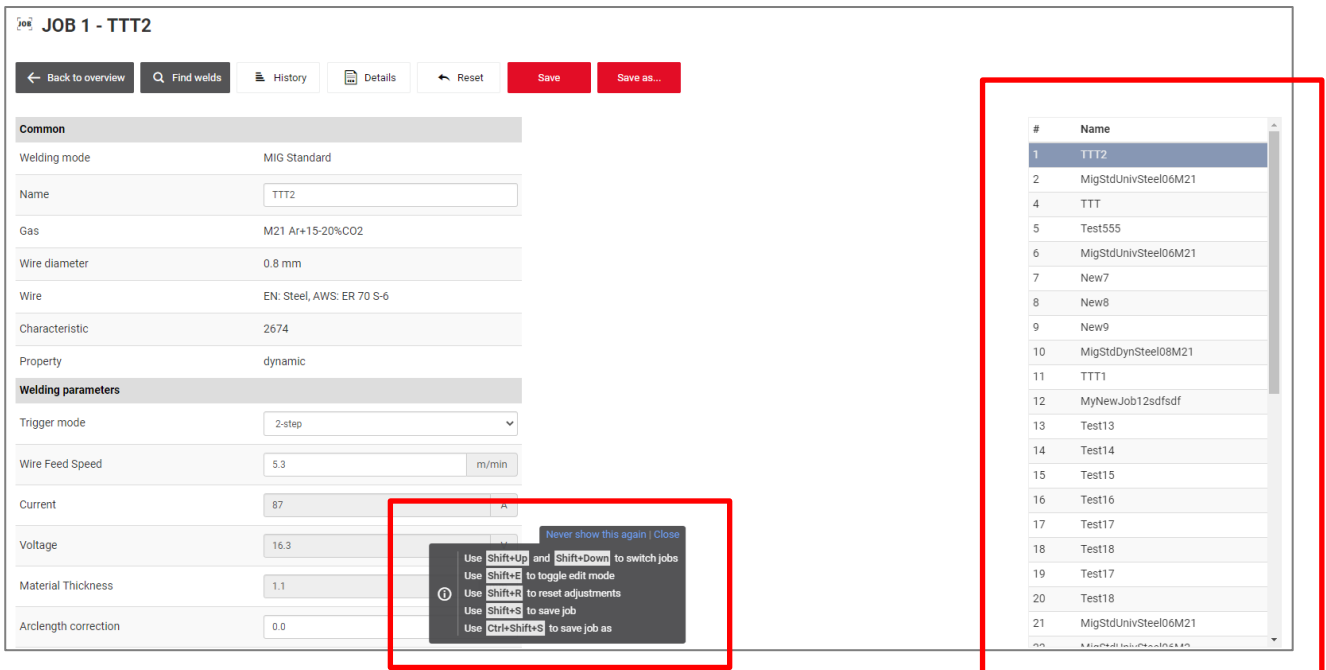


Figure 20: view and edit window jobs

For the user there is the possibility to perform various operation additionally with keyboard shortcuts. As you can see in the picture above, a help dialog is displayed when you open the page, showing the different keyboard combinations. With "Never show this again" the dialog can be hidden permanently. If the dialog is closed with "Close", it will come up again after a certain time if the page is opened again at a later time.

Functions / Shortcuts:

- Details: Switch between detail view and edit mode (Keyboard: Shift+ E)
- Reset: Reset changes made in the input fields (Keyboard: Shift+ R)
- Save: Save the job (Keyboard: Shift+ S)
- Save as: Save the job under a different name and number on this machine (Keyboard: Shift + S)
- Job table on the right: Switching through different jobs (Keyboard: shift + up or shift + down)

10.2 Compare jobs (one power source)

On the redesigned job page, you can now compare up to three other jobs with the current job.

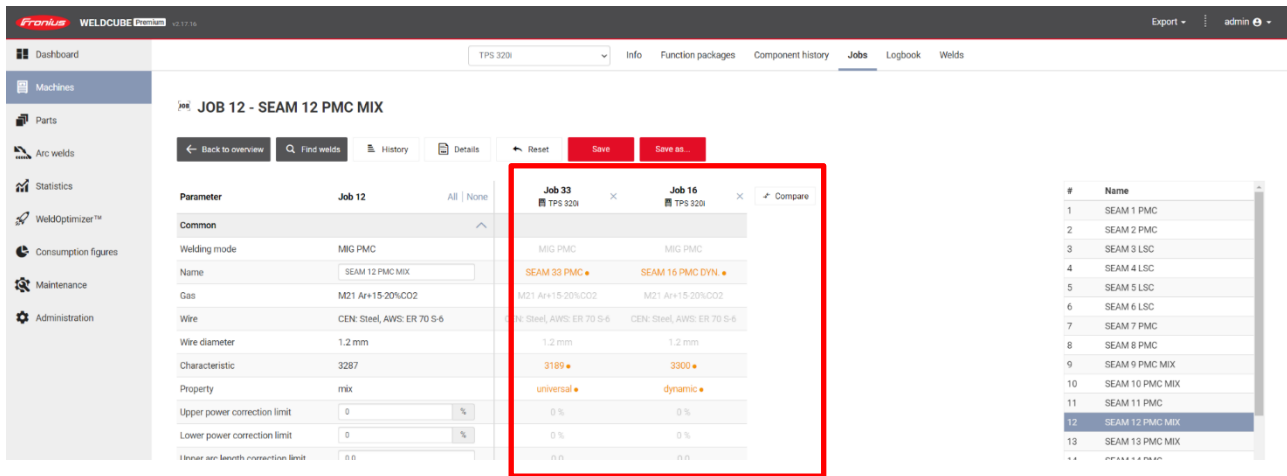


Figure 21: compare jobs

With a click on the "Compare" button a job can be added for comparison. Values that differ from the output job are highlighted in orange and marked with a dot. Job switching is also supported, i.e. if you change the reference job (on the left), the right columns update dynamically.

For ease of use, WeldCube Premium remembers the selected columns and displays them again when returning to the job page of the selected power source.

Functions / Shortcuts:

- Compare: Add a job which should be compared (Keyboard: Shift + C).

10.3 Compare jobs (multiple power sources)

Jobs can also be compared across power sources. The job and the corresponding current source are displayed in the comparison columns.

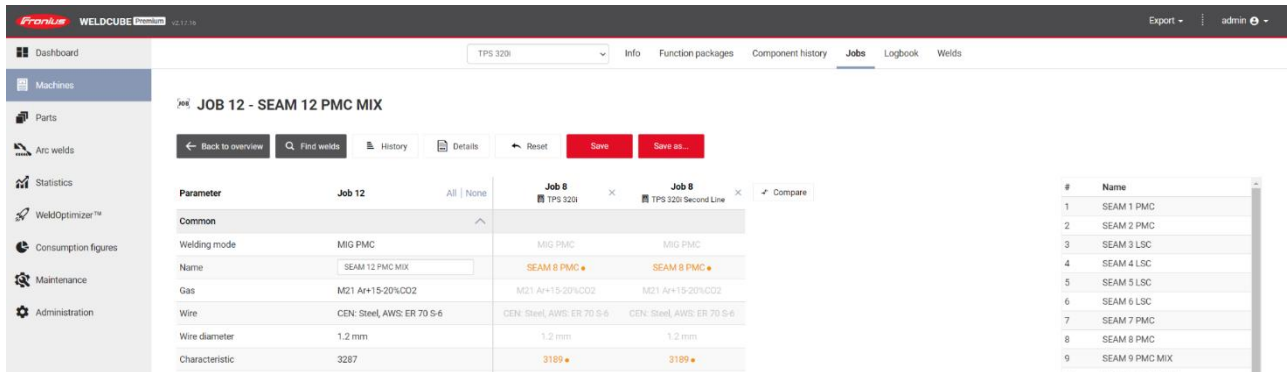


Figure 22: Compare jobs across power sources

10.4 Jobs PDF-Export (TPS, TPS/i)

With the extended PDF export, individual jobs or now also several jobs can be exported as PDF at once. The content of the PDF is identical to the job information from the welding PDF or the component PDF.

Note: The function is only available for TPS and TPS/i.

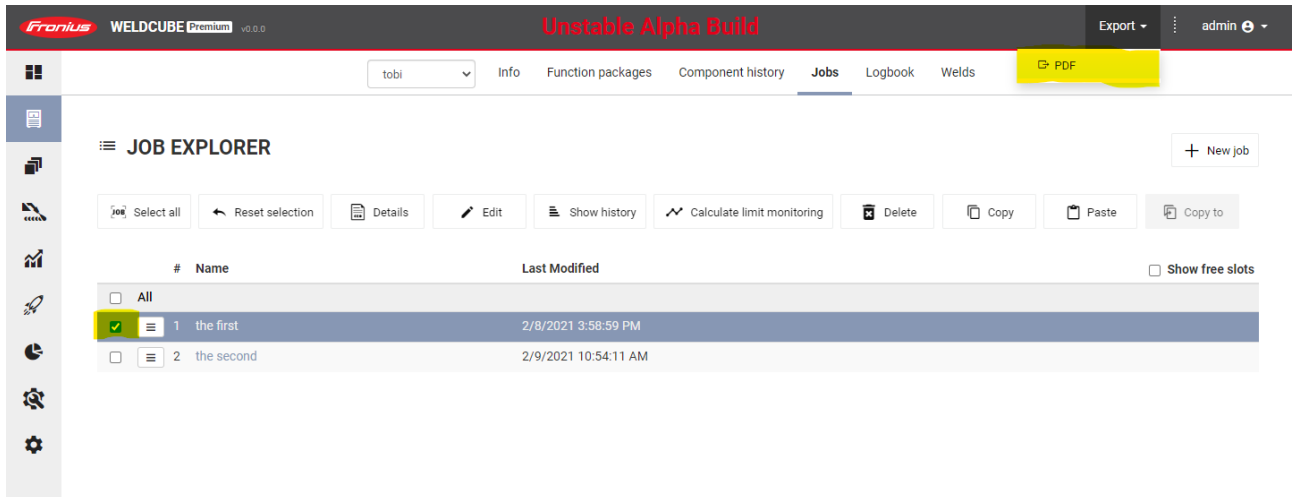


Figure 23: Multiple job PDF export

Export job list as PDF

Multiple lines can be selected in the Job Explorer and the PDF can be created as usual using the export link. Marked free job slots are ignored and not exported. If no job or only free job slots are selected, the export link is visible but deactivated.

Note: The list of jobs to be exported is limited to the currently valid jobs.

Export individual jobs as PDF

Individual jobs can be exported as PDF directly on the Job Detail page.

Note: Export is possible with currently valid and historical jobs.

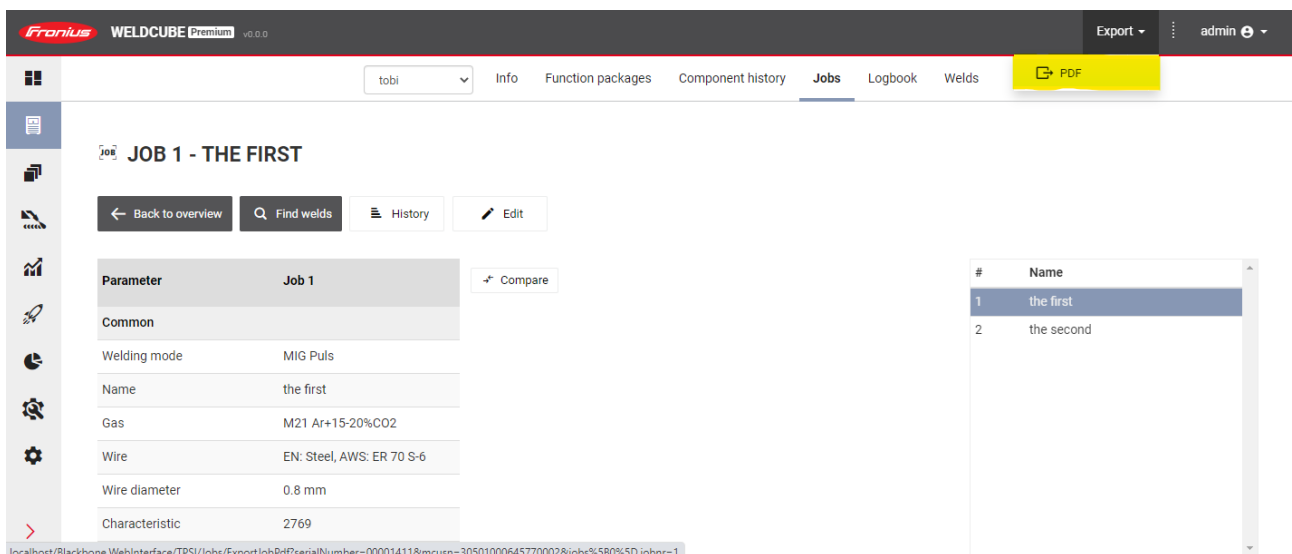


Figure 24: Export individual jobs to job detail page

10.5 Job Parameter Groups Fold In/Out

In the Job Detail view, the individual groups of job parameters can be folded in and out to achieve a better overview. With a click on "All" or "None" all groups can be either shown or hidden.

Note: For higher usability the selected states of the groups (on/off) per job type are stored locally in the browser for one user.

JOB 1 - MIGPULUNIVSTEEL08M22					
← Back to overview 🔍 Find welds ☰ History 📄 Details ↶ Reset Save Save as...					
Parameter	Job 1	All None	Job 2 thomas	Job 5 thomas	Job 7 thomas
Common		☑			
Welding parameters		☒			
Trigger mode	2-step		2-step	2-step	2-step
Wire Feed Speed	5.0 m/min		5.0 m/min	5.0 m/min	5.0 m/min
Current	62 A		152 A ●	136 A ●	62 A
Voltage	19.1 V		20.2 V ●	21.7 V ●	19.1 V
Material Thickness	1.7 mm		4.0 mm ●	2.0 mm ●	1.7 mm
Arclength correction	0.0		0.0	0.0	0.0
Weld-Start/ Weld-End		☒			
Starting current	135 %		135 %	135 %	135 %
Start Arclength correction	0.0		0.0	0.0	0.0
Start current time	off		off	off	off
Slope 1	1.0 s		1.0 s	1.0 s	1.0 s
Slope 2	1.0 s		1.0 s	1.0 s	1.0 s
End current	50 %		50 %	50 %	50 %
End Arclength correction	0.0		0.0	0.0	0.0

Figure 25: Folding in and out parameter groups