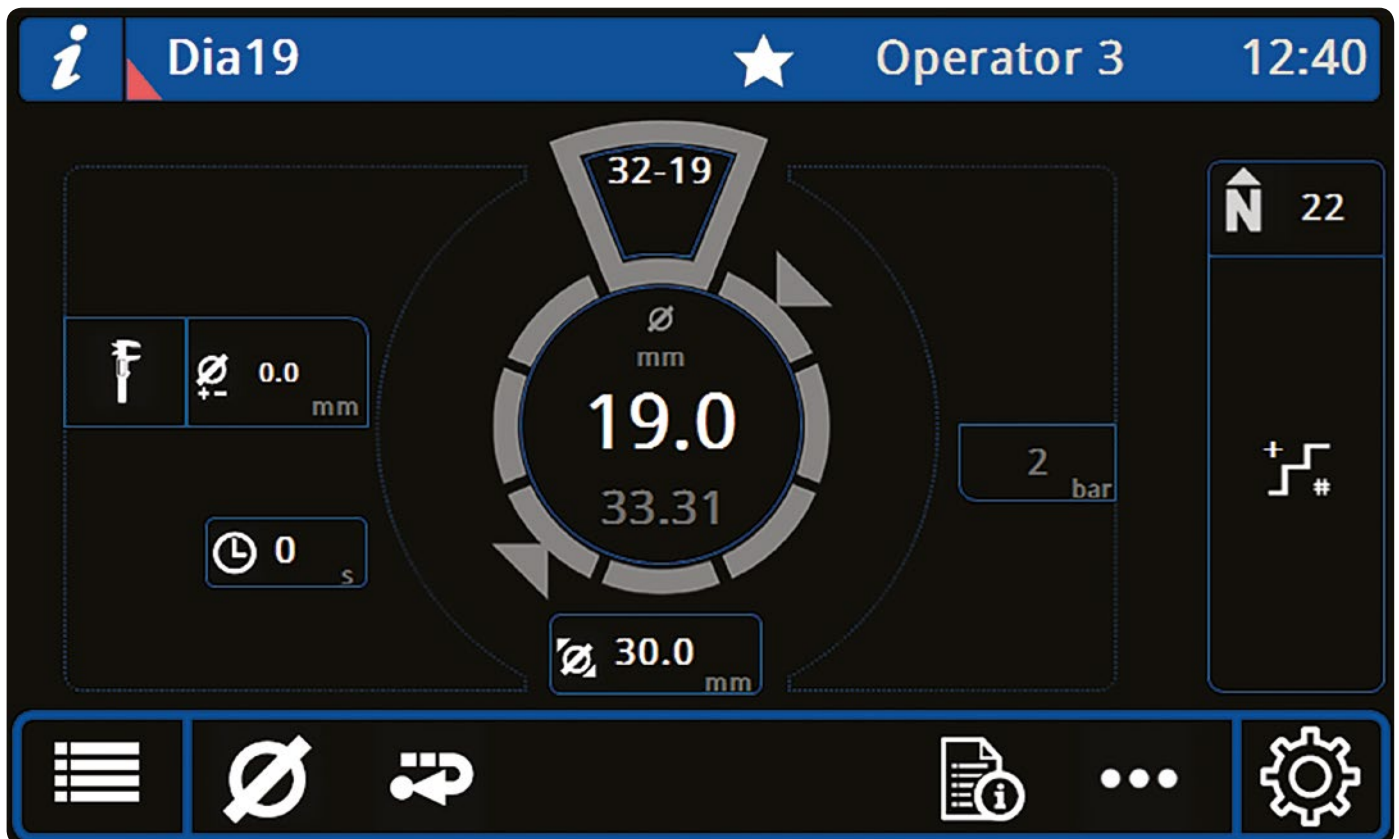


FINN-POWER ICC CONTROL

OPERATING INSTRUCTIONS

Released 6/2017



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1. INTRODUCTION

This manual familiarizes the reader with the features and operation of the Finn-Power ICC control unit. Read the following instructions thoroughly prior to operating, installing or servicing the crimping machine. Familiarity with the operating instructions speeds up commissioning and effective utilization of the equipment.

The digital Finn-Power ICC control unit has been designed for crimping machines, utilizing modern processor technology and the possibilities provided by graphic user interface. ICC control is an intelligent control unit with a graphic display allowing the operator to control the crimping machine and utilize several miscellaneous functions. It also enables versatile fault diagnostics during the operation.

GENERAL

The crimping machine is delivered with default setups, including setups for calibration and motor stand-by time. Purchased options are installed and initialized already in a factory, although it's also possible to purchase and install options afterwards. Get to know to the machines operating and service instructions to get all the benefits out of the machine and its features. With right usage you will not only longer machines working capacity but also working life.

FEATURES

STANDARD FEATURES

- Crimping by the diameter
- Retraction
- Correction
- Crimping delay
- USB-connection
- FTP sever
- Manual / automatic mode
- Tool Change Wizard
- Recipe memory, job queue
- Ascending / descending counters
- Pressure displayed
- Die position displayed
- User management
- Energy saving mode (motor running time)
- Units; mm or inch
- Automatic brightness control

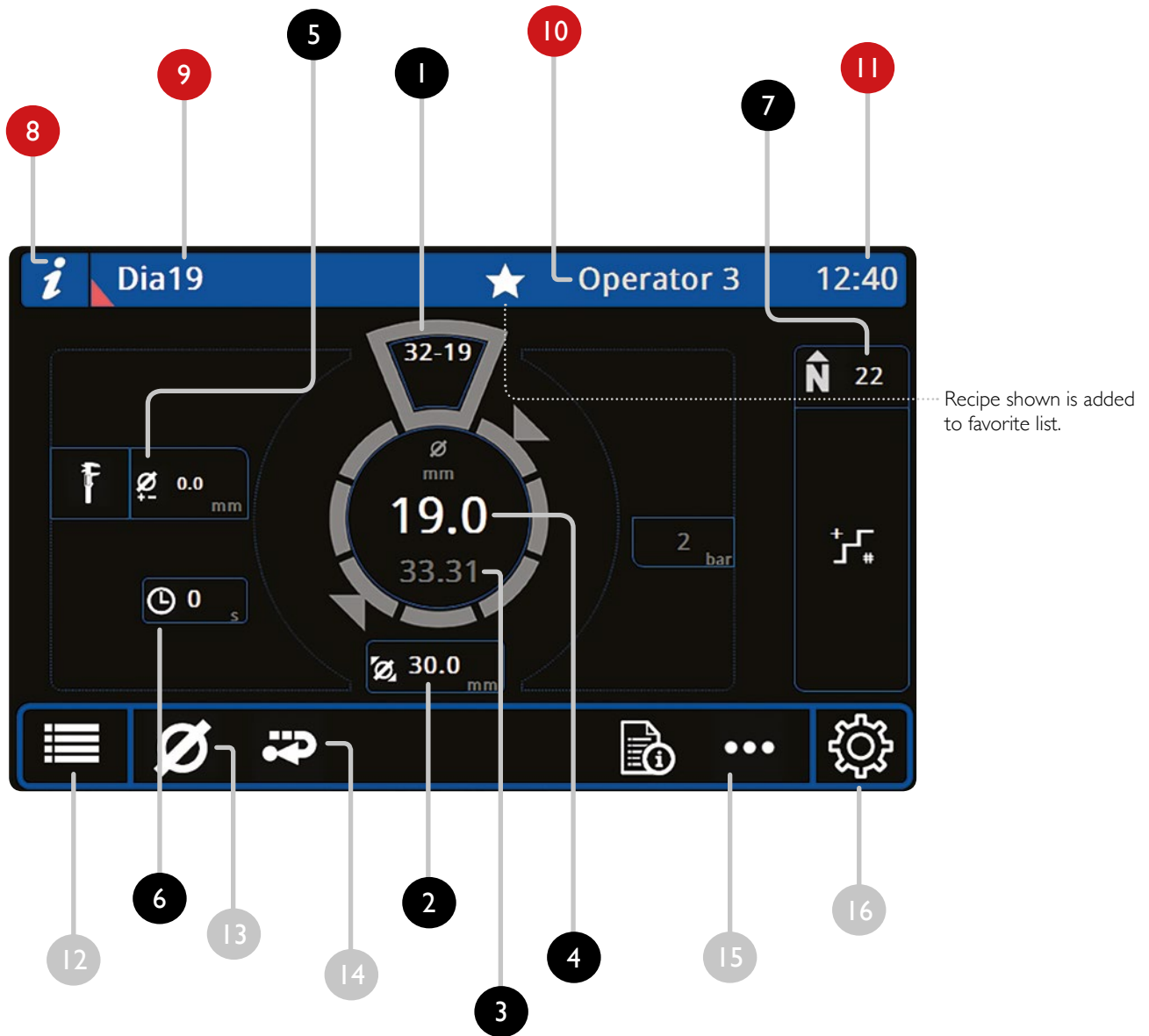
EXTENSIONS

- Pressure crimping. Crimping movement stops when the pressure or diameter limit is reached.
- Multi-step crimping. Crimping process is performed by steps. Crimping movement stops when the desired diameter or pressure limit is reached. The amount of the steps, the diameter and the pressure can be adjusted.
- Online quality monitoring, for controlling and reporting the crimping parameters. Alerts to the failure crimps. For more information see also the operating instructions for the crimping machine.

WARNINGS

When crimping sensitive materials the crimped part may brake and burst out from the machine. Make the first crimp very carefully and protect yourself and others near the machine! It is important to follow these instructions. Read also the operating instructions for the crimping machine, especially chapter "Warnings".

2. DRIVE PAGE IDENTIFICATIONS



- 1. Current Die Set
- 2. Opening
- 3. Actual crimping diameter
- 4. Set point
- 5. Correction / Offset
- 6. Crimping delay
- 7. Piece- counter

- 8. Machine Info
- 9. Selected recipe
- 10. User Handler
- 11. Time / Date

- 12. Menu
- 13. Crimping mode
- 14. Manual / Auto / Auxiliary device
- 15. Functions
- 16. Settings

3. OPTIONS IDENTIFICATION



- 1. Automatic correction
- 2. Counting mode
- 3. Bad results reaction
- 4. Step Crimping
- 5. Graphical quality control
- 6. Quality control
- 7. Pressure crimping

GENERAL SCREENS AND BUTTONS

CANCEL-BUTTON  ACCEPT-BUTTON 

NUMPAD



KEYPAD



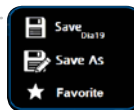
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4. DETAILED GUIDE



You can add new recipe to favorites by clicking favorite button. An other push will delete the recipe from favorites list.



RECIPES / SAVE RECIPE

(Option 1 or 2.)

Make desired changes to the crimping page. You can save the current crimping settings as a *RECIPE*.

1. Press *RECIPE NAME (Dia19) SAVE / SAVE as* window appears.
 2. Press *SAVE* to save the current crimping settings on the current recipe used.
1. Press *SAVE AS* to save as new. *RECIPE KEYPAD* appears.
 2. Type new recipe name and press *ACCEPT*.

MANAGE RECIPES

Recipe name

Recipe tech specs

Choose recipe or job by pressing on drive page. Recipes -page will show (left). Choose recipe from different tabs on the right.

Favorites -tab

History -tab / Lastly used parameters, unsaved and unnamed crimpings.

Job queue -tab / Jobs



1. Press desired tab on right.

2. If desired recipe is shown on page, choose recipe by pressing recipe name. Alternatively press for full list.

Press to show more information from recipes. By scrolling down you find all recipes. Choose desired recipe from list. Confirm by pressing *ACCEPT*.

By pressing icon recipes can be sorted according to name, color, diameter etc.

Search function

Search recipe by name.

Change of color

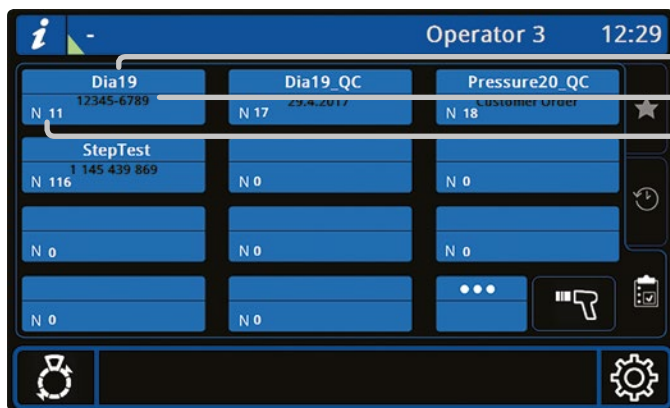
Press the row for 2s. Choose color from popup and press the accept button.

Delete

Delete recipe by choosing recipe and pressing the icon.



HISTORY SCREENS

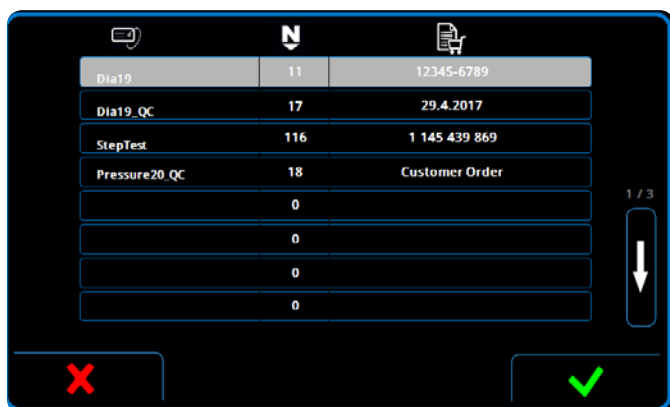


JOB QUEUE SCREENS

Choose Job in list.

- Recipe name
- Job identification
- Crimping count

N.B. Job ID max 20 marks. Job queue max 24 jobs.



TIP - MANAGE JOB QUEUE

In the standard control you can bring jobs with a JOBS.CSV -document via USB or FTP-server.

Bring jobs with Bar Code Reader (option) to jobs list. **OR** with a TCP / IP (option) connection.

BAR CODE READER



SETPOINT, TOTAL OPENING, MASTER DIE POSITION

These three values show the crimping setpoint, total opening of dies in between crimpings, and realtime die position. Set these values directly in crimping page or choose recipe. (*Detailed guide – recipes / save recipe*)




Set point

1. Press (number symbol) to set crimping setpoint. NUMPAD appears.
2. Enter desired set point value.

Note! Die set has to be changed if crimping diameter changes a significantly.

Set total opening

This value shows the total opening of crimping dies between each operation.

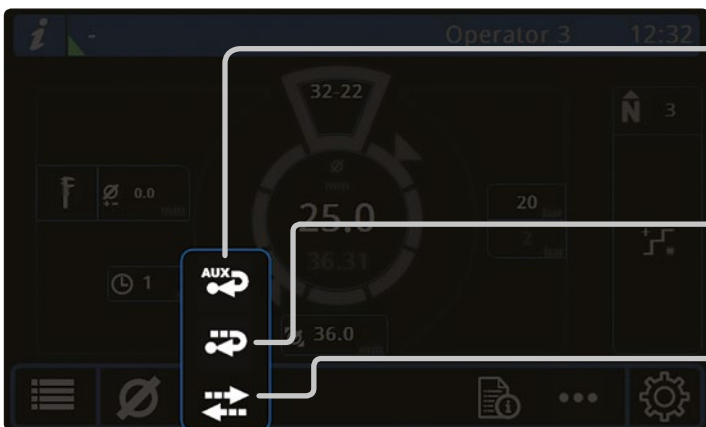
1. Press  to change crimping total opening.

Actual Die position

This value shows the die position.

DIAMETER CRIMPING / SEMI-AUTO / MANUAL / AUX DEVICE

Select control mode for machine. When using Aux or semi-auto. Dies can be opened with manual opening button to full open.



AUX device

Set machine to start crimping by auxiliary device. Aux device is operated as semi-auto mode.

Semi-auto

Set machine to semi-auto mode.

Manual

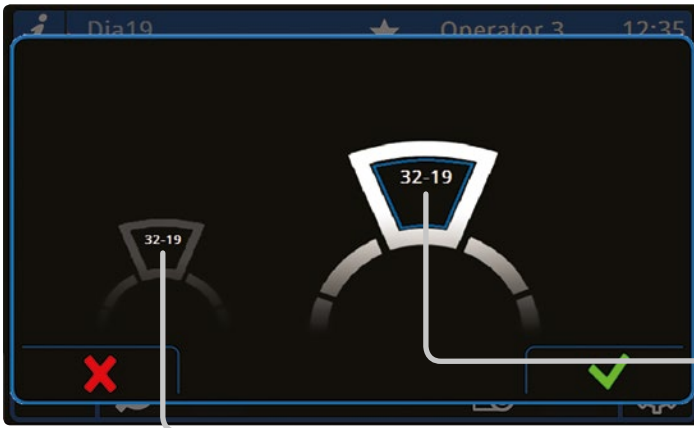
Set machine to manual mode.

The dies are opened/closed manually by pressing the push buttons. The movement can be interrupted by releasing the button. The movement stops when the desired crimping diameter or pressure is reached or when the retraction position is reached.

If an aux device or semi-auto mode is on and manual open is set, the dies open completely.

DIE SET SELECT

When either changing crimping set point or choosing a recipe / job that can't be operated with current dies, you need to change die set. When die set needs to be changed, the DIE SET segment starts blinking (picture right).



To start die set selection

1. Press the blinking die set segment. Die set pop-up appears.

The control suggests the best suitable die set as shown in the picture. You can also choose a different die set.

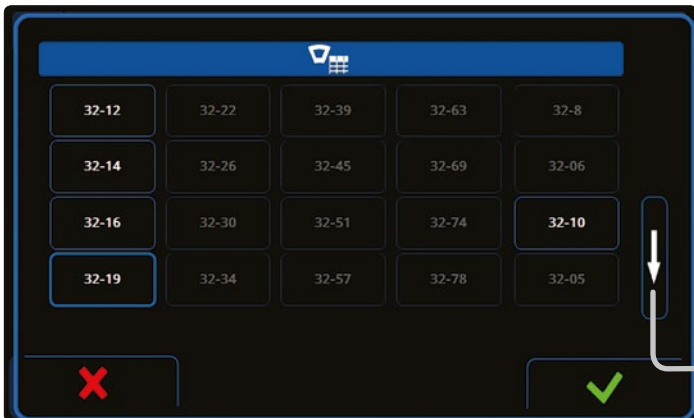
2. Suggested Dies set can be selected by pressing OK. If you want to select different die set, press die set icon. If you choose die set manually DIE SET TABLE appears (down left).

Note! When die set is chosen you are directed to this page with a prompt to launch the die set wizard or cancel. When pressing cancel you are directed to crimping page.

Suggested die set

Press to set die set manually.

Present die set



Choosing die set manually

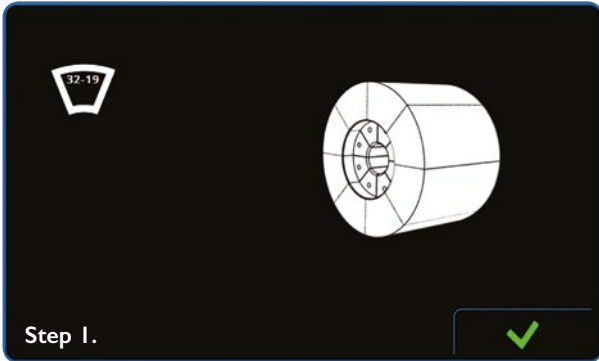
Die sets are shown in table. You can scroll up / down all die sets available. Unsuitable dies for the diameter are dimmed.

1. Choose desired die set in table.
2. Press ACCEPT to select and return to previous page, cancel to not select and return.

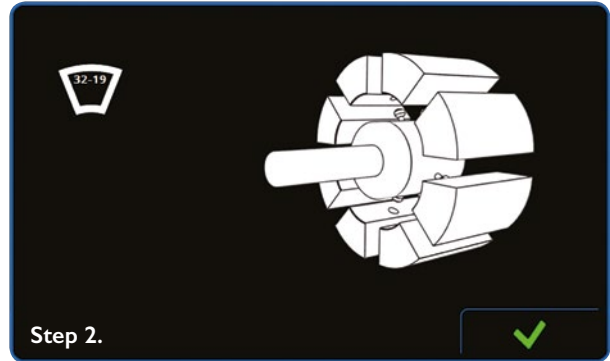
Scroll up / down.

DIE SET CHANGE WIZARD

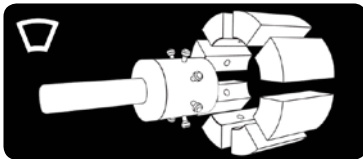
The die set change wizard opens when die set is chosen.



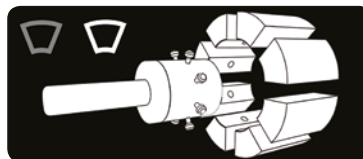
1. Close the dies completely (Step 1).



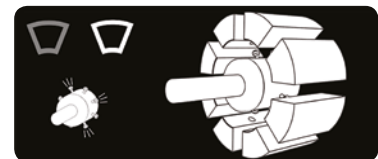
2. Insert the pins of the tool into the die set and open the dies (Step 2).



Step 3.1.



Step 3.2.



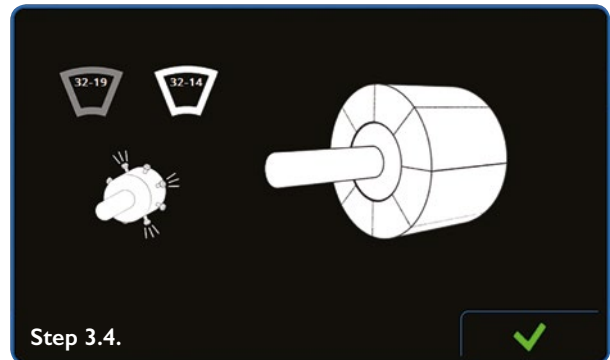
Step 3.3.

3. Install the new die set and close the dies (Step 3):

3.1. Pull the whole set out and place the set to the die set rack. Turn the QC-Tool counter clockwise until the die set is locked to its place and pull the tool out. Choose the new die set by inserting the pins of the tool into the die set in the rack, turn the tool clockwise and pull the whole die set out.

3.2. Hold the handle of the QC-Tool and make sure your hand will not get between the dies. Mount the die set between the master dies.

3.3. Close the dies very carefully.

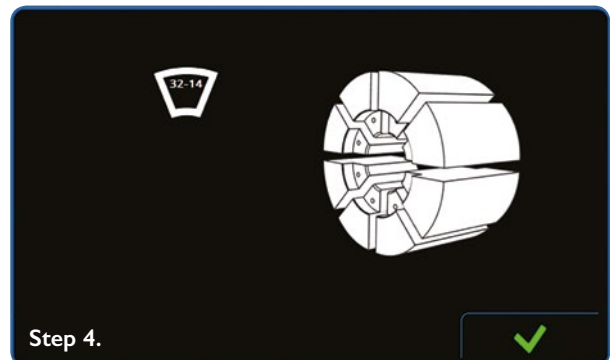


Step 3.4.

TO AVOID DAMAGING MACHINE AND DIES, MAKE SURE THAT ALL DIE SET PINS HIT IN THEIR HOLES.

3.4. Close the dies completely until the locking pins are locked in their position.

4. Remove the quick change tool and open the dies to the retraction position (Step 4). The dies are now ready for use and Tool Change Wizard will be shut automatically.



Step 4.

CORRECTION / OFFSET

Correction / Offset function adjusts crimping to desired value if there are differences between the crimping diameter and the crimped part. Perform the fine adjustment by using the correction function. **Note!** Always make the test crimp after adjusting the crimping diameter or changing the dies.



Set crimping correction / offset

1. Press -symbol. NUMPAD appears.
 2. Set value for desired correction / offset. Value can be +/- 1.0mm.
- OR** Press caliber icon to set actual measured value of crimped part. Correction is then calculated automatically.
4. Make a test crimp, check the result and measure the diameter. If necessary, make a new correction and crimp again.

CRIMPING DELAY

Crimping delay is a specific time, when dies are closed after crimping. After crimping delay dies open automatically. New crimps are disabled until the crimping cycle is fully completed.

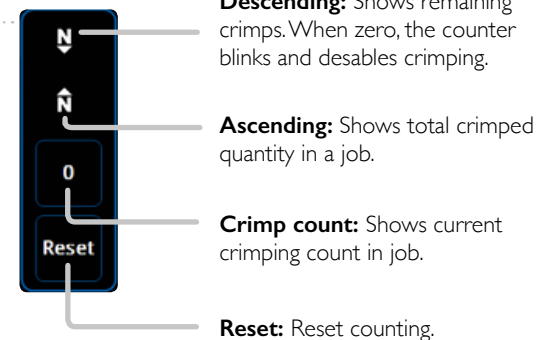
To set crimping delay

1. Press -symbol. NUMPAD appears.
2. Set value for desired crimping delay.
3. Press ACCEPT.

PIECE COUNTER

Piece counter helps you to keep track of the jobs. You can choose to count crimps descending and ascending.

BARCODE FUNCTIONS (OPTION). Work queue mode set the counting direction down and the counting value from selected job.

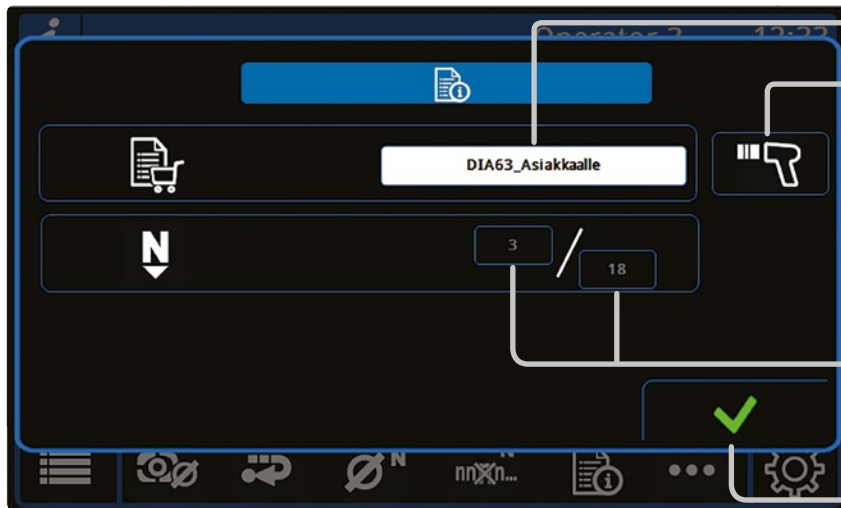


To change counting mode

1. Press -symbol. Pop-up appears.
2. Choose desired counting method.
3. Reset counter or set desired value.

JOB INFORMATION

When pressing Job Information symbol in functions menu, you can view information of job in operation.



Job identification

Barcode reader

With BCR option you can read identification with bar code reader.

1. Press button. Frame lits.
2. Read Code
3. ID appears, button blanks

Current / Total count of the order

Press ACCEPT to close Job Information.



Modified order

If the job information has been modified, the ID turns black.

SETTINGS BAR

You can access general settings by pressing -symbol.



Tools

Only for service need.

Settings

Motor run delay + grease settings

Speed / slow down

Statistics

Die set table

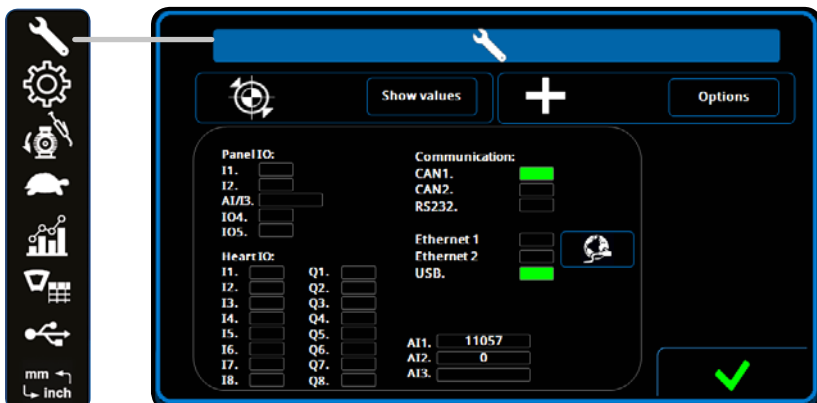
USB file handler

Change diameter unit

Press to change unit (mm/inch).

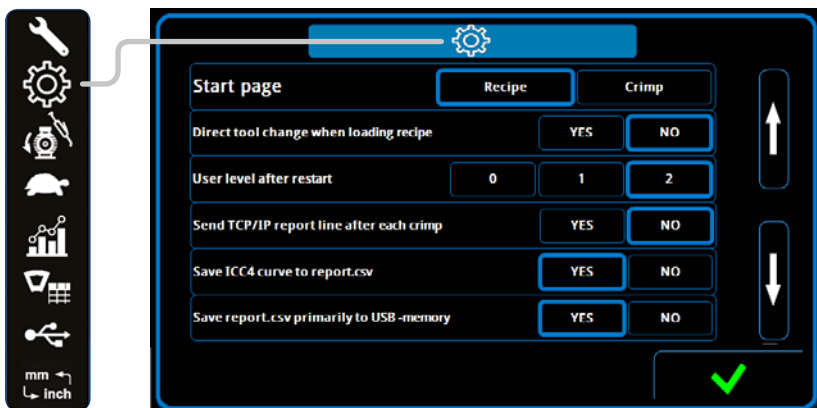
TOOLS

Machine IO status can be monitored. Service can enter to calibration functions.



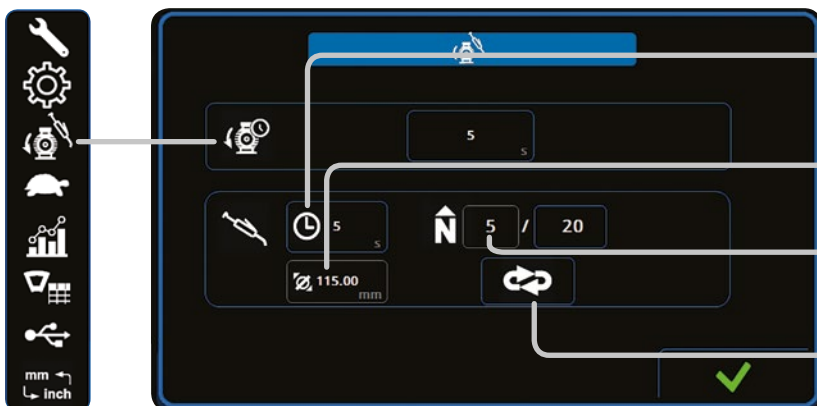
TOOL SETTINGS

Here you can modify machines general settings.



MOTOR RUN DELAY

Modify parameters for motor running delay and greasing.



Greasing parameters

Greasing time. Can be modified to longer time which results in more grease at once.

115mm information for maximum grease opening.

Counter: Current crimp count / Greasing interval. Modify if needed.

Bleeding. Brightens when pressed. Uses greasing pump until turned off.

SPEED CONTROL

When pressing speed control symbol in settings bar, you can change crimping operation speed in speed control settings. Crimping speed can be set to ease operation and increase safety and efficiency.

Set point (informative)

Slow down position
This value shows the position of the crimping tools when crimping slows down. Change position:
1. Press symbol. NUMPAD appears.
2. Set value of desired position for slower crimping speed.

Total opening (informative)

DIE SET LIST

Die set list shows all the die sets available for the machine in operation.

Die set	Minimal crimping diameter	Minimal master die diameter	Maximal crimping diameter	Maximal master die diameter
32-39	39.0	99.0	49.0	109.0
32-45	45.0	99.0	55.0	109.0
32-51	51.0	99.0	61.0	109.0
32-57	57.0	99.0	67.0	109.0
32-63	63.0	99.0	73.0	109.0
32-69	69.0	99.0	79.0	109.0
32-74	74.0	99.0	84.0	109.0
32-78	78.0	99.0	88.0	109.0

Die set

Minimal crimping diameter

Minimal master die diameter

Maximal crimping diameter

Maximal master die diameter

Scroll up / down

Add
Add a new die set to list:
1. Press ADD -button. New row appears in list
2. Add values for the new die set
3. Press ACCEPT

Edit
To edit die set values:
1. Press desired die set
2. Press edit button. Edit symbol brightens. Numpad appears.
3. Add desired value.

Delete
To delete a die set from list:
1. Press desired die set
2. Press delete

N.B. DieSet name max 6 marks.
Saved tools max 100.

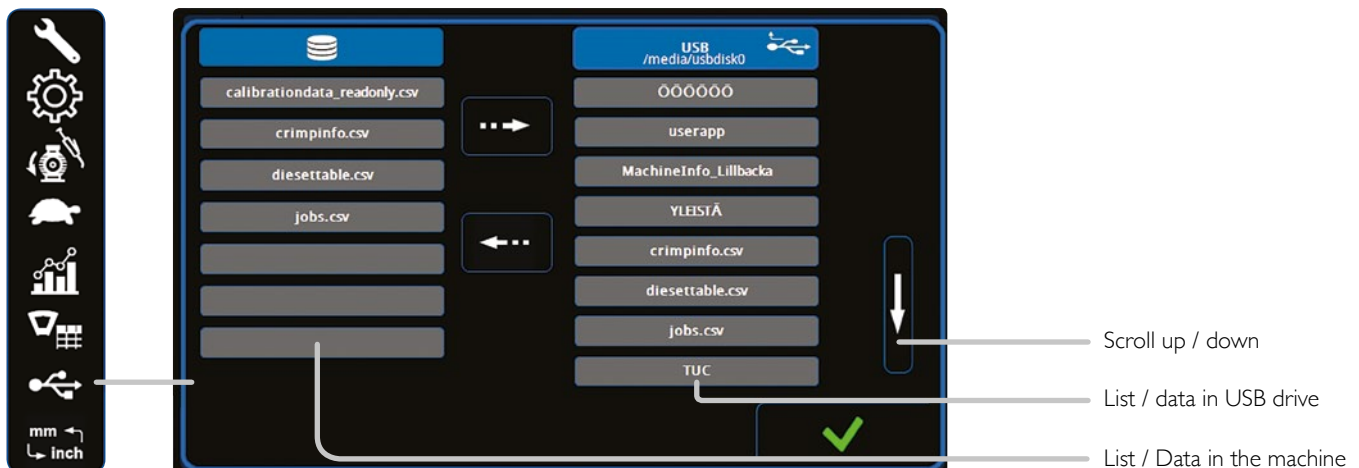
STATISTICS

Statistics give you measurable data of the crimping operation.





USB FILE HANDLER


In USB file handler you can manage jobs and recipes.




Open folder in USB drive:

1. Press folder for 2 seconds. Symbol  shows when folder is opening. Folder opens and shows files.
2. Press  to open root folder:

To transfer file from USB drive to machine:

1. Press a file you want to transfer in USB drive
2. Press  -button to transfer file to machine. The file is transferred.
3. Press ACCEPT to quit.

To transfer file from machine to USB drive:

1. Press a file you want to transfer in machine.
2. Press  -button to transfer file to USB drive. The file is transferred.
3. Press ACCEPT to quit.

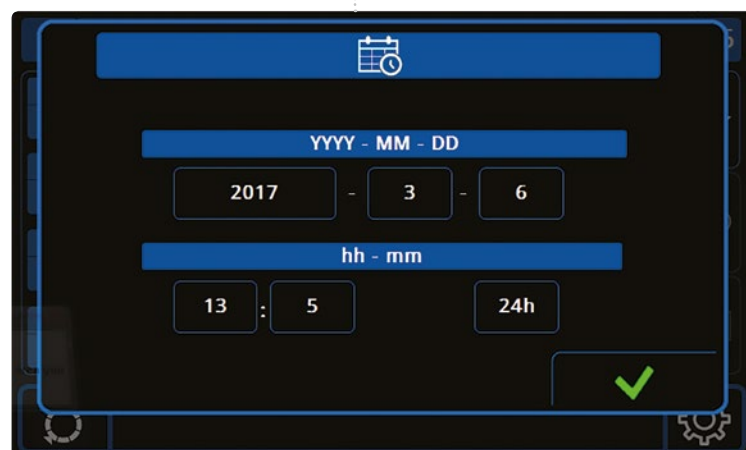
SET TIME & DATE

You can set the right time and date for the machine.



Time / Date

1. Press (time symbol)
2. Change time and date in window that appears and press ACCEPT.
(See more detailed instructions below)



Press TIME & DATE symbol on the top of the screen. TIME & DATE window appears.

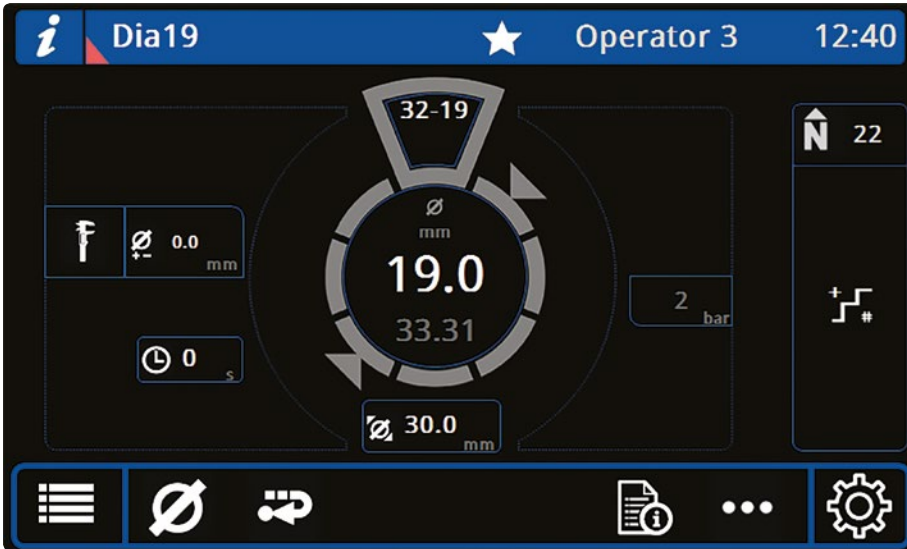
Press year, month, day, time and 24h/12h to set value for each one.



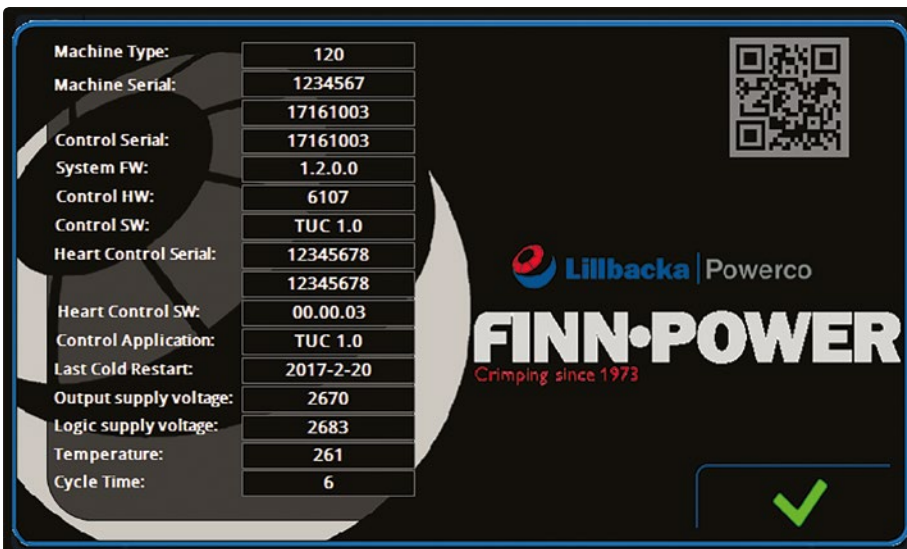
NUMPAD appears. Enter desired value.

NUMPAD

MACHINE INFO



1. Press **i**-icon to view MACHINE INFO. Window below will appear:

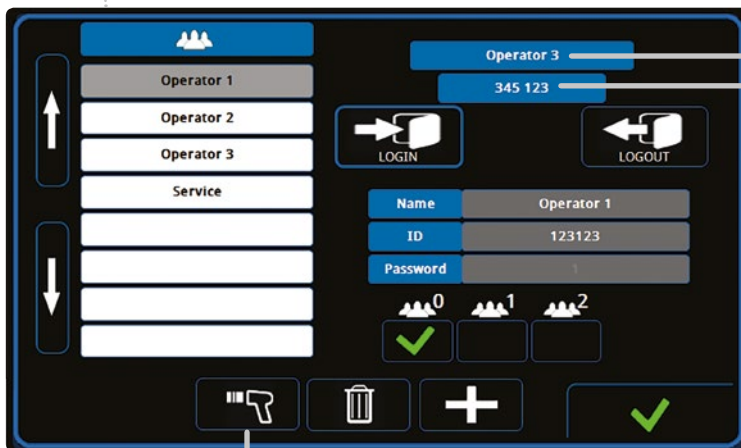


In case of service, open this window to give the needed machine info to Lillbacka service personnel.

USER HANDLER / LOG IN AS USER



1. Press USER HANDLING symbol. USER HANDLING window appears with different user levels.



Logged user level

Logged user ID



Bar code reader. OPTION. You can scan your working ID to LOG IN as user.

2. Select user you want to log in. Press log in and write password. OK

3. Press ACCEPT in USER HANDLING WINDOW to save and quit.

LOG OUT AS USER

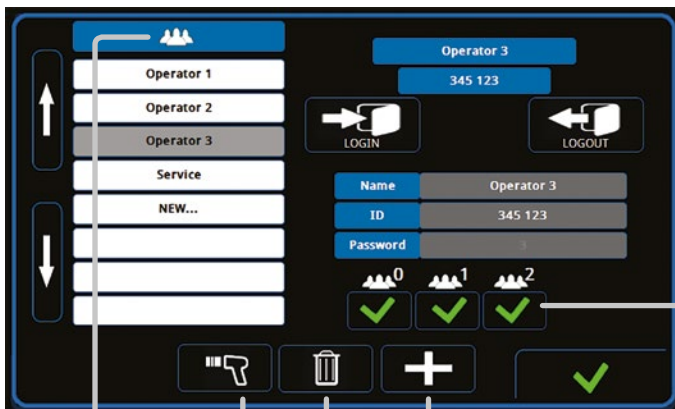
1. Press USER HANDLING symbol on info bar on the top of the screen. USER HANDLING WINDOW appears.

2. Press LOGOUT-button.

3. Press ACCEPT to save and quit.

MANAGE USERS

As a LEVEL 2 (advanced) or 3 (service) you can preview and change user data.



Level of selected user 0, 1, 2 or 3.

Add

1. Press + to add user(s).
New line will appear.
2. Type user information to fields:
name, ID and password.
3. Press accept to save new user.

Delete

1. Choose user from list
2. Press  -symbol to delete user from list.

Barcode reader (Option)

Sign in from identification card by reading barcode.

More information: see Barcode reader user guide.

Preview and change user data

1. Log in as service or advanced (level 2 or 3).
2. Choose user you want to preview / change data in.
3. Change data by pressing *name / ID / password*.
Keypad appears.
4. Type new data. Press *accept* in keypad to save.
5. Press *accept* to save and quit *user handling*.

N.B. User name, user ID and password max 15 marks. Max number of users 100.

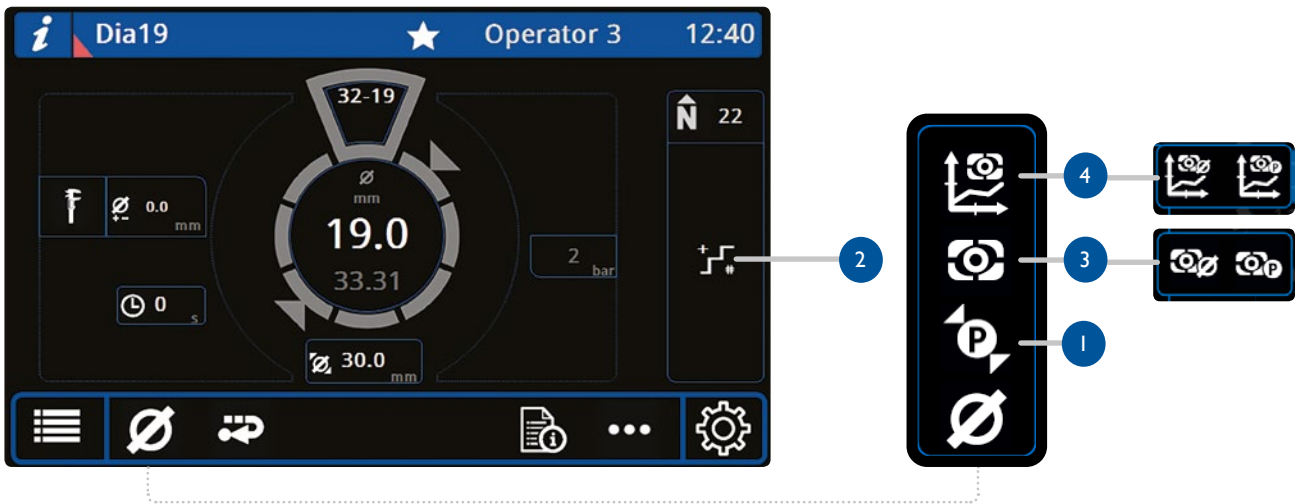
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5. OPTIONS

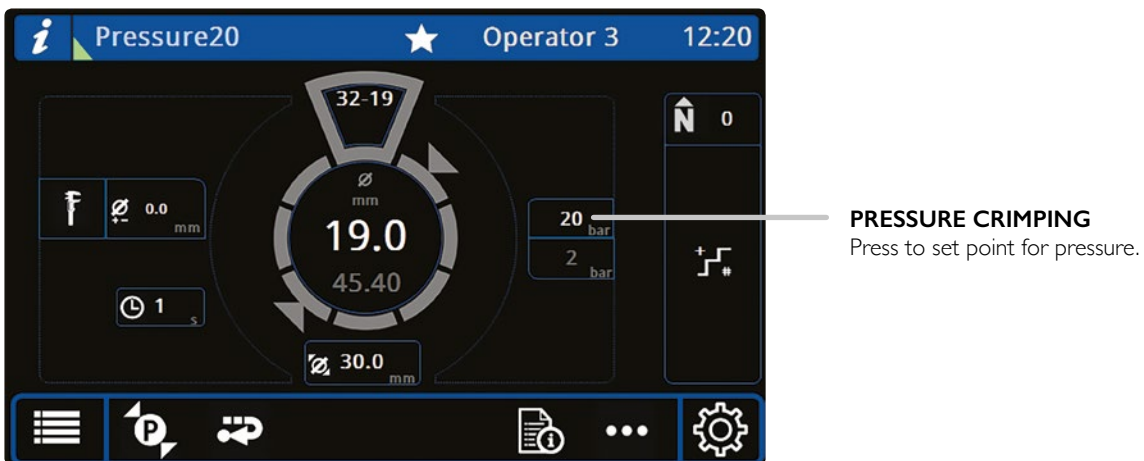
OPTION PACKAGES

- 1. Pressure crimping **ICC1**
- 2. Step Crimping **ICC2**
- 3. Quality control **ICC3**
- 4. Graphical quality control **ICC4**



PRESSURE CRIMPING (ICC1)

With pressure crimping you can also define the stopping pressure of the crimping. Diameter or pressure stops the crimping, the one that is reached first.



STEP CRIMPING (ICC2)



Step crimping button

Press to start step crimping.

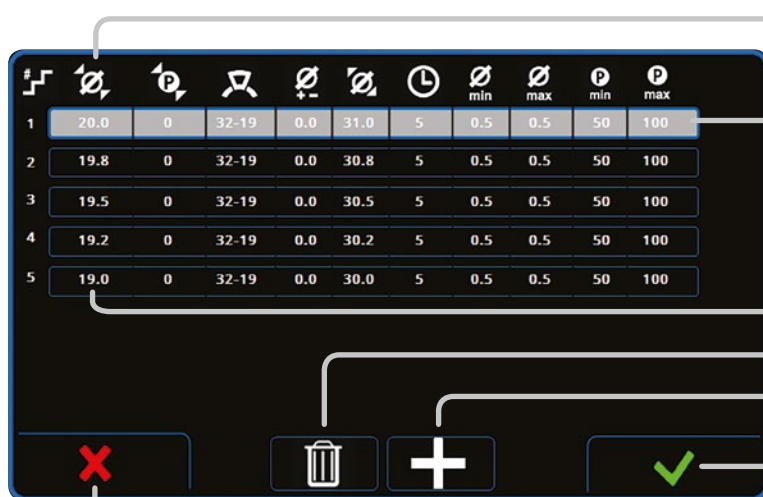
If any steps haven't been made, you'll be asked rather to choose step list view or step wizard. Read more about step wizard on page 28.



Step list view

Step wizard

STEP LIST VIEW



Diameter set point

Current active step

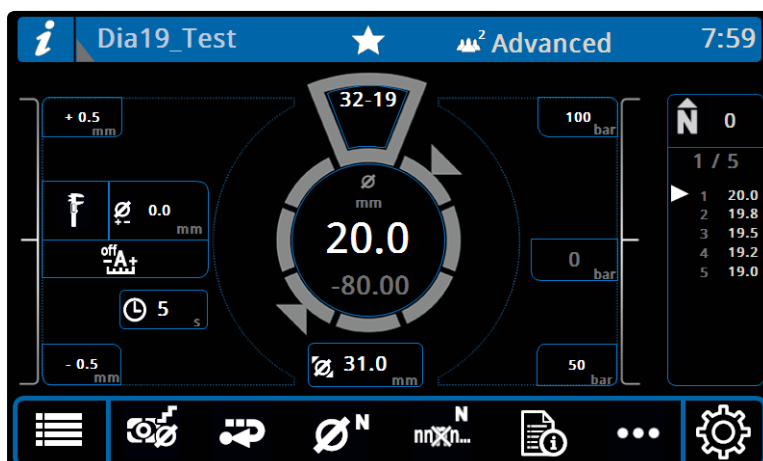
Value

Delete steps

Add steps

Accept selected step to current and go to crimp view.

Continue with previous step and go to Crimp view.



Here are the modified steps in order: Push box to show step list.

N.B. Step crimping option max 50 steps.

STEP WIZARD

Start point for crimping diameter
Press to set first point for diameter.

Automatical step point
Press to set step count. Machine calculates automatically step point changes for diameter.

End point for crimping diameter
Press to set last point for diameter.

Diameter transition
Press to set step point value. Machine calculates automatically step counts.

Accept to proceed
Step list view opens.

QUALITY CONTROL (ICC3)

With quality control you can define the tolerance for the crimping part. This ensures the quality of the part. After crimping, the control measures and saves value of the crimping and accepts or rejects it.

Auto correction.

DIAMETER QUALITY CONTROL CRIMPING
Press to set point for diameter.

Maximum and minimum limits for pressure.
Press value to change limits.

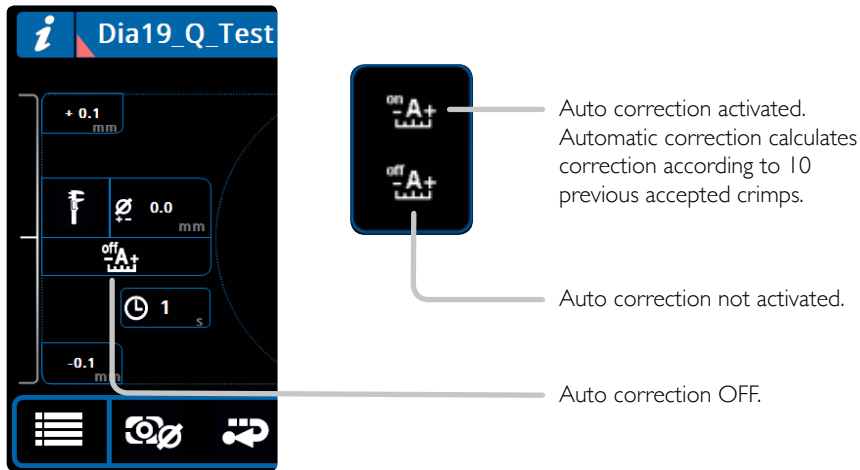
Maximum and minimum limit for diameter.
Press value to change limits.

PRESSURE QUALITY CONTROL CRIMPING
Press to set point for pressure.

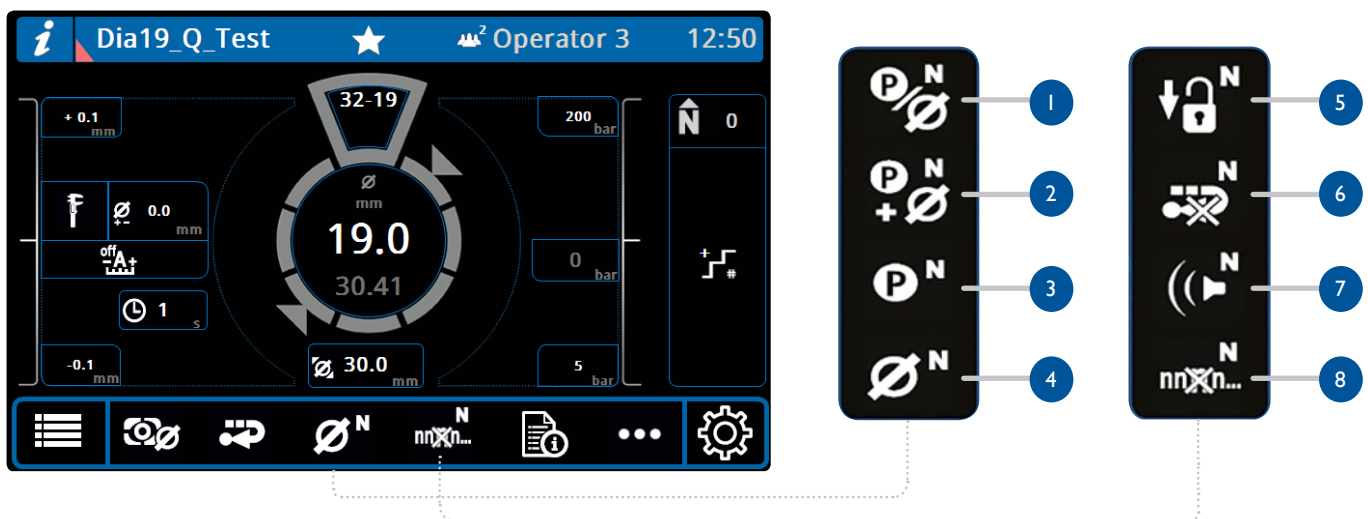
Maximum and minimum limits for pressure.
Press value to change limits.

Maximum and minimum limit for diameter.
Press value to change limits.

AUTOMATIC CORRECTION



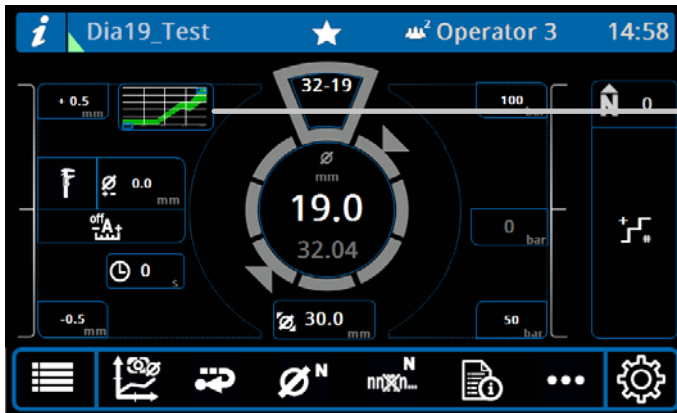
COUNTING MODE AND BAD RESULT REACTION (INCL. ICC3)



1. Counting is performed when the set crimping diameter OR crimping pressure has reached the given tolerance limits. Available only in quality control mode.
2. Counting is performed when the set crimping diameter AND crimping pressure has reached the given tolerance limits. Available only in quality control mode.
3. Counting is performed when the set crimping pressure has reached the given tolerance limits. Available only in quality control mode.
4. Counting is performed when the set crimping diameter has reached the given tolerance limits. Available in standard control.

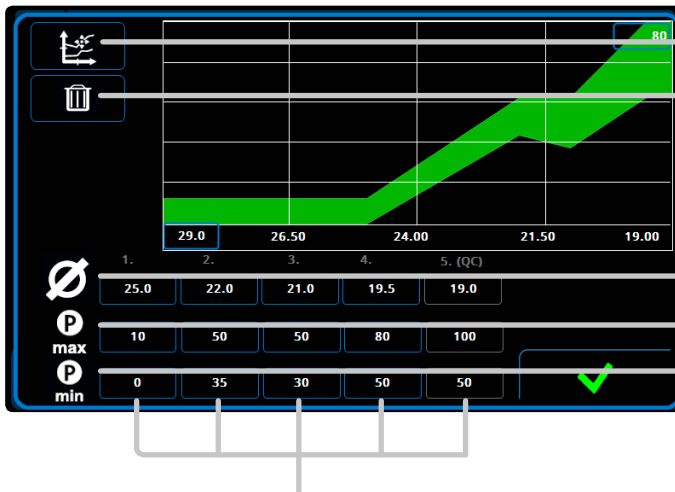
5. **Control locking.** In case of faulty crimping the dies stay closed. Dies can be opened with password (user levels 2 and 3).
6. **Die movement disabled.** The dies stay closed and the faulty part cannot be removed. Dies can be opened by pressing open button.
7. **Alarm.** An exterior alarm light or alarm signal, connected to ICC control, alerts to the faulty crimping.
8. **Counting disabled.** The counter stops, but machine operates normally. Faulty crimping will be dismissed.

GRAPHICAL QUALITY CONTROL (ICC4)



In front view with ICC4 option you can see icon of the diameter. By pushing the icon the diameter window pops up.

10 LATEST PRESSURE GRAPHS



Calculate initial values.
Note: Crimp 1...10
Delete curves from display

Diameter:
Maximum pressure.
Minimum pressure.

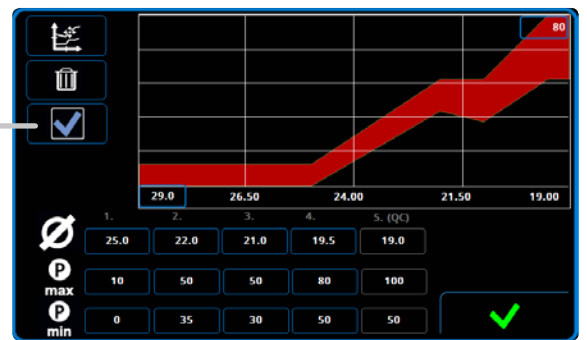
You can set limit values by five points. In the last field (5) you can set limit value for quality control. You can modify the first four fields.

1. Set the desired value for diameter for the field on top.
2. Set minimum and maximum limits for diameter for the lower fields.



If the limits are exceeded when crimping this window shows.

1. Alarm popup. Press cancel to proceed.



2. Press to finish crimping or to open dies.

N.B. Max accuracy 0.1mm/1bar: Max measuring range 100 points = 10mm.

FUNCTIONS (OPTIONS)

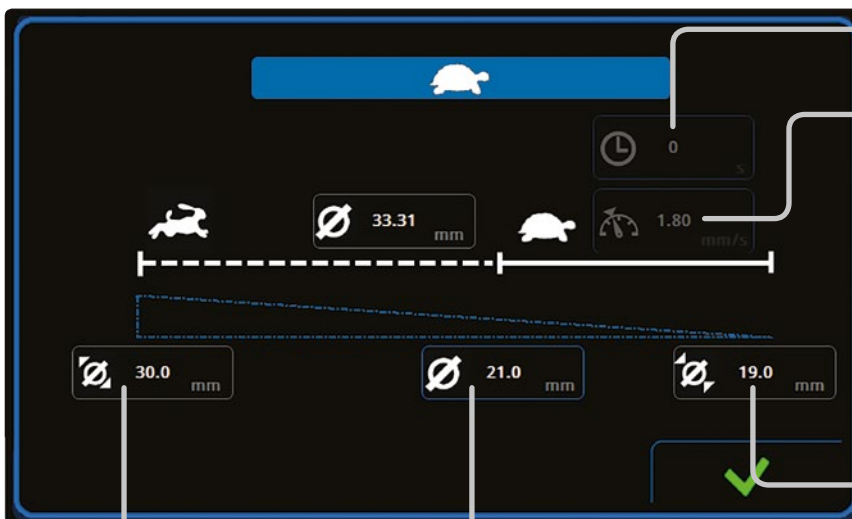


Functions

1. Press ●●● -symbol to access functions.

SPEED CONTROL (OPTION)

When pressing speed control symbol in settings bar, you can change crimping operation speed in speed control settings. Crimping speed can be set to ease operation and increase safety and efficiency. Besides slow down position, this option gives you access to set other values too for speed control.



Total opening (informative)

Slow down position

This value shows the position of the crimping tools when crimping slows down. Change position:

Slower speed in seconds
(only available with speed control option)

Slower speed in mm/s
(only available with speed control option)

Set slower speed

You can set slower speed either in seconds or in mm/s.

1. Press either speed in seconds or speed in mm/s. NUMPAD appears.

2. Set value for desired speed.

Set point (informative)

1. Press symbol. NUMPAD appears.

2. Set value of desired position for slower crimping speed.

Note! Some machine types are not equipped with slow down hydraulic unit.

SYMBOLS

	Crimping diameter		Alarm after faulty crimp
	Crimping pressure		No automatic return after faulty crimp
	Diameter quality control		No count after faulty crimp
	Pressure quality control		Instruction to press crimp button
	Semi automatic start mode		Step list view
	Back stop		Step wizard
	Foot pedal		Tools
	Auxiliary start mode		Settings
	Manual start mode		Correction
	Counting from diameter		Find
	Counting from pressure		Statistics
	Counting from pressure and diameter		Die set list
	Counting from pressure or diameter		Save
	Target		



Save as



Favorite



Job queue



History



Calibration



Backspace



Barcode reader



Memory



Recovery



Quality control



Delete



Auto correction ON



Auto correction OFF



Lock after faulty crimp



Locked



Unlocked



Slow speed



Fast speed



USB



USB root



Mm to inch conversion



Add



Download heart software





























More



Date and time



Ethernet status

	Cancel		Up
	Accept / select		Down
	Accept / select		Transfer
	Users		Transfer
	Info		Bleeding
	Recipe name		Login
	Tool change		Logout
	Motor and grease settings		Step
	Motor running delay		Add steps
	Grease settings		Tool
	Count up		Diameter
	Count down		Pressure
	Count		Opening / retraction

	Correction		Linearization
	Right		Graph
	Left		Adjust limits
	List		Job identification
	3 part window layout		Job information
	Delay time		Window size
	Diameter min		Crimp mode diameter with steps
	Diameter max		Crimp mode pressure with steps
	Diameter min (masterdie)		Crimp mode quality control diameter with steps
	Diameter max (masterdie)		Crimp mode quality control pressure with steps
	Pressure min		Graphical quality control diameter
	Pressure max		Graphical quality control pressure
	Start		Graphical quality control

A large, stylized graphic of a globe in shades of blue, positioned in the upper half of the page. The globe is composed of several curved segments, with a prominent dark blue segment in the upper left and a lighter blue segment in the lower right.

FINN-POWER ICC CONTROL

OPERATING
INSTRUCTIONS