



Supply for Mini-stops

4180i
4280i

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Supplement

Table top

The instructions for assembling with Mini-Stops

1. Safety instructions



Caution !

Assembly of the machine must only be carried out by appropriately trained technician.

Any operations to be performed on the electric installation of the sewing machine are to be done only by a competent electrician.

SAFETY INSTRUCTIONS OF THE DRIVE MANUFACTURER

The drive for the MINI-STOP sewing machines is manufactured and tested according to the valid safety regulations and enables in this way a safe and dependable operation. For maintaining this condition and a safe running, the user needs to be acquainted with all hints and cautions contained in these instructions, as well as in the instructions of the drive manufacturer.

The MINI-STOP is destined for the sewing industry and for being run in clean and dry rooms. It may not be put into operation when the machine, in which it is incorporated, does not comply with all regulations and provisions. It is not allowed to use the drive in outer humid spaces or in spaces with possible explosion risk. It is necessary to observe the hints of the manufacturer concerning the running, attendance and maintenance. The MINI-STOP works in a safe and dependable way when there are maintained the hints of the instructions and the purpose of the driver use. These instructions should be carefully read before unpacking and putting the drive into operation. Before the first putting of the MINI-STOP, its accessories and supplements into operation, be sure in being acquainted with the hints concerning the assembly, attendance, running and maintenance. All activities connected with the drive may be carried out only when observing the respective regulations and when respecting the given safety rules described in the following parts of the instructions. All persons concerned must be acquainted with these safety warnings. The inobservance of these hints may cause injuries of persons, damage of objects or breakdowns or damage of the drive.

It is necessary to observe the regulations concerning accidents, safety and skilled labour being in force in the given country.

The MINI-STOP may be installed and put into operation only by qualified persons. This will reduce to a minimum the consequences of breakdowns with the possible health injury of persons.

Operations carried out on the machine or on its parts under high voltage are not allowed. Exceptions thereof are regulated by the EN 50110 standard.

Before removing guards, assembling additional devices or accessories, e.g. sensors of the pedal position, photocell etc., the drive must be disconnected from the mains and the drive must be put into its idle condition. The operating box may be opened only after having run 10 minutes! owing to the risk of burning, fire, electric shock or injury, any reconstructions or eventual modifications of the MINI-STOP are prohibited. During the running thereof, its guards or protective devices may not be removed. Before leaving the work place, the mains switch must be out into the OFF condition. When the drive is out of use for some time, the mains plug is to be disconnected from the mains and the drive must be secured against an accidental switching on.

In the event of having connected additional devices or operational means to the drive, these may be fed only with low voltage from a safety transformer.

Never operate the drive when the air vents thereof are clogged. Be sure in avoiding the presence of dust or fibres therein. Do not insert and avoid falling of any object, e.g. needles, into these vents. Do not use MINI-STOP when working with aerosols and sprays or with oxygen. The cautions mentioned in the following parts serve for ensuring further safety.

The MINI-STOP may be operated only with a protective conductor connected on a protective system which complies with all regulations and service provisions.

2. The way of machine supply

The contents of supply will be determined in agreement between the supplier and buyer. There are following possibilities:

2.1 Complete head with accessories

In this case the supply contains:

- Complete head with motor, control electronics and connecting head cable.
- Chosen spare parts in the bag under the presser element (see parts indicated * in catalogue of spare parts).
- Standard accessories (it contains tools-see module in catalogue of spare parts).
- Special accessories (it contains some components of a stand and upper belt cover-see module in catalogue of spare parts).

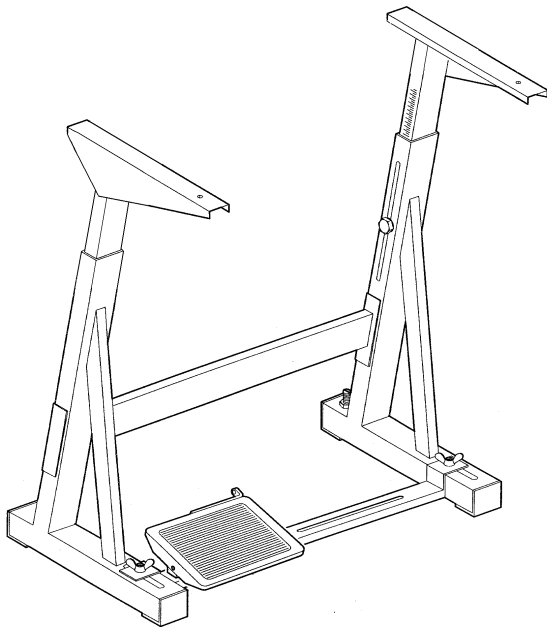
The supply like this is not complete. Buyer will provide missing components himself or he can put in an extra order to get them according to the following paragraphs.

2.2 Stand

Delivery contains components of a stand, however, without components of a stand included in special accessories supplied with machine head (see par. 2.1) and without any electrical components. If it hasn't been agreed otherwise, the stand is supplied in separate pieces. If the assembled stand is asked, special accessories are used from head supply.

Stand (ordered number S400 019000 for subclasses with Mini-stop) contains following items:

MG55 000501	Stand frame
MG53 002501	Big treadle
0907 021044	Set of parts for a stand
S615 000318	Table top



3. Table top

In case buyer will provide his own table top its drawing is shown in supplement.

4. Machine assembly

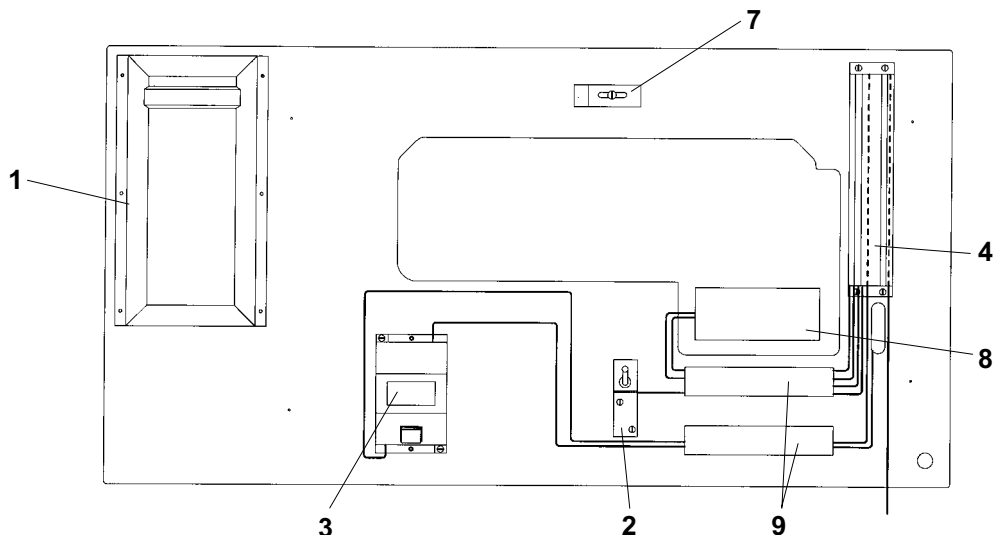
It is described machine assembly with stand here which is supplied in separate pieces. Otherwise use these instructions adequate.

4.1 Stand frame assembly

A frame is assembled according to the picture.

4.2 Assembly of components on the bottom of table top and connecting to the mains

- Put down antiskid (rubber) bands on the stand frame.
- Turn the table top its underside upwards and place it on the prepared bands.
- Screw on the drawer (1) using wood screws.
- Screw on the pedal position sensor holder (2) using wood screws and the pedal position sensor thereon using screws.
- Screw on the lighting transformer (3), if any, using wood screws.
- Connect the supply of the lighting transformer (3) lead to the terminals of the network lead of the electronics box (4) of the Mini-stop (8). For doing this, it is necessary to remove the upper metal sheet and the left-hand lateral from the electronic box.
- Screw on the box (4) of the Mini-Stop (8) electronics using wood screws.
- Screw on the knee lever with the electric switch (7) (if any), using wood screws.
- Screw on the installation ducts (9) using wood screws.
- Install the electric line of the network conductors using clamps. Place the conductors, led within the Mini-stop electronics box, into the installation ducts.



The Mini-Stop is a device of the protection class I, which means that the protection against the dangerous contact of lifeless parts is ensured by means of a protective conductor. The Mini-Stop is destined to be connected to an earthed alternating mains with the voltage from **190 to 240 V 50/60 Hz**. The connection thereof to the mains may be done only by means of a multipolar plug with a protective contact. No fixed connection is permitted. Mind the uniform distribution of the power in the three-phase mains. On every **16 A** protected phase only 3 Mini-Stops may be connected, to avoid the overload of the medium conductor (N).



The MINI-STOP may be operated only with the protective conductor connected to a functional protective system complying with all local regulations and provisions with regard to avoiding accidents of persons owing to electric current or fire. This protection should not be cancelled e. g. by any extending cord without protective conductor.



The MINI-STOP will become dangerous when the protective conductor inside or outside the drive will be broken, as well as with broken protective conductor with protective system. Any intentional breaking thereof is forbidden.

The connecting conductors should comply with the power load and the min. H05VV version. The conductor cross-section should be at least 1 mm², The length thereof should not exceed 5 m. The voltage on the protective conductor should not exceed 3,3 V with the 10 A current.



Caution!

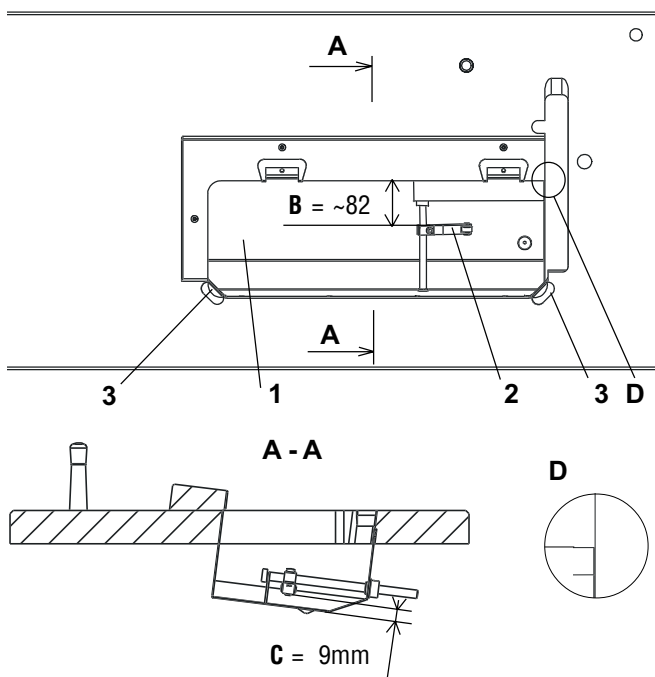
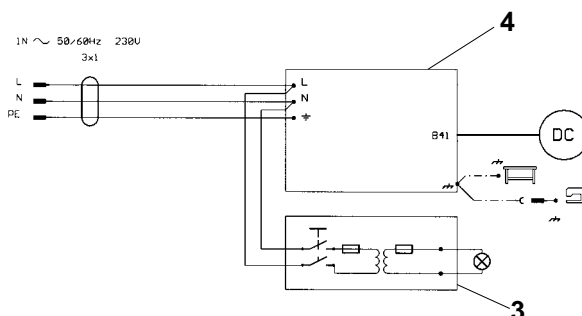
The voltage in the mains must be in conformity with the voltage indicated on the drive plate.



Caution!

The transformer of the bulb for the sewing area is not switched off by the main switch (EN 60204-3-1). Before proceeding to any repair operation in the transformer box (such as a fuse exchange) the plug categorically must be taken out of the socket. Such operations may be carried out only by persons with adequate electrotechnical skill.

Circuit layout



4.3 Assembly of a table top on a stand frame, assembly of oil tank

- Turn the table top around and screw it down to the frame by means of screw $\varnothing 8 \times 35$ mm. When applying a frame different from that recommended by the producer, be sure to adapt its position so as to ensure the stability of the machine head in its tilted state.
- Screw on the microswitch (which is a component part of the interconnecting cable) on the oil tank (1).
- Oil tank (1) with assembled lever (2) insert through the bottom part into the cut hole in the table top and put down as shown in detail (D) in that way, that the edge of the tank would fit in with the edge of the cut hole in the table top. Set the height of the tank according to the section A-A. Tank may not protrude out of upper surface of a table top. Nail down the tank with nails $\varnothing 2 \times 40$ mm.
- Adjust the lever (2) to the dimensions "B" and "C".
- Stick rubber inserts (3) into the cut-out of the table top.



4.4 Assembly of machine head onto a stand

- Stick down rubber inlays (2) with glue into the groove in a wedge (1) and put the wedge down on the table top (3).
- Disassemble transported tank (cover) from the machine head and assemble hangers (4) on the head.
- Put the head down into the rubber inlays (2) and (5).
- Screw the wedge down to the table top with screws $\varnothing 5 \times 30$ mm.
- Screw on hinges, using wood screw $\varnothing 5 \times 40$ mm and screw M5 (the hinge above the motor), to the table top. Tighten the wood screw and the screw in such a way, so that the oscillation of the head on rubber inserts is not limited.
- Insert supporting pin (6).

4.5 Electric connection of the machine head to the box of the drive electronics

4.5.1 Connecting cable

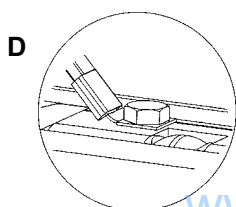
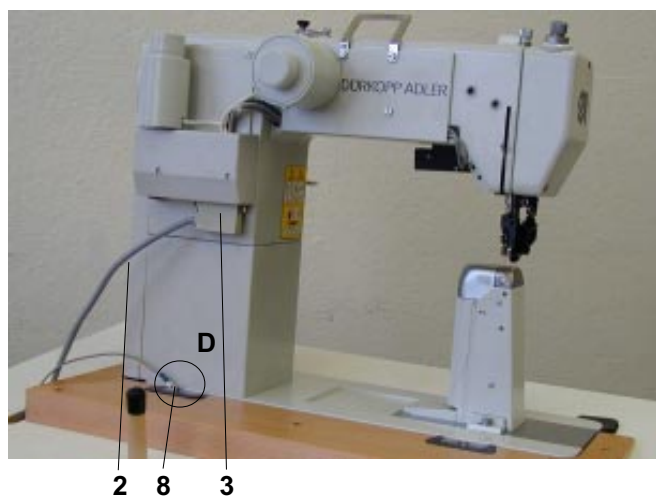
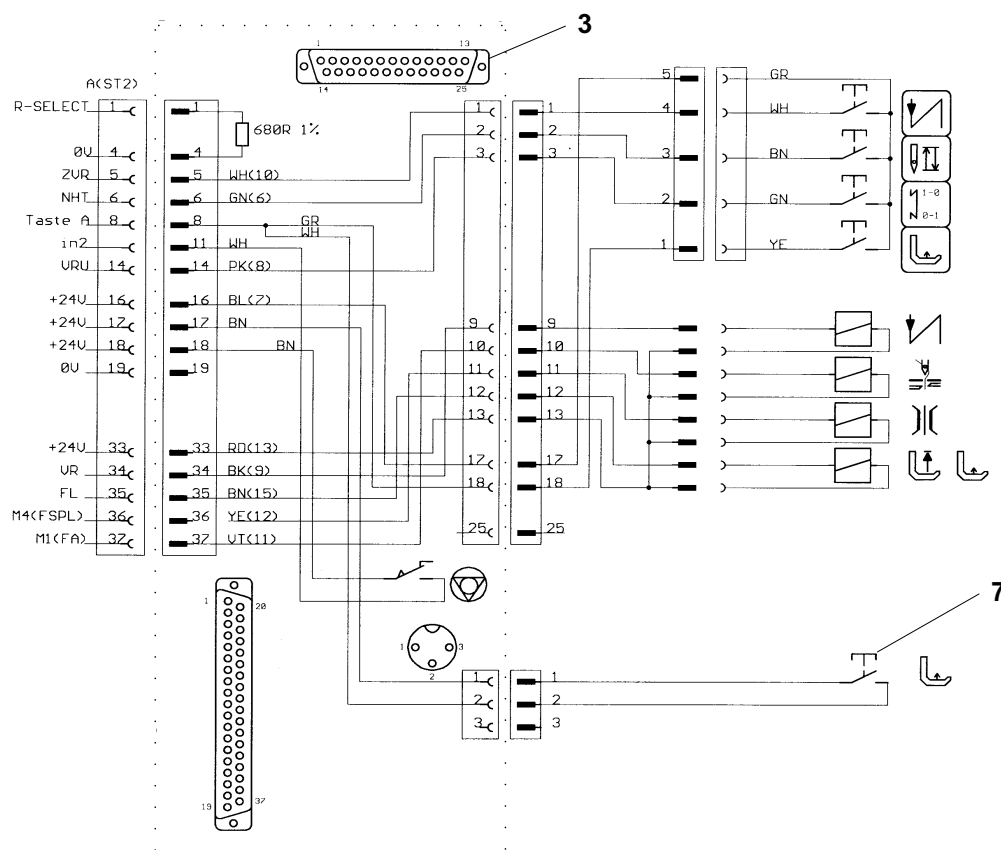
Together with the machine head there is supplied a connecting cable for the following drive EFKA DC 1550/DA320.

For the information sake, there are given the respective circuit layout.

The colours are indicated with numbers in brackets (6 – green, 7 – blue, 8 – pink, 9 – black, 10 – white, 11 – violet, 12 – yellow, 13 – red, 14 – grey, 15 – brown). Included insulating covers PVC (5) are put on the bunches and they are put together with remaining part of cable insulation by means of contracted tube (4) (it is heated up with fire of lighter).

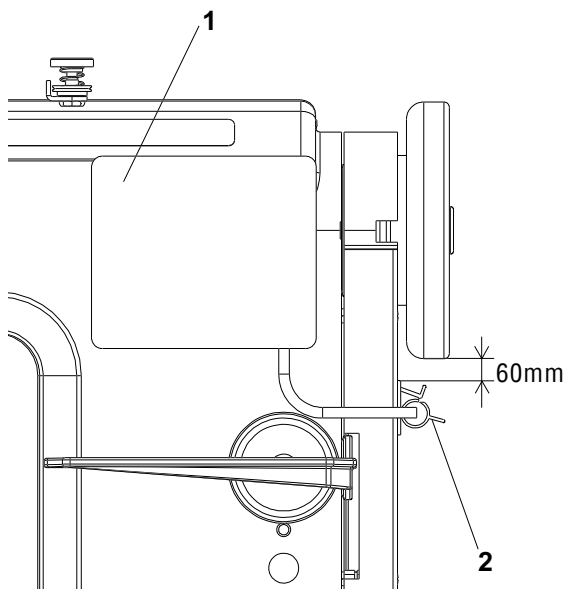
Power connecting cable is marked off with dotted line in circuit layout.

Circuit layout



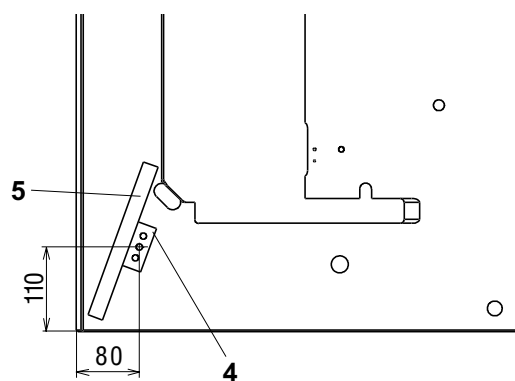
4.5.2 Proper electric connection

- Connect the 5-polar plug of the stator motor winding into the socket B41 on the rear side of the electronics box.
- Connect the 9-polar plug of the commutation motor sensor into the socket B2 on the rear side of the electronics box.
- Connect the 9-polar plug of the pedal sensor into the socket on the rear side of the electronics box B80.
- Connect the 9-polar socket of the panel, if any, into the plug on the rear side of the electronics box B776.
- Connect the 25-polar socket (3) of the connecting cable (2) with the plug on the machine head, connect the 37-pole plug of this cable into the 37-polar socket of the electronics box A.
- Connect the plug of the knee lever (7) cable with its electric switch (if any), with the socket of interconnecting cable.
- Secure all D-SUB connectors against falling out by screwing in the screws.
- Place the cables into the installation ducts.
- Mount the lighting, if any, and connect its cable with the transformer cable.
- Proceed to electric interconnecting of the motor head, hinge (8), box of the Mini-Stop electronics and stand.



4.5.3 Fastening control panel of Mini-Stop and thread stand

- Fix the control panel of Mini-Stop:
- Stick the panel V 810 (1) by Mini-Stop EFKA on the machine head (if any). Defat the contact surface properly. Stick the clip (2) on the cover belt.



- With the Mini-Stop Efka, mount the holder (4) on the panel V820 (5)(if any) using screw and screw on the holder with the panel to the stand table.



- Assemble the thread stand so that its arms would be parallel to the longer edge of a table top.

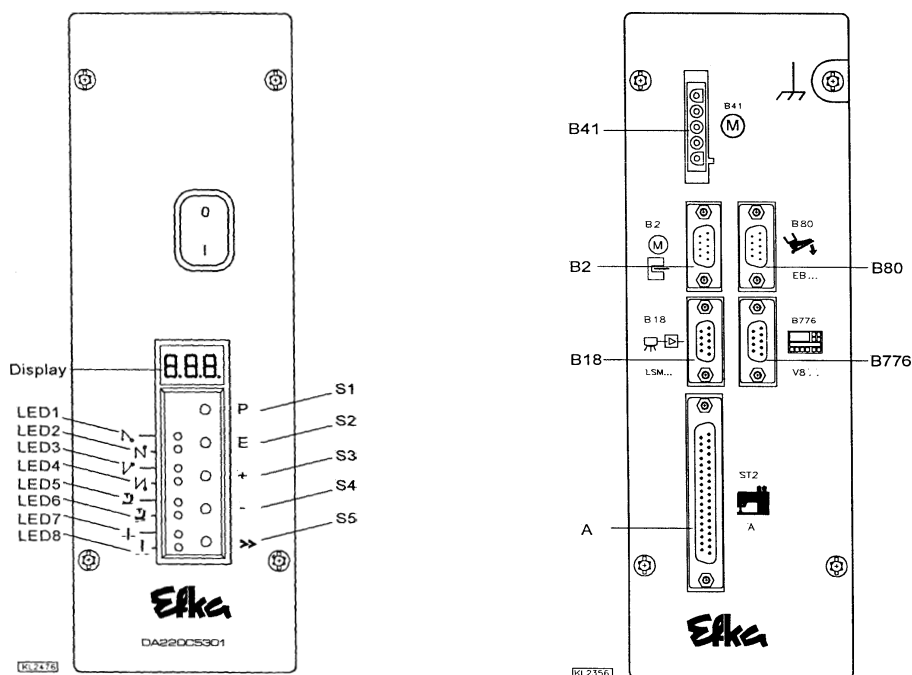
5. Basic setting of the Mini-stop

5.1 Generally

The Mini-stop DC 1550/DA320 does not necessarily need the control panel V810/VV820 when running. All parameters can be set using push the buttons and the display on electronics box, the panel V810/V820 will however enable the operator to work more easily with regard to its position. The description of the push-button panel and that of the panels V810/V820 is given in the instruction manual, part A, par. 7. The general procedure of setting parameters with the panel V810/V820 is given in the assembling instructions with standard drives, part. B1, par. 5.1 and applies also to DC 1550/DA320.

5.2 Setting of Mini-stop EFKa DC 1550/DA320

Elements of the electronics box



Front side

S1	Button P	calling or leaving the programming mode
S2	Button E	option of initial bartack (switched off, simple, double) within the programming mode of the confirmation of changes
S3	Button +	option of final bartack (switched off, simple, double) within the programming mode of enhancing the displayed value
S4	Button -	position of the presser foot when stopping in the seam (down, up) position of the presser foot after trimming (down, up) within the programmed mode of reduction of the displayed value
S5	Button »	position of the needle when stopping in the seam (down, up) within the programming mode of shifting to the next digit
LED1		indication for the start single bar
LED2		indication for the start double bar
LED3		indication for the end single bar
LED4		indication for the end double bar
LED5		indication for automatic presser foot lifting when stopping in the seam
LED6		indication for automatic presser foot lifting after having ended the seam (trimming)
LED7		indication for stopping in the seam with the needle in its bottom position
LED8		indication for stopping in the seam with the needle in its top position
Display		3 digits

Rear side

B2	connection of the commutating motor scanner
B18	connection of the light barrier module (photocell)
B41	connection of the motor stator winding
B80	connection of the pedal set value initiator
B776	connection of the panel V810/V820
A (ST2)	connection of electric elements of the sewing machine (electromagnets, electropneumatic valves, push-buttons ...)

5.2.1 Setting of parameters without the panel V810/V820

The procedure is identical as with the panel V810/V820, only the representation on the display having only 3 digits is different. In this way, the numerical values of parameters containing more than 3 digits (e.g. 2000 rev/min being represented as 200) are shortened. The parameter number is displayed with three digits with three decimal points to differ it from the value of the parameter displayed without points.

Procedure of changing parameters without the panel V810/V820

- depress the button **P** and then switch on the network switch on the front side of the electronics box, the display will show **Cod**
- depress the button **»**, the 1st digit blinks
- using the button **+** and **-**, set the 1st digit to the value **3**
- depress the button **»**, the 2nd digit blinks
- in the same way, set the 2nd and the 3rd digits, so that the display shows **311** (the code number for the access to all parameters)
- depress the button **E**, the display will show **2.0.0** (parameter number 200)
- using the buttons **»**, **+** and **-**, set the required parameter number and depress the button **E**, the display will show the parameter value
- using the buttons **+** and **-**, set the required parameter value
- depress the button **E** (the following parameter number will be displayed) or the button **P** (the original parameter number will be displayed)
- proceed to the termination of changes by depressing the button **P** (you will leave the programming mode) and you will return into the sewing mode

Note: To store the change in memory permanently, it is necessary to tread the pedal forward (sewing of at least one stitch) before switching of the network switch.

5.2.2 Setting of positions

The mechanical connection of the motor with the sewing machine is enabled by an indented belt with the gear speed ration of 1:1. This ensures constant angular ratios between the motor rotor and the sewing machine. The hand wheel synchronizer replaces the synchronizer, which is built-in in the motor. When removing for any reason the indented belt, a new setting of the correct angular ratio between the motor and the sewing machine, the so-called reference position, is necessary.

Procedure

- set the parameter number **170**, depress the button **E**
- the display will show **Sr1**
- depress the button **»**, **Po** will be displayed (the symbol **o** is rotating)
- turn the handwheel, until the rotating symbol **o** disappears and **P** is displayed
- turn now the handwheel to the value of the angle **105°** (the needle point is at the level of the throat plate)
- depress 2x the button **P** (return into the sewing mode)

Other important positions, i.e the 1st position of the needle given by the parameter **171 1E** and the 2nd position given by the parameter **171 2 E** have been preset by the manufacturer of the drive.

5.2.3 Setting of the parameter of the microswitch of the running blocking when tilting the machine

For the purpose of enhancing the safety of the operator of the machine and when unintentionally treading the pedal, the motor running is blocked. To get a correct working of this function, it is necessary to mount a microswitch (which is component part of the interconnecting cable) on the rear side of the oil tray and to set the parameter **282** to the value **1** (DA320G5350) or the parameter **241** to the value **8** (DA320G5351). When the machine head is in its working position, the microswitch must be switched on. The microswitch can be set when bending its lever.

5.2.4 Setting parameters for reducing the pressure of the presser foot when stopping

The electromagnet serving for lifting the presser foot may dispose also of a function for reducing the pressure or for lifting slightly the presser foot when turning the sewn upper parts after having stopped in the seam or when the machine is running. This command can be given by the operator by depressing the first button to the right on the button panel or by foot (microswitch of the knee lever). This function needs setting of the following parameters:

Parameter number	Parameter value	
250	12	function of reducing the presser foot pressure
332	1	the setting 333, 334 holds
333	*40	time in ms of max. current of the presser foot electromagnet
334	*60	retaining force of the presser foot electromagnet

* the values are only approximative ones and depend on the set up pressure of the presser foot and on the material thickness

5.2.5 Changes of setting parameters of the Mini-stop with regard to the original setting of the manufacturer

Parameter number	Parameter value	Parameter description
111	-	maximum revolutions (according to the machine type)
116	180	revolutions of the trimmer
171-1E	25	First position of needle - start (only DA320G5350)
171-1A	85	First position of needle - end (only DA320G5350)
192	237	angle of the delay of switching on the tensioners (only DA320G5350)
241	8	see 5.2.3 (DA320G5351)
282	1	see 5.2.3 (DA320G5350)
001	3	number of stitches of start bar - section 1
003	2	number of stitches of end bar - section 3
**250	12	function of the outlet A/30 and of the inlet A/8 (reduction of the presser foot pressure)
**332	1	the setting 333, 334 holds
**333	*40	time in ms of max. current of the presser foot electromagnet
**334	*60	retaining force of the presser foot electromagnet

* the values are only approximative ones and depend on the set up pressure of the presser foot and on the material thickness

** with using el. knee lever

5.2.6 Indication of faults

Generation information			
Display of the electronics box	V810	V820	Meaning
A1	InF A1	InF A1	When switching on the machine, the pedal is not in the zero position.
A2	-StoP- blinks	-StoP- blinks + symbol blinks	Blocking of the motor running.
A3	InF A3	InF A3	The reference position is not set.
A5	InF A5	InF A5	Autoselect not set or erroneous.

Programming of functions and values			
Display of the electronics box	V810	V820	Meaning
Jump back to 000 or to the last parameter number	Jumb back to 000 or to the last parameter number	InF F1	Erroneous code or parameter number inserted.

Serious state			
Display of the electronics box	V810	V820	Meaning
E2	InF E2	InFo E2	Low voltage in the network or short period of time between the network switching on and off.
E3	InF E3	InFo E3	Machine blocked or without attaining the required revolutions.
E4	InF E4	InFo E4	Interference due to insufficient earthing or defective contact.

Hardware failure			
Display of the electronics box	V810	V820	Meaning
H1	InF H1	InFo H1	Commutation signal or inverter defective.
H2	InF H2	InFo H2	Processor defective.

6. Examination of sewing



Caution! Risk of injury!

Before threading a thread switch the main switch off and wait until the motor stops.

- Check the sense of turning the hand wheel – according to the arrow situated on it.
- Thread a thread.
- Choose sewing material.
- Switch the desirable function on the control panel of stopmotor. Examination should be carried out with selection of fancy bar.
- First sew slowly then speed up the sewing.
- If the stitch does not meet requirements, follow the first part of instructions manual or service book.

