



DSC TOUCH
Black Edition

INSTRUCTION AND MAINTENANCE MANUAL



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1 GENERAL INFORMATION

1.1. MANUFACTURER IDENTIFICATION



Via San Polo, 183
25124 Brescia - ITALY
tel. +39 030-2300492 fax.+39 030-2300833
e-mail: dinema@dinema.it

1.2. MARKING

-  The device is produced in compliance with the Community Directives pertinent and applicable when the machine is introduced in the market.
-  Being the device produced in compliance with 2004/108/CE standard, Dinema issues a proper self-declaration of CE conformity (herewith attached).

1.3. SAFETY





1.3.1. TERMS AND DEFINITIONS

Dangerous area: Any area closed to the device where there is any risk for safety and health of any person exposed.

Exposed person: Anyone who is a dangerous area.

Operator: Anyone in charge of installation, use, adjustment, maintenance, cleaning and transport of the device. The operator can be divided in two main persons that in some cases can be identified in only one person:

Operator in charge of the device management, who

-  starts up and controls the automatic functioning of the device;
-  implements simple operations of adjustment;
-  deletes eventual machine's stops, not caused by breakdown but due to a simple functioning failures;
-  Cleans the device.

Operator in charge of the device maintenance who is a skilled technician, able to work on the machine when free from protections and able to adjust and repair mechanical and electric parts.

User: Company or person that is legally responsible for the device.

1.3.2 WARNING



This manual is an important complement of the product and must be read carefully before effecting any operation.



Be sure that the device is power supplied correctly



This device must not be used in explosive area.



Any modification or tampering is absolutely forbidden, in particular as far as protections and safety components are concerned.



This device is provided with some moving parts that are necessary for the proper operation of the device. In order to reduce bound risks, the use of the same device by two or more operators at the same time is forbidden.



The position of the garment to be measured must be done when the elements composing the DSC are not moving.






After having positioned the garment to be measured and according to the type of measurement that has to be done, *the operator must keep hands and other body's part away from moving elements composing the DSC.*



This equipment must not be moved with plug inserted.
If power supply cable has to be disconnected, do not leave it plugged into power Mains.



This device has got a parking brake:
 during measuring operations, the parking brake must be always on;
 release the parking brake only when DSC has to be moved;
 When DSC is not used, the device must be parked with the brake on.



Use this device only on steady planes free from roughness.



Move this device very slowly; do not run and do not leave it on inclined planes.



Before any cleaning or maintenance operations, be sure that power supply is off.



This device has been expressly designed and manufactured to measure garment sizes and it must be used according to this manual. The manufacturer declines any responsibility in case of wrong or inappropriate use, as well as in case of any use different from what expressly mentioned in this manual.



The manufacturer declines any responsibilities also in the case the device is used by personnel not duly trained, in the case of wrong power supply, in the case of unauthorized modifications and/or repairs, in the case of lack of maintenance or if not original or not specific spare parts are used.



This device must be disposed according to the laws in force in the country where it has been sold.



This manual has to be hold for eventual future references.
In case of assignment of the device, the manufacturer has to be informed about name and address of the new owner, to make easier the transmission of eventual manual updating.



The manufacturer reserves the right to modify the product and/or the manual without any previous advice.

1.3.3. PREVENTATIVE MEASURES

Storage

The device must be stored in a room with temperature included between 0 °C and 50 °C and with non-condensing humidity. Should you need to store it for a long time (such as 6-9 months or longer) a battery recharge every now and then (for example every 3-6 months) is recommended in order to avoid battery deterioration.

In case of oxidation of battery terminals, clean them by means of emery paper and protect them with special fat (for example the one used for car batteries).

Transportation




The device weighs about 65 Kg and contains sensitive parts (LCD, load cell and so on). Therefore it must be transported in a special case able to protect the devices (such as the one used by Dinema). Do not force over 10 Kg the movable arms, do not hang up or lift up the DSC by hooks in order to avoid permanent damages and/or danger conditions.



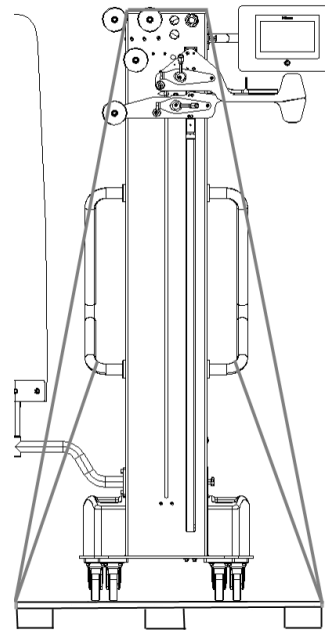
WARNING:

Considering its small base and height, during the transport DSC must be locked sideways.

If it has to be moved by means of a fork lift truck, it must be moved only if locked and placed upright on a pallet.

-  **In this phase it's very important to put the brake on all wheels.**
-  **Do NOT transport DSC horizontally, this could cause damages.**
-  **NOT use the measuring arms, the pulleys and the control panel as an anchor point for any straps.**

This picture shows an example of a good packing of DSC by using a pallet and proper straps.



1.3.4. EMPLOYER'S DUTIES

The employer is responsible for distribution of this document to all employees that have to work with the device.

1.3.5. OPERATORS' DUTIES ON THE MACHINES

Operators must follow carefully all instructions given in this manual; moreover they must bring any failure or possible dangerous condition to the attention of the person in charge.

2 GENERAL DESCRIPTION

2.1. DSC (*Dinema Size Control*)

A knitting machine, even if same program and same size are used during production cycle, does not produce garments with same width and length (the two measures are closely related), because of changes in environment humidity or temperature or because of different yarns.

Currently, to overcome this problem, there is a periodic samples inspection by one or more operators, to verify the correct size.

If the size exceeds the admitted tolerance, the operator digits on machine keyboard the collected measures and writes on his notebook machine serial number, name and size of program and corrections made.

Automatically, the device corrects the width and consequently the length of the garment which will be produced from that moment on.

In above mentioned procedure different errors may occur:

- ⓓ Measure collection of garment width made through a manual gauge is quite empiric and this can cause errors during size collection phase, due to different manual skill of the operators;
- ⓓ On mechanical gauge the dimension is read on a scale with a tolerance of 1 cm, while correction on the machine has a lower tolerance. Reading the measure on metric scale by means of a cursor can introduce parallax mistakes.
- ⓓ Values are entered manually through machine keyboard, therefore typing mistakes may occur.

DSC is a portable device, cordless which can be easily taken next to the knitting machine.

Through the cable supplied by DINEMA it is possible to connect DSC directly to the machine, to set a serial connection. During this connection, it is possible to send to DSC all parts of garment program with relevant theatrical width of each area.

More information in 2.3 and 4.2.

Batteries can be recharged by leaving DSC connected to power mains through the specific cable supplied by DINEMA.

Goal of DSC solution is a considerable reduction of the possibility of errors, trying to automatize almost completely correction procedure and letting the operator be concentrated on garment position, without asking him to work also on machine keyboard.

An additional goal, closely related to the previous one, is to speed up the size control procedure. This allows more frequent tests and therefore to get a lower number of garments out of size during production cycle.

Two different types of measuring are possible:

D LENGTH EXTENSION

After having fixed the two extremities of the zone to be measured, garment is extended until the present weight is reached.

D WIDTH EXTENSION

After having positioned the zone to be measured on the extensor arms, garment is extended until the present weight is reached.

Moreover DSC is equipped with a USB connection which allows collecting on USB key data concerning corrections made on different machines, without having to write them down. Data are included in a file and eventually saved on USB key. To recognize from which DSC they are coming out, it is possible to assign an identification number to each DSC unit, which will then be used as name of the file created (ex. DSC number 1 ->> file "1.dsc").

Data saved on USB are:

1. Date of effected measure.
2. Time of effected measure.
3. Number of the machines on which size has been collected.
4. Name of measured article.
5. Size of measured article.
6. Article zone measured.
7. Sub-zone code (for Matec machines only, for all other machines code is 0).
8. Set value for measured zone.
9. Real measured value.
10. Zone status (only controlled or modified)
11. Pull weight.

Every file line corresponds to a collected measure and measure data are divided by a comma.

Here below an example of a file saved by DSC:

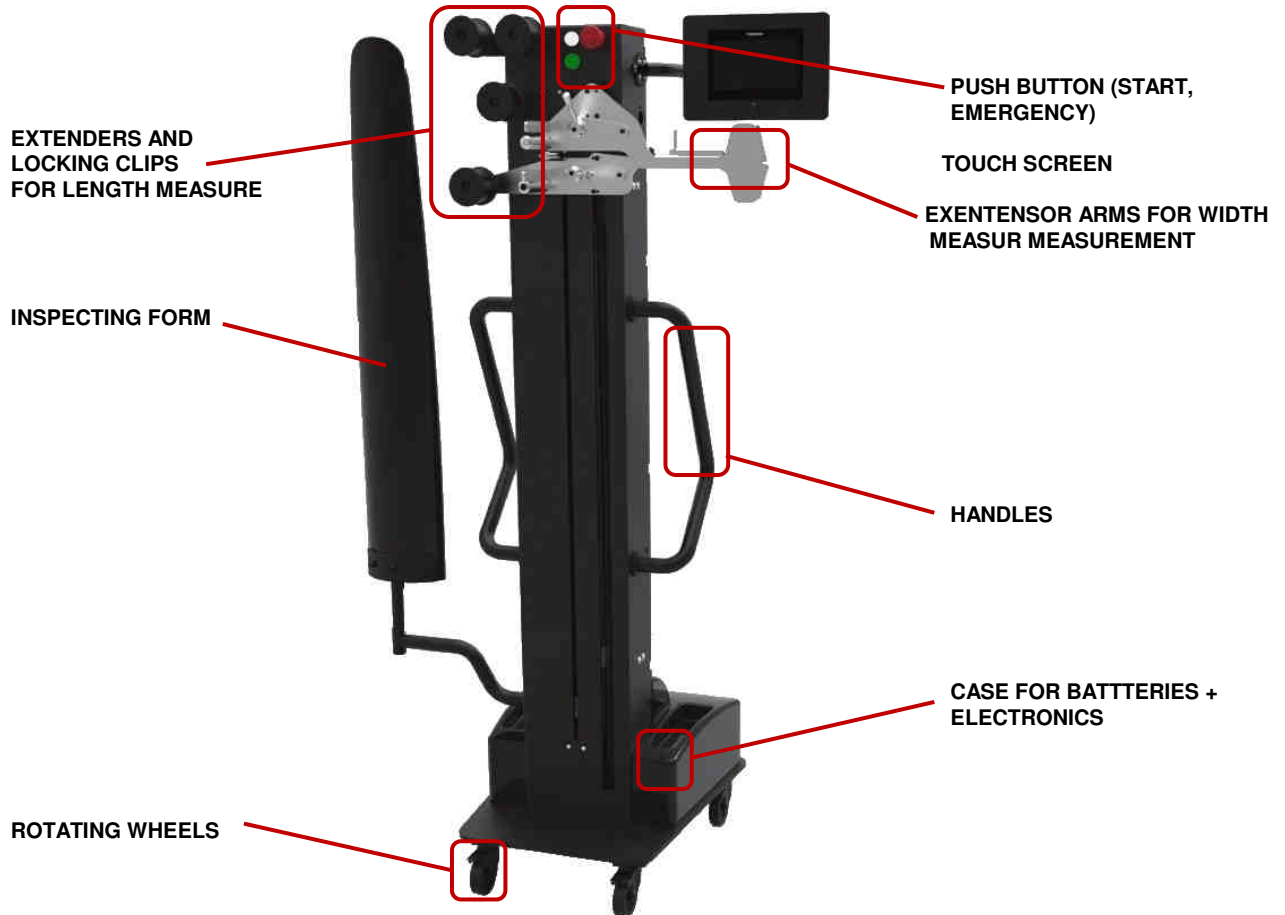
```
19/07/2010, 08:00:29, 0, "SOCK 1", 1, "BAND", 0 , 230, 227, "MODIFIED", 5000
19/07/2010, 08:01:12, 0, "SOCK 1", 1, "LEG", 0, 220, 222, "CONTROLLED", 5000
19/07/2010, 08:02:35, 0, "SOCK 1", 1, "ANKLE", 0 , 200, 197, "MODIFIED", 5000
19/07/2010, 08:03:54, 0, "SOCK 1", 1, "HEEL", 0 , 210, 213, "MODIFIED", 5000
19/07/2010, 08:04:01, 0, "SOCK 1", 1, "FOOT", 0 , 210, 215, "MODIFIED", 5000
19/07/2010, 08:05:42, 0, "SOCK 1", 1, "TOE", 0 , 210, 212, "MODIFIED", 5000
```

All data saved on USB key could be used to make statistics by the Quality Control Manager or by the Knitting Room Manager. Data could be transferred on personal computer to evaluate correction frequency for each machine, considering article and/or yarn type.

The DSC can be equipped with WIFI connection (**Kit optional**) for network connection via FTP.

2.2. DSC STRUCTURE

2.2.1 HARDWARE



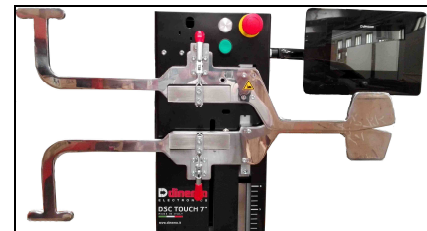
There are fundamentally three different types of DSC:



Man-Child



Woman



Seamless

Man / Child

Performs length / width measurements on man or child socks;

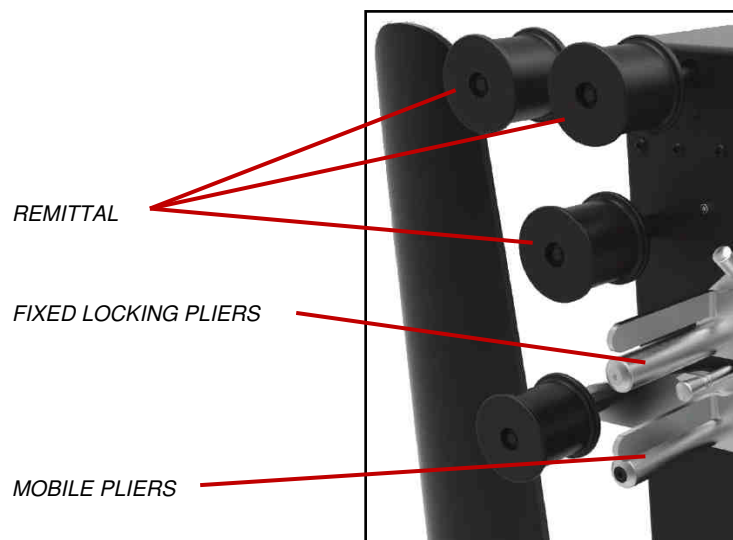
Woman

It is characterized by the presence of a higher number of extenders to allow the measurement of the width and the length of the panty stocking;

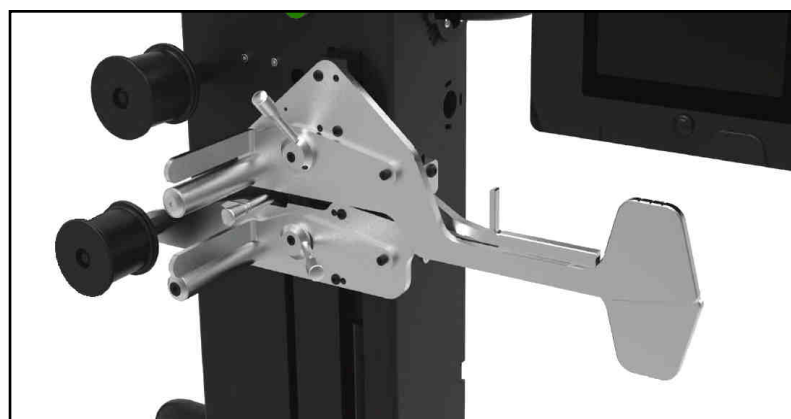
Seamless

Performs measurements on a seamless knitted garments: the right clips perform widths of sleeves, the central clips length measurements, the left clips widths of the entire knitted garments.

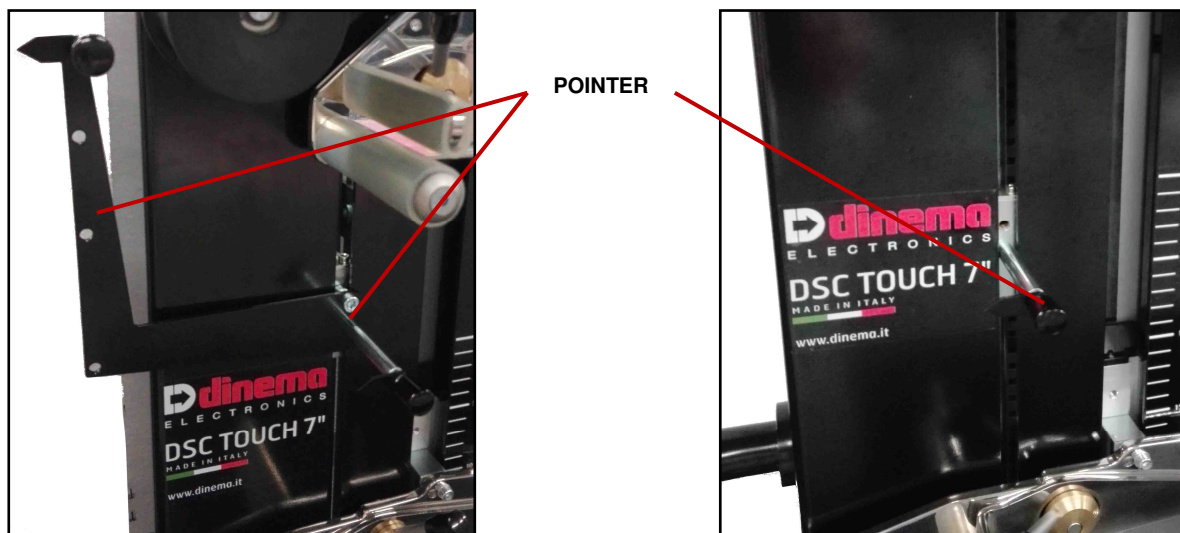
By means of DSC device both length and width can be measured.
On DSC left side there are the necessary tools (pliers) for **length measuring**.



Width measuring is affected on DSC right side, by the “arms” of the DSC.

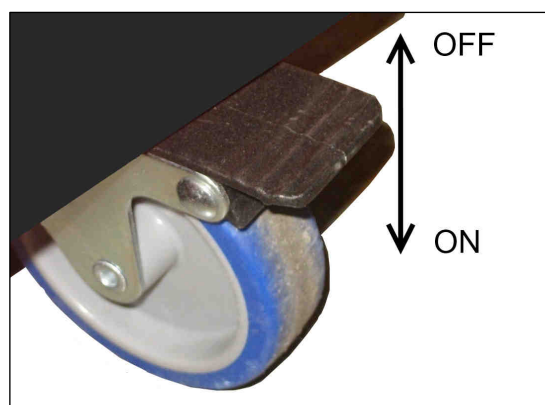


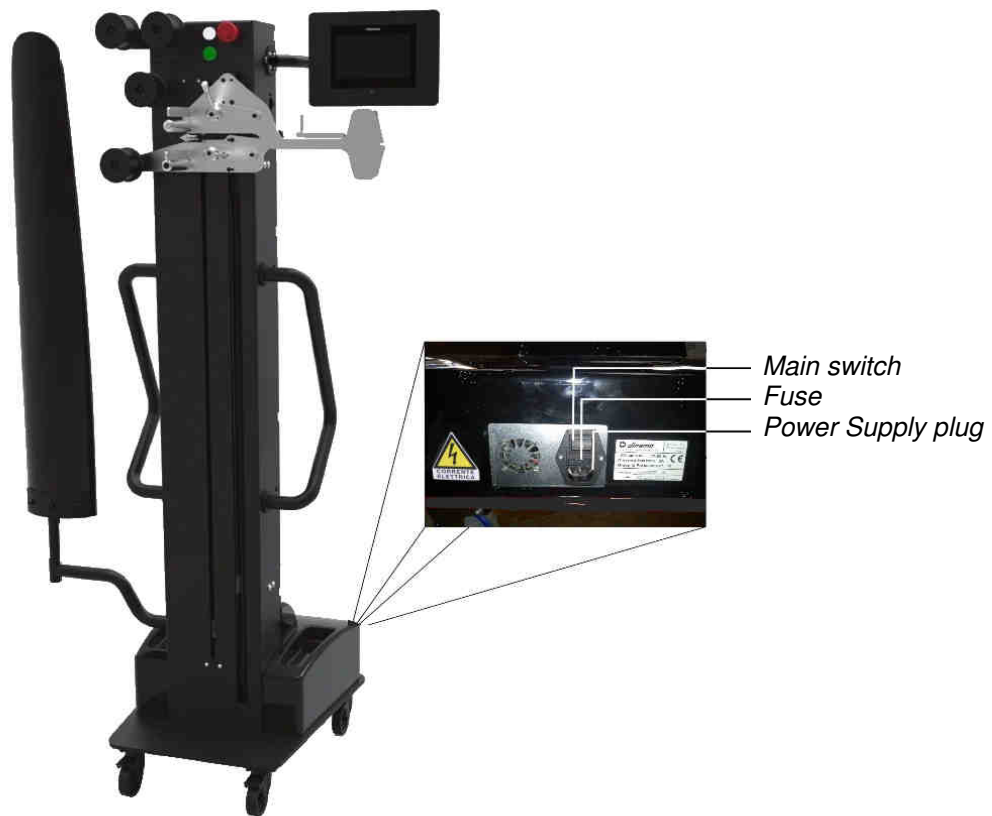
DSC device is equipped with a cursor (optional kit) that allows effecting exact measuring of **part size** (leg, foot).
Measuring is electronic through an encoder system. Part measures are displayed together with garment size measure.



In order to avoid possible damages to things or persons, DSC is provided with a **service brake** device.

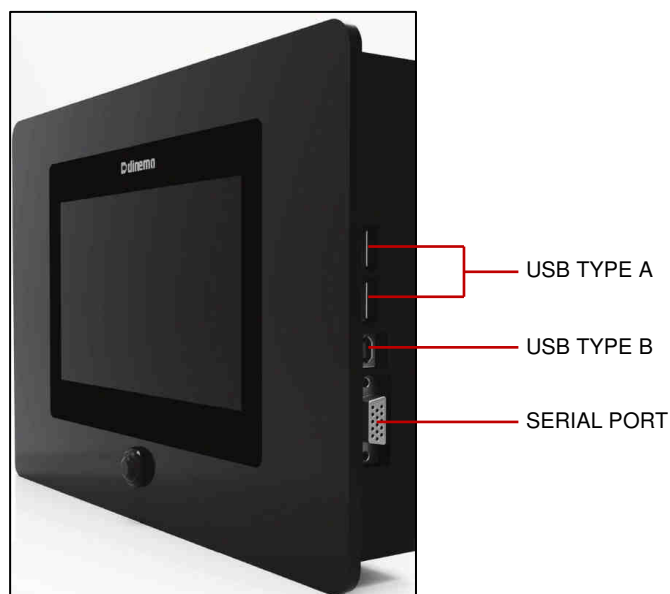
Put the brake on at least 2 wheels every time DSC has not to be moved, especially if it's on inclined plane and during measuring operations.








On DSC back side there are the device identification tag, the main switch, the safety fuse and the plug for power supply.

The housing of touch screen display includes also the USB port, the Ethernet port, and the serial port for connection to the knitting machine.









2.2.2 SOFTWARE

DSC TOUCH is based on Android operating system and a dedicated application. Interfacing with the operator is performed through a touch screen display. Moreover DSC TOUCH is provided with USB connections (Type A e Type B) and a serial connection to interface with the textile machine. All commands, with the exception of the “start” command, are entered through display, by touching the pictures on the display.

Here below the picture shows the main page, where you can see the picture for measuring in automatic mode (LONATI - MATEC) or in manual mode (MANUAL); the picture to enter configuration functions (MENU  and SETUP ) and the picture ABOUT  to open a page with information about the software installed and the possibility to download on USB key DSC configuration data.

At page bottom date and clock are displayed respectively on the left and right sides:

- DATE and TIME: Indicates current date and time (this data is automatically acquired from the Android system);
- IP ADDRESS of the machine;
- ALARM PICTURE  -  (yellow in the presence of alarms);
- USB PICTURE  -  (yellow when a USB interface is connected);
- LANGUAGE ICON  (indicate the language set in the Android system);
- BATTERY STATUS 



2.3 MACHINES CONNECTABLE

DSC, when working in automatic mode, can be interfaced to socks machines with Dinema electronics series XQ, 900 and RISC series; with MATEC machines and SANGIACOMO machines equipped with Dinema electronics as well. For detailed information about the models that can be connected, please contact Dinema. To know how the machine has to be configured and connected, please contact Lonati. Connection to Lonati machines is affected by means of the cable named “CBL 3112” supplied together with DSC unit.

Connection to XQ Lonati machines is effected by using cable Cbl 4836 combined with interface RS232/USB 2.0. This necessary since XQ machines are with no 9 poles cup connector, but only with one unique USB connector.

Connection to Matec machines is effected by means of the cables named “CBL 3112” and “CBL 3113” supplied together with DSC unit. The two cables must be linked through a 9-pole cup connector. 25-pole connector of CBL 3113 has to be connected to the Matec machine; the free 9-pole connector of CBL 3112 has to be connected to DSC unit.



Please, pay attention to the numbers stamped on the sheath in order to correctly identify the cable.





2.4 CORRECT USE OF DSC DEVICE



DSC has been expressly devised to control the size of socks and pantyhose. Every other use is inappropriate and could result unsafe to the operator and wrong for data collection. DSC is carefully calibrated in Dinema through a dynamometer.

A new calibration is necessary and has to be done with controlled deadline, in case of impacts, disassembly – reassembly or in those companies that are in compliance with quality system (such as ISO 9000).

DSC is a firm size instrument, reliable in time, consisting of high precision electronic and mechanical parts, whose calibration must be checked periodically, in particular:

-  Every time any of its parts has to be taken down for mechanical maintenance or because of accidental impacts.
-  Every 3 months for companies subject to ISO 9000 regulation or high precision internal standards.
-  Every 3 months for those machines whose work is very hard (> 700 cycles a day).
-  Every year in case of usual work (< 700 cycles a day).

To learn how to calibrate DSC device, see the chapter *DSC Calibration* of this manual.

IMPORTANT

By switching the DSC on, the weight applied on extensor arms and on locking clips is automatically recognized as zero.

Therefore during this phase, **nothing** has to be **hanged, caught or placed** on DSC elements (such as garments left on the extensor arms or on the locking clips), **otherwise collected data will not be reliable**.



Warning:

Keep your hands and other body parts away from any moving devices.

3 USE AND FUNCTIONS


To switch DSC on, turn clockwise the red push button placed on DSC front side. To switch DSC off, push down the same button.

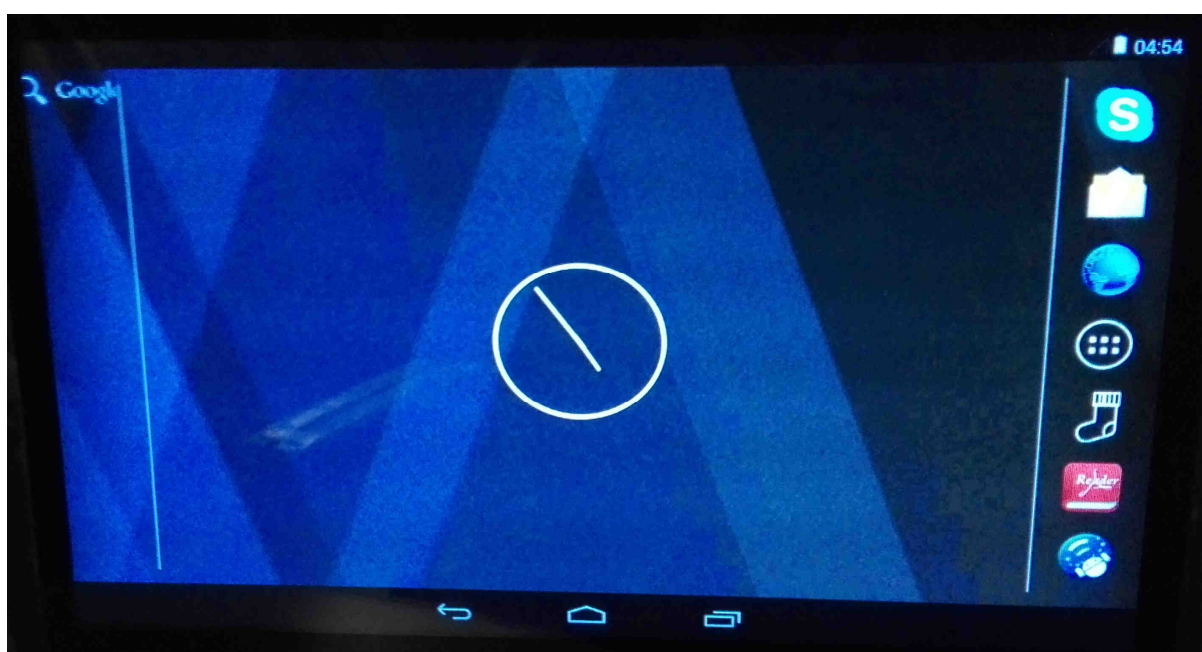
REMARK: The red push button is provided with a mechanical retainer in order to remain “pressed down”, acting as emergency button and keeping the DSC off.

When turning DSC on, here below pages are displayed in succession, this means that DSC is effecting all preliminary operations to start running.



After this first phase of initialization, the DSC will start automatically the application "DscBlackEdition".

Otherwise the main screen will be shown on the display the Android home screen shown below, from which tapping the menu picture  you access the screen showing the list of available applications.





Tapping the "DscBlackEdition" icon will open the application that controls the meter sizes.



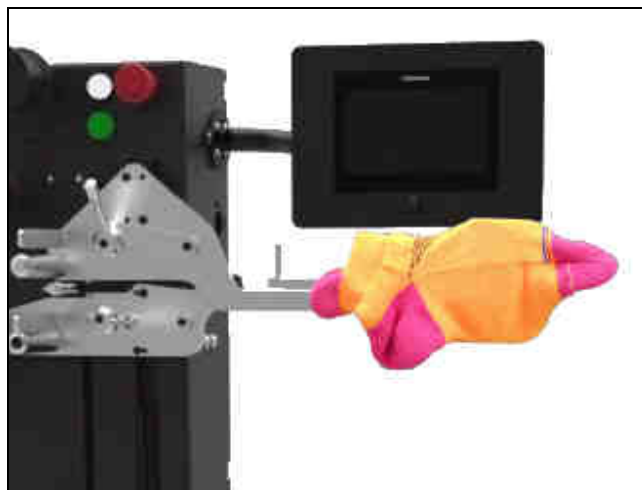
The "DscBlackEdition" application is characterized by the presence of three icons: "MANUAL", "LONATI" and "MATEC".

Tap the "MANUAL" icon to access the page that allows measurements in manual mode;
Tap the "LONATI" and "MATEC" icon to access the pages that allows automatic measurement specific for Lonati and Matec machines.

3.2 HOW TO PUT THE GARMENT ON

Before explaining DSC functions in details, it is important to show how the sock has to be positioned for the correct measuring.

MAN/CHILD – WOMAN – SEAMLESS Width measurement



SEAMLESS Width measurement of complete knitted garments

The seamless version of the DSC has additional arms for the measurement of the width of the knitted garment.



Max. Measurable width: about 1255 - 1290 mm / 49.4 – 50.8 inch (depending on DSC model and on the type of extensor arms installed).

DSC can affect 2 different types of length measuring. Only the maximum measurable length changes. In case of short and/or hardly stretchable socks use type 1; in case of long and/or very stretchable garments (ex. pantyhose) use type 2.

Here below table shows maximum measurable length for each measuring type.

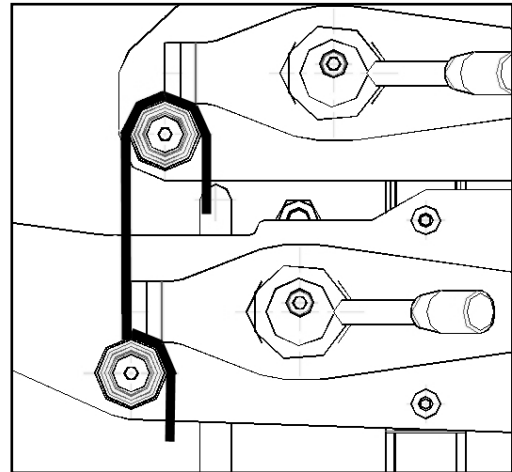
Measuring type	Max. measurable length DSC Man-Child model	Max. measurable length DSC Women model
Type 1	1200 mm / 47.2 in	1200 mm / 47.2 in
Type 2	1638 mm / 64.5 in	4458 mm / 175.5 in

SEAMLESS version of DSC allows to make three types of measures: "Width", " Knitted garment width", " Knitted garment length".

Below the table with the maximum measurements executables for each type of measurement.

Measuring type	Max. measurable length DSC SEAMLESS
Width (Sleeve)	1305 mm / 51.4 in
Knitted garment width	1570 mm / 61.8 in
Knitted garment length	1235 mm / 48.6 in

MAN/CHILD – WOMAN Position for length measuring type 1:

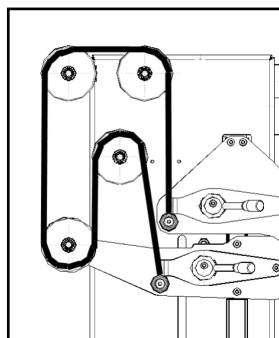


Woman DSC
Man/ Child DSC

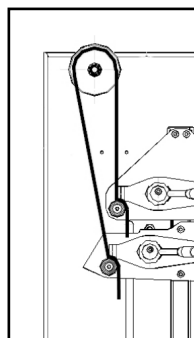


Warning:
Keep your hands and other body parts away from moving elements.

MAN/CHILD – WOMAN
Disposition for length measuring type 2:



Woman DSC



Man/ Child DSC



Warning:
Keep your hands and other body parts away from moving elements.

SEAMLESS
Disposition for length measuring:

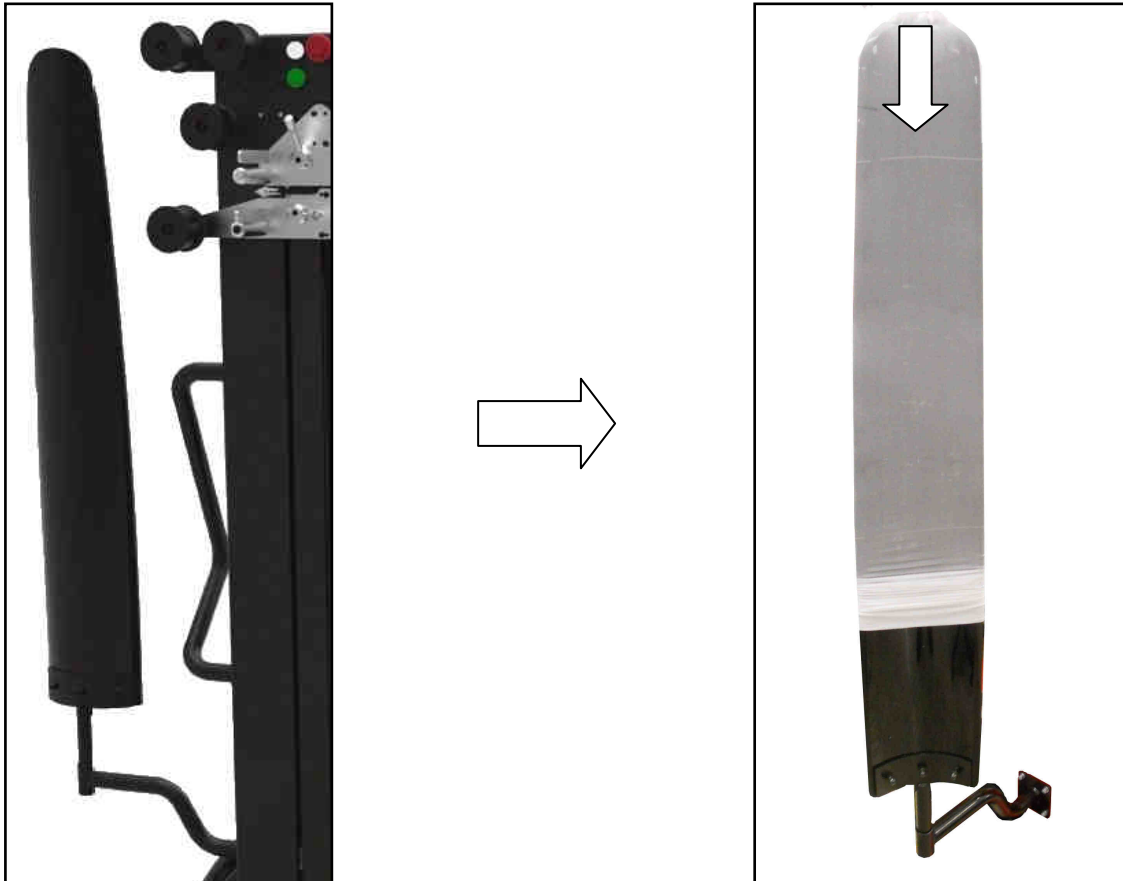


Warning:
Keep your hands and other body parts away from moving elements.

3.2 INSPECTING FORM

The DSC can come with an optional, the “inspecting form” which function is to tighten the pantyhose in order to spotlight possible imperfections and ultimately help the operator evaluate the quality of the product.


The sock has to be introduced on the gambale from up to down.



4 MEASURING PROCEDURES

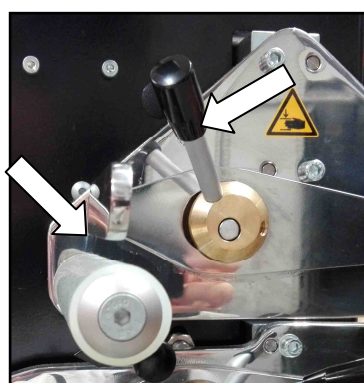
4.1 Without automatic size correction (Manual)

DSC allows the operator to measure some parts of the sock without being connected to the knitting machine.

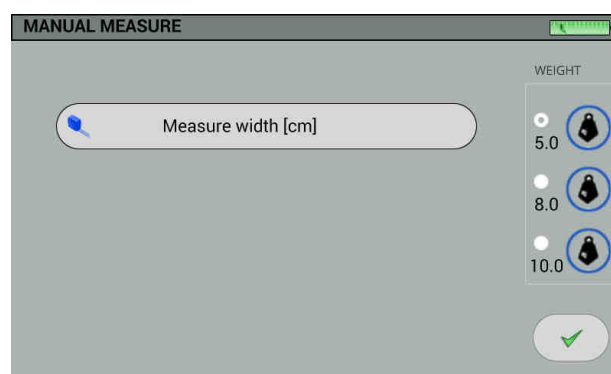
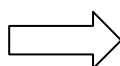
1.  Put the parking brake on.
2. On main page, please touch the button “MANUAL”.



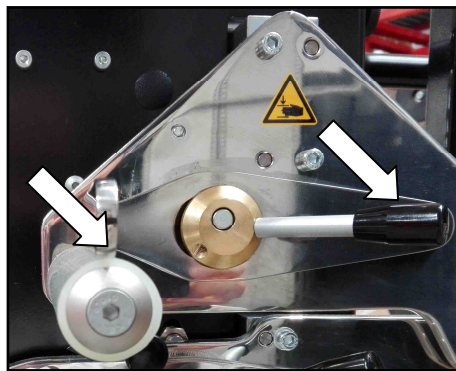
3. The following page will be different depending on the measure to be effected. When taking *width measure*, the fixed locking pliers must be on “open” position, therefore the upper lever has to be upright (pict.1).



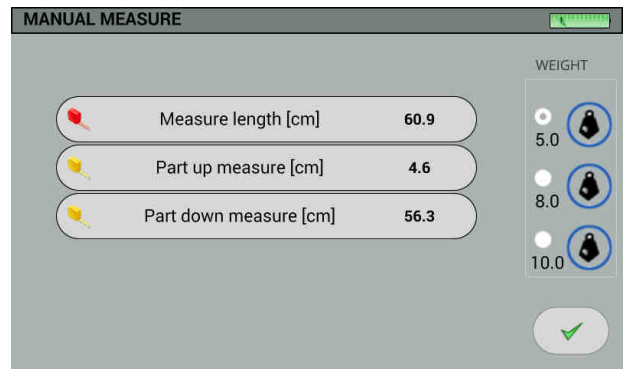
pict.1



When taking *length measure*, the fixed locking pliers must be on “close” position, therefore the upper lever has to be on horizontal position. (Pict.2).



pict.2



4. After having positioned the sock in the proper way, the operator has to push the *Start* bottom to enter measuring procedure.



Warning:
Keep your hands and other body parts away from moving elements.

In this phase the movable extensor arm stretches the sock until the set value is reached. When the measurement is over, the read value is displayed (millimetre or inches) and the extensor arm moves back to zero position automatically.

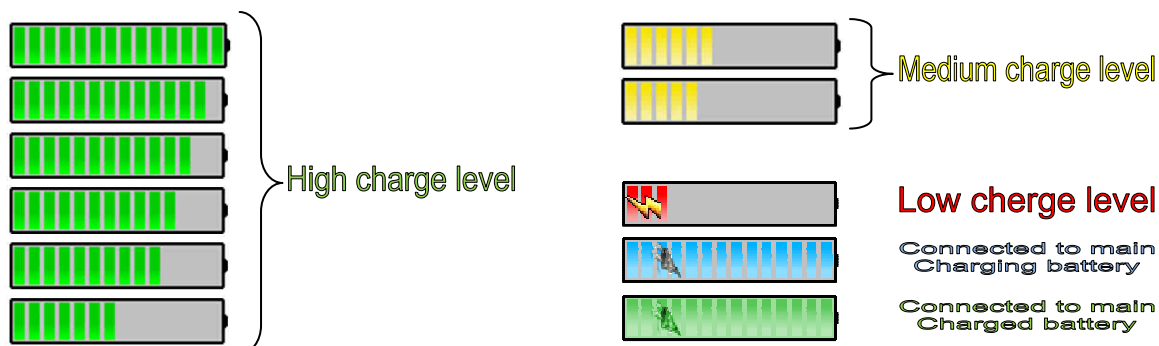
REMARK:

The accuracy of the measurement in centimetres is to the millimetre or approximate to 5 mm, depending on the setting in the setup.

Following the details of screen "MANUAL MEASURE":

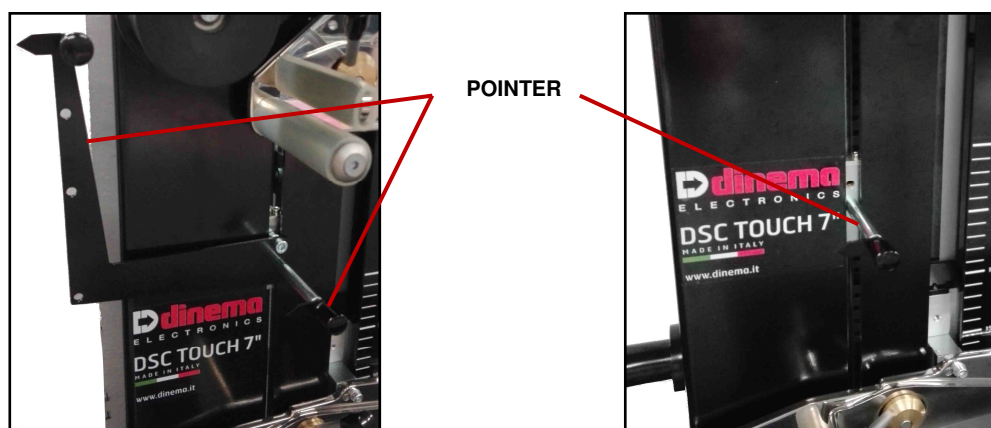
- Measure width – Measure length: Herein the latest width- or length – measure read is displayed (*mm o in.*)
- Part up measure – Part down measure: Herein the partial measurements are displayed (function available only if DSC is equipped with the optional “pointer”).
- “WEIGHT” Buttons: By using these buttons, it is possible to set up the force exerted by the DSC while taking measurement, assignment – the button must be selected in the Setup menu. From the Setup menu, you can disable the special buttons; in this case they will not appear.
During the measurement, these buttons display the force assigned. The DSC kit with optional WIFI have the opportunity to acquire via WIFI strength (pull) to which the test is performed (for details see 7.2).


➤ Above, on right side of the page it is possible to see the bar showing battery charge:



NOTE:

If the DSC was equipped with the optional accessory "pointer" for the measurement of partial article and only in the case of length measurements, the return to the position of the measuring arm will be done only after a further pressing the start button. This is to enable, with sock in traction, to perform the partial measures with the aid of the "pointer."



5. Ultimate le misure desiderate, toccando il pulsante  si tornerà nella videata principale.

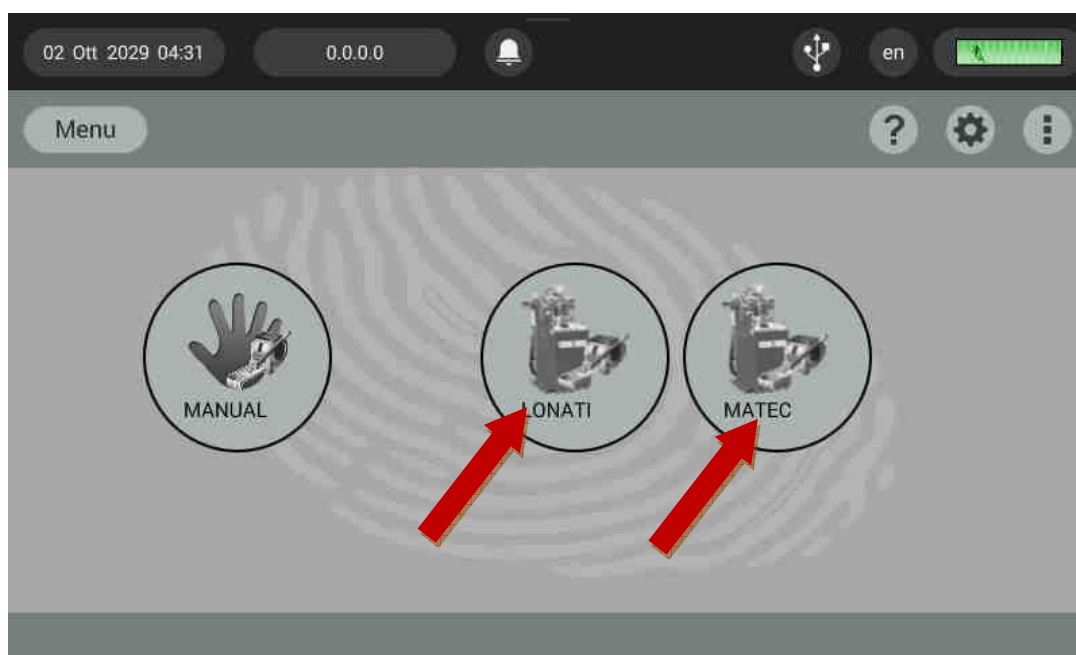
4.2 With automatic size correction (Automatic)

Now we can see in details the operations needed for the control and automatic correction of the sock size by using the DSC. Automatic size correction is possible for correction of width only.

1. ⚠ Put the service brake device on.
2. Connect the specific cable (see section Machine connectable of this manual) from its connectors at the side of the display panel of the DSC to the connector on knitting machine keyboard.



3. From the main page please touch “LONATI” or “MATEC” button.

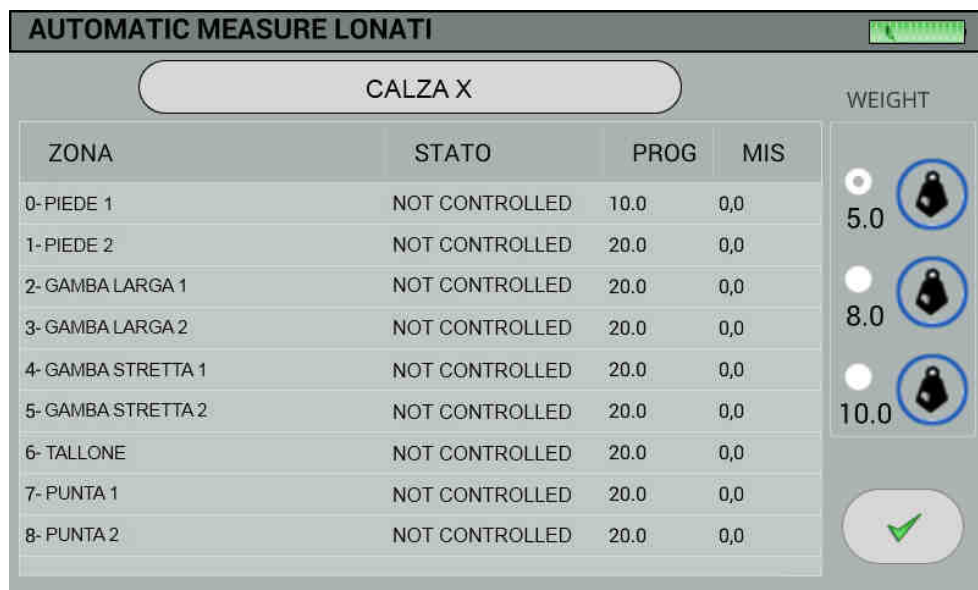


4. Following page will be shown:



Once connected, the DSC will import automatically information about the different knitted zones of the item into the processing chain of the machine. The DSC will display a screen with the list of knitted areas of the item. In the title bar of the window (next to the written "WEIGHT") the name of the file; in the column "PROG" the programmed measure; in the column "MIS" the length measured.

At the beginning of the procedure, all the zones are in the "NOT CONTROLLED" status.



Touching the line of the interested measure the zone status changes from "NOT CONTROLLED" to "CONTROLLED".

After placing the sock on the arms corresponding of the area to be controlled, you have to press the Start button to start the measurement.




Warning:
Keep your hands and other body parts away from moving elements.

At the end of measurement the zone status changes from "CONTROLLED" to "MODIFY", and the measurement result will be displayed in the "MIS" column.

MISURA AUTOMATICA LONATI			
CALZA X			PESO
ZONA	STATO	PROG	MIS
0-PIEDE 1	NOT CONTROLLED	10.0	0,0
1-PIEDE 2	NOT CONTROLLED	20.0	0,0
2- GAMBA LARGA 1	NOT CONTROLLED	20.0	0,0
3- GAMBA LARGA 2	NOT CONTROLLED	20.0	0,0
4- GAMBA STRETTA 1	CONTROLLED	20.0	0,0
5- GAMBA STRETTA 2	NOT CONTROLLED	20.0	0,0
6- TALLONE	NOT CONTROLLED	20.0	0,0
7- PUNTA 1	MODIFY	20.0	29.2
8- PUNTA 2	NOT CONTROLLED	20.0	0,0

On the right side of the table, there are three weight selection buttons labeled 5.0, 8.0, and 10.0, each with a scale icon. Below these is a green checkmark button.

If the measurement made is not satisfactory it is possible to redo the measurement taking care to touch again (before performing the measurement) the line of the interested measure to change the zone status from "MODIFY" to "CONTROLLED".

Leaving the screen using the button  you will be asked if you want to save or not the measurement made.

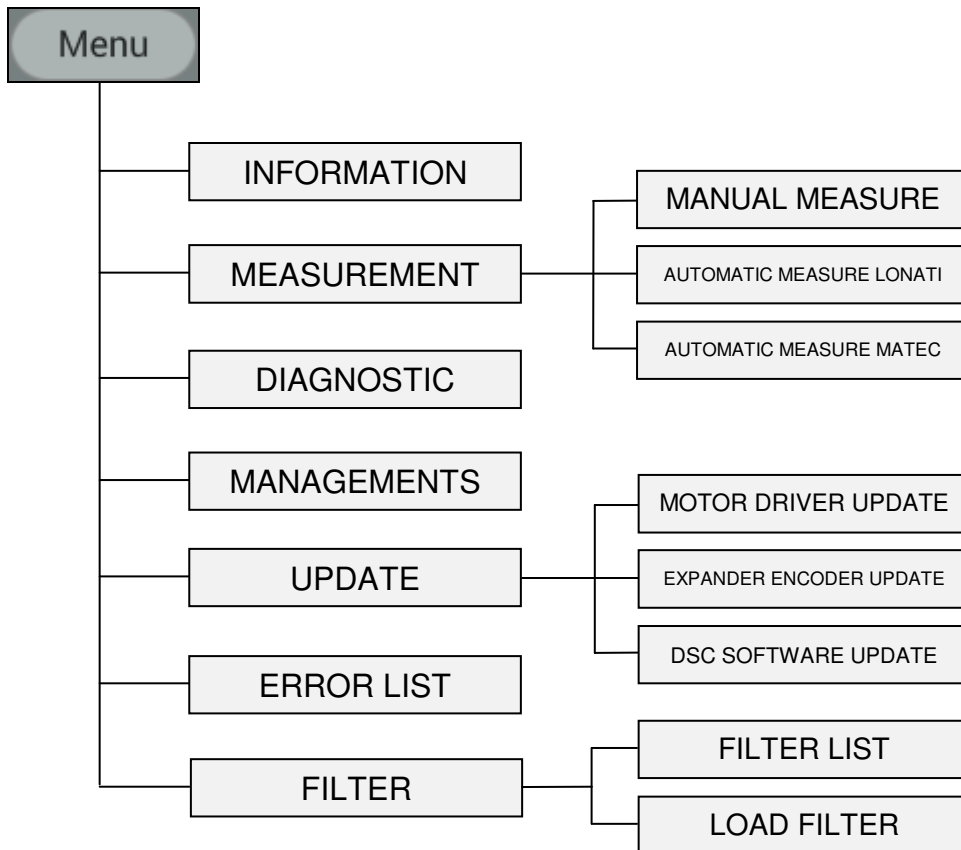



Tapping "SAVE" button, measurements of lines in which you have set "MODIFY" will modify the machine program to correct the size of the knitted garment.

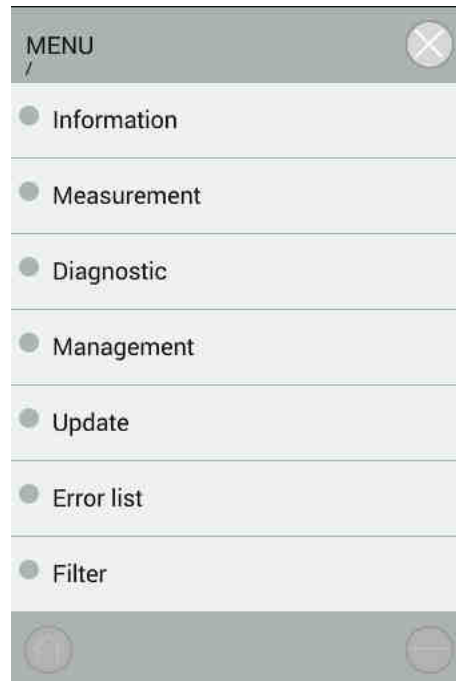
5 CONFIGURATION


Two pages concern DSC configuration: Menu page and Setup page. **Menu page** allows the operator to enter functions for diagnostic or selection of operative options; **Setup page** allows modifying DSC functional parameters

5.1. MENU PAGE

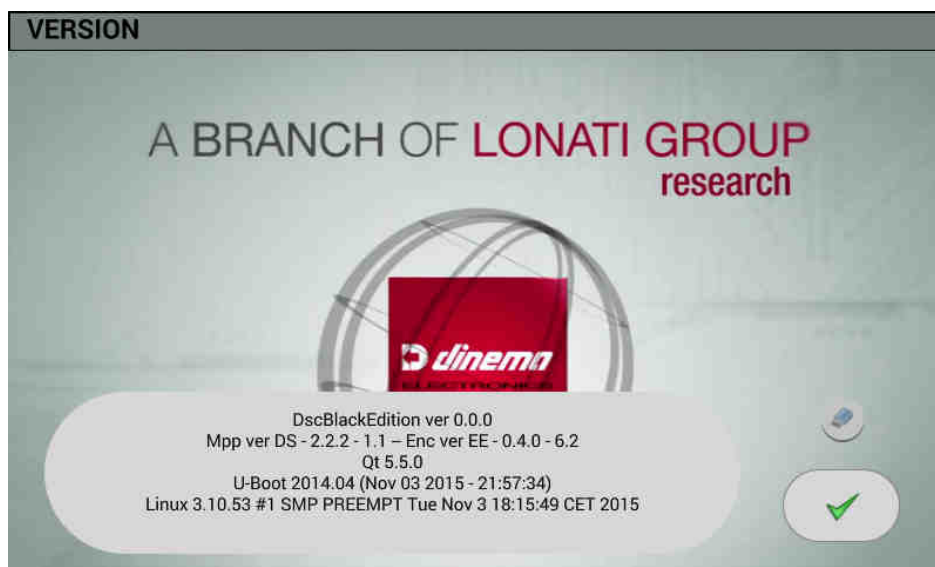


From the main page, touch the picture  to open the following page:



 **Information:** Touch this menu item to enter the page shown below, which shows the information about the installed software version. The same information can be easily saved to a USB device.

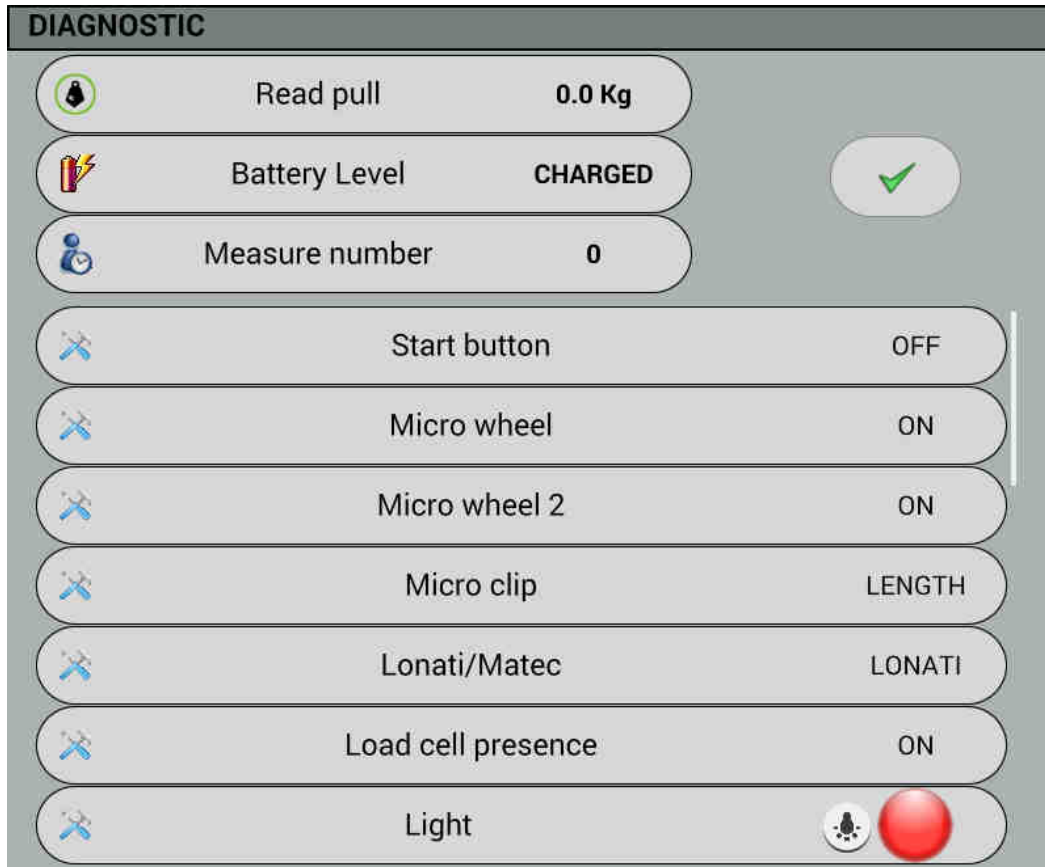
Touching the icon  when the USB device is connected, information will be saved on the device. In the background is shown Dinema S.p.A. video presentation.



- Measurement:** Touching it, you enter measurement methods previously described (manual measure, measure lonati automatic, automatic measure matec)

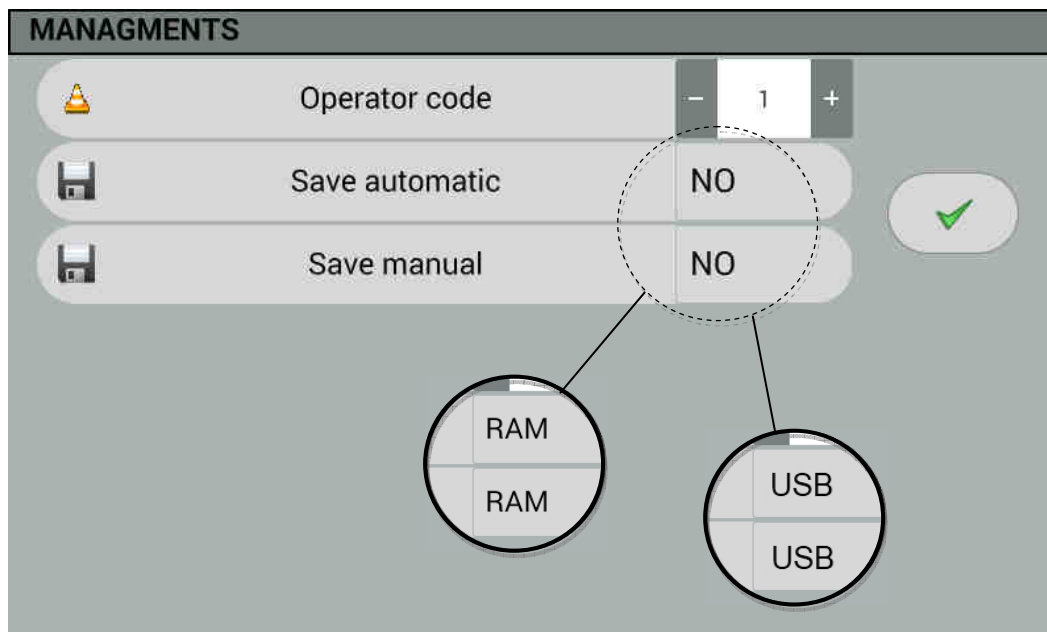


- Diagnostic:** touch this option to enter DSC diagnostic functions:



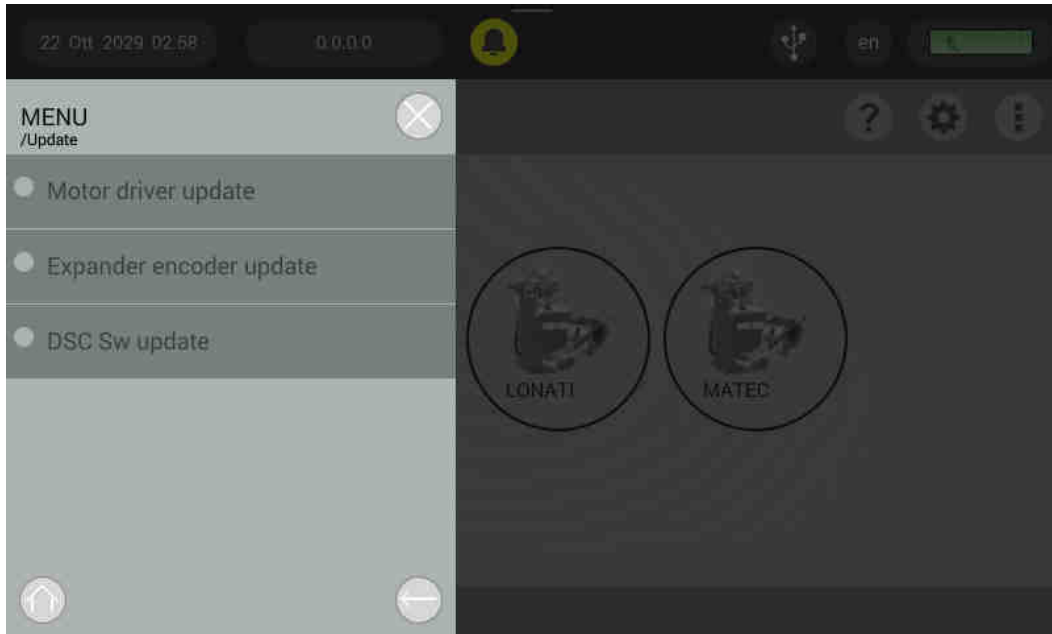
- ▷ Read pull: show instantaneous load applied to the measuring arm;
- ▷ Battery Level: show load battery level;
- ▷ Measure number: show the number of measurements performed by DSC;
- ▷ Start button: displays the status of start button;
- ▷ Micro wheel: displays the status of remittal microswitch;
- ▷ Micro wheel 2: displays the status of optional remittal microswitch;
- ▷ Micro clip: displays the status of fixed clip microswitch (length-width);
- ▷ Lonati/Matec: allows to check the correct functioning of the machine connected to the DSC acknowledgment circuit.
If Lonati machine is connected, this string will be shown the word "Lonati", if Matec machine is connected to DSC, this string will be shown the word "Matec". In any case the specified voice with no machine connected is "Lonati".
- ▷ Load cell presence: check connection with load cell;
- ▷ Light: this commad is used to check the indicator light proper functioning: touching the light bulb symbol it is possible to turn on and off the light.

- ▷ **Management**: allows to access to save measures page from which you save on USB device or on internal RAM memory of DSC.



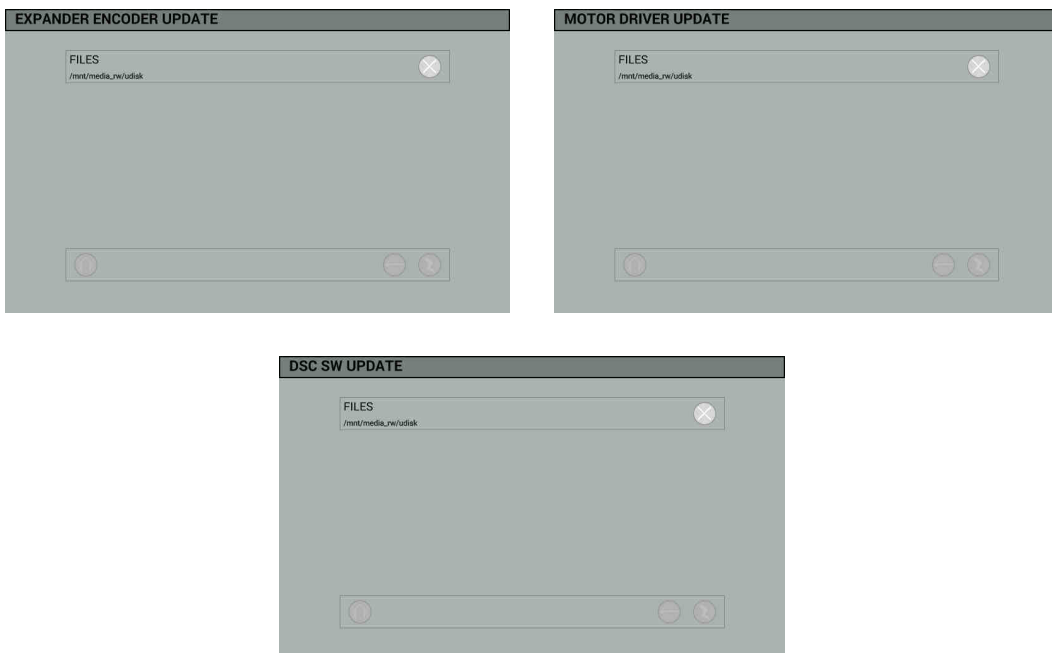
- ▷ Operator code: corresponds to the operator number which is stored on the USB device when "Automatic Save" or "Save manual" are anbled;
- ▷ Save manual: allows you to enable or disable saving measures on USB device when you perform measurements in manual mode;
- ▷ Save automatic: allows you to enable or disable saving measures on USB device when you perform measurements in automatic mode;

- ▶ **Update:** this command allows you to access the update menu where you can update, in addition to software of the DSC, motor driver and configuration of inputs / outputs of the "Encoder" board that manages encoder and proximity sensors.




Software updates are performed via USB device.


⚠ It is recommended to use only software provided by Dinema S.p.A.



▶ **Error list:** allows entering the log page of system errors. When using DSC a serious error due to any failure may occur. This error is recorded by DSC, together with date and hour to report the exact moment when it occurred. This allows Dinema Technical Support staff to understand quickly cause of the problem.

You can also touch  to save error list on USB device.

You will be able also to select the error message and delete it by touching  icon.

Tapping the button  you will return to the menu page.

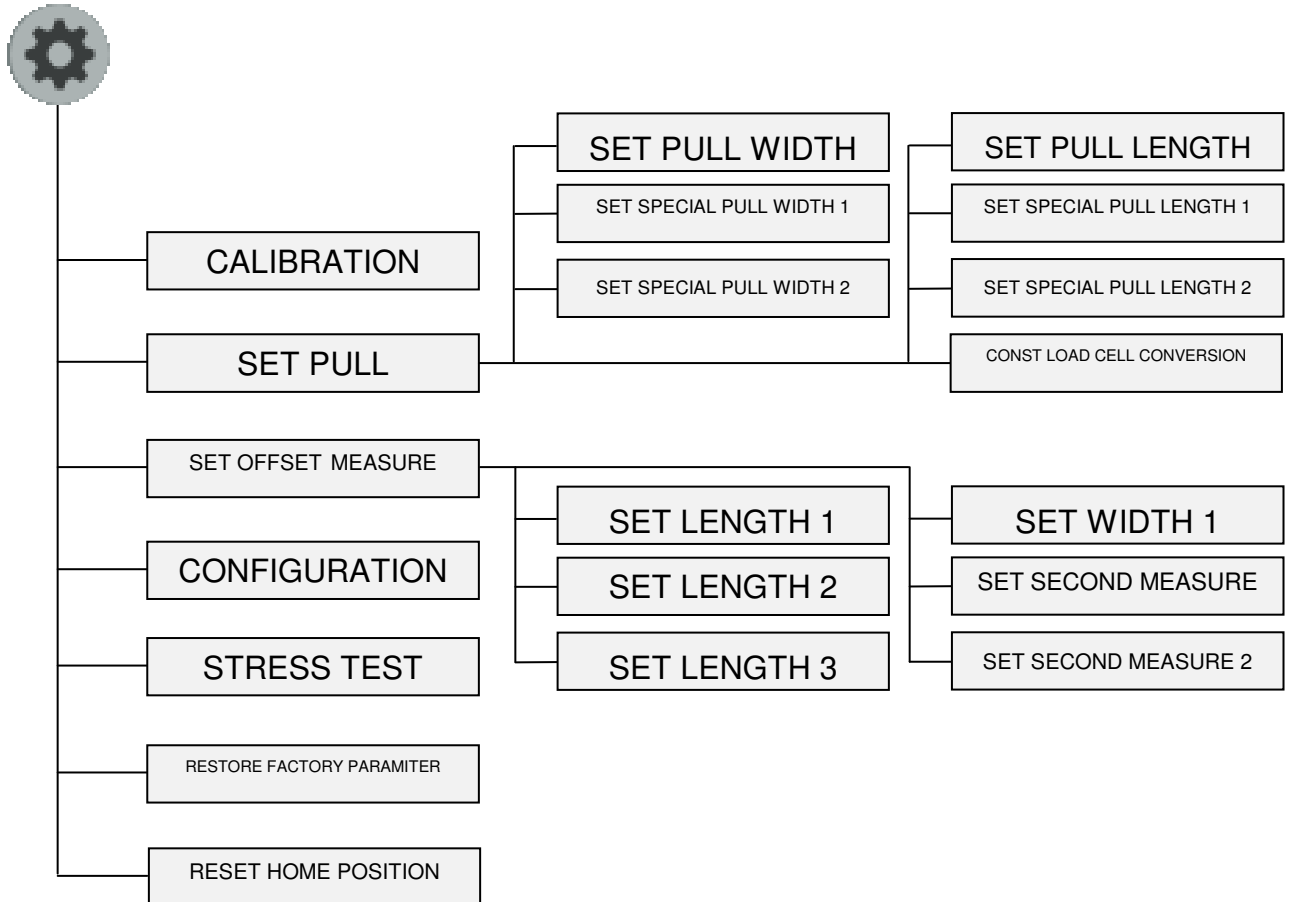



DATE	TIME	MESSAGE		
05/10/2029	21:21:09	autostart.sh executed		
05/10/2029	21:17:34	autostart.sh executed		
05/10/2029	21:16:16	autostart.sh executed		
05/10/2029	21:15:33	autostart.sh executed		
05/10/2029	21:13:56	autostart.sh executed		
05/10/2029	21:13:31	autostart.sh executed		
05/10/2029	21:13:15	autostart.sh executed		
05/10/2029	21:12:37	autostart.sh executed		
05/10/2029	21:12:17	autostart.sh executed		
05/10/2029	21:11:43	autostart.sh executed		
05/10/2029	21:10:42	autostart.sh executed		

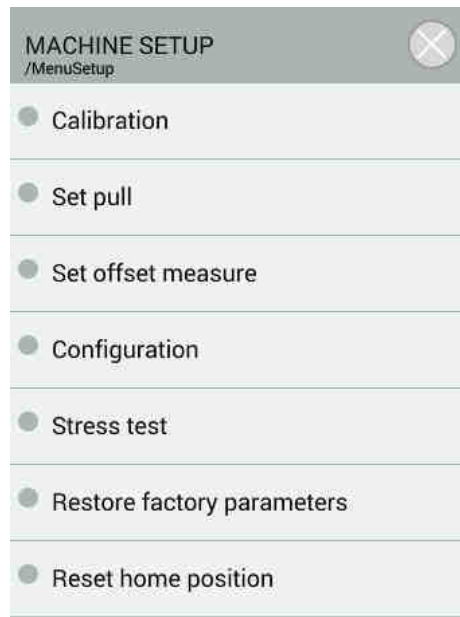
▶ **Filter:** this function allows entering the menu for filters use.
Please refer to chapter 7.1.2 section “USB and WIFI connection”.

5.2. PAGINA MACHINE SETUP

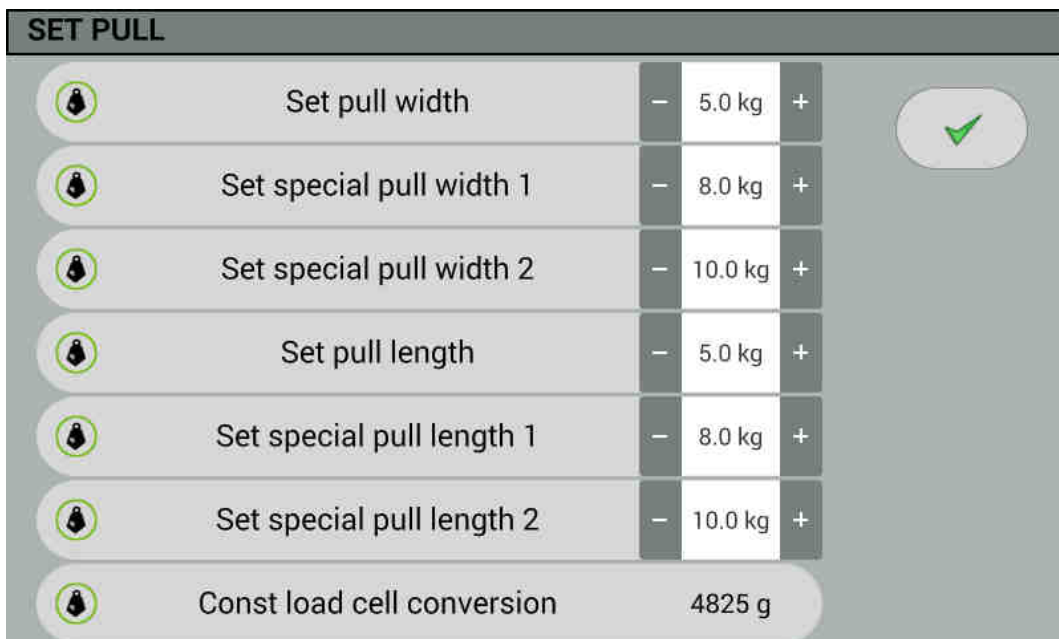
From main page you can access MACHINE SETUP page from which you can set various operating parameters of the DSC.




Tapping the button  to access the following drop-down menu:



- ▶ **Calibration:** allows entering the procedure for DSC load cell calibration. For further details see **DSC calibration**.
- ▶ **Set pull:** allows entering the settings of pull weight applied for stretching the garment. Weight settings can be different for each DSC side (width – length). Moreover besides the standard pull weight, two further weights called “special pull” can be set and activated, when the operator wishes to apply special weights on a particular article or on a particular article’s zone. Weights are expressed in Kg with resolution of 100gr.



- ▶ Set pull width [Kg]: Acting on + and - you increase or decrease the standard force that the DSC applies to the sock in width measures.
- ▶ Set special pull width 1 [Kg]: Acting on + and - you increase or decrease the “special 1” force that the DSC applies to the sock in width measures.
- ▶ Set special pull width 2 [Kg]: Acting on + and - you increase or decrease the “special 2” force that the DSC applies to the sock in width measures.
- ▶ Set pull length [Kg]: Acting on + and - you increase or decrease the “standard” force that the DSC applies to the sock in length measures.
- ▶ Set special pull length 1 [Kg]: Acting on + and - you increase or decrease the “special 1” force that the DSC applies to the sock in length measures.
- ▶ Set special pull length 2 [Kg]: Acting on + and - you increase or decrease the “special 2” force that the DSC applies to the sock in length measures.
- ▶ Const load cell conversion shows the value of the constant for loading cell conversion. Information needed by Dinema staff only.

Leaving the screen using the button  you will be asked if you want to save or not the measurement made.



Touch “**Save**” to confirm eventual changes, touch “**Not Save**” to exit without saving.

- **Set offset measure:** this function allows the operator to enter the page for setting mechanical offset of locking pliers and extensor arms that is the distance between them when the carriage is on zero position. These values are set in Dinema during testing phase and they should never be changed. It could be necessary to modify them only in case of changing of zero proximity position, or in case of replacement of an extensor arm or locking clips.



IMPORTANT: Before changing these values, read carefully following instructions.

- Verify that the **carriage is on zero position**. As “zero position” we mean the position when the movable extensor arms reach the highest position. Eventually, to be sure to be on right position, touch **Manual** on main page and push start button to move the extensor arm onto **zero position**.

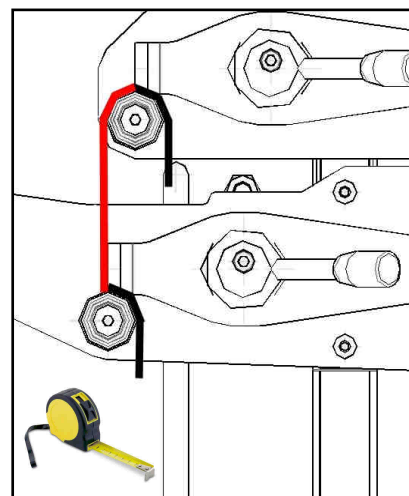


Warning:
Keep your hands and other body parts away from moving elements

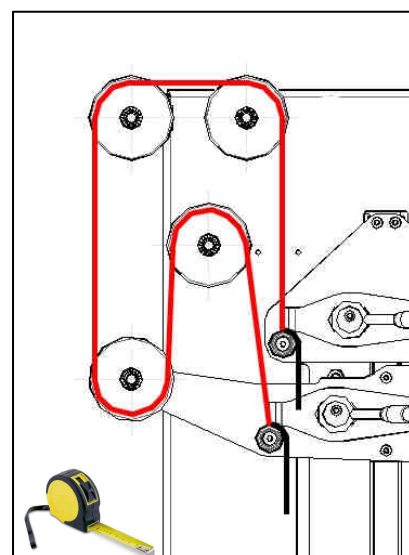
- Exit Manual page and go back to “Set offset measure” in setup menu.

SET OFFSET MEASURE			
	Set length 1	- 8.5 cm +	
	Set length 2	- 111.5 cm +	
	Set length 3	- 111.5 cm +	
	Set width 1	- 13.2 cm +	
	Set second measure	- 4.6 cm +	
	Set second measure 2	- 40.9 cm +	

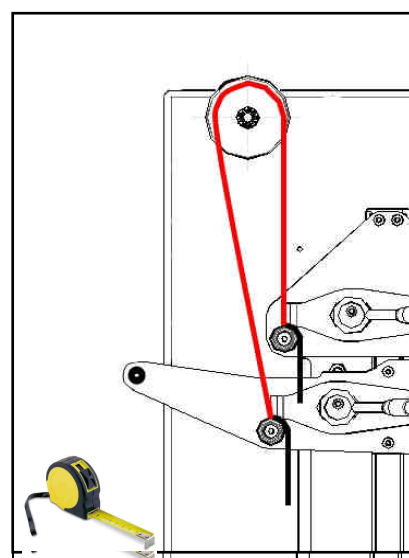
- Set length 1:** Acting on + and - to increase or decrease the offset of locking clips on position for measure *Type 1*. Value is expressed in millimeters (or inches). To verify the exact value to enter, take a flex meter and measure the distance as shown in the picture (the distance to be measured is the one in red —).



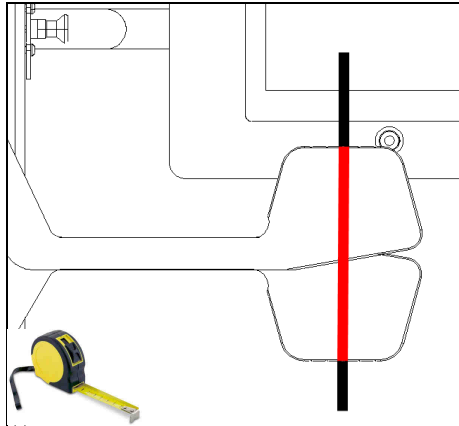
- Set Length 2:** Acting on + and - to increase or decrease the offset of locking clips on position for measure *Type 2*. Value is expressed in millimeters (or inches). To verify the exact value to enter, take a flex meter and measure the distance as shown in the picture (the distance to be measured is the one in red —).



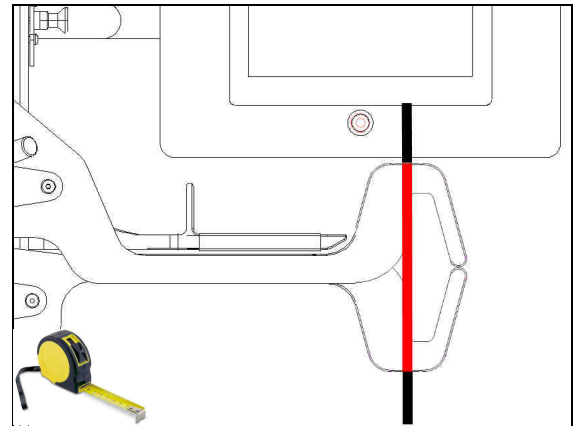
- Set Length 3:** Acting on + and - to increase or decrease the offset of locking clips on position for measure *Type 3*. Value is expressed in millimeters (or inches). To verify the exact value to enter, take a flex meter and measure the distance as shown in the picture (the distance to be measured is the one in red —).



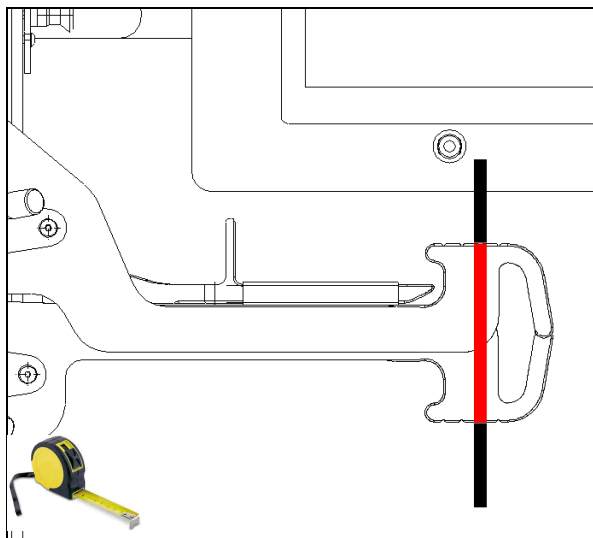
- Ⓛ **Set Width 1:** Acting on + and - to increase or decrease the offset of the extensor arms. Value is expressed in millimeters (or inches). To verify the exact value to enter take a flex meter and measure the distance as shown in the picture (the distance to be measured is the one in red —). Here below pictures show how to get the measures with three different types of extensor arms: Man-Child; Pantyhose and Seamless.



Seamless



Pantyhose



Man-Child

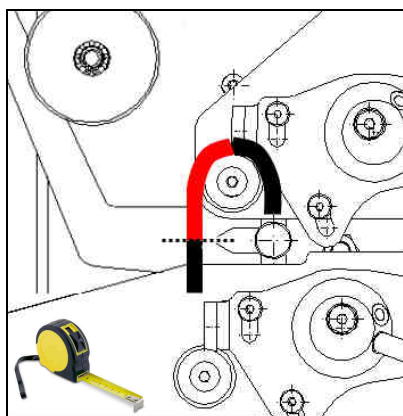
You can also make adjustment to the optional “pointer” for size of partial measurement (see page 11):

- Ⓛ Verify that the **carriage is on zero position** and procede with measures.

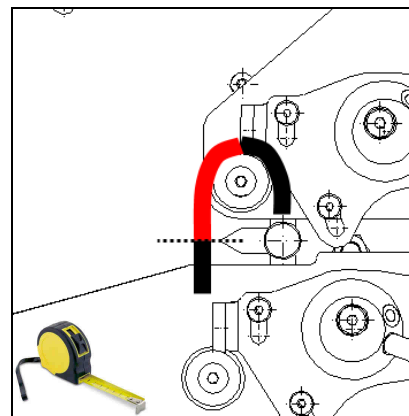


Attenzione:
Tenere le mani e le altre parti del corpo lontano dagli organi in movimento.

- ▷ Set second measure: Acting on + and - to increase or decrease the offset of pointer. Value is expressed in millimeters (or inches). To verify the exact value to enter, take a flex meter and measure the distance as shown in the picture (the distance to be measured is the one in red —).

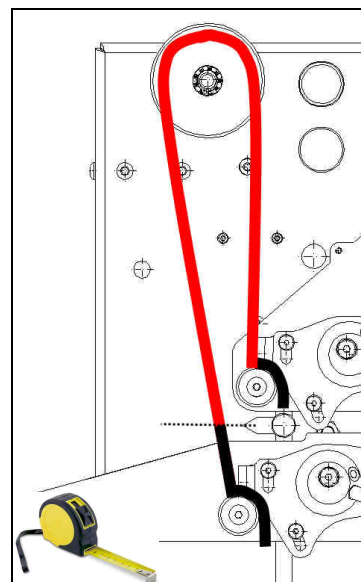
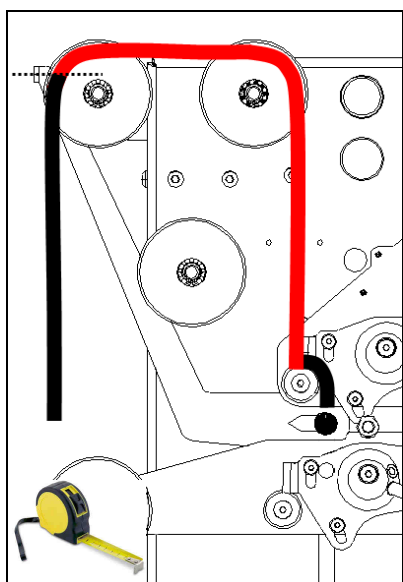



Woman



Man-Child


- ▷ Set second measure 2: Acting on + and - to increase or decrease the offset of pointer in tipe 2 or tipe 3 measure. Value is expressed in millimeters (or inches). To verify the exact value to enter, take a flex meter and measure the distance as shown in the picture (the distance to be measured is the one in red —).



Leaving the screen using the button  you will be asked if you want to save or not the measurement made.



Touch "**Save**" to confirm eventual changes, touch "**Not Save**" to exit without saving.

 **Configuration:** tapping this string you can access the DSC configuration window. Below the image of the screen that will appear on the display.



- ⓓ Number DSC: allows assigning an identification number to DSC device.
Touch + e - to increase or decrease the value. This number is used as name of the file that DSC creates when automatic or manual save is enabled (see page 18). File name changing could be useful only when using many DSC units, to avoid confusion during data analysis.
- ⓓ Serial number: is the ID code assigned to the DSC by the factory.
- ⓓ Units: This parameter indicates the unit of measurement for length and / or width you want to use. Acting on the drop-down menu you can select Meters (measurements in millimeters) or Inches (Dimensions in inches with a resolution of 32 the of an inch).
- ⓓ Resolution: is the parameter on which action is required if you want to change the resolution of the measurement.
If the unit of measurement (see above) is set to "Meters", you can select 1 or 5 mm resolution.
If the unit of measurement (see above) is set to "Inches", you can set the following resolutions:
- $\frac{1}{4}$
 - $\frac{1}{8}$
 - $\frac{1}{12}$
 - $\frac{1}{32}$
- ⓓ Up velocity: Touch + e - to increases or decreases the speed of the fixed clip during the ascent. The value is already set at the maximum speed possible to ensure a smooth functioning of the DSC. We recommend that you do NOT change this value.
- ⓓ Down velocity: Touch + e - to increase or decrease the speed of the fixed clip when moving down. The present value corresponds to the highest possible speed to assure DSC correct functioning. We suggest to keep this value UNCHANGED.
- ⓓ Special Pull: allows enabling or disabling *Special Pull* function (for further details see "Set pull" of Setup Page). Select the value wished. If this function is *Enable* additional buttons will be displayed on measure page (two for width measure and two for length measure) , to allow the operator to select the pull weight to be used when measuring
- ⓓ Repeat special pull: Normally, at the end of a measurement in "Special pull", the set of proof go back to "Normal". Enabling this feature will make sure that at the end of the measurement set remains settings "Special" selected.

- **Filter zone:** This button enables or disables, depending on what is selected in the corresponding drop-down menu, the filter function described above (Filter manage the page menu).

WARNING:


If you disable the filter function in the "menu", this function is no longer visible.

If this was disabled with the filter active, the function is no longer visible but **the filters will remain active.**

- **Time pull [sec]:** touching + and - you increase or decrease the dwell time (in which the sock is maintained extended) used by DSC after finishing the downward stroke, before rising in the rest position.

WARNING:



We suggest not modifying this value

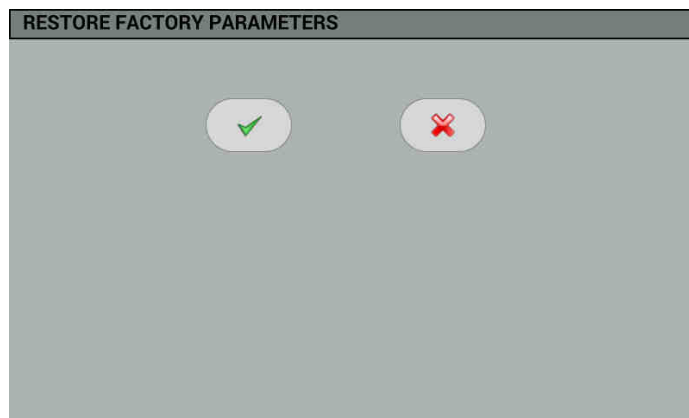
Leaving the screen using the button  you will be asked if you want to save or not the measurement made.





Touch **“Save”** to confirm eventual changes, touch **“Not Save”** to exit without saving.

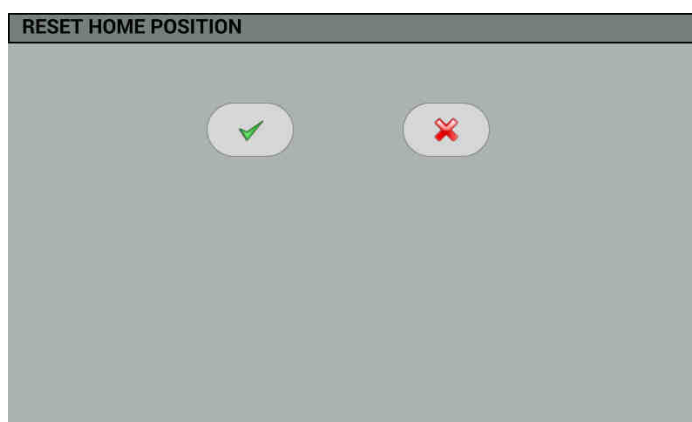
- **Stress test:** command protected by password (please call Dinema S.p.A. for this command function).
- **Restore factory parameters:** this function resets all default settings; therefore all custom values are cancelled. A warning window asks you to confirm this operation.

Touch  to confirm the restore of default values; touch  to exit without any changes.



- **Reset home position:** this function forces the DSC to search again for zero position. Usually this function is used by Dinema staff only; it can be useful in case of faulty measure after that the carriage has been moved manually. A warning asks to confirm this operation.

Touch  to confirm the restore of default values; touch  to exit without any changes.



6 HOW TO CALIBRATE DSC

In order to perform calibration of DSC there are two procedures:

- ▷ Using the dynamometer Kit.
- ▷ Use a sample weight.

▷ Using the dynamometer Kit.

Procure the calibration kit for DSC Dinema (optional order code 460214). It consists of two specific springs, two hooks in the shape of "S" and a digital dynamometer.



1. Please, "assemble" the dynamometer using the two hooks provided and the stiffer spring (see illustration at right).
2. Holding it as shown on the right, turn on the dynamometer and wait for the car to perform zero.

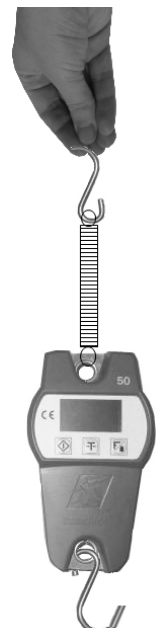
REMARK:

No weight should be connected to the dynamometer at this stage

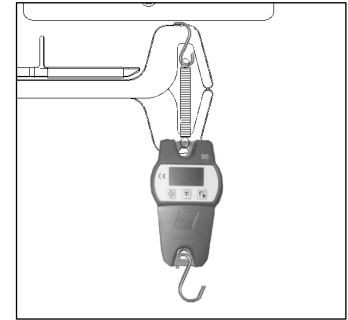


WARNING:

Before continuing with the procedure, make sure that **the DSC is off**




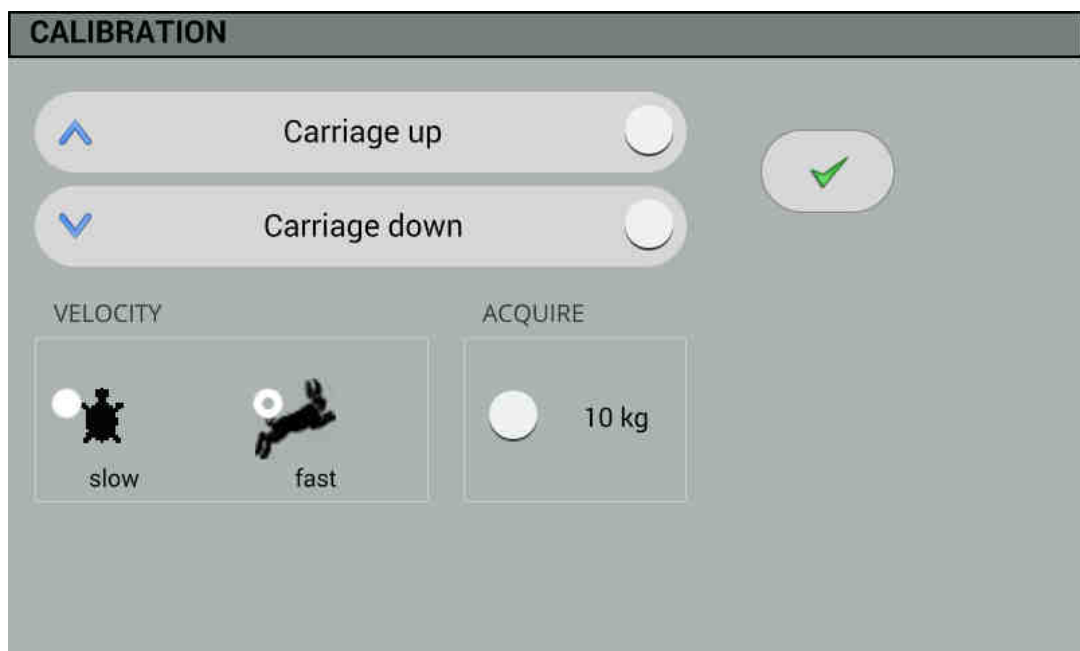
- Please verify that arms and pliers are empty (no sock inside).
Hook to the measuring arm (the upper one) the dynamometer.



- Turn on the DSC using the appropriate button mushroom shaped.
After the start-up, the main screen will appear:



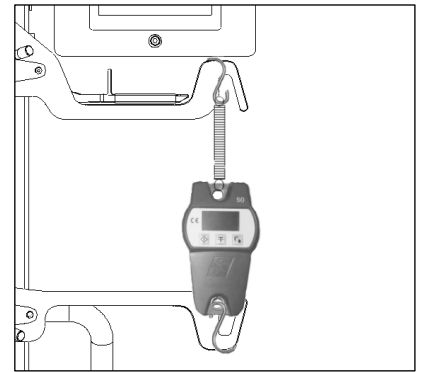
- From the main page please access to the Setup page .
- Touch the **Calibration** string to access the calibration page. This procedure allows calibrating the full scale of the load cell that reads the weight applied to the braid to an extent.



- Please press and holding down the start button and tap **Carriage down** button to lower the



carriage to engage the dynamometer to the movable arm (as show below).

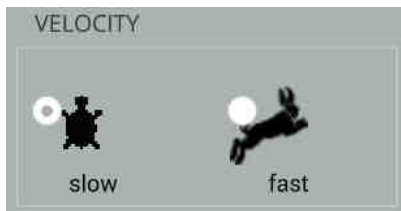


Warning:
Your hands and other body parts away from moving elements

- Let the carriage move down until the dynamometer shows 10Kg (the weight indicated on acquisition button).
Should this value be exceeded, touch **Carriage up** to let the carriage move up until you get the correct weight.




When the read weight is close to the one indicated on acquisition key, in order to effect
When the read weight is close to the one indicated on acquisition key, in order to effect the best calibration, it's possible to use the "Slow" key for a further and more exact adjustment.



IMPORTANT: highest precision is recommended.

- When the dynamometer shows the correct weight, touch "ACQUIRE" to acquire full scale value.



10. Leaving the screen using the button  you will be asked if you want to save or not the measurement made.



Touch **“Save”** to confirm eventual changes, touch **“Not Save”** to exit without saving.

11. Close all setup pages, until you are back in the main page.
12. Touch **Manual** to enter the page for manual measure (see point 2). Push start button to make the carriage move up, to release the dynamometer. The carriage stops on zero position.
13. Take the dynamometer away from DSC extensor arms, to let them be free.
14. Turn the DSC off and then on again.


 **WARNING**

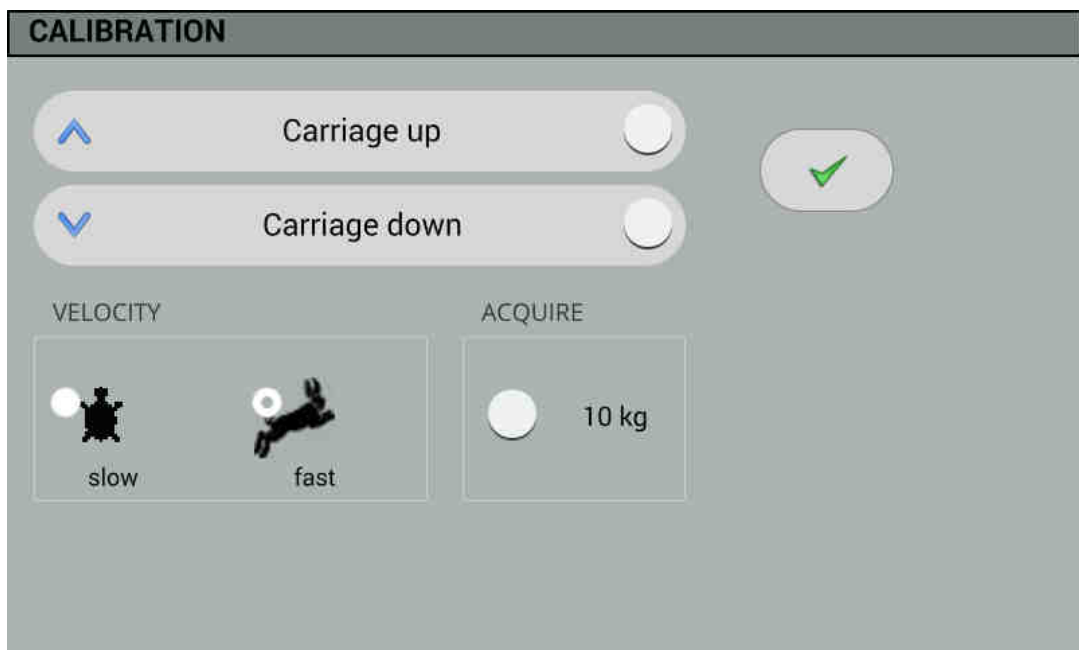
It's important to turn DSC off after calibration, before restarting to work

Impiego del peso campione

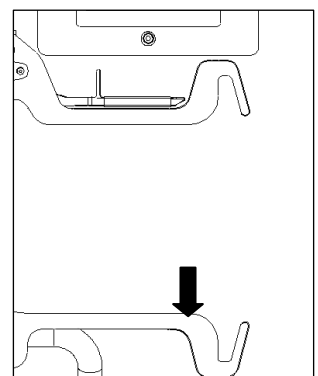
Procure a 10Kg cartificated weight



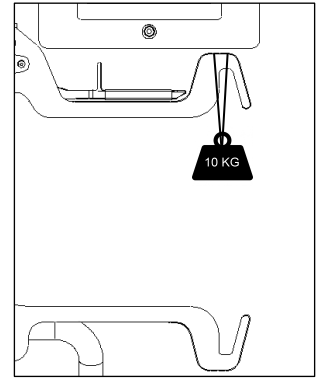
1. Turn DSC on and from the main page please access to the Setup page 
2. Touch the **Calibration** string to access the calibration page.



3. Please press and holding down the start button and tap **Carriage down** button to lower the arm at a distance that does not interfere the calibration operations.



4. Hang with a string the 10KG weight on measuring arm and capture the value by touching the "ACQUIRE" button.



 During this step the weight must not swing or jump.

5. Leaving the screen using the button  you will be asked if you want to save or not the measurement made.



Touch **“Save”** to confirm eventual changes, touch **“Not Save”** to exit without saving.

6. Close all setup pages, until you are back in the main page and remove the weight
7. Touch **Manual** to enter the page for manual measure (see point 2). Push start button to make the carriage move up, to release the dynamometer. The carriage stops on zero position.
8. Turn the DSC off and then on again.

 **WARNING**

It's important to turn DSC off after calibration, before restarting to work


7 USB E WIFI CONNECTIONS

The DSC is designed to make sure that you can interact also from the outside; to allow this the DSC has been equipped with a USB connection (number two inputs Type A and number two inputs Type B) and a WIFI connection (**optional kit**).

7.1 USB CONNECTION

7.1.1 MEASUREMENT DATA SAVING

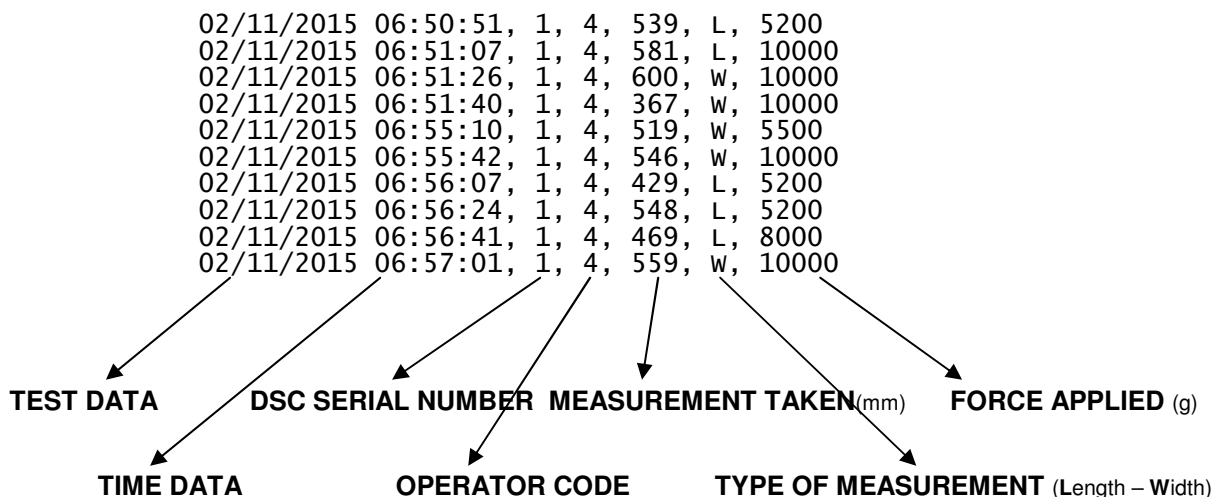
Information regarding the measurements performed by DSC can be saved on a USB device. The following describes the procedure (already mentioned on p. 18) necessary for the performance of this operation:

- ▶ Inserting the device into the USB connector appears on the home screen the symbol  that shows you are connected to the DSC;
- ▶ Touch the “Menu” button to access “Management”;
- ▶ Enable “USB” in the type of measurement you want to save (Save automatic - Save manual or both).
- ▶ The string "Operator Code" allows you to assign an identification number to the operator who performs the work.
This number will be part of the information that are saved on USB device.

In this way, the information regarding the measurements is saved in a file with the extension .txt.

The file name will be composed as follows: *year / month / day-month series DSC / operatore code.txt* (e.g. 151102_0104.txt)

Below is an example of how information is saved measurement:




7.1.2 FILTER MANAGE

The button Filter manage allows access to the menu for the management of the filters.

In Automatic measurement, when the DSC is connected to the textile machine, it receives from the machine itself all information regarding the measures in various parts of the sock. It may therefore be necessary and more practical that the DSC "manage" only the measurements of points on the sock that most interest us.

For this reason, the DSC was equipped with a filter that during the acquisition of data from the textile machine eliminates unneeded ones.

To enable this feature, see the sub-menu "Configuration" in the "Setup" menu.

 Load from USB: to indicate the device what information DSC "filter" should be drawn up from a PC to a text file (e.g. Notepad) and save it with the extension ".flt." The text file must contain the word you want to filter (e.g. tip).

You can specify multiple words to be filtered, in which case the text file will be prepared as in the example below

```
tip (new line, press enter)
leg (new line, press enter)
heel (new line, press enter)
```

N.B.

It is important that at the end of each word that you want to filter wrap, start a new line.

It is equally important that the text entered respects the spelling out of the textile machine (respecting capital –lowercase letter).

Once you have created the file. Flt and saved on a USB device that can be loaded on DSC touching the Load from USB.

When you are finished you can remove the USB device.

WARNING:

On the "setup" by selecting from the list of buttons "configuration" is possible, as explained above, to disable the filter. By doing that in the "menu" this function is no longer visible.

If this was disabled with the filter active, the function is no longer visible but the filter **will remain active**.

7.2 WIFI CONNECTION

To connect the device to the network via WIFI DSC is necessary to have appropriate kit (optional).

To configure the connection you should contact your network administrator that must configure the device and connect it to the company wireless LAN.

Once the network configuration, you can interface with the DSC via FTP.

In this way you can set, via FTP, the force (pull) applied to perform the measurements or in the same way you can view the information stored on the USB key (for example, information on the measures. See 7.1.1).

8 RECHARGE AND REPLACEMENT OF DSC BATTERIES


8.1 Recharge

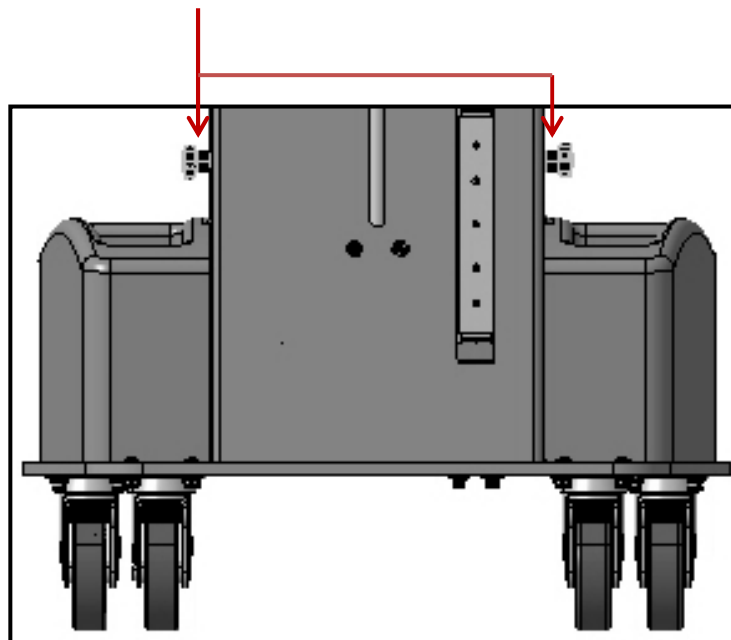
DSC is equipped with an internal battery charger that recharges the batteries every time it's plugged into power mains. Battery charger is of automatic type and assures to maintain the best charge level.

8.2 Replacement

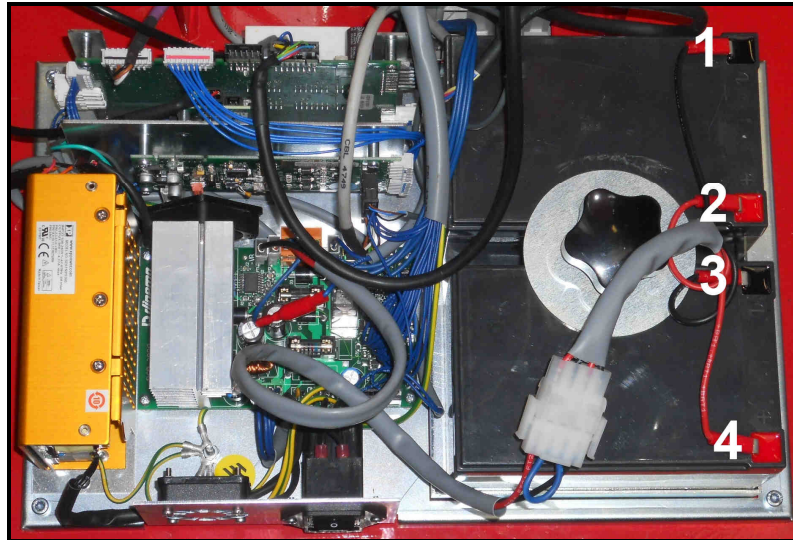
After a certain life time every battery, even if 100% charged, is no more efficient enough to assure the expected number of DSC working cycles.

Batteries' life depends on many parameters including working temperature and number of charging / discharging cycles. When replacement is necessary proceed as follows.

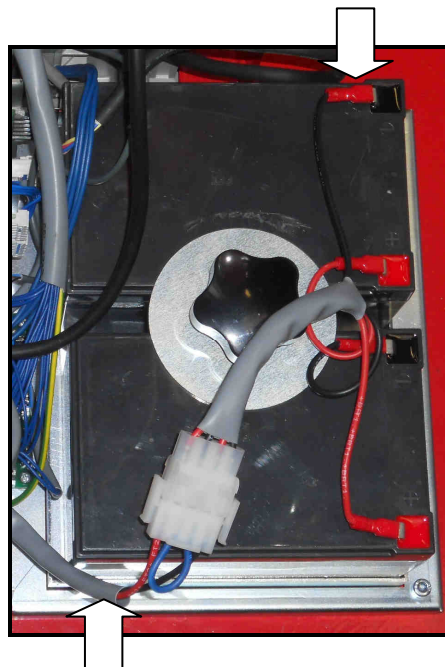
1. Turn DSC off;
2.  Be sure that DSC is unplugged.
3. Do not wear armlets, chains or other conductive things, while handling the battery.
4. Unscrew the two lateral knobs that fix the carter for electronics protection.



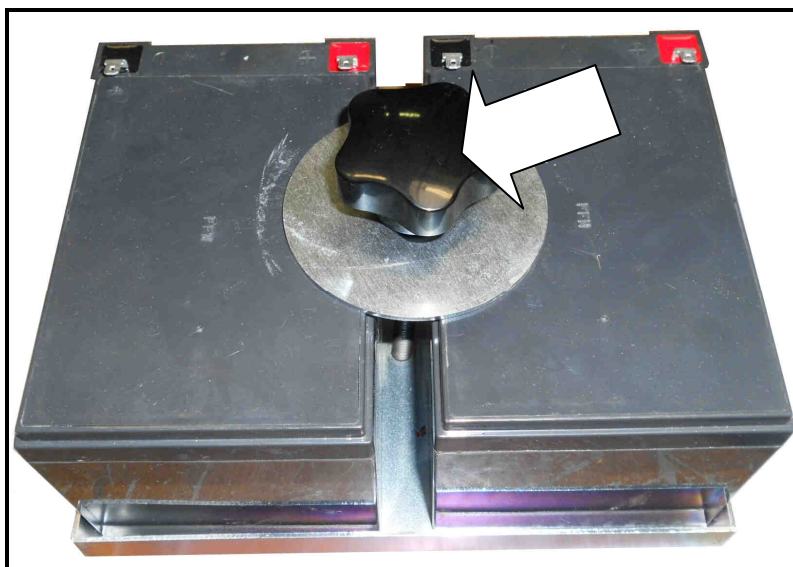
5. Take the carter out, very slowly;
6. Disconnect the four fasten connectors;



7. Loosen the locking screws positioned at the points indicated by the arrows;



8. Remove the battery by lifting the knob clamping;




9. Unscrew the locking knob to "free" the batteries;
10. Remove the batteries and replace them with new ones;



WARNING:

Both batteries should be always replaced at the same time and by an equivalent model: hermetic and rechargeable 12V 12Ah lead battery (Dinema order code 148026).

11. Re-screw the knob and place the new batteries into their container.
12.  Re-connect the cable paying attention to polarity (**black - / red +**);
13. Re-place the carter on correct position and fix it by means of lateral knobs.


WARNING:

Before using DSC powered by the batteries only, let the new batteries on charge for at least **6 hours**.

9 TYPICAL ERROR MESSAGES

Usual errors that may occur during the normal use of DSC unit are listed here below. For any other error or failure, please contact Dinema Technical Support service: support@dinema.it


Low Battery:

This warning appears when batteries are running down and can no longer assure the correct functioning of DSC device. Touch  to close the warning. DSC will complete the measuring in progress. When starting a new measuring this warning will appear again.



SOLUTION: plug DSC into power mains for batteries recharge.


ADC Offset

This warning appears when DSC is turned on and the extensor arms or the locking clips are not free. The error indicates a problem when trying to set the correct zero weight of the loading cell. Touch  to close the warning.



SOLUTION: When switching the DCS on is important that nothing is hung up, stuck or leant to the arms and/ or pliers of the DSC.
Turn DSC off. Be sure that extensor arms and locking clips are free and turn DSC on again

Link failed

This warning appears when DSC is working on automatic mode and communication between DSC and knitting machine fails. Touch  to close the warning.



SOLUTION: Verify that the cable for connection of DSC to the knitting machine is not damaged and is well connected.

WARNING:

For any other problem or if above instructions are not enough for prompt solution, contact Dinema Technical Support (support@dinema.it)

10 FUSES TABLE


PCB	Position	Type	Dinema code
5752/1	F1	5x20 3,15A 250V Fast	132014
5752/1	F3	5x20 1A 250V Delayed	132010
Main switch fuse	//	5x20 2A 250V Fast	132013



WARNING:





Sostituire i fusibili con tipi aventi le stesse caratteristiche tempo-corrente.



11 SPARE PART TABLE




	MATERIALE	CODICE DINEMA	POSIZIONE
	PCBA 5831/1	45831000T	1
	PCBA SK 4796/1	40396000T	1
	PCBA 4802/1	40502000T	2
	PCBA 5752/1	40752000T	2
	DIGISTEP AZ. DIGISTEP 10	453055	2
	PCBA 5844/1	45844000T	2
	ABLING CBL 3017 POWER SUPPLY 220V	242617	IN THE KIT
	CABLAGGIO CBL 3112 TRASMISSIONE DATI MACCHINE LONATI	242712	IN THE KIT
	CABLAGGIO CBL 3113 TRASMISSIONE DATI MACCHINE SANTONI	242713	IN THE KIT
	START BUTTON "START"	184080	3
	STOP/EMERGENCY BUTTON "RED HEAD"	184068	3
	RECHARGIABLE BATTERY PB 12V 12Ah	148026	2
	POMER SUPPLY AC/DC 150W 36V	461053	2
	PROXIMITY NPN NA DIA. 8	213071	3
	LOAD CELL 50KG	213026	3
	MOTORGEAR IN C.C.	456014	2
	MOTOR + ENCODER	156013	2
	CARTER ELECTRONICS PROTECTION	215086	2
	CALIBRATION KIT	460214	OPTIONAL
	WIFI KIT	454069T	OPTIONAL
	INSPECTING FORM KIT	453716	OPTIONAL


12 WORKING CONDITIONS


See here below all specific technical features of DSC device





DIMENSION	
	Height: 1670 mm
	Depth: 550 mm
	Width: 640 mm
	Weight: 65 Kg




TEMPERATURE RANGE	
	Working temperature: 0 ÷ 35 °C @ 70% humidity without condensation
	Storage temperature: -20 ÷ 50 °C @ 90% humidity without condensation

POWER SUPPLY	
The equipment operates at both rechargeable batteries, either through internal power supply. These data are intended to refer to the DSC connected to the mains.	
	Working power 100 ÷ 240 Vac
	Frequency 47 ÷ 63 Hz
	Max. voltage: 2A

ALTITUDINE	
	0 - 2000 m
For further information concerning working conditions, please refer to CEI-EN 60204-1 standard.	

DISPLAY	
	Back-lit LCD Touch screen 7"

POWER SUPPLY	
	Quantity: 2
	Type: Rechargeable sealed lead-acid 12V 12Ah
	Range: 700 measurement cycles on a battery charge and 100% efficient, 10Kg pulling force
	Reload: 6 hours, from zero to full capacity

RANGE FORCE EXPANSION	
	Min: 0,1 Kg
	Max: 10Kg
	Risolution: ±10gr





13 DISPOSAL



WARNING: To avoid any possible negative effect on environment and health and in order to promote materials recycling, this device must be disposed according to the regulations in force in the country in which it has been sold.

This device contains two batteries, similar to the automotive model. These batteries must absolutely not be opened, burnt or throw into either water or fire. At the end of their life they must be disposed according to the regulations in force.

14 CE DECLARATION OF CONFORMITY

			
DECLARATION of CONFORMITY PRODUCT (CE)			
Supplier:	DINEMA S.p.A. Via S. Polo nr. 183, 25134 BRESCIA Tel. 0302300492		
Declares that the family product:			
DSC Touch 7" V.3 (black edition) (Model: man-child, woman, seamless, medical)			
We declare on our responsibility that the product to which this declaration refers, was created and controlled in accordance with the technical specifications and standards applicable to inspection and testing.			
We further declare that the product which this declaration refers to, fulfils the requirements of the following directives:			
- 2004/108/CE (Directive EMC)			
- 2006/42/CE (Machine's directive)			
- 2006/95/CE (Low voltage directive)			
We also declare that the product to which this declaration refers, responds to the following standards as applicable:			
- EN 60204-1 (safety of appliance) machine's electrical equipment:			
First part: general rules			
The product complies only when used with the supplied accessories. The use of different configuration from the one supplied, it may require the adoption of specific countermeasures to achieve compliance.			
Delivered on	Signature of legal representative		
<u>18/02/2016</u>	