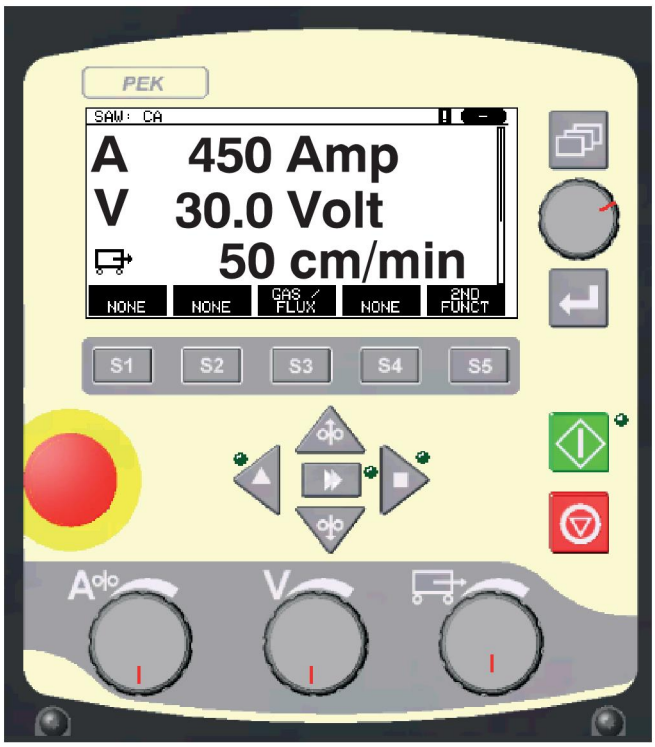
A2, A6 PEK Control Panel



Instruction manual

0460 949 274 GB 20151222

Valid for: from program version 4.10A

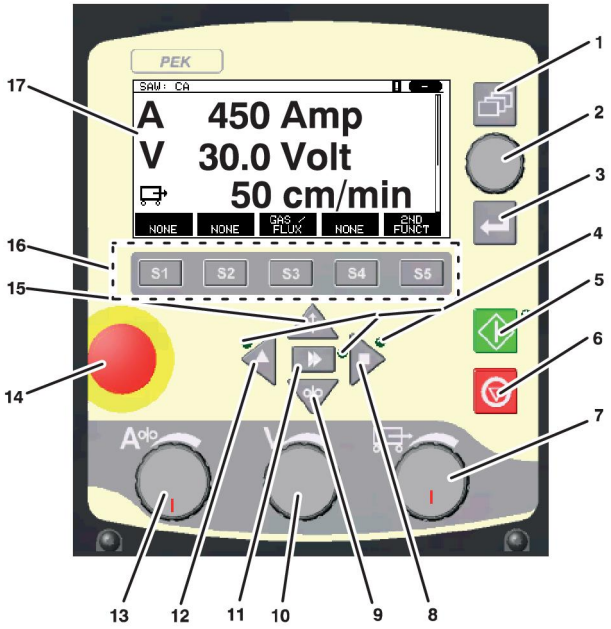
1 INTRODUCTION

To benefit as much as possible from your welding equipment, we recommend that you read this instruction manual.

For general information about operation, see the instruction manual for the control unit, automatic welding machine, column and boom or power source.

The text presented in the display is available in the following languages: English, Swedish, Finnish, Norwegian, Danish, German, French, Italian, Dutch, Spanish, Portuguese, Hungarian, Polish, American, Czech, Chinese and Russian.

1.1 Control panel



1. Menu 
2. Knob for moving cursor (positioning knob)
3. ENTER 
4. Green indicating lamp, illuminates when the function is active
5. Welding start 
6. Welding stop 
7. Knob for setting the travel speed in the measurements menu, in other menus to increase or decrease the set values (setting knob)
8. Manual travel motion 
9. Manual wire feed downwards 
10. Knob for setting the arc voltage in the measurement menu, in other menus to increase or decrease the set values (setting knob)
11. Fast motion 
12. Manual travel motion 
13. Knob for setting the welding current / wire feed speed in the measurements menu, in other menus to increase or decrease the set values (settings knob)
14. Emergency stop
15. Manual wire feed upwards 

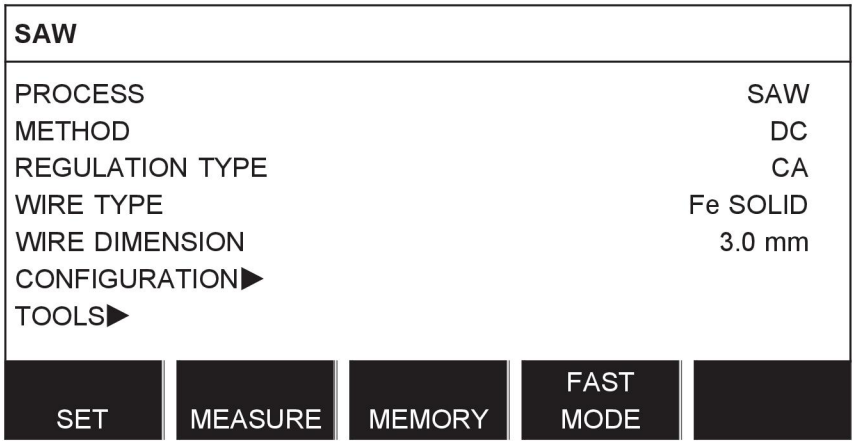
16. Soft keys 

17. Display

1.1.1 Keys and knobs

Menu 

The Menu key always takes you back to the main menu in the relevant process:



ENTER 

Use the ENTER key to confirm a selection.

Soft keys 

The five keys (S1 - S5) under the display have different functions. They are called ”soft” keys, i.e. they can have different functions depending on which menu you are in. The current function for these keys can be seen from the text in the bottom row of the display. When the function is active, this is indicated by the field with the text box turning white.

Wire feed upwards 

Key for reversing the wire without arc voltage, when replacing wire bobbin for example. The wire is fed as long as the button is depressed.

Wire feed downwards 

Key for feeding wire without arc voltage. The wire is fed as long as the button is depressed.

Travel motion 

Key for travel motion in the direction of welding where the symbol is indicated on the weld equipment. To stop travel motion press  ,  or  .

The LED illuminates during travel motion.

Travel motion 

Key for travel motion in the direction of welding where the symbol is indicated on the weld equipment. To stop travel motion press  ,  or  .

The LED illuminates during travel motion.

Welding start 

Key for welding start.

Welding stop 

Key for welding stop for all travel motions and all motors.

Positioning knob

The uppermost right-hand knob is called the positioning knob in the instruction manual and is used to position the cursor.

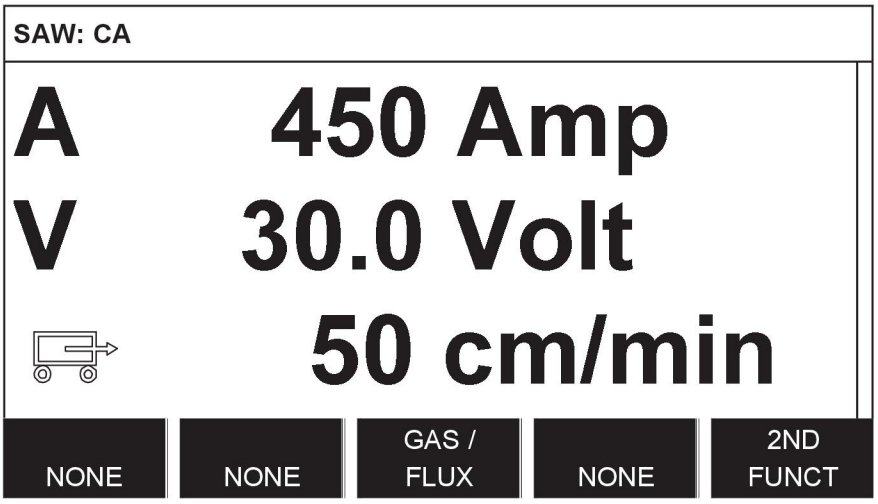
Settings knob

The three knobs under the panel are called settings knobs in the instruction manual and are used to change the set values in the panel.

1.2 First step

1.2.1 Choice of language

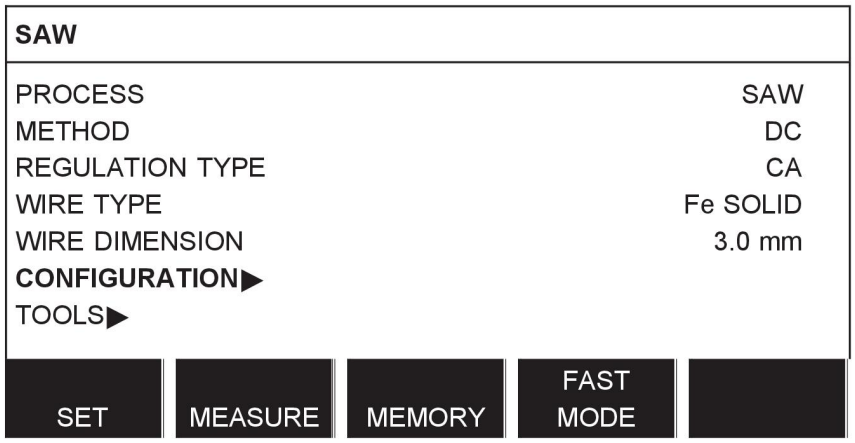
This menu appears when the machine is first started:



The control panel is set to English on delivery. To select your language, proceed as follows:

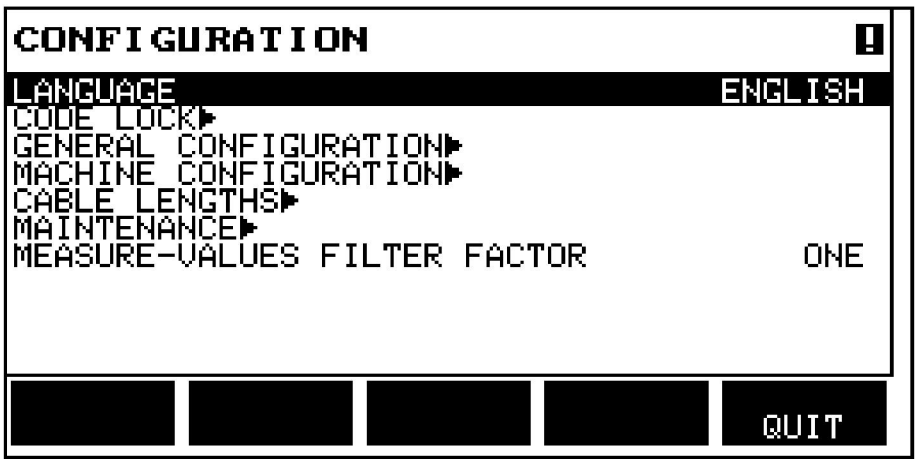
Press Menu  to access the main menu.

Position the cursor on the CONFIGURATION row, using the positioning knob.



Press ENTER  to confirm the selection.

Position the cursor on the LANGUAGE row. Press ENTER to bring up a list of the languages that are available in the control panel.



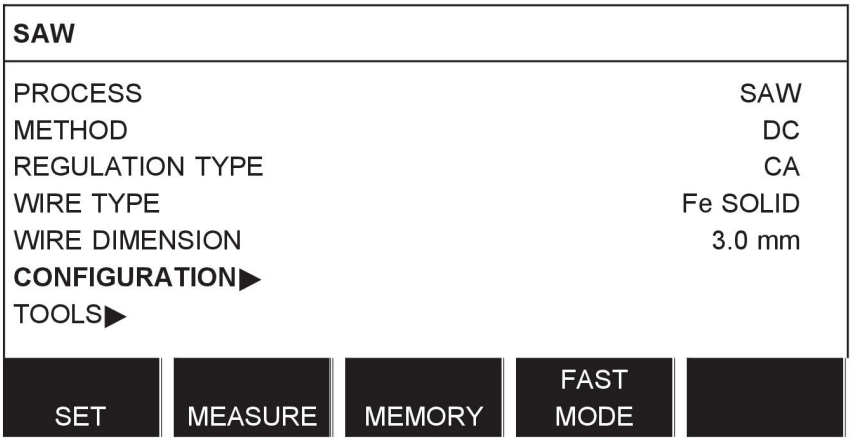
Position the cursor on the row for your language and press ENTER.

1.2.2 Unit of measurements

The control panel is set to metric measurement on delivery. To select another mesurement, proceed as follows:

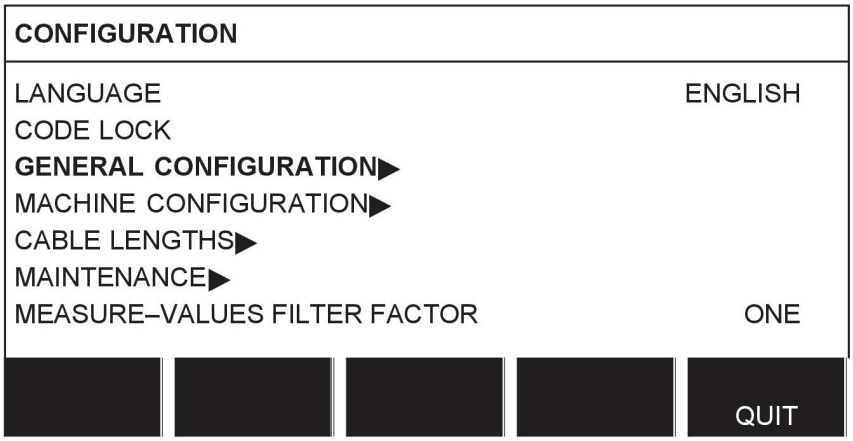
Press Menu  to access the main menu.

Position the cursor on the CONFIGURATION row, using the positioning knob.



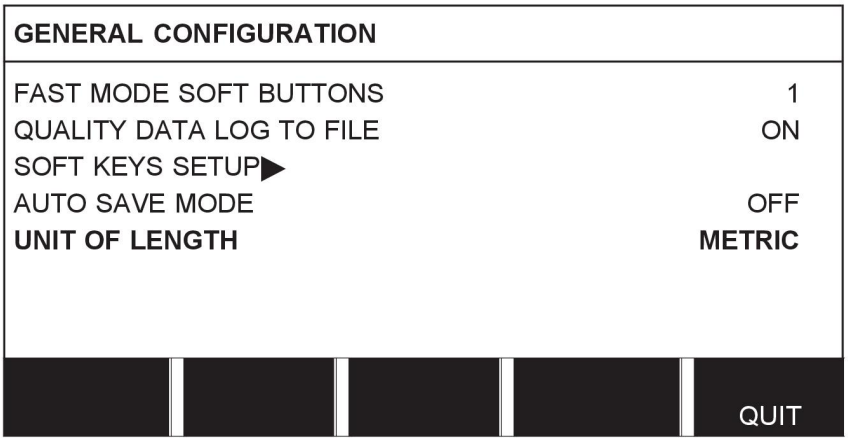
Press ENTER  to confirm the selection.

Position the cursor on the GENERAL CONFIGURATION row.



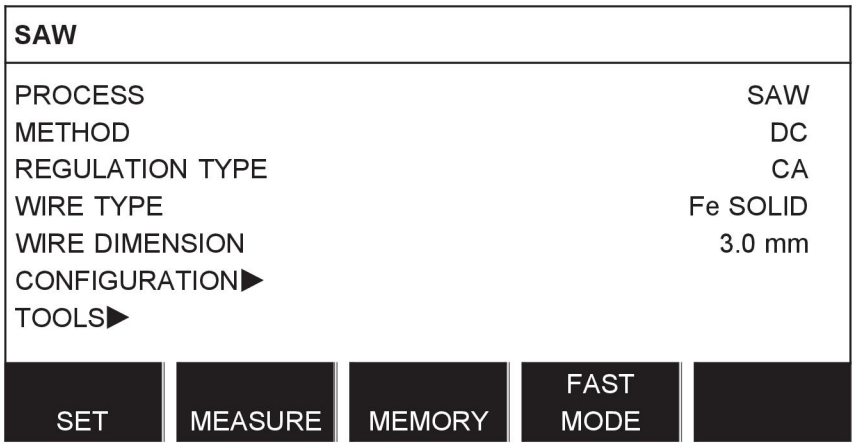
Press ENTER  to confirm the selection.

Position the cursor on the UNIT OF LENGTH row. Press ENTER to bring up a list of the mesurements that are available in the control panel.



Position the cursor on the row for correct mesurement and press ENTER.

1.3 Display



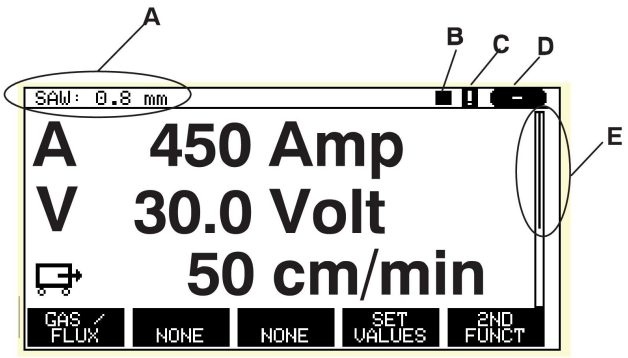
Cursor

The control panel's cursor is presented as a black field around the text, with the selected text turning white. The cursor is displayed in the instruction manual with bold text

Text boxes

At the bottom of the display are five boxes containing text that describes the current function of the five soft keys below the display.

1.3.1 Symbols in the display



A The selected weld data set

B Welding direction

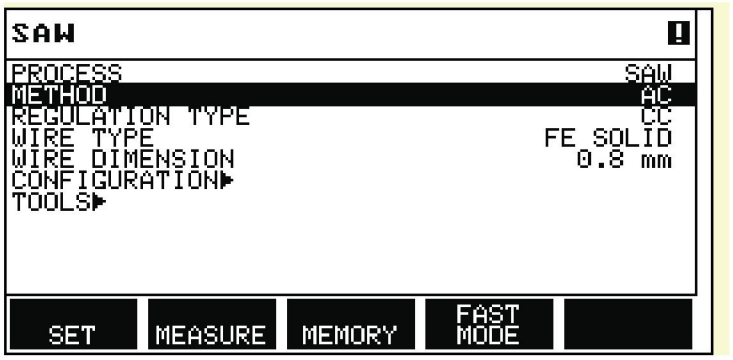
C A fault has occurred, see *"Event handling"*, page 56.

D Recalled memory position number

E Scroll bar. Further information can be found in this menu

Arrows

Where there is more information behind a row, this is indicated with a black arrow ▶ behind the text.



1.4 General information about settings

There are three types of setting:

- Setting of numerical values
- Setting of given alternatives
- Setting of ON/OFF mode

1.4.1 Setting of numerical values

The settings knobs are used to increase or decrease the set values when setting numerical values. In the measurements menu, the knobs for welding current / wire feed speed, arc voltage or travel motion are used.

1.4.2 Setting with given alternatives

Some settings are made by selecting an option from a list. This is an example of the list:

SAW
GMAW
GOUGING

The cursor is positioned on the row for SAW. By pressing ENTER in this position, the SAW option is selected. If you want to choose another option instead, position the cursor on the correct row by scrolling up or down using the positioning knob. Then press ENTER. If you want to exit the list without making a selection, press QUIT.

1.5 QUIT and ENTER

The “soft” key farthest to the right is used primarily for QUIT, although it is occasionally used for other functions.

- QUIT returns you to the previous menu or image.
- Pressing ENTER entails the execution of a selected choice in a menu or a list.

  The  key is called ENTER in this manual.

2 MENUS

The control panel uses several different menus:

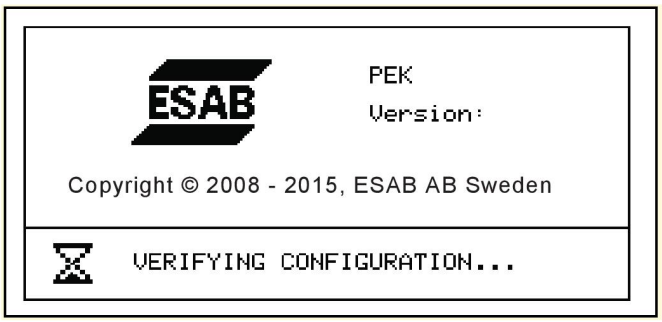
- Main menu
- Configuration menu
- Tools menu
- Weld data setting menu 

- Measurements menu 

- Weld data memory menu 

- Fast mode menu 

The menu trees are displayed in the "MENU STRUCTURE" appendix to this manual. During start-up, a start-up screen containing information about the current program version is displayed briefly.

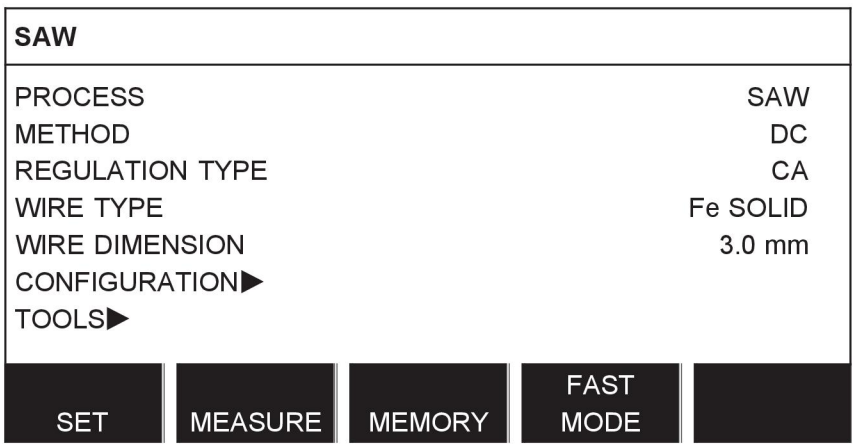


Start-up screen

2.1 Main Menu

In the MAIN MENU, you can change welding process, method, wire type, control method, wire dimension etc.

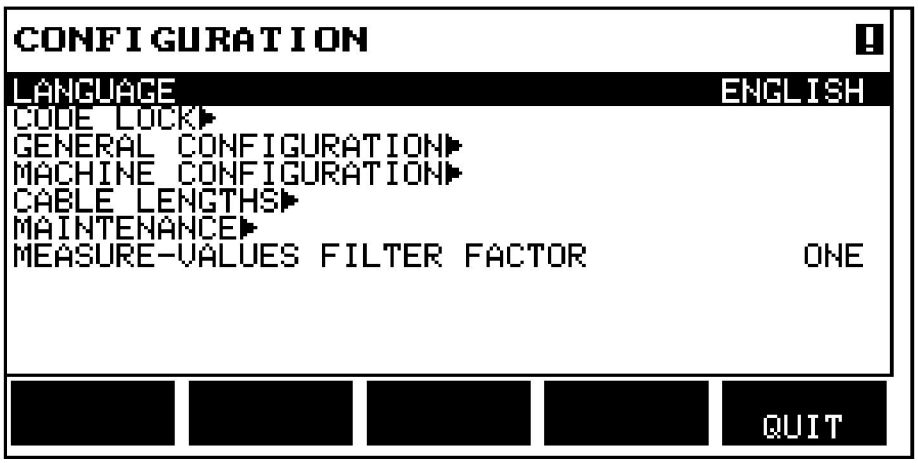
You can access other sub menus from this menu.



2.1.1 Configuration menu

Main menu → Configuration

In the CONFIGURATION menu it is possible to change language, change password, make General configuration, make machine adjustments etc.The menu has different appearances depending on which power source type is selected under Machine configuration.



2.1.2 Tools menu

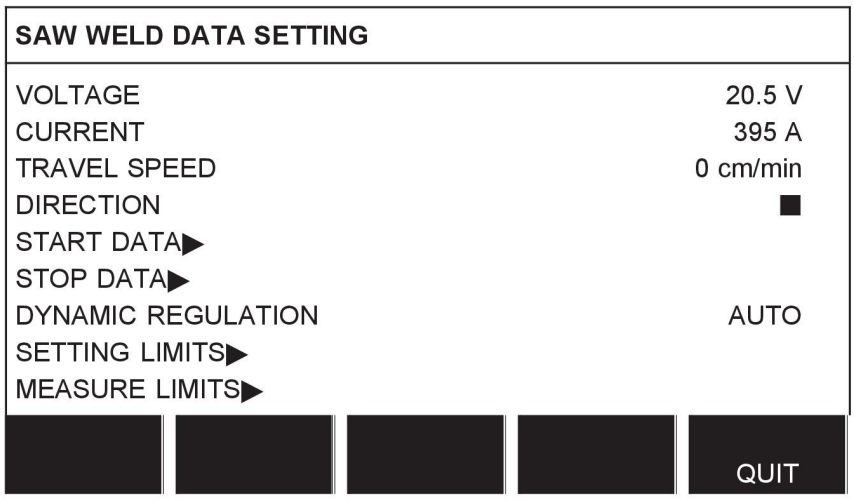
Main menu → Tools

In the TOOLS menu you can transfer files, view quality and production statistics, event logs, etc.

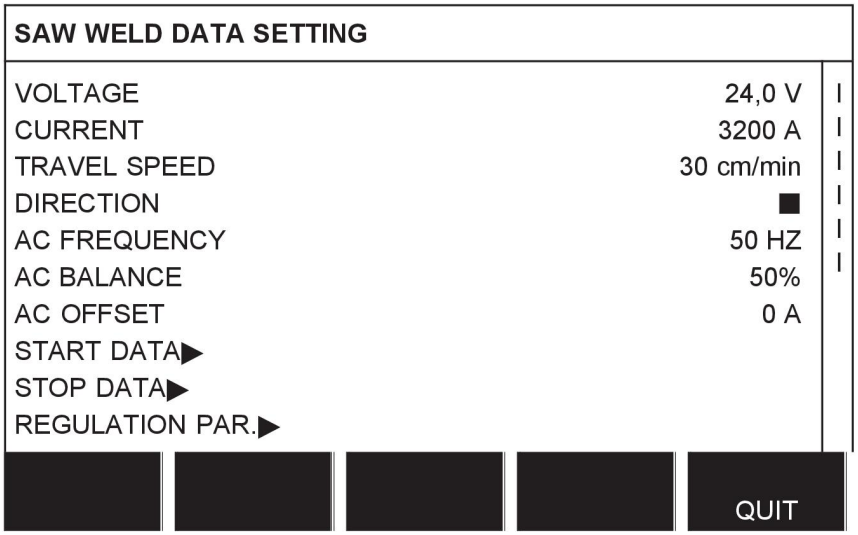
2.1.3 Weld data setting menu

Main menu → SET

In the weld data setting menu, SET, it is possible to change different welding parameters. The menu has different appearances depending on which welding process is selected.



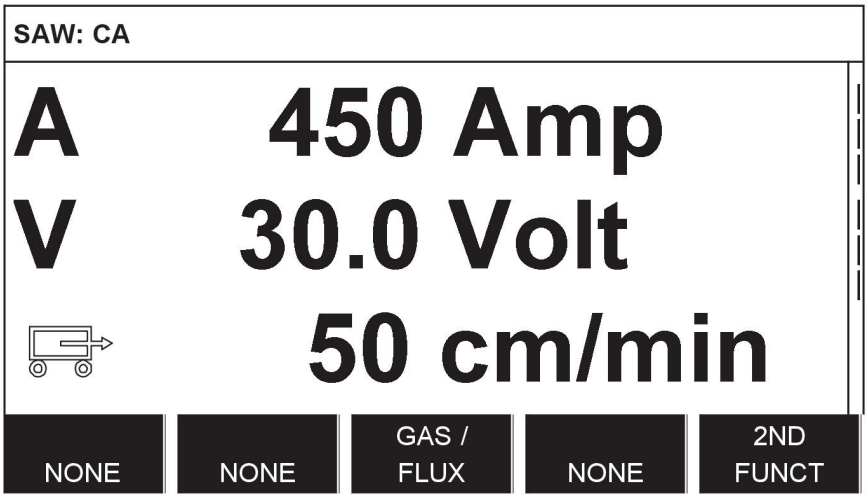
Another example of the menu:



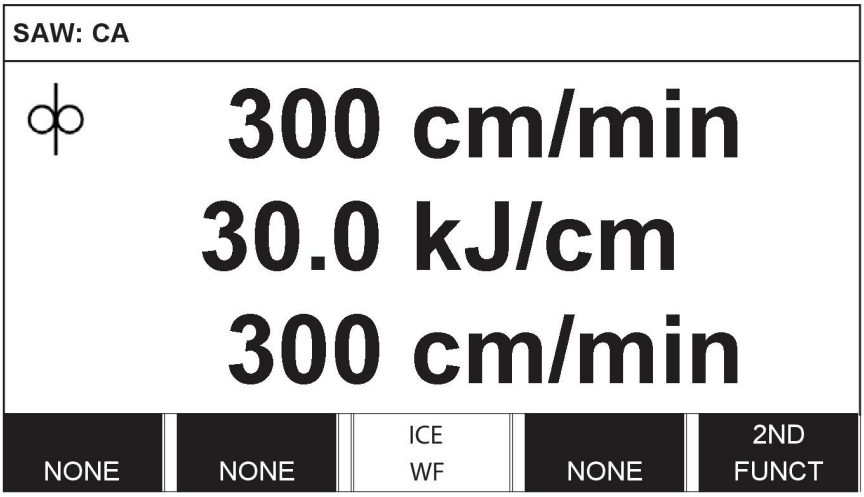
2.1.4 Measurements menu

Main menu → MEASURE

In MEASURE, you can view measured values for various welding parameters while welding is in progress.



- **A 450 AMP** - Measured welding current
- **30.0 Volt** - Measured arc voltage
- **50 cm/min** - Measured travel speed



- **300 cm/min** - Measured wire speed
- **30 kJ/cm** - Indicates energy per unit length, which is obtained using the values selected for welding current, arc voltage and travel speed
- **300 cm/min** - Measured cold wire feed speed

The measured values remain in the display even after welding has been completed.

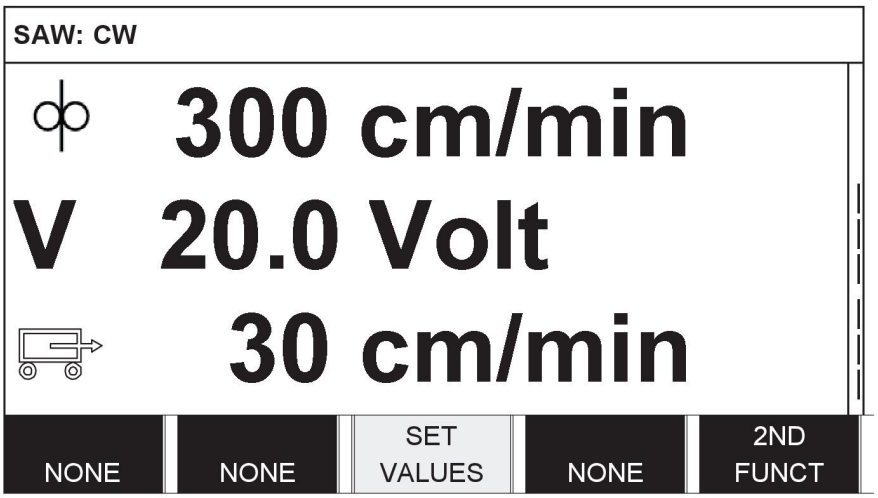
You can move to different menus without losing the measurement values.

The settings knobs can be used to change the welding parameters in the measurement display.

If the set value is changed when welding is not in progress, the measurement value changes to zero.

For activating cold wire feed, a soft key, ICE WF, is activated, see *"Soft key configuration"*, page 42. When the key is depressed, the cold wire speed is changed using the left settings knob A. If the soft key is not depressed, the settings knob affects the A current.

In the measurement display one can also see the set values if the soft key SET VALUES is activated. If both soft keys, ICE WF and SET VALUES are activated, the set feed speed for cold wire can be changed. For activating see *"Soft key configuration"*, page 42.

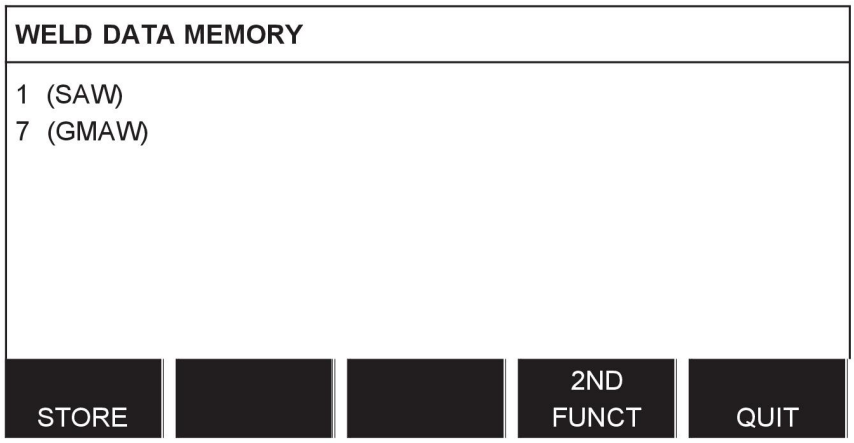


- **300 cm/min** - Set wire feed speed
- **20.0 Volt** - Set arc voltage
- **30 cm/min** - Set travel speed

2.1.5 Weld data memory menu

Main menu → MEMORY

In the WELD DATA MEMORY menu you can store, recall, delete and copy various set weld data. The weld data sets can be stored in 255 different memory positions.

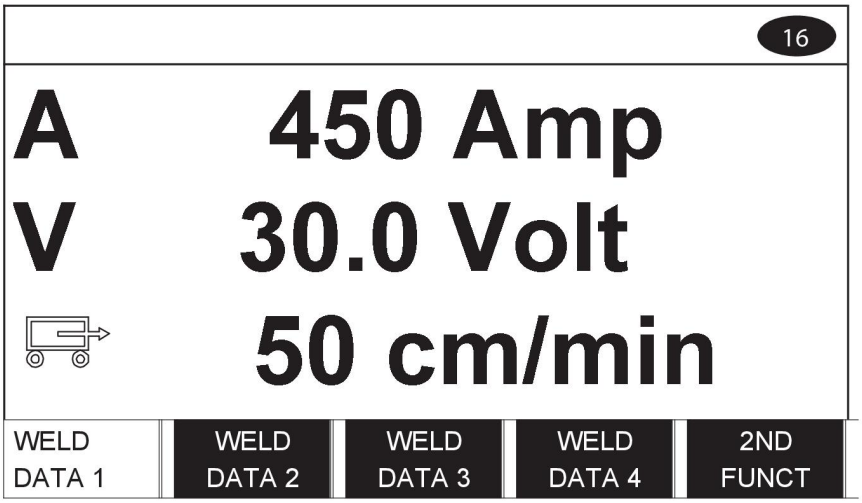


For further information, see *"MEMORY MANAGEMENT"*, page 30.

2.1.6 Fast mode menu

Main menu → FAST MODE

In the FAST MODE menu, you can “link” soft keys to weld data memory positions. These settings are carried out in the Configuration menu. The number of the selected memory position is displayed in the top right corner.



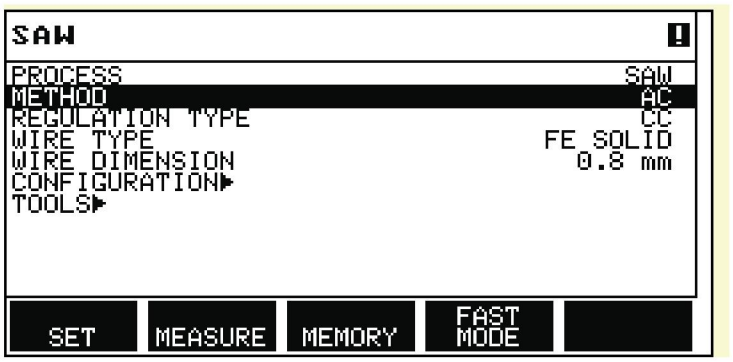
For further information, see *“Fast mode soft keys”*, page 41.

3 SUBMERGED ARC WELDING

Main menu -> Process

During Submerged Arc Welding (SAW), an arc melts a continuously supplied wire. The weld pool is protected by flux.

When the SAW process is selected, you can choose between two methods by marking METHOD using the positioning knob and pressing ENTER. Choose between AC or DC.



When the SAW process is selected, you can choose between three control methods by marking REGULATION TYPE using the positioning knob and pressing ENTER. Choose between constant welding current CA or constant wire feed CW or constant current CC (CC applies only to Aristo 1000), see explanations in *"CA, constant amperage"*, page 25, *"CW, constant wire feed"*, page 25 and *"CC, constant current"*, page 25.

If Ice wire feed is selected, see *"Ice wire feed"*, page 52, only regulation type CW can be selected.

3.1 Settings for submerged arc welding

Settings	Setting range	In steps of	Value after resetting
Arc voltage[1)]	14 - 50 V	0.1 V (1V)	30 V
Welding current[1)] (CA)	0 - 3200 A	1 A	400 A
Wire feed speed[1)] (CW)	0 - 2500 cm/min	1 cm/min	300 cm/min
Constant current[1) 3)] (CC)	0 - 3200 A	1 A	400 A
Cold wire feed speed[1)] (CW)	0 - 2500 cm/min	1 cm/min	300 cm/min
Cold wire start delay[1)] (CW)	0 - 99,0 s	0,1 s	2,5 s
Travel speed*	0 - 200 cm/min	1 cm/min	50 cm/min
Welding direction	▲-■	-	■
AC frequency	10 - 100 Hz	1	50 Hz
AC balance	25 - 75%	1	50%
AC offset	-300 - +300 A/-10 - +10V	1 A / 0.1 V	0
Start data[2)]			
Flux pre-flow	0 - 99.0 s	0.1 s	0 s
Start type	Direct or Scrape	-	Direct
Wire creep start	Auto or Set speed	-	Auto
Wire creep start speed	0 - 1000 cm/min	1 cm/min	20 cm/min

Settings	Setting range	In steps of	Value after resetting
Start phases	OFF or ON	-	OFF
Open-circuit voltage	OFF or ON	-	OFF
Maximum open-circuit voltage	5 - 60 V	0.1 V	50 V
Stop data [2]			
Flux post-flow	0 - 99.0 s	0.1 s	0 s
Crater filling	OFF or ON	-	OFF
Crater filling time	0 - 10 s	0.01 s	1 s
Burnback time	0 - 10 s	0.01 s	1 s
Stop phases	OFF or ON	-	OFF
Control parameters			
Dynamics	Auto or Set values	-	Auto
Inductance	Auto or Set values	-	Auto
Setting limits	-	-	-
Measure limits	-	-	-

[1] The setting range is dependent on the product used.

[2] The menu shows the settings that belong to the selected regulation type.

[3] Applies only to Aristo 1000 power sources

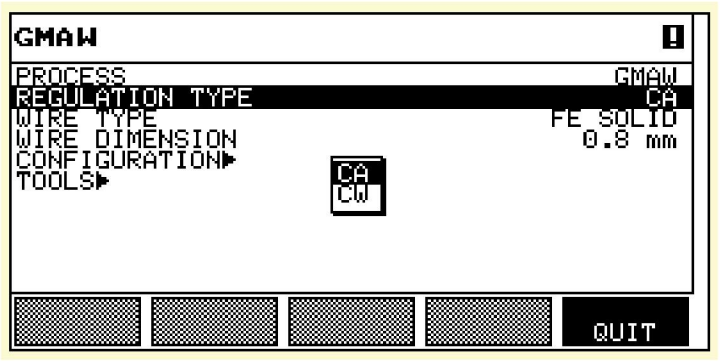
4 GAS METAL ARC WELDING

The process is available for certain machine types.

Main menu → Process

During Gas Metal Arc Welding (GMAW), an arc melts a continuously supplied wire. The weld pool is protected by shielding gas.

When the Gas Metal Arc Welding (GMAW) process is selected, you can choose between two control methods by marking REGULATION TYPE using the positioning knob and pressing ENTER. Choose between constant amperage CA or constant wire feed CW, see explanation in *"CA, constant amperage"*, page 25 and *"CW, constant wire feed"*, page 25.



4.1 Settings for Gas Metal Arc Welding

Settings	Setting range	In steps of	Value after resetting
Arc voltage*	14 - 50 V	0.1 V (1V)	30 V
Welding current* (CA)	0 - 3200 A	1 A	400 A
Wire feed speed* (CW)	0 - 2500 cm/min	1 cm/min	300 cm/min
Travel speed*	0 - 200 cm/min	1 cm/min	50 cm/min
Welding direction	▲-■	-	■
Start data			
Gas pre-flow	0 - 99.0 s	0.1 s	2.0 s
Start type	Direct or Scrape	-	Direct
Wire creep start	Auto or Set speed	-	Auto
Wire creep start speed	0 - 1000 cm/min	1 cm/min	20 cm/min
Start phases	OFF or ON	-	OFF
Open-circuit voltage	OFF or ON	-	OFF
Maximum open-circuit voltage	5 - 60 V	0.1 V	50 V
Stop data			
Gas post-flow	0 - 99.0 s	0.1 s	2.0 s
Crater filling	OFF or ON	-	OFF
Crater filling time	0 - 10 s	0.01 s	1 s
Burnback time	0 - 10 s	0.01 s	1 s
Stop phases	OFF or ON	-	OFF
Dynamic regulation	Auto or Set value	-	Auto

Settings	Setting range	In steps of	Value after resetting
Setting limits	-	-	-
Measure limits	-	-	-

**) The setting range is dependent on the product used.*

5 GOUGING

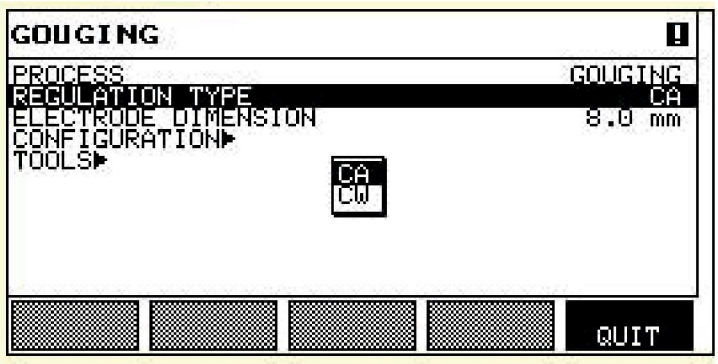
The process is available for certain machine types.

Main menu → Process

With arc air gouging, a special electrode comprising a carbon rod with a copper casing is used.

An arc is formed between the carbon rod and the work piece, which melts the material. Air is supplied so that the melted material is blown away.

When the GOUGING process is selected, you can choose between two control methods by marking REGULATION TYPE using the positioning knob and pressing ENTER. Choose between constant amperage CA or constant wire feed CW, see explanation in *"CA, constant amperage"*, page 25 and *"CW, constant wire feed"*, page 25.



5.1 Settings for gouging

Settings	Setting range	In steps of	Value after resetting
Arc voltage*	14 - 50 V	0.1 V (1V)	30 V
Welding current* (CA)	0 - 3200 A	1 A	400 A
Wire feed speed* (CW)	0 - 2500 cm/min	1 cm/min	300 cm/min
Travel speed*	0 - 200 cm/min	1 cm/min	40 cm/min
Welding direction	▲-■	-	■
Start data			
Air pre-flow	0 - 99.0 s	0.1 s	0 s
Start type	Direct or Scrape	-	Direct
Wire creep start	Auto or Set speed	-	Auto
Wire creep start speed	0 - 1000 cm/min	1 cm/min	20 cm/min
Start phases	OFF or ON	-	OFF
Open-circuit voltage	OFF or ON	-	OFF
Maximum open-circuit voltage	5 - 60 V	0.1 V	50 V
Stop data			
Air post-flow	0 - 99.0 s	0.1 s	0 s
Crater filling	OFF or ON	-	OFF
Crater filling time	0 - 10 s	0.01 s	1 s
Burnback time	0 - 10 s	0.01 s	1 s

Settings	Setting range	In steps of	Value after resetting
Stop phases	OFF or ON	-	OFF
Dynamic regulation	Auto or Set value	-	Auto
Setting limits	-	-	-
Measure limits	-	-	-

**) The setting range is dependent on the product used.*

6 FUNCTION EXPLANATIONS

6.1 CA, constant amperage

The wire feed is controlled by the power source so that a constant amperage can be achieved.

- Constant current value can be selected in the main menu.

6.2 CW, constant wire feed

The welding current is a result of the selected wire feed speed.

- Constant wire feed can be selected in the main menu.

6.3 CC, constant current

(applies only to Aristo 1000 power source)

The voltage is varied so that a constant welding current can be achieved.

- Constant current value can be selected in the main menu.

A higher wire speed gives a higher welding current.

6.4 Wire / electrode dimension

The table on page 68 shows the wire / electrode dimensions that can be selected.

Selected dimensions have a great impact on the start procedure and crater filling. When welding with other wire dimensions other than those found in the table, select one that has a dimension close to one in the list.

- Wire / electrode dimension can be selected in the main menu.

6.5 Arc voltage

Higher arc voltage increases the arc length and produces a hotter, wider weld pool.

- The arc voltage is set in the measurement display, weld data setting menu, or fast mode menu.

6.6 Wire feed speed

This sets the required feed speed of the filler wire in cm/minute. A higher wire speed gives a higher welding current.

- The wire feed speed is set in the measurement display, weld data setting menu, or fast mode menu.

6.7 Cold wire feed speed (ICE)

Cold wire feed speed is used to set a feed speed (cm/min) for the cold wire.

- The cold wire feed speed is set in the measurement display, weld data setting menu, or fast mode menu.

6.8 Cold wire start delay (ICE)

Cold wire start delay is used to indicate how long (s) after welding start cold wire feed can start.

- Cold wire start delay is set in the weld data setting menu.

6.9 Travel speed

Travel speed indicates the required speed (cm/min) at which a column and boom or trolley is to move.

- The travel speed is set in the measurement display, weld data setting menu, or fast mode menu.

6.10 Welding direction

Travel motion in the direction that the symbol indicates.

- Welding direction is selected in the weld data setting menu.

6.11 AC frequency

(applies only to Aristo 1000 power source)

AC frequency refers to the number of oscillations per second through the zero level.

- AC frequency is selected in the weld data setting menu.

6.12 AC balance

(applies only to Aristo 1000 power source)

AC balance is the relationship between positive (+) and negative (-) pulses. The value that is set indicates the percentage size of the period that is the positive section.

- AC balance is selected in the weld data setting menu.

6.13 AC offset

(applies only to Aristo 1000 power source)

With AC offset the AC level is offset positively or negatively in relation to the zero level.

- AC offset is selected in the weld data setting menu.

6.14 Flux pre-flow (SAW)

This controls the time during which flux flows before the arc is struck.

- Flux pre-flow is set in the weld data setting menu under start data.

6.15 Gas pre-flow (GMAW)

This controls the time during which shielding gas flows before the arc is struck.

- Gas pre-flow is set in the weld data setting menu under start data.

6.16 Air pre-flow (Gouging)

This controls the time during which air flows before the arc is struck.

- Air pre-flow is set in the weld data setting menu under start data.

6.17 Start type

There are two options for start type:

- Direct start, means that the travel speed starts when the arc is struck.
- Scrape start, means that the travel speed starts at the same time as wire feed.
- Start type is selected in the weld data setting menu under start data.

6.18 Wire creep start

Wire creep start is used to set the desired creep speed on the electrode motor upon start-up.

If, for example, 50 is set in the menu a creep speed of 50 cm/min is obtained.

Preset value ”AUTO” gives a creep speed calculated from the set values.

- Wire creep speed is set in the weld data setting menu under start data.

6.19 Start phases

When welding special wire or material, it may be necessary to create your own start sequence. The start sequence can affect the appearance of the weld pool.

The following can be set for Start phase1 ON

- Time s
  Time for welding in phase 1.
- Arc voltage %
  In percent of set voltage
- Wire feed %
  In percent of set wire feed
- Welding current %
  In percent of set welding current
- Travel speed %
  In percent of set travel speed

The following can be set for Start phase2 ON

- Time s
  Time for welding in phase 2.
- Arc voltage %
  In percent of set voltage
- Wire feed %
  In percent of set wire feed
- Welding current %
  In percent of set welding current
- Travel speed %
  In percent of set travel speed

- Start phases are set in the weld data setting menu under start data.

6.20 Max Open Circuit Voltage (OCV)

ON means that OCV can be set.

OFF means that OCV is set to the set value for welding voltage.

- OCV is set in the weld data setting menu under start data.

6.21 Flux post-flow (SAW)

This controls the time during which flux flows after the arc is extinguished.

- Flux post-flow is set in the weld data setting menu under stop data.

6.22 Gas post-flow (GMAW)

This controls the time during which shielding gas flows after the arc is extinguished.

- Gas post-flow is set in the weld data setting menu under stop data.

6.23 Air post-flow (Gouging)

This controls the time during which air flows after the arc is extinguished.

- Air post-flow is set in the weld data setting menu under stop data.

6.24 Crater filling

Crater filling makes a controlled reduction in the heat and size of the weld pool possible when completing the weld. This makes it easier to avoid pores, thermal cracking and crater formation in the weld joint.

- Crate filling is set in the weld data setting menu under stop data.

6.25 Burnback time

Burnback time is a delay between the time when the wire starts to brake until the time when the power source switches off the arc voltage. Too short burnback time results in a long wire stickout after completion of welding, with a risk of the wire being caught in the solidifying weld pool. Too long a burnback time results in a shorter stickout, with increased risk of the arc striking back to the contact tip.

- Burnback time is set in the weld data setting menu under stop data.

6.26 Stop phases

Stop phases are mainly used for setting crater filling.

The following can be set for Stop phase1 ON

- Time s
  Time for welding in phase 1.
- Arc voltage %
  In percent of set voltage
- Wire feed %
  In percent of set wire feed
- Welding current %
  In percent of set welding current
- Travel speed %
  In percent of set travel speed

The following can be set for Stop phase2 ON

- Time s
  Time for welding in phase 2.
- Arc voltage %
  In percent of set voltage
- Wire feed %
  In percent of set wire feed
- Welding current %
  In percent of set welding current
- Travel speed %
  In percent of set travel speed

- Stop phases are set in the weld data setting menu under stop data.

6.27 Dynamic regulation

The dynamic regulation function is developed for multiple electrode welding and alters the characteristics of the power source. The characteristics of the power source are calculated from the set wire data.

- Dynamic regulation is selected in the weld data setting menu.

6.28 Control parameters

In some applications the function Control parameters is displayed instead of Dynamic control. There are two settings to make under Control parameters:

- Dynamics - Affects the dynamic characteristics
- Inductance - Higher values give a wider weld pool and less spatter. Lower values produce a stable, concentrated arc and a harsher sound.
- Control parameters are selected in the weld data setting menu.

6.29 Setting limits

For information about setting limits see *“Setting limit editor”*, page 63.

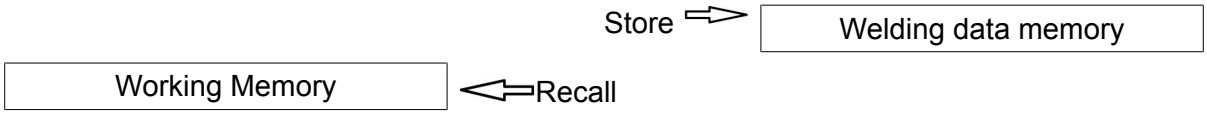
6.30 Measure limits

For information about measurement parameters see *“Measure limits editor”*, page 63.

7 MEMORY MANAGEMENT

7.1 Control panel working method

The control panel can be said to comprise two units: working memory and weld data memory.

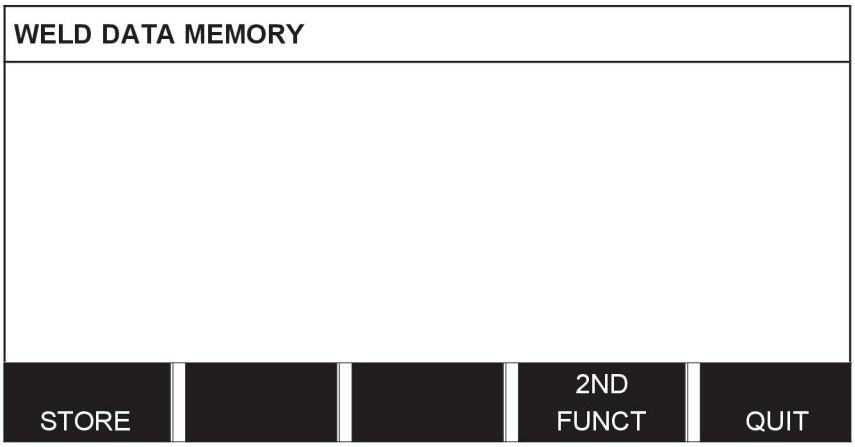


In the working memory, a complete set of weld data settings is created that can be stored in the weld data memory.

During welding, it is always the content of the working memory that controls the process. It is therefore also possible to recall a weld data set from the weld data memory to the working memory.

Note that the working memory always contains the most recently set weld data settings. They can be recalled from the weld data memory or individually altered settings. In other words, the working memory is never empty or “zeroed”.

Main menu → MEMORY → Weld data memory



It is possible to store up to 255 sets of weld data in the control panel. Each set is given a number from 1 to 255.

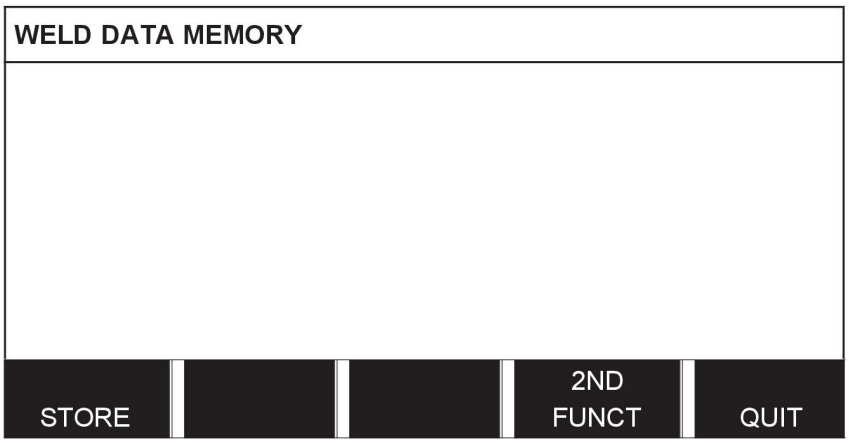
You can also delete, copy, change and name data sets and recall a set of weld data to the working memory.

7.2 Store

If the weld data memory is empty, the following screen appears in the display.

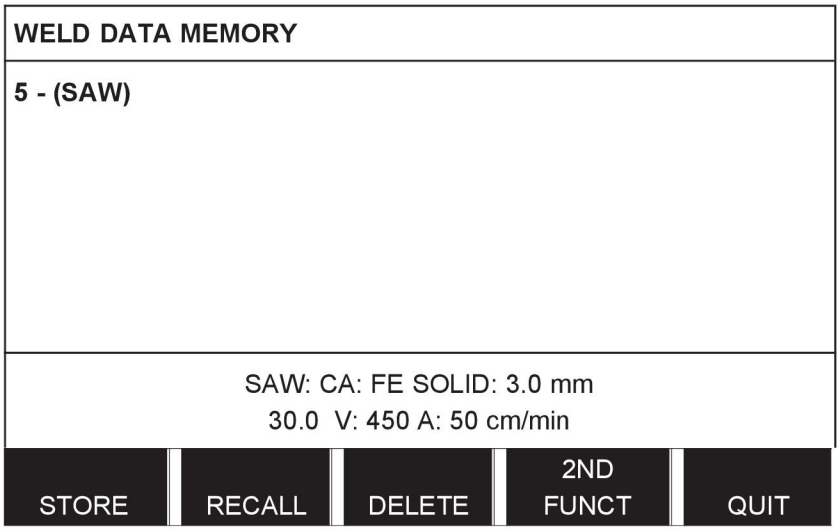
Storing a set of weld data. This will be given memory position 5. Press STORE.

Position 1 is displayed. Turn one of the settings knobs until you reach position 5. Press STORE.



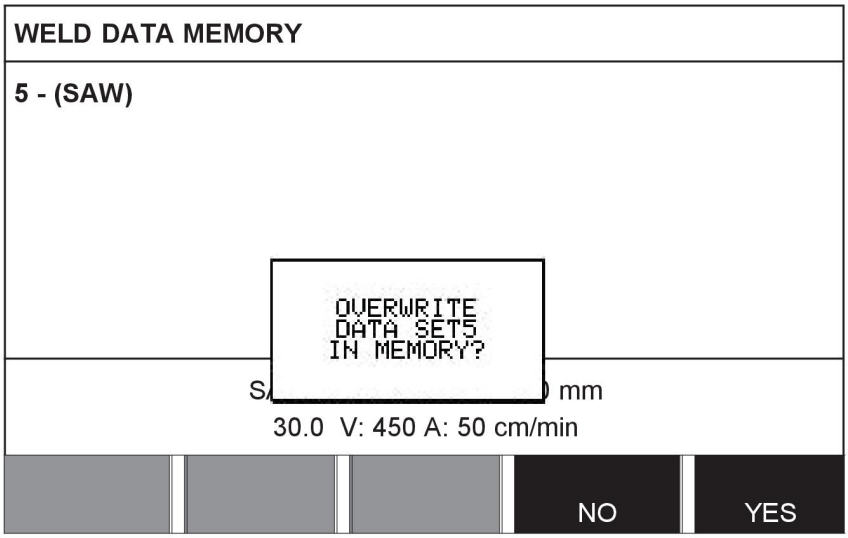
The following screen appears in the display.

The weld data set is now stored as number 5.



Parts of the content of weld data set number 5 are presented at the bottom of the display.

If a data set is already stored in the selected location, you will be asked if you want to overwrite that set or not, YES or NO.

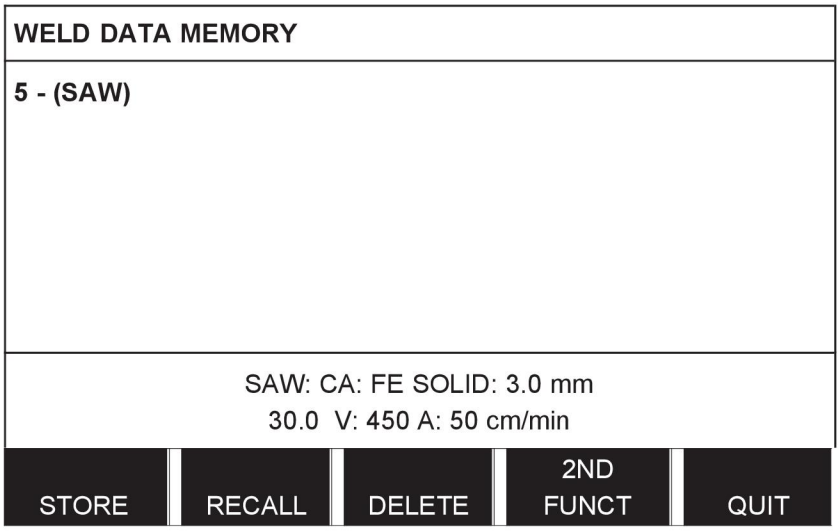


Return to the memory menu using NO.

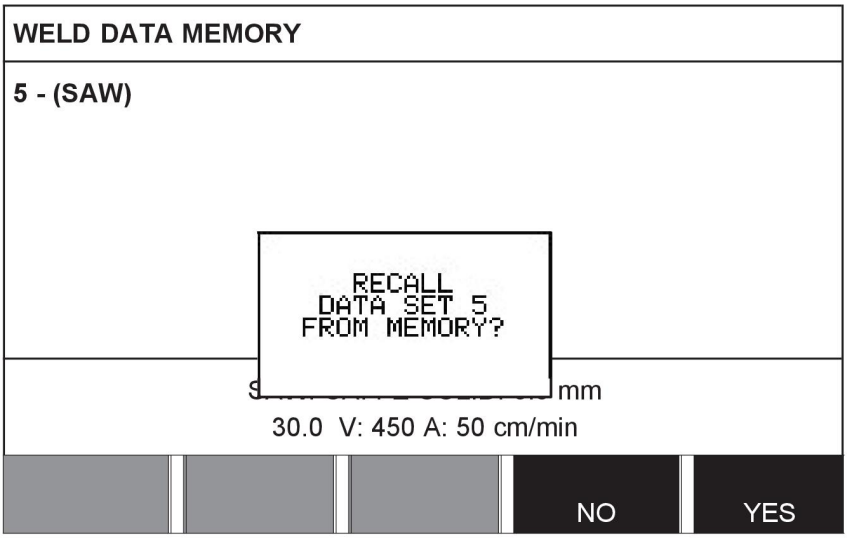
7.3 Recall

We are going to recall a stored data set:

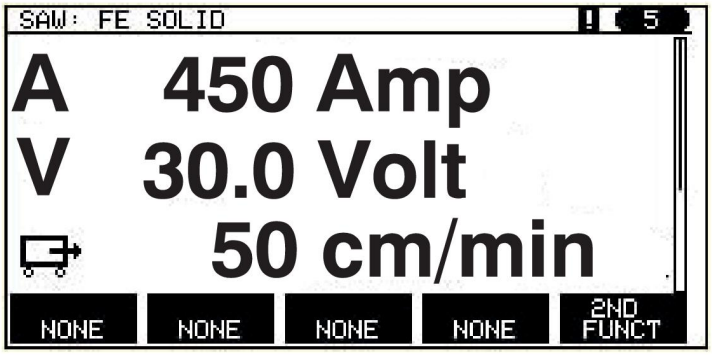
Mark the row using the positioning knob. Press RECALL.



Press YES to confirm that you want to recall data set number 5.



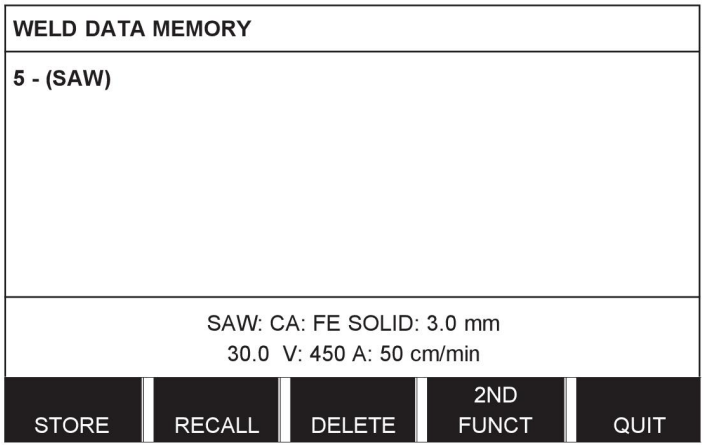
The icon in upper right corner of the measurement display shows which memory position number has been recalled.



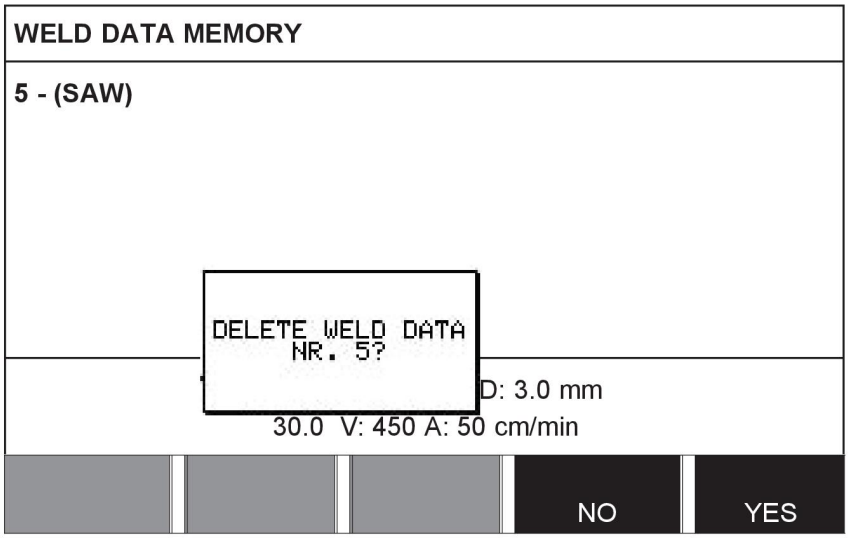
7.4 Delete

It is possible to delete one or more data sets in the memory menu.

Deleting a data set. Select the data set. Press DELETE.



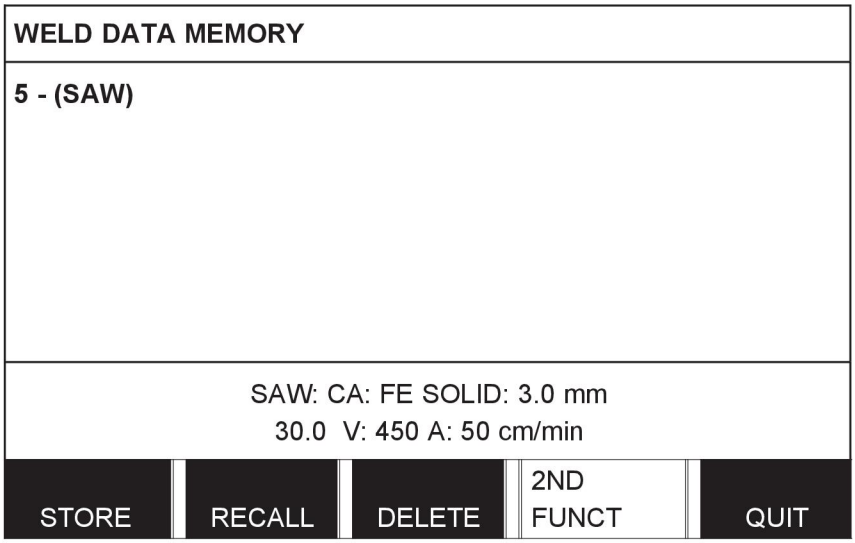
Press YES to confirm that you want to delete.



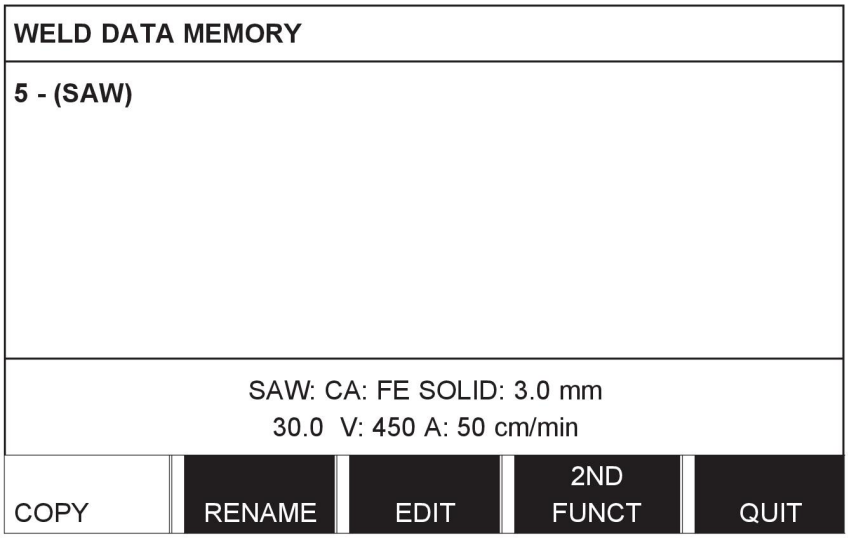
7.5 Copy

To copy the content of a weld data set to a new memory position, proceed as follows:

Press 2ND FUNCT.

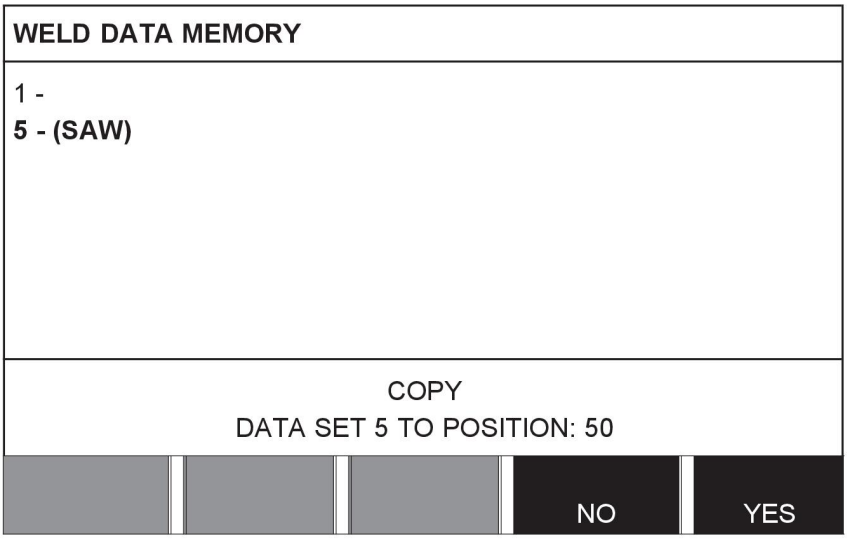


Select the memory position you want to copy and press COPY.



We are now going to copy the content of memory position 5 to position 50.

Select memory position 1 and scroll through using one of the settings knobs to the selected memory position; in this case, position 50.Press YES.

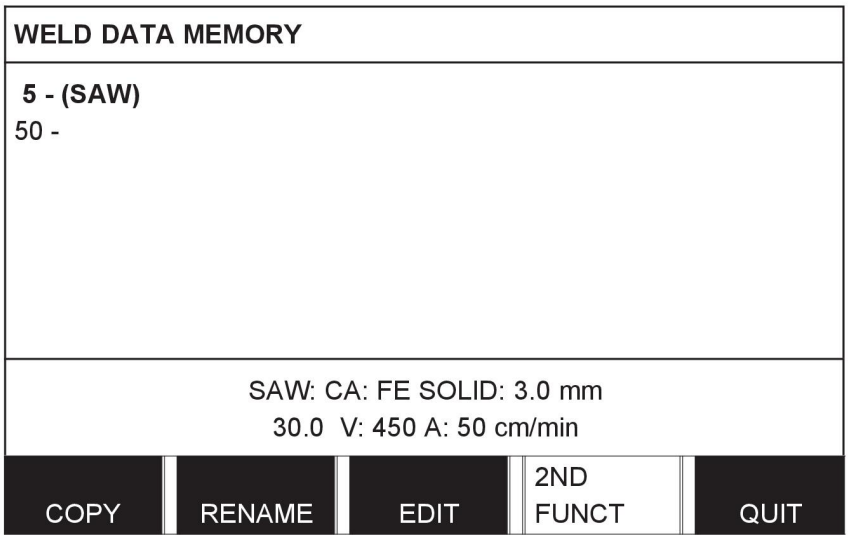


Weld data number 5 has now been copied to memory position 50.

7.6 Name

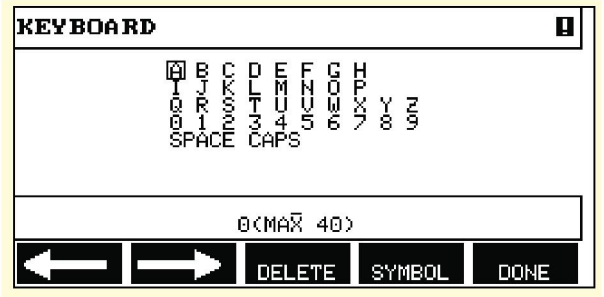
To give a stored weld data set its own name, proceed as follows:

Press 2ND FUNCT. Select the memory position you want to rename and press RENAME.



Here you have access to a keyboard that is used as follows:

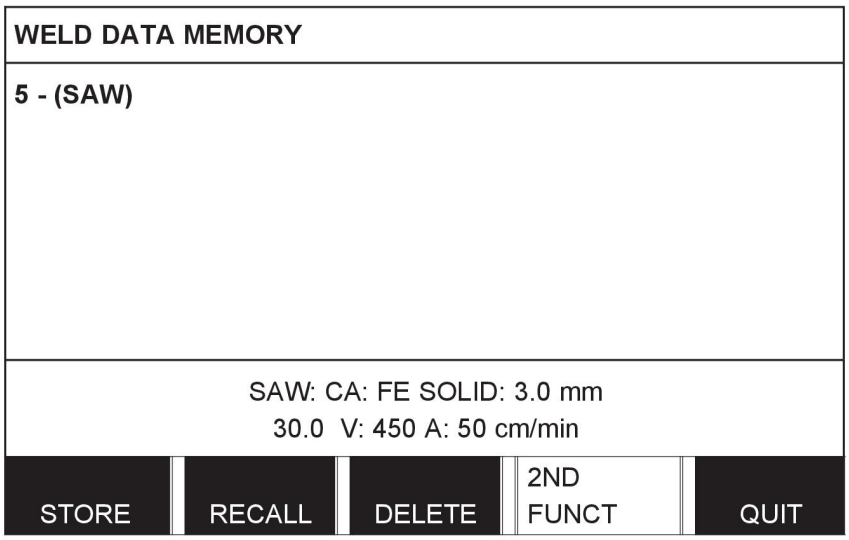
- Position the cursor on the desired keyboard character using the arrows and the positioning knob. Press DONE. Enter a complete text string with a maximum of 40 characters in this way.
- Press DONE to store. The alternative you have named can now be seen in the list.



7.7 Edit

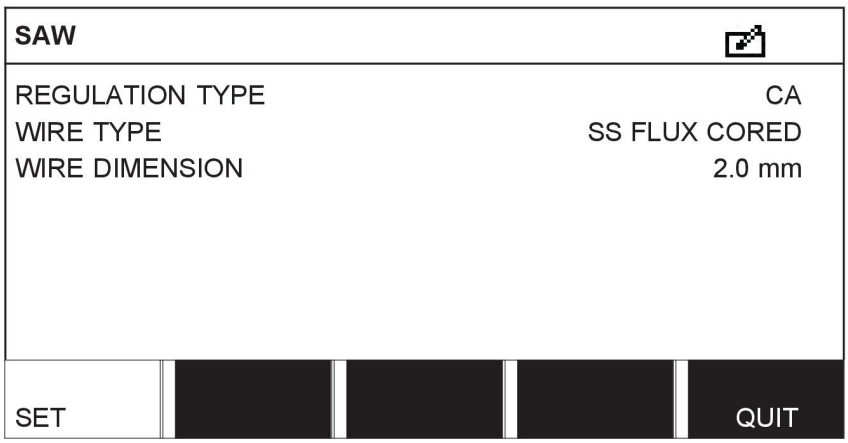
To edit the content of a weld data set, proceed as follows:

Press 2ND FUNCT. Select the memory position you want to edit and then press EDIT.



Part of the main menu is displayed and the menu shows the symbol which means that you are in an editing mode.

Press SET and make the relevant changes. 7

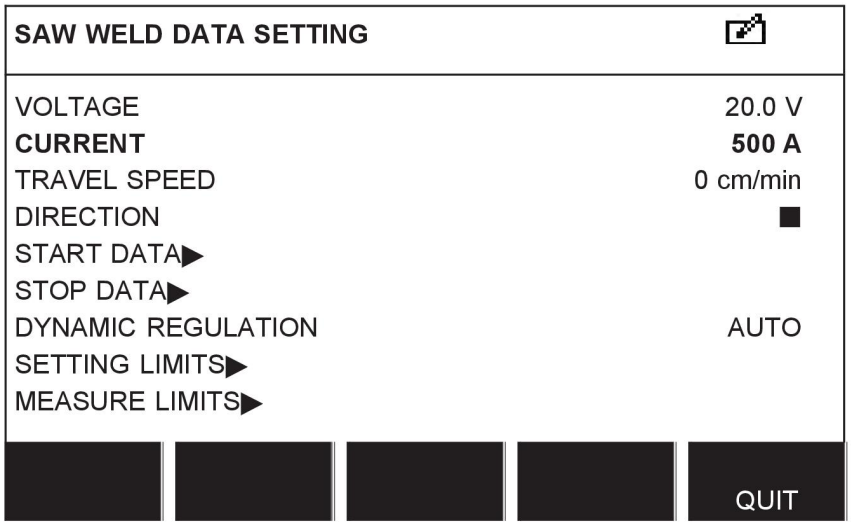


The following menu appears:

In this example we change the welding current from 400 A to 500 A.

Select the welding current and scroll through to 500 using one of the settings knobs.

Press QUIT twice.



The setting for weld data number 5 has now been edited and stored.

8 CONFIGURATION MENU

Main menu → Configuration menu

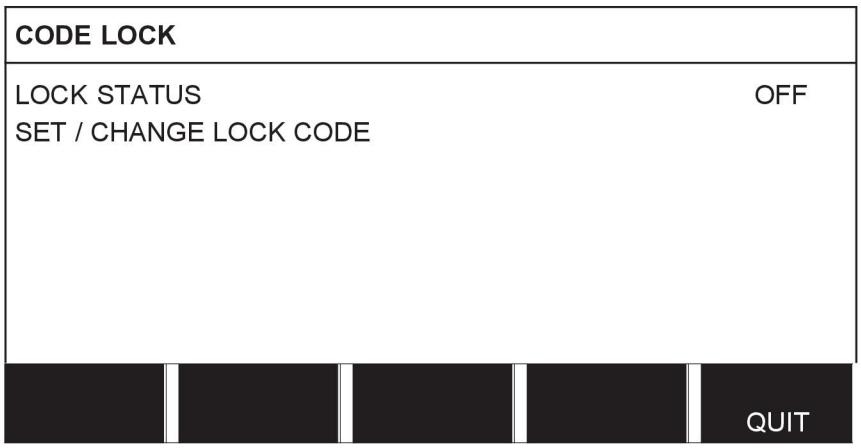
This menu contains the following sub-menus:

- Language, see *"Choice of language"*, page 7.
- Code lock, see *"Code lock"*, page 39.
- General configuration, see *"General configuration"*, page 40.
- Machine configuration, see *"Machine configuration"*, page 44.
- Cable lengths, see *"Cable lengths (applies only to LAF and TAF power sources)"*, page 54.
- Maintenance, see *"Maintenance"*, page 55.
- Measure–values filter factor, see *"Measure–values filter factor"*, page 55.

8.1 Code lock

Main menu → Configuration menu → Code lock

When the lock function is activated and you are in the measure screen or fast mode menu, a password (lock code) is required to exit from these menus.



Code lock is activated in the configuration menu.

8.1.1 Lock code status

In lock code status, you can activate/deactivate the lock function without deleting the existing lock code in the event you deactivate the function. If no lock code is stored and you try to activate the code lock, the keyboard is displayed for entering a new lock code.

To exit lock status.

When you are in the measure screen or the fast mode menu and the code lock is **deactivated**, you can exit these menus without restrictions by press QUIT or MENU in order to go to the main menu.

If it is **activated** and you try to exit, the following screen appears in order to warn the user about the lock protection.

PRESS ENTER FOR LOCK CODE...

Here you can select QUIT to undo and return to the previous menu, or proceed by pressing ENTER to enter the lock code.

You will then move to the menu with the keyboard, where you can enter the code. Press ENTER after each character, and confirm the code by pressing ENTER again.

The following text box appears:

UNIT UNLOCKED!

If the code is not correct, an error message is displayed that offers the option of trying again or returning to the original menu, i.e. the measure screen or the fast mode menu.

If the code is correct, all blocks to other menus will be removed, **although the code lock remains activated**. This means that you can leave the measure screen and the fast mode menu temporarily, yet still retain the lock status when you return to these menus.

8.1.2 Specify/edit lock code

In specify/edit lock code, you can edit an existing lock code or enter a new one. A lock code can comprise a maximum of 16 optional letters or figures.

8.2 General configuration

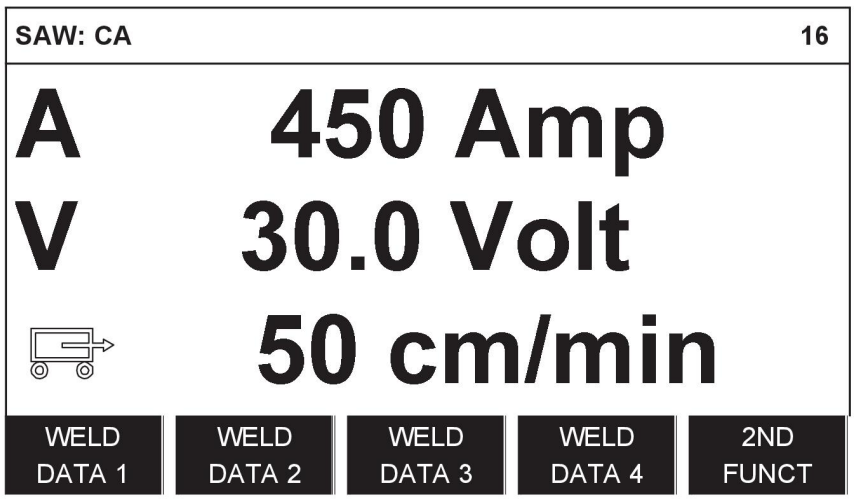
Main menu → Configuration menu → General configuration

In this menu you can set:

- Fast mode soft keys, see *"Fast mode soft keys"*, page 41
- Quality data log to file, see *"Quality data log to file"*, page 42
- Setting soft keys, see *"Soft key configuration"*, page 42
- Automatic weld data storage, see *"Auto save mode"*, page 44
- Unit of length, see *"Unit of measurements"*, page 9

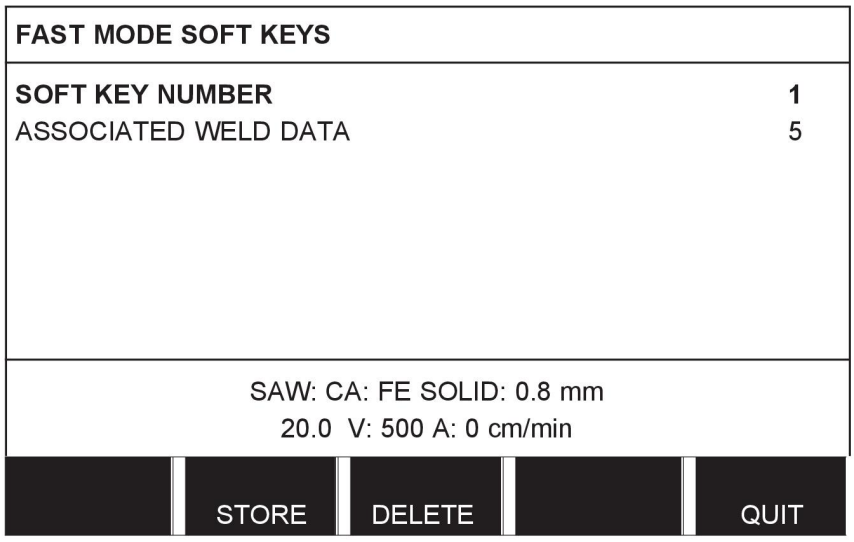
8.2.1 Fast mode soft keys

The soft keys WELD DATA 1 up to and including WELD DATA 4 are displayed in the fast mode menu.



These are configured as follows:

Position the cursor on the row for SOFT KEY NUMBER.

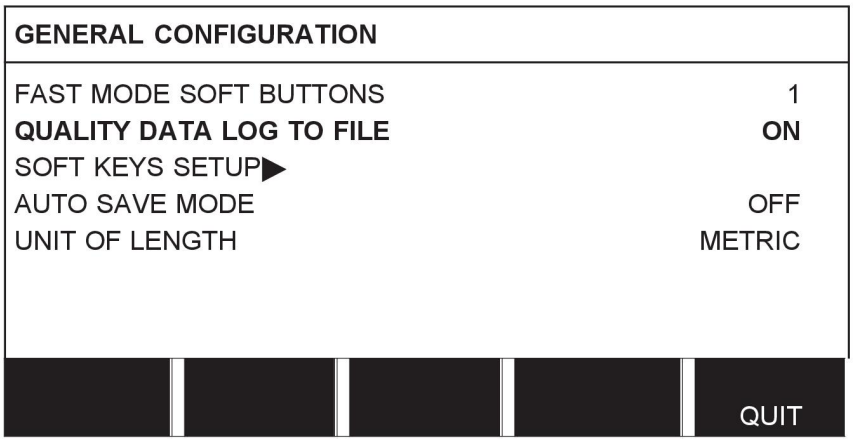


The keys are numbered 1-4 from left to right. Select the desired key by giving its number using the setting knobs.

Then scroll to the next row, ASSOCIATED WELD DATA. Here you can browse through the weld data sets that are stored in the weld data memory. Selected the desired weld data number using the setting knobs. Press STORE to save. To delete the stored set, press DELETE.

8.2.2 Quality data log to file

In the QUALITY DATA LOG TO FILE menu it is possible to activate it with ON.



Read more about settings for the quality function in *“Quality functions”*, page 65.

8.2.3 Soft key configuration

We have previously described the control panel's “soft” keys. For Submerged Arc Welding (SAW) and for Gas Metal Arc Welding (GMAW) welding, the user has the possibility of setting the function of these keys by selecting from a list of set options. There are eight soft keys that can be allocated a function.

It is possible to choose between the following options:

- None
- Gas / Flux
- Set values

  Set reference values are displayed instead of the measured values in the measurements menu.
- Relay 2

  Sets relay output no.2 on the motor circuit board, which can be used for any function by the customer.
- Direction
- Remote I/O

  Used when you want to control PEK and a welding power source via an external I/O unit.
- External axis

  To be activated when there is an external I/O unit for controlling a roller bed, for example.
- Tandem

  Used when welding with two welding heads.
- Cold wire (ICE)

  Used when a non-live wire is fed into the weld pool and the cold wire speed is to be shown in the display.

In the display screen there are two columns; one for SOFT KEYS and one for FUNCTION.

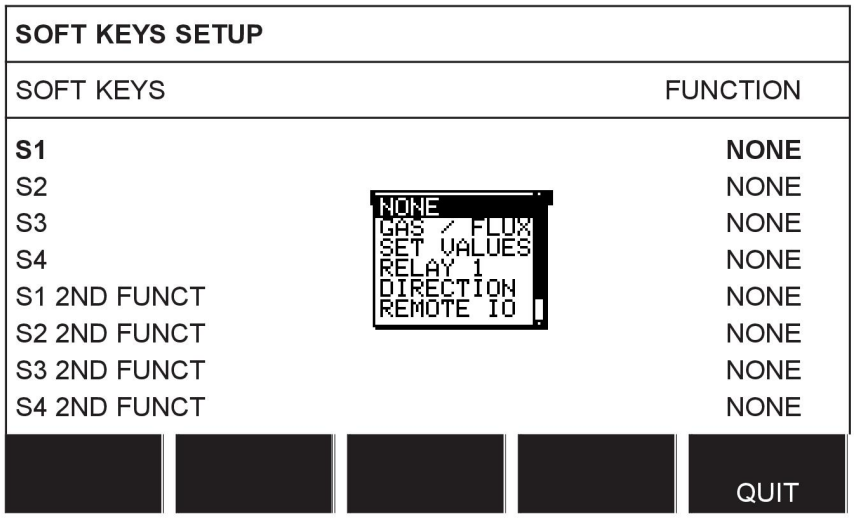
SOFT KEYS SETUP	
SOFT KEYS	FUNCTION
S1	NONE
S2	NONE
S3	NONE
S4	NONE
S1 2ND FUNCT	NONE
S2 2ND FUNCT	NONE
S3 2ND FUNCT	NONE
S4 2ND FUNCT	NONE
	QUIT

When you allocate functions to these keys, they are numbered from the left as follows:

S1	S2	S3	S4	2ND FUNCT
S1 2ND FUNCT	S2 2ND FUNCT	S3 2ND FUNCT	S4 2ND FUNCT	2ND FUNCT

To allocate a new function to a soft key, proceed as follows:

Position the cursor on the row with the soft key number you wish to use and press ENTER. A pop-up menu shows the function selections. Select using the positioning knob and press ENTER.



You can allocate new functions to the other keys in the same way, by pairing a key number in the left-hand column with a function in the right-hand column.

8.2.4 Auto save mode

When a weld data set has been recalled from a memory position in the weld data memory and you change the settings, the changes will be saved in the working memory at welding stop in the last recalled memory position.

Saving weld data manually in a memory position disables the next automatic save.

The memory position in which the weld data set is stored is displayed in the top right corner of the measure screen.

8.3 Machine configuration

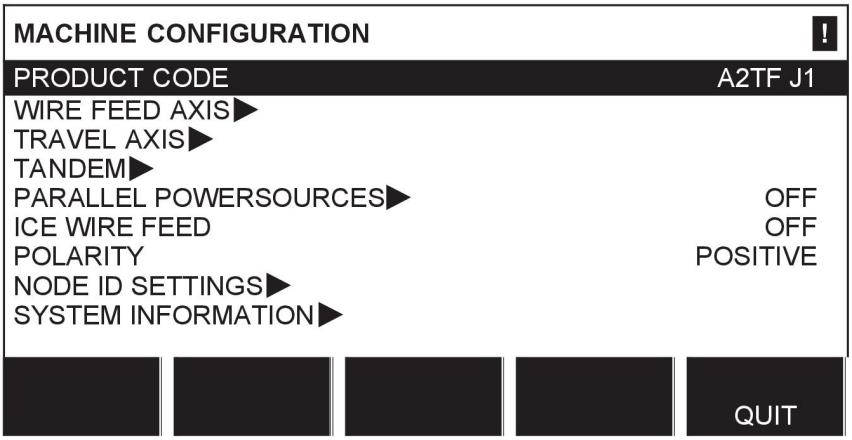
Main menu → Configuration menu → Machine configuration

In this menu you can set:

- Product code, see *"Product code"*, page 44
- Wire feed axis, see *"Wire feed axis"*, page 45
- Cold wire feed axis, see *"Cold wire axis (ICE)"*, page 45
- Travel axis, see *"Travel axis"*, page 46
- Outer axis, see *"Outer axis"*, page 46
- Tandem, see *"Tandem for LAF and TAF power sources"*, page 47 and *"Tandem for Aristo 1000 power source"*, page 50
- Parallel power sources, see *"Parallel power sources (applies only to Aristo 1000 power sources)"*, page 51
- Ice wire feed, see *"Ice wire feed"*, page 52
- Polarity, see *"Polarity (applies only to Aristo 1000 power source)"*, page 53
- Node ID settings, see *"Node id settings (applies only to Aristo 1000 power source)"*, page 54
- System information, see *"System information (applies only to Aristo 1000 power source)"*, page 54

8.3.1 Product code

In the PRODUCT CODE menu it is possible to select the automatic welding machine, column and boom, roller bed or positioner to be used.



When selecting product code, the correct motor type and gear ratio for the used gearbox in the relevant product are selected automatically.

The following options can be selected:

- **A2TFJ1**
  A2 tractor automatic welding machine for Submerged Arc Welding (SAW)
- **A2TGJ1**
  A2 tractor automatic welding machine for Gas-Shielded Metal Arc Welding (GMAW)
- **A6TFF1**
  A6 tractor automatic welding machine for Submerged Arc Welding (SAW)
- **MTW600**
  A6 tractor automatic welding machine for Submerged Arc Welding (SAW)
- **FREE 2 AXIS**
  Optional configuration for connecting 2 motors to the actuator board. One for wire feed and one for travel motion.
- **FREE 3 AXIS**
  Optional configuration for connecting external roller beds, positioners or linear axis as well as for 2 motors to the actuator board. One for wire feed and one for travel motion.

8.3.2 Wire feed axis

The wire feed motor is set automatically according to the tables below.

	A2TFJ1	**A2TGJ1**	**A6TFF1**	**MTW600**
Motor	5035 38 RPM	5035 68 RPM	VEC4000	FHP258
Gear 1	49:1	49:1	156:1	24:1
Gear 2	1:1	1:1	1:1	1:1
Diameter feed rollers	49 mm	49 mm	49 mm	30 mm
Pulse sensor	28 ppr	28 ppr	32 ppr	28 ppr
Low manual speed	150 cm/min	150 cm/min	150 cm/min	150 cm/min
High manual speed	300 cm/min	300 cm/min	300 cm/min	300 cm/min

	FREE 2 AXIS	**FREE 3 AXIS**
Motor	VEC 4000	VEC 4000
Gear 1	156:1	156:1
Gear 2	1:1	1:1
Diameter feed rollers	49 mm	49 mm
Pulse sensor	32 ppr	32 ppr
Low manual speed	150 cm/min	150 cm/min
High manual speed	300 cm/min	300 cm/min

8.3.3 Cold wire axis (ICE)

	FREE 2 AXIS	**FREE 3 AXIS**
Motor	VEC 4000	VEC 4000
Gear 1	156:1	156:1
Gear 2	1:1	1:1
Diameter feed rollers	49 mm	49 mm
Pulse sensor	32 ppr	32 ppr

	FREE 2 AXIS	FREE 3 AXIS
Low manual speed	150 cm/min	150 cm/min
High manual speed	300 cm/min	300 cm/min

8.3.4 Travel axis

The travel motor is set automatically according to the tables below.

	A2TFJ1	A2TGJ1	A6TFF1	MTW600
Motor	4030-350	4030-350	FHP258	FHP258
Gear 1	375:10	375:10	24:1	75:2
Gear 2	51:1	51:1	51:1	51:1
Wheel diameter	158 mm	158 mm	180 mm	158 mm
Pulse sensor	60 ppr	60 ppr	28 ppr	60 ppr
High manual speed	200 cm/min	200 cm/min	200 cm/min	200 cm/min

	FREE 2 AXIS	FREE 3 AXIS
Motor	VEC 4000	VEC 4000
Gear 1	312:1	312:1
Gear 2	1:1	1:1
Wheel diameter	65 mm	65 mm
Pulse sensor	32 ppr	32 ppr
High manual speed	200 cm/min	200 cm/min

8.3.5 Outer axis

When connecting an external roller bed, positioner or linear axis, FREE 3 AXIS must be selected.

When FREE 3 AXIS is selected, the motor is automatically set according to the tables below.

	Roller bed	Linear	Positioner
Gear 1	560:1	560:1	560:1
Gear 2	111:22	111:22	111:22
Gear 3	1:1	1:1	1:1
Wheel diameter	160 mm	160 mm	160 mm
Pulse sensor	30 ppr	30 ppr	30 ppr
High manual speed	200 cm/min	200 cm/min	200 cm/min
Frequency ratio	85:50	85:50	85:50
Motor	2000 rpm	2000 rpm	2000 rpm
Weld diameter	1000 mm	-	1000 mm
Roller diameter	1000 mm	-	-

8.3.6 Tandem for LAF and TAF power sources

Used when welding with two welding heads.

Position the cursor on the TANDEM row and press ENTER. Select ON, using the positioning knob and press ENTER.

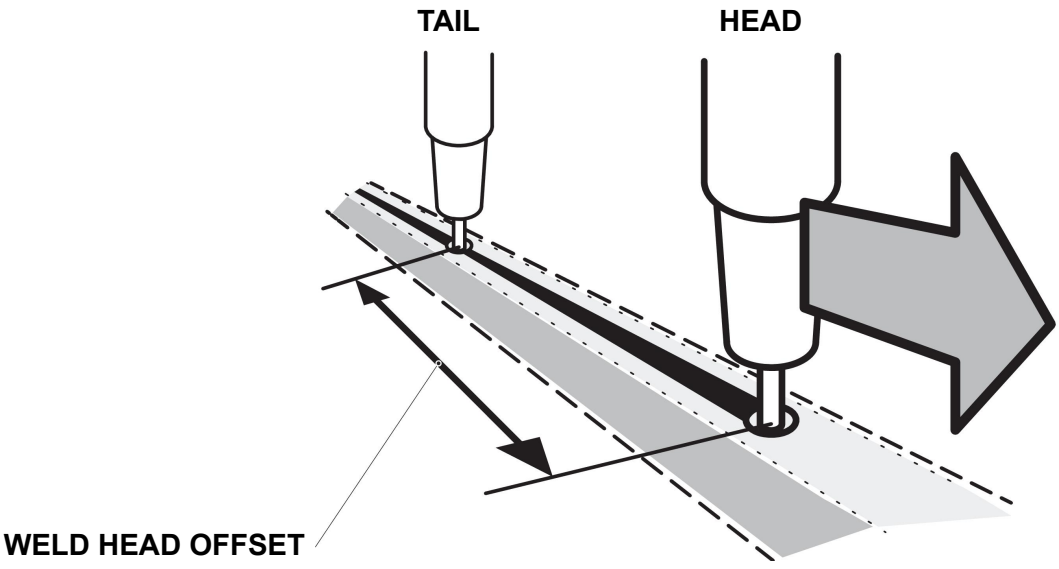
MACHINE CONFIGURATION	
PRODUCT CODE	A2TF J1
WIRE FEED AXIS▶	
TRAVEL AXIS▶	
TANDEM	**ON**
⌊ WELDING HEAD	HEAD
⌊ WELD HEAD OFFSET	20 mm
⌊ WITH I/O	ON
	QUIT

In order to weld with two welding heads, the WELD HEAD OFFSET function must be set.

WELD HEAD OFFSET is the distance in millimetres between the welding heads.

When you specify the distance between welding head 1 HEAD and welding head 2 TAIL, the value is recalculated by the control unit to a time between when welding head 1 starts and welding head 2 is to start.

The time that the control unit can calculate for the distance between the starting and stopping of the welding power sources is a maximum of 65 seconds. This means that if, for example, 50 cm/min is specified, 2000 mm can be entered as the maximum WELD HEAD OFFSET. This is so that time does not expire before welding head 2 reaches the start point.



NOTE!*Ensure that both control units have the same settings for WELD HEAD OFFSET and specify the same travel speed. The ”Master” control unit must be allocated HEAD and the ”Slave” control unit TAIL. Travel motion is always controlled from ”Master”.*

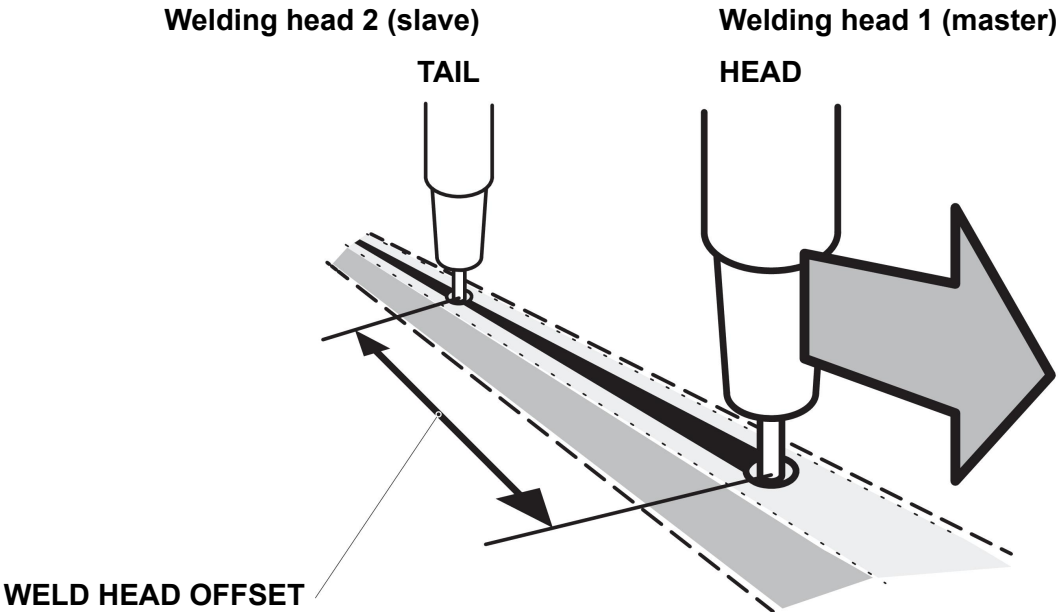
Specify the values to weld with two welding heads as follows:

Position the cursor on the WELDING HEAD row. Select whether the setting is to apply to ”master” control unit HEAD or ”slave” control unit TAIL.

MACHINE CONFIGURATION	
PRODUCT CODE	A2TF J1
WIRE FEED AXIS▶	
TRAVEL AXIS▶	
TANDEM	ON
⌊ **WELDING HEAD**	**HEAD**
⌊ WELD HEAD OFFSET	20 mm
⌊ WITH I/O	ON
	QUIT

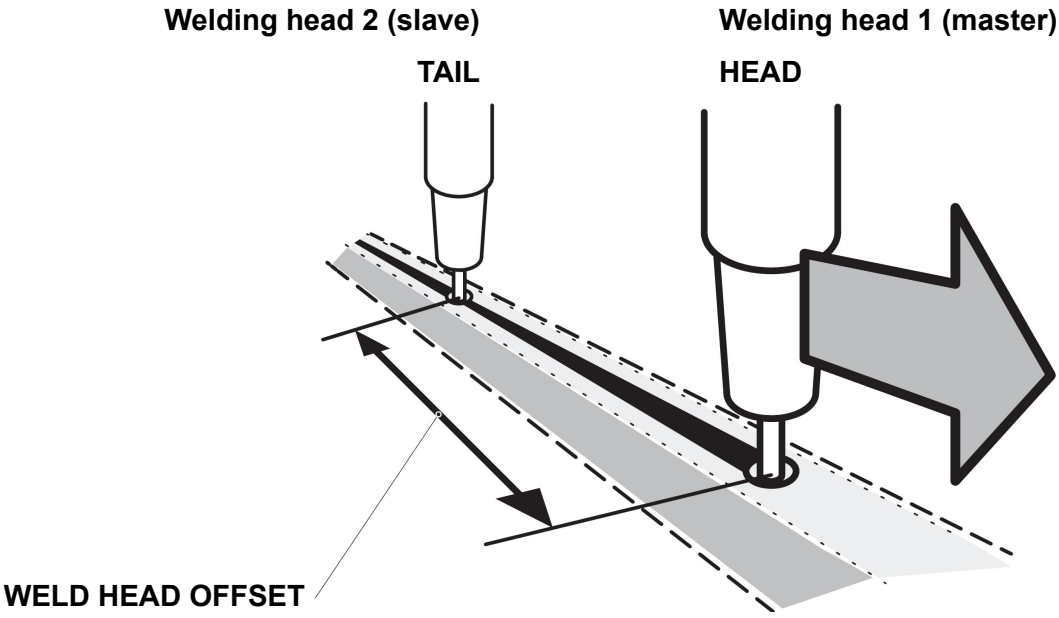
- Position the cursor on the WELD HEAD OFFSET row and specify the distance between the two welding heads.

Example, I/O ON



- Press Start,  for welding head 1.
- Welding head 1 starts to weld.
- Welding head 2 only starts welding when the start position for welding head 1 has been reached (the distance given in WELD HEAD OFFSET.
- Press  Stop, for welding head 1.
- Welding head 1 stops welding but continues travelling.
- Welding head 2 stops welding once it reaches the point where equipment1 stopped welding (the distance given in WELD HEAD OFFSET.
- Welding is complete.

Example, I/O OFF



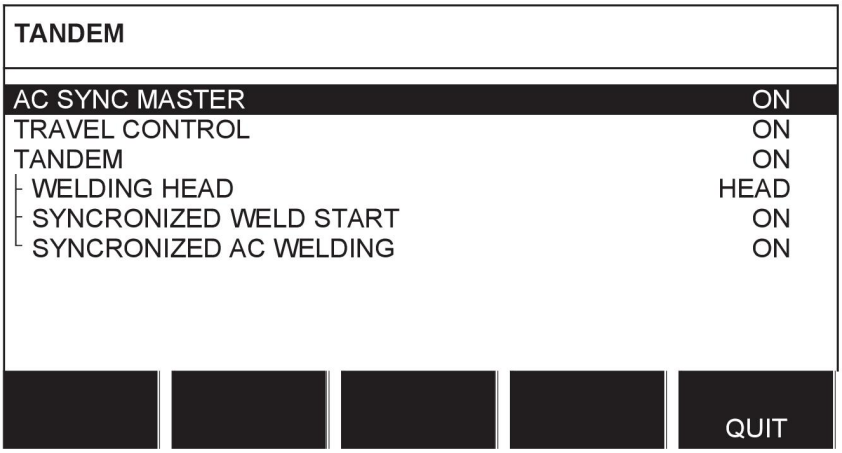
- Press Start, for welding head 1 and welding head 2 at the same time.
- Welding head 1 starts to weld.
- Welding head 2 starts to weld first when the start position for welding head 1 has been reached (the distance given WELD HEAD OFFSET).
- Press stop, for welding head 1 and welding head 2 at the same time.
- Welding head 1 stops welding but travel motion continues.
- Welding head 2 stops welding when it has reached the point where equipment1 stopped welding (the distance that is given in WELD HEAD OFFSET).
- Welding is complete.

8.3.7 Tandem for Aristo 1000 power source

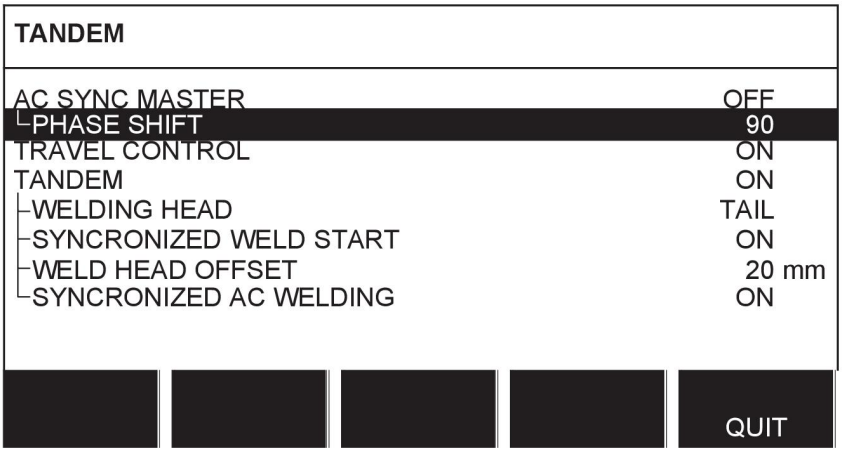
Used when welding with two or more welding heads. The welding heads are each controlled by their own control unit (PEK).

Position the cursor on the TANDEM row and press ENTER. Select ON using the positioning knob and press ENTER.

The front welding head is selected.



The rear welding head is selected.



WELDING HEAD

Select whether the welding head is to be the front (HEAD) or rear (TAIL).

AC SYNC MASTER

One power source in a tandem system has to be set as AC synchronization master if synchronized AC welding is used. Preferably the first AC welding power source is set as AC synchronization master.

TRAVEL CONTROL

Select whether the welding head is control the travel. Both the front and rear welding heads can control the travel, but only one at a time.

SYNCRONIZED WELD START

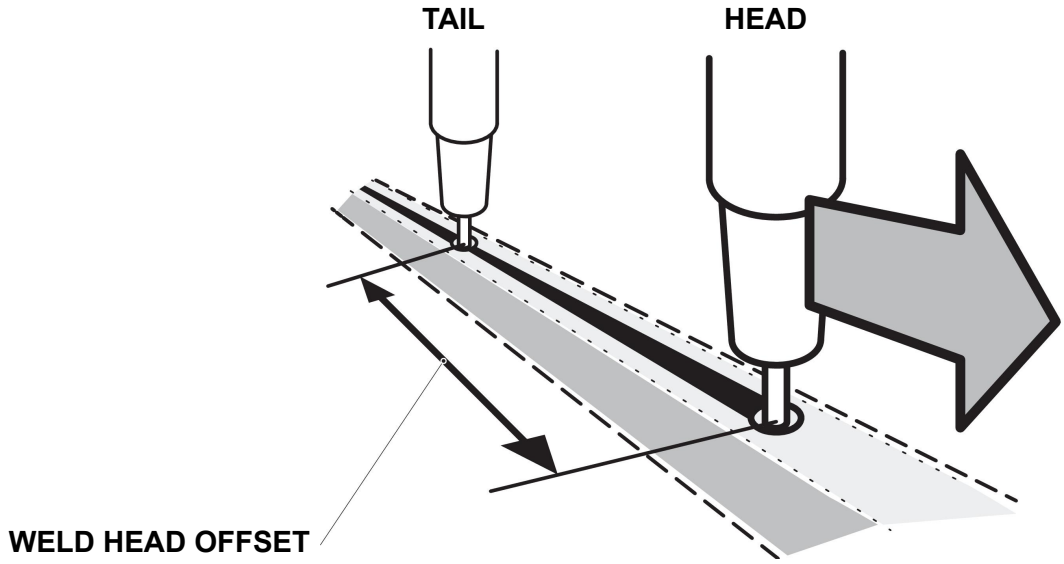
If ON is selected it means that one only need start the control unit for the front welding head. The rear one is started automatically. If OFF is selected all the welding heads must be started using the relevant control unit.

SYNCRONIZED AC WELDING

Synchronized AC welding means that the frequency and balance, the AC pulses, are synchronized to the same values for all welding heads in the tandem system.

WELD HEAD OFFSET

WELD HEAD OFFSET is the distance in millimetres between the welding heads. The weld head offset should always be set, whether a synchronised welding start is selected or not. If a **non**-synchronised welding start is selected, the offset is used to calculate a time delay for the welding start on the TAIL welding head.

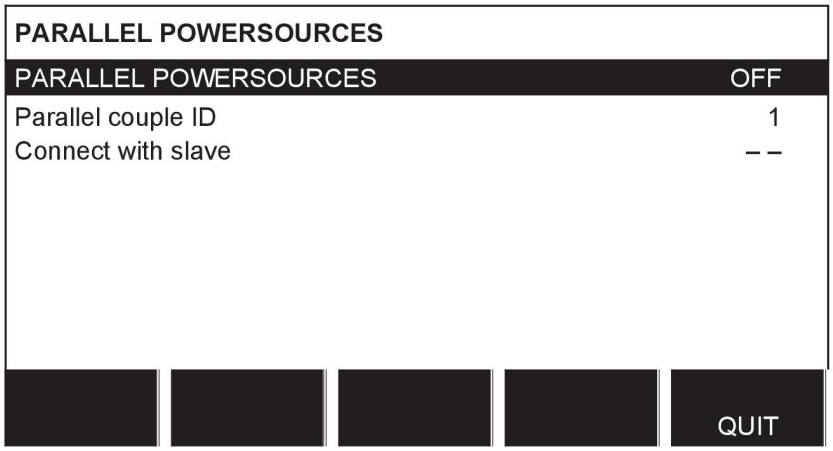


PHASE SHIFT (applies only to AC welding)

Phase shift means a phase offset in relation to the front welding head. The unit is degrees.

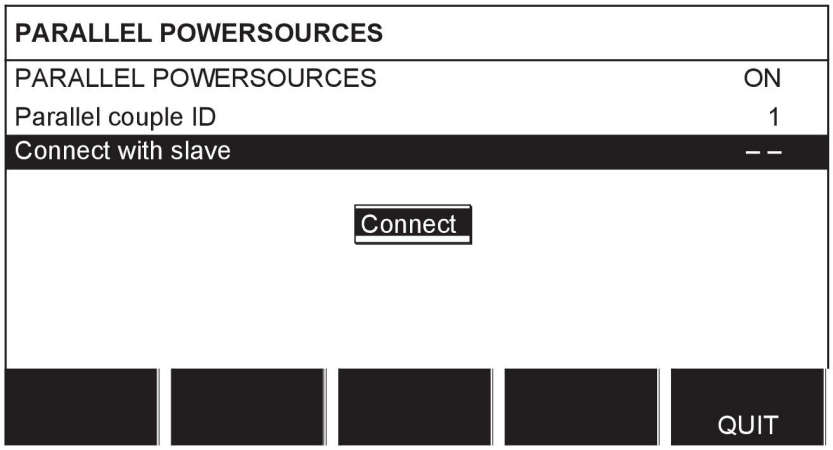
8.3.8 Parallel power sources (applies only to Aristo 1000 power sources)

To be able to setup two power sources in parallel, only the two power sources that are to be connected should have power on and be active on the CAN2 bus.



Perform settings for parallel power sources as follows:

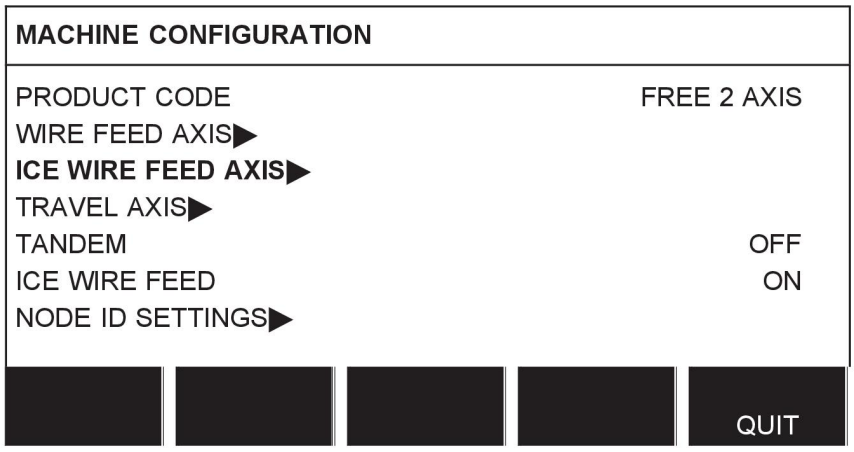
1. Set the *PARALLEL POWERSOURCES* function to ON.
2. Set *Parallel couple ID*. The first parallel couple is set to 1, the next parallel couple is set to 2 etc.
3. Select menu line *Connect with slave* and press Enter.
   A message "Connect" appears.
4. Press Enter again.



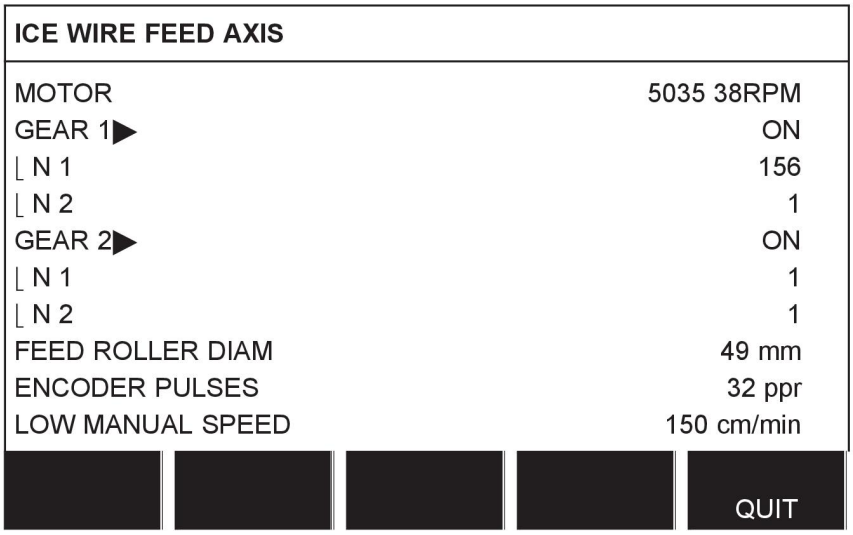
When the Master and Slave power sources are connected, the text "Connected" is presented.

8.3.9 Ice wire feed

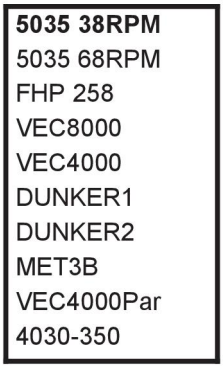
The option ICE WIRE FEED (ON) can be selected in the machine configuration menu. If ice wire feed is selected, the option ICE WIRE FEED AXIS appears.



The ice wire feed axis settings must be identical to the wire feed axis.



- Motor is selected from a dropdown list with the following options:



- GEAR 1 must be set to ON. The value cannot be OFF.
- GEAR 2 must normally be set to ON, but OFF can be selected.
- The values N1 and N2 under Gear 1 and 2 are set with one of the three settings knobs at the bottom of the panel. The interval for N1 and N2 depend on selected motor.
- The diameter of the feed rollers (FEED ROLLER DIAM) is selected with any settings knob. The interval depends on selected motor.
- The encoder for pulses (ENCODER-PULSES) is selected with any settings knob. The interval is between 1 - 9998 ppr (ppr = pulses per revolution).
- LOW MANUAL SPEED is selected with any of the settings knobs. The interval is 1 - 1000 cm/min.
- HIGH MANUAL SPEED is selected with any of the settings knobs. The interval is 1 - 5000 cm/min.

8.3.10 Polarity (applies only to Aristo 1000 power source)

In the POLARITY menu you can set the welding polarity.

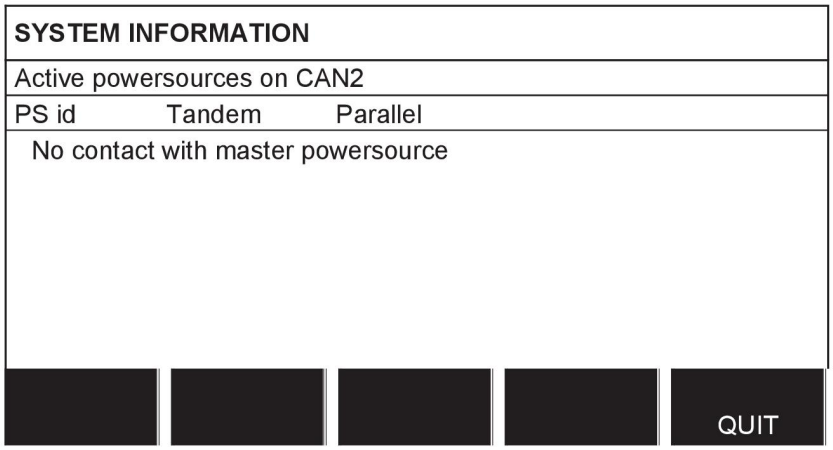
- To weld with positive polarity on the welding wire and negative polarity on the work piece, select "positive" polarity.
- To weld with negative polarity on the welding wire and positive polarity on the work piece, select "negative" polarity.

8.3.11 Node id settings (applies only to Aristo 1000 power source)

If there are I/O nodes in the system the ID numbers are given here.

8.3.12 System information (applies only to Aristo 1000 power source)

The SYSTEM INFORMATION menu shows active power sources connected via the CAN2 bus, if the power sources are in tandem or parallel mode and if they are configured as Master or Slave.



8.4 Cable lengths (applies only to LAF and TAF power sources)

The arc voltage is affected by the impedance in the welding cables. The impedance is affected by the length and area of the cables as well as by how they are routed. This is especially prominent during AC welding.

Compensation for the voltage drop with long cables is maintained if the actual cable length is specified.

The total cable length (weld cable and connector together) must be fed in.

Note! When using two cables, the areas must be combined for both cables.

This function is active during the start process before the power source has received a measurement value that it can regulate at.

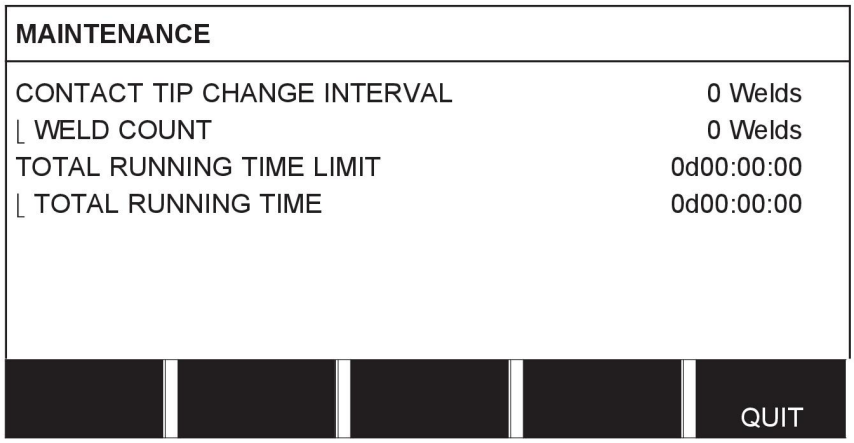
If ”Max OCV” has been selected this function is inactive.

8.5 Maintenance

Main menu → Configuration menu → Maintenance

In this menu you set how often the contact tip is to be changed. Specify the number of weld starts after which the tip is to be changed by selecting the CONTACT TIP CHANGE INTERVAL row and pressing ENTER. Change the value using the setting knobs. When the interval has been passed, fault code 54 is displayed in the error log.

When TOTAL RUNNING TIME LIMIT is selected instead of the number of starts, an authorised ESAB service technician is contacted.

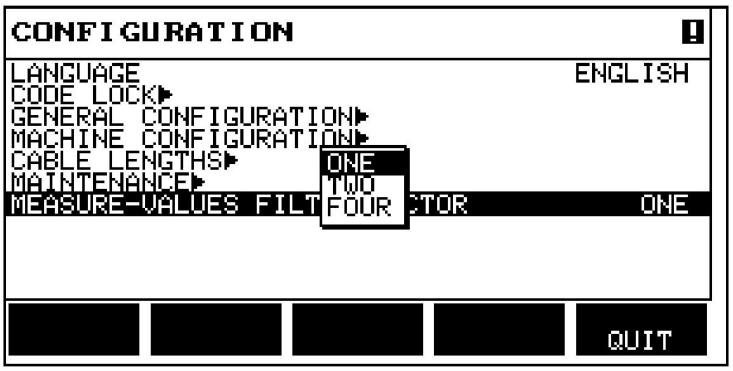


8.6 Measure–values filter factor

Main menu → Configuration menu → Measure–values filter factor

This menu provides a filter factor for the measurement values of the welding current. The higher filter factor value you choose, the more stable welding current measurement value you will get. You can choose between filter factors 1, 2 and 4.

Position the cursor on the MEASURE–VALUES FILTER FACTOR row and press ENTER. A pop-up menu shows filter factors ONE, TWO and FOUR. Select the preferred filter factor using the positioning knob and press ENTER.



9 TOOLS

Main menu → Tools

This menu contains the following sub-menus:

- Event handling, see *"Event handling"*, page 56.
- Export/Import, see *"Export/Import"*, page 59.
- File manager, see *"File manager"*, page 60.
- Edit setting limits, see *"Setting limit editor"*, page 63.
- Edit measure limits, see *"Measure limits editor"*, page 63.
- Production statistics, see *"Production statistics"*, page 65.
- Quality functions, see *"Quality functions"*, page 65.
- Calendar, see *"Calendar"*, page 67.
- User accounts, see *"User accounts"*, page 67.
- Unit information, see *"Unit information"*, page 69.

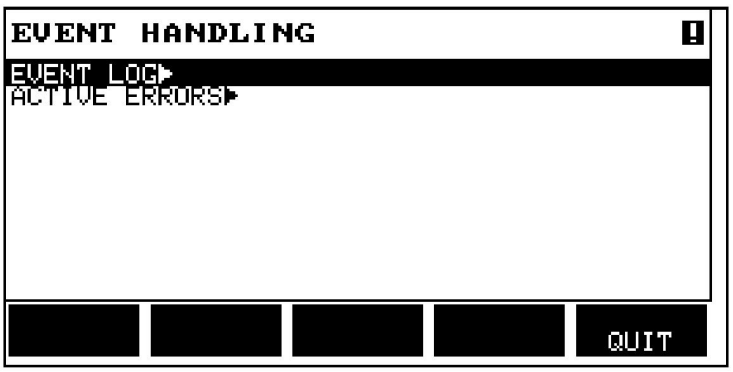
9.1 Event handling

Main menu → Tools → Event handling

Fault management codes are used to indicate that a fault has occurred in the welding process. Indicated in the display via a pop-up menu and an exclamation mark ! appears in the upper right-hand corner of the display.

Note! ! disappears from the display as soon as you enter the event log menu.

The Event handling menu has got two sub-menus, Event log (see *"Event log"*, page 56) and Active errors (see *"Active errors"*, page 57).



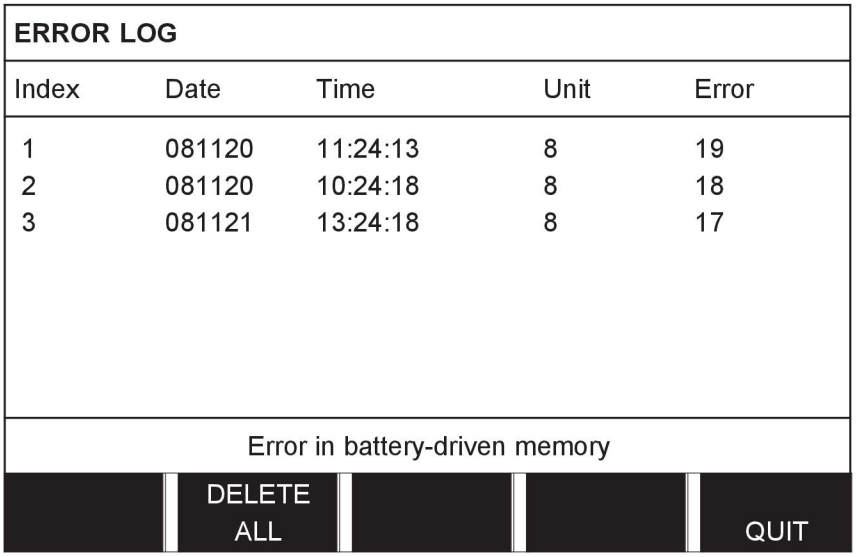
9.1.1 Event log

Main menu → Tools → Event handling → Event log

All errors that arise during the use of the welding equipment are documented as error messages in the error log. Up to 99 error messages can be saved. If the error log becomes full, i.e. if 99 error messages have been saved, the oldest message is automatically deleted when the next fault occurs.

The following information can be read in the error log:

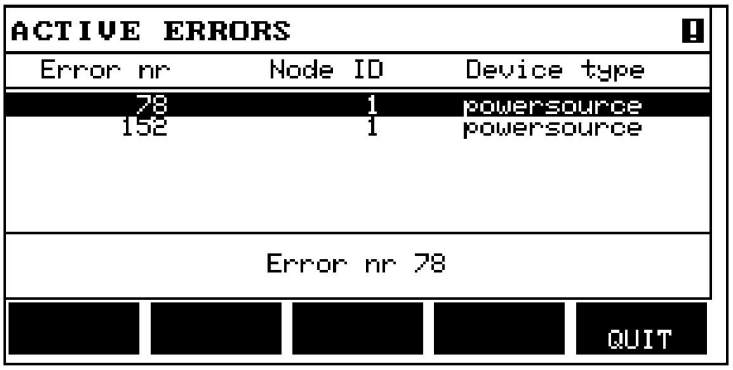
- The error number of the error
- The day on which the error occurred
- The time at which the error occurred
- The unit in which the error has occurred (see *"Unit IDs"*, page 57)
- The error's error management code (see *"Description of fault management codes"*, page 58)



9.1.2 Active errors

Main menu → Tools → Event handling → Active errors

The Active errors menu shows only the errors active for the moment.



9.1.3 Unit IDs

Explanation of unit IDs for LAF and TAF power source:

2 = Power source

6 = Wire feed and travel motion (motor board)

8 = Control panel

Note! The unit IDs specified above apply to LAF and TAF power sources, and constitutes an **example** of unit IDs for Aristo 1000, as the nodes in an Aristo 1000 application may have different ID numbers depending on the configuration of the equipment.

9.1.4 Description of fault management codes

The fault management codes that users can correct themselves are given below. If another code appears, restart the machine and if the error persists, contact a service technician.

Error code		Description
LAF, TAF	**Aristo 1000**	
6	**4201, 4202, 4203**	**High temperature** The power source has overheated and cancels welding. Welding is permitted again when the temperature falls below the maximum temperature parameter. **Action:** Check that the cooling air inlets or outlets are not blocked or clogged with dirt. Check the duty cycle being used, to make sure that the equipment is not being overloaded. If the error persists, send for a service technician.
7		**Low welding current** The weld arc has been shut down due to too low welding current during the welding process. **Action:** Is reset at next weld start. If the error persists, send for a service technician.
8		**Low battery voltage** Battery voltage too low. If the battery is not replaced, all stored data will be lost. This error does not disable any functions. **Action:** Send for a service technician to replace the battery.
11	**8411 sub-code 0**	**Speed error on a motor,** (wire feed, travel motor) A motor cannot maintain its speed. Welding stops. **Action:** Check that the wire feed has not jammed or runs too fast. If the error persists, send for a service technician.
12		**Internal communication error (warning)** The load on the system's CAN-bus is temporarily too high. The power source may have lost contact with the control unit. **Action:** Check that all the equipment is correctly connected. If the error persists, send for a service technician.
14		**Communication error** The system's CAN-bus has temporarily stopped working due to the load being too high. The current welding process stops. **Action:** Check that all the equipment is correctly connected. Turn off the mains power supply to reset the unit. If the error persists, send for a service technician.
17	**8117**	**Lost contact with the unit** Lost contact with a unit. **Action:** Check wiring and the connector between the control unit and power source. If the error persists, send for a service technician.

Error code		Description
LAF, TAF	**Aristo 1000**	
32		**No gas flow** Start prevented. **Action:** Check the gas valve, hoses and connectors.
43		**High welding current** Power source have switched off the welding process because the current has exceeded the maximum current parameter for the power source. **Action:** Is reset at next weld start. If the error persists, send for a service technician.
44		**Start pause welding current** The welding process has stopped because it has not advanced within 10 seconds. **Action:** Is reset at next weld start. If the error persists, send for a service technician.
168, 169	**8411 sub-code 1**	**A motor has stopped.** There are no pulses from the motor pulse transducer. For LAF and TAF: 168 = Motor M1 (Wire feeder motor), 169 = Motor M2 (Travel motor) **Action:** Check the motor cables. Replace the pulse transducer.
	2310	**Current servo saturation** The power source has temporarily delivered maximum current. **Action:** If the error persists, try lowering the weld data.
	3205	**High DC voltage** **Action:** Check if the main voltage is too low or too high.
	5010	**High inductance** Inductance is too high, depending on long welding cables and/or high weld data. **Action:** Try adjusting the weld data.

9.2 Export/Import

Main menu → Tools → Export / Import

In the Export/Import menu, it is possible to transfer information to and from the control panel via a USB memory.

The following information can be transferred:

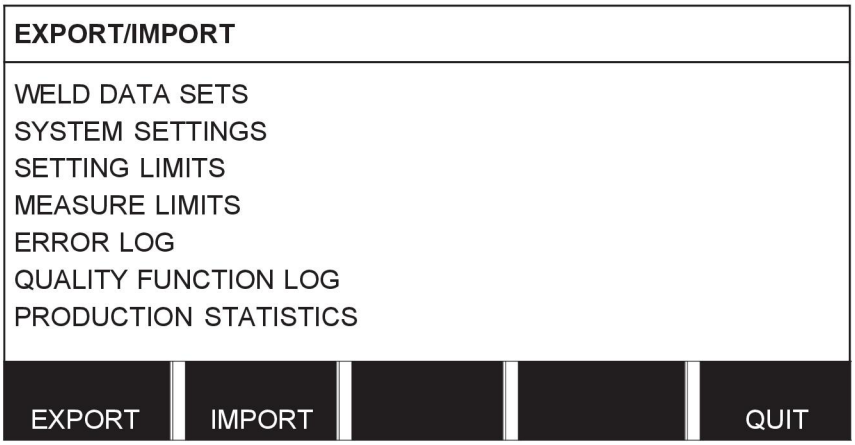
- Weld data sets — Export / Import
- System setting — Export / Import
- Setting limits — Export / Import
- Measure limits — Export / Import
- Error log — Export

- Quality function log Export
- Production statistics Export

Carry out the following to save on a USB memory:

Insert the USB memory into the control unit.

Select the row with the information that is to be transferred. Press EXPORT or IMPORT, depending on whether the information is to be exported or imported.



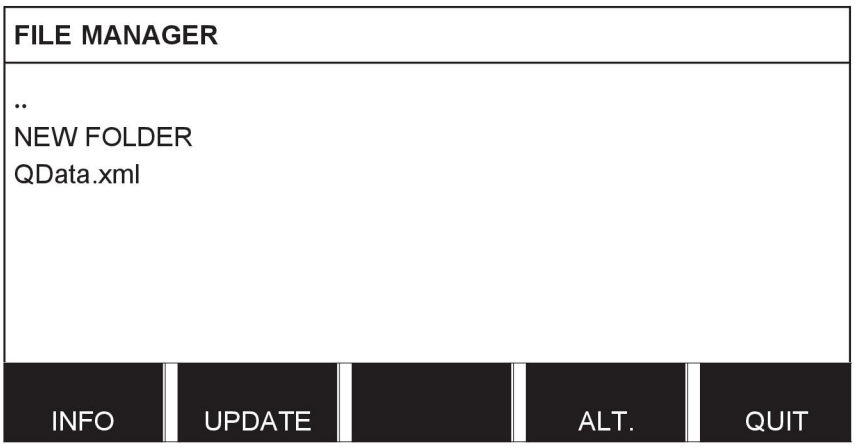
9.3 File manager

Main menu → Tools → File manager

In the file manager it is possible to manage information on a USB memory (C:\). File manager makes it possible to delete and copy weld data and quality data manually.

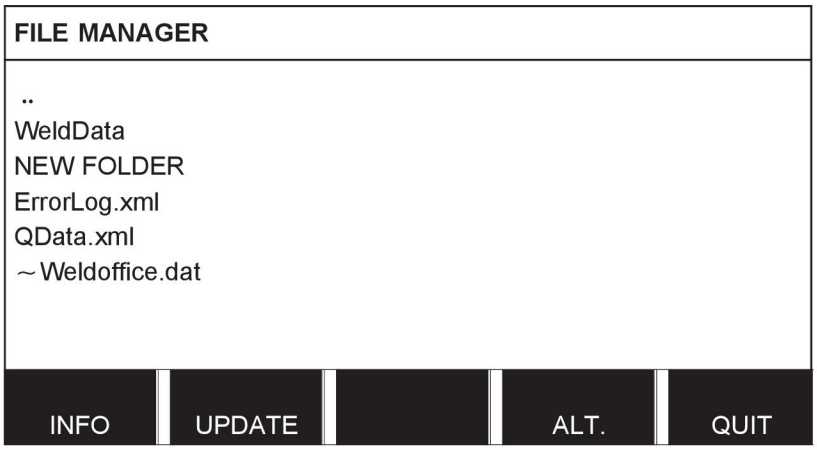
When the USB memory is connected, the display shows the memory's default folder if one is not previously selected.

The control panel remembers where you were the last time you used file manager, so that you return to the same place in the file structure when you come back.

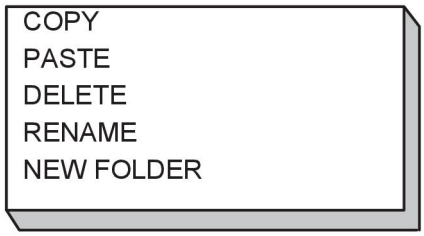


- In order to ascertain how much storage space remains for the memory, use the INFO function.
- Update the information by pressing UPDATE.
- When you want to delete, change name, create new folder, copy or paste, press ALT. A list then appears from which you can choose. If (..) or a folder is selected, you can only create a new folder or paste in a file that you have previously copied. If you have selected a file, the options RENAME, COPY or PASTE will be added if you have previously copied a file.

Select a folder or file and press ALT.



This list is displayed when you have pressed ALT.



9.3.1 Delete a file/folder

Select the file or folder that is to be deleted and press ALT.

Select DELETE and press ENTER.

The file/folder is now removed. In order to delete a folder it must be empty, i.e. first delete the files contained in the folder.

9.3.2 Rename a file/folder

Select the file or folder that is to be renamed and press ALT.

Select RENAME and press ENTER.

A keyboard appears in the display. Use the positioning knob to change row and the arrows to move left and right. Select the character/function that is to be used and press ENTER.

9.3.3 Create new folder

Select where the new folder is to be located and press ALT.

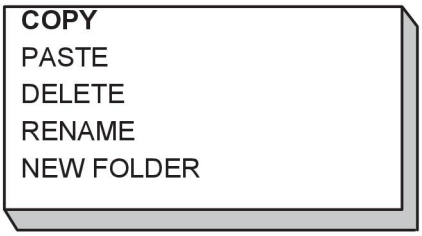
Select NEW FOLDER and press ENTER.

A keyboard then appears in the display. Use the positioning knob to change row and the arrows to move left and right. Select the character/function that is to be used and press ENTER.

9.3.4 Copy and paste files

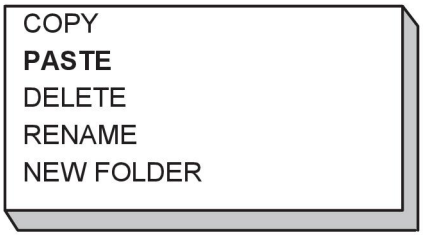
Select the file that is to be copied and press ALT.

Select COPY and press ENTER.



Position the cursor in the folder in which the copied file is to be located and press ALT.

Select PASTE and press ENTER.



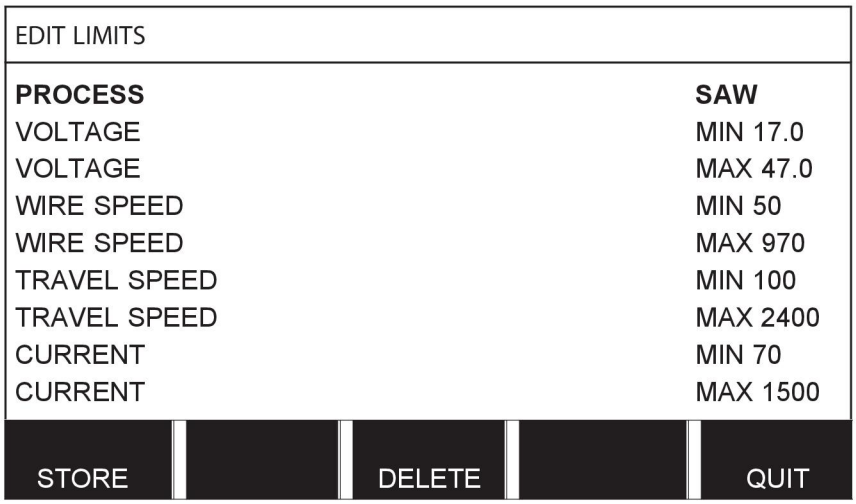
The copy is saved as Copy of plus the original name, e.g. Copy of WeldData.awd.

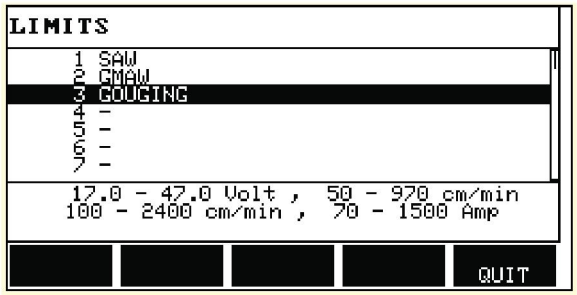
9.4 Setting limit editor

Main menu → Tools → Setting limit editor

In this menu you set your own max. and min. values for various welding methods. The limits cannot be above or below the values for which the power source is dimensioned. There are 50 storage points. Select the row for an empty storage point and press ENTER. Select process by pressing ENTER and select the welding process using the positioning knob and press ENTER.

The maximum and minimum values for arc voltage, wire feed speed, travel speed and welding current can be selected for all processes.





When the values have been adjusted, press STORE. When asked if the limit value is to be saved at the selected storage point, press NO or YES. The storage point's values can be seen under the line at the bottom.

With the AUTO soft key, the parameters are set automatically according to the most recently used parameters.

When asked if the limit settings are to be set automatically, press NO or YES and then STORE if the setting is to be retained.

9.5 Measure limits editor

Main menu → Tools → Measure limits editor

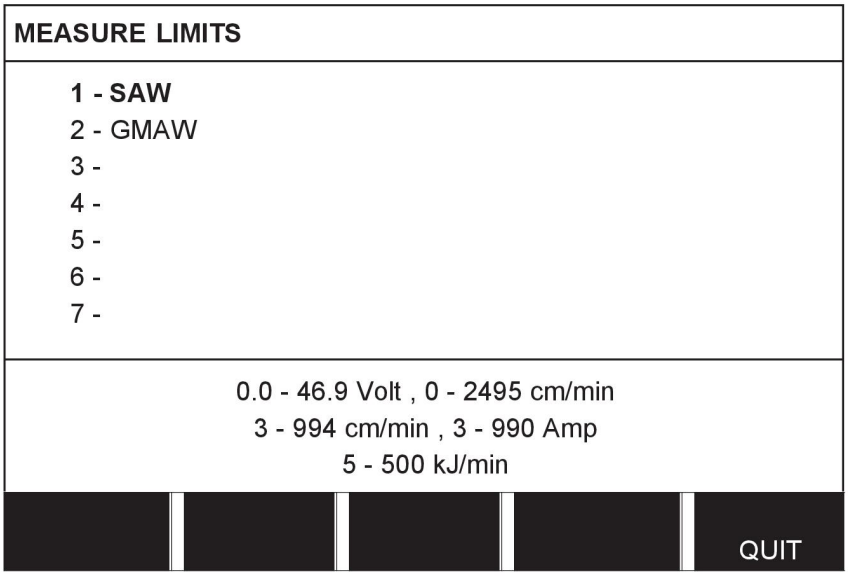
In this menu you set your own measurement values for the various welding methods. There are 50 storage points. Select the row for an empty storage point and press ENTER. Select process by pressing ENTER and select the welding process using the positioning knob and press ENTER.

The following values can be selected:

- arc voltage: min, max
- wire feed speed: min, max
- welding current: min, max
- travel speed: min, max
- energy per unit length: min, max

Set the desired value using the setting knobs and press STORE.

In the dialogue box, you are asked if you want to store the selected storage point. Press YES to save the value. The storage point's values can be seen under the line at the bottom.



With the AUTO soft key, the parameters are set automatically according to the most recently used measurement values.

When asked if the measurement values are to be set automatically, press NO or YES and then STORE if the setting is to be retained.

9.6 Production statistics

Main menu → Tools → Production statistics

The production statistics will keep track of the total arc time, the total amount of material and the number of welds since the most recent reset. They will also keep track of the arc time and the amount of material used in the most recent weld. For information purposes, the melted wire material per length unit that has been calculated and when the most recent reset occurred are also displayed.

PRODUCTION STATISTICS		
	LAST WELD	TOTAL
ARCTIME	0s	0s
CONSUMED WIRE	0g	0g
BASED ON	1g/m	
NUMBER OF WELDS		0
LAST RESET	081114	08:38:03
RESET	UPDATE	QUIT

When you press RESET, all counters are reset. Date and time show the most recent reset.

If you do not reset the counters, these are all automatically reset when one of them has reached its maximum value.

Maximum counter values

Time	999 hours, 59 minutes, 59 seconds
Weight	13350000 grams
Quantity	65535

9.7 Quality functions

Main menu → Tools → Quality functions

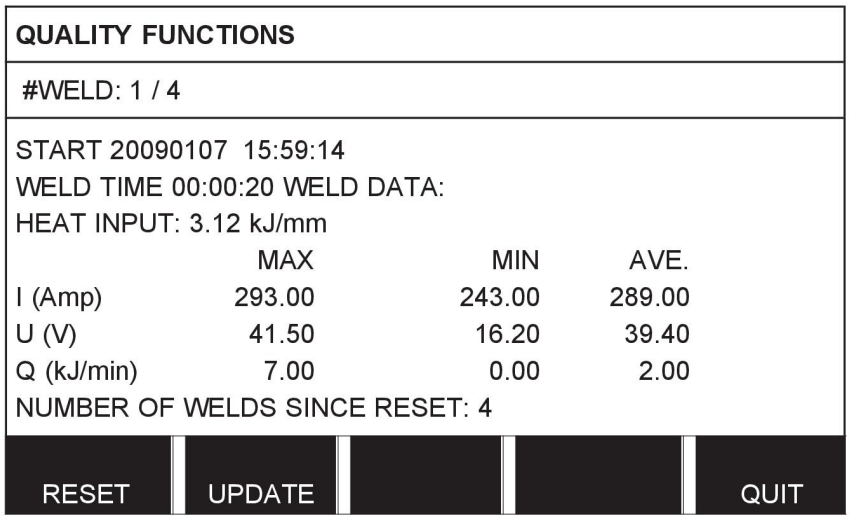
Quality functions keep track of various interesting weld data for individual welds.

These functions are:

- Time of welding start.
- Duration of welding.
- Maximum, minimum and average current during welding.
- Maximum, minimum and average voltage during welding.
- Maximum, minimum and average energy per unit length during welding.

The number of welds since the most recent reset is displayed in the row at the bottom. Information can be stored about a maximum of 100 welds. In the event of more than 100 welds, the first one is overwritten.

The most recently noted weld is presented in the display, although it is also possible to browse between other noted welds. All logs are deleted when you press RESET.



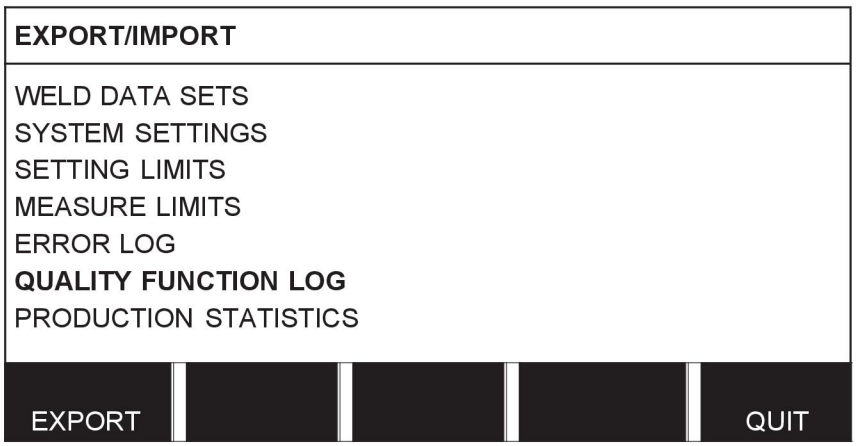
9.7.1 Store quality data

Main menu → Tools → Export / Import

The files that are produced in the control panel are stored as xml files. The USB memory must be formatted as FAT32 in order to work.

Insert a USB memory in the control panel, see *"File manager"*, page 60.

Select QUALITY FUNCTION LOG, press EXPORT.



The entire set of quality data (information about the 100 most recent welds) that is stored in the control panel is now saved on the USB memory.

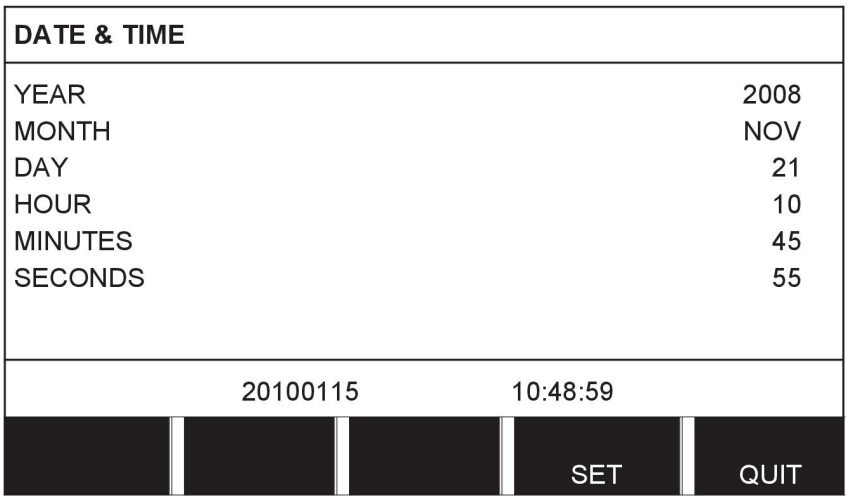
The file is in a folder called QData. QData is created automatically when you insert a USB memory.

9.8 Calendar

Main menu → Tools → Calendar

Date and time are set here.

Select the row that is to be set: year, month, day, hour, minutes and seconds. Set the correct value using one of the setting knobs. Press SET.



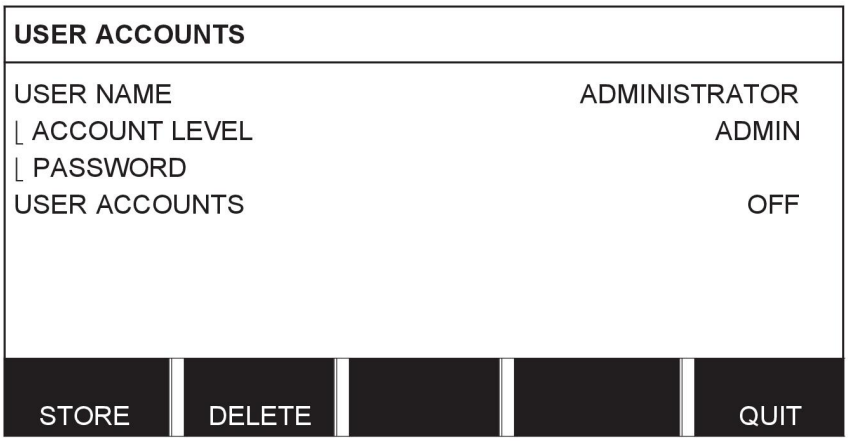
9.9 User accounts

Main menu → Tools → User accounts

Occasionally it is particularly important from a quality perspective that the product cannot be used by unauthorised parties.

User name, account level and password are registered in this menu.

Select USER NAME and press ENTER. Step down to an empty row and press ENTER. Key in a new user name on the keyboard using the positioning knob and the arrows and ENTER.



There is space for 16 user accounts. In the quality data files it will be evident which users have executed a particular weld.

Under ACCOUNT LEVEL choose from:

- Administrator
  full access (can add new users)
- Senior user
  can access everything except:
  - machine configuration
  - user accounts
  - network settings
- Normal user
  can access:
  - In the Configuration menu:
    - Maintenance
  - In the Tools menu:
    - Unit information
  - In the Settings menu:
    - Voltage
    - Current / wire feed
    - Travel speed
    - Welding direction

In the PASSWORD row, key in a password using the keyboard. When the power source is switched on and the control panel activated, you are asked in the display to enter your password.

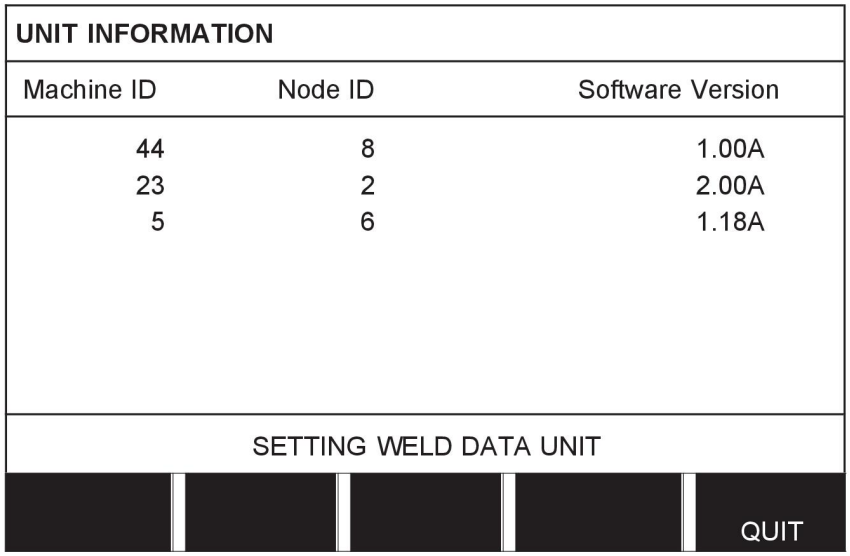
If you choose not to have this function, but instead want the power source and control panel to be unlocked for all users, select USER ACCOUNTS OFF.

9.10 Unit information

Main menu → Tools → Unit information

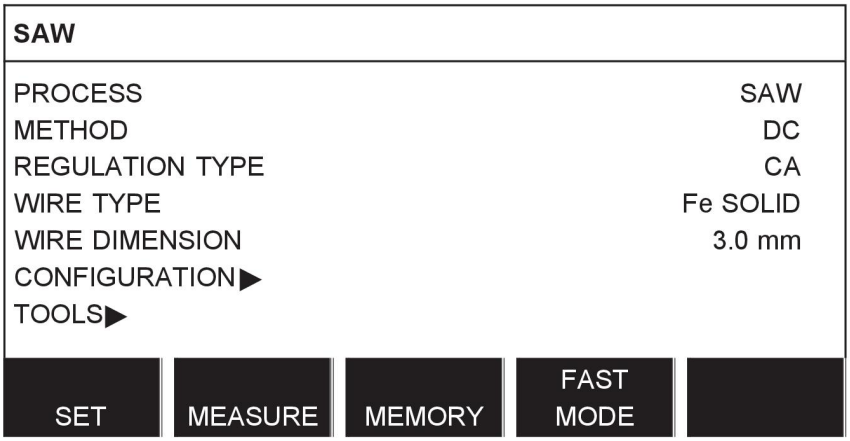
In this menu you can see the following information:

- Machine ID
- Node ID (regarding node IDs specified below, see *"Unit IDs"*, page 57)
  2 = power source
  6 = wire feed and travel motion (motor board)
  8 = control panel
- Software version



MENU STRUCTURE

SAW



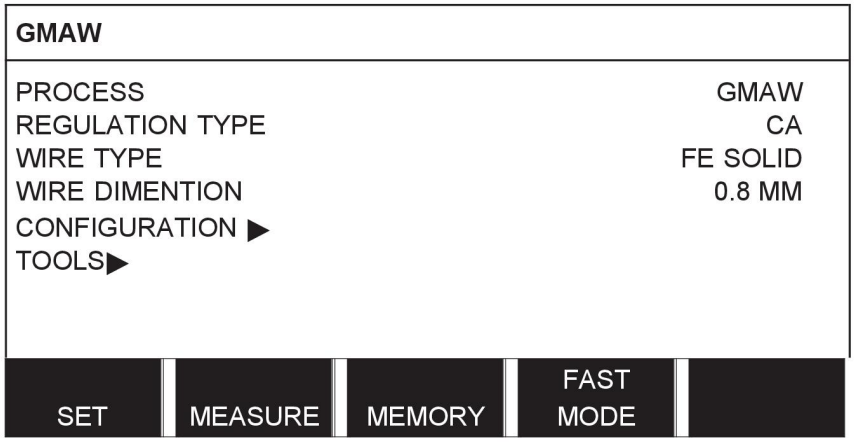
SET

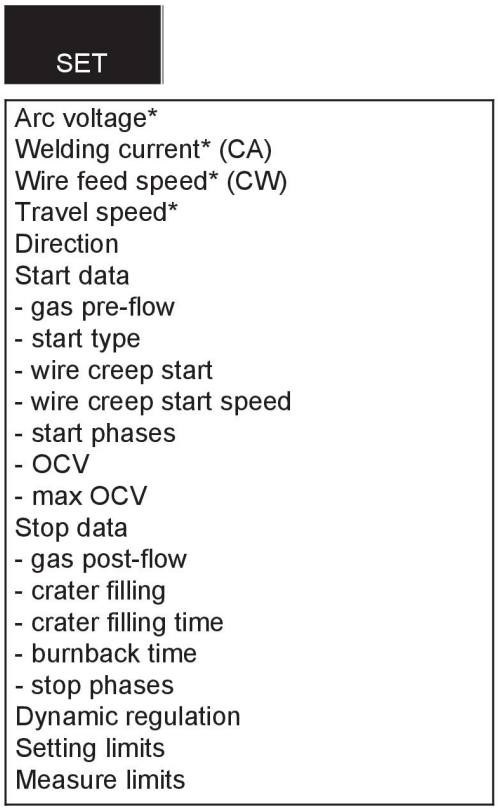
- Voltage
- Welding current[1] (CA)
- Wire feed speed[1] (CW)
- Constant current[1] (CC)
- Ice wire feed speed[1] (CW)
- Ice wire start delay[1] (CW)
- Travel speed[1]
- Direction
- AC frequency
- AC balance
- AC offset
- Start data[2]
  - flux pre-flow
  - start type
  - wire creep start
  - wire creep start speed
  - start phases
  - OCV
  - max OCV
- Stop data[2]
  - flux post-flow
  - crater filling
  - crater filling time
  - burnback time
  - stop phases
- Regulation parameters
  - dynamics
  - inductance
- Setting limits
- Measure limits

1) The setting range is dependent on the product used.

2) The menu shows the settings that belong to the selected regulation type.

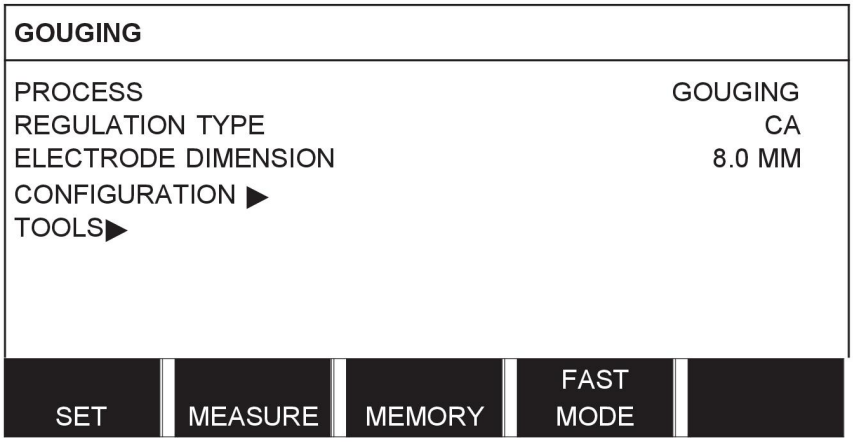
GMAW

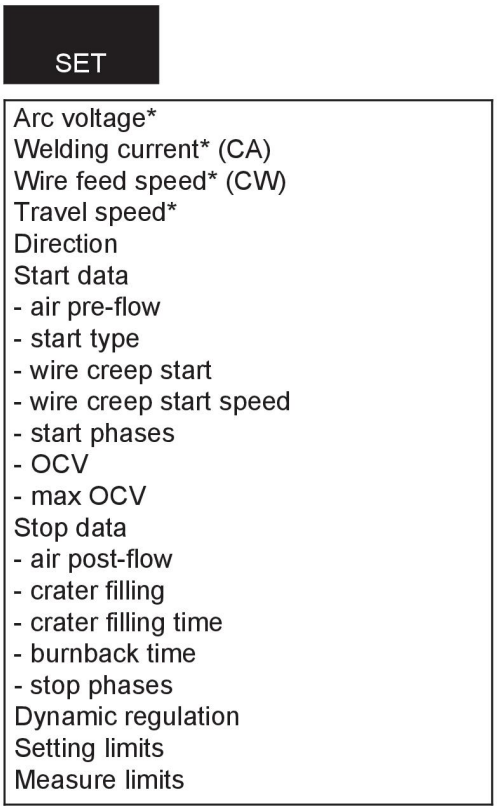




** The setting range is dependent on the product used.*

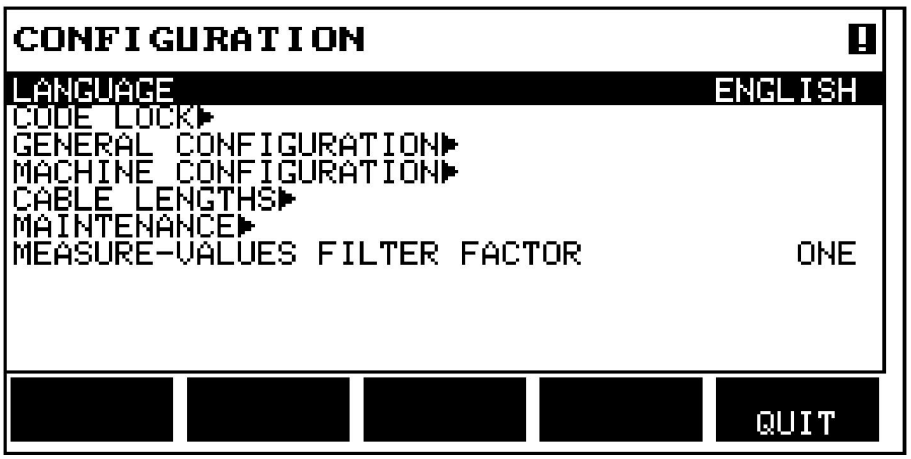
GOUGING





** The setting range is dependent on the product used.*

CONFIGURATION



Configuration
Language
Code lock
General configuration • fast mode soft buttons • quality data log to file • soft keys setup • auto save mode • unit of length
Machine configuration • product code • wire feed axis • ice wire feed axis • travel axis • outer axis • tandem • parallel power sources • ice wire feed • polarity • node ID settings • system information
Cable lengths
Maintenance • contact tip change interval • total running time limit
Measure–values filter factor

TOOLS

Tools
Event handling • Event log • Active errors
Export/import • weld data sets • system settings • setting limits • measure limits • error log • quality function log • production statistics
File manager
Setting limit editor
Measure limit editor
Production statistics
Quality functions
Calendar
User accounts
Unit information

WIRE DIMENSION

Submerged arc welding with constant ampere (SAW CA)

Wire type	Wire diameter (mm)
Fe Solid	0.8 1.0 1.2 1.6 2.0 2.4 3.0 3.2 4.0 5.0 6.0
Fe Solid Twin	2x0.8 2x1.0 2x1.2 2x1.6 2x2.0 2x2.4 2x3.0 2x4.0 2x5.0
Fe Flux Cored	0.8 1.0 1.2 1.6 2.0 2.4 3.0 3.2 4.0
Fe Flux Cored Twin	2x0.8 2x1.0 2x1.2 2x1.6 2x2.0 2x2.4 2x3.0 2x4.0
SS Solid	0.8 1.0 1.2 1.6 2.0 2.4 3.0 3.2 4.0 5.0 6.0
SS Solid Twin	2x0.8 2x1.0 2x1.2 2x1.6 2x2.0 2x2.4 2x3.0 2x3.2 2x4.0
SS Strip	30 x 0.5 60 x 0.5 90 x 0.5
SS Flux Cored	0.8 1.0 1.2 1.6 2.0 2.4 3.0 3.2 4.0 5.0 6.0
SS Flux Cored Twin	2x0.8 2x1.0 2x1.2 2x1.6 2x2.0 2x2.4 2x3.0 2x3.2 2x4.0

MIG/MAG welding with constant ampere (GMAW CA)

Wire type	Wire diameter (mm)
Fe Solid	0.8 1.0 1.2 1.6 2.0 2.4
Fe Flux Cored	0.8 1.0 1.2 1.6 2.0 2.4
SS Solid	0.8 1.0 1.2 1.6 2.0 2.4
SS Flux Cored	0.8 1.0 1.2 1.6 2.0 2.4
Al Solid	0.8 1.0 1.2 1.6 2.0 2.4
Al Flux Cored	0.8 1.0 1.2 1.6 2.0 2.4

Gouging with constant ampere (CA)

Electrode dimension (mm)
8.0 9.5 13.0

ORDERING NUMBERS

Ordering no.	Denomination
0460 504 880	Control unit PEK
0460 949 270	Instruction manual SE
0460 949 271	Instruction manual DK
0460 949 272	Instruction manual NO
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0460 949 276	Instruction manual FR
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0460 949 279	Instruction manual IT
0460 949 280	Instruction manual PT
0460 949 281	Instruction manual GR
0460 949 282	Instruction manual PL
0460 949 283	Instruction manual HU
0460 949 284	Instruction manual CZ
0460 949 285	Instruction manual SK
0460 949 286	Instruction manual RU
0460 949 289	Instruction manual EE
0460 949 290	Instruction manual LV
0460 949 291	Instruction manual SI
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Instruction manuals are available on the Internet at www.esab.com

ESAB subsidiaries and representative offices

Europe

AUSTRIA
ESAB Ges.m.b.H
Vienna-Liesing
Tel: +43 1 888 25 11
Fax: +43 1 888 25 11 85

BELGIUM
S.A. ESAB N.V.
Heist-op-den-Berg
Tel: +32 15 25 79 30
Fax: +32 15 25 79 44

BULGARIA
ESAB Kft Representative Office
Sofia
Tel: +359 2 974 42 88
Fax: +359 2 974 42 88

THE CZECH REPUBLIC
ESAB VAMBERK s.r.o.
Vamberk
Tel: +420 2 819 40 885
Fax: +420 2 819 40 120

DENMARK
Aktieselskabet ESAB
Herlev
Tel: +45 36 30 01 11
Fax: +45 36 30 40 03

FINLAND
ESAB Oy
Helsinki
Tel: +358 9 547 761
Fax: +358 9 547 77 71

GREAT BRITAIN
ESAB Group (UK) Ltd
Waltham Cross
Tel: +44 1992 76 85 15
Fax: +44 1992 71 58 03

ESAB Automation Ltd
Andover
Tel: +44 1264 33 22 33
Fax: +44 1264 33 20 74

FRANCE
ESAB France S.A.
Cergy Pontoise
Tel: +33 1 30 75 55 00
Fax: +33 1 30 75 55 24

GERMANY
ESAB GmbH
Solingen
Tel: +49 212 298 0
Fax: +49 212 298 218

HUNGARY
ESAB Kft
Budapest
Tel: +36 1 20 44 182
Fax: +36 1 20 44 186

ITALY
ESAB Saldatura S.p.A.
Bareggio (Mi)
Tel: +39 02 97 96 8.1
Fax: +39 02 97 96 87 01

THE NETHERLANDS
ESAB Nederland B.V.
Amersfoort
Tel: +31 33 422 35 55
Fax: +31 33 422 35 44

NORWAY
AS ESAB
Larvik
Tel: +47 33 12 10 00
Fax: +47 33 11 52 03

POLAND
ESAB Sp.zo.o.
Katowice
Tel: +48 32 351 11 00
Fax: +48 32 351 11 20

PORTUGAL
ESAB Lda
Lisbon
Tel: +351 8 310 960
Fax: +351 1 859 1277

ROMANIA
ESAB Romania Trading SRL
Bucharest
Tel: +40 316 900 600
Fax: +40 316 900 601

RUSSIA
LLC ESAB
Moscow
Tel: +7 (495) 663 20 08
Fax: +7 (495) 663 20 09

SLOVAKIA
ESAB Slovakia s.r.o.
Bratislava
Tel: +421 7 44 88 24 26
Fax: +421 7 44 88 87 41

SPAIN
ESAB Ibérica S.A.
Alcalá de Henares (MADRID)
Tel: +34 91 878 3600
Fax: +34 91 802 3461

SWEDEN
ESAB Sverige AB
Gothenburg
Tel: +46 31 50 95 00
Fax: +46 31 50 92 22

ESAB International AB
Gothenburg
Tel: +46 31 50 90 00
Fax: +46 31 50 93 60

SWITZERLAND
ESAB AG
Dietikon
Tel: +41 1 741 25 25
Fax: +41 1 740 30 55

UKRAINE
ESAB Ukraine LLC
Kiev
Tel: +38 (044) 501 23 24
Fax: +38 (044) 575 21 88

North and South America

ARGENTINA
CONARCO
Buenos Aires
Tel: +54 11 4 753 4039
Fax: +54 11 4 753 6313

BRAZIL
ESAB S.A.
Contagem-MG
Tel: +55 31 2191 4333
Fax: +55 31 2191 4440

CANADA
ESAB Group Canada Inc.
Missisauga, Ontario
Tel: +1 905 670 02 20
Fax: +1 905 670 48 79

MEXICO
ESAB Mexico S.A.
Monterrey
Tel: +52 8 350 5959
Fax: +52 8 350 7554

USA
ESAB Welding & Cutting Products
Florence, SC
Tel: +1 843 669 44 11
Fax: +1 843 664 57 48

Asia/Pacific

AUSTRALIA
ESAB South Pacific
Archerfield BC QLD 4108
Tel: +61 1300 372 228
Fax: +61 7 3711 2328

CHINA
Shanghai ESAB A/P
Shanghai
Tel: +86 21 2326 3000
Fax: +86 21 6566 6622

INDIA
ESAB India Ltd
Calcutta
Tel: +91 33 478 45 17
Fax: +91 33 468 18 80

INDONESIA
P.T. ESABindo Pratama
Jakarta
Tel: +62 21 460 0188
Fax: +62 21 461 2929

JAPAN
ESAB Japan
Tokyo
Tel: +81 45 670 7073
Fax: +81 45 670 7001

MALAYSIA
ESAB (Malaysia) Snd Bhd
USJ
Tel: +603 8023 7835
Fax: +603 8023 0225

SINGAPORE
ESAB Asia/Pacific Pte Ltd
Singapore
Tel: +65 6861 43 22
Fax: +65 6861 31 95

SOUTH KOREA
ESAB SeAH Corporation
Kyungnam
Tel: +82 55 269 8170
Fax: +82 55 289 8864

UNITED ARAB EMIRATES
ESAB Middle East FZE
Dubai
Tel: +971 4 887 21 11
Fax: +971 4 887 22 63

Africa

EGYPT
ESAB Egypt
Dokki-Cairo
Tel: +20 2 390 96 69
Fax: +20 2 393 32 13

SOUTH AFRICA
ESAB Africa Welding & Cutting Ltd
Durbanvill 7570 - Cape Town
Tel: +27 (0)21 975 8924

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