



English manual for BJ5000 Ex

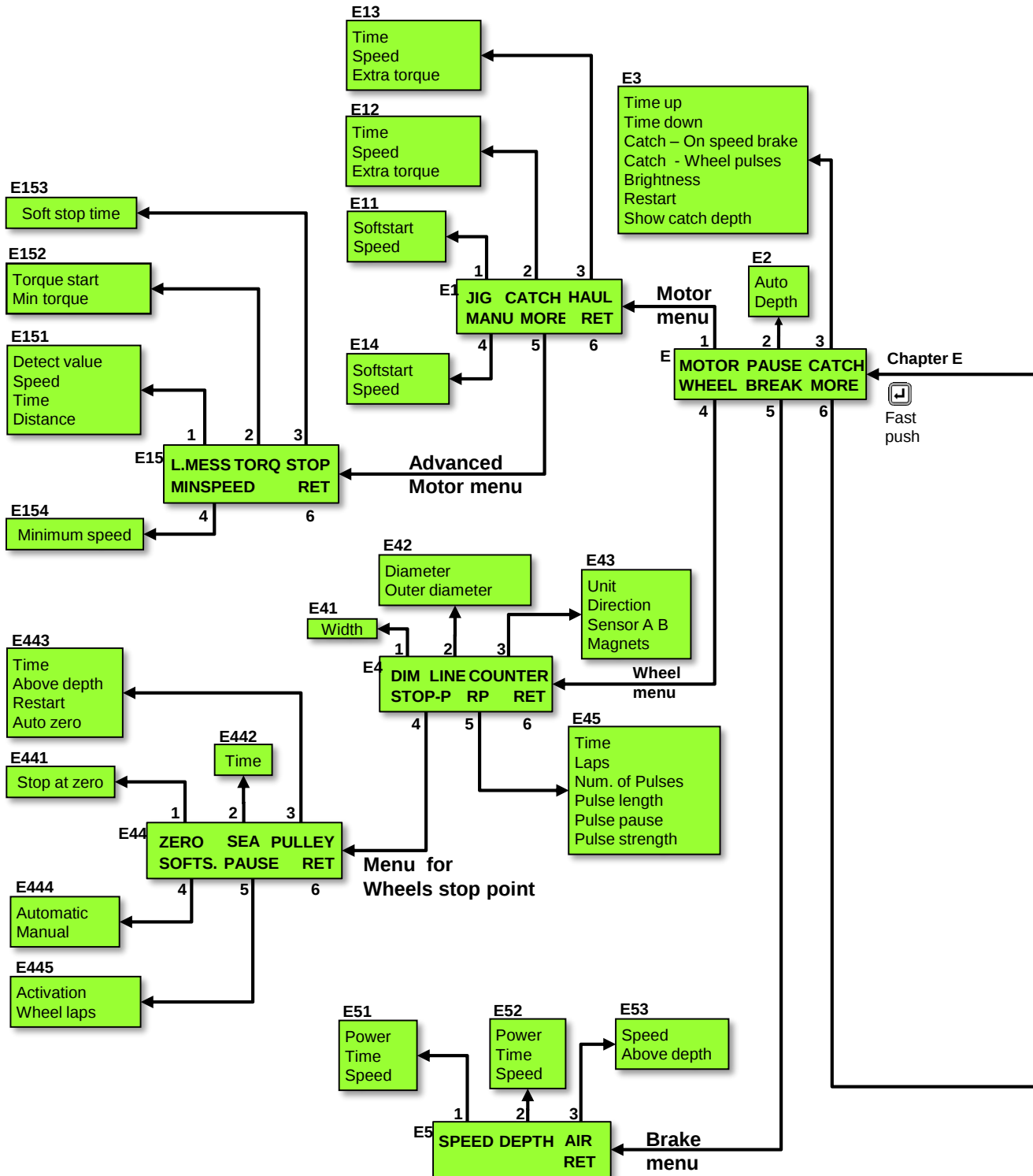


Version 10

Program 1.1834

2018-09-05

Program firmware 1.1834

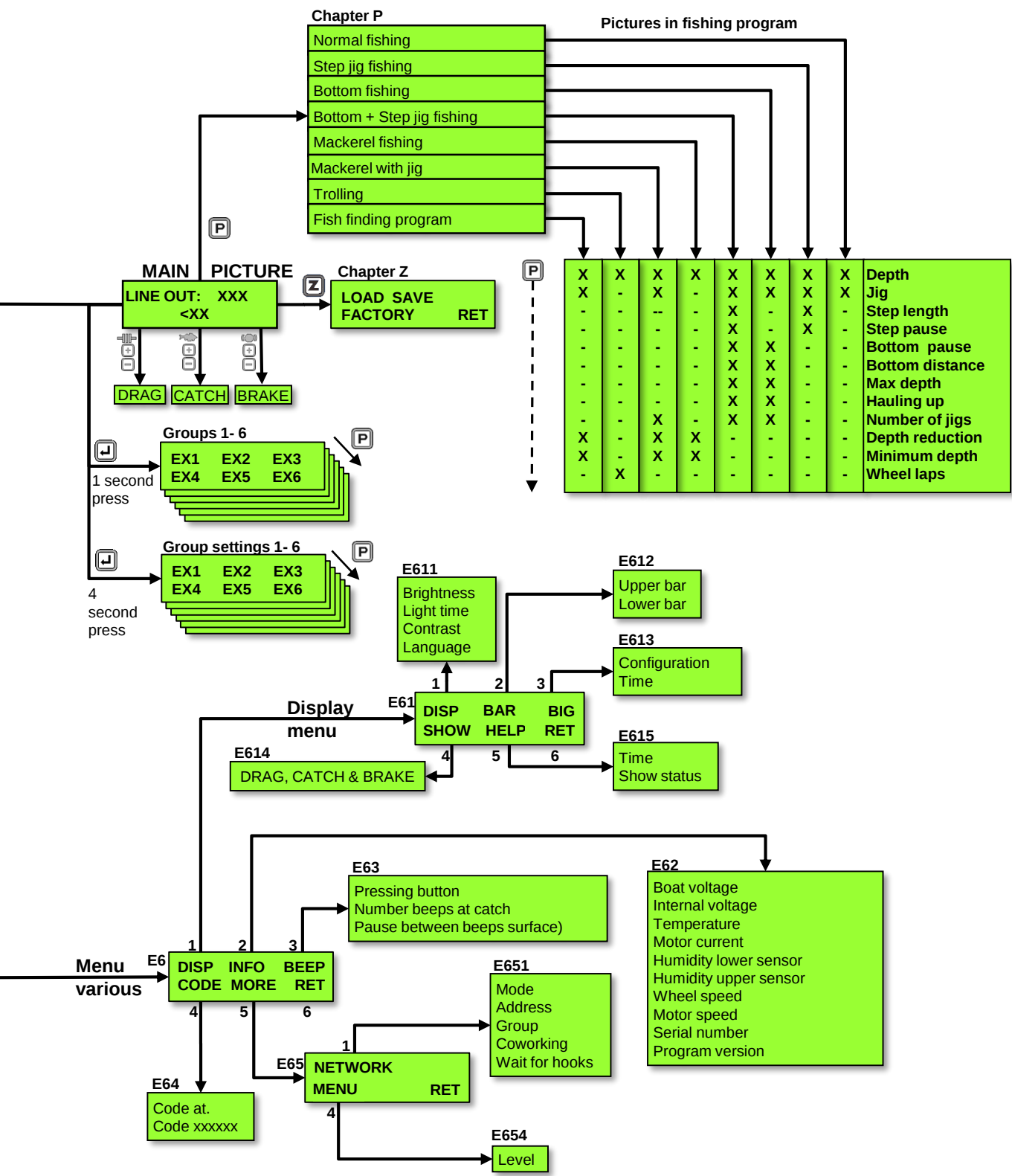


belitronic

Flowchart showing how to get from one picture to the other. Detailed description of all functions and display texts are found in the manual. From Main "Line out" use the Enter key to get in and out of the menu system. From the menu, available submenus with the buttons below the display and P-button, Z-button, Drag, Catch and Brake accessed directly. Related fish program parameters are reached directly with P-button. The choice "Ret" returns to the previous menu.

MENU AND SCREEN FLOWCHART

Program firmware 1.1834



CONTENTS

Chapter Page i chapter

Menu flowchart First pagespread
Contents This side.

Foreword page

- How to understand this manual
- Dictionary

Installation pages

- Approval 1
- Mechanical installation 1
- Electric installation 1-2
- Startup 2
- Install fishingline 2

Machine pages

- Frontpanel (Overlay) 1
- Main screen (Line out) 1
- Push buttons (Z,P,E,A,U,S) 2-3
- Push buttons (1,2,3,4,5,6) 3
- Symbols Drag Catch, Brake 2
- Catch registration 4
- Catch depth memory 5

Communication pages

- Quick start. 1
- Settings in software 1
- View other machines in network. 1
- Activate/Deactivate machines. 1
- Group screens 1-2
- Remote controll machines 3

Menu systemet (Chapter E reached with [E]nter button)

		Menues and submenues		
MAIN MENU	[E]	MOTOR [E1] WHEEL[E4]	PAUS[E2] BRAKE[E5]	CATCH [E3] MORE[E6]
MOTOR	[E1]	JIG [E11]	CATCH [E12] MANU [E14]	HAUL [E13] MORE [15]
MOTOR-MORE	[E15]	L.MESS [E151] MINSPEED [E154]	TORQ [E152]	STOP [E153]
WHEEL	[E4]	DIM[E41] STOP.P[E44]	LINE [E42] WHEEL [E45]	COUNTER[E43]
STOP.P	[E44]	ZERO [E441] SOFTS, [E444]	SEA [E442] PAUS[E445]	PULLEY [E443]
BRAKE	[E5]	SPEED [E51]	DEPTH [E52]	AIR [E53]
MORE	[E6]	DISP [E61] CODE [E64]	INFO [E62] MORE [E65]	BEEP [E63]
DISP	[E61]	DISP [E611] SHOW [E614]	BAR [E612] HELP[E615]	BIG [E613]
DISP-MORE	[E65]	NETWORK [E651] MENU[E654]		

Chapter Page i chapter

Chapter [P]rog button (Fish programs)

- Overview Fishing programs [P]
- Normal Fishing [P]1
- Step Jig Fishing [P]2
- Bottom Fishing [P]3
- Bottom With Step Jig [P]4
- Mackerel (Also Squid) [P]5
- Mackerel With Jig [P]6
- Trolling [P]7
- Fish Finding [P]8

Chapter [Z]ero button)

- SAVE, LOAD, FACTORY, DISPLAY

Information pages

- Troubleshooting, error messages 1
- Guarantee, Warranty info. 2
- Technical specifications 3
- Accessories 4
- Underhåll 4

Alphabetical wordlist Last pagespread

GDPR Backside

Warnings Backside

FOREWORD

Congratulation on a great choice of Jigging Machine!

Belitronic has produced electronic jigging machines since 1972, something we were first in the world with. Since then, we have sold thousands of machines to about 100 countries. Especially Norway, Iceland, Faroe Islands, Denmark Canada, USA and Australia.

HOW TO READ THIS MANUAL

The manual now refers to the chapter with sub pages (instead of current page number). Chapter can be specified as "installation", but can also be displayed by the [] characters, and simultaneously shows how to press the buttons in the display's menu system to find the function. All keys have symbols for primary functions, but also have small letters or numbers printed in the front panel for navigation purposes. For example, [E12] is a reference to Chapter [E12] of the manual and navigation of the menu system. In this example, the [E]nter, Button [1] and then button [2] must be pressed. In the manual, the chapters are sorted by number starting from left and not as whole numbers. That is, Chapter [E123] comes after [E1] and [E12] but before [E2].

Bold text such as **MOTOR** written in capital letters refers to the menu system where up to six choices can be displayed and selected with corresponding buttons [1] - [6] below the display. Choices leads directly to screens or to submenus with additional menu choices in smaller loops which roll back to previous menu. To display more screens repeat press the [P]rog button. [PP] means, for example, press twice, and [PPP P] press four times. Sometimes it may be, for example, [P]2[PP], which means that you must first press the [P]rog button once. The screens showed must be set to value "2". Then two more press on the [P]rog button. Bold text with gem characters are features. Values for a picture are written inside italics (" ").

DICTIONARY

- **Brake:** A constant braking force on the wheel when the line is going down.
- **Depth:** Fishing depth, and maximum fishing depth in Bottom Fishing Programs.
- **Factory reset:** Loading values previously Stored, or Factory set values.
- **Fishing area:** Is the area between set **Depth** and **Jig length**.
- **Step:** Part of **Jig Length**. Followed by a short stop **Step Pause** before continue with next **Step length**
- **Jig length:** Length of line drawn up from set **Depth**.
- **Line out:** Line length pulled out in Fathoms, Feet or Meter.
- **Max depth:** Special function in Bottom Fishing for straightening up line if the boat drifts away.
- **Softstart:** Acceleration time for the motor when starting, or changing speed.
- **Catch registration:** When a sensor detects catch, it sets Ex in Catch or Haul up mode.
- **Catch LED:** Four LED's flashes at catch registration.
- **Zeropoint:** Is the point of fishingline when **Line out** is zeroed bypressing [Z]ero button.
- **Hauling up:** multiple meanings.
 - Settings of the motor when hauling up to Zeropoint (Speed, Force and Acceleration).
 - Length of line hauled up in special function **Max depth**, see the list above.
 - How much line allowed to pulled out before Ex hauls back to **Stoppoint** again.
- **RP:** Short for Reverse Polarity for demagnetization of the electromagnetic clutch.
- **Rpm:** Speeds in the manualen are described as RPM (which is not any unit for speed) of the motor and wheel rather than line length per time unit e.g m/s or knots.
- **Drag:** Basic force applied to motor/wheel when stopped or motor runs.
- **Bar:** Displays sometimes shows vaules as animated analogue bars. Easier to read sometimes.
- **Line mess:** Function to prevent Line mess when the lines tangles.
- **Stoppoint:** Value of **Line out** when motor stopps.
- **Beep:** Built in sounder/speaker for various attention and confirmations.
- **Counter:** Register for the number of wheel laps payed out. Recalculated and shown as **Line out**.
- **Reset:** Loading Factory set values or user previously saved values.
- **Work mode:** Ex has 3 different modes. **Manual mode** is when not used. **Auto mode** is when machine works automatically with any of the **Fishing gprograms**, with **Catch detection** possibillity. **Pause mode** is used while moving between fishing spots when line is in water, allowing the motor to start if line is pulled out.

INSTALLATION

APPROVAL

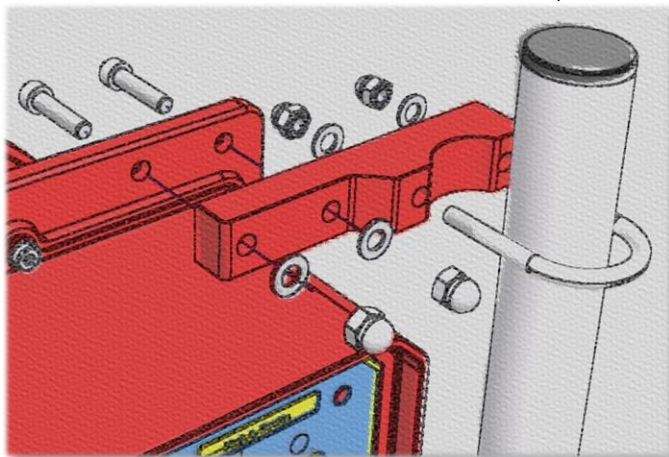
This machine BJ5000 is produced by Belitronic Sweden AB in Lunde Sweden in accordance with the appropriate rules for CE approval and marking within EU and the EEC. The serial number is printed on the outside label and also on the label under the gearbox. The machine is only meant for fishing. It must be mounted in such a way that no danger occurs when in use. It is very important that the spool, line and hooks cannot come in contact and injure the operator of the machine.

The emergency stop button must be easily accessible. Check daily that the emergency stop is working. The machine must be connected to either a 12 or 24v DC, the power source should be a Lead Acid Battery or equivalent (see the chapter ELECTRICAL INSTALLATION)

The machine shall only be used by those who have read and accepted the contents of this user manual.

INSTALLATION

Upon installation, take particular care with the mechanical, but most importantly the electrical connections. If you are in doubt, contact a qualified electrician. Mount your BJ5000Ex with the supplied 40mm U-Bolts and brackets. The brackets can be attached to either side of the machine. Mount the brackets first on the machine with the supplied M8 bolts, washers and rounded nuts. Do not over tighten. Secondly use the supplied U-Bolts around the tubing with washers and nuts. Now check tightness of all the nuts.

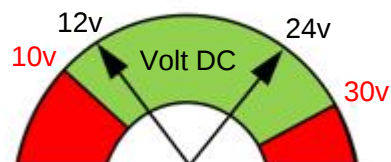
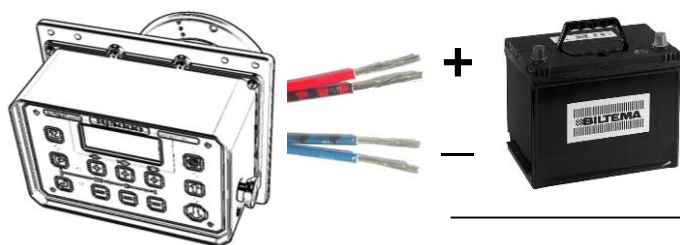


ELECTRICAL INSTALLATION

Make sure that the EMERGENCY STOP button is pressed before connecting the machine to the battery. For the warranty to apply, Ex must be connected to lead battery or battery type that can be charged from a traditional generator found on most boats and cars. The reason for this is that Ex must be able to get rid of the energy that arises from tough driving as the engine acts as a generator, which can lead to lead batteries. However, power supplies AC/DC or DC/DC may not be used. They do not receive the power from Ex and results in overvoltage that will damage Ex. The power cable should be connected directly to the battery system. Possibly via a fuse and / or main switch. Ex is made for 12volt DC and 24volt DC battery system with charging. Under 10 volts and over 30 volts can cause damage to Ex.

Avoid damaging the cable and bundling it with other cables. Cables bundled up together increases the risk of interference between Ex and other instruments onboard. The rule "Use as less cable and joints as possible". Maximum length of supply cable 4x2,5mm² at maximum motor load at 12 volt battery pole voltage is around 15 meter. If charger is used (battery pole voltage 14,5volt) 35 meter is okay. Running at 24 volt power supply longer length then 35 meter might be okay.

Interference may occur in other instruments or devices, look over cables and possibly move the machine if problem occurs.



AC/DC

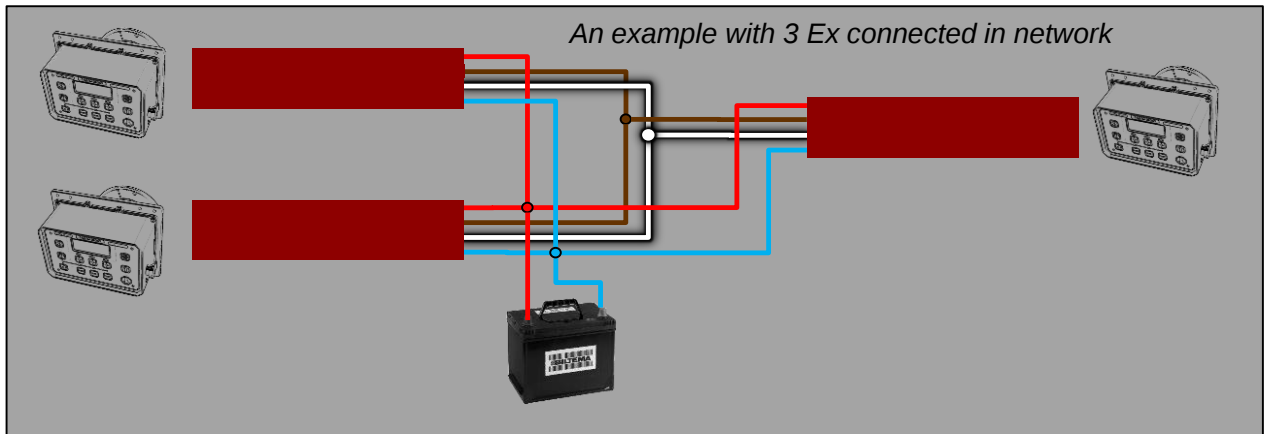
The two red wires are connected to the battery + and the two blue to the – regardless of 12V or 24v.

INSTALLATION

Continuing...ELECTRIC INSTALLATION

Communication between machines.

Ex can communicate with other Ex's and share information about where the fish are, or to prevent all machines pulling the line to the surface at the same time. For this, two wires are used in the power cable. The Brown and the White. The installation is done so that all white cables of the machine (one from each Ex) are connected together, in the easiest way is twisted together or with a screw terminal. Connect the Brown in the same way. DO NOT connect Brown and White together. Note that all of the machines in the network must be powered from same battery system (at least the battery minus pole).



Now the machines are mechanically prepared. What remains is to set up the values for the communication in the display menu. Take a look at the Communication-1 and special sections. To easily get started, step-by-step instructions are given. Machines with software older than 1.1834 must be upgraded with new software for this to be available.

STARTUP

The machine is started by turning the EMERGENCY BUTTON clockwise until it pops out. Now the machine has power. The display provides some information at startup. If the display is not lit, the machine may be incorrectly connected to the battery. Check the cables on the battery!

INSTALL FISHINGLINE

Reduce Drag to minimum value. To do this...

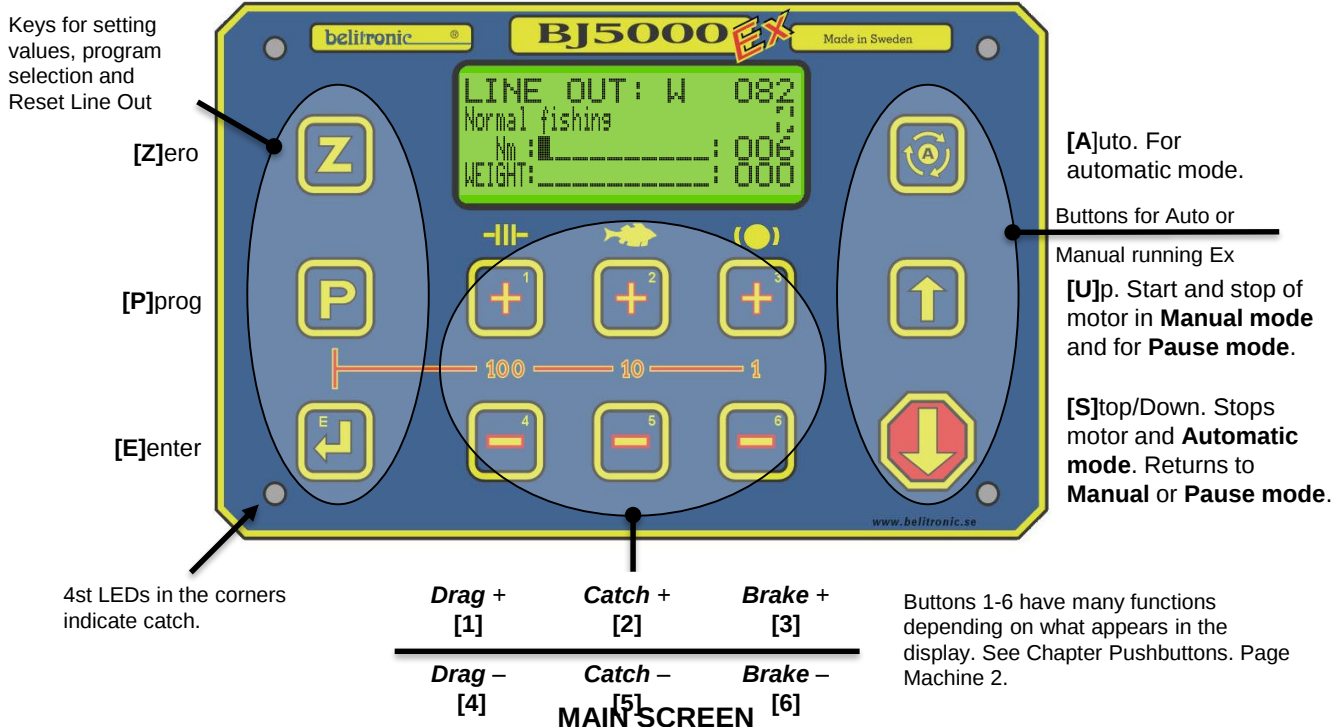
1. Press the **[4]** key until the display bar disappears.
2. Press the **[U]p** button. The motor starts but without traction on the wheel. Note the direction of rotation of the motor.
3. Press **[S]top**. If the desired direction of rotation of the motor is correct, jump to step 7. If not, proceed to item 4.
4. Press the **[E]**button when **LINE OUT** is displayed . The display now shows the MENU.
5. Press **[4]** for **WHEEL**.
6. Press **[3]** for **COUNTER** and then once on the **[P]rog** button. Display shows "Direction" Change the "Normal" or "Reverse" selection to the opposite using the button **[3]** and **[6]**. Jump to point 2.
7. Attach the line to the wheel.
8. Press **[U]p** so the motor starts.
9. Increase Drag by pressing button **[1]** until tight traction is obtained on the wheel. Reduce power with button **[4]** if desired.
10. When all the line is mounted on the wheel press the **[S]top**.

Now all line is mounted. In order for the machine to count correctly, some settings need to be made. This is described in Chapter [E41], E [42], E [42P] and E [43].

FRONT PANEL

The front panel of the BJ5000Ex (from now on called Ex) is equipped with a graphic display, 12 push buttons, with backlighting, and four red LEDs in the corners for catch indication. All buttons have more than ONE function. Below are the buttons name and primary function. From now on, push buttons in the manual will refer to what is inside the characters [], [Z] for [Z]ero, [P] for [P]rog and so on. Se picture below.

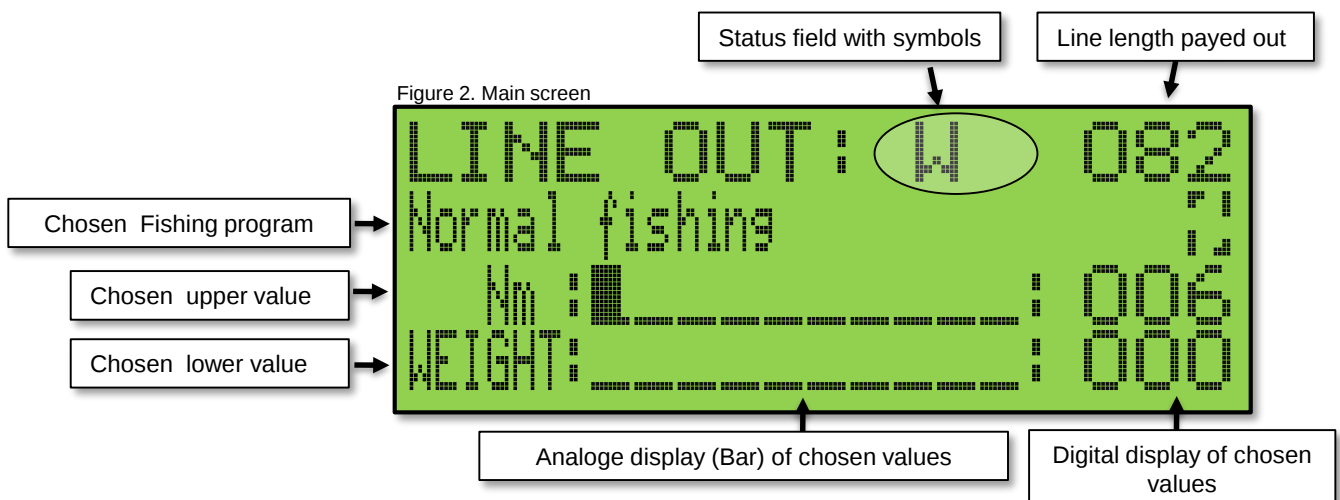
Figure 1. Name of the buttons.



The display shows the most common text in 4 lines with 16 characters in each row. The **Main screen**, is partially configurable and shows multiple information.

- Row 1 shows:
 - Status field for various temporarily information. see list of symbols in Chapter [E615].
 - Released line length(**Line out**) in Fathoms, Meters or Feet with minus sign "-" if negative (when line is above **Zeropoint**).
- Row 2 shows:
 - Selected Fishing program (Chapter [P]).
 - Catch depth memory (se machine - 5).
 - Machine mode symbols ([E445]).
- Row 3: Can show optional values (See **BAR [E612]**) in both analog and digital form. This row also shows the temporary value of **DRAG**, **CATCH** and **BRAKE** when they are changed.
- Row 4: Can show optional values (See **BAR [E612 P]**) in both analog and digital form.

Figure 2. Main screen



Buttons [P]rog [E]nter [Z]ero [A]uto [U]p [S]top



The **[P]rog** button is used in all display screens to get to the next display in chapter **[P]**. Since Ex has more than 180 images, all images are grouped into smaller loops. Pressing the **[P]rog** from the **Main screen** will first show the choice of **Fish program**. Future press then shows screens for the selected **Fish program**.



The **[E]nter** button leads from Main screen to the menu system (Chapter **[E]**) with a variety of settings for both **Fishing programs** and everything else in the machine, such as Display Contrast, Light and Sound. Inside the menu system, press the **[E]nter** button directly back to the **Main screen**. In network, the button is used to access Group screens (hold button in).



[Z]ero button has two functions: A short press resets **Line length**, which will then become **Zeropoint**. If the button is pressed for three seconds, a **Reset** menu will appear. See chapter **[Z]** for more details.

To the right of the panel there are three buttons to "drive" the machine.



[A]uto button. A short press puts Ex in the **Machine mode** called **Automatic mode**. The machine starts working according to the selected **Fishing program** (delayed start of **Autopause [E2]**) and records catch according to set criteria. If the button is held in, the line runs out without any brake at all. If the button is pressed repeatedly within 1 second in Auto mode, the Catch depth memory is cleared.



[U]p button is used to set Ex in the **Machine mode** called **Manual mode**. (Depends on **PAUSE MODE – Activates when [E445]**) A short press starts or stops the motor. If the button is pressed, the motor will run continuously until it is released. The motor also stops if the counter comes to **Zeropoint** or if the wheel is stopped by **Stop At Pulley [E442]** or **Stop At Sea [E443]**. In **Auto mode**, the button can be used to enable **Pause mode**.



[S]top / Down button is used to set Ex in the **Machine mode** called **Manual mode** (Depends on **PAUSE MODE – Activates when [E445]**) and always stops the motor. As long as the button is pressed, **BRAKE** force is applied to the wheel, which now should be easy for the sinker to pull out. When the button is released, the **DRAG** force is applied on wheel which should stop.

Button [1]-[6] (DRAG, CATCH och BRAKE)

The buttons below the display [1] - [6] have five different functions, but primary function is marked with symbols above for them. Directly accessed from **Main screen**.



The symbol means **DRAG**. Refers to the force applied to wheel when the line is stopped (in pause, or manual mode) or pulled by motor.



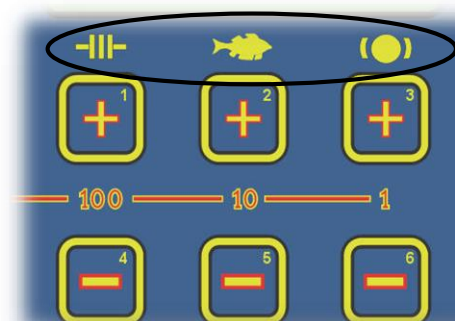
The symbol means **BRAKE** and is the constant braking force on the wheel to prevent line tangle when line is released. A significantly weaker power than DRAG.



The symbol means **CATCH**. A measure of how heavily the engine must pull before the machine is to register catch and start dragging the catch. Read more in chapter Machine - 4

Figure 1. The symbols....

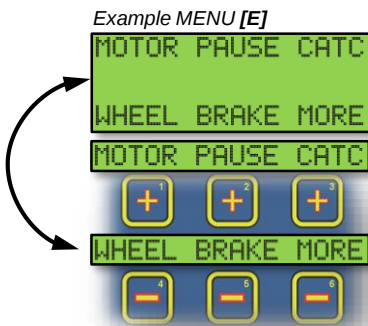
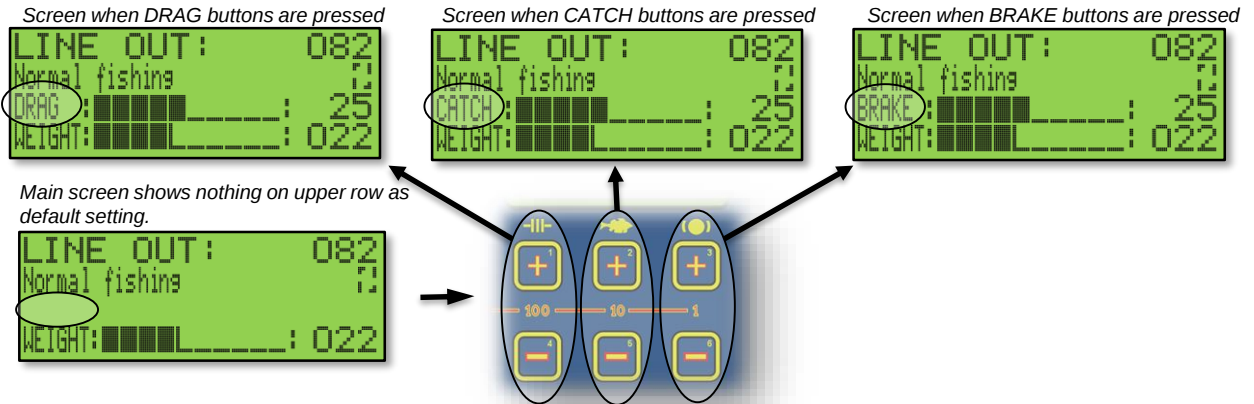
DRAG CATCH BRAKE



Buttons [1]-[6] (DRAG, CATCH och BRAKE)

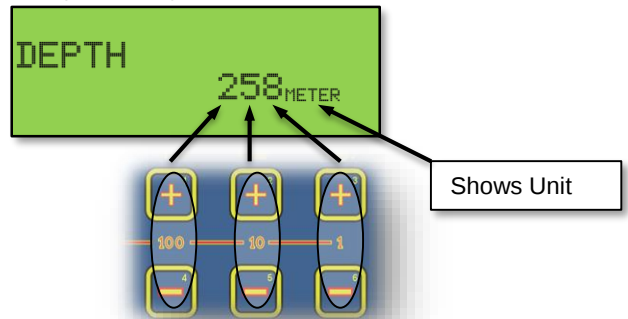
These six buttons under the display have several different functions.

Function 1. From **Main screen**, the buttons **DRAG**, **CATCH** and **BRAKE** are reached directly with the buttons below the display. The first press shows the desired value as shown in row 3. Another push or held in will change the value. After a set time **Showtime [E614]**, chosen "Value for upper row" will return on row 3. In this example, the engine torque "Nm"



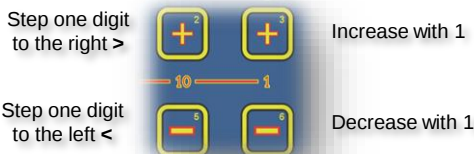
Function 2. The buttons are used for menu navigation. Each one corresponds to one of the options shown in the display. **MORE** and **RET** option found in several menus leads to and from additional menus.

Example of setting a value



Function 3. For setting and changing the values. By changing the three digits (100s, 10s and 1s) individually. Decimal numbers such as Times, changes in the 10's, 1's and 0.1's. For 4 digit numbers, the first digit (1000's) changes with 100-digit buttons.

Code screen



Function 4. To change huge numbers such as the theft code, each digit is changes individually. As shown in the illustration, Button [2] and [5] is used to change the digit position, which is indicated by an arrow. Buttons [3] and [6] are used to increase or decrease the selected digit value. To confirm the value, press [P]rog.

Group screen



Function 5. In group screens, the six buttons correspond to machines in the group. Each press of the button switches the machine in or out to control. Machines being control are surrounded by a black frame.

CATCH REGISTRATION

Catch registration can be done in 5 different ways.

- **High load.** Perhaps the most common way to register catch in Ex is how heavy it is to pull the line. This is done by measuring motor current (shown as **Weight** in Ex) while it runs, and therefore available only when motor is working. The **Weight** to be exceed for starting **Catch registration** is called **CATCH** (See Machine - 3, Function 1). How long time the **Weight** must remain above **CATCH** before entering **Catch mode** is determined by **Catch -Time up [E3]**. This makes it possible to determine whether **Catch mode** should occur early for fast bites on the bait, or if fishes need to bite on for a long time. The **Status symbol [E615 P]** can provide detailed information in **Main screen** if the limit is exceeded for fine tuning the **Catch registration** or for troubleshooting. **Status symbol [E615 P]** is disabled in factory setting.
- **Low load.** If motor current gets below what's needed for just turning the motor with hooks and sinker, like when sinker/hooks are lost or held up by another machine or fishes, **Catch mode** can be triggered. See the **L.MESS [E151]** function for more information. Also here the motor must run and the **Status symbol [E615 P]** can show detailed information for fine tuning and Troubleshooting.
- **Low wheel speed.** **Catch - Time down [E3P]** can be used to enter **Catch mode** if line rolls out too slow. For example by fishes holding the hooks or hitting the bottom. The time is the maximum time allowed for one wheel laps to pass. NB that too high setting of **BRAKE** or sluggish clutch or wheel might trigger this when it also slows down the wheel. Default **CATCH-Time down [E3P]** is not used. NB **CATCH – Time Down [E3P]** can **not** be combined with any **Bottom Fishing program**.
- **High wheel speed.** If large catch pulls out the line too fast, **Speed brake [E51]** is activated and will slow down the wheel speed, and can also activate **Catch mode**.
- **Pulled out line.** Wheel pulses are monitored during fishing and detects at any time if line and wheel is pulled backwards. If wheel is pulled out more laps than set **Catch - Wheel laps [E3 PPP]** the Ex is put into **Catch mode**.

Table 1. Shows which **Catch registrations** sensors are aviliable for each **Fishing programs**.

Fish program	Sensors				
	High load	Low load	High wheel speed	Low wheel speed	Pulled out line
[P]1 Normal Fishing	Yes	Yes	Yes	Yes	Yes
[P]2 Step Jig Fishing	Yes	Yes	Yes	Yes	Yes
[P]3 Bottom Fishing	Yes	Yes	Yes	No	Yes
[P]4 Bottom Fishing With Step Jig	Yes	Yes	Yes	No	Yes
[P]5 Mackerel	Yes (1)	Yes	Yes	Yes	Yes
[P]6 Mackerel With Jig	Yes (1)	Yes	Yes	Yes	Yes
[P]7 Trolling	Yes	Yes	Yes	Yes	Yes
[P]8 Fishfinding	Yes	Yes	Yes	Yes	Yes

(1) Catch mode i Mackerel program works as in other fishing programs but generates no indication in display, sounder or Catch LED. In Mackerel program Ex makes automatic restart when **Zero point** is reached.

CATCH DEPTH AND CATCH DEPTH MEMORY

Catch depth. In all **Fishing programs** except the **mackerel [P]5** and **Mackerel With Jig [P]6** programs, the **Catch depth** might be displayed while Ex is in **Catch mode**. This is optional and is controlled by **Show Catch depth [E3PPP PPP]**. If enabled, the **Catch depth** screens and **Main screen** is displayed alternately every 3 seconds during **Catch mode**. At the same time, the buzzer may sound for audible notice, depending on **BEEP – At catch [E63]** setting.

Catch Depth Memory.

Registered **Catch depth** is memorized during a time **Cooperation time [E651 PPP PPP P]** from **time catch occurs**. This time is shared to the entire network and is therefore located in **MENU - MORE - NETWORK**. As long as the time and memory has not ran out of time, a "M" appears in the display next to the **Auto Symbol**, for "Catch Memory"

Catch depth memory affects the machine in such a way that the machine's original **Fishing depth** and **Jig length** is replaced with a calculated value so that the **Fishing area** is centered around the **Catch area**. For example, if the **Catch detection** occurred at 50 meters and the **Jig length** is 10 meters, the machine's **Fishing depth** will change to 55 meters. Future jigging will take place between 55-45 meters, and **Catch detection depth** 50 is in the middle. When the next **Catch registration** is made, the memory is replaced with a new calculation and the **Cooperation time [E651 PPP PPP P]** restarts. When the **Cooperation time [E651 PPP PPP P]** runs out, the machine returns to its original settings for **Fishing depth**, and **Jig length**.

If the **Catch depth memory** is not interesting, for example, false catch, then the **[A]uto** button can be pressed a second time within 1 second. This will restore the original settings again and the "M" shall dissappear.

Catch depth memory can be permanently disabled by setting **Cooperation mode [E651 PPP]** to "Out". To do this, the **Communication mode[E651]** first has to be activated, "Master" or "Slave". When change is done, turn off network connection by setting **Communication mode[E651]** to "Out".

Machine no 5.



Symbol for **Catch memory**
This machine has detected catch.

Machine 1,2,3,4 or 6.



Symbol for **Catch memory**
This machine now helps machine no 5.

Catch depth memory in network.

When Ex is connected into a network, the machine's **Catch depth memory** can be shared (depends on **Cooperation mode [E651 PPP]**) with other machines within the same **Group [E651 PP]**. In the same way as the Catch detecting machine, the other machines' **Depth** and **Jig length** will be replaced during the **Cooperation time** by adopting the settings from the last machine in the Group that detects catch. Machines that helps another machine shows that machines address, instead of the "M". In the example above, machine number 5 has detected catch. When the **Cooperation time** expires, all machines return to their original settings.

More about network.

- Only one **Catch depth memory** is used in each **Group**. However, up to 6 groups can be used, all with their own **Catch depth memory**.
- Machine detecting the catch last, decides where machines in the **Group** will fish. When a machine detects a catch, the machine's settings will apply to all machines in the group. It then writes over previous **Catch depth memory** and **Cooperation time**.

COMMUNICATION

With communication between machines, the following can be done ...

- Monitor all (36) machines Line out, motor, wheel, and fish status from any machine in groups of 6 machines per display image.
- Send pushbutton to all machines (36pcs) in a group of 6pcs from any machine. Applies to the [Z]ero, [A]uto, [S]top and [U]p.
- Co-operation between the machines at the time of registration in the group. If multiple groups are used, machines within the groups can collaborate, but not between them. All machines can also be individually configured to help other machines and if they want help, or work individually, see **Cooperation mode [E651 PPP]**.

To get started easily.

1. To avoid avoid Complications , start with two machines only.
2. Connect the electrical cables for the communication, see Chapter Installation.
3. Set **Communication Mode [E651]** to "Master" on machine 1. (this machine is from now on called master machine).
4. Set **Address [E651 P]** to "1" and **Group [E651 PP]** to "A" (Default).
5. Set **Communication Mode [E651]** on machine 2 to "Slave".
6. Set **Address [E651 P]** to "2" and **Group [E651 PP]** to "A" (Default).
7. When more machines are attached to the newtwork repeate from step 5, but change Address. The combination of Address and Group, like "1A" and "1B" must never be the same in the network. "1A" and "1B" have the same address "1", but in two different Groups which is okay.

See other machines in the network.

Probably the communication between the machines has already started. To see if a machine is in contact with other machines, hold the [E]nter button while the **Line Out** screen appears until GROUP A appears. Group images display information about up to 6 machines. Each machine's address correlates with a fixed location in the display. Addresses 1, 2 and 3 are shown on the top row and 4,5 and 6 on the bottom. When a machine is contactable on the network, the respective machine's information will be displayed. If the communication fails with a machine or is disconnected, a line will appear (-----). Press [E]nter again to return to Main screen.

Enable / disable network machines for optimized communication.

In order to minimize lost time in communication, deactivate not used addresses in each group in the master machine. This makes the master just skip asking and waiting for response, and jump to next used machine. From the Main screen hold the [E]nter button, the group image is showed but keep the [E]nter button passed until it will sounds and shows "SET" in the upper right corner. Here machines are individual enabled or disabled. Machines set to "ON" are enabled and deactivated "OFF". To change, press the respective buttons [1-6] below the display. To return to the Group screen, press [E]nter.

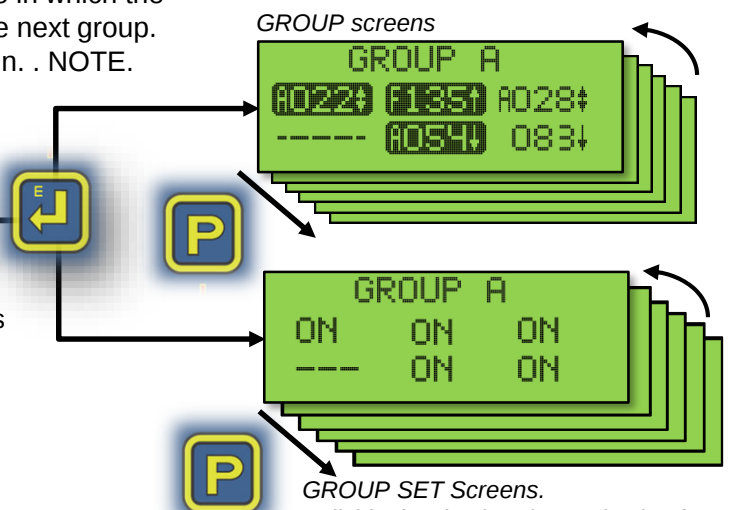
From the main screen, hold [Z]ero button for about 1 second. GROUP screen first shown at the start is the one in which the machine is a member. Press [P]rog button for the next group. After the last group screen, the first appears again. . NOTE. Shown only if communication is enabled.

Main screen



From the main screen, hold the button until it sounds (approximately 2 seconds). The GROUP screen will be passed and now shows GROUP SET screen.

NOTE This is only available in master machine



GROUP SET Screens.
Individual activation / Deactivation for each address. NOTE This screen is only available in master machine.

Information in GROUP screens.

Information as **Line out**, **Fishing mode**, **Wheel** and **Motor** status is shown as described below.

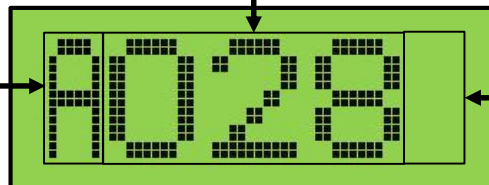
Group screen



GROUP A		
1	2	3
4	5	6

Address position in GROUP screens

Line out. Note, when "-" is showed the font size is reduced to fit.



Excample shows machine with address 3 i group 1.

Fishing mode



Automatic Fishing mode.



Automatic. Fish caught (Flashes)



Manual mode (Empty sign)

Motor and wheel status



ARROW UP. Motor runs. DRAG force on wheel.

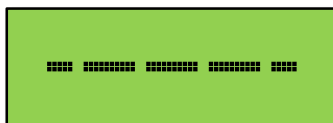


ARROW DOWN. Motor stopped. BRAKE force on wheel



EMPTY SIGN. Motor stopped. DRAG force on wheel.

No answer



Dashes. Machine is not responding to communication. Possible reasons.

- Error in communication. Temporary stops may occur but communication will automatically restart.
- Collision. Two or more machines have the same address setting, while they are in the same group. Change address or move machine to another group.
- Machine turned off.
- Machine is addressed into a group that master does not call.
- Machine is deactivated (set to OFF) in setup, in the master. See page Communication-1 Chapter "Enable / Disable Network Machines" for changes.

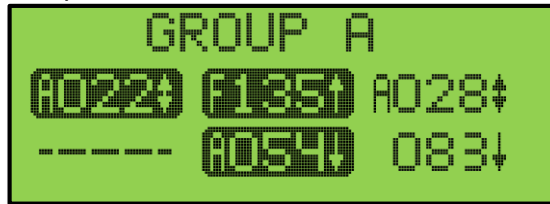
Manage / control machines in the group.

The machines that will be controlled are selected by pressing the buttons 1-6 below the display. Machines that are chosen get an inverted graphics. Light text on the black background, while machines that will not be affected appear in plain text, black on light background.

Address position in
Group screens

GRUPPE A		
1	2	3
4	5	6

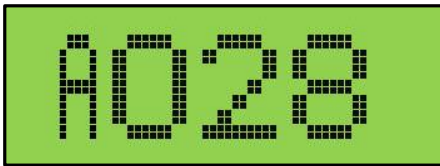
Group screen



Example

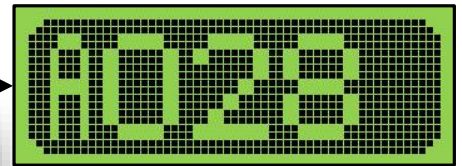
Machine 1,2 and 5 chosen .
Machine 3, 4 and 6 not chosen ,
and machine 4 does not respond
OR is deactivated.

Machine NOT chosen for receiving command

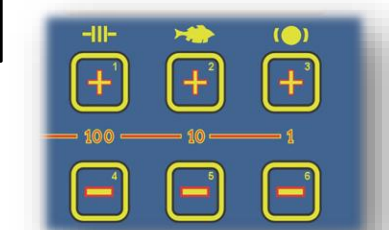


Normal text:
Black text on light background.

Machine Chosen to receive commands



Inverted text:
Light text on Black background



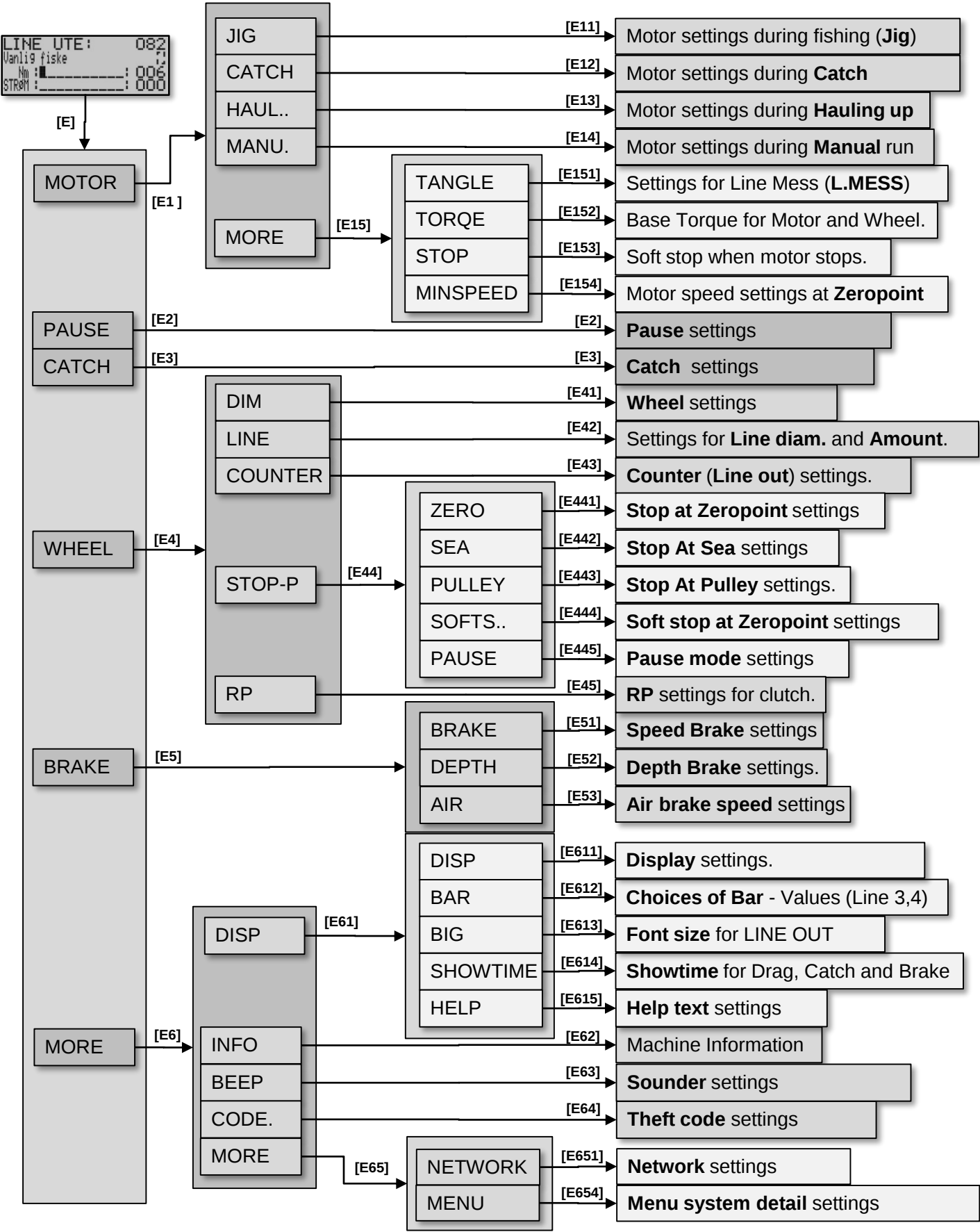
The buttons that can be sent as command to other machines are as follows.

- **[Z]**ero. Works at any time if the machine is selected.
- **[A]**uto. Works at any time if the machine is selected.
- **[S]**Top. Works at any time if the machine is selected.
- **[U]**p. Works at any time except in these two cases.
 - To prevent accidents while working with the fishing line. Bringing up the GROUP screen will block the Key **[U]**p button command.
 - **Line out** is above the **Zeropoint**. Motor does not start because it's already up.

When GROUP screen is showed, the local machine is also controlled like all other machines. The local 4 buttons above only affects the local machine, unless it's GROUP is shown and local machines address is selected. This is because otherwise the local machine would react on every button pushed that is made to all other machines.

MENYSYSTEMET [E]

The **[E]**nter button is used to jump in and out of the menu system, which results in functions described in Chapter [E]. Below is an overview of the menu system.



JIG [E11] - CATCH [E12]

Main screen

LINE OUT: 028
Normal: MOTOR PAUSE CATC
WEIGHT: WHEEL BRAKE MORE
Navigate [E]

JIG CATCH HAUL.
MANU. MORE RET

Menu **MOTOR [E1]** reached by pressing [E]nter button from **Main screen**. From this menu all motor settings are reached.

Ex has a total of five different motor modes with individual speed and accelerations. In essence, **Jig** and **Haul up** modes are used when fishing, and **Manual** mode in manual mode and when machine is not used. In all modes speed can be adjusted between 30-180rpm and acceleration times between 0.1-10.0 seconds.

JIG [E11] mode. Used during automatic fishing in any of the **Fish programs**.

Soft start [E11] is the acceleration time from stationary to **Jig speed**.

Jig speed [E11 P] Normal motor speed during fishing. The power transferred to wheel is the basic **DRAG** settings made by [1] and [4] from Main screen..

CATCH [E12] mode. Immediately at the time of catch registration, a temporary speed and power can be applied for a maximum of 60 seconds to attract more fishes or safe catch. **Time [E12]** is the time the temporarily speed **[E12 P] Catch speed** shall apply. During this time, also extra force can be applied on wheel by **[E12 PP] Drag + xxx%**. When the Time [E12] runs out of time, or if it's not used, the motor will switch to **Haul up** mode. Se next page **[E13]**. From the factory, **Catch Speed - Time [E12]** is set to zero "Out" which completely disables the function.

The transition from Jig speed to Catch speed occurs instantaneously (without a smooth transition). This allows the Catch speed to perform behaviors for Ex like below.

Slow down and let more fish bite on:

- Set **Catch Speed - Time [E12]** to higher value (10 seconds or so).
- Set low Speed for **Speed at – Catch [E12 P]**.

Secure hook penetration.

- Set short time to **Catch Speed - Time [E12]** (0.3-0,7 or similar)
- Set high speed to **Speed for Speed at-Catch [E12 P]**
- Add 10-20% to **Torque at haul up - Drag + xxx% [E12 PP]**. This cause a short jerk in the line at the catch registration to snap the hook.

Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation	Menu		
MOTOR - JIG [E11]							Simple	Normal	Extended
JIG – Soft start	Out	10,0	1,0	0,1	Seconds	[E11]	-	X	X
JIG – Speed	1	180	120	1	RPM	[E11 P]	X	X	X
MOTOR - CATCH [E12]									
CATCH – Speed time	Out	60,0	Out	0,1	Seconds	[E12]	X	X	X
CATCH – Speed	1	180	50	1	RPM	[E12 P]	X	X	X
CATCH – Extra DRAG	0	100	0	1	Percent	[E12 PP]	-	X	X

"x" =Shows, " – " Hidden

HAUL. [E13] - MANU [E14]

Main screen

LINE OUT: 028
Normal: MOTOR PAUSE CATC
WEIGHT: WHEEL BRAKE MORE
Navigate [E]

JIG CATCH HAUL.
MANU. MORE RET

Menu **MOTOR [E1]** reached by pressing [E]nter button from **Main screen**. From this menu all motor settings are reached.

After Catch registration and optional Catch mode (see **CATCH [12]**) the motor begins with Haul up mode. Settings found under **HAUL.[E13]**.

Transision to **Haul up – Speed [E13 P]** is softly made by **Soft start to - Hauling up speed [E13]**. The soft transition time may also softly add force on wheel if **Torque - Hauling up Drag + xxx% [E13 PP]** is used. Extra force and speed is to shorten the time to haul up, and time to minimize loss of catch.

MANU [E14]. The manual speed is the speed that applies when [U]p button is pressed. **Soft Start To Manual Speed [E14]** and a **Speed at manual [E14 P]** decides the acceleration and speed. The force on wheel is the basic **DRAG** setting. These settings are also used in **Pause mode**.

To prevent line tangle the motor stops by a deceleration time for about 0,7 seconds (see **MOTOR - Softstop [E153]**). During deceleration time, motor force is reduced from any extra drag (Drag + xxx%) back to basic DRAG. Since the machine is still in **Haul up mode**, the motor will start and using the higher power again if the line is pulled out. However, close to the **Zeropoint** the speed, acceleration and force switch time depends on how close the **Zeropoint** line is. If the line stopps outside **Softstop to 0 – Automatic [E444]**, which is the point at which the minimum speed begins and the motor uses **Haul up mode** settings. But if the line stays above this point, then the **Minimum Speed [E154]** settings are used.

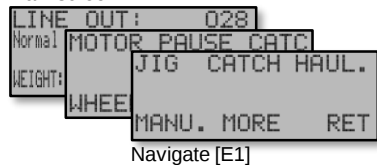
Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation	Menu		
MOTOR – HAULING [E13]							Simple	Normal	Extended
HAUL – Hauling up speed	Out	10,0	2,0	0,1	Second	[E13]	X	X	X
HAUL – Speed a hauling	1	160	120	1	RPM	[E13 P]	-	X	X
HAUL – Extra DRAG	0	100	0	1	Percent	[E13 PP]	-	X	X
MOTOR - MANUAL UP [E14]									
MANU – Soft start	Out	10,0	1,0	0,1	Second	[E14]	-	X	X
MANU – Speed	1	160	120	1	RPM	[E14 P]	X	X	x

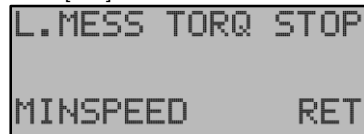
"x" =Shows, " – " Hidden

L.MESS [E151]

Main screen



Menu [E15]



Menu **MOTOR MORE [E15]** reached by pressing **[E]**nter button from **MOTR MENU** and contains advanced motor settings.

General about motor torque. The motor in BJ5000Ex is brushless without gearbox with 50% more strength and is faster than previous models. Instead of wiping out power in the clutch, the motor torque is now adjusted to meet desired pulling force. Therefore when the load approaches the set pulling force (DRAG), the motor and the wheel stops without affecting the pulling force. This minimizes power consumption. If the catch is tougher and the traction of the motor exceeds, the motor and the wheel are pulled backwards. The motor then acts as a generator that returns energy to the battery. Only when the catch pulls so hard that the motor current gets bigger than Ex can handle, the clutch starts to slip.

L.MESS [E151]. Line mess mode (function for line tangle). When two machines tear lines together, one of them will pick up both machines' hooks and sinkers, with catch registration as result. The machine without loads will then go unusually light upwards, and the wheel will not roll out when it's supposed to. Unless the line is hauled up in at the same rate as the machine detecting catch, line tangle will occur. Ex solves this by putting less load on the machine into Catch mode. Note that abnormal low loads may also be due to catch overcoming the weight of the sinker. To enter lighter Catch mode in this case might be a good solution.

Speed [E151 P] is the speed used in (Line mess mode). Probably best if set to full speed. As soon as normal load occurs, the motor returns to **Haul up speed [E13 P]**. In order for this to work well put **Speed [151 P]** to same, or higher then all machines **Haul up speed [E13 P]** otherwise they will never catch up.

Value for line mess [E151]. This limit should be set to almost (a bit less) same as the motor current (Showed as Weight) used when motor runs with Sinker and Hooks only. When motor current gets underneath this limit during the **Detect time [E151 PP]** the machine gets into **Line mess mode**.

Detect time [E151 PP]. In order not to change speed too often, giving a rough ride, the average load is measured during this time.

Distance for line mess [E151 PPP]. When the machine works with **Bottom fishing**, the first meters after the bottom detection always goes easy because the sinker is on the bottom and the line slacks. Therefore, the **L.MESS [E151]** function is disabled near bottom until this distance is pulled up.

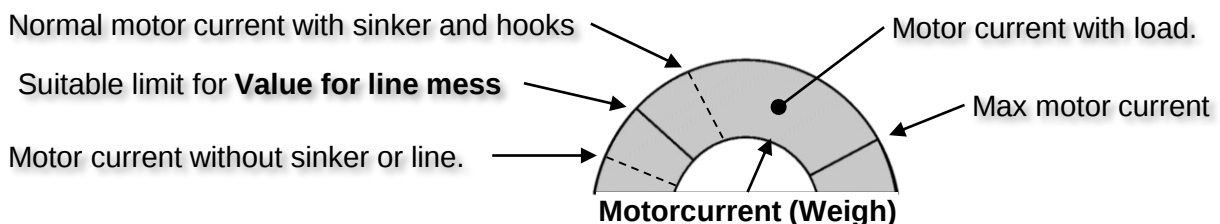


Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

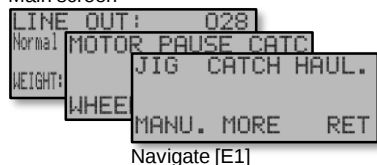
Screens	Min	Max	Factory	Step	Unit	Navigation	Menu		
MOTOR – MORE - L.MESS [E151]							Simple	Normal	Extended
L.MESS – Value	0	20	4	1	AMP	[E151]	-	X	X
L.MESS – Speed	Out	160	Out	1	RPM	[E151P]	-	X	X
L.MESS – Detect time	1	50	10	0,1	Second	[E151 PP]	-	X	X
L.MESS – Distance	0	99	5	1	M/Fm/Ft	[E151 PPP]	-	X	X

"x" =Shows, " – " Hidden

[E151]

TORQUE [E152] - STOP [E153] - MINSPEED [E154]

Main screen



Menu [E15]



Menu **MOTOR MORE [E15]** reached by pressing **[E]**nter button from **MOTR MENU** and contains advanced motor settings.

TORQUE [E152] This chapter contains advanced settings for the Motor and Clutch when it comes to DRAG, to avoid clutch slipping. The idea is that DRAG shall give a linear force on wheel from 0-30 Kg for DRAG 0-100%. To achieve this two values are needed. When adjusting the values below, first start with the **Motor – Minimum Torque**, then the **Clutch - Minimum Torque**. Tie the fishing line to the frame of the machine.

CLUTCH – Minimum Clutch torque [E152]. This value should be as low as possible, but too low will make the clutch slip, and that is not good. Too high values will cause a lower value to **DRAG** and make no change in force to the wheel.

MOTOR – Minimum Motor torque [E152 P]. This is the minimum amount of energy sent to motor. At 0% the motor does not even start. To adjust this. Set **DRAG** to 0 %. Set **Motor –Minimum torque** to 100%. Press **[S]**top once. Press **[U]**p button so motor starts. Decrease **Motor –Minimum torque** slowly until the motor gets a new sound (around 10%). Go back up to value where it sounds as when it was at 100%.

Soft stop [E153]. The motor in EX can start and stop very quickly compared to previous models. To get a softer stop deceleration is made during this time. The time can be adjusted to zero if desired and applies to driving in both automatic and manual mode.

Minimum speed near Zeropoint [E154]. Minimum speed is the speed of the motor when it arrives to the **Zeropoint** and also if it continues above the stop point if stop 0 is disconnected. The speed reduction occurs over a number of laps determined by the **Soft Stop in Auto [E444]** in **Manual mode** and **Soft Stop in Manu [E444 P]** in manual mode. If the line is inside the **Soft Stop in Manu [E444 P]** when the engine is started manually, then minimum speed will be disconnected.

Soft Start to Minimum Speed [E154 P] is the acceleration time applicable from standstill to minimum speed and may be set to larger numbers, such as 5 seconds or more to minimize jerk in the line at risk of losing catch.

Wheel laps before motor starts [E154 PP] In **Haul up mode** if line is pulled out from the **Zeropoint** the motor starts to haul back up. This can be adjustable for better functionality when using hook winch.

Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

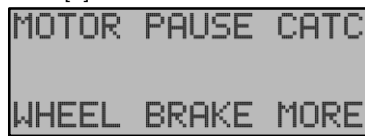
Screens	Min	Max	Factory	Step	Unit	Navigation
MOTOR – MORE - TORQ [E152]						
TORQ – Minimum Clutch Torque	0	100	16	1	%	[E152]
TORQ – Minimum Motor Torque	0	100	10	1	%	[E152 P]
MOTOR - MORE - STOP [E153]						
STOP – Motor Soft Stop	0	3,0	1,0	0,1	Second	[E153]
MOTOR – MORE - MINSPEED [E154]						
MINSPEED – Minimum speed around Zeropoint	50	180	50	1	Rpm	[E154]
MINSPEED – Softstart to Minimum speed	0,1	99,9	4,0	0,1	Second	[E154 P]
MINSPEED – Wheel laps before motor starts	0,1	33,0	1,0	0,1	Wheel laps	[E154 PP]

PAUSE [E2] - CATCH [E3]

Main screen



Menu [E]



PAUSE – Autopause [E2] is the time it takes after **[A]uto** is pressed until the machine begins to fish. The break is for the sinker to fall down and stretch the line as straight as possible before it is released. With **Autopause [E2]**, the **[A]uto** button can be pressed when hook has entered into the water without having to wait.

PAUSE – Depth [E2P] is a pause that occurs when **Depth** is reached and the line remains idle before **Jig Length** commands are made. Available in all **Fishing programs**.

CATCH – Time up [E3] (This is described under **High load** on page Machine – 4).

CATCH – Time down [E3P] (This is described under **Low speed** on page Machine – 4).

CATCH - Speed brake [E3P P] (This is described under **High speed** on page Machine – 4).

CATCH - Wheel laps [E3PPP]. This is described under **Pulled out line** on page Machine – 4).

CATCH – LED Brightness [E3PPP P] Is the power to **Catch LED**, when blinking in **Catch mode**. "0%" will disconnect the **Catch LED**. While **CATCH - Brightness** screen displays, the power is constantly on for adjusting the power.

CATCH – Restart [E3P PPP P] When motor stops at **Zeropoint** during **Catch mode** up, or by **Stop At Sea [E442]**, **Restart [E3P PPP P]** can be used to restart the **Fishing mode**. It's the same as pressing **[A]uto** button.

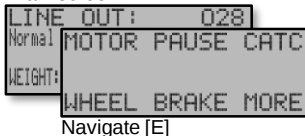
CATCH – Show Catch Depth [E3PPP PPP] decides when **Catch depth** will be displayed. "Always at Catch" will show **Catch depth** in display during the whole **Catch mode** as normal. "After hauling up" will show **Catch depth** only after machine Stops at **Zeropoint**, and makes less distraction in display. "Never" turns of the display of Catch depth off complete. This option is also automatically used in Mackerel program.

Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

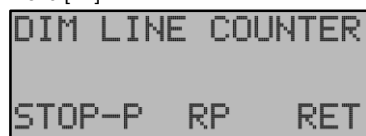
Screens	Min	Max	Factory	Step	Unit	Navigation
PAUSE [E2]						
PAUSE – Auto	0,5	10,0	0,5	0,1	Second	[E2]
PAUSE – Depth pause	0,5	25,0	0,5	0,1	Second	[E2P]
CATCH [E3]						
CATCH –Time up	0,1	10,0	1,0	0,1	Second	[E3]
CATCH – Time down	1,0	25,0	Out	0,1	Second	[E3P]
CATCH – At speed brake	Out	IN	Out	-	-	[E3PP]
CATCH – Wheel laps	Out	33,0	1,0	0,1	Wheel laps	[E3PPP]
CATCH – LED Brightness	Out	100	100	1	%	[E3PPP P]
CATCH – Restart	Out	99,9	Out	0,1	Second	[E3PPP PP]
CATCH – Show Catch depth	Never / After hauling up / Always at catch					[E3PPP PPP]

DIM [E41] - LINE [E42]

Main screen



Menu [E4]



When all the fishing line is mounted on the wheel, the fishing line diameter and diameter of amount on wheel must be fed in as accurately as possible. This allows the machine to calculate the amount of line that's released, showed as LINE OUT as accurately as possible.

DIM – Dimension [E41] tells the machine how wide the wheel is, measured in millimeters on the inside of the line. Factory default is 80mm.

LINE – Line diameter [E42] is the diameter of the fishing line in millimeter. If several lines with different diameters are used on wheel the most important line to tell is the line going on and off the wheel during jigging. Line at inner wheel diameter that never comes of the wheel does not matter at all. Also in the other end, the few meters with hooks does not have much impact.

An example: If half of the line going into water during fishing is 1.2mm and the other half is 1.0mm, the best results can be obtained with an average value like 1.1mm in this case. Alternatively, the diameter of the line that is mostly used in water.

LINE – Outer diameter [E42 P] is how much line is on the wheel. Not in meters, fathoms or feet, but the outer lap's diameter in millimeters on wheel. To help determine this, there are three holes in the wheel. These correspond to the values 160, 180 and 200mm and indicate the diameter on wheel. Enter an estimated value. The wheel has a largest outer diameter of 230mm. Putting more line then 200mm might cause line tangle though.

Hole's for easier deciding the amout of line on wheel

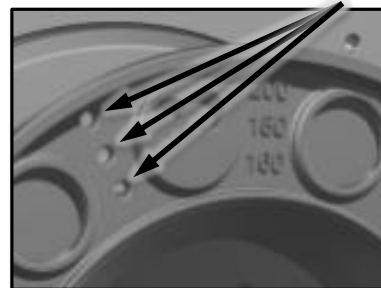
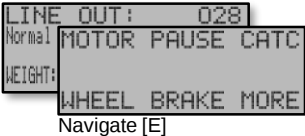


Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

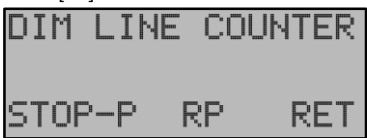
Screens	Min	Max	Factory	Step	Unit	Navigation
WHEEL – DIM [E41]						
WHEEL – Width	1	99	80	1	mm	[E41]
WHEEL – LINE [E42]						
LINE – Line diamter	1,5	5,0	1,4	0,1	mm	[E42]
LINE – Outer diameter	130	400	170	1	mm	[E42 P]

COUNTER [E43]

Main screen



Menu [E4]



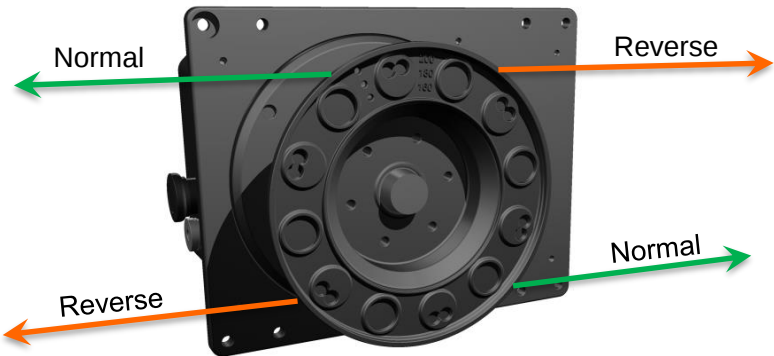
COUNTER – Unit [E43] decides if **Line out** and other lengths shall be displayed in Fathoms, Feet or Meters.

COUNTER – Direction [E43 P] decides the direction for both the motor and COUNTER . Unlike previous models, the engine in Ex can work in any direction depending on the way in which the line is to be taken. The direction can either be set to "Normal" or "Reverse". NOTE! Choices must be made before putting the line on the wheel. Changing this later makes the motor wind of the line!

Look at the image below to and determine the way sinker shall wind off the line BEFORE Line is put on wheel.

Wheel count sensor [E43 PP] is a test screen when troubleshooting to see if both wheel sensor A and B works.

To test the sensors and also wheel magnets, set **DRAG** to zero and slowly turn the wheel slowly by hand. Affected sensors will show "0" when the magnet close to it. Otherwise the sensor must show "1".



lillustratrtion from wheel side of machine.

For a complete counting pulse, a magnet must pass the sensors so that it first affects one sensor. Let's say the first is A. Then both sensors A and B must be affected simultaneously. When wheel continues, only the second sensor B should be affected. Finally when sensor B no longer is affected, the count pulse is approved. If the wheel is rotated in the opposite direction, the same pattern applies, but with A and B in the example above, reversed.

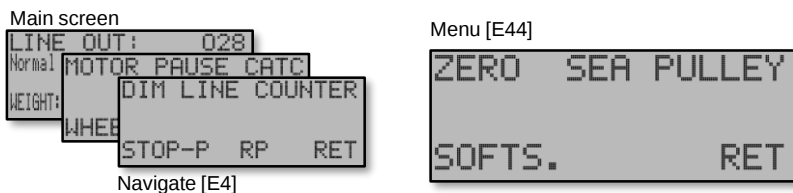
Magnets / Wheels [E43 PPP] have varied over the years and must be set correctly so that **Line Out** can be calculated correctly. Adjustable between 1 to 6 pcs. Most common used is 3. If you want better precision, up to 6 magnets can be mounted. With 3 magnets, theoretical precision on **Line out** is between 0.13 - 0.23 meters depending on outer diameter of **Line – Outer diameter [E42 P]** and with 6 the precision is the half.0.07 - 0.12. However many other things affect the precision of released line, like how it is wounded up on wheel and the line tension.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation	Menu		
WHEEL – COUNTER [E43]							Simple	Normal	Advanced
COUNTER – Unit	Meter - Fathoms - Feet				M/Fm/Ft	[E43]	X	X	X
COUNTER – Direction	Reverse - Normal					[E43 P]	X	X	X
COUNTER – Sensors	11-01-00-10 -11 eller 11-10-00-01-11					[E43 PP]	-	X	X
COUNTER – Magnets / wheel lap	1	6	3	1	Number	[E43 PPP]	-	X	X

"x" =Shows, " – " Hidden

NULL [E441] - SEA [E442] - PULLEY [E443]



ZERO - Stop At 0 [E441] or (Stop at Zeropoint) This function determines if the motor shall stop when **Zeropoint** is reached, which is common. Alternatively to **Stop At 0 [E441]** is **Stop At Pulley [E443]** (see below. **Stop At 0 [E441]** and **Stop at Pulley[E443]** can be used individually or cooperate.

Stop At Sea – Time [E442] is the Maximum run time on the motor if the wheel stops, for example at bottom or when line is at top. This time can be set up to 99.9 seconds, but not removed. As long as the wheel is turning the time is retrigged.

Stop At Pulley – Time [E443] is exactly as above **Stop At Sea – Time [E442]**. However this is mentioned to be used closer to the **Zeropoint** and is useful if the line is stretched a lot during fishing, making the calculated **Zeropoint** different to the real one. A device is then attached to Fishing line corresponding to the **Zeropoint**. The device can not pass through the Pulley, which stops the wheel and counting down the time. When time runs out the motor is stopped. Maximum time will show as “OFF” and turns the **Stop At Pulley** feature off.

Stop At Pulley – Above depth [E443 P] decides above which depth **Stop at Pulley** is active within. Below this depth, the **Stop at Sea** takes over.

Stop At Pulley – Restart [E44 3PP] is a timer that restarts the **Fishing program** after **Stop At Pulley** has occurred. Similar to what **CATCH – Restart [E3P PPP P]** does in **Catch mode** and it's same as pressing **[A]uto** button. Useful if catch is automatically released from the hooks, and ready for start.

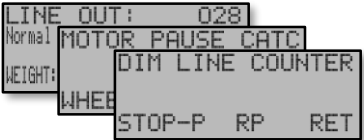
Stop At Pulley – Autoreset [E443PPP] an extra feature when using **Stop At Pulley – Restart [E44 3PP]**. This will automatically clear the **Line out** when **Stop At Pulley** occurs, every time it comes up. As pressing **[Z]ero** button.

Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screen	Min	Max	Factory	Step	Unit	Navigation
WHEEL - STOP.P - NULL [E441]						
NULL - Stop at 0	Out	IN	IN	-	-	[E441]
WHEEL - STOP.P - SEA [E442]						
SEA – Time	1,0	99,9	30,0	0,1	Second	[E442]
WHEEL - STOP.P - PULLEY [E443]						
STOP AT PULLEY - Time	Out	99,9	Out	0,1	Second	[E443]
STOP AT PULLEY - Above depth	1	50	20	1	M/Fm/Ft	[E443P]
STOP AT PULLEY – restart	0,1	60	Out	0,1	Second	[E443PP]
STOP AT PULLEY - Auto 0	Out	IN	Out	-	-	[E443PPP]

SOFTS. [E444]

Main screen



Navigate [E4]

Menu [E44]



SOFTS – Soft stop at 0 – Automatic mode [E444]. Close to the **Zeropoint** the motor speed is gradually reduced in order not to lose catch. The setting defines how many revolutions the speed is to be divided into. The calculation is from present **Motor mode – Speed** (Jig, Catch, Haul up or Line tangle speed) which is active, down to **Minimum speed [E154]**. The factory default value is 5 wheel laps.

This also makes the motor speed gradually increase if line is forced out, back to original speed before it was reduced, or to **Minimum speed near Zeropoint** if line is stopped within the area for **Soft Stop At 0**. As a slow down area.

For example, if 5 laps are set and the present speed is 150rpm, and the **Minimum speed [E154]** is set to 30 the speed is reduced according to the formula $(150-30) / 5 = 24\text{rpm}$ for each lap the last 5 laps.

Soft stop at 0 – Manual mode [E444P] gives similar motor speed reduction from **Speed at – Manual speed [E14]** to **Minimum speed [E154]** when using **[U]p** button in manual control.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation
WHEEL – STOP.P - SOFTS.. [E444]						
Soft stop at 0 – Automatic mode	Out	99	5	1	Wheel laps	[E444]
Soft stop at 0 – Manual mode	Out	99	Out	1	Wheel laps	[E444 P]

PAUSE [E445]

Ex has three working modes. Manual and Automatic modes have been in the machine since the beginning and now a third mode called Pause mode. The active mode is shown by the Mode symbol located at second row under **Line out** in Main screen (see Figure 1).

Figure 1. Mode symbol in Main screen.

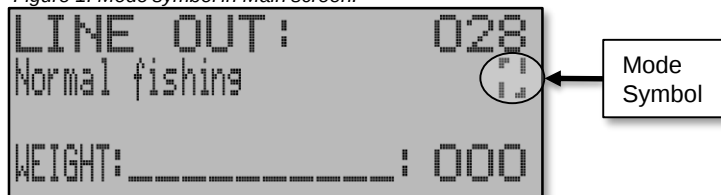
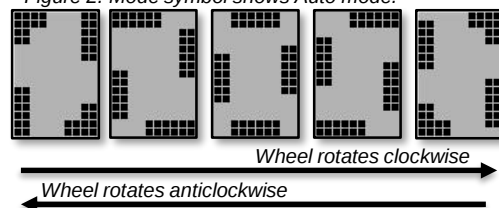


Figure 2. Mode symbol shows Auto mode.

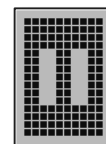


Manual mode: Traditional mode when machine is not used for fishing. The engine only starts when the user presses the [U]p button. The Mode symbol for Manual mode is blank.

Automatic mode: The mode when automatic fishing with any of the built-in **Fishing programs**. Motor is completely controlled by Ex. When the [A]uto button is pressed, the Auto symbol is displayed, which is built up of the 5 symbols in Figure 2. These appear one at a time and form a rotary animation for the purpose of the rotation of the wheel. The orientation depends on the **Counter - Direction [E43P]** setting Change if it's incorrect. When the motor stops during pauses, the symbol freezes.

Pause mode: This mode is functionally similar to Manual mode, except that the motor automatically starts if the line is pulled out, to keep the line at a **Stop point**. This easily occurs if the line remains in the water during transport. Pause mode shows as a traditional pause sign by Mode symbol as shown in Figure 3, which also flashes.

Figure 3. Mode symbol for Pause mode, flashes.



PAUSE MODE – Activates when [E445] it is determined when and how **Pause mode** is enabled. Following settings are available:

- “**At power up**” This totally replaces the **Manual mode** with the **Pause mode**, It's activated immediately when the machine is turned on.
- “**Using [U]p button**”. Ex starts up with **Manual mode**. **Pause mode** is activated only when the motor is stopped by pressing the [U]p button (Not the [S]top button). The [S]top, [A]uto and [Z]ero buttons brings Ex back to **Manual mode**. This makes it possible to use **Pause mode** only in circumstances when motor is accepted to suddenly start (if line is pulled out), but normally motor does not start.
- “**Disabled**” **Pause mode** is not used.

Pause mode – Wheel laps [E445 P] determines how much line is allowed to be rolled out before motor starts to haul up again. Set in number of wheel laps.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation
WHEEL – STOP.P – PAUSE [445]						
Pause mode – Activates	Out / Using button [U]p / At powerup					[E445]
Pause mode – Wheel laps	0,3	33,0	1,0	0,1	Wheel lap	[E445 P]

WHEEL [E45]

Main screen

LINE OUT: 028
Normal: MOTOR PAUSE CATC
WEIGHT: WHEEL BRAKE MORE
Navigate [E]

Menu [E4]

DIM LINE COUNTER
STOP-P RP RET

RP [E45] To prevent permanent magnetization of the electromagnetic clutch, which may make the wheel slow or even stop, Ex has been made more intelligent than the BJ5000 and has the following improvement.

First of all, the clutch's magnetic field changes direction after each time the wheel changes direction for going down. This makes the clutch work equally in both magnetic directions (North / South). Unlike the BJ5000, **BRAKE** power immediately replaces the **DRAG** power when wheel goes out (no zero force gap time). This allows smoother release of the line, especially with much load.

Secondly, Ex will repeat the change of the magnetic direction if the wheel does not get started. This is controlled by the interval time **RP Wheel start - Time [E45]**, which is the longest running time between the wheel magnetic pulses. After each completed **Jig length**, the direction changes and does not end until the wheel has rolled out the amount of laps outside the **Stop point** as determined by the **RP Wheel Start - Laps [E45 P]**.

Thirdly, if this is not enough, a series with short strong pulses, called **RP** pulses can be applied.

Following can be adjusted to **RP** pulses....

Number of pulses [E45 PP]. Which determines how many pulses in the series.

Pulse Legth [E45 PPP]. Pulse length.

Pulse Pause [E45 PPP P]. Pause between pulses in the series.

Pulse Power [E45 PPP PP]. This determines how much power the first pulse in the series should be. Each series of pulses starts with this power, and gradually decreases to zero.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation
WHEEL - RP [E45]						
RP - Time	Out	2,0	0,8	0,1	Seconds	[E45]
RP - Wheel laps	Out	20	3	1	Wheel lap	[E45 P]
RP – Number of pulser	Out	10	Out	1	Number	[E45 PP]
RP - Puls legth	0,1	5,0	0,1	0,1	Second	[E45 PPP]
RP – Puls pause	0,1	5,0	0,1	0,1	Second	[E45 PPP P]
RP - Puls power	0	100	20	1	Percent	[E45 PPP PP]

BRAKE [E51] - DEPTH [E52] - AIR [E53]

Main screen

LINE OUT: 028
Normal: MOTOR PAUSE CATC
WEIGHT: WHEEL BRAKE MORE
Navigate [E]

Menu [E5]

MOTOR PAUSE CATC
WHEEL BRAKE MORE

SPEED [E51] – Speed brake In addition to the constant wheel brake **BRAKE**, there is a brake force that activates when wheel speed gets too high, it's the **Speed brake**. It gives temporarily extra power to clutch, slowing it down to prevent line jerking. **Max speed [E51 PP]** determines the speed at which the **Speed brake** will activate / deactivate the extra power. **Brake power [E51]** is the amount of power used during the time **Brake Time [E51P]**.

DEPTH [E52] – Depth brake is activated if the sinker approaches the **Depth** too quickly, for softer stop. Maximum speed is determined by **Depth brake - Speed [E52PP]**. The brake is activated if the calculated time until the **Depth** is reached is less than set **Depth brake - Time [E52P]**. Brake force is determined by **Depth brake – Power [E52]**.

AIR [E53] – Air brake is similar to **Speed brake** above and is suppose to be used when hooks and lines are located above boat deck with risk of being hooked. Therefore **Air brake** is only active close to the **Zeropoint**, called **Above depth [E53P]**. **Brake time** and **Brake power** used in **Air brake** are retrieved from **Speed brake**, but the **Air brake – Speed [E53]** can be lowered.

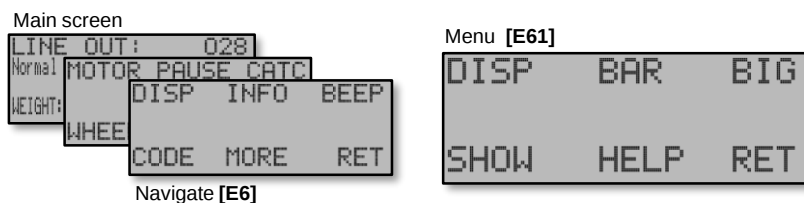
Air brake - Above depth [E53P] determines how far from **Zeropoint** the **Air brake** will apply and where **Speed brake** takes over the control. For a correct function, the **Above depth [E53 P]** should be set to whatever **Line Out** shows when the last hook leaves the boat.

When any of the three **Speed brakes** are activated, it can be visualized in **Main screen** display in the **Status field** for troubleshooting or fine tuning. Se chapter **DISPLAY – Show wheel status [E615 P]**

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation
BRAKE – SPEED [E51]						
SPEED BRAKE – Power	Out	0	20	1	%	[E51]
SPEED BRAKE – Brake time	0,1	5,0	1,0	0,1	Seconds	[E51 P]
SPEED BRAKE – Speed	50	900	600	1	RPM	[E51 PP]
BRAKE – DEPTH [E52]						
DEPTH BRAKE – Power	Out	0	20	1	%	[E52]
DEPTH BRAKE – Brake time	0,1	5,0	1,0	0,1	Seconds	[E52 P]
DEPTH BRAKE – Speed	50	900	600	1	RPM	[E52 PP]
BRAKE – AIR – [E53]						
AIR BRAKE – Speed	50	900	600	1	RPM	[E53]
AIR BRAKE – Above depth	0	999	0	1	M/Fm/Ft	[E53 P]

DISP [E611] - BAR [E612]



DISP [E611] - Brightness (Background intensity) or display 0-100%.

Light time [E611 P] is the illumination time that the display is lit after the last button press. The setting can be from 0.1 second up to 60 seconds or "On", which gives constant illumination, which is also the factory default.

Contrast [E611 PP] Display blackness. Factory default is 80%. If the machine is placed high, the entire display tends to turn black. Then lower the value. Alternatively, if placed low, increase the value if the display blurred. During startup and when displaying **Reset menu** the display has a fixed value if the user accidentally sets a value hard to read.

Language [E611 PPP] Ex can display text in two different languages. English and Norwegian.

BAR [E612] Main screen can display up to two optional values. **Chosen parameter for upper bar [E612]** will be shown on row 3, and **Chosen parameter for lower bar [E612 P]** on row 4. Row 3 temporary displays the **DRAG**, **CATCH** and **BRAKE** if any of it's buttons are pressed. Line 4 shows optional value all the time. Optional values are not showed simultaneously with **Line out**, if **Line out** font is selected to 100% (see **BIG [E613]**) because of the lack of space

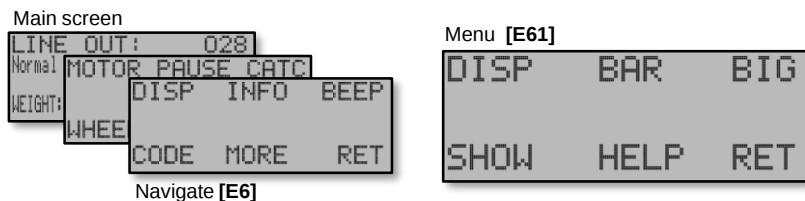
The following options are available for upper and lower posts:

- **WEIGHT.** Motor power consumption. Each line corresponds to 0.4 amps and a block of 3 amps. See **High load** or **Low load** on page Machine 4.
- **MotNm** (Newton meter). Shows how much torque the engine should provide. The value is controlled automatically by Ex when increases / decreases **DRAG**.
- **Rpm.** Engine speed in revolutions per minute.
- **Batt.** Displays the battery voltage to Ex. Measured inside the machine at cable connections. May be helpful to see if voltage drops occurred, caused by bad battery, defective joint, loop contact or if long or straight cables are used.
- **Boost.** Motor (internal) power supply voltage. Normally between 33-40 volt.
- **Temp.** The temperature inside the box.
- **ClutNm** (Newton meter). Shows how much torque the clutch should provide.
- -----. No value is displayed on the line.

Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation
MORE – DISP – DISP [E611]						
DISPLAY – Brightness	0	100	80	1	%	[E611]
DISPLAY – Light time	OUT..60s.. IN		IN	0,1	Seconds	[E611 P]
DISPLAY – Contrast	0	100	70	1	%	[E611 PP]
DISPLAY – Language	Norwegian, Engelska					[E611 PPP]
MER- DISP - BAR [E612]						
BAR - Choose upper parameter	See list above					[E612]
BAR – Choose lower parameter	See list above					[E612 P]

BIG [E613] - SHOWTIME [E614] - HELP[E615]

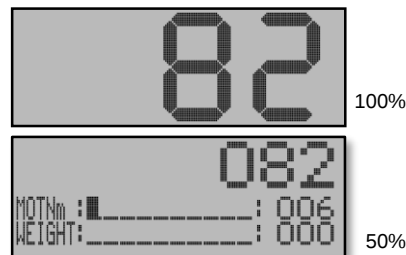


BIG [E613] Line out can be displayed with bigger font size after a time after **[A]**uto button is pressed.

Configuration [E63] There are 3 font sizes that **Line out** can be displayed with.

- “**100%**” shows 32mm large numbers, ie over the entire display height. The display has no room for other information in this mode.
- “**50%**” shows 17mm high (half display height) which can simultaneously display up to two optional values (see previous page) and the Auto Symbol. Pause before showing
- “**Disabled**”. Original 25% is used all the time. No change is made.

Figure 1. Font sizes for Line out.



Pause before showing [E613 P]. The time counted down from when button is press before viewing.

SHOWTIME [E614] Pressing the **[1-6]** buttons under the **Main screen** display shows the **DRAG**, **CATCH** or **BRAKE** values this time, then returns to **Main screen**.

HELP – Help text delay [E615] Brings small (font size) help texts to screens if activated. Help texts pops up after pressing the button in almost every screen when the delay time has passed. Pressing the buttons **[1-6]** hides the text for another period. If the text is not desired, set time to "Out".

Show wheel status [E615 P] can be activated to briefly display different information in **Main Screen** (see Status Field on page Machine – 1, Figure 2) for a different status of **Catch mode** and **Wheel**. This can be helpful if you have trouble understanding why or which brake that's active or why the machine gets into **Catch mode** , or not into **Catch mode** when it should. The following can be displayed.

- “**W**” Appears when values are saved to the memory. This symbol can not be disabled and displayed while writing to memory. Do not turn off the machine while it is displayed.
- “**+**” Indicates that the **Weight** has passed the **CATCH** value which starts **Catch detection**. See Machine - 4 **High load** for more information.
- “**-**” Appears if the motor current is less then with only hook and sinker. See Machine – 4 **Low load** for mode information.
- “**S**” Appears if **Speed brake** is activated (braking the wheel).
- “**D**” Appears if **Depth brake** is activated (braking the wheel).
- “**A**” Appears if **Air brake** is activated (braking the wheel).

Table shows units and value limits. See **[E654]** for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screens	Min	Max	Factory	Step	Unit	Navigation
MORE – DISP – DISP – BIG [E613]						
BIG – Font size	Out (8mm) / 50% (17mm) / 100% (32mm)					[E613]
BIG – Time before showing	Out	99,9	Out	0,1	Seconds	[E613 P]
MORE – DISP – SHOW [E614]						
SHOW – Showtime	0,5	20,0	4,0	0,1	Seconds	[E614]
MORE – DISP – HELP [E615]						
HELP – Help text	Out	10,0	Out	0,1	Seconds	[E615]
HELP – Show wheel status	Out	IN	Out			[E615 P]

INFO[E62] - PIP[E63]

Main screen

```

LINE OUT: 028
Normal: MOTOR PAUSE CATC
WEIGHT: DISP INFO BEEP
WHEEL CODE MORE RET
  
```

Navigate [E6]

Menu [E61]

```

DISP BAR BIG
SHOW HELP RET
  
```

INFO [E62] Various Information.

- **Voltage** Shows low voltage measured inside the machine on the main board. If this falls under 10,0V you will get an error message ("LOW BATTERY!") accompanied by a constant beep. The sound disappears when the voltage rises over 10,0V. Press any button to stop the sound.
- **Boost volt** Internal battery voltage. Normal *voltage is between 33-40V.*
- **Temperature** Temperature measured inside the machine in (C°).
- **Motor current** Motors current use measured in Amps.
- **Damp value upper sensor** Damp inside of the machine measured from the upper edge.
- **Damp value lower sensor** Damp inside of the machine measured from the lower edge.
- **Wheel speed.** Shows the speed of the Wheel in Rpm.
- **Motor speed** Shows the speed of the Motor in Rpm.
- **Serial number.** This screen shows information that shall be sent in any support case, for best service support. Serial number of both electronic cards KEX (Keyboard) and MEX (Mainboard) shows together with program firmware and cpu device used in the machine.

BEEP AT – Pressing button [E63] Decided if the sounder shall sound when pushing buttons.

Four settings are available.

- **"Local and extern"** Sounds both when pushing local buttons, and when beeing remote controlled.
- **"External only"** No sound for pressing local buttons, but it sounds when beeing remote controlled.
- **"Local only"** Sounds only when pressing local buttons. No sound when beeing remote controlled.
- **"Never"** No sound at all when buttons are pushed.

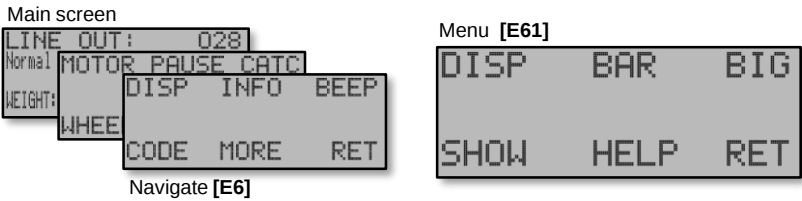
BEEP – Number at catch [E63 P] How many times the machine will beep when catch is registered. It can either be turned off by choosing "OFF", or can be set from 1 to 99 beeps.

BEEP – Pause at catch at Zeropoint [E63 PP] When the machine has hauled up the catch you get a longer beep and a longer pause, up to 60 seconds pause. You can turn this off by choosing "OFF".

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen.

Screens	Min	Max	Factory	Step	Unit	Navigation
MORE - INFO [E62]						
INFO – Voltage		35			Volt	[E62]
INFO – Boost volt		42			Volt	[E62P]
INFO – Temperature		120		0,1	Celsius	[E62PP]
INFO – Motor current					Ampere	[E62PPP]
INFO – Humidity lower sensor	0	100		1	%	[E62PPP P]
INFO – Humidity upper sensor	0	100		1	%	[E62PPP PP]
INFO – Wheel speed	0	999		1	Rpm	[E62PPP PPP]
INFO – Motor speed	0	999		1	Rpn	[E62PPP PPP P]
INFO – Serial numbers, Firmware version, Cpu						[E62]
MORE - PIP [E63]						
BEEP – Beep for pushbuttons	Out	IN	IN	-	-	[E63]
BEEP – Amount at catch	Out	99	30	1	St	[E63P]
BEEP – Pause at Zeropoint	Out	60,0	5,0	0,1	Second	[E63PP]

CODE [E64]



CODE [E64] The machine is equipped with electronic lock with any anti-theft code. If theft code is selected, the machine asks for it immediately upon startup. The code is optional 0-999999. Three attempts can be made before the machine locks. If this occurs, dealer must be contacted to obtain an unlock code. The number to the left of the code ending with an "h" and the serial number displayed at startup must be reported to retailer. Immediately turn off the machine while waiting for the new code. When the new code is entered, it deletes both the user's own theft code and theft code to be used. Reenter own code if desired.

To select a theft code, do the following.

Theft code at [E64] Select when the theft code is to be activated. The choice determines whether code should be used. Choose between...

- **"Battery unconnect"** This activates the theft code only when machine is disconnected from the power supply, which occurs if the machine is being stolen. Turning on and off the machine by the emergency stop switch will work without any code being asked.
- **"Always at start"** This will ask for a **Code** every time machine is powered on, even with the emergency stop switch.
- **"Never"** The **Theft code** is not used, unlocked.

Theft code [E64 P] Set the code by using the buttons [2] and [5] to move the cursor. Use the [3] and [6] buttons to change the number above the cursor . When you are satisfied with the **Theft code**, press [P]rog to activate the **Theft code protection** and then [E]enter for and return to **Main screen**.

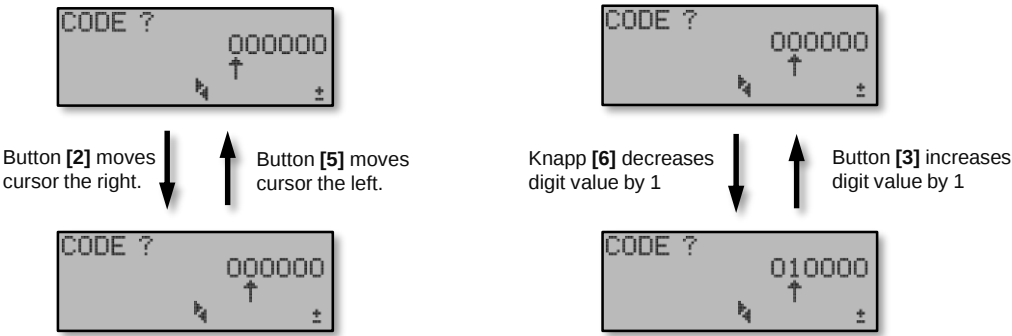
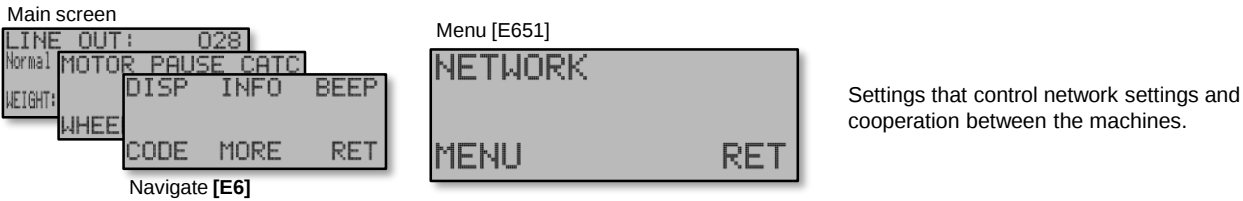


Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen.

Pictures	Min	Max	Factory	Steg	Unit	Navigation
MORE - CODE [E64]						
CODE – Theft code at	Never – Always at start – Battery unconnected.					[E64]
CODE – Theft code ?	000000	999999	-	1	-	[E64 P]



NETWORK [E651] menu includes all settings to connect the machine into a network with other Ex machines, for cooperation and remote control function.

When it comes to settings to connect to the network (which is the first to be set up), you should first consider which machines should merge together. The display and the 6 buttons below (buttons [1 – 6]) have a special role in remote control of the machines. This brings us to a natural group of machines with six machines in each group. In group screens, individual machines are easily selectable to which shall receive push button commands.

In total there are six groups, which totally gives up to 36 machines to be controlled and viewed in the network. When it comes to cooperating in **Auto mode**, for example join same fishing area when catch occurs, will only be done in the group. It allows for different groups of machines to work with different programs and fishing areas simultaneously.

Mode [E651] The first screen in network connection is the mode. The options are ...

- **“Out”** turns off the communication completely.
- **“Slave”** is the basic setting for all machines that shall communicate (Except one machine!).
- **“Master”** One machine must be set to “Master”. Exception might be if a PC is connected to the system and can work as “Master”. At present time there is no PC software ready. Machine set to master may show some additional screens in menu **Network [E651]** depending on **Menu detail level [E654]**.

Address [E651 P] Can be selected from 1 to 6. Within each group (A to F), only one machine may have this address, otherwise there will be a crash in the communication.

The address also corresponds to a fixed location on the group screen display, se figures below. For example, address 1 always has the upper left position. 2 in the upper middle, etc. In total, six machines per group is displayed.

Group [E651 PP]. In the same way as the address above, a group number is selected, A to F. Note that if **Group [E651 PP]** is set to higher value than **Number of groups [E651 PPP PP]** it is then outside of the communication range and therefore not possible to control, share or retrieve information with.

Figure 1. Group screen A

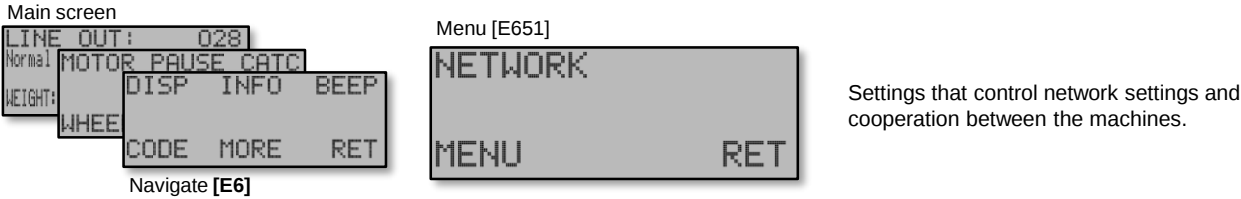
Gruppbild A		
Adress 1	Adress 2	Adress 3
Adress 4	Adress 5	Adress 6

Figure 2. Group screen B.

Gruppbild B		
Adress 1	Adress 2	Adress 3
Adress 4	Adress 5	Adress 6

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Pictures	Min	Max	Factory	Navigation
NETWORK [E651]				
NETWORK – Mode		Out / Slave / Master	Out	[E651]
NETWORK – Adress	1	6	1	[E651 P]
NETWORK – Grupp	A	F	A	[E651 PP]



Cooperation to catch [E651 PPP] This determines how machine will cooperate with other machines (other Ex) in **Catch mode**. Regardless of this setting, it still communicates and can be viewed and controlled. The following settings are available...

- “**Out**” The machine doesn’t cooperate with other machines in **Catch mode**. It works as stand alone.
- “**Ask for help**” At **Catch mode** this machine will send request to all machines in the **Group** to assist fishing in it’s **Catch area**. Any machines in the **Group** with this feature are set to "**Help other Ex**" or "**Both**" will connect to help. With this choice, this machine will not help other machines.
- “**Help other Ex**” This choice means that the machine will help other machines, but will not request assistance.
- “**Both**” Machine will both help other machines and requests assistance.

Wait for hooks [E651 PPP P]. To prevent loosing the shoal when the hook’s are pulled up, **Wait for hooks [E651 PPP P]** can be used to slow down the motor speed to **Minimum speed [E154]** when **Catch mode** begins.

This will give other machines better chance to arrive to the **Catch area** before the catching machine starts **Haul up mode [E11]**

The following pictures only apply if the machine's communication is set to Master.

No of groups [E651 PPP PP] Determines how many groups the Master shall try contact in the network. *Example:* If set to “2”, only machines in groups 1 and 2 will be called. However, machines can still be added to groups 3 to 6, but they will not be reached, and therefore invisible in the network.

Help time [E651 PPP PPP] This is the assist time machine will cooperate in **Catch mode** around the **Catch area**. Help time is sent to all machines in the network. Time starts to count down when first machine gets into **Catch mode**. When the timer runs out, all machines in the group return to their original **Depth** and **Jig length** settings. At any time, another **Catch detection** retriggers the timer, and also replaces the **Catch area**.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

Screen	Description / Step	Factory	Navigation
NETWORK [E651]			
Cooperation at catch	Out / Ask for help / Help other Ex / Both	Both	[E651 PPP]
Wait for hooks	In / Out	In	[E651 PPP P]
Below screens only shows in Master machine.			
No of groups	Decides how many groups that shall be used in the network.	1	[E651 PPP PP]
Help time	Assist time in Catch mode	120 sekunder	[E651 PPP PPP]

MENYER [E654]

Main screen

```
LINE OUT: 028
Normal: MOTOR PAUSE CATC
WEIGHT: DISP INFO BEEP
WHEEL CODE MORE RET
```

Navigate [E6]

Menu [E651]

```
NETWORK
MENU RET
```

MENU [E654] This determines the amount of screens shown in the menu [E]nter. The machine contains lots of parameters that most users never need to adjust. In order to avoid having to pass a lot of screens not used, it might be idea to choose a lower detailed level. Lowering the level hides both screens and entire advanced sub menus. Hidden screens are still used in the program as usual, just not visible for adjustment.

The following settings are available for **Level...**

“Normal” Historically, the level Ex has had all along. The only thing hidden in this level today is advanced screens for communication when problem occurs, for troubleshooting.

“Extended” Displays all screens in Ex.

“Simple” The level that will suite most of our users. Most of the fine tuning screens are hidden, but remember they are still active in the program! An example: **Soft start** and extra **DRAG** in various motor speed settings and **Speed brake** settings are not often used or changed by users, so they are hidden.

Tip!. Enter **“Normal”** level and to access screens hidden in **“Simple”** level, and adjust as desired. When satisfied, go back to **“Simple”** level, which now hides screens that does not need any further adjustments.

Some entire sub menus hidden in **“Simple”** level are...

MOTOR - MORE Advanced settings for the motor.

MAIN MENU - BRAKE Speed brake settings.

WHEEL - STOP.P Setting for wheel and when it's stop condition.

WHEEL - RP Settings for elimination of the electromagnetic clutch (**Reversed Polarity**).

PAUSE MODE Settings for motor when it's stopped.

Some screens also hidden in the **“Simple”** level are...

Soft start and **Extra DRAG** in all **Modes**

The wheel sensor signals.

Advanced settings for communication.

Note that sub menus in menu [E] not displayed are still reachable with the buttons. This is for easier support. Some screens though needs increased display level to show.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are chosen

Screens	Description / Step	Navigation
NETWORK [E654]		
NETWORK – Level	Simple / Normal / Extended	[E654]

Menu [E651]



Restore menu is reached by holding the [Z]ero button for two seconds.

The machine automatically saves all changed values to a memory that lasts for 100 years without any battery power. At startup, Ex loads all values from memory. If an invalid value is found factory default settings is loaded.

At any time if Ex does not work as intended, a **Reset** of all values can be made by press an hold the [Z]ero button for two seconds. Before program version 1.1538 **Reset** always restored back to factory default settings, but now a **Restore menu** appears instead.

This allows to restore Ex with own pre-saved values, that fits better.
The Restore menu shows...

- LOAD [Z1]** Loads all values from what the user previously has saved.
- SAVE [Z2]** Saves all values for later being able to be loaded (By **LOAD[Z1]**).
- FACTORY [Z4]** Load factory default settings.

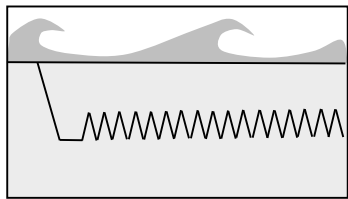
Restore affects all values except the theft code it self.

Table shows units and value limits. See [E654] for menu detail level setting. Some screens are not visible if simple view, or normal view are Chosen .

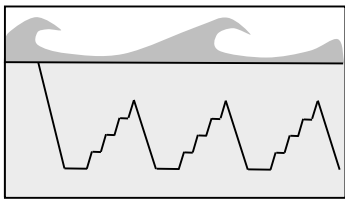
Pictures	Navigation
Navigate by press [Z]ero button.	
LOAD vaules	[Z1]
SAVE values.	[Z2]
Load FACTORY values.	[Z4]

Chapter [P] Fish programs

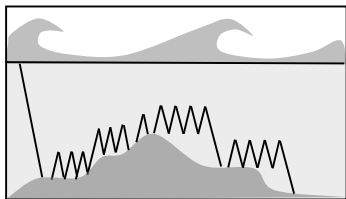
In Ex there are 8 different **Fishing programs**. All programs are programmable in smallest details and below is an overview. The following pages shows the programs in details.



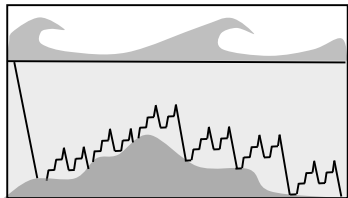
[P]1 Normal Fishing



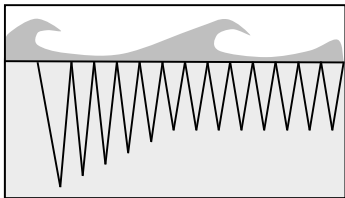
[P]2 Step Jig Fishing



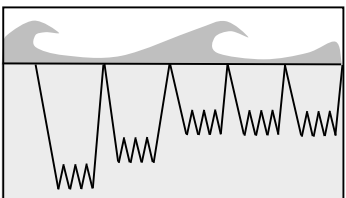
[P]3 Bottom Program



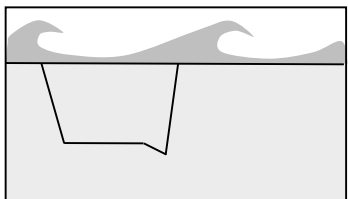
[P]4 Bottom Fishing Program
With Step Jig.



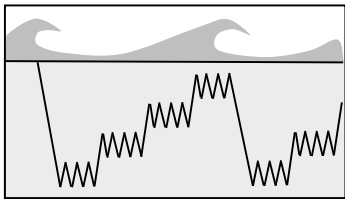
[P]5 Mackerel Program



[P]6 Mackerel Program
With Jig

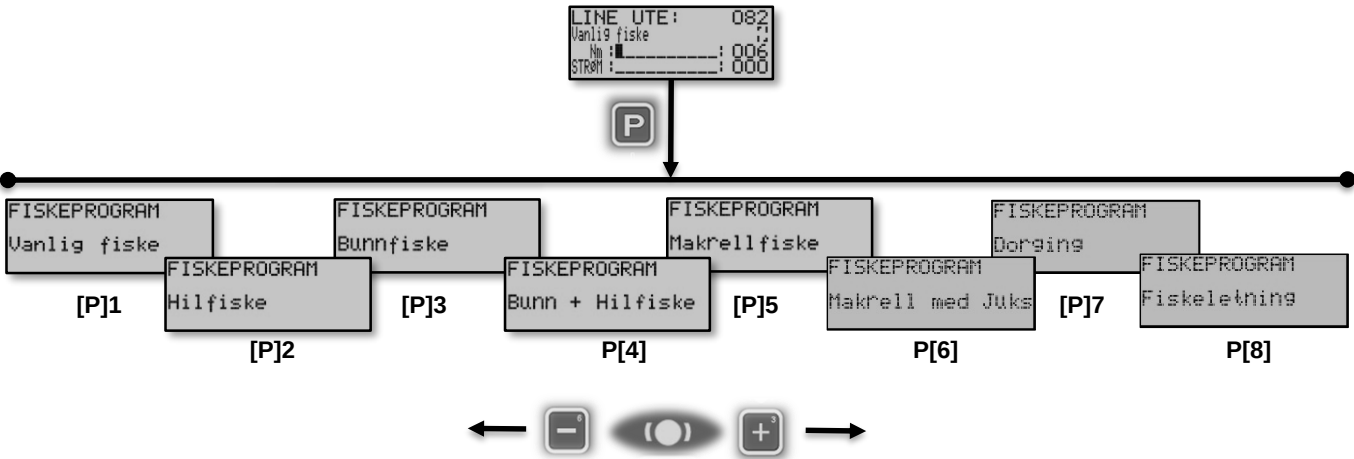


[P]7 Trolling



[P]8 Fish Finding
Program

To select **Fish program**, from **Main screen** press [P]rog. Use button [3] and [6] to select. Then continue with the [P]rog button to reach the most common screens for the selected program. Fire more details see Chapter [P]1 to [P]8 on following pages.

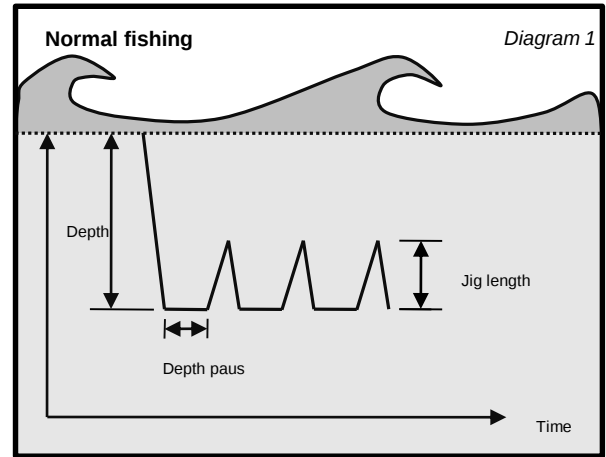


[P]1 Normal fishing

The basic program is made up of three main parts...

- **Fishing depth [P]1[P]** is the depth sinker tries to reach when **[A]**uto program begins.
- **Jig length [P]1[PP]** is the length pulled up from **Fishing depth**.
- **Depth pause [E2P]** is the time the machine is stationary at reached **Fishing depth** before it begins to pull up.

Note “**Depth pause [E2P]**” is available in all **Fishing programs** and not adjusted often, so it's located in menu **[E]**nter under **PAUSE [E2]**.



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

Programming of **Normal Fishing**...

- Press **[P]**rog and check that top row shows **Fish program**. Change with buttons **[3]** and **[6]** so that row 3 shows “**Normal fishing**”.
- Press **[P]**rog with **Fishing depth**.
- Use buttons **[1]** – **[4]** for change 100 at a time.
- Use buttons **[2]** – **[5]** for change 10 at a time.
- Use buttons **[3]** – **[6]** for change 1.
- Press **[P]**rog to **Jig length**.
- Use buttons **[1]** – **[4]** for change 100 at a time.
- Use buttons **[2]** – **[5]** for changing 10 at a time.
- Use buttons **[3]** – **[6]** for changing 1.
- When done, press **[P]**rog or **[E]**nter for **Main screen**

For available **Catch detection sensors** in this program, see Table 1 on page Machine - 4

Screens in **Normal Fishing** program

Pictures	Min	Max	Facto ry	Steg	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fishing program	Normal Fishing Program					[P]1
Depth	0	999	20	1	M/Fm/Ft	[P]1 P
Jig length	1	100	2	1	M/Fm/Ft	[P]1 PP]
Menu [E]						
Depth pause	0,5	25,0	0,5	0,1	Second	[E2P]

[P]2 Step Jig Fishing

Step jig fishing means incremental retrieval, Each **Jig length** will be divided into intervals, with interval pause between. Otherwise as “Normal fishing”

Two new features are added...

Step length [P]1[PPP] is the length of the interval drawing.

Step pause [P]1[PPP P] is the pause between two interval draws.

Example of wheel behavior with following settings.

Fishing depth [P]1[P] 50 meters,

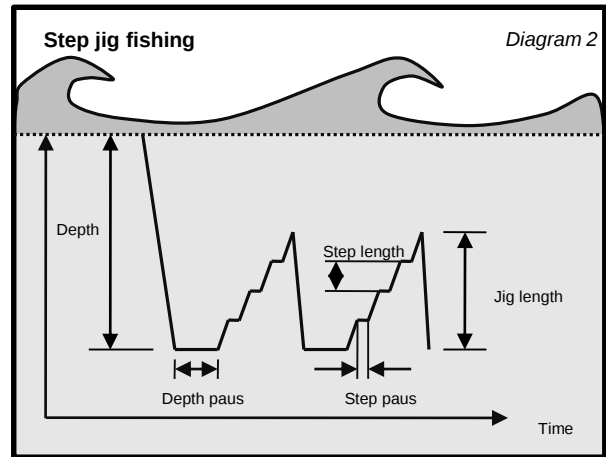
Jig length [P]1[PP] 7 meters

Step length [P]1[PPP] 2 meters

Step pause [P]1[PPP P] 3 seconds.

1. The machine releases down to 50 meters.
2. Stops and waits the time **Depth pause**.
3. Pulls the **Step length** 2 meters
4. Stops and wait **Step pause** 3 seconds.
5. From here step 3 and 4 are repeated until **Jig length** (7 meter) is pulled.
6. The machine restarts from step 1.

This procedure is repeated until **Catch mode** occurs or stopped.



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

Programming of Step Jig Fishing:

- Press [P]rog and check that top row shows **Fish program**. Change with [3] and [6] so row 3 shows **"Step jig fishing"**. Continue to adjust following screens to desired values as for the **Step jig program**.
- Press [P]rog and set **Fishing depth**.
- Press [P]rog and set **Jig Length**.
- Press [P]rog and set **Step length**.
- Press [P]rog and set **Step pause**
- When done, press [P]rog or [E]nter for **Main screen**

For available **Catch detection sensors** in this program, see Table 1 on page Machine - 4

Screens in **Step jig fishing** program

Screens	Min	Max	Factory	Step	Unit	Navigation
Line ute	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Step jig fishing					[P]2
Fishing depth	0	999	20	1	M/Fm/Ft	[P]2 P]
Jig length	1	100	2	1	M/Fm/Ft	[P]2 [PP]
Hil length	1	100	2	1	M/Fm/Ft	[P]2 [PPP]
Hil paus	0,5	10,0	2,0	0,1	Second	[P]2 [PPP P]
Från Menu [E]						
Depth paus		10	1	1	M/Fm/Ft	[E2 P]

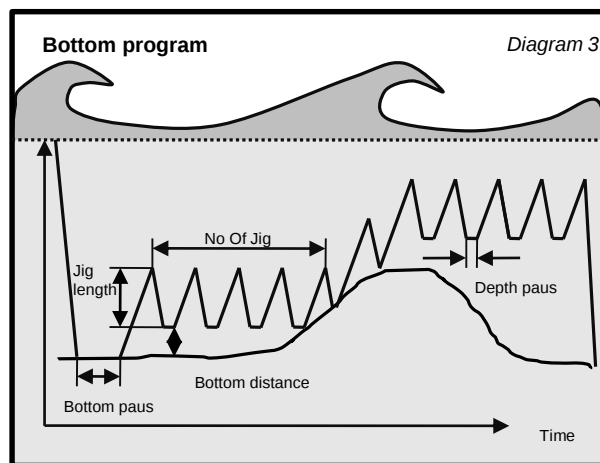
[P]3 Bottom fishing

Bottom fishing program makes the sinker automatically follow the bottom, even though the depth changes.

Fishing depth can still be used and acts as a **Maximum depth** of fishing.

The program uses five new features.

- **Detect time [P]2[PPP]**. Is the time the machine needs to register the bottom. Time is the time it takes for the wheel to rotate one lap. When a lap takes longer than the chosen time, the current depth is recorded as the bottom.
- **Bottom distance [P]2[PPP P]** is the distance the machine holds the sinker above the bottom after each jig.
- **No. jigs [P]2[PPP PP]** After the machine has repeated pulling the **Jig length** this amount of times after last **Bottom detection**, it restarts searching the bottom again.
- **Max depth [P]2[PPP PPP]** is a special feature that is only available in the **Bottom fishing program** to straighten up the line when used in water with strong current, or when boat drifts away from sinker location. When **Line out** reaches this depth, the machine will pause the **Bottom fishing program** and haul up to....
- **Hauling up [P]2[PPP PPP P]** is the amount of line hauled up when **Max depth** is reached. It's not described in meter, but in percent of **Max depth**. "100 %" will haul up all line to **Zeropoint**. When hauled up, the **Bottom fishing program** will restart.



Programming **Bottom fishing**...

- Press **[P]**rog and check that top row shows **Fish program**. Change **Fishing program** with button **[3]** and **[6]** until row 3 shows "**Bottom fishing**".
- Press **[P]**rog. Set **Fishing depth** to limit the fishing depth if desired.
- Press **[P]**rog, set **Jig length**.
- Press **[P]**rog, set **Bottom pause**
- Press **[P]**rog, set **Bottom distance**.
- Press **[P]**rog, set **No. Jigs**.
- Press **[P]**rog, set **Max depth** for the feature to straighten up the line, if desired.
- Press **[P]**rog, set **Haul up** percent for the **Max depth** feature, if used.
- When done, press **[P]**rog or **[E]**nter for **Main screen**

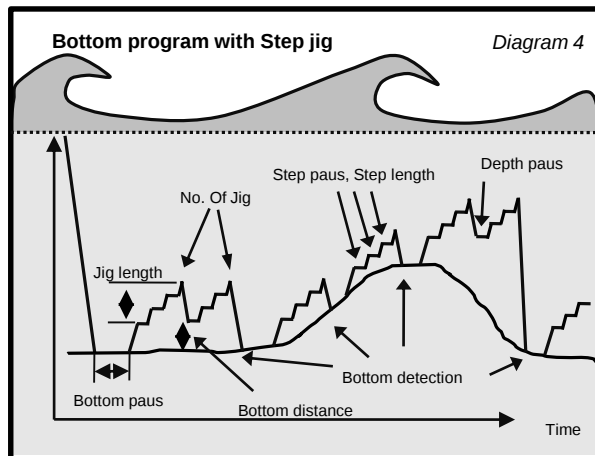
For available Catch Detection Sensors in this program, see Table 1 on page Machine - 4

Screens in **Bottom fishing** program.

Pictures	Min	Max	Factory	Step	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Bottom fishing					[P]3
Depth	0	999	20	1	M/Fm/Ft	[P]3 [P]
Jig length	1	100	2	1	M/Fm/Ft	[P]3 [PP]
Bottom pause	0,5	999,9	2,0	0,1	Second	[P]3 [PPP]
Bottom distance	0	20	2	1	M/Fm/Ft	[P]3 [PPP P]
No of jig	1	25	10	1	St	[P]3 [PPP PP]
Maxium depth	1	999	999	1	M/Fm/Ft	[P]3 [PPP PPP]
Haul up	1	100	50	1	M/Fm/Ft	[P]3 [PPP PPP P]
Menu [E]						
Depth pause		10	1	1	M/Fm/Ft	[E2 P]

[P]4 Bottom program With Step Jig

Bottom program with Step jig, is a combination between regular **Bottom program [P]2**, and **Step jig program[P]3**. So details about the screens used here refers to those programs.



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

Programming **Bottom fishing with Step Jig fishing...**

- Press **[P]**rog and check that top row says "**Fish program**". Change with buttons **[3]** and **[6]** so that the row 3 shows "**Bottom and Step**".
- Press **[P]**rog, set **Fishing depth**.
- Press **[P]**rog, set **Jig Length**.
- Press **[P]**rog, set **Bottom Pause** (See **Bottom fishing [P]3** for details).
- Press **[P]**rog, set **Bottom distance** (See **Bottom fishing [P]3** for details).
- Press **[P]**rog, set **No Of Jig** (See **Bottom fishing [P]3** for details).
- Press **[P]**rog, set **Step length** (See **Step Jig Fishing [P]3** for details).
- Press **[P]**rog, set **Step pause** (See **Step Jig Fishing [P]3** for details).
- Press **[P]**rog, set **Max depth** for the feature to straighten up the line, if desired. (See **Bottom fishing [P]3** for details).
- Press **[P]**rog, set **Haul up** percent for the **Max depth** feature, if used. (See **Bottom fishing [P]3** for details).
- When done, press **[P]**rog or **[E]**nter for **Main screen**

For available **Catch detection sensors** in this program, see Table 1 on page Machine - 4

Screens in **Bottom fishing program with Jig**

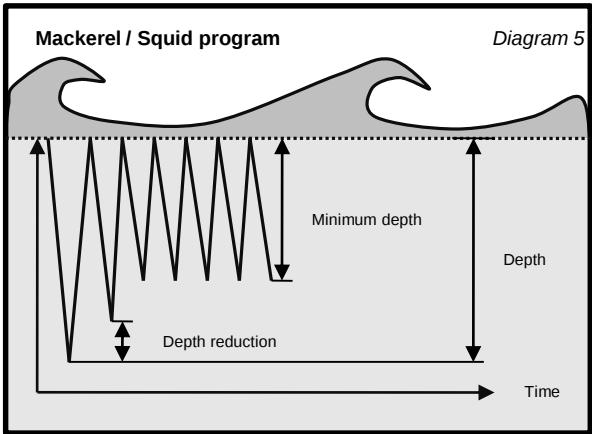
Pictures	Min	Max	Factory	Step	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Bottom program With Step Jig					[P]4
Fishing depth	0	999	20	1	M/Fm/Ft	[P]4 [P]
Jig length	1	100	2	1	M/Fm/Ft	[P]4 [PP]
Step length	1	100	2	1	M/Fm/Ft	[P]4 [PPP]
Step pause	0,5	10,0	2,0	0,1	Second	[P]4 [PPP P]
Bottom pause	0,5	999,9	2,0	0,1	Second	[P]4 [PPP PP]
Bottom distance	0	20	2	1	M/Fm/Ft	[P]4 [PPP PPP]
No of jig	1	25	10	1	St	[P]4 [PPP PPP P]
Maximum depth	1	999	999	1	M/Fm/Ft	[P]4 [PPP PPP PP]
Huling up	1	100	50	1	M/Fm/Ft	[P]4 [PPP PPP PPP]
Menu [E]						
Depth pause	1	10	1	1	M/Fm/Ft	[E2 P]

[P]5 MACKEREL AND SQUID FISHING PROGRAM

This program is used for trolling mackerel and is also used for squid fishing. **Jig length** is not used in this program because line is hauled up to **Zeropoint** each time motor starts. Every time lines heads down the **Fishing depth** is reduced, if desired, to a minimum Fishing depth.

Two new features are used...

- **Deep reduction[P]5[PP]** is the reduction of the **Fishing depth** for each time the line has been hauled up to **Zeropoint**. This attract the fish against shallower water, which allows for faster catch retrieval.
- **Minimum depth**. Reducing the **Fishing depth** to the **Zeropoint** would not work well. **Minimum depth** is the shallowest **Fishing depth** that will be used.



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

Example of wheel behavior with following settings...

- **Fishing depth** is 50 meters.
- **Depth reduction** is 5 meters.
- **Minimum depth** is 30 meters

When [A]uto is pressed.

- The machine releases to 50 meters. Brakes up and then pulls up the entire line to Zeropoint.
- Next release will be to 50-5 = 45 meter. Brakes up and then retracts the entire line again.
- Ex will continue reduce the **Fishing depth** until...
- Reduction of **Fishing depth** gets above 30 meter. Reduction is stopped and 30 meter will be set as **Fishing depth** for all further fishing, until next press on [A]uto button.

Programming of Mackerel fishing...

- Press [P]rog and make sure top row shows "**Fish program**". Change with button [3] and [6] until row 3 shows "**Mackerel fishing**".
- Press [P]rog, set **Fishing depth**.
- Press [P]rog, set **Depth reduction**.
- Press [P]rog, set **Minimum depth**.
- When done, press [P]rog or [E]nter for **Main screen**

In **Mackerel fishing**, the **Catch depth** is not shown, but **Catch registration** on **High load**, and **Low load** is still active in order to enter **Catch mode** which gives more options to variate motor power and speed.

For available **Catch Detection Sensors** in this program, see Table 1 on page Machine - 4

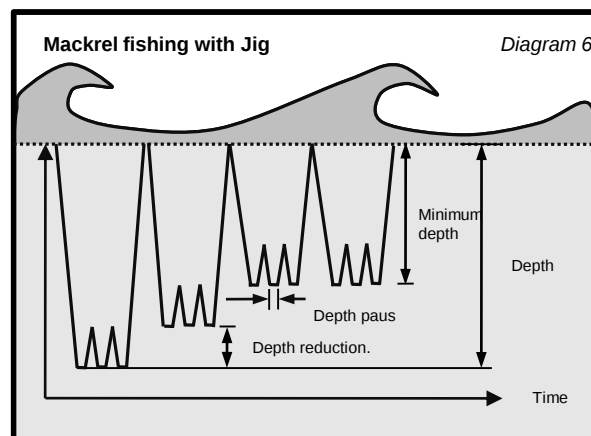
Screens in Mackrel / Squid program

Pictures	Min	Max	Factory	Step	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Makrillfiskeprogram					[P]5
Depth reduction	1	10	2	1	M/Fm/Ft	[P]5 [P]
Minimum depth	0	999	5	1	M/Fm/Ft	[P]5 [PP]
Från Menu [E]						
Depth pause	1	10	1	1	M/Fm/Ft	[E2 P]

[P]6 MACKEREL FISHING WITH JIG

This program combines the program **Normal fishing [P]1** with **Mackerel [P]5**. So details about the screens used here refers to those programs. The combination gives a new behaviour that can be from two ways.

1. Either it can be seen as the **Normal fishing [P]1** program, that has a limit in number of jigs that ends with pulling up to **Zeropoint**, before it returns to **Fishing depth**, but now with possibility to reduce the **Fishing depth**, just as in **Mackerel program [P5]** with **Minimum depth**.
2. Or, a Mackerel program, with the possible to perform a repeated **No of Jig [P]6[PPP]** before hauling up to **Zeropoint**.



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

Programming **Mackerel fishing with Jig**.

1. Press **[P]rog** and check that top tow shows "**Fish program**". Change with buttons **[3]** and **[6]** until row 3 shows "**Mackerel fishing with Jig**".
2. Press **[P]rog**, set **Fishing depth**.
3. Press **[P]rog**, set **Jig length**.
4. Press **[P]rog**, set **No Of Jig**.
5. Press **[P]rog**, set **Depth reduction**.
6. Press **[P]rog**, set **Minimum depth**.
7. When done, press **[P]rog** or **[E]nter** for **Main screen**

In **Mackerel fishing with Jig**, the **Catch depth** is not shown, but **Catch registration on High load**, and **Low load** is still active in order to enter **Catch mode** which gives more options to variate motor power and speed. After hauling up to **Zeropoint** when in **Catch mode**, the machine continue at last **Fishing depth** and continue the **Number of Jig** from last number.

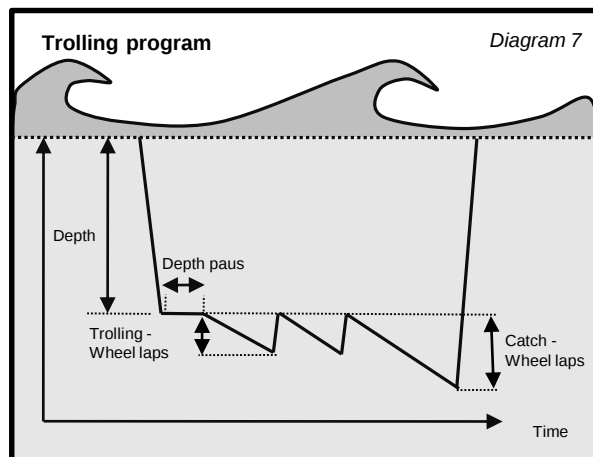
For available **Catch detection sensors** in this program, see Table 1 on page Machine - 4

Screens in **Mackerel fishing with Jig**

Screens	Min	Max	Factory	Step	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Mackerel fishing with Jig					[P]6
Fishing depth	0	999	20	1	M/Fm/Ft	[P]6 [P]
No Of Jig	1	99	10	1	Antall	[P]6 [PP]
Depth redution.	1	10	2	1	M/Fm/Ft	[P]6 [PPP]
Minimum depth	0	999	5	1	M/Fm/Ft	[P]6 [PPP P]
Menu [E]						
Depth pause	1	10	1	1	M/Fm/Ft	[E2 P]

Trolling program is made up of three main parts...

- **Fishing depth**[P]7[P]. The depth for fishing.
- **Depth pause** [E2P] is made after Fishing depth is reached.
- **Wheel laps**[P]7[PP] In **Trolling program** motor does not start only because **Depth pause** has ended. Motor starts when line is pulled outside **Fishing depth** with more laps set by **Wheel laps** [P]7[PP]. When Fishing depth is reached the motor stops again.
- wheel is pulled longer than the set number of revolutions for **Catch - Wheel laps** [E3 PPP] located in Menu CATCH [E3].



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

Programming **Trolling program**.

- Press [P]rog and check that top row shows "**Fish Program**". Change using button [3] and [6] until row 3 shows "**Trolling**".
- Press [P]rog, set **Fishing depth**.
- Press [P]rog, set **Wheel laps**.
- When done, press [P]rog or [E]nter for **Main screen**

The **Trolling program** began with **Catch registration** only by **Wheel laps**. This means that the motor does not have to run. **Catch registration** is made when wheel is pulled backwards a set distance. However today all sensors are available in **Trolling program** as well as **Catch registration** by **Wheel laps** is available in all other **Fishing programs**. Besides best **Catch registration** might be a combination of the sensors.

For available **Catch detection sensors** in this program, see Table 1 on page Machine - 4

Screens in Trolling program.

Pictures	Min	Max	Factory	Step	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Normal Fishing Program					[P]7
Depth	0	999	20	1	M/Fm/Ft	[P]7 [P]
Wheel laps	0,1	33	0,1	0,3	Wheel lap	[P]7 [PP]
Menu [E]						
Depth pause	0,5	25,0	0,5	0,1	Second	[E2 P]
Catch – Wheel laps	0,5	33	0,5	0,3	Wheel laps	[E3 PPP]

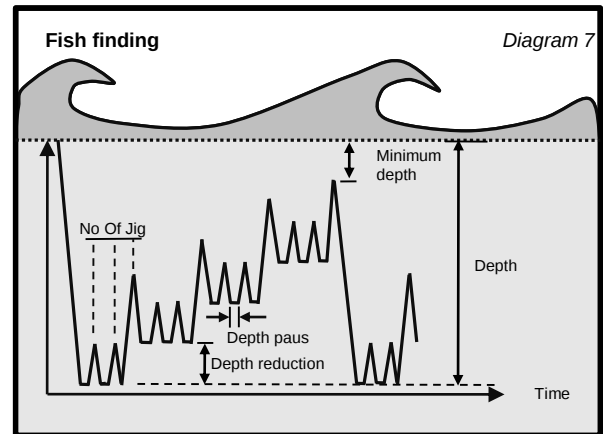
[P]8 FISH FINDING PROGRAM

The **Fish finding** program is the program to use when searching for fish. It resembles **Mackerel fishing with Jig** but with two differences.

- At **Fishing depth**, **Jig length** is pulled and returns to **Fishing depth** and repeats **No. of Jigs**. Exactly as in **Mackerel with Jig** program. When **No. of Jigs** ends in the **Mackerel program** the line is hauled up to the **Zeropoint**, but this program hauls up the **Depth reduction** instead. Now **No of Jigs** restarts. Reduction of **Fishing depth** is then repeated until **Minimum depth** is reached.
- When **Minimum depth** is reached, the program restarts from the original **Fishing depth**, same as pressing
- **[P]rog** button.

Programming **Fish finding** program...

- Press **[P]rog** and check that top row shows **Fish program**. Change with button **[3]** and **[6]** to until row 3 shows **Fish finding**.
- Press **[P]rog**, set **Fishing depth**.
- Press **[P]rog**, set **Jig length**.
- Press **[P]rog**, set **No Of Jig**.
- Press **[P]rog**, set **Depth reduction**.
- Press **[P]rog**, set **Minimum depth**.
- When done, press **[P]rog** or **[E]nter** for **Main screen**



The diagram shows theoretically how the sinker is drawing on an echo sounder image, with the depth of the vertical axis and the time on the horizontal.

For available Catch Detection Sensors in this program, see Table 1 on page Machine - 4

Screens in **Fish Finding** Program

Screens	Min	Max	Factory	Step	Unit	Navigation
Line out	0	999	-	1	M/Fm/Ft	Main screen
Fish program	Makrillfiskeprogram					[P]8
Fishing depth	0	999	20	1	M/Fm/Ft	[P]8 [P]
Jig length	1	999	10	1	M/Fm/Ft	[P]8 [PP]
No Of Jig	1	99	10	1	number	[P]8 [PPP]
Depth reduction	1	10	2	1	M/Fm/Ft	[P]8 [PPP P]
Minimum depth	0	999	5	1	M/Fm/Ft	[P]8 [PPP PP]
Fra Menu [E]						
Depth pause	1	10	1	1	M/Fm/Ft	[E 2P]

TROUBLESHOOTING

1. Press the EMERGENCY STOP switch to turn off the machine.
2. Does machine turn off ? Dark display light etc. If not, look at **Emergency stop switch** below.
3. The wheel should rotate completely freely and easily. If not look at **Wheel stuck** below .
4. Release EMERGENCY STOP switch. Turns the machine on, jump to 5. If not read **Emergency stop switch**
5. Does the Display show strange characters, if not the Keyboard (KEX card) must be replaced.
6. If motor starts when machine is powered on, the problem is Mainboard (MEX card).
7. If all buttons works jump to 8, if not the keyboard (KEX card) must be replaced.
8. Press and hold **[Z]ero** button until "**Restore menu**" appears in the display. Choose **Factory**.
9. Reduce **DRAG** to zero. Does wheel rotate easily ? If not see **Wheel stuck** below.
10. Briefly press **[U]p**, motor shall start. Does it start correctly jump to **11**. If not, does the motor operate in **Auto mode**? If yes, the **[U]p** button is broken, change Keyboard (KEX card). If not, the failure seems to be Mainboard (MEX card), or motor failure. Check that the motor cables are not damaged or unplugged. If the display shows the WEIGHT with 1-3 bars jump to **9**. If it shows high values, zero or unstable values, the error may be due to any electronic cards. Change one at a time.
11. **Line out** should count negatively (-001, -002, etc.) while wheel is rotating. If **no** The failure might be on any cards, or something may happen with the magnets on the wheel. See Chapter **Sensors [E43 PP]**. If a new wheel has been fitted or the wheel has been removed, it may be wrong?
12. Press **[S]op** button. Attach the line to the Ex frame and start the engine. Increase **DRAG** slowly. Does motor current and wheel power increase? If it is completely powerless, se **Clutch** below.
13. Does Sounder work when the buttons are pressed? If not the fault is on the keyboard (KEX card). On the other hand, if it sounds weak, it may be because the bracket for amplifying the sound on the keypad is missing.
14. Jump to the **Catch LED** menu, see Chapter Brightness [E3 PPP P]. Increase to 100%. If they do not work the Keyboard (KEX card) must be replaced.

Emergency stop switch: The emergency stop switch has a brace that need to be adjusted, else the two problem may occur. If it's correct, and power supply voltage is correct to machine, the problem might be any of the electronic boards.

- Machine can't be turned on. It's totally powerless with dark display and Catch LED lights.
- Machine can't be turned off.

Wheel stuck: When Ex is powered off the wheel should be loose. If not may depend on...

- Mechanical: If wheel/clutch has been removed some washer might have been lost. Make sure the washers both inside and outside of clutch rotor are mounted. Otherwise the rotor might have mechanical contact to the clutch rotor, or the membrane plate got to tight space so it cant release the wheel.
- Magnetic: The clutch may be permanently magnetized, dirty, rusted or corroded. Read about RP Chapter [E45] to remove **Permanent Magnitization**.

Clutch: If wheel has no power when motor is running with **DRAG** set to 20% or more, the problem should either be that Membrane plate is missing, or that Motor axle wedge is missing.

FAULT INDICATION

BATTERY LOW!

The battery voltage inside machine is too low. The alarm limit is below 10 volt. Note that if the machine is plugged into a 24 volt system, 10 volts are very low. But Ex does is not sensitive to 12/24 system. It works down to 10 volt wither way.

If **BATTERY LOW** indication appears in display, check cables, connectors, and boat battery. There is also possibly that the machine measures the voltage wrong.

LOADING FACTORY DEFAULT SETTING

If settings gets invalid of some reason, the display shows **LOADING FACTORY DEFAULT VALUES**. If user settings is required, Hold **[Z]ero** button 2 second and shoose **LOAD**.

WARRENTY

Guarantee of this machine is 2 (TWO) years from invoice date

If a problem occurs within this period, the machine will be repaired without cost.

The guarantee covers parts and labour from either the factor or one of the dealers. The guarantee is only valid for construction, production or material faults.

The guarantee does not cover damage by rough usage or not using the machine as intended.

The guarantee does not cover loss of equipment or catch

The machine must be sent in paid freight to the dealer or factory, the machine will also be returned from the dealer or factory in paid freight. The customer must pay the freight/postage costs to the dealer or factory

The manufacturer or dealer can not be held responsible for damage, loss or costs associated with the use of this product.

GUARANTEE

If a problem should occur then contact the dealer that you purchased from, it is them that have the responsibility for the guarantee work at first.

Service or repair must only be carried out by authorised dealers or the manufacturer. Within the guarantee time ,the dealer must repair the machine without cost to the customer. If the machine has to be sent to the dealer, the customer must cover these costs.

If the machine has to be exchanged (guarantee) , the guarantee is only valid from the original invoice date!

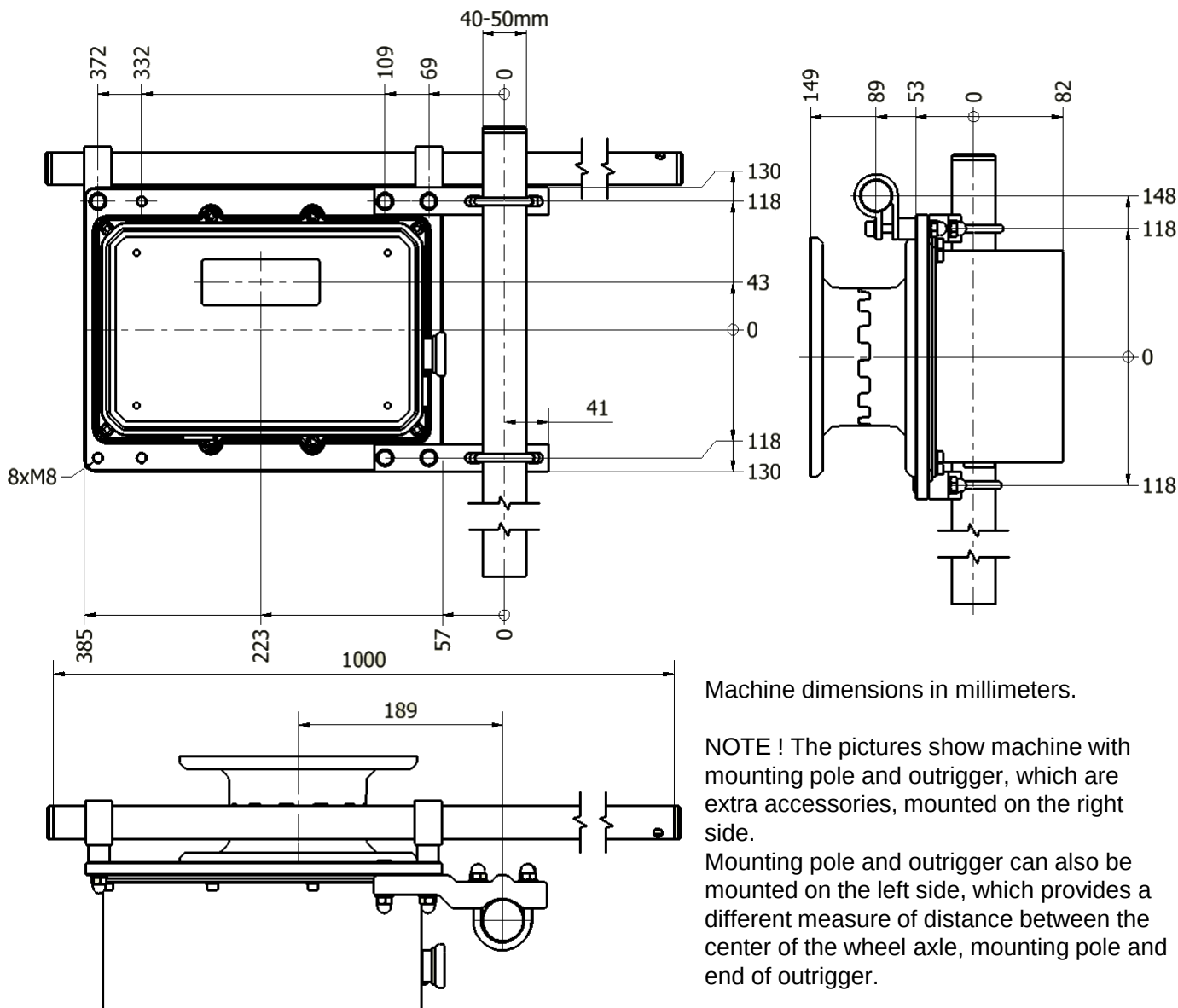
The program and fishing programs are Belitronics property. All programs are used "AS IS"

The programs and accompanied documents are copyrighted and protected by law.

Belitronic Sweden AB appreciate our customers experiences with regards to usage and operating this machine and would like nothing better than to receive feedback, positive or negative. We also like to receive photos of boats with these machines mounted, catch and crew.

Thank you for purchasing a BJ5000Ex and happy fishing!

TECHNICAL DATA



Machine dimensions in millimeters.

NOTE ! The pictures show machine with mounting pole and outrigger, which are extra accessories, mounted on the right side.

Mounting pole and outrigger can also be mounted on the left side, which provides a different measure of distance between the center of the wheel axle, mounting pole and end of outrigger.

Machine weight:	15,3 Kg
Current consumption at 12Volt:	20 Ampere max
Current consumption at 24Volt:	10 Ampere max
Average current consumption in Auto mode:	3 Ampere.
Power supply voltage:	12-30 Volt DC
Cable dimensions:	7 Meter 4x2,5mm ² (Extra long is available)
Line capacity:	~500 Meter 1,4mm Nylon line
Max Fishing depth:	999 Meter, Fathoms, Feet
Motor speed:	1-180 rpm
Maximum pulling force in line:	30Kg
Tolerance in line length measurement:	0,2 Meter
Guarantee:	2 Years
Front panel:	12 illuminated push buttons. 4 LED Catch indicators Graphic illuminated LCD 192x64 pixels. Acoustic signal at catch & pushing buttons.

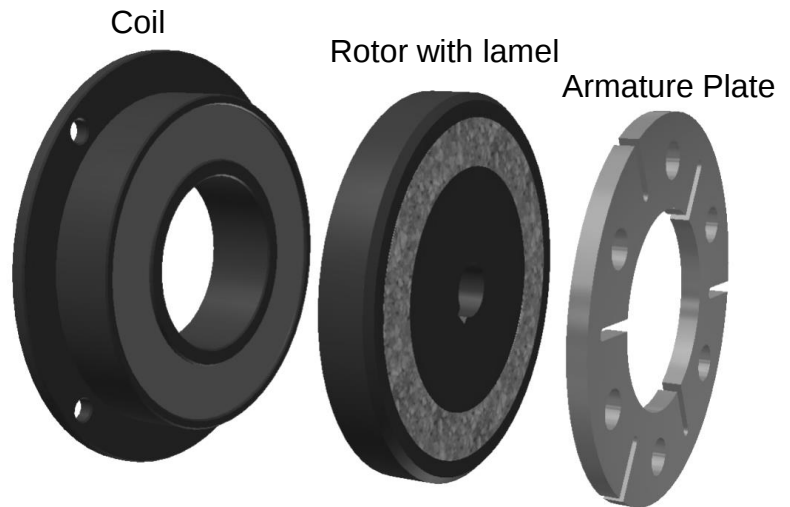
MAINTENANCE

Clutch

The clutch should be cleaned at regular intervals, at least once per year. If the line does not run off when [A]uto is pressed, then you should check the clutch. It could be dirt and grime that are affecting the clutch. The same thing can happen when the machine has not been used over a longer period of time. To clean the clutch do the following. Remove the centre screw that holds the wheel in place. Carefully remove the wheel. The armature plate is loose, so avoid losing this, especially if you are doing this on board the boat. Pull the rotor from the axle, this can sit very good, but often is quite easy to remove. Clean all of the parts with degreasing chemicals such as alcohol, technical spirit, acetone ect. Rub the armature plate and the rotor carefully with emery paper.

Check once per year to see if damp has entered the machine. Loosen the 8 screws and remove the front case.

Look for condensation and possible corrosion on the display/main board. If you see signs of condensation, then let the machine dry out. A new silicone seal is recommended after opening especially if there were signs of condensation. Use some Teflon or similar on the screws as stainless steel and aluminium do not mix very well



ACCESSORIES



ALFABETISK REGISTER A-Me

Above depth **[E443 P]** (Stop at pulley)
Above depth **[E53 P]** (Air brake)
Activates **[E445]** (Pause mode)
Adress **[E651 P]** (Address in Network)
Air brake **[E53]** (Speed brake above depth)
Assist time (network) **[E651 PPP PPP P]**
Automode **[E445]** (Machine mode se Machine 1,2)
Autoreset **[E443PPP]** (Stop at Pulley)
Autopause **[E2]** (Pause before releasing line)
Autosymbol **[E445]** (Display symbol)
[A]uto (se pages Machine 1, 2, 3)

BAR [E612] (Submenu for display)
BIG [E613] (Submenu for display)
Bottom fishing **[P]3** and **[P]4** (Fish program)
Boostvolt **[E62 P]** (Internal battery voltage)
BEEP [E63] (Menu for sounder)
Brake (Symbol)...ses pages Machine 1, 2.
Brake + (Button **[3]**) see pages Machine 1, 2
Brake - (Button **[6]**) see pages Machine 1, 2
BRAKE [E5] (Menu for **Speed brake**)
Bottom fishing (Fishing program **[P]3**, **[P]4**)
Buttons (see Machine – 1, 2, 3)
Brightness **[E3PPP P]** (Catch LED)
Brightness **[E611]** (Display)

Catch depth memory (Page Machine - 5)
Catch registration (Page Machine – 4)
CATCH [E3] (Menu)
Catch (Symbol) (See page Machine – 2)
Catch + (Button **[2]**) (see page Machine – 1, 2, 3)
Cacth – (Button **[5]**) (see page Machine – 1, 2, 3)
Catch - Speed brake **[E3 PP]** (Catch registration)
Catch - Wheel laps **[E3 PPP]** (Catch registration)
Catch depth (se Machine - 5)
Catch speed **[E12 P]**
Catch depth memory (see Machine - 5)
Clutch minimum torque **[E152]** (Clutch)
CODE [E64] (Menu for **Theft code**)
Code **[E64P]** (Setting theft code)
Code at **[E64]** (Theft code activation)
Contrast **[E611 PP]** (Display)
Cooperation at catch **[E651 PPP]** (Network)
COUNTER [E43] (Menu)

Direction **[E43P]** (Counter)
Datasheet (see page Information 3)
Detect time **[P]3[PP]** and **[P]4[PP]**
Depth **[P]1** to **[P]8** (Fishing depth)
Depth brake **[E52]** (Soft brakt to Fishing depth)
Depth pause **[E2P]** (Paus at depth)
Depth reduction **[P]5[PP]**, **[P]6[PPP]**, **P[8]PPP P]**
(in Fishing programs)
DIM [E41] (Menu wheel counter precission)
DISP [E61] (Menu for display)
DISP [E611] (Submenu for display)
Display (see page Machine – 1, 3)
Distance **[E151PPP]** (Line mess)

Direction (Riktning) **[E43P]** (Counter)
Drag + Extra drag (in Catch mode **[E2 PP]**)
Drag + Extra drag (in Haul up mode **[E3 PP]**)
DRAG+ (Button **[1]**) (Page Machine - 3)
DRAG– (Button **[4]**) (Page Machine - 3)
Drag (symbol see machine – 1, 2)

Extra force **[E2 PP]** (Catch mode)
Extra force **[E3 PP]** (Hauling up)
Errors **[E651 PPP PP]** (communication)
Factory reset (chapter **[Z]ero**)
Fishing depth **[P]1** to **[P]8**.
Fish finding program **[P]8** (Fish program)
Front panel (see page Machine 1)
Force **[E51]** (Speed brake)
Force **[E52]** (Depth brake)

Group/s (group in network) **[E651 PP]**

Hauling up **[E13]** (Motor mode)
Hauling up speed **[E13 P]**
HELP [E615] (Help texts)
Help Time **[E615]** (Delay for help texts)
Main screen (se page Machine 1)

INFO[E62] (Menu for varieuse information)
Installation (se pages Installation 1 and 2)
Install fishing line (see page Installation – 2)

JIG [E11] (Menu for motor in **Fishing mode**)
Jig length **[P1]**
Jig speed **[E11P]**

Lower Bar **[E612]** (Display)
LINE [E42] (Menu for Counter setting)
Line diameter **[E42]** (Counter setting)
L.MESS [E151] (Menu for Anti tangle)
Line diameter **[E42]** (Counter)
Line out
Light time **[E611 P]** (Display)
LOAD [Z1] (menu Restore, Chapter **[Z]ero**)
Language **[E611 PPP]** (Display)

Machine mode (see Machine 1, 2)
Mackerel **[P]4** (Fish program)
Mackerel with Jig **[P]6** (Fish program)
Magnets **[E43PPP]** (Counter setting)
Master (mode i network) **[E651]**
Master time (network) **[E651 PPP PPP PPP]**
Measurment (Physic dimension, see page Information – 1)
Menu level **[E654]** (Details in menues)
Menu system **[E]** (Button **[E]**)
Menu system **[P]** (Button **[P]**)
Menu overview...See page Contents.
Menu flowchart... See inside last page.

ALFABETISK REGISTER Mo-Z

MORE (Links in several menues to sub menues)	Status field (See Machine 1)
Minimum speed [E154]	Step jig, Step jig fishing [P]1, P[3] (Fish programs)
Minimum depth [P]5 [PPP], [P]6 [PPP P], [P]8 [PP]	Stop at zero [E441] (Counter setting)
Minimum motor torque [E152 P] (Motor setting)	STOP [E153] (Menu Motor stop)
Moisture sensor [E62 PPP P] (Lower)	Stop At Sea [E442]
Moisture sensor [E62 PPP PP] (Upper)	Stop At Pulley [E443]
Mode [E651] (Network setting)	STOP.P [E44] (Menu)
MOTOR [E1] (Menu)	[S]TOPP (Button) (Page Machine – 2)
Motor speed [E62 PPP PPP P] (Info motor speed)	Symbols (Page Machine – 1)
Motor current [E62 PPP] (Info motor current)	
	Temperature [E62 PP] (Internal in machine)
NETWORK [E651] (Menu)	Theft code [E64]
No of groups (see Groups)	Time [E151 PP] (Line mess/Line tangle)
No of pulses [E45PP] (RP)	Time [E45] (RP)
Number at catch [E63P] (Sounder at catch)	Time [E442] (Stop in Sea)
	Time [E51 P] (Speed brake)
Outer diameter [E42 P] (Counter setting)	Time [E52 P] (Depth brake)
	Time Up [E3] (Catch registration)
PAUSE [E3] (Menu for pauses)	Time Down [E3 P] (Catch registration)
PAUSE [E445] (Menu for Pause mode)	Time before show [E613 P] (Display big font)
Pause at catch och null [E63 PP] (Summer)	TORQ [E152] (Menu Motor torque)
PULLEY [E443] (Menu for Stop at Pulley)	Trolling [P]7 (Fish program)
Power up (Page Installation – 2)	
Pushing buttons [E63] (Sounder)	Unit [E43] (Counter setting)
Pulse legth [E45 PPP] (RP)	[U]p (Button see Page Machine – 2)
Pulse pause [E45 PPP P] (RP)	Upper Bar [E612 P] (Display)
Restart [E443PP] (Stop at Pulley)	Value for Linemess [E151 P]
Restart [E3PPP PP] (Restart attfter catch)	Voltage [E62] (Info)
RP [E45] (Menu for demagnitization)	
Reset.....se Chapter [Z]	Wait for hokks [E651 PPP P] (Netwoork)
	WHEEL [E4] (Menu)
SAVE [Z2] (Chapter [Z] , Choise in Restore menu)	Wheel speed [E62PPP PPP]
SEA [E442] (Menu)	Wheel laps [E45 P] (RP)
Serial number [E62PPP PPP PP]	Wheel laps [E445 P] (Paus mode)
Showtime [E614] (Drag, Catch och Brake)	Wheel width [E41] (Counter)
Show Wheel status [E615 P] (Display)	Wheel sensor [E43PP] (Test screen for Counter)
Show Catch depth [E3PPP PPP] (Catchregistration)	
Slave (address in network) [E651]	ZERO [E441] (Menu Zeropoint)
SOFTS. [E444] (Menu Soft stop)	[Z]ero (Button see Page Machine – 2)
Soft start [E11] (Fishing mode)	
Soft start [E13] (Hauling up mode)	
Soft start [E14] (Manual mode)	
Soft stop [E153] (When motor stops)	
Soft stop to 0 – Automatic [E444]	
Soft stop to 0 – Manual mode [E444 P]	
Speed [E51 PP] (Speed brake)	
Speed [E52 PP] (Depth brake)	
Speed [E53] (Air brake)	
Speed [E11 P] (Fishing mode)	
Speed [E12 P] (Catch mode)	
Speed [E13 P] (Haul up mode)	
Speed [E14 P] (Manual mode)	
Speed [E151] (Line mess mode)	
Speed brake (Speed brake) [E51]	
Speed [E154] (At Zeropoint)	
Starting up (se page Installation 2)	

Warning!

When the machine is turned on, it may be set to PAUSE MODE, which means that the engine will start and pull in the line if it is pulled out!

Read more about Pause Mode (Mode) in the Chapter [E445]

Before starting up and using EX, the entire manual including PAUSE MODE must be read and understood by the user.

GDPR (General Data Protection Regulation)

Belitronic's data policy

In order to send products and provide the best support, Belitronic Sweden AB (Swedish company corporate ID 556200-3672) registers and stores customer information that the customer has given us voluntarily. The information that we store is the Customer's Name, Address, Phone Number, E-mail Address, and for Service Issues we also store Serial numbers of machine's and parts, model names, together with dates, error descriptions, and actions.

Outside Belitronic Sweden AB, this information is only shared with the relevant reseller for each case. Transportation companies get access to the customer's name and address. Accounting firms get full insight into Belitronic Sweden AB company and can see all information.

For more details about our data storage, or of extracts, change / deletion of information we have about you as a customer write to support@belitronic.net or call us on phone 0612-32000.

Thank you for purchasing a BJ5000Ex and good luck!

