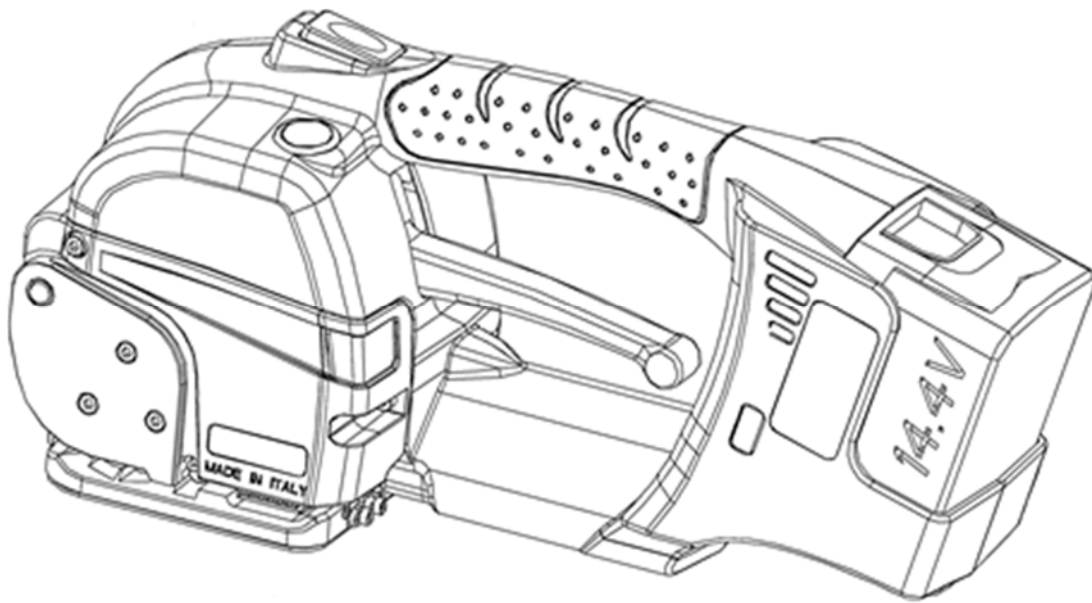


DuBose

DS700

OPERATION AND PARTS MANUAL



Operating and maintenance manual

General Power Tool Safety Warnings

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save all warnings and instructions for future reference. The term [power tool] in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

Keep work area clean and well lit. Cluttered or dark areas invite accidents. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes. Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

Electrical safety

Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock. Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators, there is an increased risk of electric shock if your body is earthed or grounded. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges and moving parts. Damaged or entangled cords increase the risk of electric shock.

Personal safety

Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool when you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury. Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries. Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents. Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations. Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

Power tool use and care

Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed. Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired. Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

Battery tool use and care

Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack. Use power tools only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire. When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, which can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire. Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

Service

Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

SPECIFIC SAFETY RULES FOR STRAPPING TOOLS

Eye and hand protection

Strapping tool must be used by one operator at time. When using plastic strapping it is recommended to wear guard glasses with side shields. The non-observance of this rule may cause dangerous wounds to eyes and heavy injuries to the eyes. It is also compulsory to wear protective gloves against occasional sharp-edged strap.

Acoustic Protection

Wear hearing protection.

Body protection

Wear safety shoes and working uniform.

Cutting of tensioned strap

Use the proper strap shear for the cutting of tensioned strap. The use of other tools, such as, blades and tongs, may be dangerous. When cutting, it is important to keep a safe distance and to make sure that other personnel are not standing in the tool working area. Tensioned strap, when cut, can snap and fly quickly, causing injury.

Danger caused by incorrect sealing

It is essential to check that strap sealing is perfect. An incorrect sealing is not reliable and exposes both goods and packaging operators to danger. As it is the operator's responsibility to make a correct sealing, and it is advised that they study the correct sealing check instructions provided in this manual.

Strap dispensing

Strap must be unrolled using a suitable dispenser.

Use of package for different purposes

It is absolutely forbidden to lift, hang or draw the goods package to avoid dangerous accidents.

Strap breakage danger during sealing cycle

A wrong use, a too heavy tensioning, an unsuitable strap, a sharp-edged package or packages incorrectly positioned during tightening cycle, may cause a sudden strap loosening or breaking with the following possible consequences:










- Packages fall-down
- loss of balance
- Sudden return of strap which may cause injuries or damage other goods.

Always ensure that you are in a stable position when you use the tool. Clear the space around the working area, maintaining an adequate safety distance. Make sure no one is present in the cleared working area before proceeding with use of the tool.

Battery

- Avoid unintentional powering up of the tool.
- Ensure the On/Off switch is in the off position before inserting battery pack.
- Carrying the power tool with your finger on the On/Off switch or inserting the battery pack into power tools that have the switch on invites accidents.
- Do not open the battery. Danger of short circuiting.
- Protect the battery against heat, e.g., also against continuous sun irradiation and fire. There is danger of explosion.
- Do not short-circuit the battery. There is danger of explosion.
- Battery leakage may occur under extreme usage or temperature conditions. When a rechargeable battery leaks, avoid contact with the skin or eyes. The battery liquid is caustic and could cause chemical burns to tissues.
- If liquid comes in contact with skin, wash quickly with soap and water, then with lemon juice or vinegar. If the liquid contacts your eyes, flush them with water for a minimum of 10 minutes and seek medical attention.

SYMBOLS

	Before using the machine read the instruction manual		
	ATTENTION!		Wear protection gloves
	Tool positioning and removal of tool		Wear safety shoes
	Strap tension		Wear hearing protection
	Strap sealing		Wear safety glasses

Use of the instruction manual

This instruction manual is addressed to tool operators, owners, maintenance, cleaning and repair staff.

ANY USE OTHER THAN THE ONE STATED IN THIS MANUAL IS NOT ALLOWED!

This manual gives instructions about the use of the tool according to the lay-out and its technical features.

- The tool is for a specialized use, the instruction manual can never replace a qualified, experienced operator.
- This booklet is to be considered an integral part of the tool and must be kept for future reference for the entire tool life cycle.
- In case of loss or damage, user can request the manufacturer a new manual, making reference to tool serial number, model and year of production, as shown on the tool name-plate.
- The manufacturer reserves at any time the right to bring both production and instruction manual up-to-date without any obligation to modify previous tools and manuals.

- The user may contact the manufacturer to get further information on the correct use of the tool.
- The manufacturer is not responsible in the following cases:

- Misuse of the tool
- Lack of maintenance
- Safety design over rides or modifications of the machine not previously authorized by manufacturer
- Partial or full non-observance of instructions
- Extraordinary events

INTENDED USE OF THE TOOL

The equipment described in the manual herein is intended to strap packaging with plastic straps using a vibration welding system. Any other use is not permitted.

TECHNICAL DATA Noise / Vibration Information

Measured values determined according to EN 415-8 Appendix A. Typically the weighted sound pressure level of the product is 85.35 dB (A). The noise level when working can exceed 96.33 dBA. Wear hearing protection! Vibration total values (triax vector sum) determined according to EN 60745: Vibration emission value $a_h < 4.94$ m/s². The vibration emission level given in this information sheet has been measured in accordance with a standardized test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However, if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period. An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period. Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organization of work patterns.

Technical features

	DS700
Length	13 in.
Width	4.25 in.
Height	6.5 in.
Strap quality	PP / PET
Sealing type	VIBRATION
Welding efficiency	75-85% OF BREAK STRENGTH OF THE STRAP
Neck type	ROUND PACKAGE (minimum diameter 28 in.)
Strap width	3/8", 1/2" and 5/8"
Strap thickness	0.020 – 0.044"
Max tension	720 pounds force
Max tension speed	40 ft./min
Cycles per charge	150-350
Charge time	22 minutes
Battery	BATT.14,4V 4,0 Ah LI-IO SANYO CELL
Charger	MAKITA CHARGER 110 V - USA
Weight (including battery)	8.3 pounds

MODEL TABLE

Model	Item	Strap width
DS700	49754	3/8 – 5/8 in.

OPERATION INSTRUCTION

Before using the tools the operator must read and understand this manual.

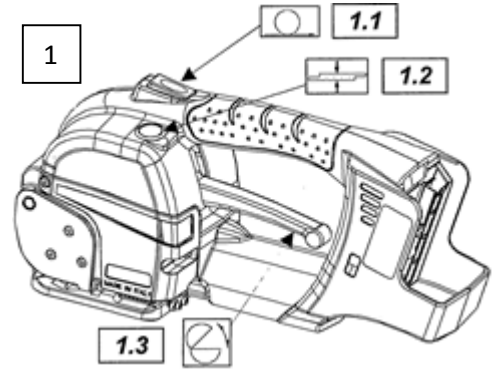
Installation

The user must have read and understood the present manual. Before start to use the tool, carefully check the technical characteristics table to be aware of the performance and the limitations of the strapping tool you are going to use.

Serious injuries and damages to people or equipment may result if the equipment is not correctly used, if the strap is over tensioned and/or if inadequate straps are used, in relation with the product to be packaged (sharp edges, high temperatures, etc.), due to sudden sagging or breakage of the straps.

Control components

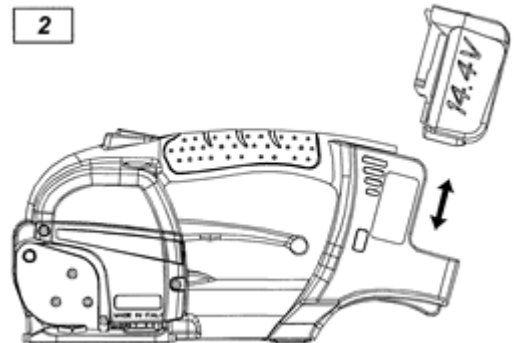
- Tensioning button (fig.1 - 1.1)
- Welding button (fig. 1 – 1.2)
- Opening lever (fig.1 – 1.3)
- Control panel (fig.3)



Switching on

Insert the battery as shown in (fig.2). The tool can be switched on by one of the following three actions:

- Push the tensioning button (1.1)
- Raise the opening lever of the tool (1.3)
- Push the welding button (1.2)



Tool control panel description

The control panel is composed of:

7segment 3 digit display (fig.3 - letter A, B, C), 3 led (fig.3 – letter D, E, F) and two control buttons (fig.3 – letter G, H).

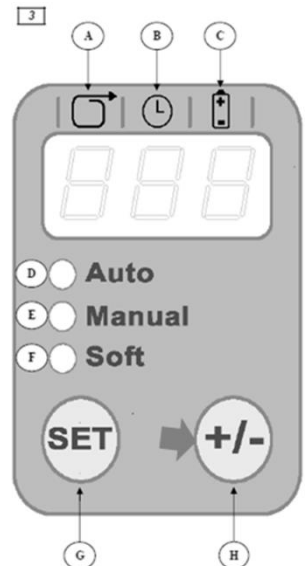
The first digit of the display (fig.3 – letter A) indicates the tensioning force on a 1-9 scale. The second digit of the display (fig.3 – letter B) indicates the welding time on a 1-9 scale (see table below).

The third digit (fig.3 – letter C) indicates the residual charge of the battery on a 1-9 scale.

The three led permit 6 different tool operating modes of functioning.

For more information see the section “Operation mode setting”.

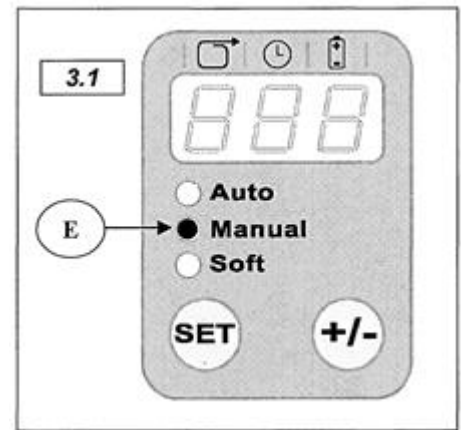
The two buttons are used to scroll through the menu items, change the operating mode, tensioning force and welding time settings.



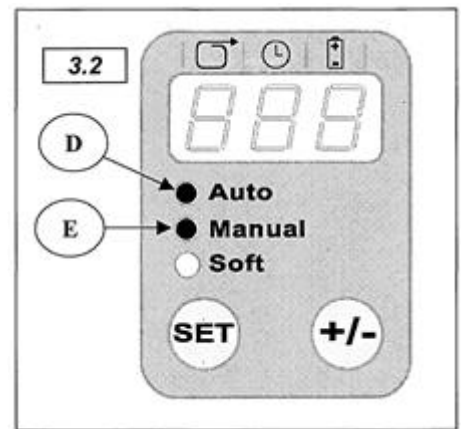
Operation mode setting

The tool has three basic operating modes of functioning.

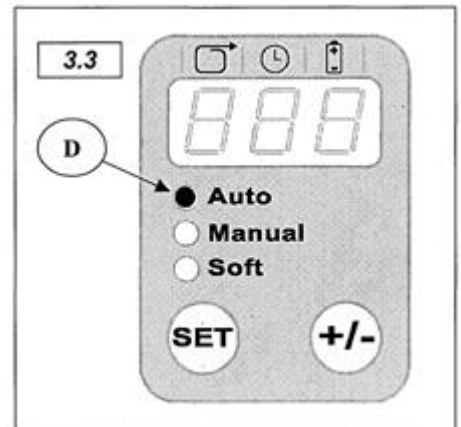
- **Manual (fig.3 - 3.1)** – the strap is tensioned by pressing the tensioning button (1.1). At the release of the button (1.1) the strap tensioning stops. To obtain the set tensioning force, keep the tensioning button pressed until the complete recovery of the strap and the consequent stop of the motor. Start the welding with the button (1.2). In this operating mode there is a full control on the strapping cycle.



- **Semiautomatic (fig.3 – 3.2)** - the strap is tensioned by pressing the tensioning button (1.1). At the release of the button (1.1) the strap tensioning stops. To obtain the set tensioning force, keep the tensioning button pressed until the complete recovery of the strap and the consequent stop of the motor. The welding will start automatically when the set tensioning force is obtained. This operating mode decreases the strapping time and guarantees excellent strapping force repeatability.



- **Automatic (fig.3 – 3.3)** - the tensioning and the welding of the strap is done automatically by pressing the tensioning button (1.1). In this operating mode it is possible to stop the strapping cycle in any instant by pressing the tensioning button (1.1) or pressing the welding button (1.2) or raising the opening lever (1.3).



Soft tensioning – the soft tensioning can be applied on each of the basic operating modes: manual, semiautomatic and automatic. It consists in a lower speed tensioning and longer acceleration times in order to obtain lower tensioning forces. The soft tensioning is recommended where the package could be easily damaged and/or where a low tensioning force is requested. The soft tensioning is particularly suitable for a low thickness straps and/or PP straps.

Approximate tensioning force values

	1	2	3	4	5	6	7	8	9
Normal tensioning (LB)	280	315	370	415	485	550	618	675	730
Soft tensioning (LB)	135	157	180	191	215	247	280	325	360

Welding time table

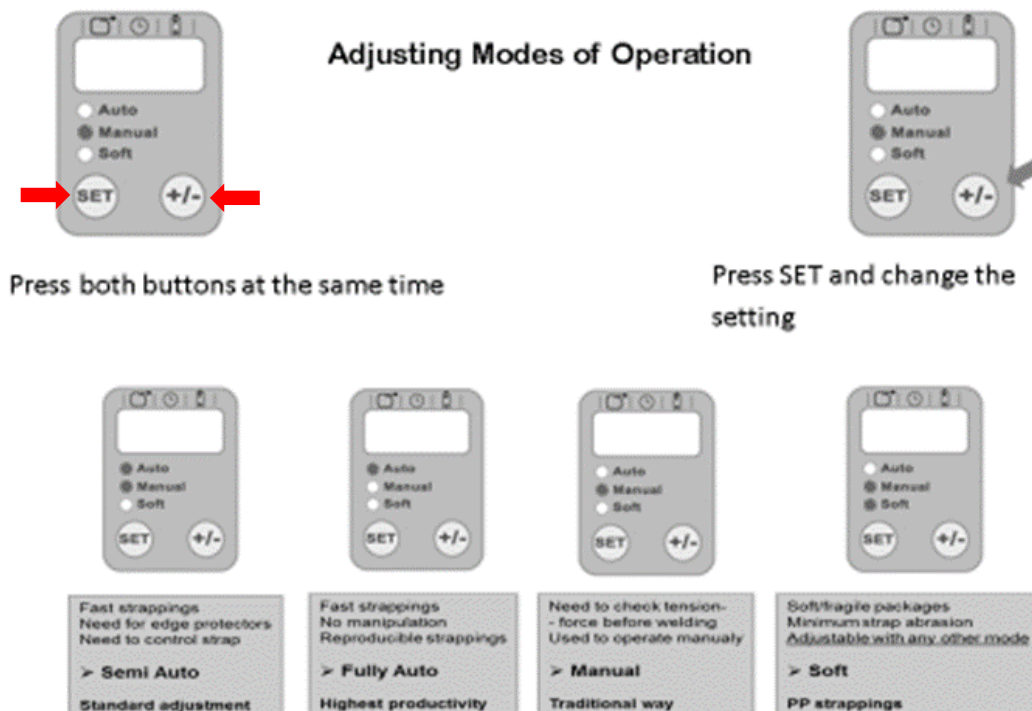
	1	2	3	4	5	6	7	8	9
Time (sec)	0,6	0,9	1,2	1,5	1,8	2,1	2,4	2,7	3

Settings

To enter the setting menu press both buttons “SET” (fig.3 – letter G) e “+/-“(fig.3 - letter H) at the same time. The current operating mode setting starts to blink. Use the button “+/-“(fig.3 - letter H) to modify the setting of the operating mode scrolling through the 6 possible combinations. To scroll to the tensioning force value setting press the button “SET” (fig.3 – letter G). The digit of the tensioning force starts to flash. Use the button “+/-“(fig.3 - letter H) to set the desired value. To scroll to the welding time value setting press the button “SET” (fig.3 – letter G). The digit of the welding time setting start to blink. Use the button “+/-“(fig.3 - letter H) to set the desired value.

To exit the setting menu and save the set values, ii any time, press the tensioning or welding buttons or raise the opening lever.

To exit without saving, keep the control panel inactive for more than 10 seconds.

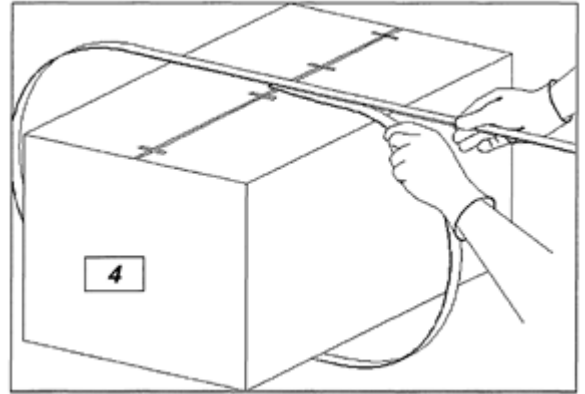


Strapping cycle

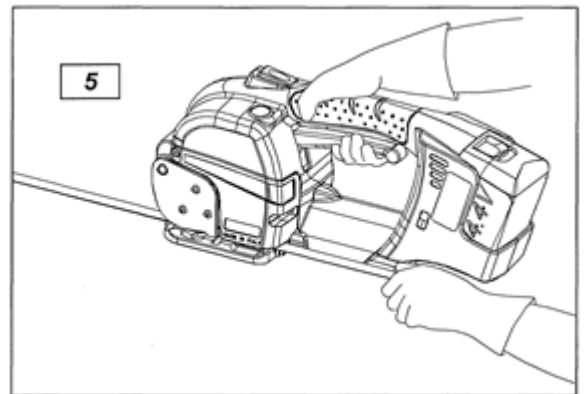
ATTENTION! Do not press the tensioning or welding buttons without strap inserted into the tool. If the tool is operated without strap, the feed wheel and the welding plates could be damaged.

The correct usage of the tool is as follows:

Prepare the strap. Wrap the strap around the package (fig.4), keeping the end of the strap on the bottom and aligning both straps. Hold the strap in your left hand.

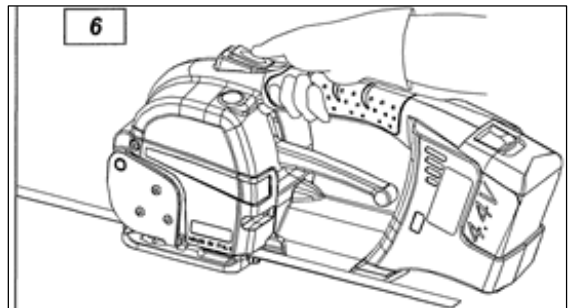


Strap insertion. With your right hand, open the tool raising the opening lever (fig. 5). With your left hand, insert both straps keeping them well aligned. Release the opening lever. Check the correct positioning of the straps before proceeding.



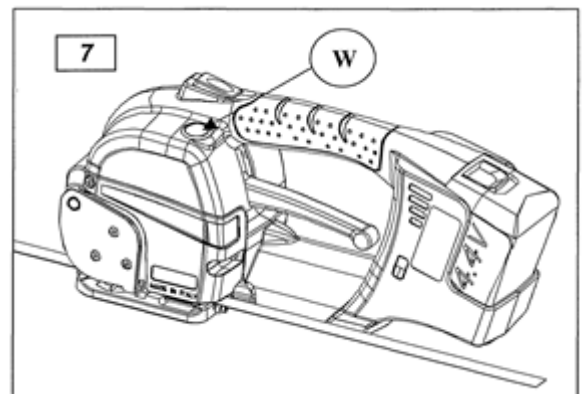
Start of the strapping cycle. Check the selected operating mode. Stay to the side to avoid eventual lash of the strap due to excessive tensioning force and consequent break of the strap. Press the tensioning button (1.1) see (fig.6).

In both manual and semiautomatic modes the tensioning of the strap stops if the tensioning button is released. In automatic mode, the strapping cycle could be stopped at any moment by pressing the tensioning or welding buttons or raising the opening lever.



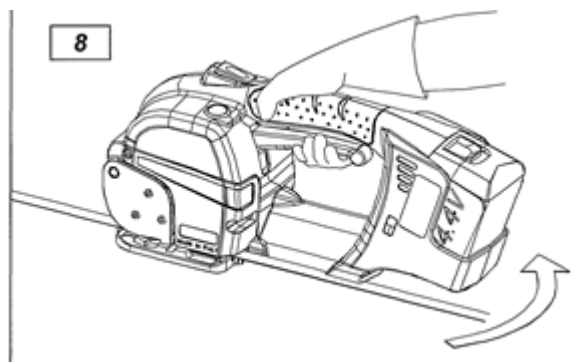
ATTENTION! An excessive tensioning force could cause the strap to break. The break of the strap could cause serious injuries.

Welding of the strap. In manual mode, to start the welding operation press the button (1.2) see (fig.7). In semiautomatic and automatic modes the welding cycle will start automatically when the set tensioning force is obtained. The welding cycle includes also the cutting of the strap.



Opening and extraction of the tool. Wait for weld to be cooled before extracting the tool. A count down on the display and an acoustic sound signals the end of the cooling time. An anticipated opening of the tool could cause an excessive loss of tensioning force or break of the weld with consequent serious danger for the operator.

Raise the opening lever (1.3) and remove the tool from the strapping plane turning the back to the right (fig. 8).



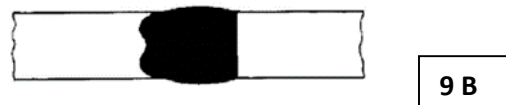
Welding quality control

The welding control is very important for your safety.

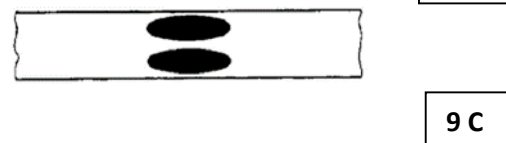
Correct welding (fig.9-A) – the entire area is well welded, without excessive leak of mold material on both sides.



Long welding time (fig.9-B), wrong, the melt material leaks, in an excessive way, on both sides of the welding zone. The welding efficiency is poor. Decrease the welding time.



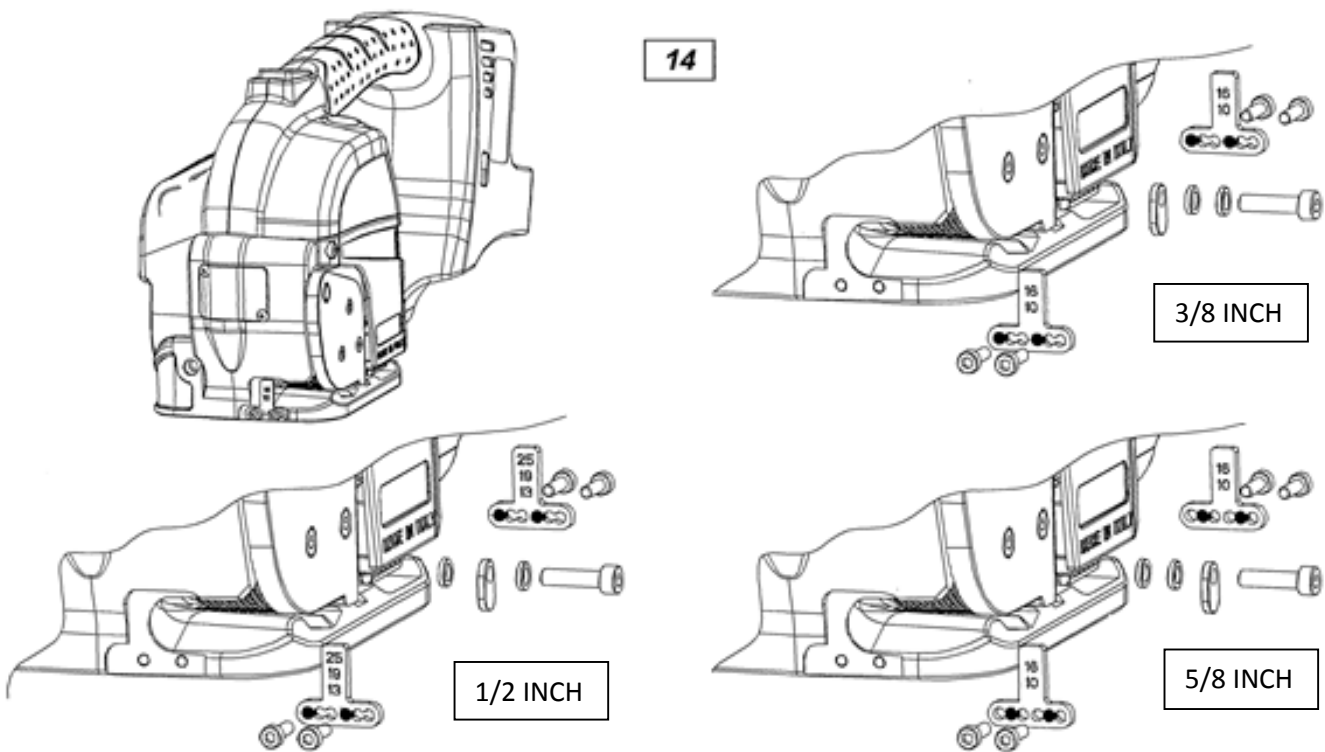
Short welding time (fig.9-C), wrong, the welding area is only partly welded. The welding efficiency is poor. Increase the welding time.



ATTENTION! Cut and replace strappings with inadequate welds. Eventual break of the strap in the welding area could cause serious damages. Test, periodically, the effective welding efficiency with adequate equipment (Strap samples can be sent to DuBose for testing and documentation).

Setting the correct strap width.

This tool can be used with PP/PET strap with width between 10 and 16 mm. To set the correct strap width proceed as shown in fig. 14.



Special functions

Checking the total number of cycles. The total number of cycles is given as a 6 digit number shown in two different screen shots, 3 at a time, from left to right. Hold the “+/-“ button for more than 3 seconds. The first 3 digits are shown on the display. To show the second 3 digits, press the “+/-“ button. Press once again the “+/-“ button to exit. The total number of cycles could be used to plan an ordinary or extraordinary maintenance of the tool.

Checking the software version

Remove the battery. Hold pressed the welding button and insert the battery. On the display appears the software version composed by 3 digits. Release the welding button to exit.

Locking the control panel

Remove the battery. Hold pressed both tensioning (1.1) and welding (1.2) buttons and insert the battery. An acoustic signal indicates the lock of the control panel.

The same signal is emitted every time the control panel buttons are pressed with a locked panel. To unlock the control panel repeat the same procedure.

Maintenance

ATTENTION! BEFORE ANY MAINTENANCE OPERATION, REMOVE THE POWER SUPPLY OF THE TOOL.

The maintenance and repair must be done exclusively by trained personnel. If necessary, send the tool, using the original packing, to the closest DuBose Repair center.

Daily cleaning.

Remove strap residue from the feed wheel and the welding unit using compressed air. It is not necessary to open the tool.

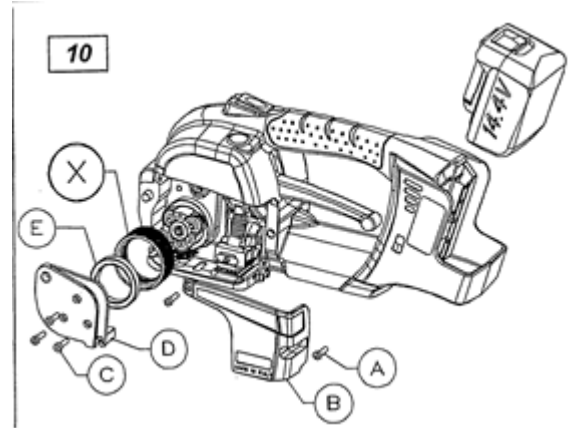
ATTENTION! Use safety glasses.

Feed wheel replacement (fig.10).

Remove the battery of the tool.

Remove the 2 fixing screws (fig.10-A) of the cover "B" on the left side of the tool. Remove the cover "B".

Remove the 3 screws (fig.10.C), remove the external flange "D" and the bearing "E". Replace the feed wheel "X" and if necessary, lubricate with a lithium grease with density 0. To assemble the tool, repeat the described operations in inverse order. Use Loctite 243 to fix the screws.



Cutter and welding plate replacement (fig. 11)

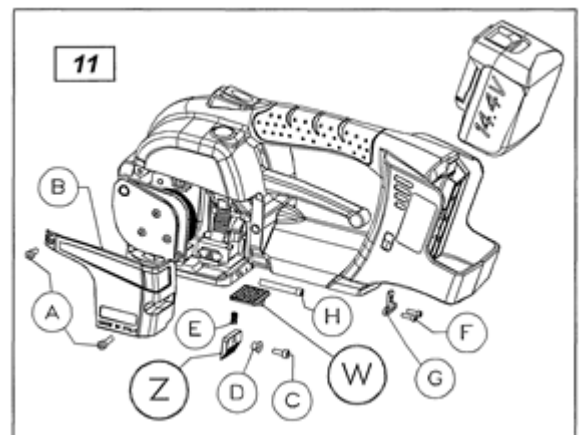
Remove the 2 fixing screws (fig.10-A) of the cover "B" on the left side of the tool. Remove the cover "B".

Cutter replacement:

Remove the screw "C" (fig.11-C), remove the bushing "D" and replace the cutter "Z". Don't forget to insert the cutter spring "E".

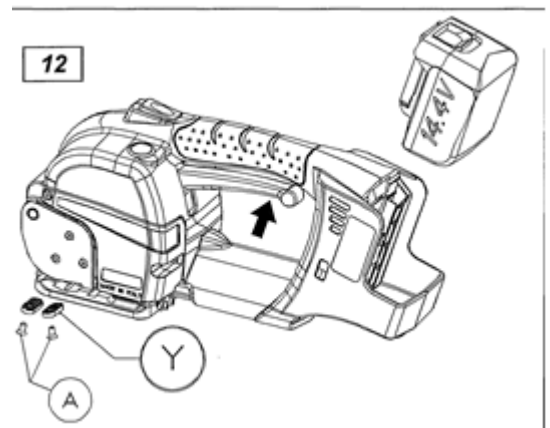
Welding plate replacement:

Remove the 2 screws "F" (fig.11), remove the guide "G", remove the pin "H" and replace the welding plate "W".



Replacing the grippers (fig. 12)

To replace the grippers, remove the screws "A", extract the old grippers and replace them with new ones "Y". Use Loctite 243 to fix the screws.

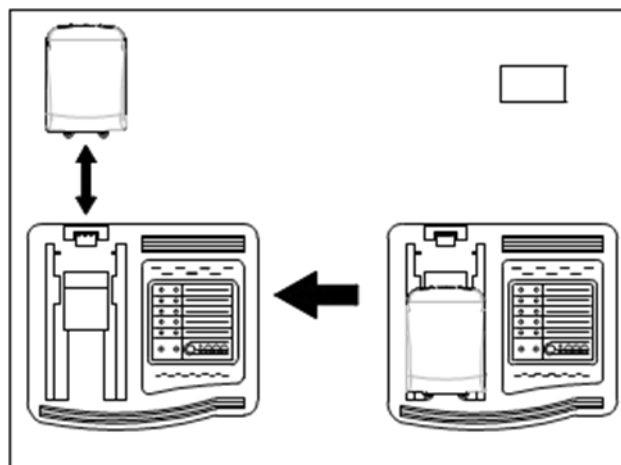


Error descriptions

Error code	Description	Remedy
E01	Current sensor error	Contact DuBose
E02	Tensioning error	Contact DuBose
E03	Not used	-
E04	Not used	-
E05	Stepper limit switch error	Remove the cover, verify the blue spring and the limit switch of the stepper
E06	Stepper switch closed	Raise the opening lever
E07	Emergency stop during the automatic cycle	Raise the opening lever
E08	Welding error	Check the motor wires connections
E09	Welding error	Check the blue spring compression, charge the battery
E10	Irregular motor rotation	Contact DuBose
E11	Toggle mechanism opens during welding	Check the strap thickness
E12	Opening lever raised during welding	Raise the opening lever to clean the error code
E13	Memory error	Contact DuBose
E14	Opening lever switch closed	Control the opening lever position
E15	Battery discharged	Charge the battery
E16	Motor driver check error	Contact DuBose
E17	Motor driver check error	Contact DuBose
E18	Overheating error	Let the tool cool down
E20	Overheating error	Let the tool cool down

TO CHARGE THE BATTERY

To charge the battery, you must insert it in the right position in the battery charger housing. (Fig. 18)



DISPOSAL



The machine, accessories and packaging should be sorted for environmental-friendly recycling.

Only for EC countries:

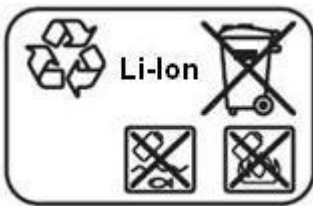
Do not dispose of power tools into household waste!

According the European Guideline 2012/19/EU for Waste Electrical and Electronic Equipment and its implementation into national right, power tools

that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

Battery packs/batteries:

Li-Ion: Lithium Ion



Do not dispose of battery packs/batteries into household waste, fire or water. Battery packs/batteries should be collected, recycled or disposed of in an environmental-friendly manner.

Product Warranty and Repair

Every tool supplied by DuBose Packaging, is guaranteed for a period of 12 months beginning at the shipping date recorded on the original invoice. During the warranty period, DuBose Packaging will replace free of charge, all parts proved to be defective by reason of faulty workmanship or materials. The decision of our Repair Department on all the matters relating to complaints shall be final. All repairs relating to this warranty and tool defects must be performed at our facility

Return address:

DuBose Packaging, LLC Plastic Division

Attn: Tool Repair

100 Industrial Drive

Clinton, NC 28328

All transportation charges related to returned material are the shipper's responsibility. Material returned COD will not be accepted. This warranty will not cover tools that DuBose Packaging determines the defect is due to lack of maintenance and / or misuse of the tool. Our warranty does not apply to parts subject to normal usage wear.

DuBose Packaging will not consider warranty repair on any tool that the serial number tag has been altered or removed or the serial number does not match the documented number on the original sales order.

DuBose DS700 SPARE PARTS LIST		
Part Number	Qty	Description
210960000	1	KIT BEARING GEAR WHEEL
210960200	1	ONE WAY CLUTCH GEAR
210960400	1	KIT BEARING GEAR WHEEL
210960600	1	MAIN FRAME KIT
210960700	1	CARRIAGE SUPPORT KIT
210960800	1	KIT BEARING GEAR WHEEL
210960900	1	TOGGLE MECHANISM
210961500	1	TRACTION FLANGE KIT
210961600	1	PAWL KIT
210961700	1	OPENING LEVER KIT
210961800	1	EXTERNAL FLANGE GROUP
210964300	1	LONG ECCENTRIC WITH ONE WAY BEARING
210964400	1	SEALING GROUP (TRIPLE BEARING)
210967600	1	ENHANCED WORM GEAR KIT
210968200	1	COVER GROUP (DS700)
210969600	1	WELDING BUTTON GROUP
210970800	1	MT/GT REDUCER FLANGE GROUP
220967500	1	ENHANCED SCREW KIT
220967900	1	CPU BOARD GROUP
291362000	1	MOTOR WITH PINION KIT
401014662	1	MOTOR FLANGE
401014770	1	LATERAL COVER
401014990	1	BEARING SUPPORT
402005790	2	WASHER ANTERIOR THK. 1,5 mm.
402009350	1	MOVING SEALING PLATE PIN
402012130	1	ONE WAY GEAR
402013250	1	BLADE
402013280	1	WELDING PLATE
402014550	1	PIN
402014622	1	FRONTAL COVER
402014690	1	PIN
402014790	1	PINION
402014810	3	PLANETARY GEAR
402014830	1	LAST STAGE SUN GEAR
402014870	1	FEEDWHEEL
402014910	2	GRIPPER
402014930	1	ACTUATOR PISTON
402014950	2	PIN
402014980	1	EXTERNAL GUIDE
402015000	1	SHAFT
402015050	1	CARRIAGE SPRING PIN
402015800	1	SPHERE PRESSING PLATE
402016470	1	WELDING BUTTON FIXING GEAR
403009590	1	CUTTER GUIDE SPACER
404009660	1	DIGIT POWER PROGR. LINK COVER
404014740	1	TENSIONING BUTTON
404014760	1	PISTON GUIDE
404015020	1	DISPLAY COVER
406015230	1	DS700 COVER GASKET
407002210	1	LOAD SPRING
407009780	1	LIFT SPRING
407009790	1	CUTTER SPRING
407014710	1	BUTTON SPRING
408009620	1	COVER
408014880	1	PROTECTION PLATE
408014900	2	STRAPPING GUIDE
413015240	1	KEYBOARD LABEL (GRAY AND BLUE)

DuBose DS700 SPARE PARTS LIST		
Part Number	Qty	Description
501011650	1	BEARING INA 626-2RS
501011810	2	BEARING 6807 2RS
501011820	3	NEEDLE ROLLER CAGE BEARING-TV 5x8x8
502001650	1	WASHER 10X16X0.5 DIN 988
503002770	2	ELAST. RING D8 7435
503002800	1	ELAST. RING A6 UNI 7435
503004460	2	RING PS 10X16X0.2
503004480	1	WASHER 5X10X1
503004490	1	SEEGER PS 21X15X0.5
503008030	6	WASHER 10X5X0,3
503010540	1	SEEGER JV22 DIN 472
503011660	1	SEEGER A 15x1 V
503011670	1	SEEGER J 28x1,2 V
503011780	2	SEEGER BENZING D. 8 UNI 7434
503011870	1	WASHER DIN 988 12X6X0,5
503011880	3	WASHER DIN 988 14X8X0,3
503011940	1	ARRESTING RING A-17x1 V
509007630	1	BEARING FIAM 541015045
509008970	1	BEARING KOYO 608 2RU
515000090	4	SCREW TCEI M4X10 UNI5931
515001240	6	SCREW TCEI M4X16 UNI 5931
515002280	21	SCREW TCEI M3x10 UNI 5931
515002860	4	SCREW TCI M2X10 UNI 6107 BRUN.
515003380	2	SCREW TPSCE M4x8 UNI5933
515003430	2	SCREW TBCE M3X10 ISO 7380
515004690	1	SCREW M3X4 UNI5929 PE 45H
515007520	1	SCREW TCEI M3X6 UNI5931
515008100	4	SCREW TCBCR 2.9X9.5 6954 ZIN
515009620	8	SCREW TBCR 3,5X14
515012430	1	SLOTTED FLAT TRIM HEAD SCREW 4x25
516004910	1	SELF-LOCKING NUT M4 D985 5S
519011850	2	SCREW COL.M5 6x20 ISO 7379
520002350	8	STEEL SPHERE DIAM. 5mm
520012160	2	STEEL SPHERE DIAM. 4 mm
521009940	1	CONNECTION 14,4 V
521011890	1	CABLE SWITCH KIT
521011910	1	ELECTRONIC TOUCH KEYBOARD
521012220	1	BATT.14,4V 4,0 Ah LI-IO SANYO CELL
721043220	1	HYDON LINEAR ACTUATOR
		WEARING PARTS