# CONTROL AB620A5034


## Operating manual

### With parameter list

- Putting into Service
- Settings
- Functional Description
- Connection Diagrams
- Timing Diagrams

**No. 402446 English**

FRANKL & KIRCHNER GMBH & CO KG
EFKA OF AMERICA INC.
EFKA SINGAPORE PTE. LTD.

## Important Notes

The particulars used in various figures and tables, such as type, program number, speed, etc., serve as examples. They may differ from those in your display.

For current versions of the Instructions for Use and Lists of Parameters, necessary for operating EFKA drives in accordance with regulations, please refer to the EFKA web site **www.efka.net**, page **"Downloads"**.

On our web site, you will also find the following supplementary instructions for this control:

- General instructions for use and programming
- Use with USB Memory Stick
- Adapter cords

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# 1 Range of Applications

The drive is suitable for lockstitch, chainstitch and overlock machines of various manufacturers.
It can be operated with or without control panel.
The easy-to use V810 or V820 control panels extend the range of functions.
With the help of adapter cords (adapter cords see Special Accessories), the drive can be used in replacement of the controls listed in the table below, as long as backtacking, stitch condensing, and chain suction are not used.

| Machine manufacturer | Replacing | Machine | Model | Thread trimming mode | Adapter cord |
|---|---|---|---|---|---|
| Aisin | AB62AV | Lockstitch | AD3XX, AD158, 3310, EK1 | 0 | 1112815 |
| Brother | AB62AV | Lockstitch | 737-113, 737-913 | 0 | 1113420 |
| Brother | AC62AV | Chainstitch | FD3 B257 | 5 | 1112822 |
| Dürkopp Adler | DA62AV | Lockstitch | 210, 270 | 0 | 1112845 |
| Global | | Chainstitch | CB2803-56 | 5 | 1112866 |
| Juki | AB62AV | Lockstitch | 5550-6 | 14 | 1112816 |
| Juki | AB62AV | Lockstitch | 5550-7, 8500-7, 8700-7 | 14 | 1113132 |
| Kansai | AC62AV | Chainstitch | RX 9803 | 5 | 1113130 |
| Pegasus | AC62AV | Chainstitch | W500/UT, W600/UT/MS, with/without stitch condensing | 5 | 1112821 |
| Pegasus | AB60C | Backlatch | | 8 | 1113234 |
| Pfaff | PF62AV | Lockstitch | 563, 953, 1050, 1180 | 0 | 1113746 |
| Rimoldi | | Chainstitch | F27 | 5 | 1113096 |
| Singer | SN62AV | Lockstitch | 212 UTT | 2 | 1112824 |
| Union Special | AC62AV | Chainstitch | 34700 with stitch lock | 5 | 1112844 |
| Yamato | AC62AV | Chainstitch | VC series | 5 | 1113345 |
| Yamato | | Chainstitch | VG series | 5 | 1113345 |
| Yamato | AB60C | Backlatch | ABT3 | 9 | 1112826 |
| Yamato | | Backlatch | ABT13, ABT17 | 9 | 1113205 |
| Medium-duty sewing machine, general | | Lockstitch | e.g. Dürkopp Adler, Juki, Pfaff, Sunstar, Golden Wheel | 3 | Suitable adapter, upon request |

## 1.1 Use in Accordance with Regulations

The drive is not an independent functional machine. It has been designed for integration into other machines by trained specialists.
It must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the EC Directive (Appendix II, paragraph B of the Directive 89/392/EEC and supplement 91/368/EEC).

The drive has been developed and manufactured in accordance with the relevant EC standards:

IEC/EN 60204-31 Electrical equipment of industrial machines:
Particular requirements for industrial sewing machines, sewing units and sewing systems.

Operate the drive only in dry areas.

**ATTENTION**

When selecting the installation site and the layout of the connecting cable, the Safety Instructions must be followed with no exceptions.
Particular attention should be paid to maintaining the proper distance from moving parts!

# 2 Scope of Supply

| Standard Scope of Supply | | |
|---|---|---|
| 1 | Direct current motor | **DC1200 optional DC1250** |
| 1 | Electronic control/Power supply unit | **AB620A5034N214** |
| 1 | Set of accessories (standard) | **B156** |
| | Consisting of: | Plastic bag for B156 + documentation |
| and | | |
| 1 | Set of accessories | **Z55** |
| | Consisting of: | 37-contact SubminD plug,<br>potential equalization cord |
| | | |
| **Option 1** | | |
| 1 | Actuator | **EB401** |
| and | | |
| 1 | Set of accessories | **Z66** |
| | Consisting of: | 37-contact SubminD plug, tension rod,<br>potential equalization cord |
| | | |
| **Additional options** | | |
| | Below table assembly set | Z71 AB6..-DC12.. Below table assembly |
| | Pulse encoder IPG001 | Z72 AB6..-DC12.. IPG |
| | | |

**NOTE**

If there is no metallical contact between drive (motor) and machine head, the potential equalization cord supplied with the unit is to be wired from the machine head to the terminal provided on the control box!

## 2.1 Special Accessories

The special accessories available ex works allow the augmentation and enhancement of functions, operating, connecting, and mounting options.
Since the range of available components is continually expanded, we kindly ask you to contact us in case of need.

| Designation | Material No. |
|---|---|
| **Control panel** Variocontrol V810 | 5970153 |
| **Control panel** Variocontrol V820 | 5970154 |
| **Control panel** Variocontrol V860 | 5990164 |
| **Reflection light barrier module** LSM002 | 6100031 |
| **Hall sensor module** HSM001 | 6100032 |
| **Pulse encoder** IPG001 | 6100033 |
| **Adapter cord** for the connection of light barrier module and/or Hall sensor module HSM001 and/or pulse encoder IPG001 | 1113229 |
| **Extension cable** approx. 1000 mm long for commutation transmitter DC12.. + DC15.. | 1113151 |
| **Extension cable** approx. 1000 mm long for Netz DC12.. line + DC15.. | 1113931 |
| **Potential equalization cord** 700 mm long, LIY 2.5 mm², gray, with spades on both sides | 1100313 |
| **Foot control** type FB302B with three pedals for standing operation, with approx. 1400 mm connecting cable and plug | 4170025 |
| **Fitting piece** for position transmitter | 0300019 |
| **Knee switch** type KN19 (pushbutton) with cord of approx. 450 mm length and western plug (RJ11) | 5870021 |
| **Knee switch** type KN20 (pushbutton + selector switch ) with cord of approx. 1640 mm length and Western plug (RJ11) | 5870022 |
| **Adapter set** for DC12. + DC15.. on PEGASUS model W600 | 1113125 |
| **Adapter set** for DC12. + DC15.. on PEGASUS Ex/Ext | 1113126 |
| **Adapter set** for DC12. + DC15.. on PEGASUS model W1500N, W1600 | 1113647 |
| **Undertable mounting kit** for DC1200/DC1250 | 1113956 |
| **Undertable mounting kit** for DC1500/DC1550 | 1113427 |

| | |
|---|---|
| **9-contact SubminD** male connector | 0504135 |
| **9-contact SubminD** female connector | 0504136 |
| **Half-shell housing** for 9-contact SubminD | 0101471 |
| **37-contact SubminD** male connector, complete | 1112900 |
| **Single pins for 37-contact SubminD** with strand of 50 mm length | 1112899 |
| **Adapter set direct drives DC1210 & DC1230** | |
| **Mounting kit for DC1210 on JUKI M067, M069** | 1114085 |
| **Mounting kit for DC1210 on JUKI M068** | 1114093 |
| **Mounting kit for DC1210 on PEGASUS EX** | 1114082 |
| **Mounting kit for DC1210 on PEGASUS M900** | 1114088 |
| **Mounting kit for DC1210 on YAMATO AZ, CZ** | 1114084 |
| **Mounting kit for DC1230 on PEGASUS chainstitch** | 1114119 |
| **Mounting kit for DC1230 on YAMATO VC, VE, VF, VG** | 1114102 |

### 2.1.1 Adapter Cords for Special Machines

*For interconnection diagrams of the adapter cords, please refer to our web site at www.efka.net/downloads.*

| Machine / Type / Model | Material No. |
|---|---|
| **AISIN** high-speed seamer AD3XX, AD158, 3310 and overlock machine EK1 | 1112815 |
| **BROTHER** models 737-113, 737-913 | 1113420 |
| **BROTHER** Lockstitch machines, with 100 Ω selective resistance, cl. 7xxx, B84xx, 877B, B87xx, 878B (mode 31) | 1113420 |
| **BROTHER** chainstitch machines, with 150 Ω selective resistance, cl. FD3-B257, 25xx, 26xx, 27xx (mode 32) | 1112822 |

| Designation | Material No. |
|---|---|
| **BROTHER** models B721, B722, B724, B737, B748, B772, B774, B778, B842, B845, B872, B875<br>***Connection of the position sensor incorporated in the hand wheel*** | 1113433 |
| **DÜRKOPP ADLER** models 210 and 270 | 1112845 |
| **GLOBAL** model CB2803-56 | 1112866 |
| **JUKI** high-speed seamer with index -6 | 1112816 |
| **JUKI** high-speed seamer with index -7 | 1113132 |
| **JUKI** lockstitch machines<br>***Connection of the position sensor incorporated in the hand wheel*** | 1113157 |
| **JUKI** DNU1541, LU2210, LU1510 | 1114023 |
| **JUKI** LU2810-6 | 1114024 |
| **JUKI** PLC 2760 | 1114025 |
| **KAISER** models 1245 & 335 | 1114003 |
| **KANSAI** machines model RX 9803 | 1113130 |
| **PEGASUS** models W500/UT, W600/UT/MS with or without stitch condensing | 1112821 |
| **PEGASUS** backlatch machine | 1113234 |
| **PFAFF** models 563, 953, 1050, 1180 | 1113746 |
| **PFAFF** models 1245 & 335 | 1114003 |
| **SINGER** models 211, 212U, 212UTT and 591 | 1112824 |
| **TYPICAL** models 1245 & 335 | 1114003 |
| **UNION SPECIAL** lockstitch machine model 63900AMZ (in replacement of US80A) | 1112823 |
| **UNION SPECIAL** model 34700 with stitch lock | 1112844 |
| **UNION SPECIAL** models 34000 and 36200 (in replacement of US80A) | 1112865 |
| **UNION SPECIAL** models CS100 and FS100 | 1112905 |
| **YAMATO** VC/VG series chainstitch machines + stitch lock | 1113345 |
| **YAMATO** backlatch machine ABT3 | 1112826 |
| **YAMATO** backlatch machine ABT13, ABT17 | 1113205 |
| **MAUSER** models 1245 & 335 | 1114003 |
| **MITSUBISHI** lockstitch machines<br>***Connection of the position sensor incorporated in the hand wheel*** | 1113411 |

# 3 Putting into Service

**Before putting the control into service, the following must be ensured, checked and/or adjusted:**

- Selection of motor type using parameter **467**
- The correct installation of the drive, position transmitter and accompanying devices, if necessary
- The correct selection of the trimming operation using parameter **290**
- If necessary, the correct adjustment of the direction of motor rotation using parameter **161**
- The correct selection of the functions of keys (inputs) using parameters **240...246**
- The setting of the transmission ratio between motor shaft and machine shaft using parameter **272**
- The setting of the type of position sensor using parameter **270**
- If necessary, the adjustment of the positions using parameter **171**
  if necessary, the setting of the positions using parameter **171** (possible with all settings of parameter **270**)
- The correct positioning speed using parameter **110**
- The correct maximum speed compatible with the sewing machine using parameter **111**
- The setting of the remaining relevant parameters
- Begin sewing in order to save the set values

# 4 Setting and Putting into Service with the Aid of the Fast Installation Routine (SIR)

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Call-up of the Fast Installation Routine SIR | (Sir) | **500** |

The Fast Installation Routine (SIR) passes through all parameters necessary for programming the functional sequence and the positions.

With SIR you can do the most important settings for initial operation with menu prompting.
For safety reasons, the menu must be executed point by point. This ensures correct setting of all important parameters.

Input of the code number for the fitting level. ➔

Parameter **500** is displayed. ➔

Parameter **290** for functional sequence of the cutting procedures. ➔

Parameter **467** for selection of motor. ➔

Parameter **111** for the maximum speed. ➔

Parameter **161** for direction of motor rotation. ➔

Parameter **270** for type of position sensor. ➔

Parameter **272** for transmission ratio. ➔
**Important!** The transmission ratio should be determined and indicated as precisely as possible.

If parameter **270 =0 or 5**, continue with input of **451**. ➔
Check the transmission ratio.

Move pedal forwards. Let the drive run until ready (rdy) is displayed. ➔
Press pedal to position 0. The check is complete.

if parameter **270 = 6**, set the reference position. ➔

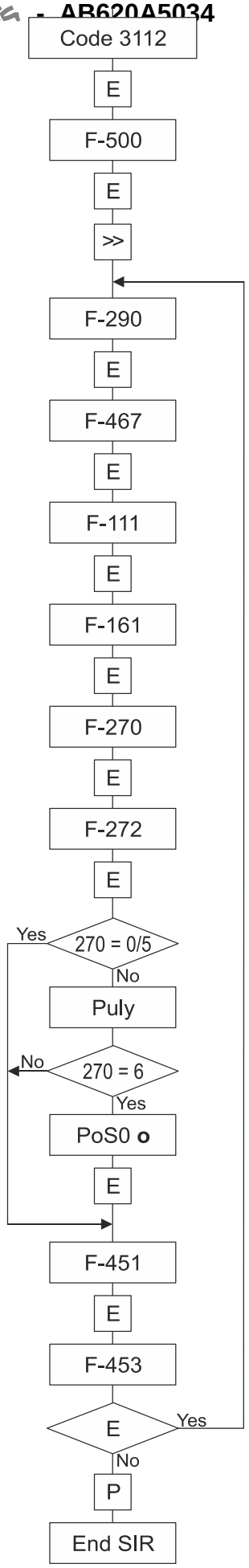
Turn hand wheel until symbol **o** display goes off. ➔
Set reference position (e.g. height of the stitch plate, lower dead point).

Parameter **451** for position 1. ➔

Parameter **453** for position 2. ➔

To repeat the cycle from parameter **290**, push button **E.** ➔

Or end with button **P** (2x). ➔




**The values can be varied by pressing key +/-.**

**The input of the code number is described in the general operating manual!**

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**Setting on the operating part of the controls (onboard) or on V810:**

| | | | | |
|---|---|---|---|---|
| 1 | Input code number **3112**! | | | |
| 2 | Press the **E** key | ➔ | Parameter **5.0.0.** displayed | |
| 3 | Press the **E** key | ➔ | **Sir** displayed. The V810 displays the symbol **[o].** Onboard: The 2 lower segments of the right 7 segment display flash. | |
| 4 | Press the **>>** key | ➔ | Parameter **2.9.0.** appears | **(Functional cycle cutting processes)** |
| 5 | Press the **E** key | ➔ | Parameter value e.g. **05** appears. | |
| 6 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 7 | Press the **E** key | ➔ | Parameter **4.6.7.** appears | **Selection of motor; 1 =DC1500, 2 =DC1550, 3 =DC1200, 4 =DC1250)** |
| 8 | Press the **E** key | ➔ | Parameter value e.g. **3** appears. | |
| 9 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 10 | Press the **E** key | ➔ | Parameter **1.1.1.** appears | **(Maximum speed)** |
| 11 | Press the **E** key | ➔ | Value of the set speed appears. | |
| 12 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 13 | Press the **E** key | ➔ | Parameter **1.6.1.** appears | **(Direction of motor rotation)** |
| 14 | Press the **E** key | ➔ | Parameter value e.g. **1** appears. | |
| 15 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 16 | Press the **E** key | ➔ | Parameter **2.7.0.** appears | **(Type of position sensor)** |
| 17 | Press the **E** key | ➔ | Parameter value e.g. **0** appears. | |
| 18 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 19 | Press the **E** key | ➔ | Parameter **2.7.2.** appears | **(Transmission Ratio)** |
| 20 | Press the **E** key | ➔ | Parameter value e.g. **1000** appears. | |
| 21 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 22 | | | If parameter **270 =0 or 5**, or the check of the transmission ratio is already done, continue with Point 30. | |
| 23 | Press the **E** key | ➔ | **PULY** is displayed. | **(Check the transmission ratio)** |
| 24 | Move pedal forwards | | Let the drive run until ready (**rdy**) is displayed. For a maximum speed that is too high, an error message A12 is generated. Push button **E** as often as needed until parameter **111** (Point 12) is reached again to set the permitted maximum speed. | |
| 25 | Press pedal to position 0 (neutral) | | The check is complete. | |
| 26 | | | When parameter **270 ≠ 6**, continue with Point 31. | |
| 27 | | | **P0 o** (V810 **PoS0 o**) is displayed (**o** in red). | **(Setting the reference position)** |
| 28 | Rotate the hand wheel in the running direction until **o** extinguishes *****. Set reference position (e.g. height of the stitch plate, lower dead point). | | | |
| 29 | Press the **E** key | ➔ | Parameter **4.5.1.** appears | **(Position 1 leading edge, position 1 trailing edge is automatically set 60° higher)** |
| 30 | Press the **E** key | ➔ | Angle from position 1 is displayed. | |
| 31 | Turn the hand wheel | ➔ | Set position 1 (at least 1 rotation *****). | |
| 32 | Or press the **+/-** key | ➔ | The parameter value can be changed. | |
| 33 | Press the **E** key | ➔ | Parameter **4.5.3.** appears | **(Position 2 leading edge, position 2 trailing edge is automatically set 60° higher)** |
| 34 | Press the **E** key | ➔ | Angle from position 2 is displayed. | |
| 35 | Turn the hand wheel | ➔ | Set position 2 (at least 1 rotation *****). | |
| 36 | Or press the **+/-** key | ➔ | The parameter value can be changed. | |
| 37 | Upon pressing the **E** key once more the program returns to parameter **2.9.0.**! | | | |
| 38 | Press the **P** key twice | ➔ | The system exits the SIR routine. | |

***)** *All operations carried out by turning the hand wheel must always be carried out in the direction of rotation set up on the machine. Under no circumstances should you turn against the machine direction.*

**Setting on the V820 control panel:**

| | | | | |
|---|---|---|---|---|
| 1 | Input code number **3112**! | | | |
| 2 | Press the **E** key | ➔ | Parameter **500** displayed. | |
| 3 | Press the **E** key | ➔ | **Sir [o]** displayed. | |
| 4 | Press the **>>** key | ➔ | Parameter **290 FAm 05** appears. | **(Functional cycle cutting processes)** |
| 5 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 6 | Press the **E** key | ➔ | Parameter **467 MOT 3** appears. | **Selection of motor; 1 =DC1500, 2 =DC1550, 3 =DC1200, 4 =DC1250)** |
| 7 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 8 | Press the **E** key | ➔ | Parameter **111 n2** appears. | **(Maximum speed)** |
| 9 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 10 | Press the **E** key | ➔ | Parameter **161 drE 0** appears. | **(Direction of motor rotation)** |
| 11 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 12 | Press the **E** key | ➔ | Parameter **270 PGm 0** appears. | **(Type of position sensor)** |
| 13 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 14 | Press the **E** key | ➔ | Parameter **272 trr 01000** appears. | **(Transmission Ratio)** |
| 15 | Press the **+/-** key | ➔ | The parameter value can be changed. | |
| 16 | | | If parameter **270 =0 or 5**, or the check of the transmission ratio is already done, continue with Point 25. | |
| 17 | Press the **E** key | ➔ | **PULY Ab620A** is displayed. | Check the transmission ratio |
| 18 | Move pedal forwards | | Let the drive run until ready (**rdy**) is displayed. For a maximum speed that is too high, an error message A12 is generated. Push button **E** as often as needed until parameter **111** (Point 12) is reached again to set the permitted maximum speed. | |
| 19 | Press pedal to position 0 (neutral) | | The check is complete. | |
| 20 | | | When parameter **270 ≠ 6**, continue with Point 25. | |
| 21 | | | **PoS 0 o** is displayed (**o** is red). | **(Setting the reference position)** |
| 22 | Rotate the hand wheel in the running direction until **o** extinguishes *****. Set reference position (e.g. height of the stitch plate, lower dead point). | | | |
| 23 | Press the **E** key | ➔ | Parameter **451 P1E** appears | **(Position 1 leading edge, position 1 trailing edge is automatically set 60° higher)** |
| 24 | Turn the hand wheel | ➔ | Set position 1 (at least 1 rotation *****). | |
| 25 | Or press the **+/-** key | ➔ | The parameter value can be changed. | |
| 26 | Press the **E** key | ➔ | Parameter **453 P2E** appears. | **(Position 2 leading edge, position 2 trailing edge is automatically set 60° higher)** |
| 27 | Turn the hand wheel | ➔ | Set position 2 (at least 1 rotation *****). | |
| 28 | Or press the **+/-** key | ➔ | The parameter value can be changed. | |
| 29 | Upon pressing the **E** key once more the program returns to parameter **290**! | | | |
| 30 | Press the **P** key twice | ➔ | The system exits the SIR routine. | |

***)** *All operations carried out by turning the hand wheel must always be carried out in the direction of rotation set up on the machine. Under no circumstances should you turn against the machine direction.*

# 5 Quick access

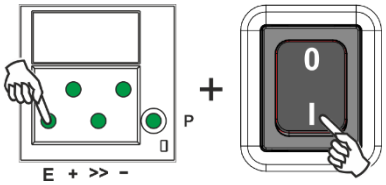
These are button combinations that are linked in the direct access with settings & function of the control. Quick access can, however, can ***only*** be used with machines that are already set up.

## 5.1 Parameter back up

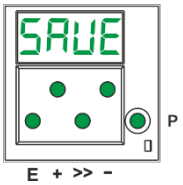
When the machine has been completely set up, the settings should be backed up.

### 5.1.1 Parameter backup

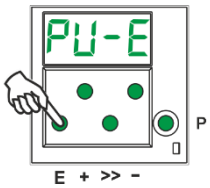
- Turning off the controls



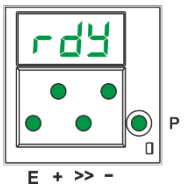

- Hold the E button down & turn on the controls
- (Hold down the E button 5 sec after turning on)




- "SAVE" is shown on the display




- Press the E button once, to execute the backup process

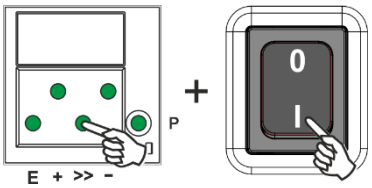



- When the process is completed, "rdy" is displayed for 1 second

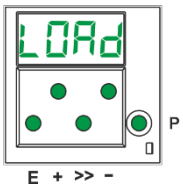
- Turning off the controls

### 5.1.2 Restoring parameters from the backup

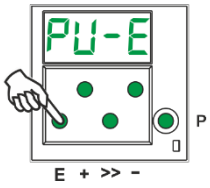
- Turning off the controls



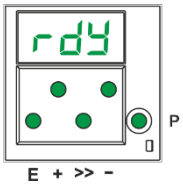

- >>-Hold the button down (5 sec) & turn on controls




- "LOAD" is shown on the display




- Press the E button once, to execute the backup process

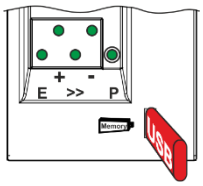



- When the process is completed, "rdy" is displayed for 1 second

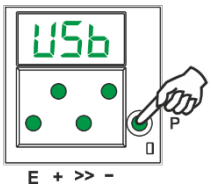
- Turning off the controls

### 5.1.3 Save the parameter backup on a USB stick

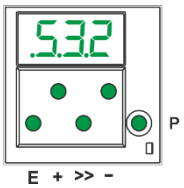
(The parameters can be views with a text editor or Microsoft Word. The parameters in this file must ***not*** be changed!)



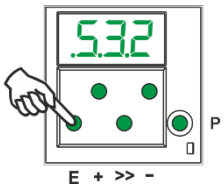

- Insert an empty USB Stick



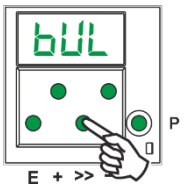

- Wait until "USB" shows on the display and press the P key
- 
- Use the +/- buttons to get to parameter F-532. (".5.3.2" is shown on the display)



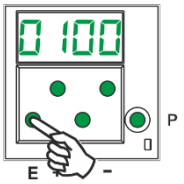

- Use the +/- buttons to get to parameter F-532. (".5.3.2" is shown on the display)



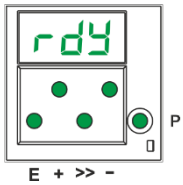

- Press the E button once




- Press the >> button




- Press the E button

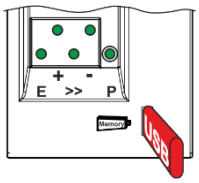



- When the process is completed, "rdy" is displayed for 1 second

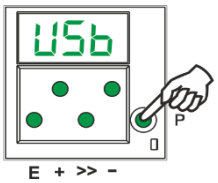

- Turn off

### 5.1.4 Restoring the parameter backup from the USB stick

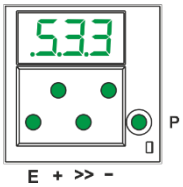
This process does not change the actual parameter settings. To load the backup to the current parameter setting, execute **Chapter 5.1.2 "Restoring parameters from backup"**. (After this process)



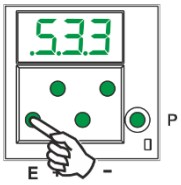

- Insert the USB stick with the file "0100DATA.PAB"



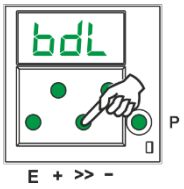

- Wait until "USB" shows on the display and press the P key
- Use the +/- buttons to get to parameter F-533. (".5.3.3" is shown on the display)



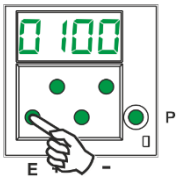

- Use the +/- buttons to get to parameter F-533. (".5.3.3" is shown on the display)



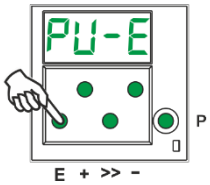

- Press the E button once



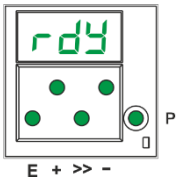

- Press the >> button




- Press the E button




- Press the E button once, to execute the backup process

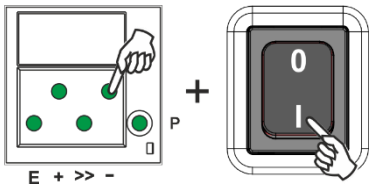



- When the process is completed, "rdy" is displayed for 1 second

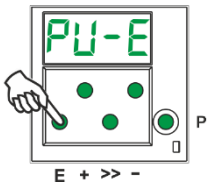

- Turn off

## 5.2 Setting the reference position

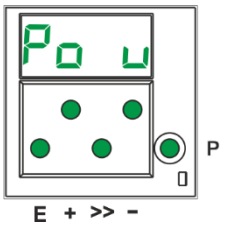
(For detailed instructions refer to Chapter **6.9.1** Setting the Reference Position (Parameter 170)



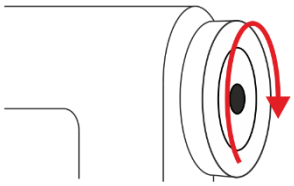

- Hold down the button and switch on the controls
- (Until Pos0 show for 1 second)



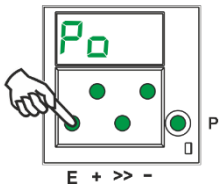

- Press the E button




- "P0" and a rotating "u" are displayed



- Turn the handwheel until the rotating "u" disappears
- Bring the handwheel to the zero position (needle up / OT)




- Press the E button


- Turn off

**Note:** If the rotating "u" does not disappear after 10 rotations, change the direction of rotations.

# 6 Setting the Basic Functions

## 6.1 Direction of motor rotation

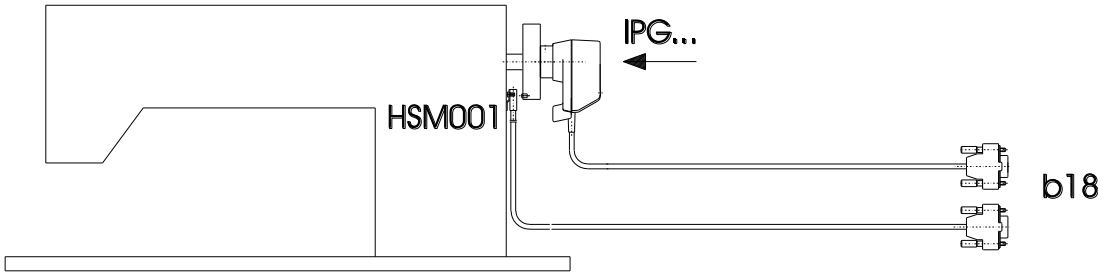
| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Direction of motor rotation | (drE) | **161** |

**161 =0** Clockwise motor rotation (look at the motor shaft)
**161 =1** Counterclockwise motor rotation

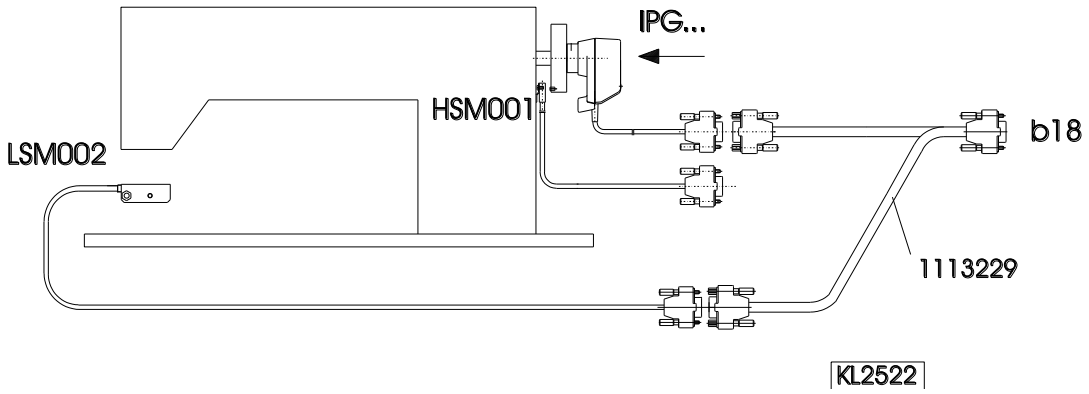
**ATTENTION**
If the motor is mounted differently, e. g. at a different angle or with gear, make sure that the value set using parameter **161** corresponds to the direction of rotation.

## 6.2 Use of a HSM001 Hall Sensor Module or IPG... Pulse Encoder

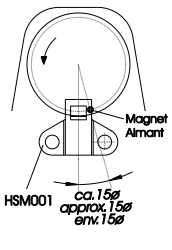
**Representation and installation of a HSM001 Hall sensor module or IPG... pulse encoder !**




**Representation and installation of a HSM001 Hall sensor module or PG... pulse encoder together with a LSM002 light barrier module by means of adapter cord no. 1113229 !**




**Operation with HSM001 Hall sensor module**

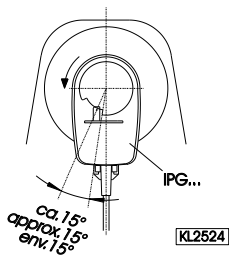



← - Get machine to the needle-up position.
- Position bore for magnet such that the magnet is located approx. 15° after the sensor in the sense of rotation.

**Operation with IPG... pulse encoder**

- Get machine to the needle-up position.
- Turn disk in the pulse encoder such that the leading edge will be located approx. 15° after the sensor on the board in the sense of rotation.

→



## 6.3 Transmission Ratio

**NOTE**

The transmission ratio must always be input if no transmission ratio of 1:1 exists, because only motors with integrated incremental transmitters will be used. **The transmission ratio should be determined and set as precisely as possible!**

The transmission ratio between motor shaft and shaft of the sewing machine head must be input, so that the set speeds of parameters **110...117** correspond to the sewing speeds.

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Transmission ratio between motor shaft and machine shaft | (trr) | **272** |

The transmission ratio can be selected within a range of 150...40000 using parameter **272**.

**Example:** With a motor pulley diameter of 40 mm and a sewing machine head pulley diameter of 80 mm the value 500 can be calculated using the formula below. If the value 2000 has been selected in parameter 272, it follows that the motor pulley is double the size of the sewing machine head pulley.

$$\text{Value of parameter } \mathbf{272} = \frac{\text{Motor pulley diameter}}{\text{Machine pulley diameter}} \times 1000$$

## 6.4 Selection of Functional Sequences (Thread Trimming Operations)

This drive is suitable for different lockstitch, chainstitch and overlock machines. The mode for the functional sequence required on the respective machine can be selected using parameter **290**.

**ATTENTION**

Before switching the functional sequences, you must disconnect input and output plug-and-socket connections between control and machine. Please ensure that the functional sequence (mode) suitable for the respective machine is selected.
**Settings with parameter 290 are possible only after the power is turned On.**

You will find a summary of the modes that can be set and the corresponding machines and adapter cords, to include available output signals in the List of Parameters chapter: Table of adapter cords.

**Further information see chapter "Timing Diagrams" for the various modes.**

## 6.5 Functions of the Keys Inputs in1...in7

The function that is started when a button or switch connected to one of the inputs in1 to in7 is actuated can be selected using parameters **240...246**.
The possible functions are listed in the section "Parameter list".

## 6.6 Positioning speed

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Positioning speed | (n1) | **110** |

The positioning speed can be set using parameter **110** on the control within a range of 70...390 RPM.

## 6.7 Maximum Speed Compatible with the Sewing Machine

The maximum speed of the machine is determined by the selected pulley and by the following settings:
- Set the maximum speed using parameter **111** (n2).
- Set the maximum speed limitation to the specific level according to the application as described in chapter "Direct Input of Maximum Speed Limitation (DED)".

## 6.8 Maximum speed

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Maximum speed | (n2) | **111** |

**NOTE**
See instruction manual of the sewing machine manufacturer for the maximum speed of the sewing machine.

**NOTE**
Select the pulley such that the motor runs at approx. 4000 RPM with max. number of stitches.

## 6.9 Positions

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Mode for the position sensor<br>Setting the needle positions<br>Transmission ratio between motor shaft and machine shaft | (PGm)<br>(Sr2)<br>(trr) | **270**<br>**171**<br>**272** |

A sensor can be used as a position sensor, e.g. Efka Hall sensor module (HSM1) or pulse generator (IPG) with either NC or NO functionality.
It is connected to socket B18/7.
Parameter **270** is used to select the mode to be selected depending on the type and mounting of the sensor used (see section Parameter List under parameter **270** for a description and flow chart).
After configuration of parameter **270** to "**1, 2, 3 o 4**", parameter **171** must be used to set the angle for positions 1 and/or 2, incoming and outgoing.
Alternatively, the positions can be configured using the fast-installation routine.
The transmission ratio must already have been input using parameter **272**.

### 6.9.1 Setting the reference position (Parameter 170)

The angular positions necessary on the machine e.g. “needle down position“ or “thread lever up position“ are stored in the control. A reference position is needed in order to establish a relationship between position transmitter information and actual mechanical position.

**The reference position must be set:**
- For initial operation
- After replacing the motor

**Setting the reference position on the control**
- Input code number and select parameter **170**!
- Press the **E** key ➔ Display **Sr1_**
- Press the **>>** key ➔ Display **P o u** (character “o” rotating) *1
- Turn hand wheel until rotating character **o** goes off on the display. ➔ Display **P o**
  By turning the hand wheel, set the needle to the bottom dead center or the needle point to the height of the needle plate in the direction of rotation of the motor shaft, while needle is moving downward. ➔ Configuration of the zero point of the machine
- Press the **P** key once ➔ Actual parameter number 170 is displayed *2

or
- Press the **P** key twice ➔ Exit programming at the technician level.

**Setting the reference position on the V810 control panel**
- Input code number and select parameter **170**!
- Press the **E** key ➔ Display **[o]**
- Press the **>>** key ➔ Display **P o u** (character o rotating) *1
  Turn hand wheel until rotating character **o** goes off on the display. ➔ Display **PoS 0**
- Set the needle to the bottom dead center by turning the hand wheel. ➔ Configuration of the zero point of the machine
- Press the **P** key once ➔ Actual parameter number 170 is displayed *2

or
- Press the **P** key twice ➔ Exit programming at the technician level.

**Setting the reference position on the V820 control panel**
- Input code number and select parameter **170**!
- Press the **E** key ➔ Display **F-170 Sr1 [o]**
- Press the **>> F2** *3 ➔ Display **P o u** (character o rotating) *1
  Turn hand wheel until rotating character **o** goes off on the display. ➔ Display **PoS 0**
- Set the needle to the bottom dead center by turning the hand wheel. ➔ Configuration of the zero point of the machine
- Press the **P** key once ➔ Actual parameter number 170 is displayed *2

or
- Press the **P** key twice ➔ Exit programming at the technician level.

**1) If P 0 or Pos 0 is displayed, the reference position is already set. To repeat the setting the power must be switched off and the code number reentered.*
**2) The next parameter to be set can be selected.*
**3) The button **>>(F2)** is the farthest button to the right on the control part.*

If error message A3 (reference position not set) appears, repeat the above setting sequence.

### 6.9.2 Setting the Positions

This is an explanation of terms for the following descriptions:
Position 1 means "Needle lower position"
Position 2 means "Thread lever up" or "Needle rod TDC"

Each position has a starting angle (start) and ending angle (end). The needle stop position always refers to the starting angle.

| Position parameters | | Parameters |
|---|---|---|
| Start position 1<br>End position 1<br>Start position 2<br>End position 2 | (P1E)<br>(P1A)<br>(P2E)<br>(P2A) | **451**<br>**452**<br>**453**<br>**454** |

The position window 1 and position window 2 must not overlap. Consider that the width of the position window is at least 30° (difference between start and end of the position)!

If positions are set via the Setting and Putting into Service with the Aid of the Fast Installation Routine (SIR), then only the starting angle must be set. The end angles are automatically set to 60° after the starting angle.

The needle positions should in principle only be set via the quick installation routine (SIR) to prevent erroneous inputs. You are guided through the required parameters with it.
See Section **Fehler! Verweisquelle konnte nicht gefunden werden.** Setting and Putting into Service with the Aid of the Fast Installation Routine (SIR)

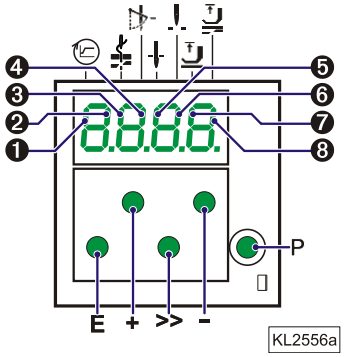
It is only important to set the position window including end angle for specific cutting systems. For these systems, the cutting duration is controlled via the end angle of the position.

## 6.10 Display of the Signal and Stop Positions

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Display of positions 1 and 2 | (Sr3) | **172** |

The position settings can easily be checked by means of parameter **172**.
- Select parameter **172**
- The control panel display shows "Sr3"
- Turn hand wheel according to the direction of motor rotation

**Control display (control panel not connected)**




- Segment ❺ is turned on corresponds to position 1 On
- Segment ❺ is turned off corresponds to position 1 Off
- Segment ❻ is turned on corresponds to position 2 On
- Segment ❻ is turned off corresponds to position 2 Off

**V810 / V820 control panel display**

- Arrow above symbol "position 1" on key 4 (V810) / on key 7 (V820) is displayed — corresponds to position 1 On
- Arrow above symbol "position 1" on key 4 (V810) / on key 7 (V820) is displayed — corresponds to position 1 Off
- Arrow above symbol "position 2" on key 4 (V810) / on key 7 (V820) is displayed — corresponds to position 2 On
- Arrow above symbol "position 2" on key 4 (V810) / on key 7 (V820) is displayed — corresponds to position 2 Off

**If the V810 or V820 control panel is connected, the positions will be displayed only on the control panel!**

## 6.11 Positioning shift

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Positioning shift | (PSv) | **269** |

Determine by means of parameter **269** whether the drive is to stop exactly on the position (Parameter **269 =0**) or some increments after the position.

## 6.12 Braking Characteristics

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Braking ramp running<br>Braking ramp stop<br>Braking ramp for n < 350 $^{min^{-1}}/_{ms}$ when drive stopped | (br1)<br>(br2)<br>(br3) | **207**<br>**208**<br>**219** |

- Parameter **207** regulates the braking effect between speed stages
- Parameter **208** influences the braking effect for the stop
- Parameter **219** influences the braking effect before the stop

The following applies to all setting values: the higher the value, the stronger the braking reaction!

## 6.13 Braking Power at Standstill

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Braking Power at Standstill | (brt) | **153** |

This function prevents unintentional "wandering" of the needle at standstill.
The effect can be checked by turning the hand wheel.

- The braking power is effective at standstill
  - at stop in the seam
  - after the seam end

- The effect can be set
- The higher the set value, the stronger the braking power

## 6.14 Starting Characteristics

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Starting edge | (ALF) | **220** |

The drive acceleration dynamics can be adapted to the sewing machine characteristic (light/heavy).

- High setting value = high acceleration

With a high starting edge setting and, in addition, possibly high braking parameter values on a light machine, the characteristic may appear coarse. In this case, one should try to optimize the settings.

## 6.15 Actual Speed Display

| Function **with** control panel | | Parameters |
|---|---|---|
| Display actual speed | (nIS) | **139** |

If parameter **139 = 1**, the V810/V820 display shows the following information:

| | | V810 | V820 |
|---|---|---|---|
| **During operation:**<br>▪ The actual speed<br>▪ **Example:** 2350 revolutions per minute | ➔ | **2350** | **2350** |
| **At stop in the seam:**<br>▪ The stop indication | ➔ | **StoP** | **StoP** |
| **At standstill after trimming:**<br>▪ On the V810, indication of the type of control<br>▪ On the V820, indication of the set maximum speed and the type of control<br>**Example:** 4000 revolutions per minute and type of control AB425S | ➔ | **Ab620A** | **4000 Ab620A** |

## 6.16 Operating hours counter

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Acoustic signal (operating part)<br>Service routine for total operating hours<br>Service routine for operating hours before service<br>Input of operating hours before service | (AkS)<br>(Sr6)<br>(Sr7)<br>(Sr) | **127**<br>**176**<br>**177**<br>**217** |

The integrated operating hours counter records the time of motor operation. Downtimes are not recorded. Time recording accuracy is 1ms. There are two ways of operating hours counting.

**1. Basic operating hours counting:**

**217 =0** Operational mode: Operating hours counting

**2. Service Hours Monitoring:**

**217 =>0** Operational mode: Number of operating hours before the next service.
Input of operating hours before the next service.
This value is compared to the operating hours counter.
The input of hours is done in steps of 10. i. e. the lowest display of 001 corresponds to 10 hours (e. g. 055 = 550 hours).
When the set number of operating hours are reached, the message "C1" will show on the display after each trimming operation. In addition, the speed indicator blinks on the control or on the V820 control panel during operation or after drive standstill.
Moreover, an acoustic signal is emitted when using a V810/V820 control panel if parameter **127=1**.

**176** In this service routine, the total operating hours can be read out according to the procedure example described below for parameter **177**.

**177** Display of operating hours since the **last** service.

**Display example of operating hours or hours since the last service and operating hours counter reset.**

**Display on the control:**

- Select parameter **177**
- Press the **E** key → **Sr7**
- Press the **>>** key → **h t** (hours /thousands letter symbol)
- Press the **E** key → **000** hours /thousands display)
- Press the **E** key → **h h** (hours / hundreds letter symbol)
- Press the **E** key → **000** (hours / hundreds display)
- Press the **E** key → **Min** (minutes letter symbol)
- Press the **E** key → **00** (minutes display)
- Press the **E** key → **SEc** (seconds letter symbol)
- Press the **E** key → **00** (seconds display)
- Press the **E** key → **MS** (milliseconds letter symbol)
- Press the **E** key → **000** (milliseconds display)
- Press the **E** key → **rES** See chapter "Set and Reset Operating Hours Counter"
- Press the **E** key → The process will be repeated from the hours display.
- Press the **P** key twice → e.g. **400** (sewing process can be started)

**Display on the V810 control panel:**

- Select parameter **177**
- Press the **E** key → **Sr7 [°]**
- Press the **>>** key → **hoUr** (hours letter symbol)
- Press the **E** key → **000000** (hours display)
- Press the **E** key → **Min** (minutes letter symbol)
- Press the **E** key → **00** (minutes display)
- Press the **E** key → **SEc** (seconds letter symbol)
- Press the **E** key → **00** (seconds display)
- Press the **E** key → **MSEc** (milliseconds letter symbol)
- Press the **E** key → **000** (milliseconds display)
- Press the **E** key → **rES F2** See chapter "Set and Reset Operating Hours Counter"
- Press the **E** key → The process will be repeated from the hours display.
- Press the **P** key twice → e.g. **Ab620A** (sewing process can be started)

**Display on the V820 control panel:**

- Select parameter **177**
- Press the **E** key → **F-177** **Sr7** [°]
- Press the **>>** key → **hoUr** **000000** (hours display)
- Press the **E** key → **Min** **00** (minutes display)
- Press the **E** key → **Sec** **00** (seconds display)
- Press the **E** key → **MSEc** **000** (milliseconds display)
- Press the **E** key → **rES** **F2** See chapter "Set and Reset Operating Hours Counter"
- Press the **P** key twice → e.g. **4000** **Ab620A** (sewing process can be started)

### 6.16.1 Set and Reset Operating Hours Counter

**The number of hours has been reached (service necessary):**

- Press the **>>** key once ➔ The operating hours counter is set to "0" and restarted.

**The number of hours has not yet been reached:**

- Press the **>>** key three times ➔ The operating hours counter is set also to "0" and restarted.

**A value in parameter 177 has been changed:**

- After displaying **rES ...,** when the **E** key is pressed again, **SEt** will then be displayed.
- If the changed value is to be saved, press the **>>** key 3 times.

### 6.16.2 Total Operating Hours Display

In this service routine enabled using parameter **176**, the total number of operating hours is displayed.
The sequence of displayed values is as with parameter **177**.
The values can only be displayed, not varied. Therefore, letter symbols "rES" for "reset" and "SEt" for "set" will not appear.

# 7 Functions with or without Control Panel

## 7.1 First Stitch after Power On

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| 1 stitch at positioning speed after power On | (Sn1) | **231** |

If parameter **231** is on, the first stitch after power on will be performed at positioning speed for the protection of the sewing machine. This is independent of the pedal position and the softstart function.

## 7.2 Softstart

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Softstart On/Off | (SSt) | **134** |

**Functions:**

- After power on
- At the beginning of a new seam
- Speed pedal controlled and limited to (n6)
- Lower speed of a parallel function prevailing (e. G. Stitch count)
- Stitch counting synchronized to position 1
- Suspension with pedal in position 0 (neutral)
- Interruption by full heelback (position -2)

**When using the V820 control panel, direct access by means of the function key (key 9) is possible!**

| Function **with** control panel | | Parameters |
|---|---|---|
| Softstart On/Off | (-F-) | **008 =1** |

### 7.2.1 Softstart speed

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Softstart speed | (n6) | **115** |

### 7.2.2 Softstart stitches

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Number of softstart stitches | (SSc) | **100** |

## 7.3 Sewing foot lifting

| Function **without** control panel | | Control |
|---|---|---|
| Automatic in the seam<br>Automatic after thread trimming | Segment 7 on<br>Segment 8 on | Key **–** (S4) |

| Function **with** control panel | | V810 | V820 |
|---|---|---|---|
| Automatic in the seam<br>Automatic after thread trimming<br>If parameter 290 = 16, with slide-in strip "7" | Left-hand arrow above key On<br>Right-hand arrow above key On<br>Left-hand arrow above key On | Key 3<br>Key 3 | Key 6<br>Key 6<br>Key 9 |

| Function | | Parameters |
|---|---|---|
| Automatic sewing foot with pedal forward at the seam end if light barrier or stitch counting is On | (AFL) | **023** |
| Coupled thread tension release and sewing foot lifting. The function can be activated only with a thread trimmer that depends on the angle. | (FSP) | **024** |
| Switch-on delay with pedal in position –1 | (t2) | **201** |
| Start delay after disabling the sewing foot lifting signal | (t3) | **202** |
| Time of full power of sewing foot lifting | (t4) | **203** |
| Duty ratio (ED) with pulsing | (t5) | **204** |
| Delay after thread wiping until sewing foot lifting | (t7) | **206** |
| Delay after thread trimming without thread wiper until sewing foot lifting | (tFL) | **211** |
| Upper limit ON period of sewing foot lifting 1...100 | (EF-) | **254** |

**Sewing foot is lifted:**
- in the seam

by heelback (position -1)
or automatically (using the **-** S4 key on the control, segment 7 lights up)
or automatically (using key **3** on the V810 control panel)
or automatically (using key **6** on the V820 control panel)
by pressing a key depending on the pre-selection of parameters **240...246**
- after thread trimming

by heelback (position -1 or -2)
or automatically (using the **-** S4 key on the control, segment 8 lights up)
or automatically (using key **3** on the V810 control panel)
or automatically (using key **6** on the V820 control panel)
by pressing a key depending on the pre-selection of parameters **240...246**
automatically by light barrier when pedal forwards, according to the setting of parameter **023**
automatically by stitch counting when pedal forwards, according to the setting of parameter **023**
Switch-on delay after thread wiper (t7)
Switch-on delay without thread wiper (tFL)

It is possible to prevent unintentional foot lifting before thread trimming when changing from pedal position 0 (neutral) to position -2 by setting a switch-on delay (t2) using parameter**201**.

**Holding power of the lifted foot:**
The sewing foot is lifted by full power. Then the system switches automatically to partial power in order to reduce the load for the control and the connected solenoid.
Set the duration of full power using parameter **203** and the partial holding power using parameter **204**.

**ATTENTION**

If the holding power is set too high, the solenoid and the control may be permanently damaged. Please observe the permissible duty ratio (ED) of the solenoid and set the appropriate value according to the table below.

| Value | Duty ratio (ED) | Effect |
|---|---|---|
| 1 | 1 % | Low holding power |
| 100 | 100 % | High holding power (full power) |

**Sewing foot lowers:**

- Press pedal to position 0 (neutral)
- Press pedal to position ½ (slightly forward)
- Release key for manual sewing foot lifting

Upon pressing the pedal forward from lifted sewing foot, the start delay (t3) that can be set using parameter **202** becomes effective.

## 7.4 Start Backtack/Start Stitch Condensing

| Function **without** control panel | | Control |
|---|---|---|
| Single start backtack<br>Double start backtack<br>Start backtack Off | Segment 1 on<br>Segment 2 on<br>Both segments off | Key **E** (S2) |
| Start stitch condensing On; number of stitches with stitch regulator (Parameter **001**)<br>Start stitch condensing On; number of stitches without stitch regulator (Parameter **000**) after that number of stitches with stitch regulator (Parameter **001**)<br>Start stitch condensing Off | Segment 1 on<br>Segment 2 on<br><br>Both segments off | Key **E** (S2) |

| Function **with** control panel | | V810/V820 |
|---|---|---|
| Single start backtack<br>Double start backtack<br>Start backtack Off | Left-hand arrow above key On<br>Right-hand arrow above key On<br>Both arrows Off | Key 1 |
| Start stitch condensing On; number of stitches with stitch regulator (Parameter **001**)<br>Start stitch condensing On; number of stitches without stitch regulator (Parameter **000**) after that number of stitches with stitch regulator (Parameter **001**)<br>Start stitch condensing Off | Left-hand arrow above key On, right-hand arrow above key On<br><br>Both arrows Off | Key 1 |

The start backtack/start stitch condensing starts by pressing the pedal forward at the beginning of the seam. From lifted sewing foot the backtack is delayed by the time t3 (start delay after switching off the sewing foot lifting signal). Start backtack as well as start stitch condensing are executed automatically at speed n3. They cannot be interrupted. If softstart is running parallel, the respective lower speed is prevailing. The stitch regulator will be switched off after completion of the stitch count (Parameter **001**) and the speed n3 after a delay time t1. Then pedal control is returned. The stitch regulator and counter are synchronized to position 1.

### 7.4.1 Speed n3 at the Start of the Seam

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Start backtack/start stitch condensing speed<br>Start backtack/start stitch condensing speed can be interrupted by pedal in pos. 0 (neutral)<br>Start and end backtack or stitch condensing can be interrupted by pedal in pos. 0 (neutral) On/Off | (n3)<br>(n2A)<br>(StP) | **112**<br>**162**<br>**164** |

### 7.4.2 Stitch Counting for Start Backtack/Start Stitch Condensing

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Number of stitches forward or without stitch regulator | (c2) | **000** |
| Number of stitches backward or with stitch regulator | (c1) | **001** |
| Double start backtack repetition | (war) | **090** |
| Backtack repetition On/Off | (Fwr) | **092** |

The start backtack/start stitch condensing stitches with or without stitch regulator can be programmed and varied using the above parameters directly on the control or on a connected V810/V820 control panel.
For fast operator information (HIT) when using the V820 control panel, the value of the function switched on using key **1** can be displayed for approx. 3 seconds. During this time, the value can be varied directly by pressing key **+** or **-**.

### 7.4.3 Stitch Correction and Speed Release

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Stitch correction time | (t8) | **150** |
| Delay until speed release after start backtack | (t1) | **200** |

Speed release after single and double backtack can be influenced by parameter **200.**
In the case of slow backtack mechanisms it is possible to delay disabling of the stitch regulator in the single and double start backtack by the time t8 (start backtack stitch correction) and thereby prolong the backward section. This time-lag can be selected by means of parameter **150**.

### 7.4.4 Double start backtack

The forward section will be sewn for a number of stitches that can be set. Then the stitch regulator signal will be issued and the backward section will be executed. The number of stitches for the two sections can be set separately.

### 7.4.5 Single Start Backtack / Start Stitch Condensing

The stitch regulator signal will be issued and the backward section and/or start stitch condensing will be executed for a number of stitches that can be set.

## 7.5 End Backtack / End Stitch Condensing

| Function **without** control panel | | Control |
|---|---|---|
| Single end backtack<br>Double end backtack<br>End backtack Off | Segment 3 on<br>Segment 4 on<br>Both segments off | Key **+** (S3) |
| End stitch condensing On; number of stitches with stitch regulator (Parameter **002**)<br>End stitch condensing on; stitch count with stitch regulator (Parameter **002** ), afterwards the stitch count without the stitch regulator (Parameter **003**).<br>End stitch condensing Off | Segment 3 on<br>Segment 4 on<br><br>Both segments off | Key **+** (S3) |

| Function **with** control panel | | V810 | V820 |
|---|---|---|---|
| Single end backtack<br>Double end backtack<br>End backtack Off | Left-hand arrow above key On, right-hand arrow above key On<br>Both arrows Off | Key 2 | Key 4 |
| End stitch condensing On; number of stitches with stitch regulator (Parameter **002**)<br>End stitch condensing on; stitch count with stitch regulator (Parameter **002** ), afterwards the stitch count without the stitch regulator (Parameter **003**).<br>End stitch condensing Off | Left-hand arrow above key On, right-hand arrow above key On<br><br>Both arrows Off | Key 2 | Key 4 |

The end backtack/end stitch condensing in a seam with stitch counting starts by heelback at the end of counting, or, from the light barrier seam at the end of the light barrier compensating stitches. The stitch regulator is immediately enabled from machine standstill. After lowering the sewing foot, the switch-on point of the stitch regulator is delayed by the time t3 (start delay after switching off the sewing foot lifting signal). The first leading edge of position 1 counts as 0 stitch whenever the function is not started in position 1. The stitch regulator is synchronized to position 1. End backtack as well as end stitch condensing are executed automatically at speed n4. They cannot be interrupted. From full machine run, end backtack / end stitch condensing will be switched in only after having reached the speed n4 and synchronization to position 2.

### 7.5.1 Speed n4 at the Seam End

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| End backtack/end stitch condensing speed | (n4) | **113** |
| End backtack/end stitch condensing speed can be interrupted by pedal in pos. 0 (neutral) | (n2E) | **163** |
| Start and end backtack or stitch condensing can be interrupted by pedal in pos. 0 (neutral) On/Off | (StP) | **164** |

### 7.5.2 Stitch Counting for End Backtack/End Stitch Condensing

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Number of stitches forward or without stitch regulator | (c3) | **002** |
| Number of stitches backward or with stitch regulator | (c4) | **003** |
| Double end backtack repetition | (wer) | **091** |
| Backtack repetition On/Off | (Fwr) | **092** |

The end backtack/end stitch condensing stitches with or without stitch regulator can be programmed and varied using the above parameters directly on the control or on a connected V810/V820 control panel.
For fast operator information (HIT) when using the V820 control panel, the value of the function switched on using key **4** can be displayed for approx. 3 seconds. During this time, the value can be varied directly by pressing key **+** or **-**.

### 7.5.3 Stitch Correction and Last Stitch Backward

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Last stitch backward On/Off | (FAr) | **136** |
| Stitch correction time | (t9) | **151** |

The backtack solenoid can be delayed in the double end backtack by selecting a stitch correction time (t9) using parameter **151**.
For some sewing procedures it is desirable that the backtack solenoid in the single end backtack is disabled only after trimming. This function can be selected using parameter **136**.

**136 =0** Trimming stitch backward Off
**136 =1** Trimming stitch backward On with single end backtack
**136 =2** Trimming stitch or positioning stitch always backward at the seam end

### 7.5.4 Double End Backtack/End Stitch Condensing

The backward section and/or end stitch condensing will be executed for a number of stitches that can be set. Then the stitch regulator will be disabled and the forward section and/or normal stitch condensing stitches will be executed. The number of stitches for the two sections can be set separately.
After stitch counting (Parameter **003**) the trimming function will be initiated. During the entire operation the sewing speed is reduced to speed n4,. with the exception of the last stitch, which will be performed at positioning speed n1.
In the case of slow backtack mechanisms it is possible to delay disabling of the stitch regulator in the single and double end backtack by the time t9 (end backtack stitch correction).

### 7.5.5 Single End Backtack / End Stitch Condensing

The stitch regulator signal will be issued and the backward section and/or end stitch condensing will be executed for a number of stitches that can be set. During the last stitch the speed is reduced to positioning speed.

**When using the V820 control panel, direct access by means of the function key (key 9) is possible!**

| Function **with** control panel | | Parameters |
|---|---|---|
| Backtack repetition On/Off | (-F-) | **008 =8** |

### 7.5.6 Backtack Synchronization

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Backtack synchronization for start and end backtack On/Off | (nSo) | **298** |
| Backtack synchronization speed | (nrS) | **299** |

If parameter **298** is on, the backtack speed will be switched to backtack synchronization speed one stitch before engaging and disengaging of the backtack solenoid. After the switch on and off the locking magnets, during the next position 2 the lock speed is released again. If the synchronization speed, adjustable with parameter **299**, is higher than the locking speed, the locking speed is retained. Backtack synchronization is possible in the start and end backtack.

## 7.6 Start Ornamental Backtack/Stitch Condensing

| Function **without** control panel | | Control |
|---|---|---|
| Function "ornamental backtack" On/Off | (SrS) | **135** |
| Ornamental backtack stop time | (tSr) | **210** |
| Single start ornamental backtack | Segment 1 on | key **E** (S2) |
| Double start ornamental backtack | Segment 2 on | |
| Start ornamental backtack Off | Both segments off | |

| Function **with** control panel | | V810/V820 |
|---|---|---|
| Function "ornamental backtack" On/Off | (SrS) | **135** |
| Ornamental backtack stop time | (tSr) | **210** |
| Single start ornamental backtack | Left-hand arrow above | Key **1** |
| Double start ornamental backtack | key On | |
| Start ornamental backtack Off | Right-hand arrow above key On | |
| | Both arrows Off | |

The parameters of the start backtack speed and the backtack stitches forward and backward are identical with the standard start backtack.

**Difference from the standard start backtack:**

- The drive stops for stitch regulator switching
- The stop time can be set

**When using the V820 control panel, direct access by means of the function key (key 9) is possible!**

| Function **with** control panel | | Parameters |
|---|---|---|
| Ornamental backtack On/Off | (-F-) | **008 =2** |

## 7.7 End Ornamental Backtack/Stitch Condensing

| Function **without** control panel | | Control |
|---|---|---|
| Function "ornamental backtack" On/Off | (SrS) | **135** |
| Ornamental backtack stop time | (tSr) | **210** |
| Single end backtack | Segment 3 on | Key **+** (S3) |
| Double end backtack | Segment 4 on | |
| End backtack Off | Both segments off | |

| Function **with** control panel | | V810 | V820 |
|---|---|---|---|
| Function "ornamental backtack" On/Off | (SrS) | **135** | **135** |
| Ornamental backtack stop time | (tSr) | **210** | **210** |
| Single end backtack | Left-hand arrow above | Key 2 | Key 4 |
| Double end backtack | key On, right-hand arrow | | |
| End backtack Off | above key On | | |
| | Both arrows Off | | |

The parameters of the end backtack speed and the backtack stitches forward / backward are identical with the standard end backtack.

**Difference from the standard end backtack:**
- The drive stops for stitch regulator switching
- The stop time can be set

**When using the V820 control panel, direct access by means of the function key (key 9) is possible!**

| Function **with** control panel | | Parameters |
|---|---|---|
| Ornamental backtack On/Off | (-F-) | **008 =2** |

## 7.8 Intermediate Backtack

Upon pressing an external key according to the pre-selection of parameters **240...246**, the backtack solenoid can be switched on anywhere in the seam and at standstill.

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Counted manual backtack On/Off | (chr) | **087** |
| Speed of manual backtack | (n13) | **109** |
| Ornamental backtack On/Off | (SrS) | **135** |
| Manual ornamental backtack speed | (n9) | **122** |
| Speed status for manual backtack | (Shv) | **145** |

The speed function for the manual backtack can be set using parameter **145**.

**145 =0** Speed controllable by the pedal up to the set maximum speed (Parameter **111**)

**145 =1** Fixed speed (Parameter **109**) without influence by the pedal (machine stop by pressing the pedal to the basic position)

**145 =2** Limited speed controllable by the pedal up to the set limit (Parameter **109**)

**Intermediate backtack (Parameter 135 = 0):**
Backward sewing with speed limitation according to the setting of parameter 109 is performed when the key is held down.

**Intermediate ornamental backtack (Parameter 135 = 1):**
By pressing the key in the seam, the drive stops and the backtack solenoid is activated. The speed limitation n9 according to the setting of parameter 122 is effective during the entire intermediate backtack operation. Backward sewing is performed when the key is held down and the stitches are counted. When the key is released, the drive stops, the backtack solenoid is switched off and a forward seam is performed according to the counted stitches after the ornamental backtack stop time. After that the speed limitation is released.

Moreover, the number of stitches for each type of backtack can be selected using Parameter **087** .

**087 = 0 Stitches** Normal manual backtack

**087 = 1...255 Stitches** Manual backtack with counted backtack

**Intermediate backtack (Parameter 135 = 0) with counted backtack section (Parameter 087 = >0):**
During manual backtack the speed is n13 (Parameter 109). According to the setting of parameter 145 it is pedal controlled, fixed or limited.

**Intermediate ornamental backtack (Parameter 135 = 1) with counted backtack section (Parameter 087 = >0):**
After the button is pushed, the drive stops in position 1. The locking magnet is switched on. After the ornamental backtack stop time (Parameter 210) has elapsed and the pedal has been pressed forward, the drive runs until counting (Parameter 087) has been completed. The drive stops again in position 1. The backtack solenoid is disabled, and the time set using parameter 210 elapses. Then the seam section forward is repeated. The sequence is performed at speed n9 (Parameter 122).

## 7.9 Stitch Regulator Suppression/Recall

**Effective in standard and ornamental backtack**

The next backtack and/or stitch condensing operation can be suppressed or recalled once by pressing an external key according to the pre-selection of parameters **240...246**.

| Upon pressing the key, | Start Backtack/ Stitch condensing On | Start Backtack/ Stitch condensing Off | End backtack / Stitch condensing On | End Backtack/ Stitch condensing Off |
|---|---|---|---|---|
| Before the start of the seam | No backtack / Stitch condensing | Backtack/ Stitch Condensing | ------ | ------ |
| In the seam | ------ | ------ | No backtack / Stitch condensing | Backtack/ Stitch Condensing |

The double backtack is performed in the above cases.

## 7.10 Holding Power of the Stitch Regulator Solenoid

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Time of full power | (t10) | **212** |
| Holding Power of the Stitch Regulator Solenoid | (t11) | **213** |
| Upper limit stitch regulator ON period | (EV-) | **255** |

The stitch regulator solenoid is engaged by full power. Then the system switches automatically to partial power in order to reduce the load for the control and the connected stitch regulator solenoid. Set the duration of full power using parameter **212** and the partial holding power using parameter **213**.

**ATTENTION**

If the holding power is set too high, the solenoid and the control may be permanently damaged. Please observe the permissible duty ratio (ED) of the solenoid and set the appropriate value according to the table below.

| Value | Duty ratio (ED) | Effect |
|---|---|---|
| 1 | 1 % | Low holding power |
| 100 | 100 % | High holding power (full power) |

## 7.11 Reverse motor rotation

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Positioning speed | (n1) | **110** |
| Reversing angle | (ird) | **180** |
| Switch-on delay of reverse motor rotation | (drd) | **181** |
| Reverse motor rotation On/Off | (Frd) | **182** |

The function "reverse motor rotation" is performed after trimming. When the stop position is reached, the drive stops for the duration of the switch-on delay of reverse motor rotation. Then it runs in reverse direction at positioning speed according to the set degrees.

## 7.12 Unlocking the Chain (Mode 5/6/7)

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Number of run-out stitches when unlocking the chain<br>Function “unlock the chain” in modes 5, 6 and 7 | (c6)<br>(mEk) | **184**<br>**190** |

Upon unlocking the chain at the seam end, the functions **thread trimming** and tape cutter/fast scissors are automatically suppressed. When setting parameter **190 = 3**, the function **tape cutter/fast scissors** is however possible. After pressing the key "unlocking the chain" and with pedal in position 0 (neutral), the drive always stops in position 1.

**Settings necessary for the operation “unlocking the chain”:**

- Set “unlock the chain” using parameter **190 =1 / 2 / 3 / 4** (**190 =0** “unlock the chain” off)
- Set **switch-on delay** using parameter **181** and **reversing angle** using parameter **180**
- Determine the **function of the key “unlock the chain”** using one of the parameters **240...246**
- If parameter **290** is set at“

**190 =0** **Unchaining switched off**

**190 =1** **Sequence with pedal in position -2 from machine run or from position 2:**
- Press key "unlock the chain"
- Run at positioning speed to position 1
- Sequence of reversing angle at positioning speed after a switch-on delay that can be set

**190 =1** **Sequence with pedal in position -2 from standstill in position 1:**
- Press key "unlock the chain"
- Run at positioning speed to position 1
- Sequence of reversing angle at positioning speed after a switch-on delay that can be set

**190 =2** **Automatic sequence with light barrier at the seam end without tape cutting / pedal in position –2 according to the setting of parameter 019**
- Press key "unlock the chain"
- Run to position 1 after light barrier sensing
- Sequence of reversing angle at positioning speed after a switch-on delay that can be set

**190 =3** **Automatic sequence with light barrier on the seam end with tape cutter and run-out stitches(Only possible in mode 7 and if parameter 018 =0 )**
- Press key "unlock the chain"
- After light barrier detection, sequence of the compensation stitches and end count up to tape cutting
- Run-out stitches up to unlocking the chain, adjustable with parameter 184
- Sequence of reversing angle at positioning speed after a switch-on delay that can be set

**190 =4** **Sequence with pedal in position –2 / no unlocking of the chain if seam end with light barrier, cutting and run-out stitches is set:**
- Press the pedal to position -2
- Run at positioning speed to position 1
- Sequence of reversing angle at positioning speed after a switch-on delay that can be set
- No unlocking of the chain at the seam end with light barrier
- Reverse motor rotation is suppressed when the drive stops. The signals “blow fabric onto stack”, M2 and “sewing foot lift” will be issued.

**When using the V820 control panel, direct access by means of the function key (key 9) is possible!**

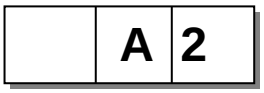
| Function with control panel | | Parameters |
|---|---|---|
| Unlocking the chain On/Off | (-F-) | **008 =4** |

## 7.13 Machine run blockage

**ATTENTION**
This is not a safety function. The line voltage must still be switched off during maintenance and repair work.

The function “machine run blockage” is enabled by connecting a switch to socket ST2, depending on the pre-selection of parameters 240...246. When using a V810 / V820 /control panel, an acoustic signal can be switched on and/or off by means of parameter 127.

**Display after enabling machine run blockage without control panel:**
Control display ➔




**Display and signal after enabling machine run blockage with control panel:**
Display on the V810 control panel! ➔
(symbol blinks and acoustic signal if parameter 127 = 1)


Display on the V820 control panel!
(symbol blinks and acoustic signal if parameter 127 = 1)➔

Machine run blockage in the free seam, seam with stitch counting and light barrier seam:
The seam is suspended by opening and/or closing the switch.
- Stop in the basic position
- Needle up is not possible
- Sewing foot lifting is possible

Machine run blockage in the start backtack / start stitch condensing:
The start backtack / start stitch condensing is interrupted by opening and/or closing the switch.
- Stop in the basic position
- Needle up is not possible
- Sewing foot lifting is possible
- After disabling of the machine run blockage, the seam will be continued with the section following the start backtack / start stitch condensing

Machine run blockage in the end backtack / end stitch condensing:
The end backtack / end stitch condensing is interrupted, and the seam is completed by opening and/or closing the switch.
- Sewing foot lifting is possible

## 7.14 High lift for walking foot / flip-flop 1

| Function with or without control panel | | Parameters |
|---|---|---|
| High lift for walking foot On/Off | (hP) | 137 |
| Signal “high lift for walking foot” when key is closed/open | (ihP) | 263 |

High lift for walking foot is effective only if input function 13 or 14 has been selected using one of the parameters **240...246** and parameter **137 =1**. Select using parameter **263** whether the key is to be active when open or when closed.

**263 =0** Signal “high lift for walking foot” is issued when key is closed
**263 =1** Signal “high lift for walking foot” is issued when key is opened

### 7.14.1 High lift walking speed

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| High lift walking speed | (n10) | 117 |

### 7.14.2 High Lift Walking Speed Run-Out Time

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| High Lift Walking Speed Run-Out Time | (thP) | **152** |

### 7.14.3 High Lift Walking Stitches

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Number of high lift walking stitches | (chP) | **185** |

Upon pressing the external key “high lift for walking foot” depending on the setting of parameters **240...246**, the speed is limited to high lift walking speed. The solenoid for high lift for walking foot is switched on if the speed ≤ high lift walking speed. It is possible to program run-out stitches using parameter **185**. This way, high lift for walking foot remains on until stitch counting has been completed. The speed limitation remains effective during run-out time after the solenoid for high lift for walking foot has been switched off.

### 7.14.4 High Lift for Walking Foot Operational Mode Not Stored (Parameters 240...246 = 13)

**The following function is performed if "0" run-out stitches have been programmed using parameter 185:**

- Press the key “high lift for walking foot”; signal “high lift for walking foot” is On.
- Release the key“ high lift for walking foot”; signal “high lift for walking foot” turns off.

**The following function is performed if ">0" run-out stitches have been programmed using parameter 185:**

- When pushing the “high lift foot for walking” key for the first time at a drive stand still: The “high lift foot for walking” switches on and remains on after the button is released.
- When pressing the “high lift foot for walking” key again at drive standstill: The “high lift foot for walking” signal switches off again.

If the signal “high lift for walking foot” is On when starting the drive, the speed will be limited. The signal turns off after the run-out stitches have been executed, and the speed limitation will be disabled after the run-out time (Parameter **152**). If the key is held down until after counting, high lift for walking foot remains On. If the key is pressed only briefly, counting takes priority.

**While the drive is running, if ">0" run-out stitches have been programmed using parameter 185:**

- Pushing the “high lift foot for walking” key while the drive is running: The “high lift foot for walking” signal and “high lift foot for walking” speed switch on.
- Release the “high lift foot for walking foot” key while the drive is running: The signal “high lift foot for walking foot” switches off and depending on the run-out time (Parameter **152**) the speed limit is disabled again.

### 7.14.5 High Lift for Walking Foot Operational Mode Stored /Flip-Flop 1 (Parameters 240...246 = 14)

- Upon first actuation of the “high lift foot for walking” key while the drive is running: The “high lift foot for walking” signal and “high lift foot for walking” speed switch on.
- By repeatedly pushing the “high lift foot for walking” key while the drive is running: Signal “high lift foot for walking” switches off immediately and after the run-out time (Parameter **152**), speed limiting is released.

## 7.15 Speed Limitation Depending on High Lift

| Function with or without control panel | | Parameters |
|---|---|---|
| Maximum speed | (n2) | 111 |
| High lift walking speed | (n10) | 117 |
| Lift-dependent speed limiting with potentiometer on | (Pot) | 126 =7 |
| High lift for walking foot - measurement value of potentiometer for minimum lift | | 911 |
| High lift for walking foot - measurement value of potentiometer for maximum lift | | 912 |

The lift-dependent speed limitation depends on the position of the adjustment wheel for the lift, which is coupled with a potentiometer It may be activated or deactivated using parameter **126**.

**126 =0** Deactivated. The maximum speed n10 set with parameter **117** is in effect.

**126 =7** Activated. The speed is limited to a value that depends on the lift level configured.

The speed is limited in the range between the maximum speed (n2, parameter **111**) for the minimum height, and a high lift walking speed (n10, parameter **117**) for the maximum lift.

### 7.15.1 Programming the measurement value of the poti

- Call parameter **911**.
- Turn the adjustment wheel for the lift until the value displayed changes.
- Then set the **minimum** height lift.
- Confirm the change with the **E** button

- Call parameter **912**.
- Turn the adjustment wheel for the lift until the value displayed changes.
- Then set the **maximal** height lift.
- Confirm the change with the **E** button

- Call parameter **401**.
- Set a value of **1** to save the changes. Storage by pressing the **P** button twice with subsequent approximation is not possible here

**NOTE**
If the values are outside the permitted range, fault message **A11** will be emitted.

## 7.16 Speed Limitation n9

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Speed Limitation n9 | (n9) | 122 |

When a key is pushed to which input function **33** is assigned, speed limitation n9 is activated. The speed is controlled by the pedal up to the limit.

## 7.17 Thread trimming operation

| Function | | Parameters |
|---|---|---|
| Thread trimmer On/Off | FA | **013** |
| Thread wiper On/Off | FW | **014** |

| Function **with** control panel | V820 |
|---|---|
| Thread trimmer or thread wiper On/Off | Key 5 |

When a V820 control panel is connected, the functions can also be switched on and off using key 5.

### 7.17.1 Thread Trimmer/Thread Wiper (Lockstitch Modes)

| Function | | Parameters |
|---|---|---|
| Thread wiper time | (t6) | **205** |
| Thread wiper switch-on delay | (dFw) | **209** |
| Holding power output M1 of the thread trimmer backward | (t11) | **213** |
| Thread trimmer activation angle | (iFA) | **250** |
| Switch-off delay of thread tension release | FSA | **251** |
| Thread tension release switch-on delay | FSE | **252** |
| Stop time for thread trimmer | (tFA) | **253** |
| Upper limit ON period of thread trimmer backward | EV- | **255** |
| Switch-on delay angle of the thread trimmer | FAE | **259** |

Thread trimming in the lockstitch modes is performed at trimming speed.
When the thread trimmer is off, the drive stops in position 2 at the seam end; it stops in position 1 at the end of programmed seams.
The thread wiper ON period can be set depending on the selected trimming mode (see chapter "Timing Diagrams" in the List of Parameters). The delay time (t7) (Parameter **206**) prevents sewing foot lifting before the thread wiper is in its initial position.
If the thread wiper is not connected, there will be a delay time (tFL) after thread trimming until sewing foot lifting.

### 7.17.2 Trimming speed

| Function | | Parameters |
|---|---|---|
| Trimming speed | (n7) | **116** |

### 7.17.3 Chainstitch thread cutter (var. modes)

Thread trimming in the chainstitch modes is performed at machine standstill in position 2.
The signal sequence of M1...M4 and sewing foot lifting at the seam end can be set as desired using parameters **280...288** (Parallel or sequential).
When the thread trimmer is off, the drive stops in position 2 at the seam end.

### 7.17.4 Chainstitch Machine Trimming Signal Times

Signal delay times and ON periods can be set with the help of the following parameters.
See chapter 8 »Setting the Basic Functions, Selection of Functional Sequences« in this manual for further information on chain stitch seam end variants and chapter »Timing Diagrams« in the List of Parameters.

| Function | | Parameters |
|---|---|---|
| Delay time output M1 | (kd1) | **280** |
| ON period output M1 | (kt1) | **281** |
| Delay time output M2 | (kd2) | **282** |
| ON period output M2 | (kt2) | **283** |
| Delay time output M3 | (kd3) | **284** |
| ON period output M3 | (kt3) | **285** |
| Delay time output M4 | (kd4) | **286** |
| ON period output M4 | (kt4) | **287** |
| Delay time until sewing foot On | (kdF) | **288** |

## 7.18 Functions for bag sewing machines

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Chainstitch machine functions e. g. bag sewing machine functions | (Bag) | 198 |

There are various setting possibilities in mode 5 using parameter **198**:

**198 =0** Thread trimming or hot thread chain cutting and sewing foot lifting are enabled by means of the pedal.

**198 =1** Thread trimming or hot thread chain cutting is enabled by means of the knee switch, and the sewing foot is lifted using the pedal.

**198 =2** Thread trimming or hot thread chain cutting is enabled by means of the pedal, and the sewing foot is lifted by means of the knee switch.

For bag sewing machine operation the parameters indicated below must be adapted manually. For the knee switch select an input in1...i7, and set the corresponding parameter to "**42**".

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Delay time output M2 | (kd2) | **282** |
| ON period output M2 (impulse) | (kt2) | **283** |
| Delay time output M3 for hot thread chain cutting | (kd3) | **284** |
| M3 ON period output for hot thread chain cutting | (kt3) | **285** |
| Delay time until sewing foot On | (kdF) | **288** |
| Input for knee switch function | (in1...in7) | **240...246** |

## 7.19 Overlock Machine Functions (Mode 7)

### 7.19.1 Chain Suction Signal

The chain suction signal can be pre-selected for start and end counting, respectively, using the E key on the control and key **1** on the V810/V820 control panel. If chain suction and tape cutter are switched off at the start of the seam, the respective counts will be suppressed. But they will be performed at the seam end.

| Function **without** control panel | | Control |
|---|---|---|
| **Chain suction** at the start of the seam On | Segment 1 on | Key S2 |
| **Chain suction** at the end of the seam On | Segment 2 on | |

| Function **with** control panel | | V810/V820 |
|---|---|---|
| **Chain suction** at the start of the seam On | left-hand arrow above key On | Key 1 |
| **Chain suction** at the end of the seam On | right-hand arrow above key On | |

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Stop for tape cutting at the seam end On/Off | (SAb) | **017** |
| Sequence of the overlock mode (mode 7) with or without stop | (UoS) | **018** |
| Signal chain suction on seam end up to counted c2 or to pedal 0 | (SPO) | **022** |
| Start counting (Parameter **157**) for thread tension release at the start of the seam | (tFS) | **025** |
| Speed during the stitch count at the seam start | (kSA) | **143** |
| Speed during the stitch count at the seam end | (kSE) | **144** |
| Stitches until thread tension release Off after light barrier covered at the start of the seam | (SFS) (kSL) | **157** **193** |
| Enable chain suction signal and thread tension release at the seam end | (FSn) | **199** |
| Thread tension release at the seam end until pedal in pos. 0 or until the next seam start is switched on | (bdO) | **235** |
| Braking curve in the overlock mode On/Off | (tkS) | **237** |
| Switch-off delay for chain suction at the seam end, if parameter **022 =2** | (Abc) | **267** |
| Start count cancellation and seam end initiation by light barrier uncovered On/Off | | |

**There are various setting possibilities with the following parameters in the overlock mode (mode 7).**

**018 =0** Sequence with stop.

**018 =1** Sequence without automatic stop at the seam end. When the command “run” is given, the drive runs at the pre-selected speed. The program switches to the next start of a seam without issuing signals M1/M2, when the pedal is in pos. 0 (neutral) or the light barrier is covered.

**018 =2** Sequence as with setting 1. But with pedal in pos. 0 signals M1/M2 will be issued, and the program switches to the next start of a seam.

**018 =3** Sequence as with setting 1. But with pedal -2 signals M1/M2 will be issued, and the program switches to the next start of a seam. Intermediate stop and sewing foot lifting with pedal in pedal -1 is possible.

**018 =4** If the light barrier is covered during the end count for chain suction, the program switches immediately to the next start of a seam. If the end count has been completed and the light barrier remains uncovered, the drive stops immediately.

**018 =5** Tape cutting at the start of the seam with stop.

**022 =0** The chain suction signal at the seam end is disabled after count c2.

**022 =1** The chain suction signal at the seam end remains on until pedal in pos. 0 (neutral).

**022 =2** Chain suction until the drive is at standstill and the switch-off delay (Parameter **237**) has elapsed. The switch-off delay will be disabled whenever a new seam is started.

**025 =0** Start counting for thread tension release at the start of the seam.

**025 =1** Start counting for thread tension release when the light barrier is covered.

**193 =0** Thread tension release and chain suction after the light barrier compensating stitches.

**193 =1** Chain suction from light barrier uncovered onwards and thread tension release after the light barrier compensating stitches.

**199 =0** Thread tension release On at the seam end until pedal in pos. 0 (neutral).

**199 =1** Thread tension release On at the seam end or at the start of the seam.

**199 =2** Thread tension release On at the seam end or at the start of the seam and after “power On“.

**267 =0** Start count cancellation by light barrier uncovered impossible.

**267 =1** Start count cancellation by light barrier uncovered.
Chain suction or tape cutting at the start of the seam are cancelled whenever the light barrier senses “uncovered”, and the seam end will be initiated.

**It is possible to select the speed function for stitch counting at the start of the seam and at the seam end using the following parameters.**

**143 =0** Speed controllable by the pedal up to the set maximum speed (Parameter **111**).

**143 =1** Fixed speed (Parameter **112**) without an affect by the pedal. Stop with pedal in pos. 0.

**143 =2** Limited speed (Parameter **112**) controllable by the pedal up to the set limit.

**143 =3** At fixed speed (Parameter **112**), can be cancelled or interrupted depending on the setting of parameter **019**.

**144 =0** Speed controllable by the pedal up to the set maximum speed (Parameter **111**).

**144 =1** Fixed speed (Parameter **113**) without an affect by the pedal. Stop with pedal in pos. 0.

**144 =2** Limited speed (Parameter **113**) controllable by the pedal up to the set limit.

**144 =3** At fixed speed (Parameter **113**), can be cancelled or interrupted depending on the setting of parameter **019**.

### 7.19.2 Start and End Counts

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| End count (c2) at limited speed n4 until stop | (c2) | **000** |
| Start count (c1) at limited speed n3 for chain suction | (c1) | **001** |
| Count (c3) tape cutter at the start of the seam | (c3) | **002** |
| End count (c4) for tape cutter at the seam end | (c4) | **003** |
| Seam end in mode 7 through end count (c2) or (c4) | (mhE) | **191** |
| Stitch counting speed at the start of the seam | (n3) | **112** |
| Stitch counting speed at the seam end | (n4) | **113** |

The following settings are possible for determining the seam end using **parameter 191**:
**191 =0** Seam end after count c4 – tape cutter
**191 =1** Seam end after count c2 – chain suction

## 7.20 Tape Cutter/Fast Scissors (Modes 6/7)

### 7.20.1 Tape Cutter/Fast Scissors in Mode 6

The signal **tape cutter/fast scissors** is issued only at the seam end. Furthermore, the manual tape cutter/fast scissors function can be set. See also chapter "**Manual Tape Cutter/Fast Scissors**".

| Function **with** or **without** control panel | Parameters |
|---|---|
| **Tape cutter** at the seam end On/Off | **014** |

**Output and Times for Tape Cutter**

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Delay time for output M3 (ST2/27) **tape cutter** AH | (kd3) | **284** |
| ON period for output M3 (ST2/27) **tape cutter** AH | (kt3) | **285** |

- Parameter **232** must be set at "**0**" (tape cutter function).
- The delay time for the tape cutter is usually set at "**0**".

**Output and Times for Fast Scissors**

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Delay time for output M3 (ST2/27) **fast scissors** AH1 | (kd3) | **284** |
| ON period for output M3 (ST2/27) **fast scissors** AH1 | (kt3) | **285** |
| Delay time for output M4 (ST2/36) **fast scissors** AH2 | (kd4) | **286** |
| ON period for output M4 (ST2/36) **fast scissors** AH2 | (kt4) | **287** |

- Parameter **232** must be set at "**1**" (fast scissors function).
- The delay times for "fast scissors" are usually set at "**0**".

### 7.20.2 Tape Cutter/Fast Scissors in Mode 7

The signal tape cutter/fast scissors can be set separately for start and end counting. See also chapter "Manual Tape Cutter/Fast Scissors".

| Function without control panel | | Control |
|---|---|---|
| **Tape cutter/Fast scissors** at the start of the seam On | Segment 3 on | key + (S3) |
| **Tape cutter/Fast scissors** at the end of the seam On | Segment 4 on | |
| **Tape cutter/Fast scissors** at the start and end of the seam On | Segment s 3 and 4 on | |
| **Tape cutter/Fast scissors** at the start and end of the seam Off | LEDs 3 and 4 off | |

- When using the V810 control panel, parameter **291** will automatically be set to slide-in strip "**7**" if **290 =7**.
- When using the V820 control panel, parameter **292** will automatically be set to slide-in strip "**5**" if **290 =7**.

| Function **with** control panel | V810 | V820 |
|---|---|---|

| | | | |
|---|---|---|---|
| **Tape cutter/Fast scissors** at the start of the seam On<br>**Tape cutter/Fast scissors** at the end of the seam On<br>**Tape cutter/Fast scissors** at the start and end of the seam On<br>**Tape cutter/Fast scissors** at the start and end of the seam Off | left-hand arrow above key On<br>right-hand arrow above key On<br>both arrows above key On<br>both arrows above key Off | Key 2 | Key 4 |

The tape cutter signal can be influenced by parameter **020** in such a way that the signal remains on at the seam end and is off when you begin sewing again after some run-out stitches, which can be set using parameter 021. This action serves as clamp.

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Clamp at the seam end (output ST2/27) On/Off (mode 7) | (kLm) | **020** |
| Run-out stitches from the clamp at the seam start (mode 7) or<br>Stitch count after the light barrier uncovered until the tape cutter is on (mode 15) | (ckL) | **021** |

**Output and Times for Tape Cutter**

| Function | | Parameters |
|---|---|---|
| Delay time for output M3 (ST2/27) **tape cutter** AH | (kd3) | **284** |
| ON period for output M3 (ST2/27) **tape cutter** AH | (kt3) | **285** |

- Parameter **232** must be set at "**0**" (tape cutter function).
- The delay time for the tape cutter is usually set at "**0**".

**Output and Times for Fast Scissors**

| Function | | Parameters |
|---|---|---|
| Delay time for output M3 (ST2/27) **fast scissors** AH1 | (kd3) | **284** |
| ON period for output M3 (ST2/27) **fast scissors** AH1 | (kt3) | **285** |
| Delay time for output M4 (ST2/36) **fast scissors** AH2 | (kd4) | **286** |
| ON period for output M4 (ST2/36) **fast scissors** AH2 | (kt4) | **287** |

- Parameter **232** must be set at "**1**" (fast scissors function).
- The delay times for "fast scissors" are usually set at "**0**".

## 7.21 Manual Tape Cutter/Fast Scissors

Upon pressing an external key depending on the pre-selection of parameters **240...246**, the **tape cutter** or **fast scissors** can be enabled anywhere in the seam or at standstill.
See also chapter "Connection Diagram" in the List of Parameters!

## 7.22 FlipFlop functions (AFF)

| Function | | Parameters |
|---|---|---|
| FlipFlop 1 | (AFF1) | **830** |

**Output assignment**

**F-830 =0** AFF1 =Off (preset)
**F-830 =1** AFF1 =M1
**F-830 =2** AFF1 =M2
**F-830 =3** AFF1 =M3
**F-830 =4** AFF1 =M4
**F-830 =5** AFF1 =M5

Linking

**F-038 =0** Linking off (preset)
**F-038 =1** Linking with FSPL
**F-038 =2** Linking with “high lift for walking foot”
**F-038 =3** Linking with FSPL & with “high lift for walking foot”

**F-039 =0** Linking off (preset)
**F-039 =1** Linking with foot lifting (in the seam)
**F-039 =2** Linking with foot lifting (at the seam end)
**F-039 =3** Linking with foot lifting (in and at the end of the seam)

**Inputs assignment:** F-24x =101

| Function | | Parameters |
|---|---|---|
| FlipFlop 2 | (AFF2) | **831** |

**Output assignment**

**F-831 =0** AFF2 =Off (preset)
**F-831 =1** AFF2 =M1
**F-831 =2** AFF2 =M2
**F-831 =3** AFF2 =M3
**F-831 =4** AFF2 =M4
**F-831 =5** AFF2 =M5

**Inputs assignment**: F-24x =102

| Function | | Parameters |
|---|---|---|
| FlipFlop 3 | (AFF3) | **832** |

**Output assignment**

**F-832 =0** AFF3 = Off (preset)
**F-832 =1** AFF3 = M1
**F-832 =2** AFF3 = M2
**F-832 =3** AFF3 = M3
**F-832 =4** AFF3 = M4
**F-832 =5** AFF3 = M5

**Linking**

**F-040 = 0** Linking off (preset)
**F-040 = 1** AFF3 off when foot lifting is active
**F-040 = 2** AFF3 off when interlock is active
**F-040 = 3** **AFF3 is off when locking or** foot lifting is active

**Inputs assignment**: F-24x =103

## 7.23 Seam with Stitch Counting

| Function **without** control panel | | Parameters |
|---|---|---|
| Stitch counting On/Off | (n7) | **015** |

| Function **with** control panel | V820 |
|---|---|
| Stitch counting On/Off | Key 2 |

### 7.23.1 Number of Stitches for a Seam with Stitch Counting

| Function with or **without** control panel | | Parameters |
|---|---|---|
| Number of stitches for the seam with stitch counting | (Stc) | 007 |

The number of stitches for stitch counting can be set directly on the control with parameter **007** or on a

connected V810/V820 control panel.
For fast operator information (HIT) when using the V820 control panel, the value of the function switched on using key **2** can be displayed for approx. 3 seconds. During this time, the value can be varied directly by pressing key **+/-**.

### 7.23.2 Stitch Counting Speed

| Function | | Parameters |
|---|---|---|
| Positioning speed | (n1) | **110** |
| Stitch Counting Speed | (n12) | **118** |
| Speed mode for a seam with stitch counting | (SGn) | **141** |

A certain speed behavior for the stitch counting can be selected using **parameter141**.

**141 =0** Execution at pedal controlled speed
**141 =1** Execution at fixed speed n12, when pressing the pedal forward (position >1)
**141 =2** Execution at limited speed n12, when pressing the pedal forward (position >1)
**141 =3** Automatic execution at fixed speed after having pressed the pedal once. The procedure can be interrupted by "heelback (-2)"
**141 =4** Automatic execution at fixed speed n1 after having pressed the pedal once. The procedure can be interrupted by "heelback (-2)"

The sewing speed is reduced in each stitch depending on the actual speed (max. 11 stitches before the end of stitch counting), in order to be able to stop exactly at the end of counting. When the light barrier is on, free sewing will be performed after stitch counting.

### 7.23.3 Seam with Stitch Counting When Light Barrier Is On

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Light barrier On/Off | LS | **009** |
| Stitch counting On/Off | (StS) | **015** |

| Function **with** control panel | V820 |
|---|---|
| Light barrier On/Off | Key 3 |
| Stitch counting On/Off | Key 2 |

When "stitch counting and light barrier function" is set, the number of stitches will be executed first, then the light barrier will be activated.

## 7.24 Free Seam and Seam with Light Barrier

| Function | | Parameters |
|---|---|---|
| Positioning speed | (n1) | **110** |
| Upper limit of maximum speed | (n2) | **111** |
| Limited speed according to setting of parameter **142** | (n12) | **118** |
| Lower limit of maximum speed | (n2_) | **121** |
| Speed mode free seam | (SFn) | **142** |

Speed control for the free seam and the seam with stitch counting can be selected using the speed mode.

**142 =0** Execution at pedal controlled speed
**142 =1** Execution at fixed speed n12, when pressing the pedal forward (position >1)
**142 =2** Execution at limited speed n12, when pressing the pedal forward (position >1)
**142 =3** Only for the seam with light barrier:
- Automatic execution at fixed speed after having pressed the pedal once.
- The seam end is initiated by light barrier.
- The procedure can be interrupted by heelback (-2).
- If the light barrier is not on, speed as with parameter setting **142 = 0**.

When using a control panel, the maximum speed is displayed after power on and thread trimming and can be varied directly using the **+/-** keys on the control panel. The setting range lies between the values of parameters **111** and **121**.

## 7.25 Light barrier

| Function **with** or **without** control panel | Parameters |
|---|---|
| Light barrier On/Off | **009** |

| Function **with** control panel | | V820 |
|---|---|---|
| Light barrier covered/uncovered On<br>Light barrier uncovered/covered On<br>Light barrier Off | Right-hand arrow above key On<br>Left-hand arrow above key On<br>Both arrows Off | Key 3 |

The light barrier function at the input of socket B18/8 is active only if parameter value **239 = 0**.

### 7.25.1 Speed after Light Barrier Sensing

| Function with or without control panel | | Parameters |
|---|---|---|
| Speed after Light Barrier Sensing | (n5) | **114** |

At the end of the light barrier stitch count at speed n5, the end count for the tape cutter (c4) is continued under pedal control. If the stitch count for the tape cutter is set to 0 and the light barrier balancing stitch count set until the tap cutter is introduced, then the count is done independently of the pedal at a speed of n5.

### 7.25.2 General Light Barrier Functions

| Function | | Parameters |
|---|---|---|
| Light barrier compensating stitches | LS | **004** |
| Number of light barrier seams | (LSn) | **006** |
| Light barrier sensing uncovered/covered | (LSd) | **131** |
| Start of sewing blocked/unblocked with light barrier uncovered | LSS | **132** |
| Light barrier seam end with thread trimming On/Off | (LSE) | **133** |
| Speed of the light barrier compensating stitches | PLS | **192** |

- After sensing the seam end, the compensating stitches are counted at light barrier speed.
- Suspension of the procedure with pedal in pos. 0 (neutral). Interruption of the procedure with pedal in pos. -2.
- The thread trimming operation can be disabled using parameter **133**, regardless of the setting of key **5** on the V820 control panel. Stop in the basic position.
- Programming of max. 15 light barrier seams depending on the setting of parameter **006** with stop in the basic position. Thread trimming after the last light barrier seam.
- Light barrier sensing uncovered or covered at the seam end can be selected using parameter **131**.
- Start blockage with light barrier uncovered programmable using parameter **132**.
- Speed selection pedal controlled / n5 during the light barrier compensating stitches using parameter **192**.

The light barrier compensating stitches can be programmed and varied using the above parameters directly on the control or on a connected V810/V820 control panel.
For fast operator information (HIT) when using the V820 control panel, the value of the function switched on using key **3** can be displayed for approx. 3 seconds. During this time, the value can be varied directly by pressing key **+** or -.
**When using a V820 control panel, direct access by means of the function key (key 9) is possible.**

| Function **with** control panel | | Parameters |
|---|---|---|
| Start of sewing blocked with light barrier uncovered On/Off | (-F-) | **008 =3** |

### 7.25.3 Reflection Light Barrier LSM002

**Sensitivity setting:**
Set minimum sensitivity depending on the distance between light barrier and reflection area (turn potentiometer as far as possible to the left).
- Potentiometer directly on the light barrier module

**Mechanical orientation:**
Orientation is facilitated by a visible light spot on the reflection area.

### 7.25.4 Automatic Start Controlled by Light Barrier

**This function is not possible when parameter F-290 =8 or 9 (modes 8 and 9)!**

| Function | | Parameters |
|---|---|---|
| Delay of automatic start | (ASd) | **128** |
| Automatic start On/Off | (ALS) | **129** |
| Light barrier sensing uncovered | (LSd) | **131** |
| Start of sewing blocked with light barrier uncovered | LSS | **132** |

This function enables an automatic start of the sewing operation as soon as the light barrier senses the insertion of fabric.

**Prerequisites for the operation:**

- Parameter **009 = 1** Light barrier On
- Parameter **129 = 1** Automatic start On
- Parameter **131 = 1** Light barrier sensing uncovered
- Parameter **132 = 1** No start of sewing with light barrier uncovered
- The pedal must be kept pressed forward at the seam end.

For safety reasons this function is enabled only after a normal start of sewing. The light barrier must be covered as long as the pedal is in position 0. Then press the pedal forward. This function is disabled when the pedal is no longer pressed forward after the seam end.

### 7.25.5 Light barrier filter for knitted fabrics

| Function | | Parameters |
|---|---|---|
| Number of stitches of the light barrier filter | (LSF) | **005** |
| Light barrier filter On/Off | (LSF) | **130** |
| Light barrier sensing uncovered or covered | (LSd) | **131** |

The filter prevents premature enabling of the light barrier function when sewing knitted fabrics.

- Enabling/Disabling of the filter using parameter **130**
- The filter is not active if parameter **005 = 0**
- Adaptation to the mesh is possible by varying the number of filter stitches.
- Knitted fabric sensing with light barrier
  - Uncovered ➔ covered, if parameter **131 = 0**.
  - Covered ➔ uncovered, if parameter **131 = 1**.

### 7.25.6 Functional Variations of the Light Barrier Input

| Function | Parameters |
|---|---|
| Selection of the input function on socket B18/8 | **239** |

If the light barrier function is not used, a switching function can be assigned to the input on socket B18/8 as well as to inputs in1...i7.

The following input functions are possible with parameter **239**

**239 =0** **Light barrier function:** The input is prepared for a light barrier function.

**239 =>0** **All other input functions are identical, as described in the next section "Inputs for switches and keys".**

## 7.26 Switching Functions of Inputs in1...i13

| Function | | Parameters |
|---|---|---|
| Selection of the input function | (in1...in7)<br>(in11-LSM)<br>(in12...in13) | **240...246**<br>**239**<br>**550...551** |

The functions of the keys/switches connected to socket connectors ST2, B18 and B22 can be selected for inputs in1...in13 using parameters **240...246, 239 (LSM), 550, 551**.

**240...246, 239 (LSM), 550, 551 =**

**0** **Input function blocked.**

**1** **Needle up/down:** Upon pressing the key, the drive runs from position 1 to position 2 or from position 2 to position 1. If the drive is outside of the stop position, it moves to the preselected home position.

**2** **Needle up:** Upon pressing the key, the drive runs from position 1 to position 2.

**3** **Single stitch (basting stitch)**: Upon pressing the key, the drive performs one rotation from position 1 to position 1. If the drive is in position 2, it runs to position 1 upon pressing the key and from position 1 to position 1 each time the key is pressed again.

**4** **Full stitch**: Upon pressing the key, the drive performs a full rotation depending on the set stop position.

**5** **Needle to position 2**: If the drive is outside of position 2, then after pushing the key it moves to position 2. After the power is switched on, the drive runs until it has synchronized.

**6** **Machine run blockage effective with open contact**: Upon opening the switch, the drive stops in the pre-selected basic position.

**7** **Machine run blockage effective with closed contact**: Upon closing the switch, the drive stops in the pre-selected basic position.

**8** **Machine run blockage effective with open contact (unpositioned)**: Upon opening the switch, the drive stops immediately unpositioned.

**9** **Machine run blockage effective with closed contact (unpositioned)**: Upon closing the switch, the drive stops immediately unpositioned.

**10** **Run at automatic speed (n12)**: Upon pressing the key, the drive runs at automatic speed. The pedal is not used. (This input function is inverted in mode 9.)

**11** **Run at limited speed (n12)**: Upon pressing the key, the drive runs at limited speed. The pedal must be pressed forward.

**12** **Sewing foot lifting with pedal in position 0** (neutral).

**15** **Tape cutter or fast scissors (mode 6/7)**: Upon pressing the key, the tape cutter will be enabled for a preset time.

**18** **Unlocking the chain**: Upon pressing the key, the motor performs a reverse rotation at the seam end. Moreover, backtacking and thread trimmer will be suppressed.

**24** **Needle to position 2**: Upon pressing the key, the drive runs from position 1 to position 2, and the sewing foot is lifted. The start is blocked after that. Upon pressing the key again, the sewing foot is lowered, and the start is possible again.

**27** **Unlocking the chain**: Upon pressing the key, the function “unlock the chain” will be performed without using the pedal.

**28** **External light barrier**: In this mode it is possible to initiate the seam end using a key, not the light barrier. But the light barrier function must be On.

**33** **Speed n9**: Below this speed, operation can be pedal controlled.

**34** **Automatic speed n9**: The speed can be suspended by pressing the pedal to position 0.

**37** **Speed n12 with break contact**: Below this speed, operation can be pedal controlled.

**38** **Automatic speed n12 with break contact**: Not influenced by the pedal.

**41** **Tape cutting only at machine standstill.**

**42** **Enable hot thread chain cutting or sewing foot lifting:** Function only effective in mode 37

**43** **No function**

**44** **Functions the same as actuating the pedal –2**: When the key is pushed the seam end is introduced. If the functions “end backtack“ and “trimming operation” are activated, they will be completed. The drive stops in position 2.

**45** **- 90 No function**

**91** **Threading mode 66**

**92** **– 100 No function**

**101** **Signal AFF1 switchable as flip-flop:** Upon pressing the key, signal AFF1 is activated and deactivated when pressing the key again.

**102** **Signal AFF2 switchable as flip-flop**: Upon pressing the key, signal AFF2 is activated and deactivated when pressing the key again.

**103** **Signal AFF3 switchable as flip-flop:** Upon pressing the key, signal AFF3 is activated and deactivated

when pressing the key again, manual lock automatic

**104 Manual lock automatic**
**105 -109 No function**
**109 Part lift mode 66**
**110 No function**
**111 Machine run blockage effective in Pos. 2 at the seam end with closed contact**
**112 Foot lifting FlipFlop**
**113 – 117 No function**
**118 FlipFlop for running at maximum speed**

## 7.27 Software Debouncing of All Inputs

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Software debouncing of all inputs | (EnP) | **238** |

**238 =0** No debouncing
**238 =1** Debouncing

## 7.28 F1/F2 Function Key Assignment on the V810/V820 Control Panels

| Function with control panel | | Parameters |
|---|---|---|
| Selection of input function on the (A) "F1" key on the V810/V820 control panels | (tF1) | **293** |
| Selection of input function on the (B) "F2" key on the V810/V820 control panels | (tF2) | **294** |

The function of the keys F1 (A) and F2 (B) can be selected on the control panels using parameters **293 and 294**.

**293/294 =**
**0 Input function blocked**
**1 Needle up/down:** Upon pressing the key, the drive runs from position 1 to position 2 or from position 2 to position 1. If the drive is outside of the stop position, it moves to the preselected home position.
**2 Needle up** Upon pressing the key, the drive runs from position 1 to position 2.
**3 Single stitch (basting stitch):** Upon pressing the key, the drive performs one rotation from position 1 to position 1. If the drive is in position 2, it runs to position 1 upon pressing the key and from position 1 to position 1 each time the key is pressed again.
**4 Full stitch:** Upon pressing the key, the drive performs a full rotation depending on the stop position.
**5 Needle to position 2:** If the drive is outside of position 2, then after pushing the key it moves to position 2. After the power is switched on, the drive runs until it has synchronized.
**6...12 No function**
**13 High lift for walking foot operational mode not stored:** The signal “high lift for walking foot” is issued as long as the key is held down, and the drive runs with speed limitation (n10).
**14 High lift for walking foot operational mode stored /flip-flop 1:** The signal “high lift for walking foot” is issued upon briefly pressing the key, and the drive runs with speed limitation (n10). The operation is disabled upon pressing the key again.
**15 Tape cutter or fast scissors (mode 6/7):** Upon pressing the key, the tape cutter will be enabled for a preset time.
**16 Intermediate Backtack:** Upon pressing the key, the backtack will be enabled anywhere in the seam and at standstill of the drive.
**17 Backtack suppression / recall:** Upon pressing the key, the backtack will be suppressed or recalled once.
**18 No function**
**19** Bobbin thread monitor
**20...100 No function**

## 7.29 Special pedal function Single stitch / Full stitch

| Function | | Parameters |
|---|---|---|
| Special pedal function Single stitch / Full stitch | (EZP) | **041** |
| Pedal travel forwards for detection of the special pedal function | (GrP) | **042** |
| Time for detection of the special pedal function | (dPd) | **051** |
| Speed for single stitch / full stitch | (n9) | **122** |

With the single stitch / full stitch function, it is possible to enable the execution of a stitch though pedal forwards actuation. For this it is necessary to move the pedal forward only far enough so that the percentage portion (e.g., 40%) of the maximum possible pedal travel (100%) set by the parameter **042**, is not exceeded.
The execution is done as single stitch (Parameter **041 = 1**) or full stitch (Parameter **041 =2**)
If the travel set with parameter **042** is exceeded within the time set with parameter **051**, the drive runs with the speed specified by the respective pedal setting, even when under the threshold.
First after pedal 0-position can the special pedal function be actuated again.
The single/full stitch is executed in the speed set with parameter **122**. To ensure that only a single stitch is executed, the setting 300 rpm must not be exceeded.

**041 =0** Special pedal function Off
**041 =1** Single stitch:
The performs one rotation from position 1 to position 1. If it is standing in position 2, it runs to position 1 the first time and then each time from position 1 to position 1.
**041 =2** Full stitch:
The drive executes a complete rotation corresponding to its starting position.

## 7.30 Signal “Machine Running“

| Function | | Parameters |
|---|---|---|
| Mode "machine running" | (LSG) | **155** |
| Switch-off delay for signal "machine running" | (t05) | **156** |

Set activation of signal “machine running” using parameters 155/156 .

**155 =0** Signal "machine running" Off.
**155 =1** Signal "machine running" will be issued whenever the drive is running.
**155 =2** The signal "machine running" will be issued whenever the speed is higher than 3000 RPM
**155 =3** Signal "machine running" will be issued whenever the pedal is not in position 0 or neutral.
**155 =4** Signal "machine running" will be issued only after motor synchronization (one rotation at positioning speed after power On).
**156** Delay of switch-off time.

## 7.31 Signal Output Position 1

- Transistor output with open collector (max. +40 V, $I_{max}$ 10 mA)
- Signal whenever the needle is in the slot between position 1 and 1A
- Independent of sewing, thus also when turning the handwheel manually
- Suitable e. g. for the connection of a counter
- An inverted signal is issued at socket ST2/22

## 7.32 Signal Output Position 2

- Logic level output (+5 V, $I_{max}$ 5 mA)
- Signal whenever the needle is in the slot between position 2 and 2A
- Independent of sewing, thus also when turning the handwheel manually
- Suitable e. g. for the connection of a counter
- An inverted signal is issued at socket B18/9

## 7.33 Signal Output 512 Impulses per Rotation

- Logic level output (+5 V, $I_{max}$ 5 mA)
- Signal whenever a generator slot of the position transmitter is sensed
- 512 impulses per rotation of the handwheel

- Independent of sewing, thus also when turning the handwheel manually
- Suitable e. g. for the connection of a counter
- A signal is issued at socket B18/1+6

## 7.34 Actuator

### 7.34.1 Analog actuator

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Selectable pedal functions | (-Pd) | **019** |
| Characteristic of the "analog pedal" EB401 | (APd) | **026** |

The effect of pedal actuation on the drive functions can be set using parameter **019**:

**019 =0** Pedal in pos. -1 (slightly back) blocked in the seam. But with pedal in pos. -2 (all the way back) sewing foot lifting is possible in the seam (function active whenever the light barrier is On).
**019 =1** With pedal in pos. -1 (slightly back) sewing foot lifting is blocked in the seam.
**019 =2** With pedal in pos. -2 (all the way back) thread trimming is blocked (function active whenever the light barrier is On).
**019 =3** The functions “pedal in pos. -1 (slightly back) and “pedal in pos -2 (all the way back) are active.
**019 =4** The functions “pedal in pos. –1” (slightly back) and “pedal in pos. –2” (all the way back) are blocked in the seam (function active whenever the light barrier is On).
**019 =5** Start seam end by placing the portal at -1 (slightly back)

The characteristics of the “analog pedal” is adjustable with parameter **026**:

**026 =0** Analog function off
**026 =1** 12-level selected, like prior pedal function of the digital actuator.
**026 =2** Continuously variable (i.e. for external potentiometer, without trimming function)
**026 =3** 24-level
**026 =4** 60-level
**026 =5** 48-level
**026 =6** 40-Step for SOP (standing operation)

# 8 Signal Test

| Function **with** or **without** control panel | | Parameters |
|---|---|---|
| Input and output test | (Sr4) | **173** |

Function test of external inputs, multiple-function key bar and transistor power outputs with connected actuators (e.g. solenoids and solenoid valves).

## 8.1 Signal Test Using the Incorporated Control Panel or the V810/V820

### 8.1.1 Inputs to the control

- Select parameter **173** (OFF is displayed).
- **Control pad on controller:** By actuating the keys or switches connected to inputs in1 to in7, the number of the input actuated appears on the display, e.g. **i06**. More than one switch and/or key may not be actuated at the same time.
  If more than one key or switch is activated at once, the number of the lowest-numbered input is displayed. If, for example, **in3, in5, in6, in7** are actuated, **i03** is displayed.

**Note:** Checking of positions is described in chapter "Displaying the signal and stop positions".

- **V810 control panel:** The numbers of the inputs in1...in7, in11 (LSM), in12, and in13 appear individually on the LCD display. Here, too, several switches and/or keys may not be actuated at the same time.
  The signals "Light barrier, sensor (IPG... or HSM...), generator pulses 1 and 2, position 1 and 2" can be checked directly for functionality. The display is carried out using the arrows assigned to keys 2 to 4

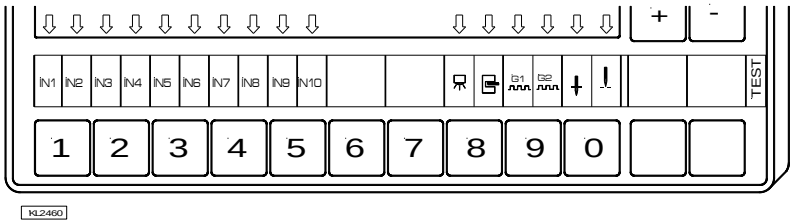
Display example for input 03 on the V810 control panel: ➔ **in i03**

- **V820 control panel:** The numbers of the inputs in1...in7, in11 (LSM), in12, and in13 appear individually on the LCD display. In addition, the active inputs are displayed by arrows over keys 1 through 6, even if multiple inputs are actuated at once.
- If more than one key or switch is activated at once, the number of the lowest-numbered input is displayed. If, for example, **in3, in5, in6, in7** are actuated, **03** is displayed.

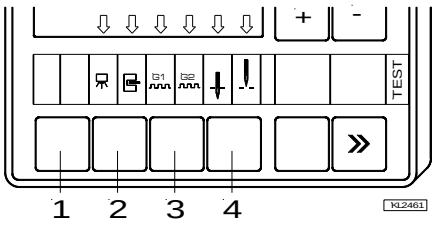
The signals "Light barrier, positions, etc." are displayed by arrows above keys 8, 9, 0.

Display example for input 03 on the V820 control panel: ➔ **2-06 in 03**

**V820 Control Panel**




**V810 Control Panel**




**NOTE**

If an input is active with open contact, the corresponding arrow lights up when the contact is open. If an input is active with closed contact, the corresponding arrow lights up when the contact is closed!

### 8.1.2 Outputs of control

- Select parameter **173**.
- Select the desired output using the **+/-** keys.
- On the V810 control panel or on the built-in keypad in the control, the **>>** key is used to turn on the associated output, if it is connected and working.
- On the V820 control panel, instead of the **>>** key the key lower right, at the outer edge must be pressed.

Display example for backtacking output on the V810 control panel: ➔ **2-34 oUt vr**

Display example for backtacking output on the V820 control panel: ➔ **2-34 oUt vr**

# 9 Table of Machine Functions and Adapter Cords

**ATTENTION**

Before switching functional sequences, detach cables from the inputs and outputs! It must be absolutely certain that for the functional sequence to be changed the machine provided has been installed! Then proceed with the setting using parameter 290!

**Setting the functional sequence using parameter 290**

| | | | Functions / Outputs | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Power transistors ➔ | | FL | VR | M1 | M2 | M3 | M4 | M5 | |
| Mode | Function / Machine | Adapter | ST2/35 | ST2/34 | ST2/37 | ST2/28 | ST2/27 | ST2/36 | ST2/32 | |
| 0 | **Lockstitch: e. g.** | | **FL** | **VR** | **FA1** | **FA2** | **FW** | **FA1+2** | **ML** | |
| | Brother (737-113, 737-913) | 1113420 | FL | VR | FA1 | FA2 | FW | | | |
| | Aisin (AD3XX, AD158, 3310; EK1) | 1112815 | FL | VR | FA1 | FA2 | FW | | | |
| | Pfaff (563, 953, 1050, 1180) | 1113746 | FL | VR | FA1 | FA2 | FW | | ML | |
| | Dürkopp Adler (210, 270) | 1112845 | FL | VR | FA1 | FA2 | FW | | | |
| 2 | **Lockstitch: e. g.** | | **FL** | **VR** | | **FA** | **FSPL** | **FL1** | **ML** | |
| | Singer (212 UTT) | 1112824 | FL | VR | | FA | FSPL | FL1 | | |
| 3 | **Lockstitch: e. g. Dürkopp Adler (467)** | | FL | VR | FA | ML | FW | FSPL | | |
| 5 | **Chainstitch: parallel sequence** | | **FL** | **STV** | **AH1** | **AH2** | **AH3** | **AH4** | **ML** | |
| | Yamato (VC/VG series) | 1113345 | FL | STV | FA | | FW | | ML | |
| | Kansai (RX 9803) | 1113130 | FL | | FA | | FW | | ML | |
| | Pegasus (W500/UT, W600/UT/MS with or without stitch condensing) | 1112821 | FL | STV | FA | FA | FW | | | |
| | Union Special (34700) | 1112844 | FL | STV | FA | FA | FW | | ML/NK | |
| | Global (CB2803-56) | 1112866 | FL | | | | FA | | | |
| | Rimoldi (F27) | 1113096 | FL | | FW | FAO | FAU | | ML | |
| 6 | **Chainstitch: tape cutter/fast scissors** | | FL | STV | FA | M2 | AH1 | AH2 | ML | |
| 7 | **Overlook** | | FL | KS | FA | M2 | AH | FSPL | ML | |
| 8 | **Backlatch** | | **FL** | | **PD≤-1** | **PD≥1** | **PD≥1*** | | **ML** | |
| | Pegasus | 1113234 | | | PD≤-1 | PD≥1 | | | | |
| 9 | **Backlatch** | | **FL** | | **PD≤-1** | **PD≥1** | **PD≥1*** | | **ML** | |
| | Yamato (ABT3) | 1112826 | | | PD≤-1 | PD≥1 | | | | |
| | Yamato (ABT13, ABT17) | 1113205 | | | PD≤-1 | PD≥1 | | | | |
| 14 | **Lockstitch: e. g.** | | **FL** | **VR** | **FA1+2** | **FA2** | **FW** | **FA1** | **ML** | |
| | Juki (5550-6) | 1112816 | FL | VR | FA1+2 | | FW | | | |
| | Juki (5550-7, 8500-7, 8700-7) | 1112816 | FL | VR | FA1+2 | | FW | | | |
| | With short trimmer Adapter for position sensors incorporated in the handwheel | 1113157 | | | | | | | | |
| 25 | **Lockstitch: JUKI** (LU2210 / LU2260) | | FL | VR | FA | FSPL | FW | HP | ML | |
| 37 | **Heavy duty bag machine Union Special** | | FL | | | IMP | BR | | M2 | |
| 38 | **Lockstitch: : e. g.** HonYu class HY-4410 | | FL | VR | FA1 | FA2 | AFF2 | AFF1 | MST/HP | |
| 53 | **Lockstitch: : e. g.** Juki (LU2810-6) | | FL | VR | FA1 | FA2 | AFF2 | AFF1 | MST/HP | |
| 55 | **Chainstitch with UTQ: e. g.** Yamato | | FL | VR | AH1 | M2 | M3 | M4 | M2 | |
| 56 | **Strobel:** Replacement for ST220 | | FL | VR | AH1 | AH1 | BS | | M2 | |
| 57 | **Lockstitch: e. g.**Typical Kl. TW1-591 | | FL | VR | FA | M2 | | FSP2 | | |
| 58 | **Lockstitch: e. g.** Juki PLC 2760 | | FL | VR | FA1 | AFF3 | FA3 | FSP2 | MST/HP | |
| 59 | **Lockstitch: e. g.**DA class 768 | | FL | VR | FA1 | AFF3 | FA3 | FA2 | MST/HP | |
| 60 | **Lockstitch: e. g.**Typical class 1245 | | FL | VR | FA1 | M2 | FA3 | FA2 | MST/HP | |
| 61 | **Lockstitch: e. g.**Kaiser class 570/590 | | FL | VR | FA | M2 | 2FSRL | FSP2 | | |
| 62 | **Lockstitch: e. g.** Typical/Mauser class 335 | | FL | VR | FA | M2 | FW | FSP2 | MST/HP | |
| 63 | **Lockstitch: e. g.**Juki DNU 1541-7 | | FL | VR | FA | FSP2 | AFF2 | AFF1 | MST/HP | |
| 65 | **Kettenstich: e. g.** Sagitta | | **FL** | **STV** | **AH1** | **AH2** | **AH3** | **AH4** | **ML** | |

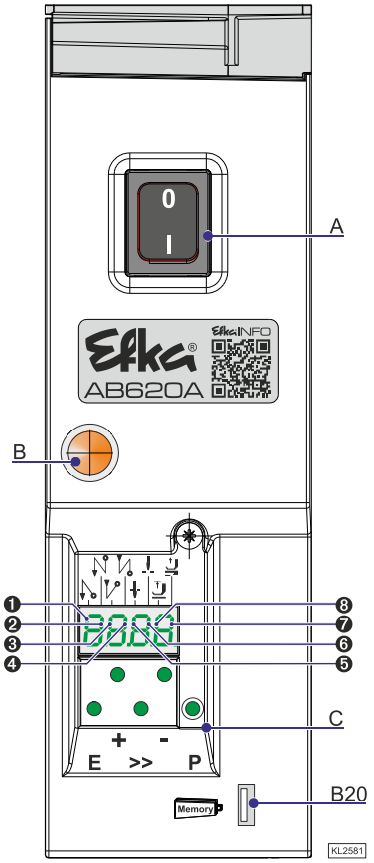
**) The signal issued at this output is inverted!*

| Explanation of letter symbols of the above table and chapter ”Timing Diagrams“ | | | |
|---|---|---|---|
| **Outputs** | | **Outputs** | |
| AH | Tape cutter | FL1 | Sewing foot lifting without pulsing |
| AH1/AH2 | Fast scissors | FSPL | Thread tension release |
| FA | Thread trimmer | FW | Thread wiper |
| FA1 | Thread trimmer pos. 1...1A<br>(e.g. Pfaff, magnetic) | ML/NK | Machine running / Needle cooling |
| FA1+2 | Thread trimmer pos. 1...2 | PD≥1 | Pedal forwards until the engine is running (min. to max. rotational speed) |
| FA2 | Thread trimmer pos. 1A...2<br>(e.g. Pfaff, pneumatic) | PD≤-1 | Pedal slightly back (FL) or entirely back (FA) |
| FAO | Needle thread trimmer | PD=0 | Pedal in pos. 0 (neutral) |
| FAU | Bobbin thread trimmer | PD-2 | Full heelback (FA) |
| FL | Sewing foot lifting | VR | Backtacking |

# 10 Operating Elements and Socket Connectors

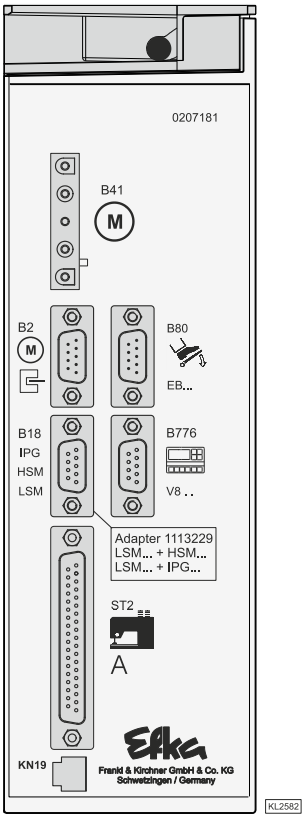
## 10.1 Positions of the Front Side

| | |
|---|---|
| A | **Power switch** |
| B | **Network control lights** |
| C | **Control panel** (onboard module)<br>+ **Display** (4-digit 7-segment display) |
| Key | |
| P | Call or exit programming mode |
| E | Start backtack single / double / off<br>Enter key for modifications in the programming mode |
| + | End backtack single / double / off<br>In the programming mode - increase of the value indicated |
| >> | Basic position 1 or 2<br>In programming mode as shift key |
| – | Automatic sewing foot lifting at stop in the seam On/Off<br>Automatic sewing foot lifting after thread trimming On/Off<br>In the programming mode - decrease of the value indicated |
| The upper vertical segments of the 4 digit 7 segment display indicate the switching states of foot lifting and basic position. | |
| 1 | Single start backtack |
| 2 | Double start backtack |
| 3 | Single end backtack<br>Tape cutter at the start of the seam ON/OFF (mode 7) |
| 4 | Double end backtack<br>Tape cutter at the seam end ON/OFF (mode 7) |
| 5 | Basic position “needle position 1“ |
| 6 | Basic position “needle position 2“ |
| 7 | Automatic sewing foot lifting at stop in the seam |
| 8 | Automatic sewing foot lifting after the thread trimming operation |
| Connector | |
| B20 | USB Memory Stick |



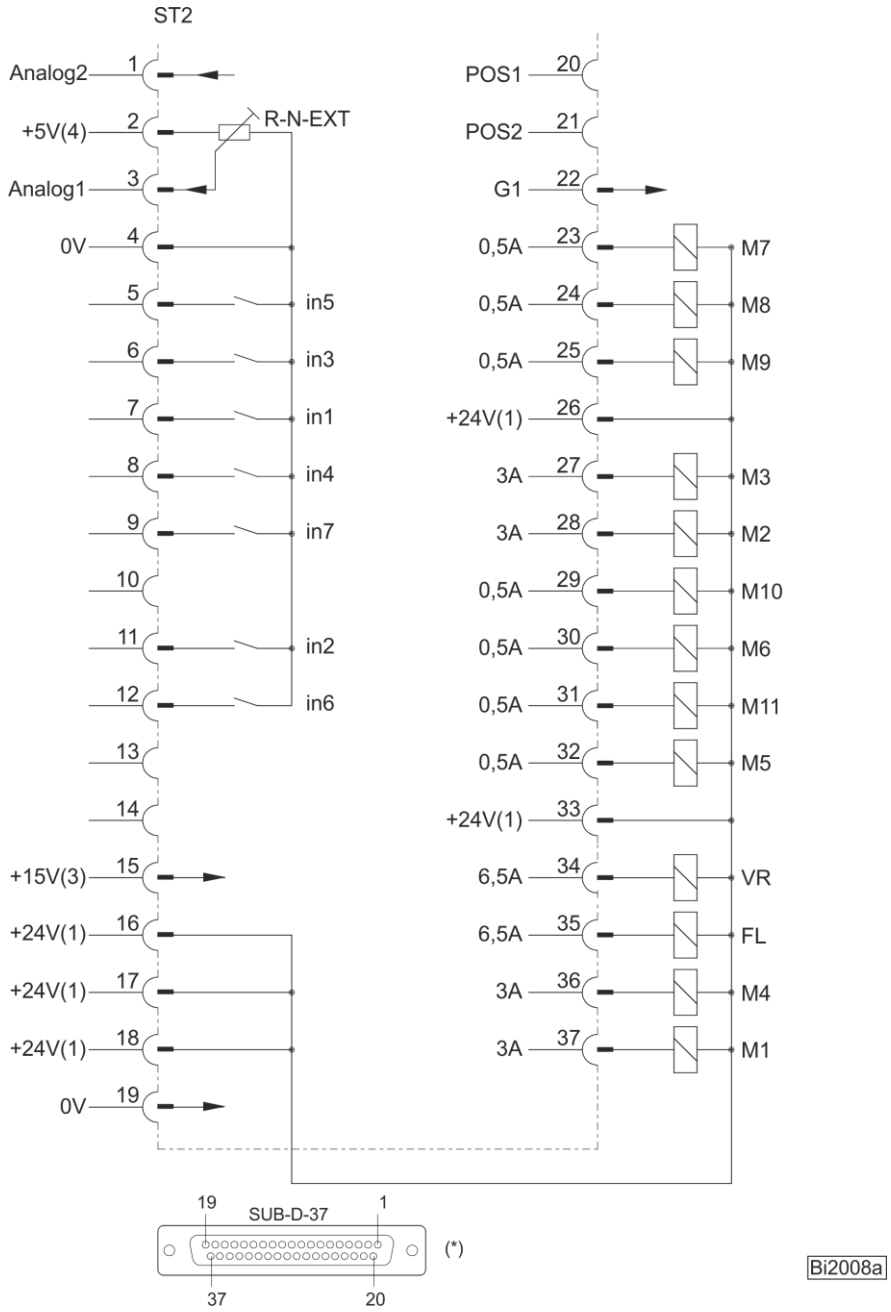

## 10.2 Positions of the rear side

| | |
|---|---|
| Connector | |
| B2 | Commutation transmitter |
| B18 | Light barrier module LSM002<br>- Hall sensor module HSM001<br>- Pulse encoder IPG001<br>*(Adapter cord 1113229 in case of multiple assignment)* |
| B41 | Motor power supply |
| B80 | Actuator |
| ST2 | Socket for inputs and outputs<br>e. g. solenoids, solenoid valves, displays, keys and switches |
| B776 | V810/V820 Control Panel |
| B22 (KN19) | Knee switch |



## 10.3 Connection Diagrams

**Inputs switched to 0V**

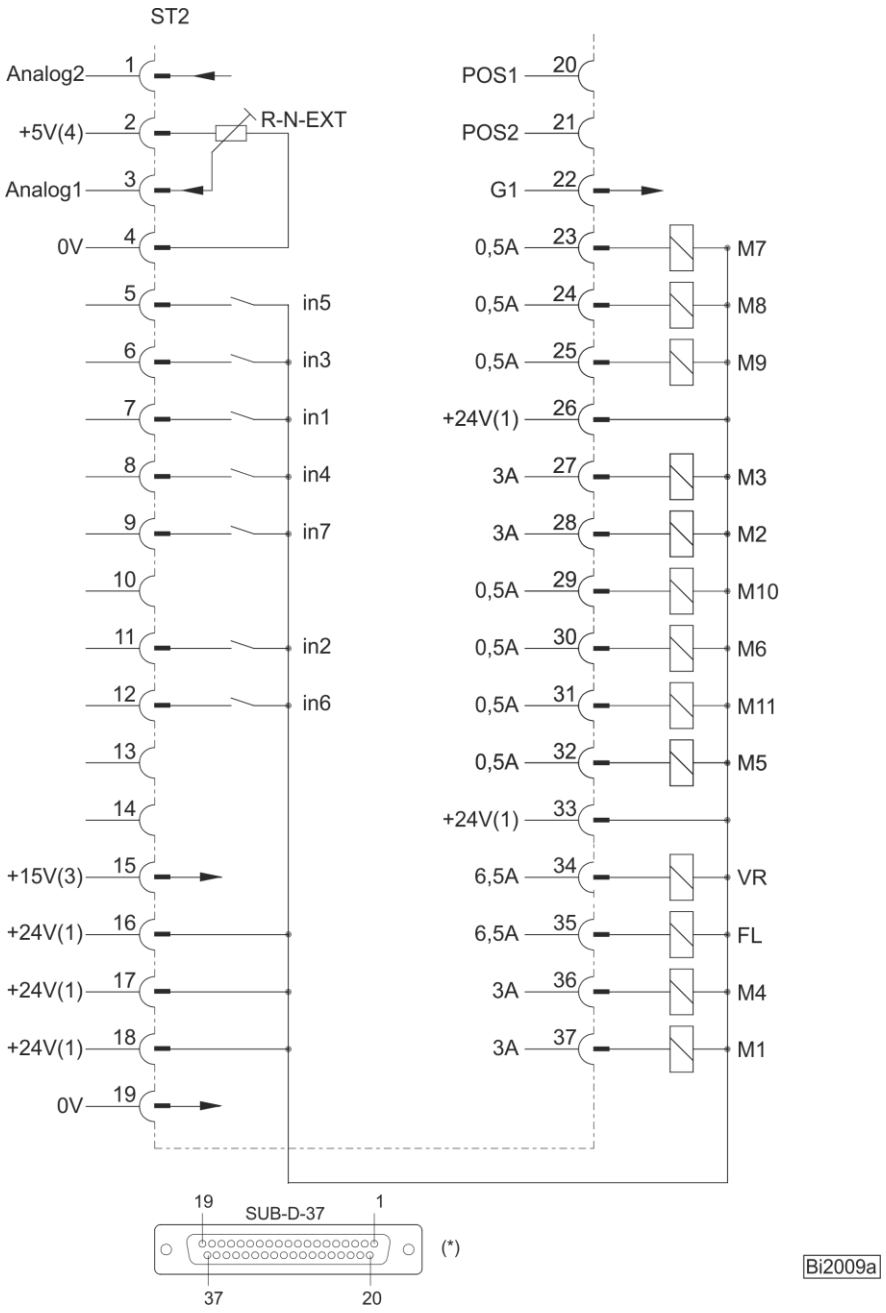



**ATTENTION**

When connecting the outputs, ensure that a total power of 96VA constant load will not be exceeded!

| | | | | | |
|---|---|---|---|---|---|
| in1 | Input 1 | R-N-EXT | External potentiometer for speed limitatiom | M4 | Output 4 |
| in2 | Input 2 | VR | Backtacking | M5 | Output 5 |
| in3 | Input 3 | POS1 | Position 1 | M6 | Output 6 |
| in4 | Input 4 | POS2 | Position 2 | M7 | Output 7 |
| in5 | Input 5 | FL | Sewing foot lifting | M8 | Output 8 |
| in6 | Input 6 | G1 | Generator signal | M9 | Output 9 |
| in7 | Input 7 | M1 | Output 1 | M10 | Output 10 |
| | | M2 | Output 2 | M11 | Output 11 |
| | | M3 | Output 3 | | |

**Inputs switched to +24 V**



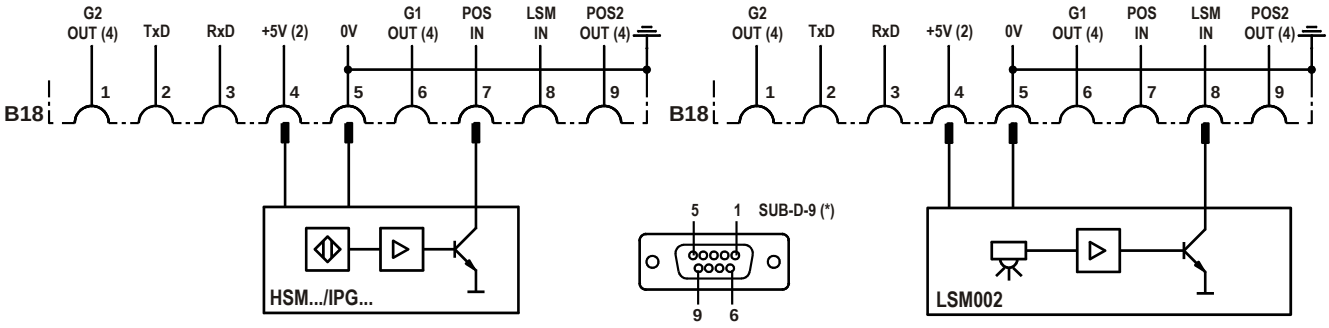

**ATTENTION**

When connecting the outputs, ensure that a total power of 96VA constant load will not be exceeded!

*1) Nominal voltage +24 V, no-load voltage max. +30 V momentarily after power on*
*2) Transistor output with open collector max. +40 V, $I_{max}$ 10 mA*
*3) Nominal voltage +15 V, $I_{max}$ 30 mA*
*4) Nominal voltage +5 V, $I_{max}$ 20 mA*
**) View: Front view of the control (component side) and/or rear view of the outgoing connecting cable*

**Connection of a HSM001 Hall sensor module or an IPG001 pulse encoder**

**Connection of a light barrier module LSM002**

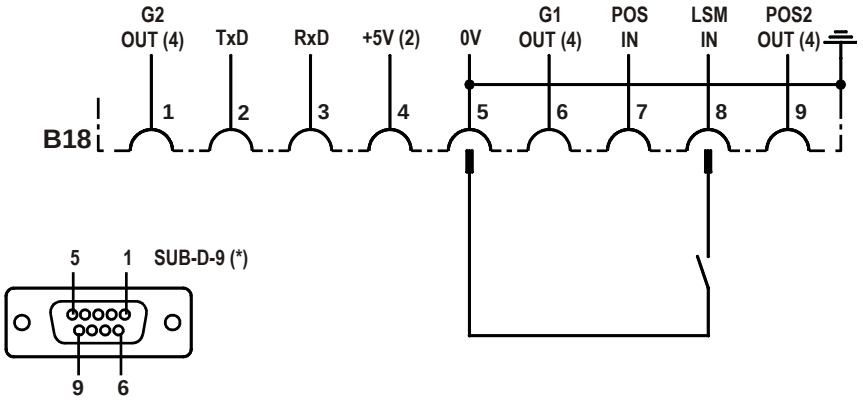



BI1174a

***Adapter cord 1113229 in case of multiple assignment of socket B18!***

| | | | |
|---|---|---|---|
| POS2 OUT | Output for position 2 | LSM IN | Possibility of connecting a light barrier module to socket B18/8 |
| POS IN | Input for positions (e. g. connection of a sensor) | LSM002 | Reflection light barrier module |
| G1/G2 OUT | Output of generator impulses | HSM001 | Hall sensor module |
| TXD/RXD | Serial transmission lines | IPG | Pulse encoder |

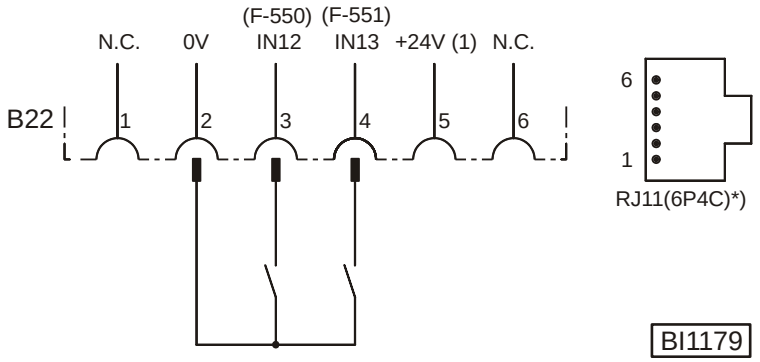
If parameter 239 is set to >0, it is possible to operate a key at the input of the B18/8 connector.




BI1159a

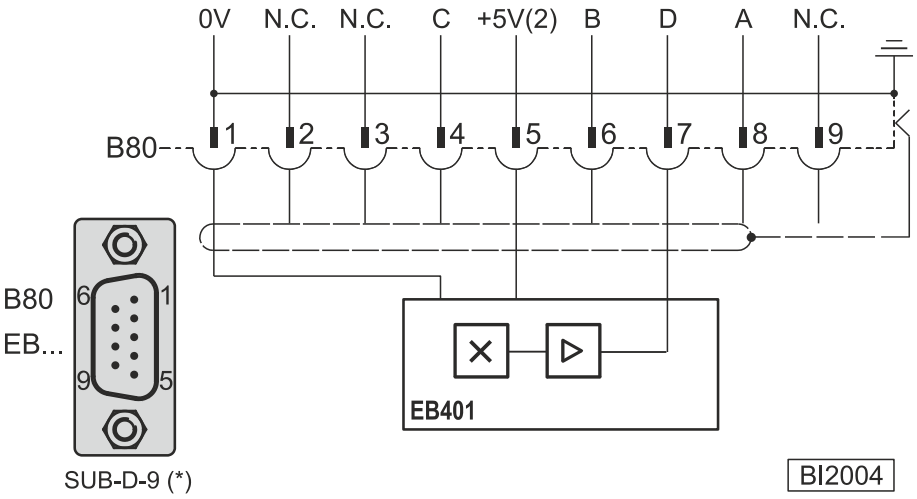
There is a supply voltage of +5 V on the B18/4 socket for external devices. This voltage can be switched to +15 V using parameter 362.

*2) Nominal voltage +5V, $I_{max}$ 100 mA (switchable to +15 V, $I_{max}$ 100 mA)*
*4) Logic level output +5 V, $I_{max}$ 5 mA*
**) View: Front view of the control (component side) and/or rear view of the outgoing connecting cable*




| | | | |
|---|---|---|---|
| IN12 | Input 12, function programmable using parameter 550 | IN13 | Input 13, function programmable using parameter 551 |

**Connecting the analogous actuator EB401**

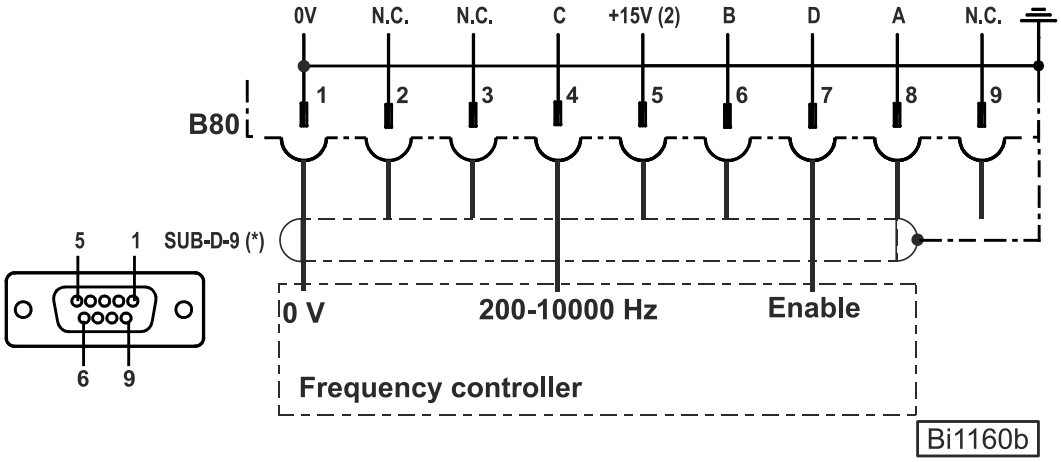



EB.. = Actuator

**Code table for digital target value preset (grey code)**

| Pedal step ➔ | -2 | -1 | 0 | ½ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Input A (B80/8) | L | L | H | H | H | L | L | H | H | L | L | H | H | L | L | H |
| Input B (B80/6) | L | H | H | L | L | L | H | H | H | H | L | L | L | L | H | H |
| Input C (B80/4) | H | H | H | H | L | L | L | L | L | L | L | L | H | H | H | H |
| Input D (B80/7) | H | H | H | H | H | H | H | H | L | L | L | L | L | L | L | L |

**Connection for frequency run**




**Connections**: 0 V on Pin 1
Frequency output on Pin 4
Frequency controller output on Pin 7

In order to introduce motor running 0V must be applied to pin 7

Frequency rates: 0-5 V / 200-10000 Hz
Min. speed 50 $min^{-1}$
Max. speed F-111

Parameter F-396 =0 Frequency Off
F-396 =1 Frequency On

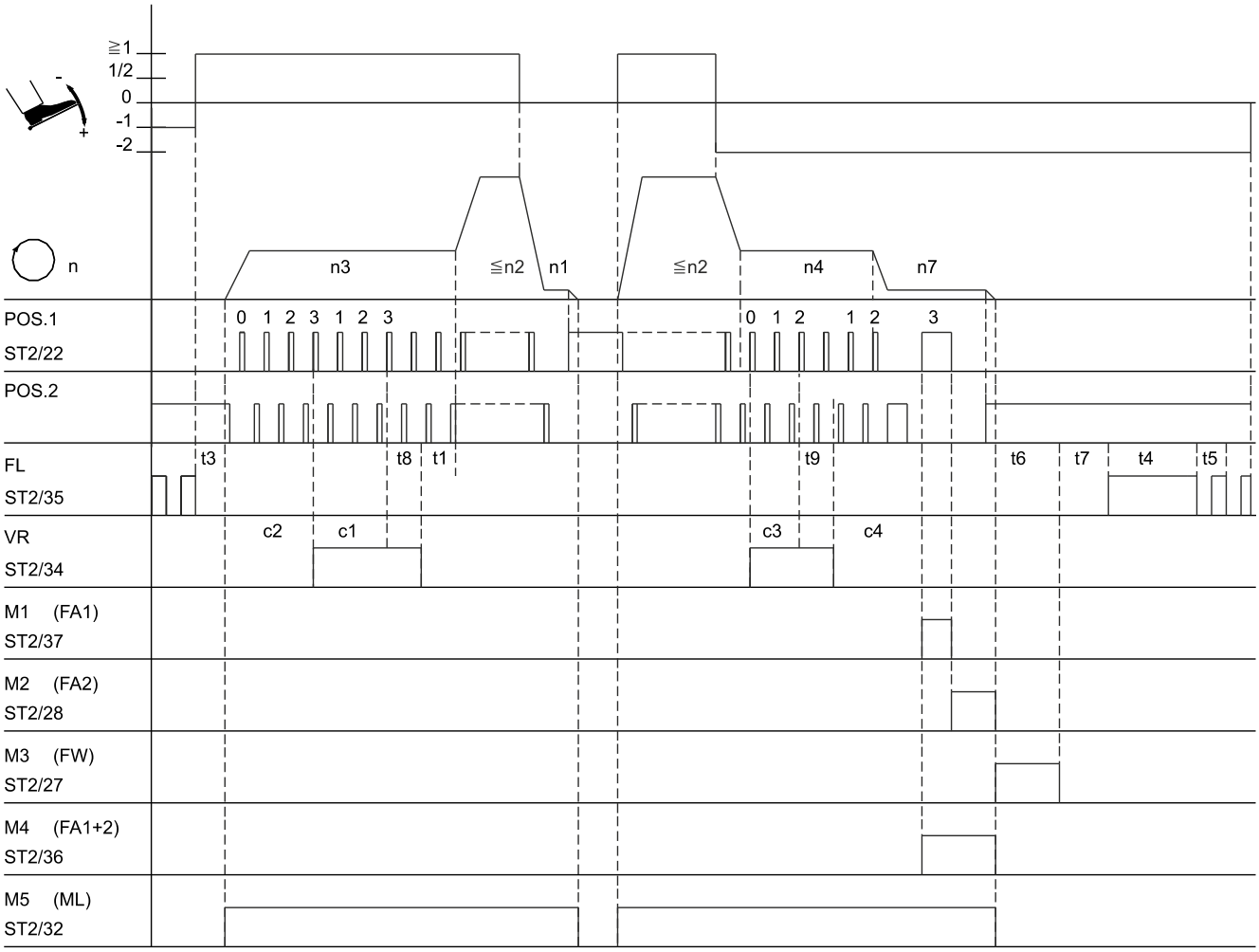
Plug B80 input signal

| Pin8 "A" | Pin6 "B" | Pin4 "C" | Pin5 "D" | Motor state |
|---|---|---|---|---|
| X | X | X | Deactivated. | Stop |
| X | X | Frequency < 60 Hz | Activated (0V) | Stop |
| X | X | Frequency > 60 Hz | Activated (0V) | Running |
| X | X | Frequency > 60 Hz | Deactivated. | Stop |
| 0 V | 0 V | X | Deactivated. | Trimmer |

*1) Nominal voltage +24 V, no-load voltage max. +30 V momentarily after power on*
*2) Nominal voltage +5 V, $I_{max}$ 20 mA*
**) View: Front view of the control (component side) and/or rear view of the outgoing connecting cable*

# 11 Timing Diagrams

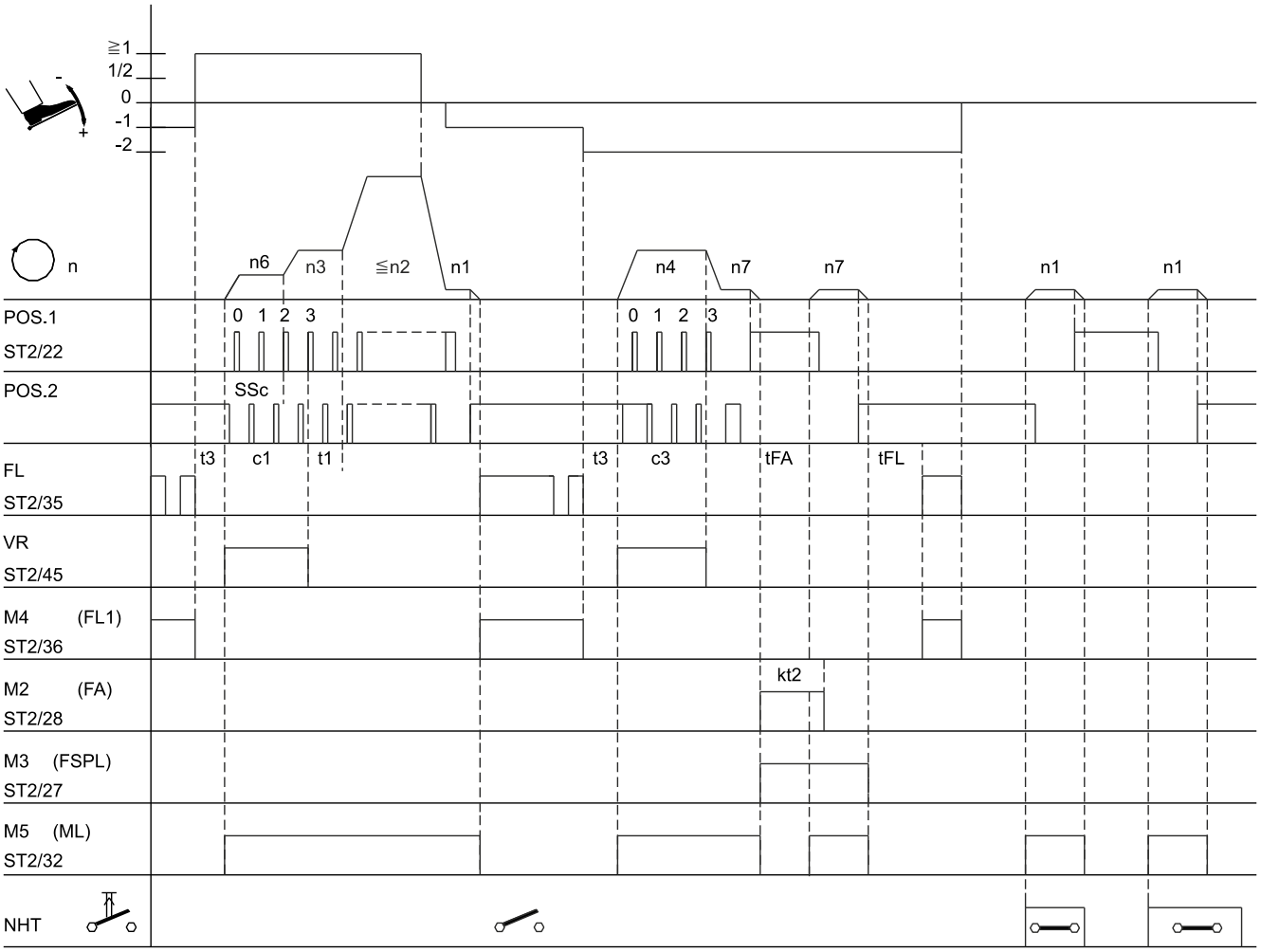
### Mode 0 (lockstitch)




0330/MODE-00

| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 0 | 290 =0/27 | | | |
| | Double start backtack with stitch correction On | | Key **E** | Key 1 | Key 1 |
| | Double end backtack with stitch correction On | | Key **+** | Key 2 | Key 4 |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Start backtack speed | 112 | | | |
| n4 | End backtack speed | 113 | | | |
| n7 | Trimming speed | 116 | | | |
| c2 | Start backtack stitches forward | 000 | | | |
| c1 | Start backtack stitches backward | 001 | | | |
| c3 | End backtack stitches backward | 002 | | | |
| c4 | End backtack stitches forward | 003 | | | |
| t8 | Start backtack stitch correction | 150 | | | |
| t9 | End backtack stitch correction | 151 | | | |
| t1 | Delay until speed release after start backtack | 200 | | | |
| t3 | Start delay from lifted sewing foot | 202 | | | |
| t4 | Full power of sewing foot lifting | 203 | | | |
| t5 | Pulsing of sewing foot lifting | 204 | | | |
| t6 | Thread wiper ON period | 205 | | | |
| t7 | Sewing foot switch-on delay after thread wiper | 206 | | | |

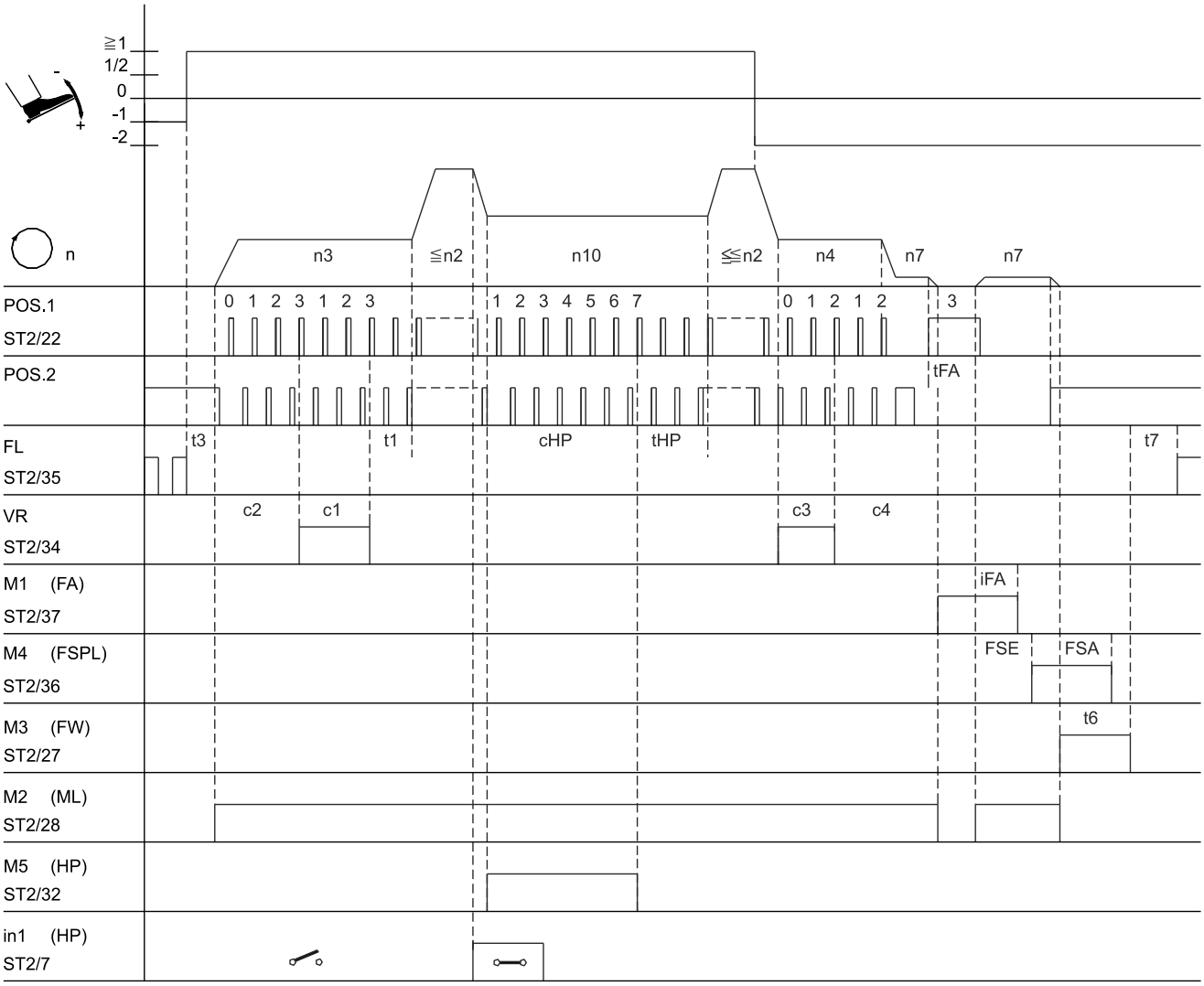
## Mode 2 (lockstitch)




0330/MODE-02

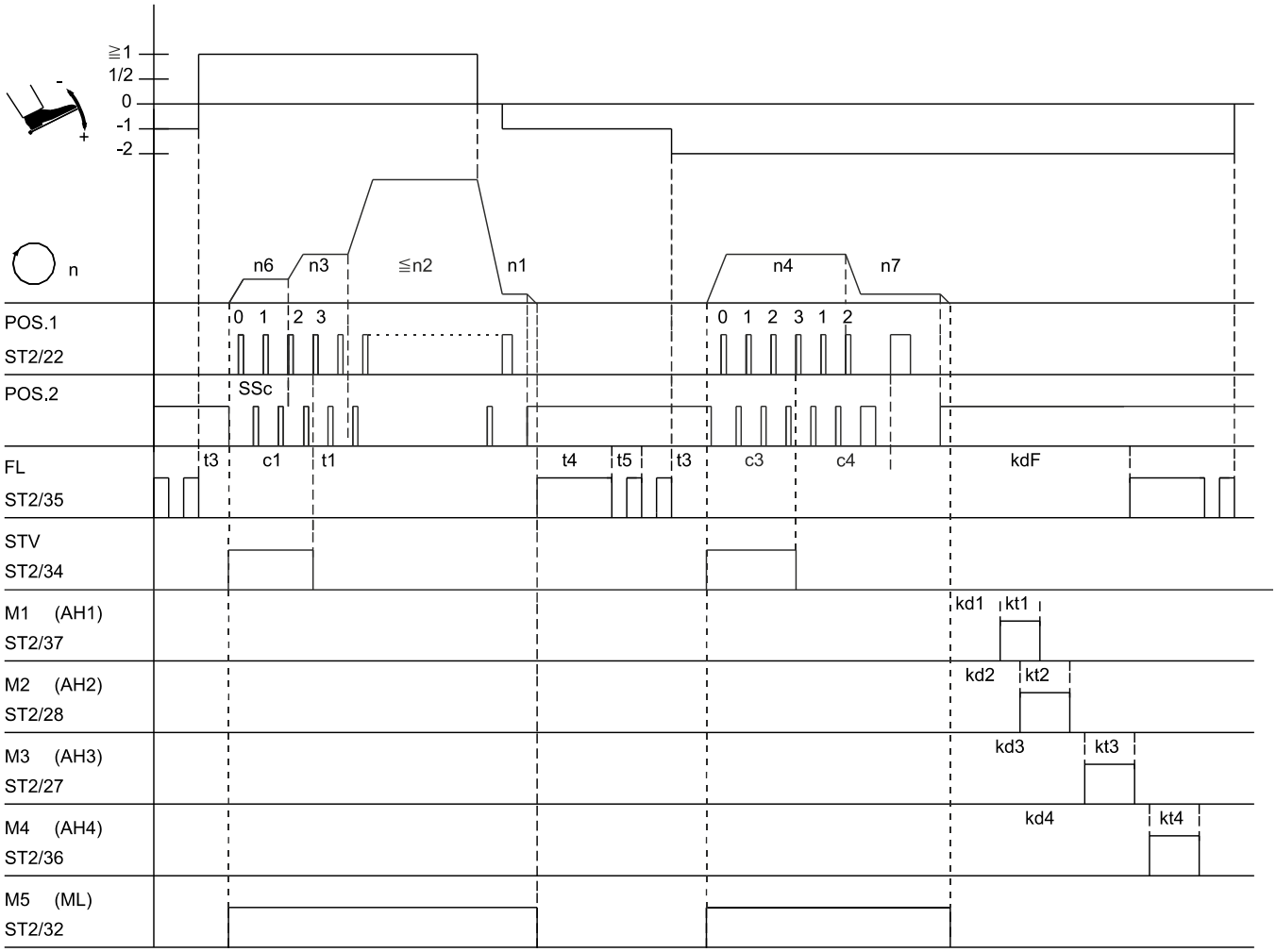
| Mark | Function | | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|---|
| FAm | Mode 2 | | 290 =2 | | | |
| SSt | Softstart | | 134 =1 | | | |
| | Single start backtack | On | | Key **E** | Key 1 | Key 1 |
| | Single end backtack | On | | Key **+** | Key 2 | Key 4 |
| n1 | Positioning speed | | 110 | | | |
| n2 | Maximum speed | | 111 | | | |
| n3 | Start backtack speed | | 112 | | | |
| n4 | End backtack speed | | 113 | | | |
| n6 | Softstart speed | | 115 | | | |
| n7 | Trimming speed | | 116 | | | |
| c1 | Start backtack stitches backward | | 001 | | | |
| c3 | End backtack stitches backward | | 002 | | | |
| SSc | Softstart stitches | | 100 | | | |
| t1 | Delay until speed release after start backtack | | 200 | | | |
| t3 | Start delay from lifted sewing foot | | 202 | | | |
| tFL | Switch-on delay of sewing foot lifting | | 211 | | | |
| tFA | Stopping time for thread trimming | | 253 | | | |
| kt2 | ON period thread trimmer | | 283 | | | |

### Mode 3 (lockstitch)




| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 3 | 290 =3 | | | |
| | Double start backtack On | | Key **E** | Key 1 | Key 1 |
| | Double end backtack On | | Key **+** | Key 2 | Key 4 |
| hP | High lift for walking foot | 137 =1 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Start backtack speed | 112 | | | |
| n4 | End backtack speed | 113 | | | |
| n7 | Trimming speed | 116 | | | |
| n10 | High lift walking speed | 117 | | | |
| c2 | Start backtack stitches forward | 000 | | | |
| c1 | Start backtack stitches backward | 001 | | | |
| c3 | End backtack stitches backward | 002 | | | |
| c4 | End backtack stitches forward | 003 | | | |
| thP | High lift walking speed run-out time | 152 | | | |
| chP | Stitch counting high lift for walking foot | 185 | | | |
| t6 | Thread wiper ON period | 205 | | | |
| t7 | Sewing foot switch-on delay after thread wiper | 206 | | | |
| iFA | Thread trimmer activation angle | 250 | | | |
| FSA | Switch-off delay of thread tension release | 251 | | | |
| FSE | Switch-on delay angle of thread tension release | 252 | | | |
| tFA | Stopping time for thread trimming | 253 | | | |

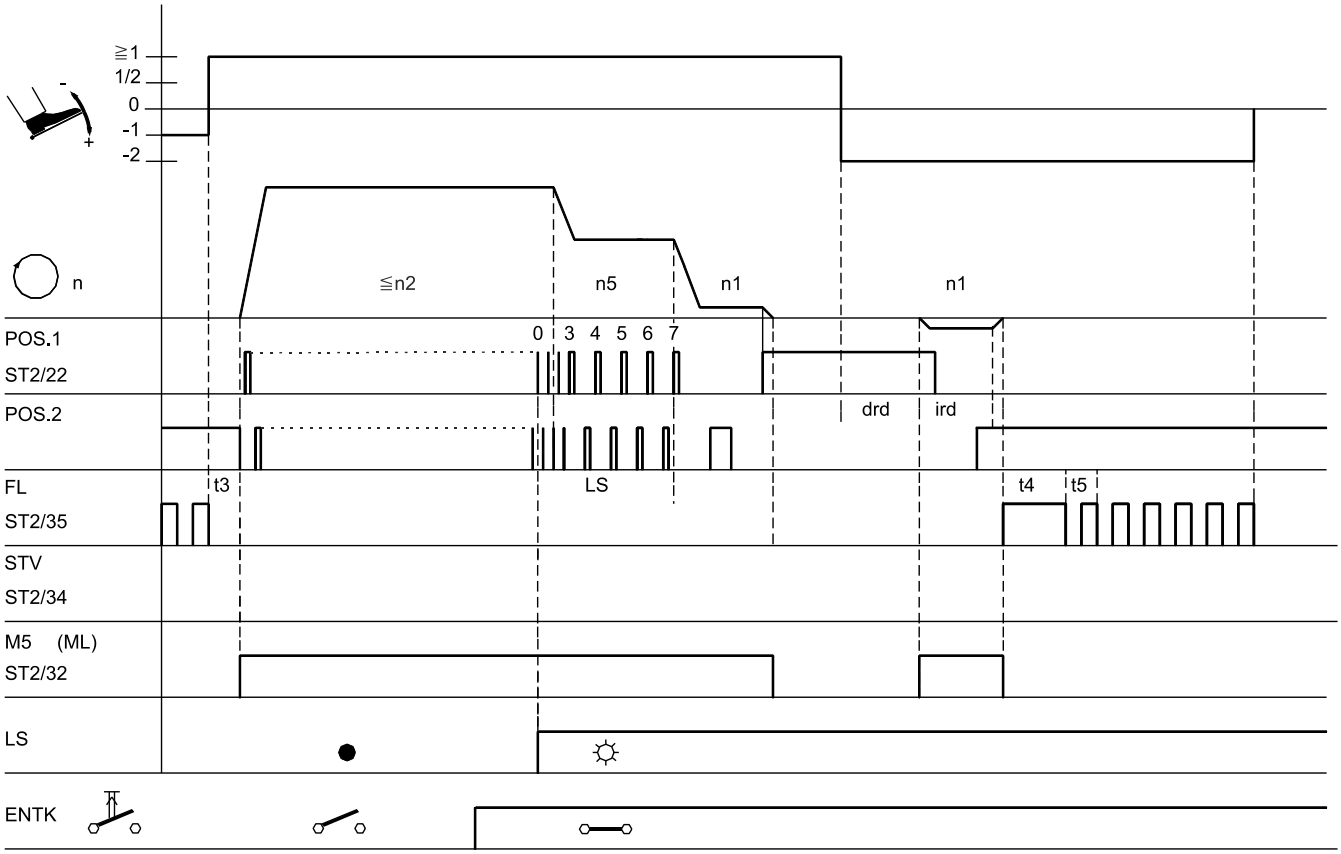
## Mode 5 (chainstitch)




0330/MODE-05

| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 5 | 290 =5 | | | |
| SSt | Softstart | 134 =1 | | | |
| | Start stitch condensing On | | Key **E** | Key 1 | Key 1 |
| | End stitch condensing On | | Key **+** | Key 2 | Key 4 |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Start stitch condensing speed | 112 | | | |
| n4 | End stitch condensing speed | 113 | | | |
| n6 | Softstart speed | 115 | | | |
| n7 | Trimming speed | 116 | | | |
| c1 | Stitch counting of start stitch condensing | 001 | | | |
| c3 | Stitch counting of end stitch condensing | 002 | | | |
| c4 | Stitch counting at the seam end without stitch regulator | 003 | | | |
| SSc | Softstart stitches | 100 | | | |
| t1 | Delay until speed release after start backtack | 200 | | | |
| t3 | Start delay from lifted sewing foot | 202 | | | |
| t4 | Full power of sewing foot lifting | 203 | | | |
| t5 | Pulsing of sewing foot lifting | 204 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |
| kd1-kd4 | Delay times of outputs M1...M4 | 280/2/4/6 | | | |
| kt1-kt4 | ON periods of outputs M1...M4 | 281/3/5/7 | | | |

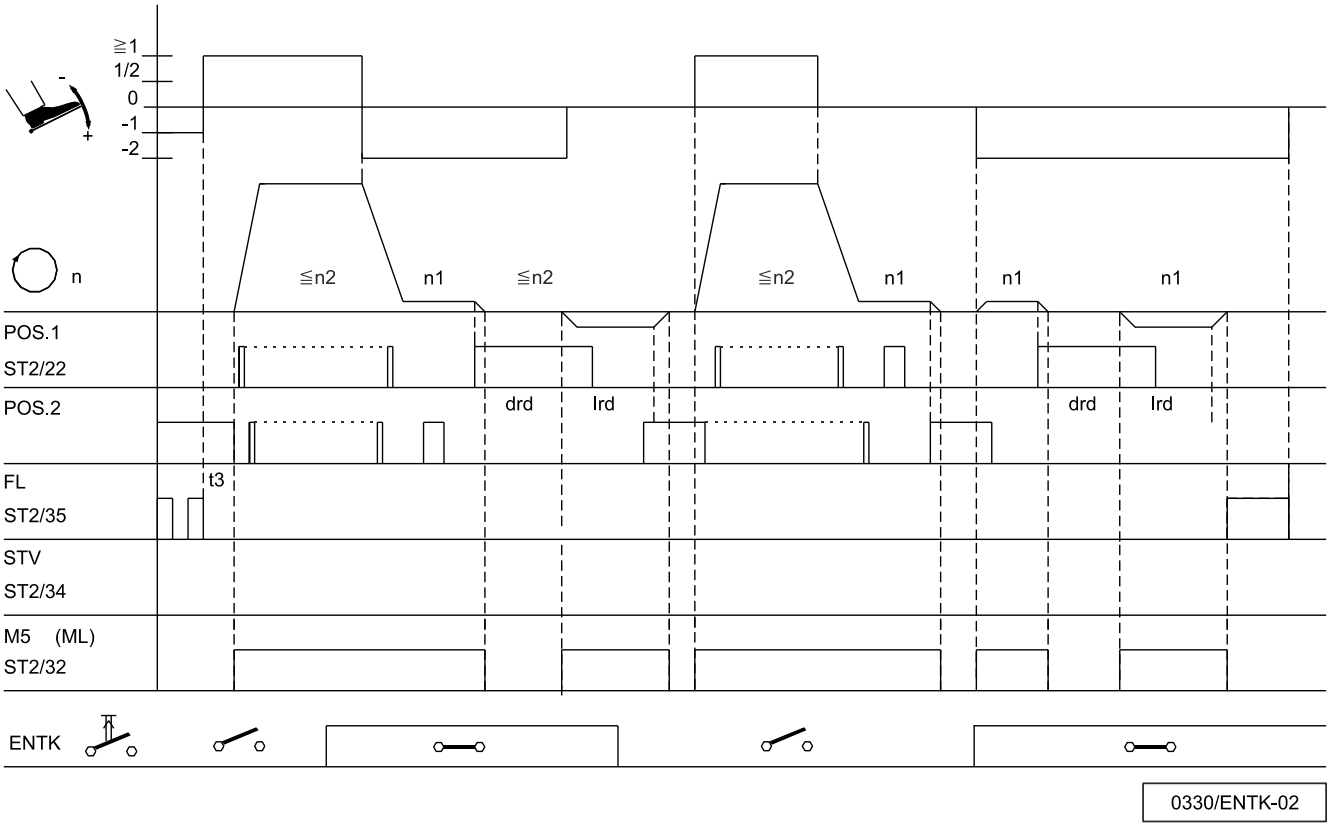
**Mode 5, 6 or 7 (function “unlocking the chain” with light barrier)**




| Mark | Function | | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|---|
| FAm | Mode 5 | | 290 =5 | | | |
| drE | Direction of motor rotation | Right | 161 =0 | | | |
| Frd | Reverse motor rotation | | 182 =1 | | | |
| | Basic position 2 | On | | Key **>>** | Key 4 | Key 7 |
| | End stitch condensing and thread trimmer *) | On | | | | |
| LS | Light barrier | | 009 =1 | | | |
| mEk | Unlock the chain automatically with light barrier | | 190 =2 | | | |
| in7 | Machine run blockage effective with open | | 246 =6 | | | |
| in8 | contact | | 247 =10 | | | |
| in.. | Automatic speed n12 without pedal | | 2.. | | | |
| | Assign the function “unlocking the chain” to an output | | | | | |
| n1 | Positioning speed | | 110 | | | |
| n2 | Maximum speed | | 111 | | | |
| n5 | Speed after light barrier sensing | | 114 | | | |
| LS | Light barrier compensating stitches | | 004 | | | |
| ird | Number of reversing increments | | 180 | | | |
| drd | Switch-on delay of reverse motor rotation | | 181 | | | |
| t3 | Start delay from lifted sewing foot | | 202 | | | |
| t4 | Full power of sewing foot lifting | | 203 | | | |
| t5 | Pulsing of sewing foot lifting | | 204 | | | |
| tGn | Speed gate damping period | | 222 | | | |
| dGF | Speed gate 2 | | 224 =1 | | | |
| kdF | Switch-on delay of sewing foot lifting | | 288 | | | |

*) *When unlocking the chain, the functions “stitch condensing” and “thread trimmer” are suppressed!*

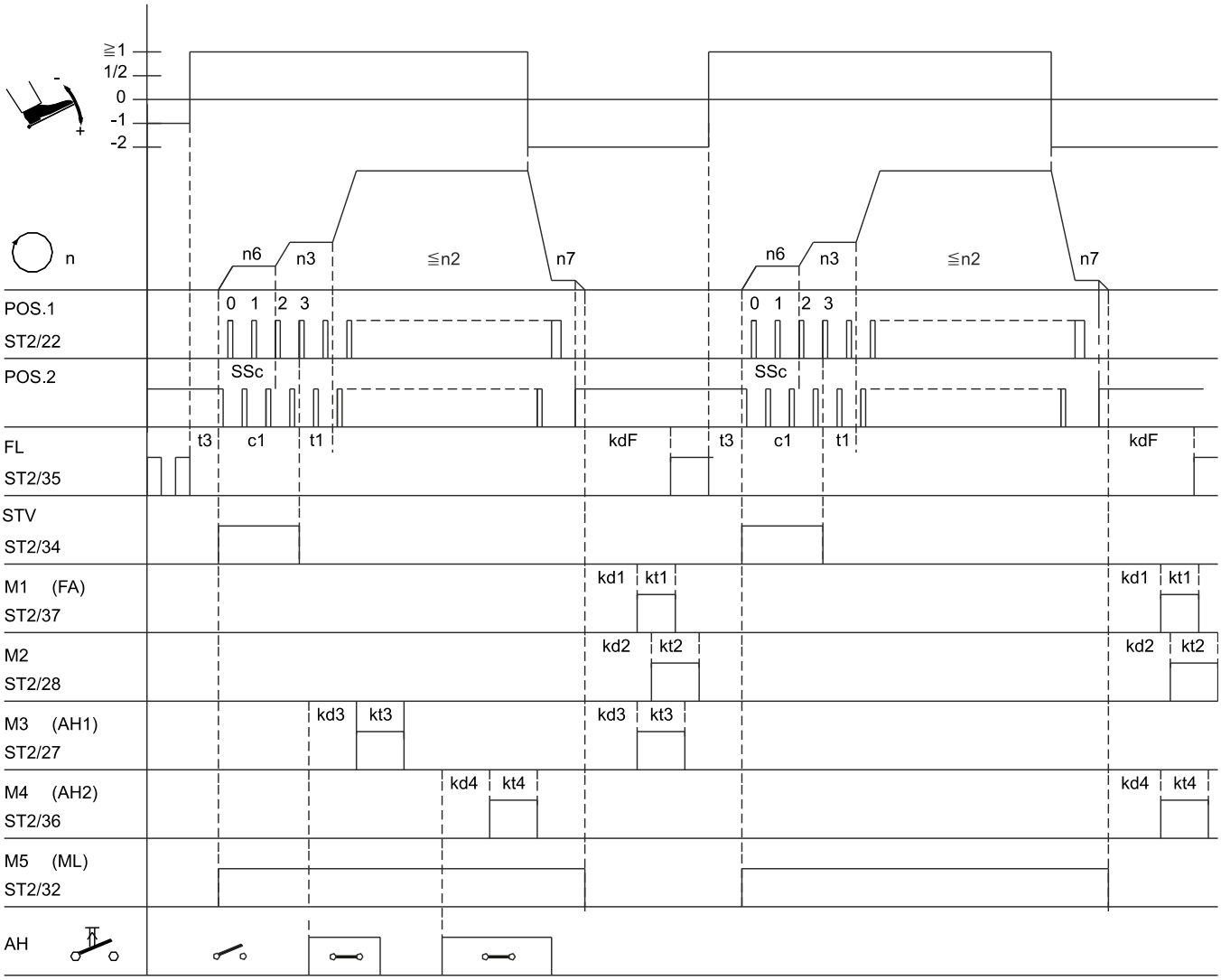
**Mode 5, 6 or 7 (function “unlocking the chain”)**




| Mark | Function | | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|---|
| FAm | Mode 5 | | 290 =5 | | | |
| drE | Direction of motor rotation | Right | 161 =0 | | | |
| Frd | Reverse motor rotation | | 182 =1 | | | |
| | Basic position 2 | On | | Key **>>** | Key 4 | Key 7 |
| | End stitch condensing and thread trimmer *) | On | | | | |
| in7 | Machine run blockage effective with open | | 246 =6 | | | |
| in8 | contact | | 247 =10 | | | |
| in.. | Automatic speed n12 without pedal | | 2.. | | | |
| | Assign the function “unlocking the chain” to an output | | | | | |
| n1 | Positioning speed | | 110 | | | |
| n2 | Maximum speed | | 111 | | | |
| ird | Number of reversing increments | | 180 | | | |
| drd | Switch-on delay of reverse motor rotation | | 181 | | | |
| t3 | Start delay from lifted sewing foot | | 202 | | | |
| t4 | Full power of sewing foot lifting | | 203 | | | |
| t5 | Pulsing of sewing foot lifting | | 204 | | | |
| tGn | Speed gate damping period | | 222 | | | |
| dGF | Speed gate 2 | | 224 =1 | | | |

**) When unlocking the chain, the functions “stitch condensing” and “thread trimmer” are suppressed!*

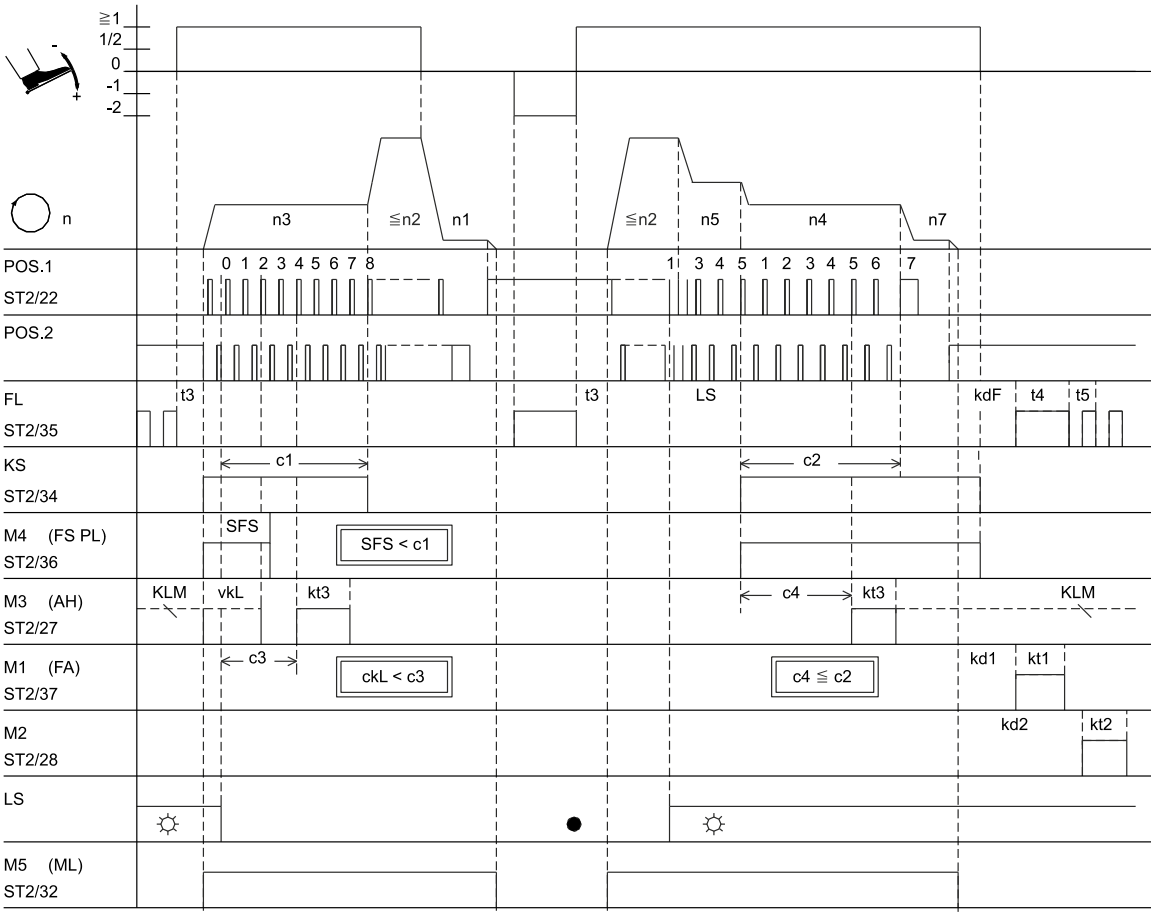
**Mode 6 (chainstitch with fast scissors) parameter 232 = 1**




0330/MODE-06

| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 6 | 290 =6 | | | |
| SSt | Softstart | 134 =1 | | | |
| | Start stitch condensing On | | Key **E** | Key 1 | Key 1 |
| USS | Chainstitch with fast scissors M3/M4 | 232 =1 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Start stitch condensing speed | 112 | | | |
| n6 | Softstart speed | 115 | | | |
| n7 | Trimming speed | 116 | | | |
| c1 | Stitch counting of start stitch condensing | 001 | | | |
| SSc | Softstart stitches | 100 | | | |
| t1 | Delay until speed release after start backtack | 200 | | | |
| t3 | Start delay from lifted sewing foot | 202 | | | |
| kd1/kd2 | Delay times of outputs M1/M2 | 280 / 282 | | | |
| kt1/kt2 | ON periods of outputs M1/M2 | 281 / 283 | | | |
| kd3/kd4 | Delay times of outputs M3/M4 (AH1/AH2) | 284 / 286 | | | |
| kt3/kt4 | ON periods of outputs M3/M4 (AH1/AH2) | 285 / 287 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |

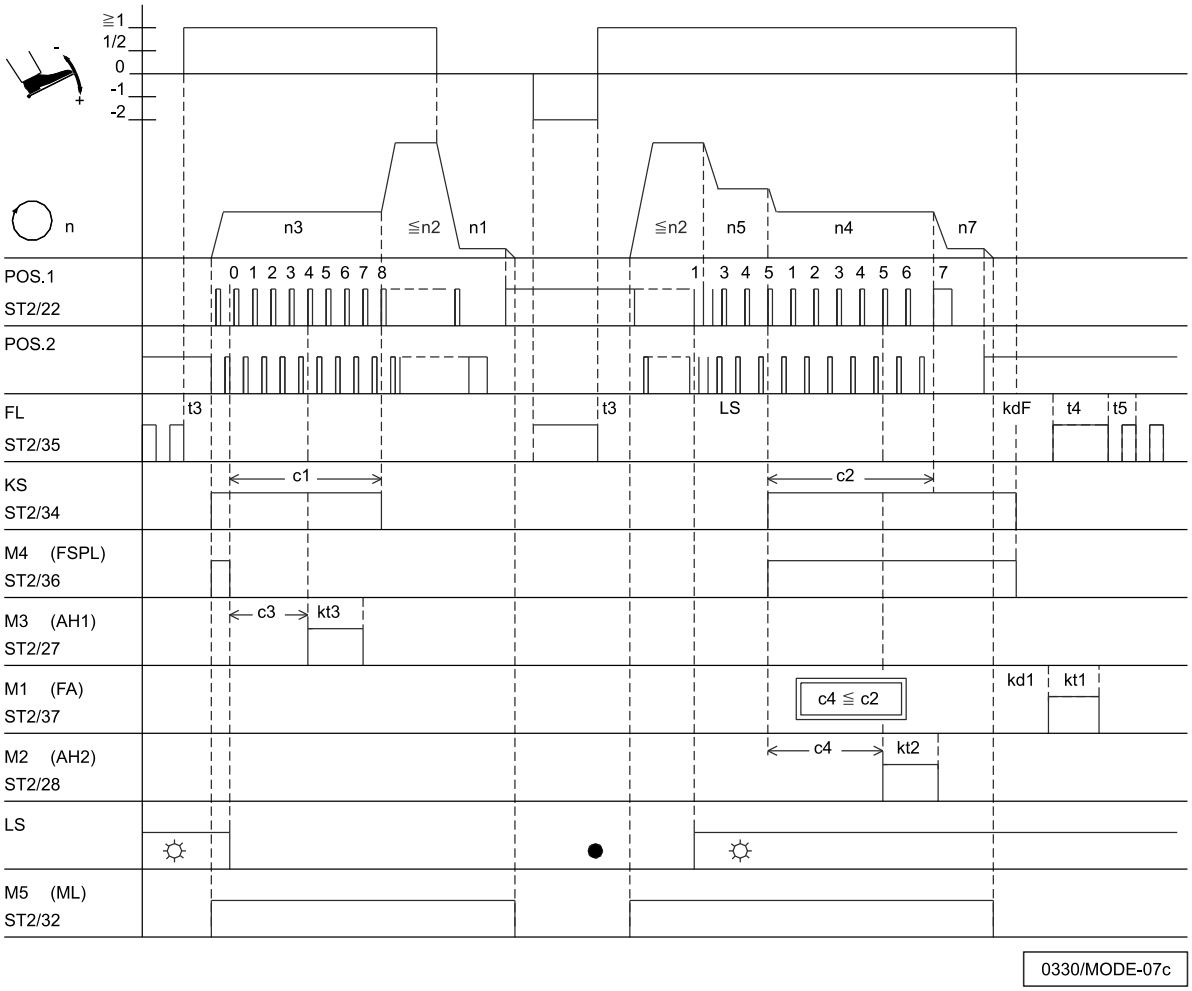
**Mode 7 (overlock) parameter 232 = 0 (tape cutter) / parameter 018 = 0 (seam end with stop)**




0330/MODE-07a

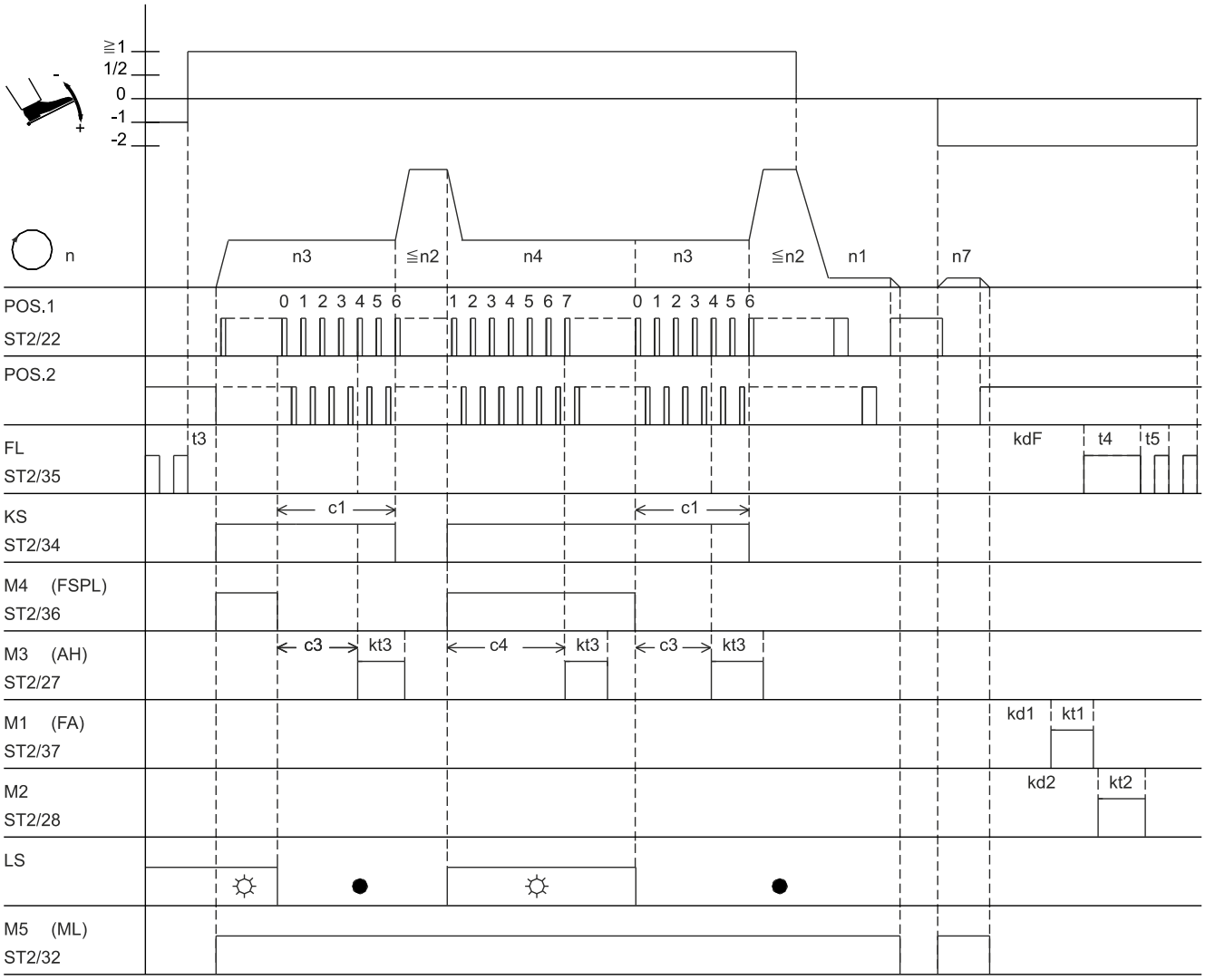
| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 7 | 290 = 7 | | | |
| | Counts c1, c2, c3 and c4 | On | Key **E/+** | Key 1/2 | Key 1/4 |
| | Sewing foot lifting at the seam end | On | Key **-** | Key 3 | Key 6 |
| LS | Light barrier | 009 = 1 | | | |
| UoS | Sequence “overlock mode with stop” | 018 = 0 | | | |
| -Pd | Function “pedal in pos. –2” blocked | 019 = 2 | | | |
| kLm | Clamp at the seam end On | 020 = 1 | | | |
| SPO | Chain suction at the seam end until pedal in pos. 0 (neutral) | 022 = 1 | | | |
| tFS | Beginning of thread tension release at the start of the seam | 025 = 0 | | | |
| LSS | Start blockage with light barrier uncovered | 132 = 0 | | | |
| kSA | Stitch counting at the start of the seam at fixed speed n3 | 143 = 0 | | | |
| kSE | Stitch counting at the seam end at fixed speed n4 | 144 = 0 | | | |
| mhE | Seam end after count c2 | 191 = 1 | | | |
| PLS | Speed n5 after light barrier sensing | 192 = 0 | | | |
| kSL | Chain suction On after light barrier compensating stitches | 193 = 0 | | | |
| USS | Tape cutter function | 232 = 0 | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Speed for start counting | 112 | | | |
| n4 | Speed for end counting | 113 | | | |
| n5 | Speed after light barrier sensing | 114 | | | |
| n7 | Trimming speed | 116 | | | |
| c2 | End counting for chain suction | 000 | | | |
| c1 | Start counting for chain suction | 001 | | | |
| c3 | Start counting for tape cutter | 002 | | | |
| c4 | End counting for tape cutter | 003 | | | |
| LS | Light barrier compensating stitches | 004 | | | |
| ckL | Run-out stitches clamp at the start of the seam | 021 | | | |
| SFS | Stitches from light barrier uncovered until end FSPL-E | 157 | | | |
| kd1/kd | Delay times of outputs M1/M | 280/282 | | | |
| kt1/kt2 | ON periods of outputs M1/M2 | 281/283 | | | |
| kt3 | ON period of tape cutter | 285 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |

**Mode 7 (overlock) parameter 232 = 1 (fast scissors) / parameter 018 = 0 (seam end with stop)**




| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 7 | 290 = 7 | | | |
| | Counts c1, c2, c3 and c4 | On | Key **E/+** | Key 1/2 | Key 1/4 |
| | Sewing foot lifting at the seam end | On | Key **-** | Key 3 | Key 6 |
| LS | Light barrier | 009 = 1 | | | |
| UoS | Sequence “overlock mode with stop” | 018 = 0 | | | |
| -Pd | Function “pedal in pos. –2” blocked | 019 = 2 | | | |
| kLm | Clamp at the seam end Off | 020 = 0 | | | |
| SPO | Chain suction at the seam end until pedal in pos. 0 (neutral) | 022 = 1 | | | |
| LSS | Start blockage with light barrier uncovered | 132 = 0 | | | |
| kSA | Stitch counting at the start of the seam at fixed speed n3 | 143 = 0 | | | |
| kSE | Stitch counting at the seam end at fixed speed n4 | 144 = 0 | | | |
| mhE | Seam end after count c2 | 191 = 1 | | | |
| PLS | Speed n5 after light barrier sensing | 192 = 0 | | | |
| kSL | Chain suction On after light barrier compensating stitches | 193 = 0 | | | |
| USS | Function “fast scissors” | 232 = 1 | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Speed for start counting | 112 | | | |
| n4 | Speed for end counting | 113 | | | |
| n5 | Speed after light barrier sensing | 114 | | | |
| n7 | Trimming speed | 116 | | | |
| c2 | End counting for chain suction | 000 | | | |
| c1 | Start counting for chain suction | 001 | | | |
| c3 | Start counting for tape cutter | 002 | | | |
| c4 | End counting for tape cutter | 003 | | | |
| LS | Light barrier compensating stitches | 004 | | | |
| kd1 | Delay time of output M1 | 280 | | | |
| kd2 | Delay time of output M2 | 282 = 0 | | | |
| kt1/kt | ON periods of outputs M1/M2 | 281/283 | | | |
| kt3 | ON period of tape cutter | 285 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |

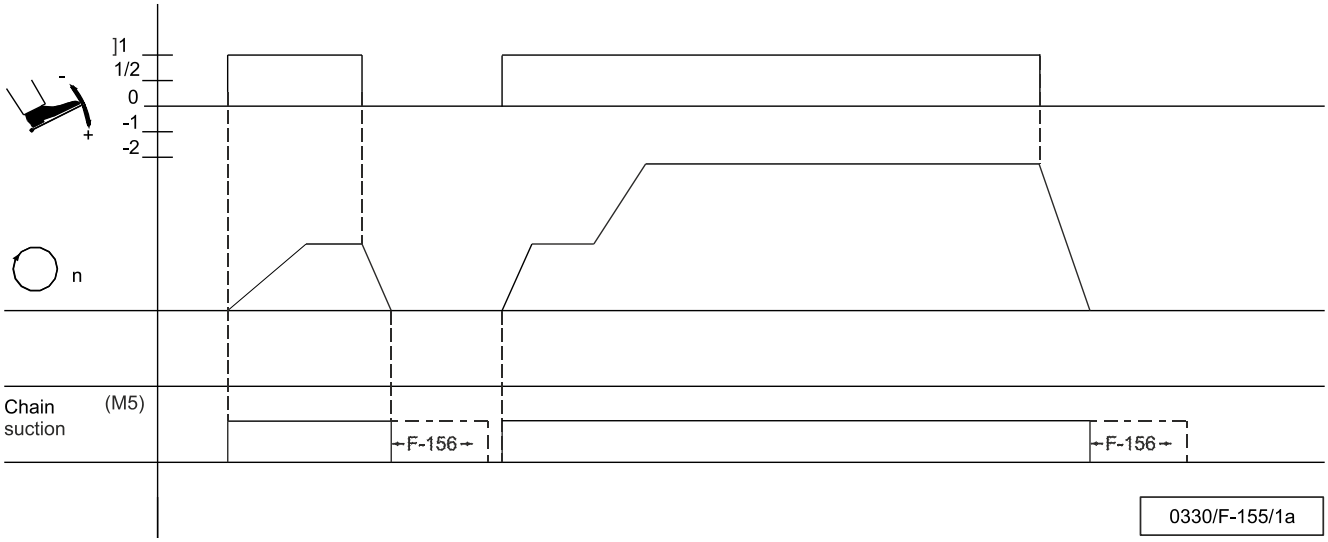
**Mode 7 (overlock) parameter 232 = 0 (tape cutter) / parameter 018 = 1 (seam end without stop)**




| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 7 | 290 = 7 | | | |
| | Counts c1, c2, c3 and c4 | On | Key **E/+** | Key 1/2 | Key 1/4 |
| LS | Light barrier compensating stitches | 004 = 0 | | | |
| LS | Light barrier | 009 = 1 | | | |
| UoS | Sequence “overlock mode at the seam end without stop” | 018 = 1 | | | |
| -Pd | Function “pedal in pos. –1/–2” activated in the seam | 019 = 3 | | | |
| SPO | Chain suction at the seam end until pedal in pos. 0 (neutral) | 022 = 1 | | | |
| kSA | Stitch counting at the start of the seam at fixed speed n3 | 143 = 1 | | | |
| kSE | Stitch counting at the seam end at fixed speed n4 | 144 = 1 | | | |
| USS | Tape cutter function | 232 = 0 | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Speed for start counting | 112 | | | |
| n7 | Trimming speed | 116 | | | |
| c1 | Start counting for chain suction | 001 | | | |
| c3 | Start counting for tape cutter | 002 | | | |
| c4 | End counting for tape cutter | 003 | | | |
| t3 | Start delay from lifted sewing foot | 202 | | | |
| kd1/kd2 | Delay times of outputs M1/M2 | 280/282 | | | |
| kt1/kt2 | ON periods of outputs M1/M2 | 281/283 | | | |
| kt3 | ON period of tape cutter | 285 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |

### Mode 7 (overlock) chain suction permanent signal

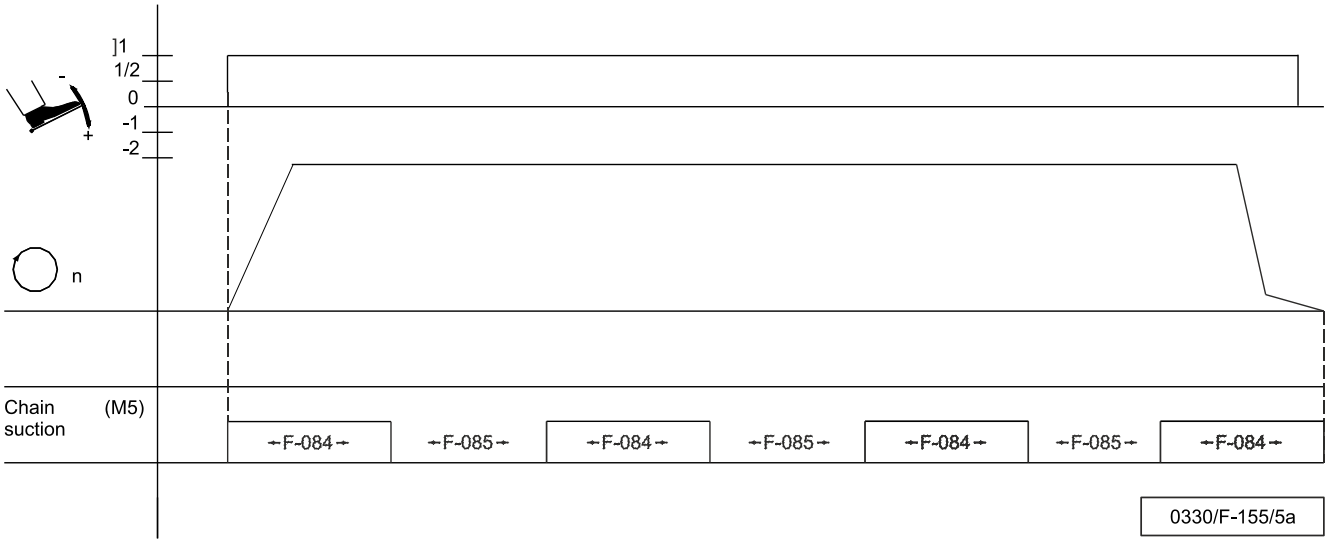
Parameter F-155= 1
Parameter F-156= 200 ms
Suction always On if motor running signal




| Mark | Function | Parameters | | | |
|---|---|---|---|---|---|
| M5<br>n<br>F-156 | Chain suction<br>Speed<br>Switch-off delay for M2 | 155 = 1<br><br>156 = 200ms | | | |

### Mode 7 (overlock) chain suction via stitch count (Ecco)

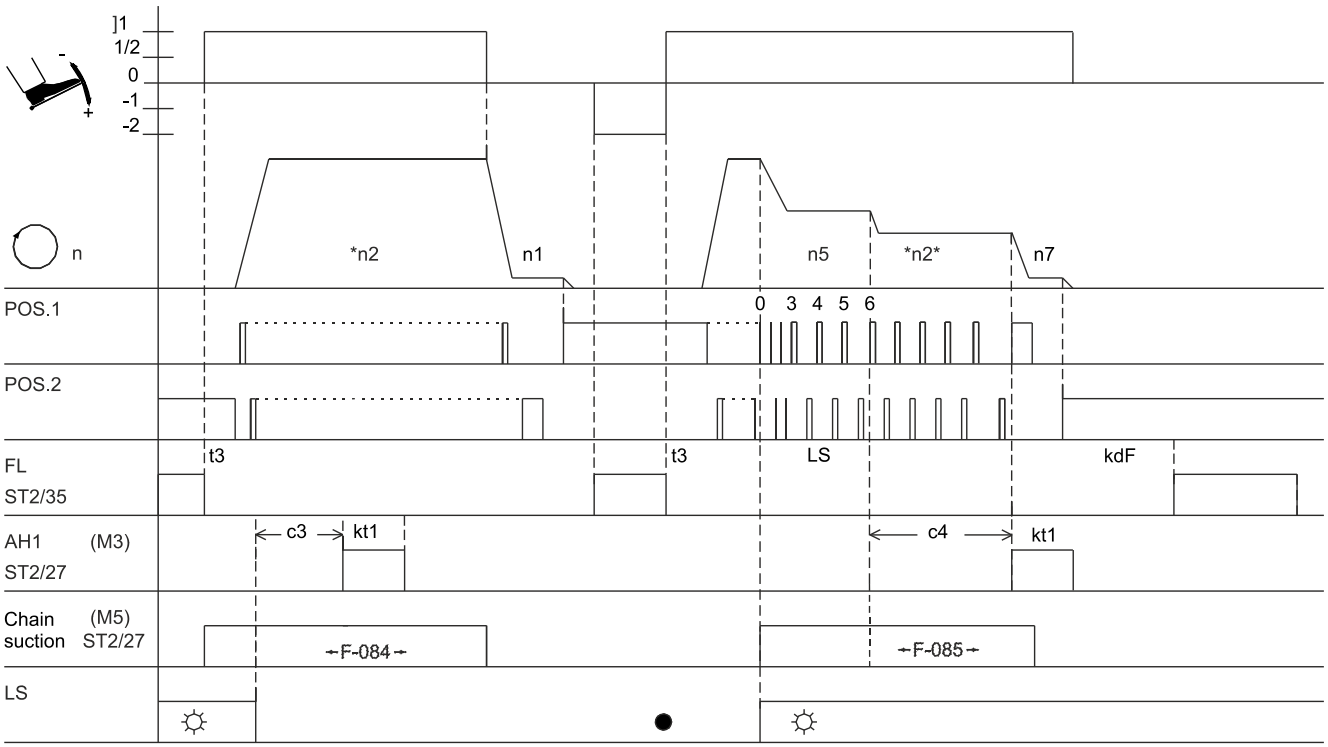
Parameter F-155= 5
Parameter F-084= 5
Parameter F-085= 4




| Mark | Function | | Parameters | | |
|---|---|---|---|---|---|
| M5 | Chain suction | | 155 = 5 | | |
| n | Speed | | | | |
| Mle | Stitches for motor run Ecco On | | 084 = 5 | | |
| Mla | Stitches for motor run Ecco Off | | 085 = 4 | | |

## Mode 7 (overlock) Chain suction controlled via light barrier

Parameter F-155= 6

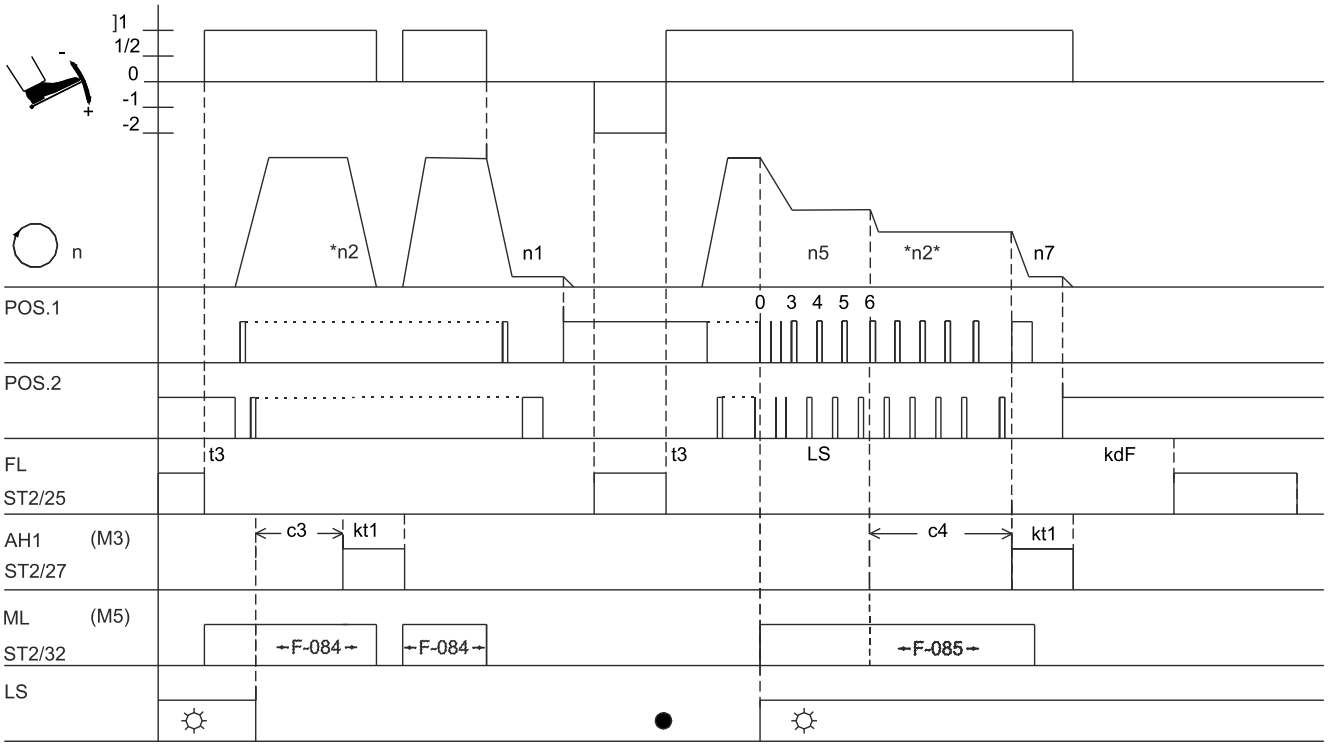



0330/F-155/6a

| Mark | Function | Parameters | Control | | |
|---|---|---|---|---|---|
| | Sewing foot lifting at the seam end On | | | | |
| LS | Light barrier | 009 =1 | Key - | | |
| UoS | Sequence “overlock mode with stop” | 018 =0 | | | |
| -Pd | Function “pedal in pos. –2” blocked | 019 =2 | | | |
| LSS | Start blockage with light barrier uncovered | 192 =0 | | | |
| PLS | Speed n5 after light barrier sensing | 232 =0 | | | |
| USS | Tape cutter function | | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n5 | Speed after light barrier sensing | 114 | | | |
| n7 | Trimming speed | 116 | | | |
| c3 | Start counting for tape cutter | 002 | | | |
| c4 | End counting for tape cutter | 003 | | | |
| LS | Light barrier compensating stitches | 004 | | | |
| kt1 | ON period of tape cutter | 281 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |
| Mle | Run-out stitch chain suction on seam start | 084 | | | |
| Mla | Run-out stitch chain suction on seam end | 085 | | | |

## Mode 7 (overlock) chain suction controlled via light barrier and chain suction signal interrupted during stop

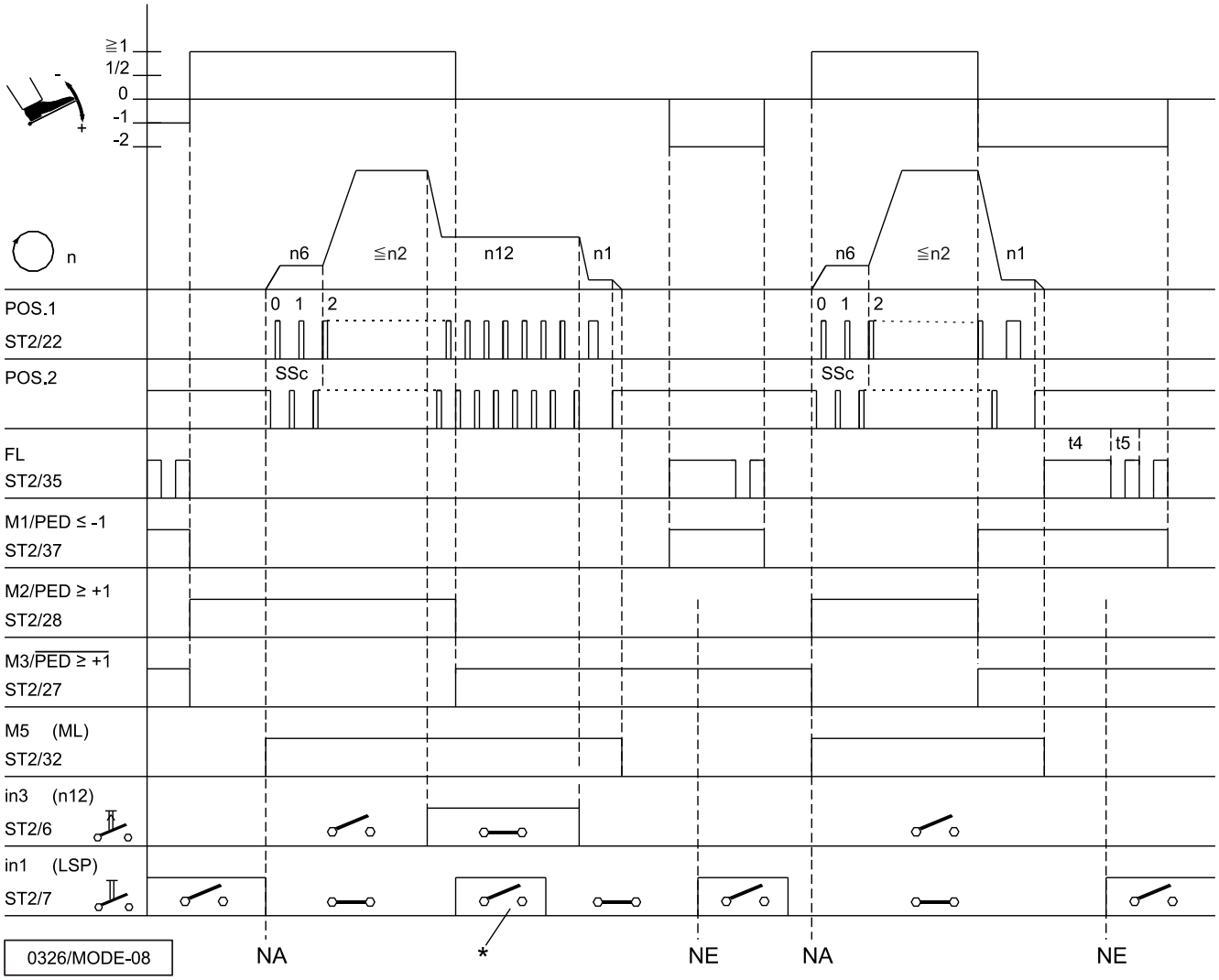
Parameter F-155= 7




0330/F-155/7a

| Mark | Function | Parameters | Control | | |
|---|---|---|---|---|---|
| | Sewing foot lifting at the seam end On | | | | |
| LS | Light barrier | 009 =1 | Key - | | |
| UoS | Sequence “overlock mode with stop” | 018 =0 | | | |
| -Pd | Function “pedal in pos. –2” blocked | 019 =2 | | | |
| LSS | Start blockage with light barrier uncovered | 192 =0 | | | |
| PLS | Speed n5 after light barrier sensing | 232 =0 | | | |
| USS | Tape cutter function | | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n5 | Speed after light barrier sensing | 114 | | | |
| n7 | Trimming speed | 116 | | | |
| c3 | Start counting for tape cutter | 002 | | | |
| c4 | End counting for tape cutter | 003 | | | |
| LS | Light barrier compensating stitches | 004 | | | |
| kt1 | ON period of tape cutter | 281 | | | |
| kdF | Switch-on delay of sewing foot lifting | 288 | | | |
| Mle | Run-out stitch chain suction on seam start | 084 | | | |
| Mla | Run-out stitch chain suction on seam end | 085 | | | |

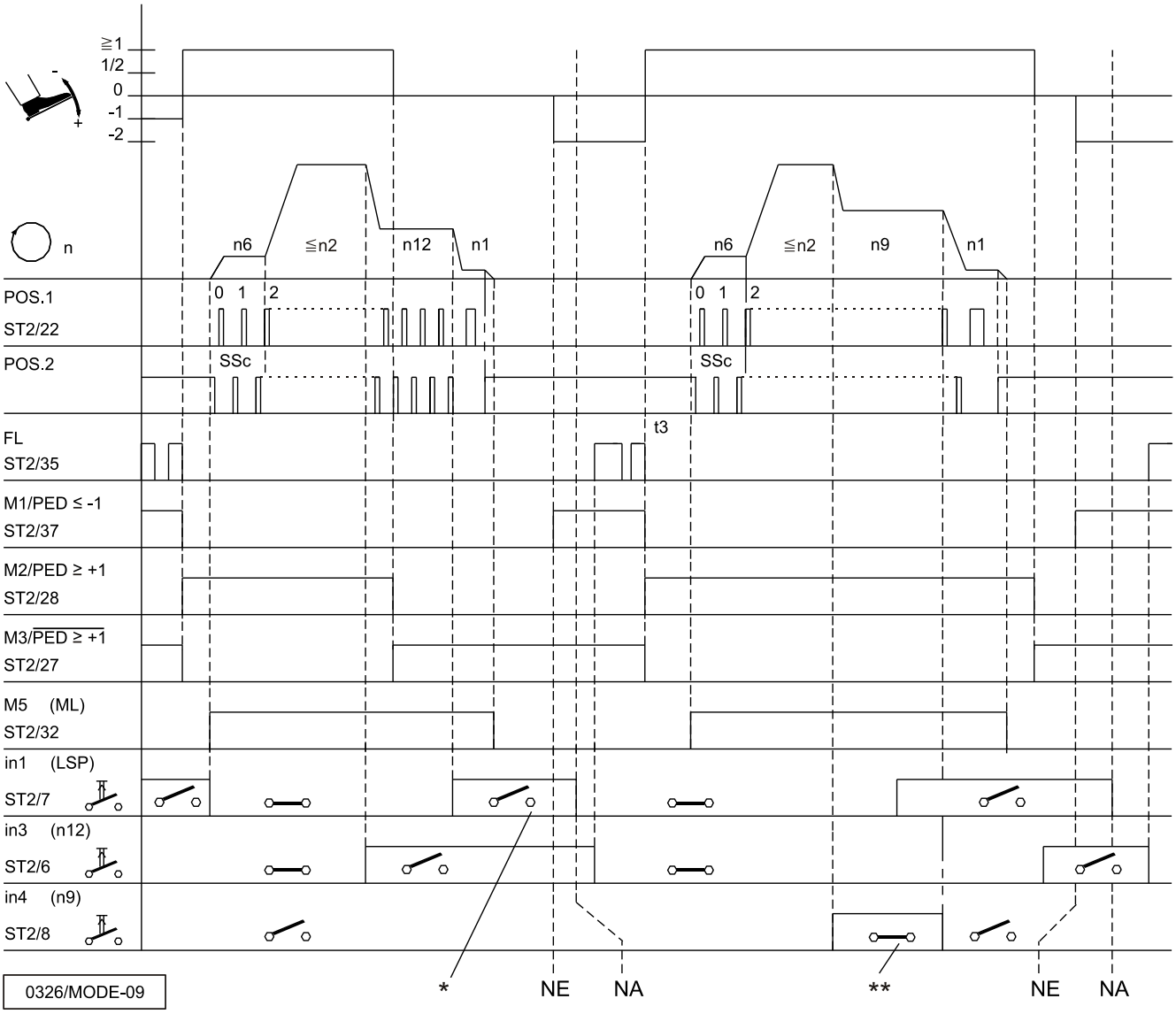
## Mode 8 (backlatch Pegasus)




| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 8 | 290 =8 | | | |
| | Basic position 2 On | | Key >> | Key 4 | Key 7 |
| SSt | Softstart | 134 =1 | | | |
| in1 | Machine run blockage activated with open switch | 240 =6 | | | |
| in3 | n-Auto with closed switch | 242 =10 | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n6 | Softstart speed | 115 | | | |
| n12 | Automatic speed | 118 | | | |
| SSc | Softstart stitches | 100 | | | |
| t4 | Full power of sewing foot lifting | 203 | | | |
| t5 | Pulsing of sewing foot lifting | 204 | | | |

*) *When automatic speed is On, machine run blockage (safety switch) does not work!*
*NA Start of seam*
*NE Seam end*

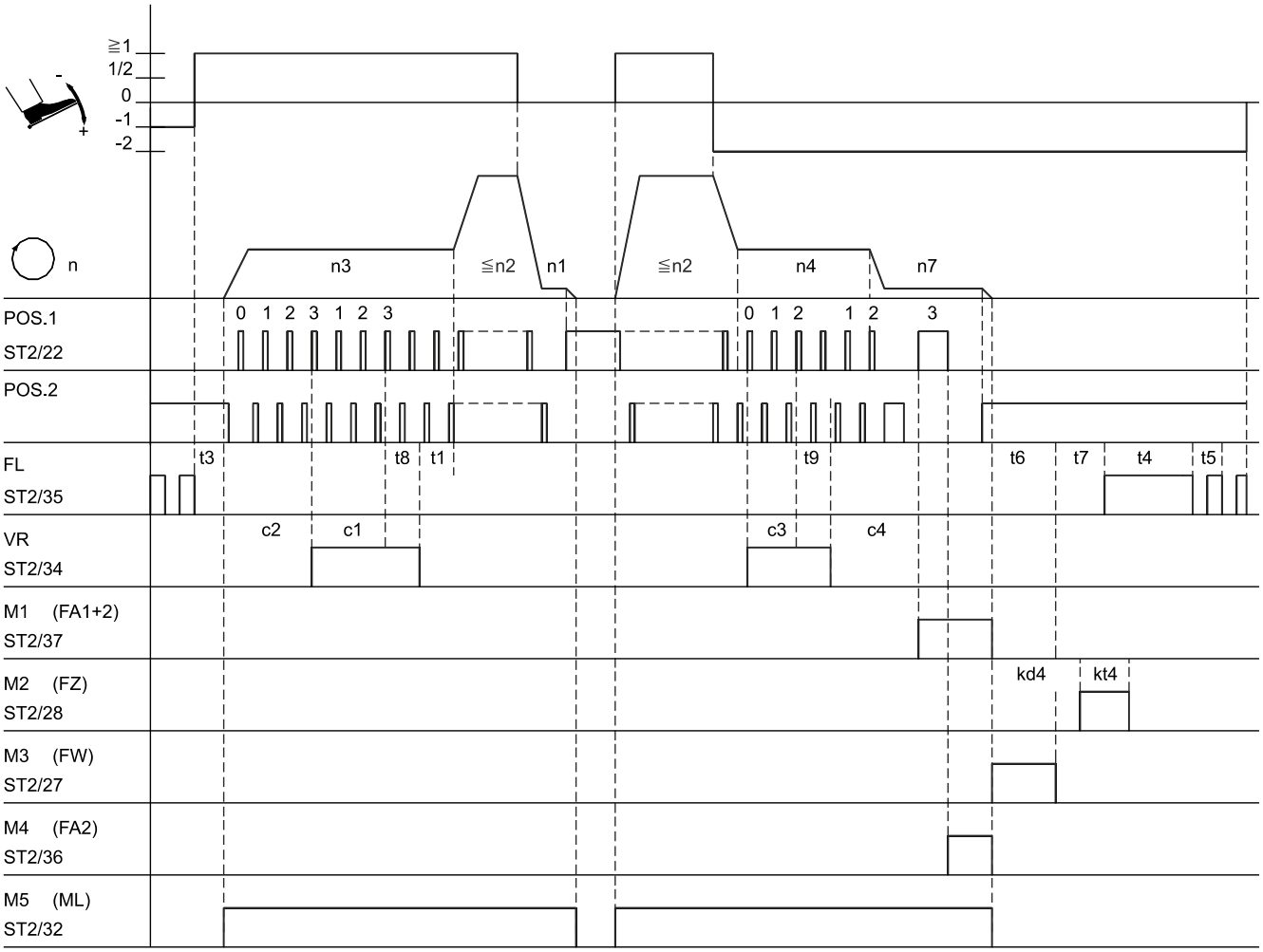
**Mode 9 (backlatch Yamato)**




| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 9 | 290 =9 | | | |
| | Basic position 2 On | | Key >> | Key 4 | Key 7 |
| SSt | Softstart | 134 =1 | | | |
| in1 | Machine run blockage activated with open switch | 240 =6 | | | |
| in3 | Automatic speed on an open switch<br>(The function of input 3 is inverted in mode 9) | 242 =10 | | | |
| PGm | Setting an external sensor to position 2.<br>(A sensor must be connected!) | 270 | | | |
| n1 | Positioning speed | 110 | | | |
| n2 | Maximum speed | 111 | | | |
| n6 | Softstart speed | 115 | | | |
| n9 | Limited speed n9 | 122 | | | |
| n12 | Automatic speed | 118 | | | |
| SSc | Softstart stitches | 100 | | | |
| t3 | Start delay from lifted sewing foot | 202 | | | |
| t4 | Full power of sewing foot lifting | 203 | | | |
| t5 | Pulsing of sewing foot lifting | 204 | | | |

**) With this setting, machine run blockage (safety switch) takes priority over automatic speed!*
***) Automatic speed n9 takes priority over machine run blockage (safety switch)!*
*NA Start of seam*
*NE Seam end*

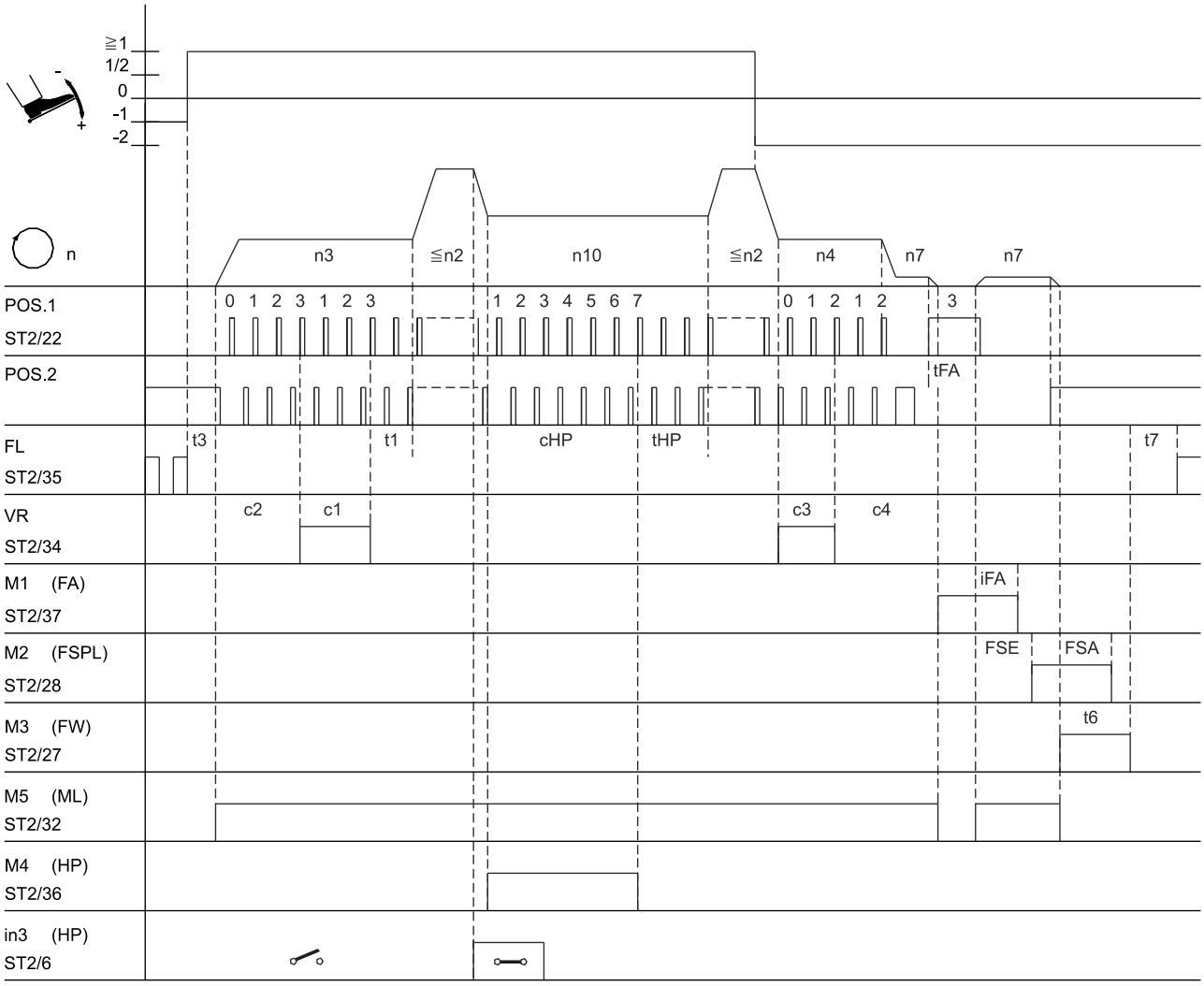
## Mode 14 (lockstitch)




0330/MODE-14

| Mark | Function | | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|---|
| FAm | Mode 14 | | 290=14 | | | |
| | Double start backtack with stitch correction | On | | Key **E** | Key 1 | Key 1 |
| | Double end backtack with stitch correction | On | | Key **+** | Key 2 | Key 4 |
| PGm | Setting an external sensor to position 1.<br>(A sensor must be connected!) | | 270=3 | | | |
| n1 | Positioning speed | | 110 | | | |
| n2 | Maximum speed | | 111 | | | |
| n3 | Start backtack speed | | 112 | | | |
| n4 | End backtack speed | | 113 | | | |
| n7 | Trimming speed | | 116 | | | |
| c2 | Start backtack stitches forward | | 000 | | | |
| c1 | Start backtack stitches backward | | 001 | | | |
| c3 | End backtack stitches backward | | 002 | | | |
| c4 | End backtack stitches forward | | 003 | | | |
| t8 | Start backtack stitch correction | | 150 | | | |
| t9 | End backtack stitch correction | | 151 | | | |
| t1 | Delay until speed release after start backtack | | 200 | | | |
| t3 | Start delay from lifted sewing foot | | 202 | | | |
| t4 | Full power of sewing foot lifting | | 203 | | | |
| t5 | Pulsing of sewing foot lifting | | 204 | | | |
| t6 | Thread wiper ON period | | 205 | | | |
| t7 | Sewing foot switch-on delay after thread wiper | | 206 | | | |
| kd4 | Delay time output M2 | | 286 | | | |
| kt4 | ON period output M2 | | 287 | | | |

## Mode 25 (lockstitch Juki LU2210 / LU2260)




0330/MODE-25

| Mark | Function | Parameters | Control | V810 | V820 |
|---|---|---|---|---|---|
| FAm | Mode 25 | 290 =25 | | | |
| | Double start backtack On | | Key **E** | Key 1 | Key 1 |
| | Double end backtack On | | Key **+** | Key 2 | Key 4 |
| Pot | External potentiometer is active | 126 =3 | | | |
| hP | High lift for walking foot | 137 =1 | | | |
| in3 | High lift for walking foot with speed limitation n10 | 242 =14 | | | |
| PGm | Setting an external sensor to position 1. (A sensor must be connected!) | 270 =3 | | | |
| n2 | Maximum speed | 111 | | | |
| n3 | Start backtack speed | 112 | | | |
| n4 | End backtack speed | 113 | | | |
| n7 | Trimming speed | 116 | | | |
| n10 | High lift walking speed | 117 | | | |
| c2 | Start backtack stitches forward | 000 | | | |
| c1 | Start backtack stitches backward | 001 | | | |
| c3 | End backtack stitches backward | 002 | | | |
| c4 | End backtack stitches forward | 003 | | | |
| thP | High lift walking speed run-out time | 152 | | | |
| chP | Stitch counting high lift for walking foot | 185 | | | |
| t1 | Delay until speed release after start backtack | 200 | | | |
| t3 | Start delay from lifted sewing foot | 202 | | | |
| t6 | Thread wiper ON period | 205 | | | |
| t7 | Sewing foot switch-on delay after thread wiper | 206 | | | |
| iFA | Thread trimmer activation angle | 250 | | | |
| FSA | Switch-off delay of thread tension release | 251 | | | |
| FSE | Switch-on delay angle of thread tension release | 252 | | | |
| tFA | Stopping time for thread trimming | 253 | | | |

## 11.1 Operator Level

**Note** The preset values indicated apply to mode 0 (Parameter 290 = 0).
For preset values applicable to other modes see table in chapter 11.1 »Preset Values Depending on Mode«.

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 000 c2 | - Number of stitches of start backtack forward<br>- Number of stitches of start stitch condensing without stitch regulator<br>- Number of stitches of end counting chain suction | Stitches | 254 | 0 | 2 | |
| 001 c1 | - Number of stitches of start backtack backward<br>- Number of stitches of start stitch condensing with stitch regulator<br>- Number of stitches of start counting chain suction | Stitches | 254 | 0 | 4 | |
| 002 c3 | - Number of stitches of end backtack backward<br>- Number of stitches of end stitch condensing with stitch regulator<br>- Number of stitches of tape cutter at the start of the seam | Stitches | 254 | 0 | 2 | |
| 003 c4 | - Number of stitches of end backtack forward<br>- Number of stitches of end stitch condensing without stitch regulator<br>- Number of stitches of tape cutter at the seam end | Stitches | 254 | 0 | 2 | |
| 004 LS | Light barrier compensating stitches | Stitches | 254 | 0 | 7 | |
| 005 LSF | Number of stitches of the light barrier filter for knitted fabrics | Stitches | 254 | 0 | 1 | |
| 006 LSn | Number of light barrier seams | | 15 | 1 | 1 | |
| 007 Stc | Number of stitches for the seam with stitch counting | Stitches | 999 | 0 | 20 | |
| 008 -F | A parameter from the technician level is assigned to key 9 on the V820 control panel<br>1 = Softstart On/Off<br>2 = Ornamental backtack On/Off<br>3 = Start of sewing blocked with light barrier uncovered On/Off<br>4 = Unlocking the chain On/Off<br>8 = Backtack repetition On/Off<br>9 = Multi-backtack / standard backtack | | 9 | 1 | 1 | |
| 009 LS | Light barrier On/Off | | 1 | 0 | 0 | |
| 010 SrM | Strobel backtack in mode F-290 =56<br>0 = End backtack off<br>1 = Single end backtack on2 = Double end backtack on<br>3 = Double start and double end backtack on<br>4 = Simple start backtack and simple end tack on | | 4 | 0 | 0 | F |
| 013 FA | Thread trimmer On/Off | | 1 | 0 | 0 | |
| 014 Fw | Thread wiper On/Off | | 1 | 0 | 0 | |
| 015 StS | Stitch counting On/Off | | 1 | 0 | 0 | |
| 017 SAb | Stop for tape cutting at the seam end On/Off<br>(Function only when overlock mode is active). | | 1 | 0 | 0 | |
| 018 UoS | 0 = Sequence “overlock mode with stop”<br>1 = Sequence “overlock mode without automatic stop. When the command “run” is given, the drive runs at the pre-selected speed. With **pedal in pos. 0** or **light barrier covered**, the program switches to the next start of a seam without issuing signals M1/M2.<br>2 = As with setting “1”. But with **pedal in pos. 0** signals M1/M2 will be issued, and the program switches to the next start of a seam.<br>3 = As with setting “1”. But with **pedal -2** signals M1/M2 will be issued, and the program switches to the next start of a seam. Intermediate stop and sewing foot lifting with pedal in **pedal -1** is possible.<br>4 = If the light barrier is covered during the end count for chain suction, the program switches immediately to the next start of a seam. If the end count has been completed and the light barrier remains uncovered, the drive stops.<br>5 = Tape cutting at the start of the seam with stop | | 5 | 0 | 0 | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 019 -Pd | 0 = Pedal in pos. -1 blocked in the seam. But with pedal in pos. -2 sewing foot lifting is possible in the seam (function active whenever the light barrier is On)<br>1 = With pedal in pos. -1 sewing foot lifting is blocked in the seam.<br>2 = Pedal in pos. –2, thread trimming disabled. (Function only if parameter 009 = 1)<br>3 = Pedal in pos. –1 and –2 enabled in the seam.<br>4 = Pedal -1 and -2 locked in the seam (function only when parameter 009 =1)<br>5 = Start seam end by with pedal -1 | | 5 | 0 | 3 | |
| 020 kLm | Clamp at the seam end On/Off | | 1 | 0 | 0 | |
| 021 ckL | Run-out stitches clamp at the start of the seam | Stitches | 254 | 0 | 2 | |
| 022 SPO | 0 = Chain suction until the end of count c2<br>1 = Chain suction at the seam end until pedal in pos. 0 (neutral)<br>2 = Chain suction until the drive is at standstill and the switch-off delay (Parameter 237) has elapsed. | | 2 | 0 | 0 | |
| 023 AFL | Automatic sewing foot lifting with pedal forward at the seam end, if light barrier or stitch counting is On.<br>0 = Automatic foot lifting off<br>1 = Automatic foot lifting On | | 1 | 0 | 1 | |
| 024 FSP | Coupled thread tension release and sewing foot lifting.<br>The function can be activated only with a thread trimmer that depends on the angle.<br>0 = No coupling<br>1 = Coupled thread tension release and sewing foot at the seam end with thread trimmer off<br>2 = Coupled thread tension release and sewing foot in the seam and at the seam end with thread trimmer off<br>3 = Coupled thread tension release and sewing foot always effective | | 3 | 0 | 0 | |
| 025 tFS | Start counting (pa. 157) for thread tension release at the start of the seam<br>0 = Start counting at the start of the seam<br>1 = Start counting when the light barrier is covered | | 1 | 0 | 1 | |
| 026 APd | Characteristic of the "analog pedal"<br>0 = Analog function off<br>1 = 12-level, like previous pedal function<br>2 = continuously variable<br>3 = 24-level<br>4 = 60-level<br>5 = 48-level<br>6 = 48 level / standing operation (SOP; foot control 304)i | | 6 | 0 | 4 | |
| 027 plu | Area for setting + 1/2 of the analog pedal in percent | | 80 | 10 | 30 | |
| 028 epd | 0 = Function Off<br>1 = Pedal 2 release only from Pos. 1 | | 0 | 1 | 0 | |
| 030 rfw | Bobbin thread monitor<br>0 = Off<br>1 = Active with stop<br>2 = Active without stop<br>3 = Active with stop and start blockage after thread trimming<br>4 = As 1, but with display of remaining stitches<br>5 = As 2, but with display of remaining stitches<br>6 = As 3, but with display of remaining stitches | | 6 | 0 | B | |
| 031 cfw | Number of stitches for bobbin thread monitor.<br>(The 3-digit value must be multiplied by 100). | | 255 | 0 | B | |
| 037 Tu | Monitoring for FF1 signal in sec | | 60 | 0 | 0 | 0 |
| 038 1FH | Coupling with the 2nd thread tension release AFF1<br>0 = Off<br>1 = Coupling with FA<br>2 = Coupling with HP<br>3 = Coupling with FA and HP | | 3 | 0 | 0 | |
| 039 1FL | Coupling with foot lifting with the 2nd thread tension AFF1<br>0 = Off<br>1 = Coupling with foot lifting in the seam<br>2 = Coupling with foot lifting at the seam end<br>3 = Coupling with foot lifting in the seam and at the seam end | | 3 | 0 | 0 | |
| 040 3FB | Mode FlipFlop3<br>0 = Off<br>1 = Switched off when the foot is lifted<br>2 = Switched off during a reverse backtack | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 3 = Switched off when the foot is lifted or locked. | | | | | |
| **Parameters** | **Designation** | **Unit** | **Max** | **Min** | **Preset** | **Ind.** |
| 041 EZP | Special pedal function Single stitch / Full stitch<br>0 = Function Off<br>1 = Single stitch (assuming needle up to needle down). Afterwards alas a complete hand wheel rotation in speed n9)<br>2 = Full stitch (a complete hand wheel rotation in speed n9)<br>3 = Speed limitation up to F-042 | | 2 | 0 | 0 | |
| 042 GrP | Pedal travel forwards for detection of the special pedal function | % | 100 | 0 | 40 | |
| 049 KML | Clutch motor running (Kopplung MotorLäuft) signal (F-290=7)<br>=0 OFF<br>=1 clutch with pedal Mi1 & pedal Mi2 in the seam<br>=2 clutch with pedal Mi1 & pedal Mi2 outside of the seam<br>=3 clutch with pedal Mi1 & pedal Mi2 in and outside of the seam | 3 | 0 | 0 | 049 KM | |
| 051 dPd | Time for detection of the special pedal function | ms | 2550 | 0 | 100 | |
| 082 DDr | Suck stitches to waste | Stitches | 254 | 0 | 25 | D |
| 083 tDr | Time sucking waste | ms | 5000 | 0 | 0 | D |
| 084 Mle | Stitches for motor ECO On | Stitches | 254 | 0 | 5 | |
| 085 Mla | Stitches for motor ECO runs down | Stitches | 254 | 0 | 5 | |
| 086 vct | Counted forward section in manual ornamental backtack On/Off | | 1 | 0 | 1 | |
| 087 chr | 0 = Manual backtack at speed n13 (Parameter 109)<br>1..255 = Manual ornamental backtack at speed n9 (Parameter 122) | Stitches | 255 | 0 | 0 | |
| 088 kla | Stitches for clamping the seam start (mode 68) | Stitches | 20 | 0 | 3 | |
| 090 wAr | Repetition of the start/ multiple backtack | | 255 | 0 | 3 | |
| 091 wEr | Repetition of the final/multiple backtack | | 255 | 0 | 3 | |
| 092 Fwr | 1 = Backtack repetition On/Off<br>2 = Repetition of the start backtack with automatic cutting. No end backtack is done. | | 2 | 0 | 0 | |

## 11.2 Technical level (Code no. 1907)

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 100 SSc | Number of softstart stitches | Stitches | 254 | 0 | 2 | |
| 101 EvA | Switch-on delay for the backtacking solenoid in the initial backtack | ms | 255 | 0 | 43 | |
| 102 AvA | Power-off delay for the backtacking solenoid in the initial backtack | ms | 255 | 0 | 4 | |
| 103 EvE | Switch-on delay for the backtacking solenoid in the final backtack | ms | 255 | 0 | 43 | |
| 104 AvE | Power-off delay for the backtacking solenoid in the final backtack | ms | 255 | 0 | 5 | |
| 108 PEr | Stop position of the ornamental backtack<br>1 = Position 1 leading<br>2 = Position 2 leading<br>3 = Position 1 trailing<br>4 = Position 2 trailing<br>5 = Position 3 leading<br>6 = Position 3 trailing | | 6 | 1 | 1 | |
| 109 n13 | Speed of manual backtack | RPM | 9900 | 200 | 1500 | |
| 110 n1 | Positioning speed for threading (mode 66) | RPM | 390 | 70 | 200 | |
| 111 n2 | Upper limit setting range of the maximum speed | RPM | 9900 | n2_ | 5000 | |
| 112 n3 | Start backtacking speed | RPM | 9900 | 200 | 1200 | |
| 113 n4 | End backtacking speed | RPM | 9900 | 200 | 1200 | |
| 114 n5 | Speed after light barrier sensing | RPM | 9900 | 200 | 1200 | |
| 115 n6 | Softstart speed | RPM | 9900 | 70 | 500 | |
| 116 n7 | Trimming speed | RPM | 700 | 70 | 200 | |
| 117 n10 | High lift for walking speed limitation | RPM | 9900 | 400 | 1000 | |
| 118 n12 | Automatic speed for stitch counting | RPM | 9900 | 400 | 3500 | |
| 119 nSt | Speed stage graduation<br>1 = Linear<br>2 = Slightly progressive<br>3 = Highly progressive | | 3 | 1 | | |
| 121 n2 | Lower limit setting range of the maximum speed | RPM | n2_ | 200 | 400 | |
| 122 n9 | Limited speed n9 | RPM | 9900 | 200 | 2000 | |
| 123 n11 | Limited speed n11 | RPM | 9900 | 200 | 2500 | |
| 125 bot | Speed limitation using ext. potentiometer (minimum value) | RPM | Pa.25 | 0 | 200 | |
| 126 Pot | Function “speed limitation using external potentiometer”<br>0 = Function “external potentiometer” Off<br>7 = Lift-dependent speed limiting with potentiometer (if parameter 911= 912). | | 7 | 0 | 0 | |
| 127 AkS | Acoustic signal for V8xx ON/OFFI | | 1 | 0 | 0 | |
| 128 ASd | Start delay, when command “start” is given by covering the light barrier (see parameter 129) | ms | 2000 | 0 | 0 | |
| 129 ALS | Machine start by covering the light barrier (only in conjunction with parameter 132 = 1)<br>0 = Function Off<br>1 = Light barrier covered ➔ pedal forward (>1) ➔machine run pedal controlled.<br>2 = Pedal forward (>1) ➔ light barrier covered machine run ➔ pedal controlled.<br>3 = Light barrier covered ➔ machine run at automatic speed n12 (without pedal)<br>4 = Pedal forward (>1) ➔ light barrier covered machine run ➔pedal controlled.<br>5 = Light barrier covered ➔ machine run at automatic speed n12 (without pedal)<br>**Attention!** If 129 = 3, the machine starts immediately after covering the light barrier without influence by the pedal! It can be stopped only by uncovering the light barrier or by machine run blockage!<br>If machine run blockage is disabled, the machine starts immediately even if the light barrier is still covered!<br>6 = The same as 3, run without pedal when covering the light curtain, however start up only when FI is lowered. | | 3 | 0 | 0 | |
| 130 LSF | Light barrier filter for knitted fabrics | | 1 | 0 | 0 | |
| 131 LSd | 0 = Light barrier sensing “covered”<br>1 = Light barrier sensing uncovered | | 1 | 0 | 1 | |
| 132 LSS | 0 = Machine start possible with light barrier uncovered or covered.<br>1 = Machine start blocked with light barrier uncovered if parameter 131 = 1.Machine start blocked with light barrier covered, | | 1 | 0 | 1 | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 133 LSE | Thread trimming operation, when completing the seam after light barrier sensing On/Off | | 1 | 0 | 1 | |
| 134 SSt | Softstart On/Off | | 1 | 0 | 0 | |
| 135 SrS | Ornamental backtack On/Off | | 1 | 0 | 0 | |
| 136 FAr | 0 = Trimming stitch backward Off<br>1 = Trimming stitch backward On with single end backtack<br>2 = Trimming stitch or positioning stitch always backward at the seam end | | 2 | 0 | 0 | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 137 hP | High lift for walking foot function activated/deactivated | | 1 | 0 | 0 | |
| 139 nIS | Display of machine speed On/Off | | 1 | 0 | 0 | |
| 140 dnE | Delay of seam end with pedal in pos. -2 | ms | 2550 | 0 | 0 | |
| 141 SGn | Speed status for the seam with stitch counting<br>0 = Speed controllable by the pedal up to the set maximum speed (Parameter 111)<br>1 = Fixed speed (Parameter 118) without influence by the pedal (machine stop by pressing the pedal to the basic position)<br>2 = Limited speed controllable by the pedal up to the set limit (Parameter 118)<br>3 = At fixed speed (Parameter 118) can be interrupted by full heelback -2<br>4 = At fixed speed (Parameter 110) can be interrupted by full heelback -2 | | 4 | 0 | 0 | |
| 142 SFn | Speed status for the free seam and for the seam with light barrier<br>0 = Speed controllable by the pedal up to the set maximum speed (Parameter 111)<br>1 = Fixed speed (Parameter 118) without influence by the pedal (machine stop by pressing the pedal to the basic position)<br>2 = Limited speed controllable by the pedal up to the set limit (Parameter 118)<br>3 = At fixed speed (Parameter 118) can be interrupted by full heelback (only for seams with light barrier). | | 3 | 0 | 0 | |
| 143 kSA | Stitch counting at the start of the seam (e. g. chain suction)<br>0 = Speed controllable by the pedal up to the set maximum speed (Parameter 111)<br>1 = Fixed speed (Parameter 112) without influence by the pedal (machine stop by pressing the pedal to the basic position)<br>2 = Limited speed controllable by the pedal up to the set limit (Parameter 112)<br>3 = At fixed speed (Parameter 112), can be suspended or interrupted depending on the setting of parameter 019. | | 3 | 0 | 0 | |
| 144 kSE | Stitch counting at the seam end (e. g. chain suction)<br>0 = Speed controllable by the pedal up to the set maximum speed (Parameter 111).<br>Fixed speed (Parameter 113) without influence by the pedal (machine stop by pressing the pedal to the basic position).<br>1 = Limited speed controllable by the pedal up to the set limit (Parameter 113)<br>2 = At fixed speed (Parameter 113), can be suspended or interrupted depending on the setting of parameter 019. | | 3 | 0 | 0 | |
| 145 Shv | Speed status for the manual backtack<br>0 = Speed controllable by the pedal up to the set maximum speed (Parameter 111)<br>1 = Fixed speed (Parameter 109) without influence by the pedal (machine stop by pressing the pedal to the basic position)<br>2 = Limited speed controllable by the pedal up to the set limit (Parameter 109) | | 2 | 0 | 0 | |
| 150 t8 | Stitch correction of the double start backtack (prolongation of the stitch regulator ON period /not effective with ornamental backtack) | ms | 500 | 0 | 0 | |
| 151 t9 | Stitch correction of the double end backtack (prolongation of the stitch regulator ON period / not effective with ornamental backtack) | ms | 500 | 0 | 0 | |
| 152 thP | High Lift Walking Speed Run-Out Time | ms | 500 | 80 | 150 | |
| 153 brt | Braking power at machine standstill | | 50 | 0 | 15 | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 155 LSG | Mode signal run<br>0 = Signal Off.<br>1 = Signal run On.<br>2 = Signal “run” enabled when the speed is >3000 RPM.<br>3 = Signal with pedal <> 0.<br>4 = Signal enabled only after motor synchronization (one rotation at positioning speed after power On).<br>5 = Motor runs Eco with setting F-84 and F-85<br>6 = Motor runs the same as chain suction at the seam start / end with counter F-084 and F-085<br>7 = The same as 6, however chain suction at the start of the seam can be interrupted and with switch-off delay F-156 | | 7 | 0 | 1 | |
| 156 t05 | Switch-off delay for the signal “run” or signal with pedal in pos. 0 (neutral) | ms | 2550 | 0 | 0 | |
| 157 SFS | Stitches until thread tension release Off after light barrier covered at the start of the seam (Only in mode 7) | Stitches | 254 | 0 | 0 | |
| 161 drE | Direction of motor rotation<br>0 = Clockwise rotation<br>1 = Counterclockwise rotation | | 1 | 0 | 1 | |
| 162 n2A | Start backtack speed whenever the backtack can be interrupted by pedal in pos. 0 (neutral) (Parameter 164) | RPM | 9900 | 200 | 600 | |
| 163 n2E | End backtack speed whenever the backtack can be interrupted by pedal in pos. 0 (neutral) (Parameter 164) | RPM | 9900 | 200 | 600 | |
| 164 StP | Start and end backtack can be interrupted by pedal in pos. 0 (neutral) On/Off | | 1 | 0 | 0 | |
| 170 Sr1 | -See Section **Fehler! Verweisquelle konnte nicht gefunden werden.** Setting the reference position (Parameter 170) | | | | | |
| 172 Sr3 | See Section 6.10 Indication of the setting of the positions | | | | | |
| 173 Sr4 | See Section 8 Signal test | | | | OFF | |
| 174 Lng | Language selection V860 control panel<br>1 = English<br>2 = German | 2 | | 1 | 174 Ln | |
| 176 Sr6 | Service routine for total operating hours display.<br>The process is as with display example of parameter 177. | | | | | |
| 177 Sr7 | Service routine for display of hours since the last service.<br><br>**Display example for the operator control panel:**<br>Press the E key → Display Sr7=<br>Press the >> key → Display h t<br>Press the E key → Display 0000<br>Press the >> key → Display h h<br>Press the E key → Display 0000<br>Press the E key → Display Min<br>Press the E key → Display 00<br>Press the E key → Display SEc<br>Press the E key → Display 00<br>Press the E key → Display MS<br>Press the E key → Display 000<br>Press the E key → Display rES<br>Press the E key again to restart routine, or press the P key twice to return to operational status<br><br>**Display example for the V810 control panel:**<br>Press the E key → Display Sr7 [°]<br>Press the >> key → Display hoUr<br>Press the E key → Display 000000<br>Press the E key → Display Min<br>Press the E key → Display 00<br>Press the E key → Display SEc<br>Press the E key → Display 00<br>Press the E key → Display MSEc<br>Press the E key → Display 000<br>Press the E key → Display rES F2<br>Press the P key twice → Display e.g. Ab620A<br><br>**Display example for the V820 control panel:**<br>Press the E key → Display F-177 Sr7 [°]<br>Press the >> key → Display hoUr 000000 | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Press the E key ➔ Display Min 00<br>Press the E key ➔ Display SEc 00<br>Press the E key ➔ Display MSEc 000<br>Press the E key ➔ Display rES F2<br>Press the P key twice ➔ Display e.g. Ab620A | | | | | |
| 179 | Sr5 | Display of control program number with index and more identification numbers. The data is displayed in sequence by keystroke.<br><br>**Display example for the operator control panel:**<br>Press the E key ➔ Display Sr5=<br>Press the >> key ➔ Display e.g. 5034 (Prog. No.)<br>Press the E key ➔ Display e.g. A (Index)<br>Press the E key ➔ Display e.g. 06 (Year)<br>Press the E key ➔ Display e.g. 10 (Month)<br>Press the E key ➔ Display e.g. 24 (Day)<br>Press the E key ➔ Display e.g. 16 (Hour)<br>Press the E key ➔ Display e.g. --<br>Press the E key ➔ Display e.g. ----<br>Press the E key again to restart routine, or press the P key twice to return to operational status | | | | | |
| | | **Display example for the V810 control panel:**<br>Press the E key ➔ Display Sr [°]<br>Press the >> key ➔ Display e.g. 5054<br>Press the E key ➔ Display e.g. 010823<br>Press the E key ➔ Display e.g. 15<br>Press the E key ➔ Display e.g. 1F68<br>Press the P key twice ➔ Display Ab620A<br><br>**Display example for the V820 control panel:**<br>Press the E key ➔ Display F-179 Sr5 [°]<br>Press the >> key ➔ Display e.g. PrG 5054<br>Press the E key ➔ Display e.g. dAt 01082315<br>Press the E key ➔ Display e.g. Chk 1F68<br>Press the E key ➔ Display e.g. 132650210015<br>Press the E key ➔ Display e.g. Skn 01047543<br>Press the P key twice ➔ Display 4000 Ab620A | | | | | |
| 180 | rd | Reversing angle | Degrees | 359 | 0 | 175 | |
| 181 | drd | Switch-on delay of reverse motor rotation | ms | 990 | 0 | 10 | |
| 182 | Frd | Reverse motor rotation On/Off | | 1 | 0 | 0 | |
| 184 | c6 | Number of run-out stitches when unlocking the chain | Stitches | 254 | 0 | 20 | |
| 185 | chP | Minimum number of stitches for high lift for walking | Stitches | 254 | 0 | 0 | |
| 190 | mEk | Function “unlock the chain” in modes 5, 6 and 7 (Parameter 290)<br>0 = Unlocking off<br>1 = Unlocking the chain manually (with pedal in pos. –2 without cutting at the seam end)<br>2 = Unlocking the chain automatically<br>- By means of light barrier or<br>- pedal in pos.-2 (Parameter 019) without cutting at the seam end<br>3 = Unlocking the chain automatically<br>- By means of light barrier or<br>- Pedal in pos. –2 (Parameter 019) with cutting and run-out stitches (Parameter 184) at the seam end, then unlocking the chain (only if parameter 290 = 7)<br>4 = Unlocking only with pedal 2<br>No unlocking the chain at the seam end by means of light barrier, cutting and run-out stitches. | | 4 | 0 | 1 | |
| 191 | mhE | Seam end for overlock mode through<br>End count c2 or c4<br>0 = Seam end after count c4 – Tape cutter<br>1 = Seam end after count c2 – chain suction | | 1 | 0 | 0 | |
| 192 | PLS | Speed of the light barrier compensating stitches<br>0 = Speed n5 after light barrier sensing<br>1 = Speed pedal controlled | | 1 | 0 | 0 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 193 | kSL | Enable chain suction signal and thread tension release<br>0 = Thread tension release and chain suction after the light barrier compensating stitches<br>1 = Chain suction from light barrier uncovered onwards and thread tension release after the light barrier compensating stitches | 1 | 0 | 0 | |
| 198 | Bag | Functions with chainstitch machines e. g. bag sewing machine (Parameter 290 = 37)<br>0 = Function “thread trimming” or “hot thread chain cutting” and sewing foot lift using the pedal.<br>1 = Function “thread trimming” or “hot thread chain cutting” using the knee switch, and sewing foot lift using the pedal.<br>2 = Function “thread trimming” or “hot thread chain cutting” using the pedal and sewing foot lift using the knee switch. | 2 | 0 | 0 | |
| 199 | FSn | Thread tension release at the seam end On/Off.<br>0 = Thread tension release Off at the seam end for pedal in pos. 0.<br>1 = Thread tension release On at the seam end for pedal in pos. 0.<br>2 = Thread tension release at the seam end and after power on and pedal in position 0 On. | 2 | 0 | 0 | |

## 11.3 Supplier level (Code No. 3112)

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 200 t1 | Delay until speed release after start backtack | ms | 500 | 0 | 100 | |
| 201 t2 | Sewing foot switch-on delay after thread wiper with half heelback | ms | 2550 | 20 | 80 | |
| 202 t3 | Start delay after disabling the sewing foot lifting signal | ms | 500 | 0 | 50 | |
| 203 t4 | Time of full power of sewing foot lifting | ms | 600 | 0 | 500 | |
| 204 t5 | Holding power for sewing foot lifting 1...100%<br>1%➔ low holding power<br>100%➔ high holding power | % | Pa.254 | 1 | 40 | |
| 205 t6 | Thread wiper time | ms | 2550 | 0 | 120 | |
| 206 t7 | Delay from end of thread wiper until sewing foot lifting On | ms | 800 | 0 | 40 | |
| 207 br1 | Braking effect when varying the preset value ≤ 4 stages (indicated values only with transmission ratio 1:1) | | 55 | 1 | 15 | |
| 208 br2 | Braking effect when varying the preset value ≥ 5 stages (indicated values only with transmission ratio 1:1) | | 55 | 1 | 20 | |
| 209 dFw | Thread wiper switch-on delay | ms | 2550 | 0 | 0 | |
| 210 tSr | Stop time for switching the stitch regulator in the ornamental backtack | ms | 500 | 0 | 140 | |
| 211 tFL | Sewing foot lifting switch-on delay with thread wiper off | ms | 500 | 0 | 60 | |
| 212 t10 | Time of full power of backtacking or thread trimmer forward | ms | 600 | 0 | 500 | |
| 213 t11 | Holding power for backtacking or thread trimmer backward 1...100%<br>1%➔ low holding power<br>100%➔ high holding power | % | Pa.255 | 1 | 40 | |
| 215 Zrv | 0 = Last counted forward segment in start backtack OFF<br>1 = Last counted forward segment in start backtack On | | 1 | 0 | 0 | |
| 217 Sr | Number of operating hours before service in steps of 10 (operating hours recording enabled if set at “0”). | Std | 99900 ***) | 00000 | 00000 | |
| 218 SkL | Select custom machines<br>0 = No custom machine<br>1 = Model 204<br>2 = Big Bag | | 2 | 0 | 0 | |
| 219 br3 | Braking ramp for n < 350 $^{min^{-1}}/_{ms}$ when drive stopped | | 55 | 1 | 4 | |
| 220 ALF | Accelerating power of the drive (indicated values only with transmission ratio 1:1) | | 55 | 1 | 35 | |
| 221 dGn | Speed gate 1 | RPM | 990 | 50 | 100 | |
| 222 tGn | Speed gate damping period | ms | 990 | 0 | 20 | |
| 225 br4 | Setting the braking curve for the light barrier and machine run blockage (values only with transmission ratio 1:1) | | 55 | 1 | 20 | |
| 229 dP2 | Delay of heelback (-2) | ms | 2000 | 0 | 0 | |
| 232 USS | Overlock with fast scissors On/Off | | 1 | 0 | 0 | |
| 233 c | Thread tension release switch-on delay | Stitches | 254 | 0 | 0 | |
| 234 pdo | Restart after machine run blockage via pedal 0 position | | 1 | 0 | 1 | B |
| 236 FLP | 0 = Fl always permitted<br>1 = Fl only permitted in position 2<br>2 = Fl after cutting stored pedal plus ½ lifts storing, pedal minus 1 switches stored Fl on.<br>3 = Storage for standing actuation FBxxx<br>4 = Fl generally deactivated<br>5 = Stored foot lifting at the seam end can be deactivated with pedal plus ½ and pedal minus 1. | | 5 | 0 | 0 | B |
| 237 tkS | Switch-off delay for chain suction at the seam end, if parameter 022 = 2. | ms | 2550 | 0 | 0 | |
| 238 EnP | Software debouncing for all inputs:<br>0 = No debouncing<br>1 = Debouncing | | 1 | 0 | 1 | |
| 239 FEL | Selection of the input function on socket B18/8<br>0 = Light barrier function, if 009 =1<br>All other functions as with parameter 240. | | 112 | 0 | 0 | |

***) *The 4-digit value displayed must be multiplied by 10.*

## Supplier level (Code No. 3112)

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 240 in1 | Selection of the input functions on socket ST2/7 for input 1<br>0 = No function<br>1 = Needle up/down<br>2 = Needle up<br>3 = Single stitch (basting stitch)<br>4 = Full stitch<br>5 = Needle to position 2<br>6 = Machine run blockage effective with open contact<br>7 = Machine run blockage effective with closed contact<br>8 = Machine run blockage unpositioned effective with open contact<br>9 = Machine run blockage unpositioned effective with closed contact<br>10 = Automatic speed n12 without pedal (N.O. contact)<br>11 = Limited speed n12 pedal controlled<br>12 = Sewing foot lifting with pedal in position 0 (neutral)<br>13 = High lift for walking foot with speed limitation n10 (operational mode not stored)<br>14 = “High lift walking foot” with speed limiting n10. Set parameter 137 to 1<br>15 = tape cutter/fast scissors: Function only in chainstitch and overlock mode<br>16 = Intermediate backtack / intermediate stitch condensing<br>17 = Stitch regulator suppression / recall<br>18 = Unlocking the chain: Can be activated by pressing the key , but will be executed only at the seam end<br>23 = No function<br>24 = Needle to position 2 (see instruction manual)<br>27 = Unlocking the chain: Function is performed upon pressing the key<br>28 = External light barrier (according to setting of parameter 131)<br>30 = High lift for walking foot, if sewing foot is On<br>31 = Function “speed limitation bit0” (speed n11)<br>32 = Function “speed limitation bit1” (speed n10) (bit0 + bit1 = speed n9)<br>33 = Speed n9 pedal controlled<br>34 = Automatic speed n9 can be suspended by pressing the pedal to pos. 0 (neutral)<br>37 = Speed n12 pedal controlled (break contact)<br>38 = Automatic speed n12 without pedal (break contact [N.C.])<br>41 = Tape cutting only at machine standstill<br>42 = Enable hot thread chain cutting or sewing foot lifting. Function only effective in mode 37<br>43 - 85 = No function<br>91 = Threading mode 66<br>101 = AFF1 ex.2. Thread tension release<br>102 = AFF2 ex. switch stitch length<br>103 = AFF3 example of an edge guide<br>104 = Manual lock automatic<br>109 = Part lift mode 66<br>110 = Machine run blockage in Pos. 2 at the seam end open<br>111 = Machine run blockage in Pos. 2 at the seam end close<br>112 = Foot lifting FlipFlop<br>113 – 117 No function<br>118 = Flipflop for running in nmax<br>119-123= No function<br>124 = Disable Strobel backtack<br>125-127 = No function<br>128 = Reset stitch counter<br>129 = Reset stitch counter for service<br>130 = Pedal -2 per external key<br>131-145= No function | | 145 | 0 | 0 | |
| 241 in2 | Selection of input function on socket ST2/11 for input 2<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 145 | 0 | 0 | |
| 242 in3 | Selection of input function on socket ST2/6 for input 3<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 145 | 0 | 0 | |

| Parameters | | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|---|
| 243 | in4 | Selection of input function on socket ST2/8 for input 4<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 145 | 0 | 0 | |
| 244 | in5 | Selection of input function on socket ST2/5 for input 5<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 145 | 0 | 0 | |
| 245 | in6 | Selection of input function on socket ST2/12 for input 6<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 145 | 0 | 0 | |
| 246 | in7 | Selection of input function on socket ST2/9 for input 7<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 145 | 0 | 0 | |
| 250 | iFA | Thread trimmer activation angle | Degrees | 359 | 0 | 180 | |
| 251 | FSA | Switch-off delay of thread tension release | ms | 990 | 0 | 50 | |
| 252 | FSE | Switch-on delay angle of thread tension release | Degrees | 359 | 0 | 0 | |
| 253 | tFA | Stopping time for thread trimming | ms | 500 | 0 | 70 | |
| 254 | EF- | Upper limit (Pa.204) clocking the sewing foot lifting switch on period (ED) 1...100 % | % | 100 | 1 | 100 | |
| 255 | Ev- | Upper limit (Pa.213) clocking the sewing foot on period (ED) 1...100 %1...100 | % | 100 | 1 | 100 | |
| 259 | FAE | Activation delay angle of the thread trimmer | Degrees | 359 | 0 | 0 | |
| 263 | ihP | 0 = Signal “high lift for walking foot”, when key is closed.<br>1 = Signal “high lift for walking foot”, when key is open. (Function only if parameter 137 = 1) | | 1 | 0 | 0 | |
| 267 | Abc | Overlock mode: Interrupt the start count<br>And seam end initiation by light barrier uncovered | | 1 | 0 | 0 | |
| 268 | SEL | Speed limitation via "select". (F290=55 & F290=74) | | 1 | 0 | 0 | |
| 269 | PSv | Positioning shift | Incr. | 100 | 0 | 10 | |
| 270 | PGm | Mode for position sensor<br>0 = No external sensor. Positions are created via the sensor integrated in the motor.<br>5 = No position sensor available. The drive stops unpositioned. The thread trimmer function is suppressed with this setting.<br>6 = With external sensor (e.g. IPG, HSM...). | | 6 | 0 | 0 | |
| 272 | trr | Transmission ratio between motor shaft and machine shaft (calculation formula see instruction manual!)<br>**The transmission ratio should be determined and indicated as precisely as possible!** | | 40000 | 150 | 1000 | |
| 280 | kd1 | Delay time output M1 | ms | 5000 | 0 | 0 | |
| 281 | kt1 | ON period output M1 | ms | 5000 | 0 | 100 | |
| 282 | kd2 | Delay time output M2 | ms | 5000 | 0 | 100 | |
| 283 | kt2 | ON period output M2 | ms | 5000 | 0 | 100 | |
| 284 | kd3 | Delay time output M3 | ms | 5000 | 0 | 200 | |
| 285 | kt3 | ON period output M3 | ms | 5000 | 0 | 100 | |
| 286 | kd4 | Delay time output M4 | ms | 5000 | 0 | 300 | |
| 287 | kt4 | ON period output M4 | ms | 5000 | 0 | 100 | |
| 288 | kdF | Delay time until sewing foot On | ms | 5000 | 0 | 380 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 290 | FAm | Selection of machine specific **mode**<br><br>0 = **Lockstitch:**<br>(FA1, FA2, FA3, FA1+FA2): e.g. BrotherDürkopp Adler, Mitsubishi, Pfaff, Toyota<br>»Slide-in strips for V810/V820 =1/1«<br>1 = **No Function**<br>2 = **Lockstitch:** e.g. Singer (212 UTT)<br>»Slide-in strips for V810/V820 =1/1«<br>3 = **Lock stitch (medium duty, general):**<br>e.g. Dürkopp Adler, Juki, Pfaff, Sunstar, Golden Wheel<br>»Slide-in strips for V810/V820 =1/1«<br>4 = **Chainstitch** Union Special 34000, 36200<br>»Slide-in strips for V810/V820 =1/1«<br>5 = **Chainstitch general:**<br>M1, M2, M3 and M4 parallel sequence<br>»Slide-in strips for V810/V820 =5/3«<br>6 = **Chainstitch** with **tape cutter** and<br>**Fast scissors** and **M1 / M2** at the seam end<br>»Slide-in strips for V810/V820 =5/3«<br>7 = **Overlook**<br>»Slide-in strips for V810/V820 =7/5«<br>8 = **Backlatch:** Pegasus<br>»Slide-in strips for V810/V820 =7/5«<br>9 = **Backlatch:** Yamato<br>»Slide-in strips for V810/V820 =7/5«<br>10 = Union Special Lockstitch (63900AMZ)<br>»Slide-in strips for V810/V820 =1/1«<br>11-12= **No function**<br>13= **Lockstitch:** Pfaff (1425, 1525)<br>»Slide-in strips for V810/V820 = 1/1«<br>14 = **Lockstitch:** Juki (5550-6, 5550-7)<br>»Slide-in strips for V810/V820 =1/1«<br>15= Reserved<br>16= No function<br>17 = **Chainstitch:** Pegasus Stitchlock<br>»Slide-in strips for V810/V820 =5/3«<br>18-24= No function<br>25 = **Lockstitch:** Juki (LU2210/LU2260)<br>»Slide-in strips for V810/V820 =1/1«<br>26-36= No function<br>37 = **Union Special Bag Machine**<br>»Slide-in strips for V810/V820 =1/1«<br>38 = **Lockstitch:** HonYu Klasse HY-4410<br>»Slide-in strips for V810/V820 =1/1«<br>39-46=No function<br>47**= Hand-stitch machine:** Guta **Activation necessary!**<br>»Slide-in strips for V810/V820 = 4/4«<br>48-51= No function<br>52**= Lockstitch: Golden Wheel (8671)**<br>»Slide-in strips for V810/V820 = 5/5«<br>53 = **Lockstitch:** Juki (LU2810-6)<br>»Slide-in strips for V810/V820 =2/2«<br>54 = **No function**<br>55 = **Chainstitch with UTQ:** Yamato<br>»Slide-in strips for V810/V820 =13/17«<br>56 = **Strobe**l replacement St220 as mode 5 with end backtack<br>»Slide-in strips for V810/V820 =5/2«<br>57 = **Lock stitch:**Typical Kl. TW1-591 snaplock<br>»Slide-in strips for V810/V820 =5/2«<br>58 = **Lockstitch:** Juki PLC 2760<br>»Slide-in strips for V810/V820 =5/2«<br>59 = **Lockstitch:** DA class 768<br>»Slide-in strips for V810/V820 =5/2«<br>60 = **Lockstitch:** Typical class 1245<br>»Slide-in strips for V810/V820 =5/2«<br>61 = **Lockstitch:** Kaiser class 570/590<br>»Slide-in strips for V810/V820 =5/2«<br>62 = **Lockstitch:** Typical/Mauser Klasse 335<br>»Slide-in strips for V810/V820 =5/2« | 79 | 0 | 0 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 63 = **Lockstitch:** Juki DNU 1541-7<br>»Slide-in strips for V810/V820 =5/2«<br>64 = **No function**<br>65 = **Chainstitch:** Sagitta<br>»Slide-in strips for V810/V820 =5/2«<br>66 = **Chainstitch:** Strobel VTD 410EV<br>»Slide-in strips for V810/V820 =5/2«<br>67 = **Chainstitch:** Hengtai MP500»Slide-in strips for V810/V820 =5/2«<br>68 = **Lockstitch:** Typical/Mauser Klasse 333<br>»Slide-in strips for V810/820 =5/2«<br>69 = **Lockstitch:** Juki class 1760<br>»Slide-in strips for V810/820 =5/2«<br>70= Reserved<br>71= No function<br>72= CL205/CL204<br>»Slide-in strips for V810/820 =5/5«<br>73= Reserved<br>74= **Chainstitch:** Yamato VG<br>»Slide-in strips for V810/820 =5/5«<br>75= SHDA CL160-30<br>»Slide-in strips for V810/820 =5/5«<br>76= Reserved<br>77= Reserved<br>78=Golden Wheel CSR88914<br>»Slide-in strips for V810/820 =5/5«<br>79 Gute GT8700C<br>»Slide-in strips for V810/820 =5/5«<br><br>Other modes are selectable, however have the same functions as mode 0. | | | | | |
| 291 | 810 | Select slide-in strip number for the V810 control panel (illustration see instruction manual for part V810/V820.<br>At setting **0**, keys 1…4 are disabled. | | 13 | 0 | 1 | |
| 292 | 820 | Select slide-in strip number for the V820 control panel (illustration see instruction manual for part V810/V820.<br>At setting **0**, keys 1…0 are disabled. | | 17 | 0 | 1 | |
| 293 | tF1 | Selection of the input function using key (A) “F1” on the V810/V820 control panel<br>0 = Key F1 is disabled<br>1 = Needle up/down<br>2 = Needle up<br>3 = Single stitch (basting stitch)<br>4 = Full stitch<br>5 = Needle to position 2<br>6...12 = No function<br>13 = High lift for walking foot with speed limitation n10 (operational mode not stored)<br>14 = High lift for walking foot with speed limitation n10 (operational mode stored)<br>15 = Tape cutter / fast scissors (in chainstitch and overlock mode)<br>16 = Intermediate backtack/intermediate stitch condensing<br>17 = Stitch regulator suppression / recall<br>18 = No function<br>19 = Bobbin thread monitor<br>20..Rest = No function | | 100 | 0 | 17 | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 294 tF2 | **Selection of the input function using key (B) "F2" on the V810/V820 control panel**<br>Functions of the key as with parameter 293, but at setting **0** key F2 is disabled. | | 100 | 0 | 1 | |
| 297 mSO | **Custom signal**<br>0 = Function Off<br>1 = Signal is switched on whenever the light barrier is uncovered (Pa.131 =1) or covered (Pa 131 =0)<br>2 = Signal is switched on whenever the light barrier is covered (Pa.131 =1) or uncovered (Pa 131 =0)<br>3 = Signal switches on from the light barrier to the seam end.<br>4 = Signal M11 switches on like with setting 3. However, the signal M5 (machine running) is switched off during output M11. When signal M11 is issued, signal M6 (machine at standstill) is also immediately issued. | | 3 | 0 | 0 | |
| 298 nSo | Backtack synchronization On/Off | 1 | 0 | 0 | | |
| 299 nrS | Stitch locks speed | RPM | 3000 | 150 | 400 | |
| 328 ob | Changing function keys on the control panel<br>0 = All keys are locked<br>1 = All keys are released, key **E** + start backtack, key + end backtack (except mode 7)<br>2 = All keys are released, button **E** affects chain suction, button + impacts tape cutter (only in mode 7)<br>3 = Button E and button + no function<br>4 = 4 = Button E, + and – no function<br>5 = Button E affects soft start, button + impacts tape cutter and wiper<br>6 = Button E affects soft start, button + impacts tape cutter seat start /end | | 6 | 0 | 1 | |
| 340 1L | Lower switching threshold of input IN1 | % | 100 | 0 | 30 | |
| 341 1L | Upper switching threshold of input IN1 | % | 100 | 0 | 80 | |
| 342 2L | Lower switching threshold of input IN2 | % | 100 | 0 | 30 | |
| 343 2h | Upper switching threshold of input IN2 | % | 100 | 0 | 80 | |
| 344 3L | Lower switching threshold of input IN3 | % | 100 | 0 | 30 | |
| 345 3h | Upper switching threshold of input IN3 | % | 100 | 0 | 80 | |
| 346 4L | Lower switching threshold of input IN4 | % | 100 | 0 | 30 | |
| 347 4h | Upper switching threshold of input IN4 | % | 100 | 0 | 80 | |
| 348 5L | Lower switching threshold of input IN5 | % | 100 | 0 | 30 | |
| 349 5h | Upper switching threshold of input IN5 | % | 100 | 0 | 80 | |
| 350 6L | Lower switching threshold of input IN6 | % | 100 | 0 | 30 | |
| 351 6h | Upper switching threshold of input IN6 | % | 100 | 0 | 80 | |
| 352 7L | Lower switching threshold of input IN7 | % | 100 | 0 | 30 | |
| 353 7h | Upper switching threshold of input IN7 | % | 100 | 0 | 80 | |
| 360 11L | Lower switching threshold of input LSM | % | 100 | 0 | 50 | |
| 361 11h | Upper switching threshold of input LSM | % | 100 | 0 | 70 | |
| 362 15V | Switch +5V/+15V on B18<br>0 = +5V<br>1 = +15V | | 1 | 0 | 0 | |
| 363 Evr | Ratchet mech. Interlock on /off (F-290 = 58) | 1 | 0 | 0 | | B |
| 364 EWi | Ratcheting bracket mech. Interlock (F290 =58) | Degrees | 100 | 0 | 10 | B |
| 365 K4S | Switching Strobel class (F-290 =56)<br>0 = Standard Strobel machines<br>1 = Class 45<br>2 = VEB100-7 band cutter fixture | | 2 | 0 | 0 | B |
| 369 FSL | Target setpoint via input PedalC with frequency (AB600A)<br>0 = AUS<br>1 = ON / PedalD =Enable<br>2 = ON / input function 54 = enable | 2 | 0 | 0 | | 369 |
| 370 n2 | Direct input of maximum speed | RPM | F-111 | F-121 | Display | |
| 374 nrd | Reset speed | rpm | 390 | 70 | 100 | B |
| 377 tFl | Time monitoring foot lifting | sec | 250 | 0 | 0 | B |
| 395 Sti | Stitch lock on /off (F-290 = 17) | 1 | 0 | 0 | B | 395 |
| 396 FSL | Target setpoint via input PedalC with frequency<br>0 = OFF<br>1 = ON / PedalD = Enable<br>2 = ON / input function 54 = Enable | 2 | 0 | 0 | 0 | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 401 EEP | Immediate storage of all changed data<br>- Input code number 3112 after power On<br>- Press the E key<br>- -Input parameter 401<br>- Press the E key<br>- Set display from 0 to 1<br>- Press the E or P key<br>- All data are stored | | 1 | 0 | 0 | |
| 451 P1E | - Start position 1 "Needle lowest position"<br>See Section **Fehler! Verweisquelle konnte nicht gefunden werden.** Setting the Positions (Parameter 270 = 0 or 6) | | 359 | 0 | | |
| 452 P1A | - End position 1 "Needle lowest position"<br>See Section **Fehler! Verweisquelle konnte nicht gefunden werden.** Setting the Positions (Parameter 270 = 0 or 6) | | 359 | 0 | | |
| 453 P2E | - Start position 2 thread lever up" / "Needle rod OT"<br>See Section **Fehler! Verweisquelle konnte nicht gefunden werden.** Setting the Positions (Parameter 270 = 0 or 6) | | 359 | 0 | | |
| 454 P2A | - End position 2 thread lever up" / "Needle rod OT"<br>See Section **Fehler! Verweisquelle konnte nicht gefunden werden.** Setting the Positions (Parameter 270 = 0 or 6) | | 359 | 0 | | |
| 467 MOT | Selection of motor<br>1 = Efka DC1500 (512)<br>2 = Efka DC1550 (512)<br>3 = Efka DC1200 (512)<br>4 = Efka DC1250 (512)<br>5 = QE3760 (256) (Quick Rotan)<br>6 = QE5540 (256) (Quick Rotan)<br>7 = Reserved for machine manufacturers<br>8 = Reserved for machine manufacturers<br>9 = Efka DC1210<br>10 =Efka DC1230<br>11 =Reserved for machine manufacturers<br>12 =Reserved for machine manufacturers<br>13 =Reserved for machine manufacturers<br>14 =Efka DC1280<br>15 =Reserved for machine manufacturers<br>16 =Reserved for machine manufacturers<br>17 =Reserved for machine manufacturers<br>18 =Reserved for machine manufacturers<br>19 =Reserved for machine manufacturers<br>20 =Reserved for machine manufacturers<br>21 =Reserved for machine manufacturers | | 21 | 1 | 1 | |
| 500 Sir | Recall of Fast Installation Routine (SIR) (see chapter “Fast Installation Routine (SIR)” | | | | | |
| 510 | Transfer parameter settings from control to Memory Stick | | | | | |
| 511 | Transfer parameter settings from Memory Stick to control | | | | | |
| 512 | Compare control and Memory Stick parameter settings | | | | | |
| 513 | Delete parameter setting file from Memory Stick | | | | | |
| 527 | Transfer control software from Memory Stick to control | | | | | |
| 529 | Delete control software file from Memory Stick | | | | | |

| Parameters | Designation | Unit | Max | Min | Preset | Ind. |
|---|---|---|---|---|---|---|
| 550 in12 | Selection of input function on socket B22/3 for input 12<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 42 | 0 | 0 | |
| 551 in13 | Selection of input function on socket B22/4 for input 13<br>0 = No function<br>All other functions of the keys as with parameter 240 | | 42 | 0 | 0 | |
| 552 12L | Lower switching threshold of input IN12 | % | 100 | 0 | 30 | |
| 553 12h | Upper switching threshold of input IN12 | % | 100 | 0 | 80 | |
| 554 13L | Lower switching threshold of input IN13 | % | 100 | 0 | 30 | |
| 555 13h | Upper switching threshold of input IN13 | % | 100 | 0 | 80 | |
| 599 LrP | Last pilgrim backtack in positioning speed (n1) On/Off | 1 | 0 | 1 | | |
| 808 M4´ | Upper limit cycle M4 (2. Thread tension release) | % | 100 | 0 | 100 | |
| 820 FF1 | FlipFlop1 On/Off | | 1 | 0 | | |
| 821 FF2 | FlipFlop2 On/Off | | 1 | 0 | | |
| 822 FF3 | FlipFlop3 On/Off | | 1 | 0 | | |
| 823 F1R | FlipFlop1 Reset at thread end On/ Off | | 1 | 0 | | |
| 824 F2R | FlipFlop2 Reset at thread end On/Off | | 1 | 0 | | |
| 825 F3R | FlipFlop3 Reset at thread end On/Off | | 1 | 0 | | |
| 828 cPL | Counter until puller lowers | | 255 | 0 | | |
| 829 MPL | 0 = No function<br>1 = Always ventilate puller at the thread end | | 1 | 0 | | |
| 830 FF1 | Selecting the output for flip-flop function AFF1<br>0 = No output selected<br>1 = M1<br>2 = M2<br>3 = M3<br>4 = M4<br>5 = M5<br>6 = M6<br>7 = M7<br>8 = M8<br>9 = M9<br>10 = M10<br>11 = M11 | 11 | 0 | 0 | | |
| 831 FF2 | Selecting the output for flip-flop function AFF2<br>0 = No output selected<br>1 = M1<br>2 = M2<br>3 = M3<br>4 = M4<br>5 = M5<br>6 = M6<br>7 = M7<br>8 = M8<br>9 = M9<br>10 = M10<br>11 = M11 | 11 | 0 | 0 | | |
| 832 FF3 | Selecting the output for flip-flop function AFF3<br>0 = No output selected<br>1 = M1<br>2 = M2<br>3 = M3<br>4 = M4<br>5 = M5<br>6 = M6<br>7 = M7<br>8 = M8<br>9 = M9<br>10 = M10<br>11 = M11 | 11 | 0 | 0 | | |
| 833 epd | 0 = Function Off<br>1 = Pedal 2 release only from Pos. 1 | 0 | 1 | 0 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 902 | APt | Service routine to teach the analog pedal. Pedal forwards for standing operation | | | | 902 A | |
| 905 | u86 | User-defined function strips for V860<br>0 = Off (selection of function strip using F-292)<br>1 = User-defined function strips 1<br>2 = User-defined function strips 2<br>3 = User-defined function strips 3<br>4 = User-defined function strips 4<br>▪ User-defined function strips 5 | 5 | 0 | 0 | 905 u | |
| 911 | | High lift for walking foot - measurement value of potentiometer for minimum lift | | 255 | 0 | 0 | |
| 912 | | High lift for walking foot - measurement value of potentiometer for maximum lift | | 255 | 0 | 0 | |
| 939 | EnF | Storage for threading function F-290 =66 | | 1 | 0 | 0 | C |
| 944 | t20 | Full engagement time for indexed M4 | | ms | 600 | 0 | |
| 945 | t21 | Cycle M4 | | % | 100 | 0 | |

# 12 Error Displays

| On the control | Signification |
|---|---|
| **General Information** | |
| A1 | Pedal not in neutral position when turning the machine on |
| A2 | Machine run blockage |
| A3 | Reference position is not set |
| A6 | Light barrier monitoring |
| A7 | Bobbin thread monitor |
| A9 | No thread trimming mode available in parameter 290 |
| A10 | Security code missing |
| A11 | High lift foot for walking - measurement of the potis not permitted |
| A12 | The maximum speed configured cannot be reached at this transmission ratio |
| A16 | Error in preset parameter structure. |
| A17 | Error of serial EE PROM |
| A500 | Max. number of files (99) on Memory Stick exceeded |
| A501 | File not found on Memory Stick |
| A503 | Data on Memory Stick and in the control is not equal |
| A504 | Checksum error in file |
| A511 | Error reading/writing file |
| A512 | Error reading/writing file |
| | |
| C1 | Operating hours counter has reached or exceeded the service time |
| C2 | Fatal exception error |
| C3 | Program error |
| C4 | C4-001 10h test runs have elapsed, release missing |
| **USB error** | |
| D1 | USB Info |
| **Programming Functions and Values (Parameters)** | |
| Returns to 0000 or to last parameter number | Wrong code or parameter number input |

| Serious Condition | |
|---|---|
| E1 | The external pulse encoder e.g. IPG... is defective or not connected |
| E2 | Line voltage too low, or time between power Off and power On too short |
| E3 | Machine blocked or does not reach the desired speed |
| E4 | Control disturbed by deficient grounding or loose contact |
| E5 | Motor end level over-temperature |
| E7 | 24 V power supply unit overload |
| E8 | Too much data for the EEPROM or flash memory |
| E9 | EEPROM or flash memory defective. |
| E10 | End phase transistor short circuit(Output FL, VR, M1, M2, M3, oder M4) |
| E11 | Thermal overload of output stage transistor |
| E12 | Short-circuit on output M5 |
| E13 | Thread trimmer does not reach the end position |
| E14 | Power voltage too high: The power voltage is greater than 290 V eff.<br>(The DC motor cannot be started; if running, the motor is stopped without positioning. The motor is passively braked (runs down)! |
| E15 | Internal communications error with intermediate circuit |
| E16 | Power voltage too low: The power feed voltage was less than 120 V eff.<br>(The DC motor cannot be started, and the 24 V is turned off.) |
| E17 | Charging PTC too warm. The intermediate circuit could not be charged to the voltage needed.<br>Possible cause: Switching the controller on/off to many times within a short time.<br>Correction: Turn off controller and allow it to cool. (The duration of the cooling off phase depends on the ambient conditions and can take several minutes). |
| E18 | Intermediate circuit voltage greater than 450 V, braking resistance possibly failed |
| E19 | No motor connected, inverter defective, motor phase failed |
| E20 | Speed too high |
| E21 | Error in the 5 V power supply |
| E22 | EB401: Analog value outside the range |
| E23 | V860: Error during communication |
| E24 | Customer null point sensor not detected |
| E25 | IGM/HSM not detected |

| Programming and Data Transfer | |
|---|---|
| F1 | Parameter unavailable; wrong code number |
| F7 | RS232 Time out |
| F8 | RS232, error in data transfer, NAK received |
| | |
| **Hardware Disturbance** | |
| H1 | Commutation transmitter cord or frequency converter disturbed |
| H2 | Processor disturbed |
| | |
| | |

| Status messages | |
|---|---|
| WAIT | Cause: No control software loaded.<br>Solution 1: Software must be loaded with IF232 cable. |
| PROG | Cause: Controls updates the intermediate circuit processor. If no software update can be executed, this could also be an error of processor communication. Then the message appears every time it is switched on.<br>Solution 1: Software must be loaded with IF232 cable.<br>Solution 2: The controls must be sent in for repair. |

**For your notes:**

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