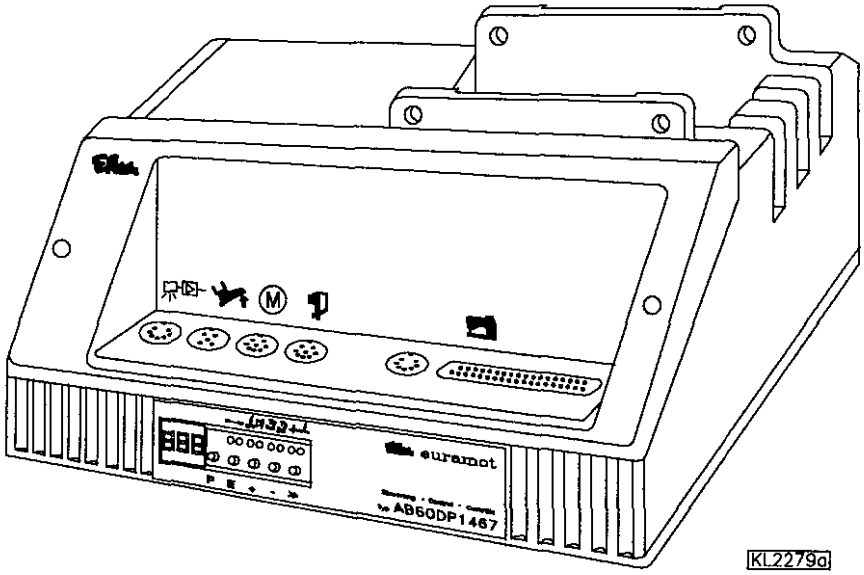
Efka euramot

CONTROL AB60D1467



PARAMETER LIST

CONNECTION DIAGRAM
TIMING DIAGRAMS

No. 402253 English

Efka FRANKL & KIRCHNER GMBH & CO KG

Efka EFKA OF AMERICA INC.

Efka EFKA ELECTRONIC MOTORS SINGAPORE PTE. LTD.

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1. Table of Adapter Cords

Setting the functional sequence by using Parameter 290										
Mode	**Designation**	**Adapter**	**Outputs**					**Inputs**		
	Power transistors = = >		**FL ST2/35**	**M1 ST2/37**	**M2 ST2/28**	**M3 ST2/27**	**ML ST2/32**	**in1 ST2/7**	**in3 ST2/6**	**in4 ST2/8**
0	**Lockstitch**; e.g.									
	Brother (737-113, 737-913)	1112814	FL	FA1 +	FA2	FW		-	NHT	-
	Aisin (AD3XX, AD158, 3310, EK1)	1112815	FL	FA1 +	FA2	FW		-	NHT	-
	Pfaff (563, 953, 1050, 1180)	1112841	FL	FA1	FA2	FW	ML	-	-	FLEX
	Dürkopp Adler (210, 270)	1112845	FL	FA1 +	FA2	FW			NHT	EST
1	**Lockstitch**; e.g. Singer (591, 211U,212U)	1112824	FL	-	FA2	FW		NHT	-	-
2	**Lockstitch**; e.g. Singer (212 UTT)	1112824	FL	-	FA	FSPL		NHT	-	-
3	**Lockstitch**; e.g. Dürkopp-Adler (467)		FL	FA	FSPL	FW	ML	NHT	-	-
4	**Chainstitch**; Union Special									
	(34000 and 36200 »replacement for US80A«)	1112865	FL	-	FA-V	FW	ML	LSP	LSP	ENTK
	(CS100 und FS100)	1112905	FL	-	FA-V	FW	ML	LSP	LSP	-
5	**Chainstitch**; parallel sequence									
	Yamato	1112818	FL	FA	-	FW		LSP	-	-
	Kansai (RX 9803)	1112819	FL	FA	-	FW	ML	LSP	-	-
	Pegasus (W500/UT)	1112821	FL	FA	FA	FW		LSP	-	-
	Brother (FD3 B257)	1112822	FL	FA	FA	FW		LSP	ENTK	-
	Global (CB2803-56)	1112866	FL	-	-	FA		LSP	-	-
	Rimoldi (F27)	1113096	FL	FW	FAO	FAU	ML	-	-	-
6	**Chainstitch**; tape cutter / fast scissors		FL	M1	AH1	AH2	ML	-	-	-
7	**Overlock**;		FL	M1	M2	AH	ML	-	-	-
8	**Backlatch**; Pegasus	1112827	-	PD≤-1	PD≥1	-		LSP	N.AUTO	-
9	**Backlatch**; Yamato (ABT3)	1112826	-	PD≤-1	PD≥1	-		LSP	N.AUTO	-
	Backlatch; Yamato (ABT13)	1112898	-	PD≤-1	PD≥1	-		LSP	N.AUTO	-
10	**Lockstitch**; e.g. Union Special (63900AMZ »replacement for US80A«)	1112823	FL	-	FA-V	FW	ML	-	-	-
11	**Reversal of the direction of rotation with pedal in pos. -2**		FL	DR-UK	PD=-2	ML	ML	N.POS	-	-
12	**Reversal of the direction of rotation with input in3**		FL	DR-UK	PD=0	ML	ML	N.POS	DR-UK	-
13	**Lockstitch**; Pfaff (1425)	1113072	FL	FA	FSPL	FW	ML	NH	POS2	DB
14	**Lockstitch**; e.g.									
	Juki (5550-6)	1112816	FL	FA1 + 2		FW		-	-	-
	Juki (5550-7)	1112817	FL	FA1 + 2	FZ	FW		-	-	-

Outputs:

FL	= Sewing foot lifting
FA1	= Thread trimmer pos 1...1A
FA2	= Thread trimmer pos. 1A...2
FA1 + 2	= Thread trimmer pos. 1...2
FSPL	= Thread tension release
FA-R/FA-V	= Thread trimmer backward/forward
ML	= Machine running
FW	= Thread wiper
AH/AH1/AH2	= Tape cutter/tape cutter 1/tape cutter 2
DR-UK	= Reversal of the direction of rotation
PD=0	= Pedal in position 0 (neutral)
FAO	= Needle thread trimmer
FAU	= Bobbin thread trimmer
FZ	= Thread puller
PD=-2	= Pedal step -2
PD≥1	= Pedal steps 1...12
PD≤-1	= Pedal steps -1 / -2

Inputs:

NHT	= Needel up/down
EST	= Single stitch
FLEX	= External sewing foot lift
N.POS	= Positioning speed
N.AUTO	= Automatic speed
LSP	= Machine run blockage (safety switch)
DR-UK	= Reversal of the direction of rotation
NH	= Needle up
POS2	= Run to position 2
DB	= Speed limitation n12
ENTK	= Unlock the chain

Explanation of abbreviations page 1 and chapter "Timing Diagrams"

2. Starting Service

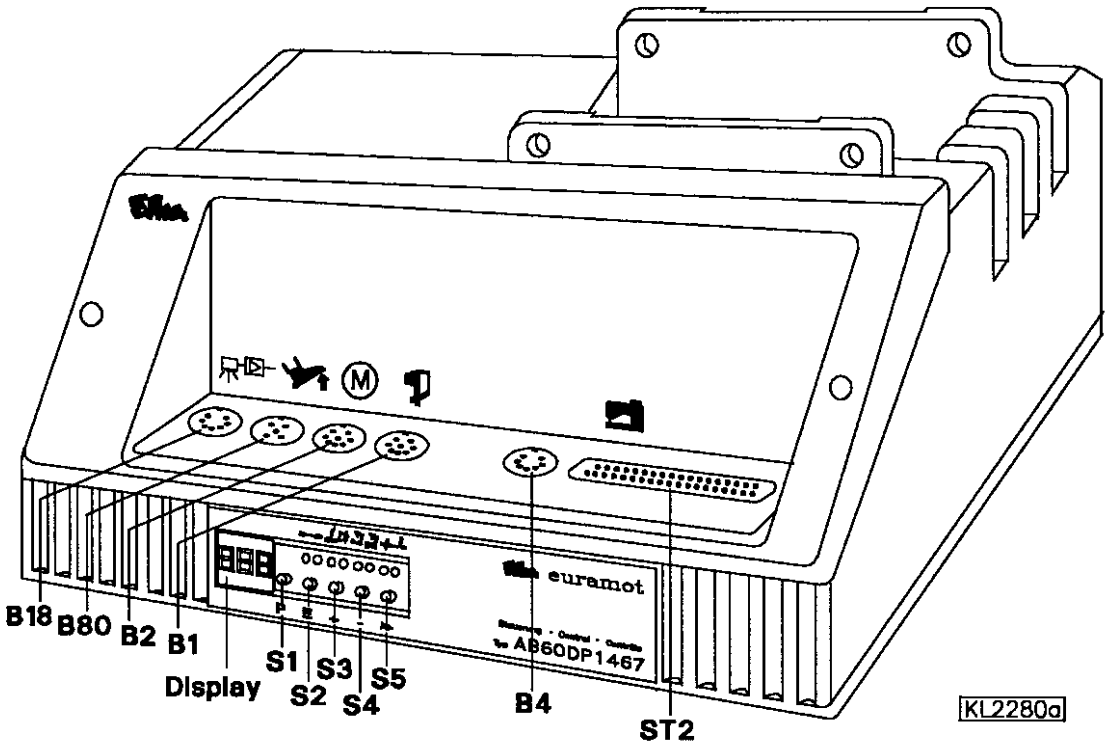
Before putting the control into operation, the following must be ensured, checked and/or adjusted:

- **The correct installation of the drive, the position transmitter and accompanying devices, if necessary**
- **The correct adjustment of the direction of rotation of the motor with parameter 161**
- **The correct selection of the trimming operation with parameter 290**
- **The correct selection of the functions of the pushbuttons (inputs) with parameters 240...249**
- **The correct positioning speed with parameter 110**
- **The correct maximum speed compatible with the sewing machine with parameter 111**
- **The setting of the positions**
- **The setting of the remaining relevant parameters**
- **Start sewing in order to save the set values**

See instruction manual for details!

3. Operating Elements and Socket Connectors

3.1 Position in the Control

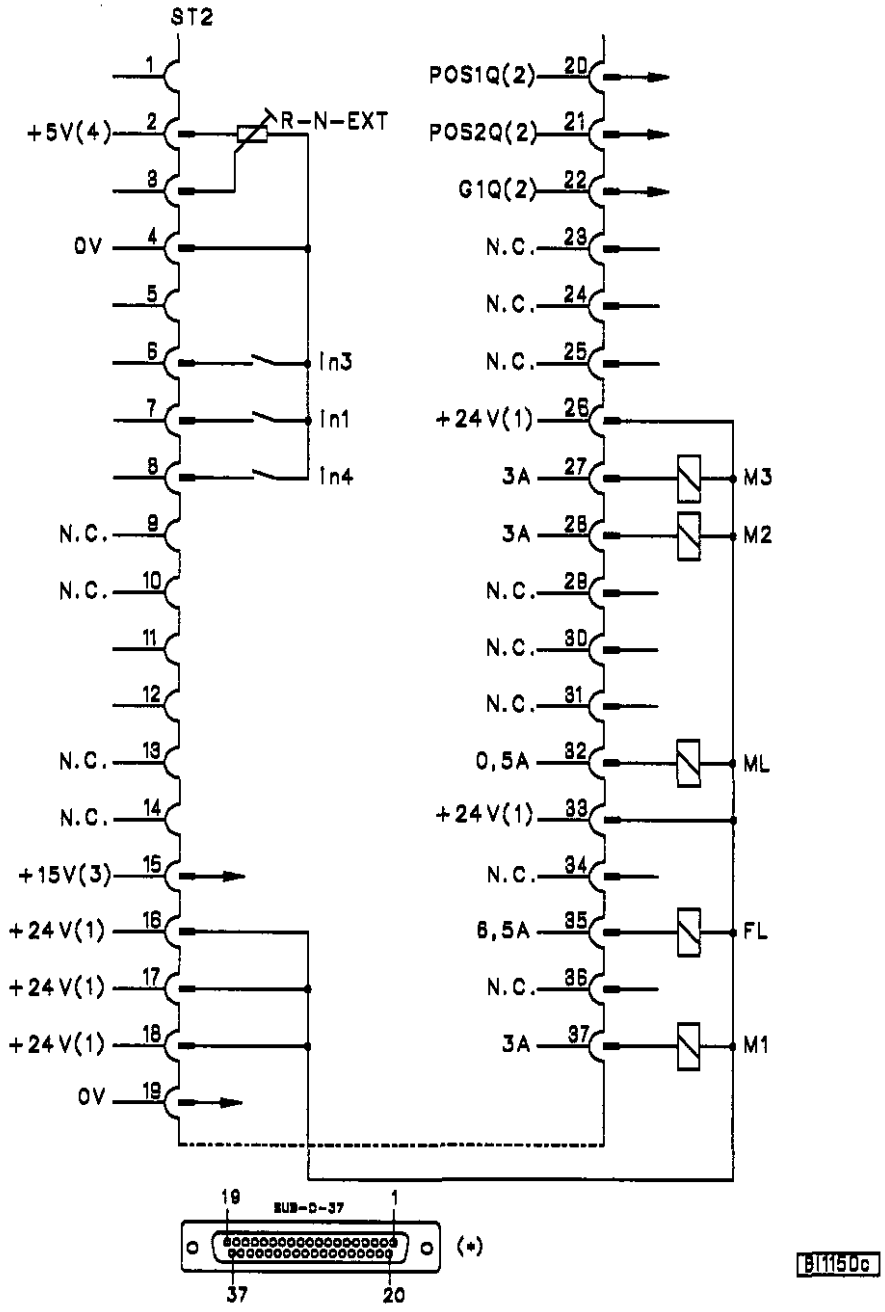


B1 - Position transmitter
B2 - Commutation transmitter for d.c. motor
B4 - Inputs for pushbuttons
B18 - Light barrier module
B80 - Actuator
ST2 - Inputs and outputs for solenoids / solenoid valves / displays / pushbuttons and switches

S1..S5 - Pushbuttons for programming and selection of functions
Display - 3 digits

3.2 Connection Diagram

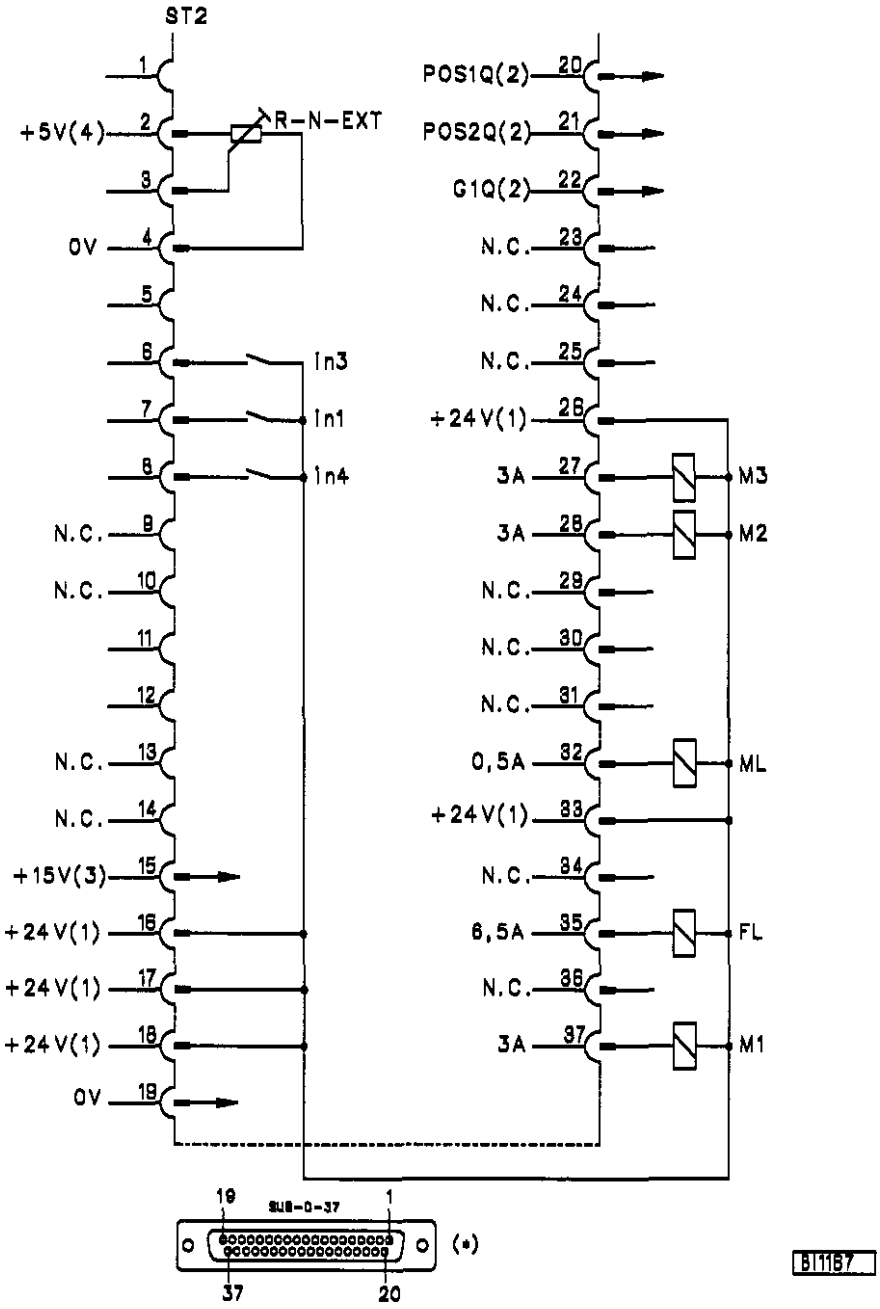
Inputs switched to 0V



Attention!
When connecting the outputs, ensure that a total power of 70VA constant load will not be exceeded !

in1	- Input 1	M1	- Output 1	POS1Q	- Position 1
in3	- Input 3	M2	- Output 2	POS2Q	- Position 2
in4	- Input 4	M3	- Output	GEN	- Generator impulses
R-N-EXT	- External potentiometer for speed limitation (50kΩ)	FL	- Sewing foot lifting		
		ML	- Machine running		

Inputs switched to +24V

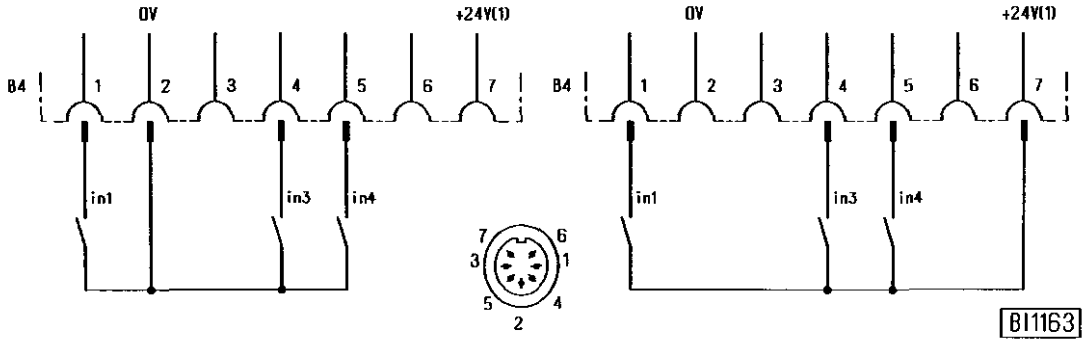


Attention!

When connecting the outputs, ensure that a total power of 70VA constant load will not be exceeded !

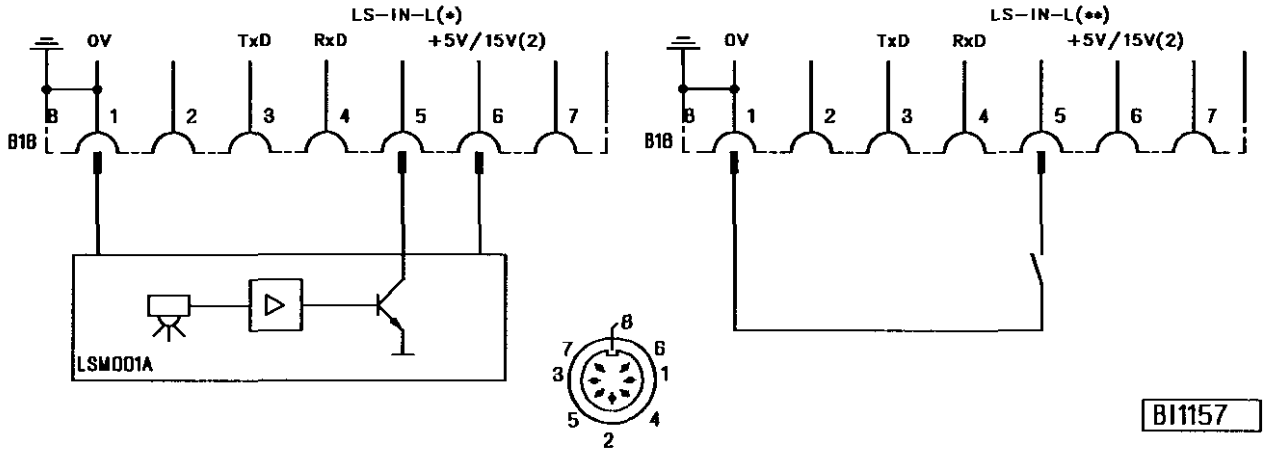
1) Nominal voltage 24V, no-load voltage max. 36V
2) Transistor output with open collector (max. 40V, 10mA)
3) Nominal voltage 15V, I_{max} = 30mA
4) Nominal voltage 5V, I_{max} = 20mA
*) Front view of the socket (component side) and/or rear view (soldering side) of the plug

Inputs switched to 0V **Inputs switched to +24V**



in1 - Input 1
in3 - Input 3
in4 - Input 4

The functions of the pushbuttons can be selected for all inputs in1, in3 and in4 of the sockets ST2 and B4 by parameters 240, 242 and 243.

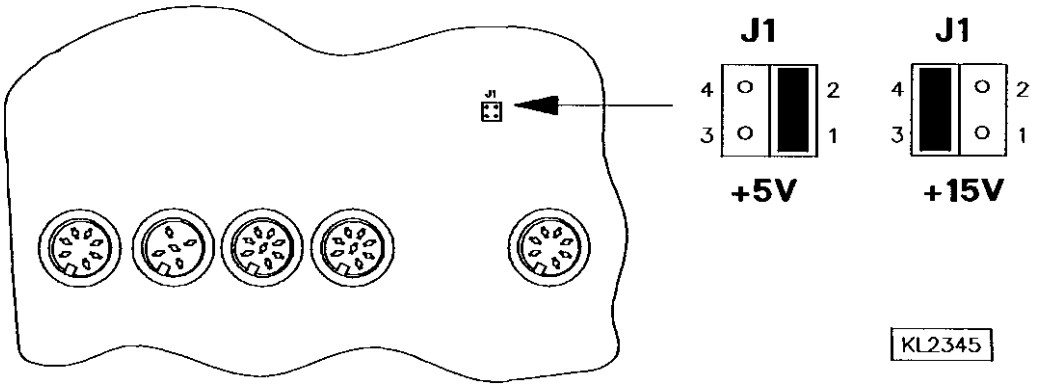


LSM001A - Reflection light barrier module

* - Parameter 239 = 0 => Light barrier function is selected (identified when switched to 0V)

** - Parameter 239 = 1...28 => Various input functions are possible on socket B18/5

+5V = Connect pins 1 and 2 right with jumper (factory setting)
+15V = Connect pins 3 and 4 left with jumper



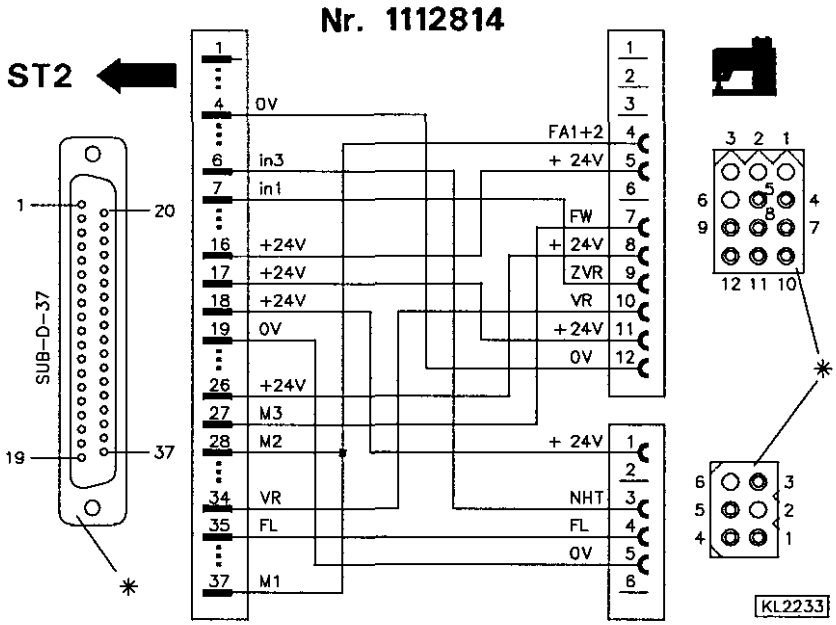
1) Nominal voltage 24V, no-load voltage max. 36V
2) Nominal voltage +5V, 100 mA (can be changed to 15V, 100 mA)

3.3 Adapter Cords

Note:
The following adapter cords contain connections that are not used by the control AB60D.
See chapter **Connection Diagram** of the sockets ST2 and B4 and compare the active inputs and outputs.

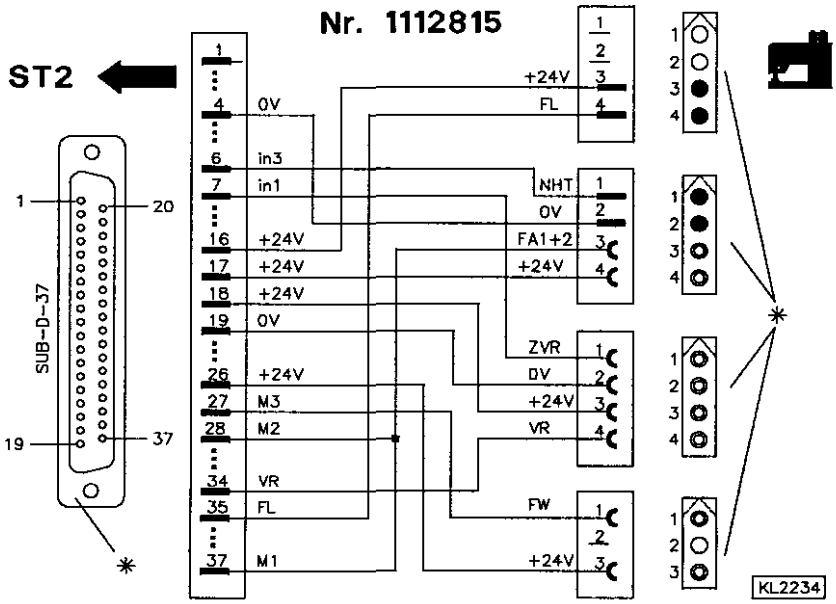
Adapter cord for BROTHER class 737-113 and 737-913

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 0**
Setting the functions of the pushbuttons	**Input in3**	**=> Parameter 242 = 1**



Adapter cord for AISIN classes AD3XX, AD158, 3310 and EK1

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 0**
Setting the functions of the pushbuttons	**Input in3**	**=> Parameter 242 = 1**



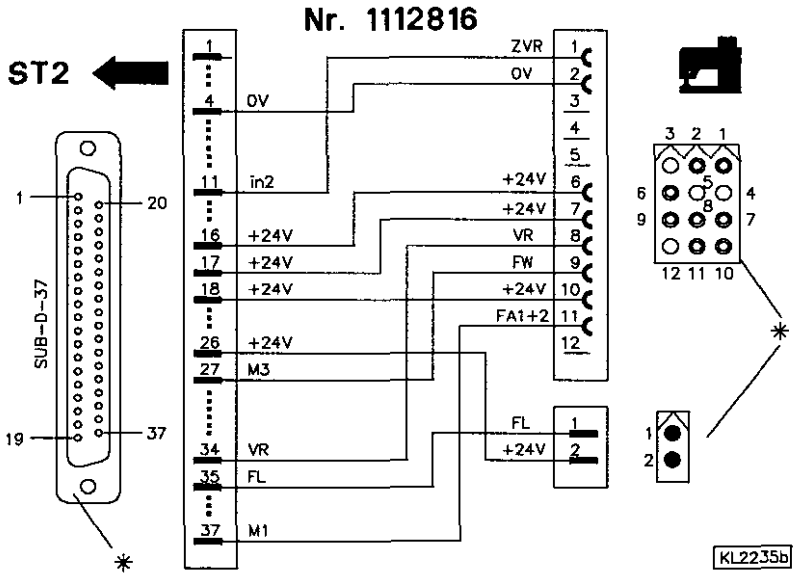
*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) of the remaining plugs/sockets.

Note

Adapter cords 1112816 and 1113132 can only be used for signals with sewing foot lift and thread trimmer. A manual backtack is possible only if one of the outputs M1...M3 is switched to a different function by means of the corresponding parameter and the pushbutton is connected to one of the inputs in1, in3 or in4 directly on the 37-pole plug. **Input in2 is not connected!**

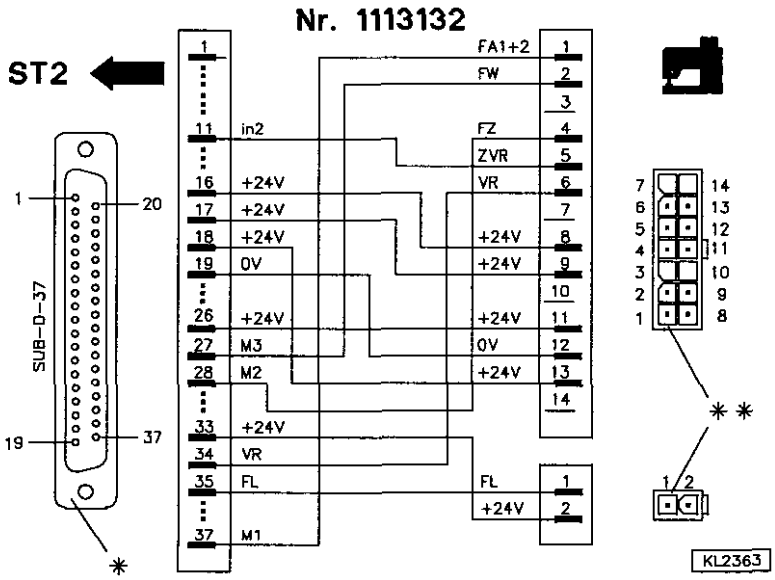
Adapter cord for JUKI class 5550-6

Setting the functional sequence	Thread trimming mode	=> Parameter 290 = 14



Adapter cord for JUKI class 5550-7

Setting the functional sequence	Thread trimming mode	=> Parameter 290 = 14

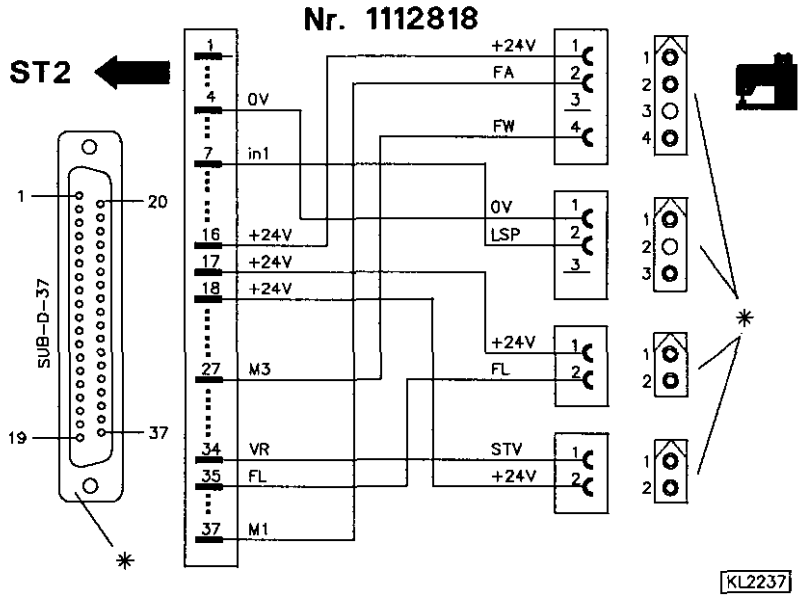


*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) of the remaining plugs/sockets.

**) Front view (component side) of the Molex Minifit plugs.

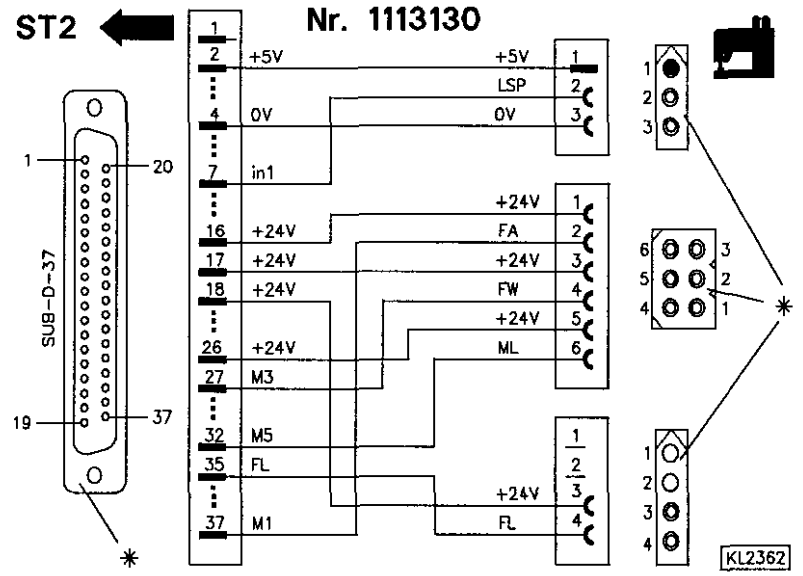
Adapter cord for YAMATO chain stitch machines

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 5**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 7**



Adapter cord for KANSAI class RX9803

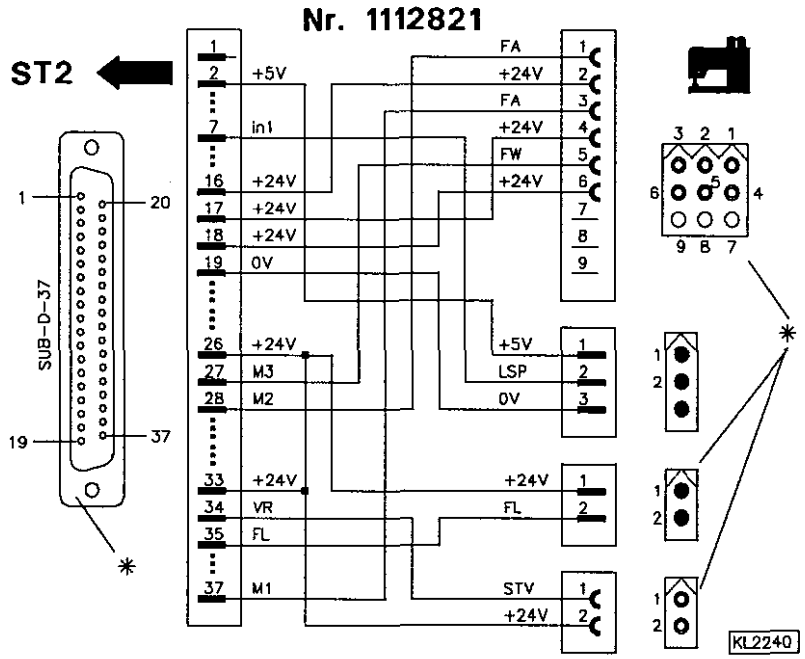
Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 5**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 7**



*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) of the remaining plugs/sockets.

Adapter cord for PEGASUS classes W500/UT, W600/UT/MS with or without stitch condensing

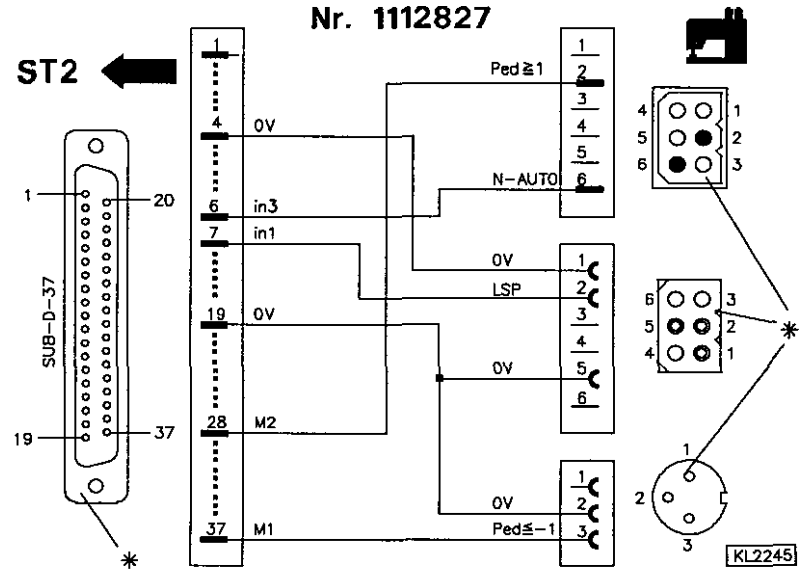
Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 5**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 7**



ATTENTION! **When using this adapter cord on a Pegasus machine, the 9-pole cord no. 742373-91 must be removed from the machine!**

Adapter cord for PEGASUS backlatch machines

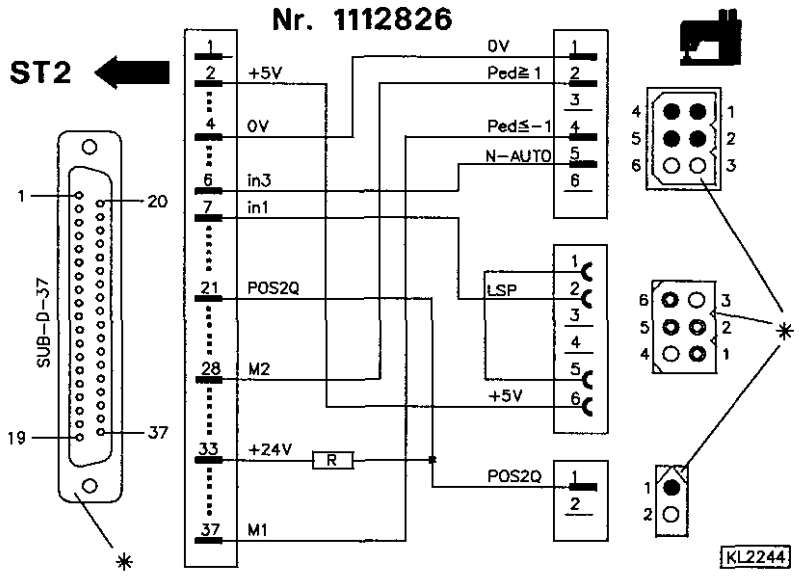
Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 8**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 6**
	Input in3	**=> Parameter 242 = 10**



*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) and/or rear view (soldering side) of the remaining plugs/sockets.

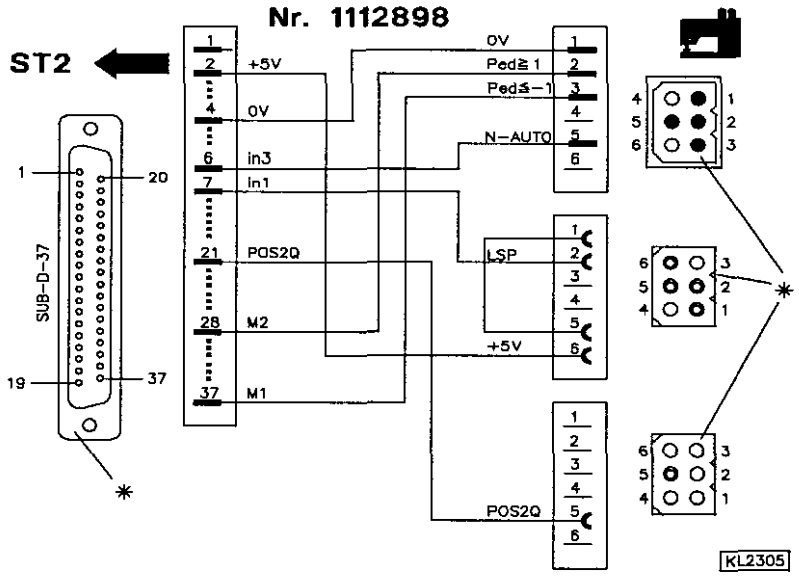
Adapter cord for YAMATO backlatch machines class ABT3

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 9**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 6**
	Input in3	**=> Parameter 242 = 10**



Adapter cord for YAMATO backlatch machines class ABT13

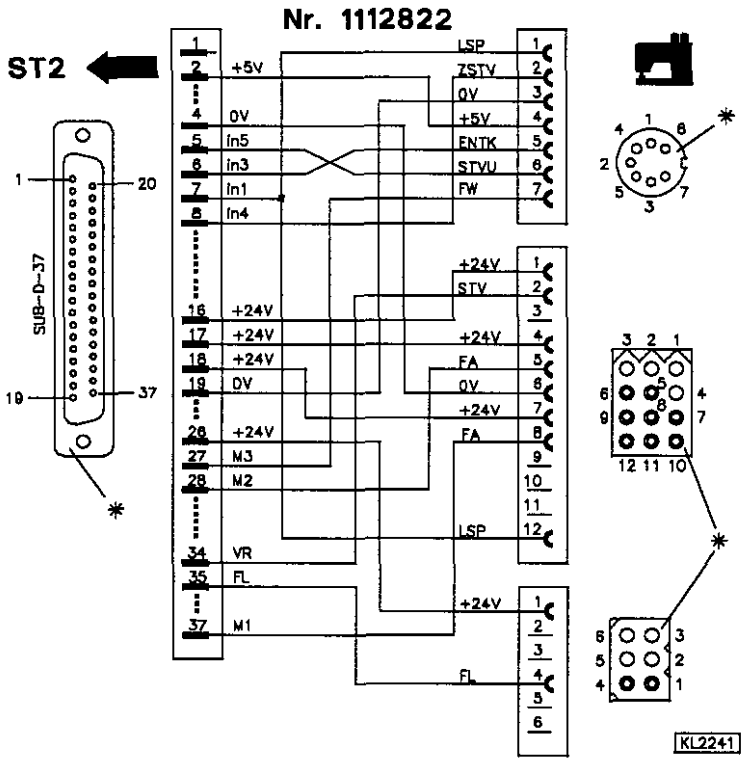
Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 9**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 6**
	Input in3	**=> Parameter 242 = 10**



*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) of the remaining plugs/sockets.

Adapter cord for BROTHER class FD3 B257

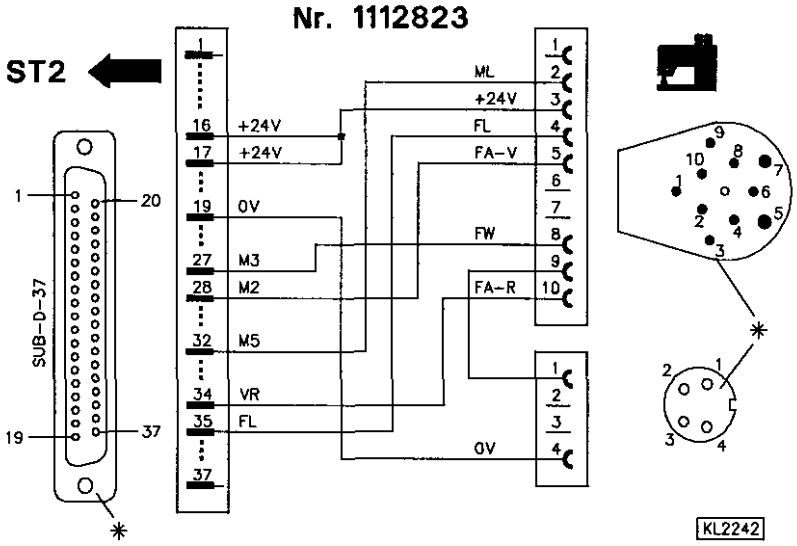
Setting the functional sequence	Thread trimming mode	=> Parameter 290 = 5
Setting the functions of the pushbuttons	Input in1	=> Parameter 240 = 7
	Input in3	=> Parameter 242 = 18



*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) and/or rear view (soldering side) of the remaining plugs/sockets.

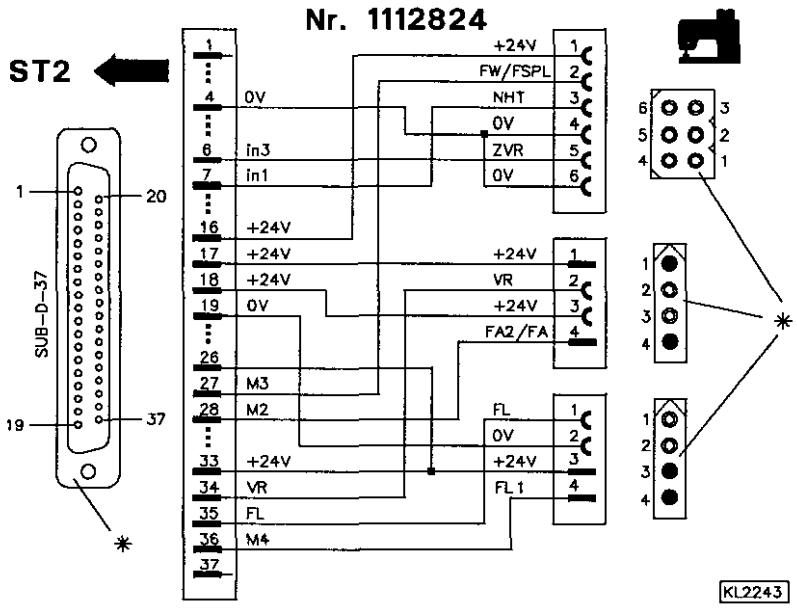
Adapter cord for UNION SPECIAL class 63900AMZ

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 10**



Adapter cord for SINGER classes 211, 212 and 591

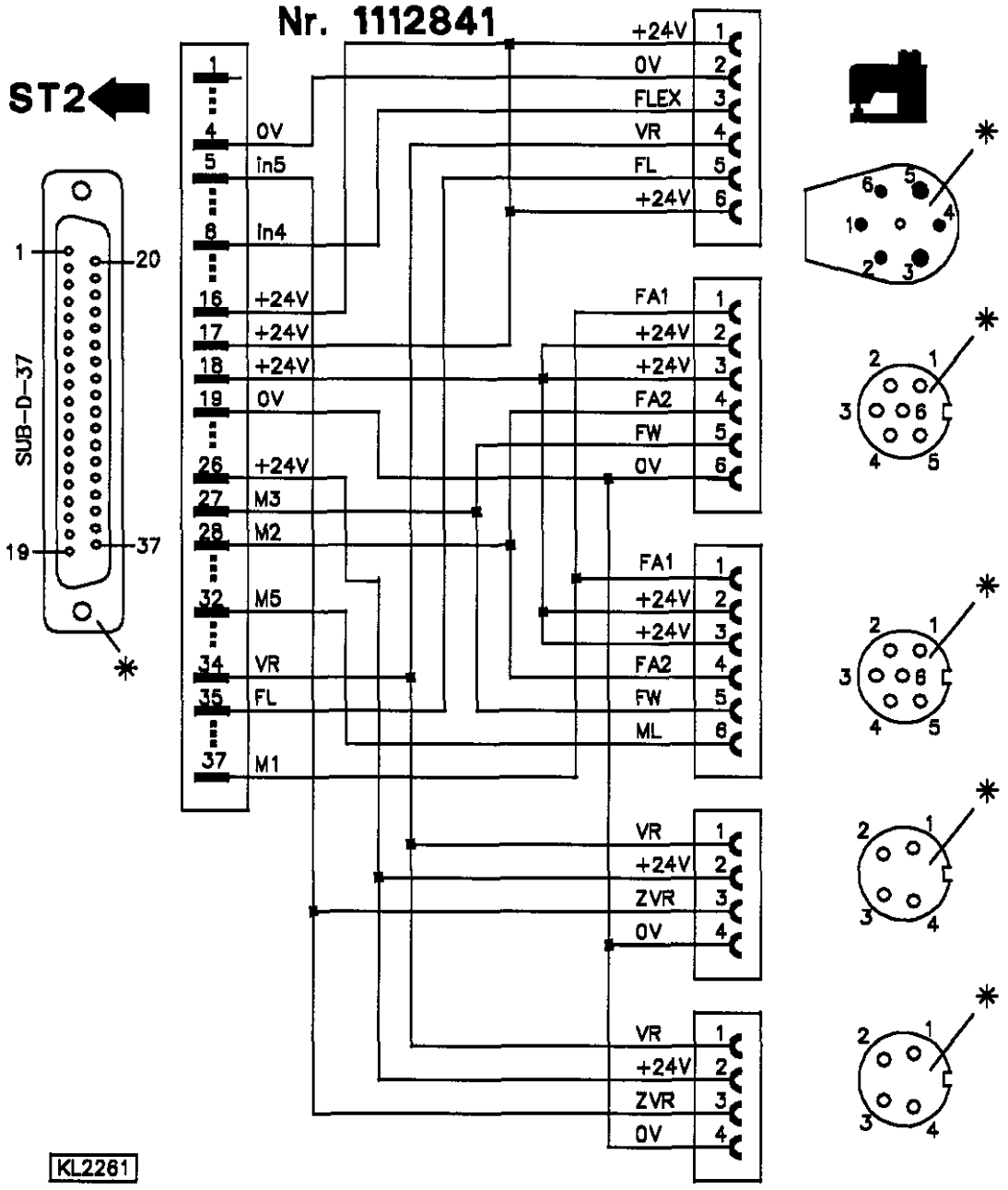
Setting the functional sequence (Singer cl. 591, 211U, 212U)	**Thread trimming mode**	**=> Parameter 290 = 1**
Setting the functional sequence (Singer cl. 212UTT)	**Thread trimming mode**	**=> Parameter 290 = 2**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 1**



*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) and/or rear view (soldering side) of the remaining plugs/sockets.

Adapter cord for PFAFF classes 563, 953, 1050, 1180 without thread monitor

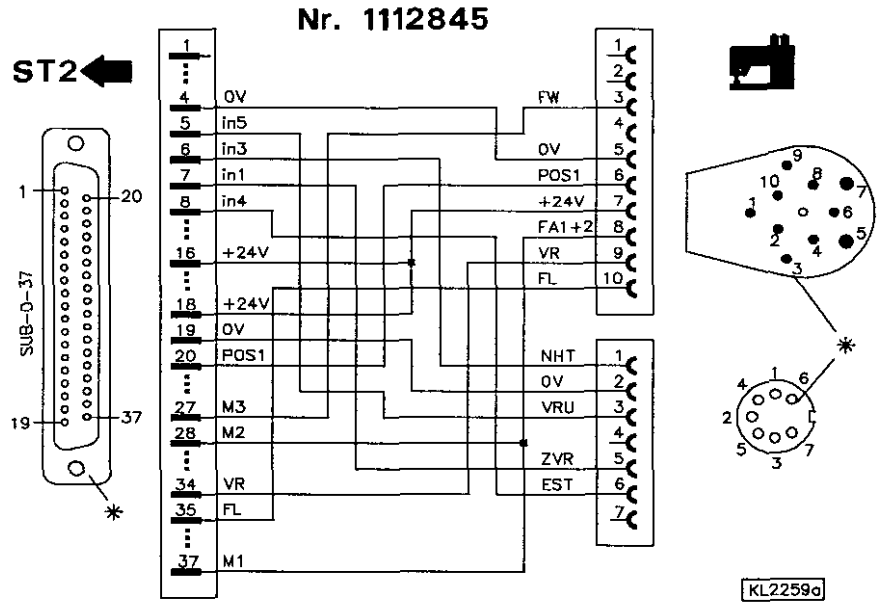
Setting the functional sequence	Thread trimming mode	=> Parameter 290 = 0
Setting the functions of the pushbuttons	Input in4	=> Parameter 243 = 12



*) Rear view (soldering side) of 37-pole plug (ST2) and the remaining sockets.

Adapter cord for DÜRKOPP ADLER classes 210, 270

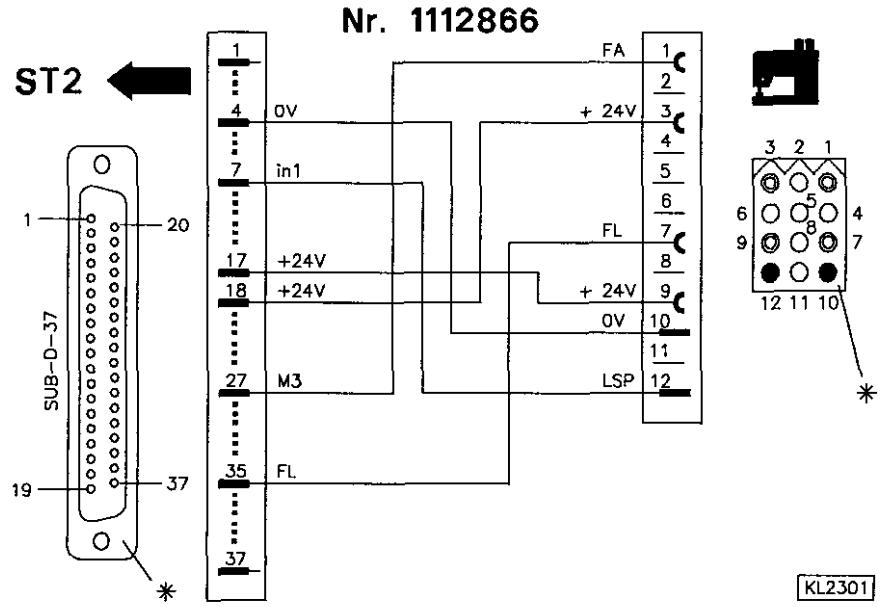
Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 0**
Setting the functions of the pushbuttons	**Input in3**	**=> Parameter 242 = 1**
	Input in4	**=> Parameter 243 = 3**



Note: The Dürkopp-Adler set of pushbuttons can be directly connected to control socket B4, and the corresponding input functions can be selected with parameter 240/242/243!

Adapter cord for GLOBAL class CB2803-56

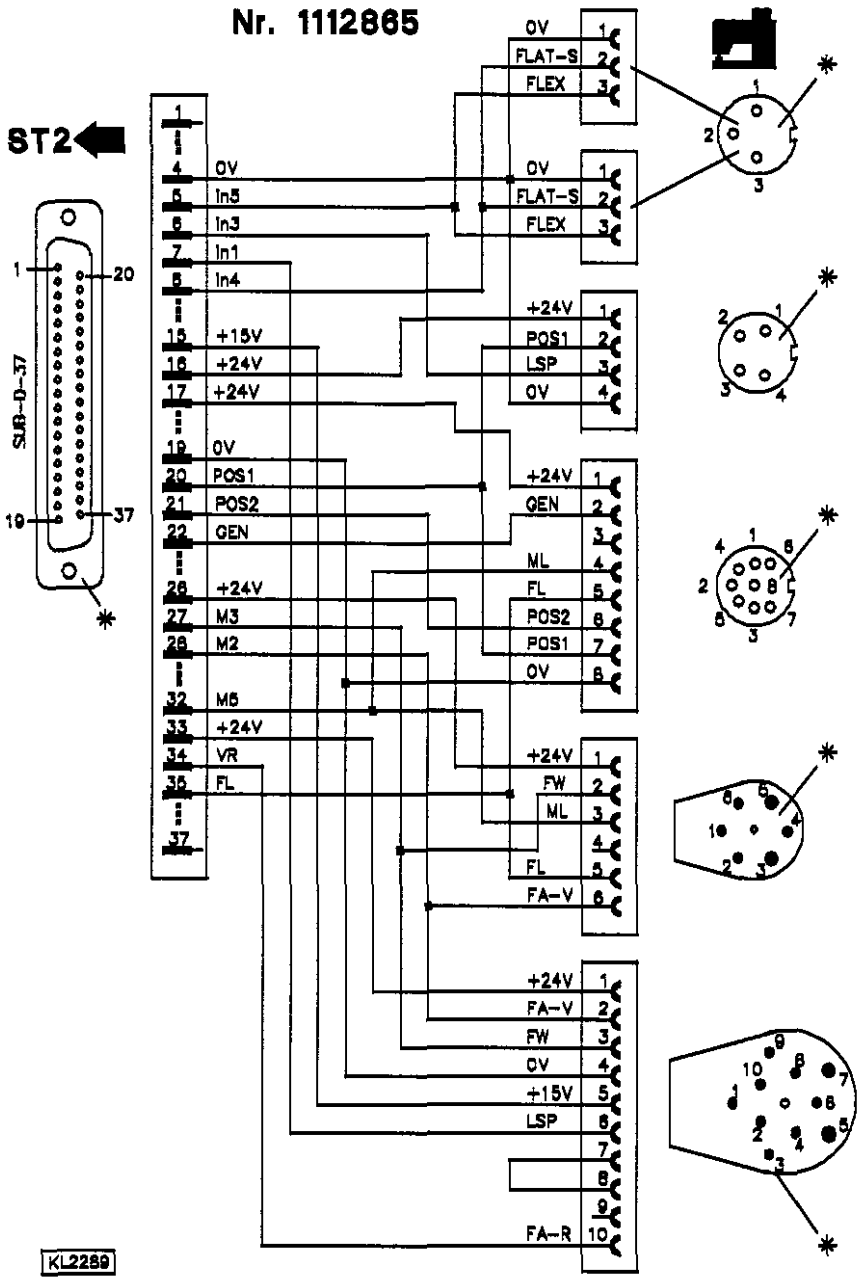
Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 5**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 6**



*) Rear view (soldering side) of 37-pole plug (ST2). Front view (component side) and/or rear view (soldering side) of the remaining plugs/sockets.

Adapter cord for UNION SPECIAL classes 34000 and 36200

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 4**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 6**
	Input in3	**=> Parameter 242 = 6**
	Input in4	**=> Parameter 243 = 18**

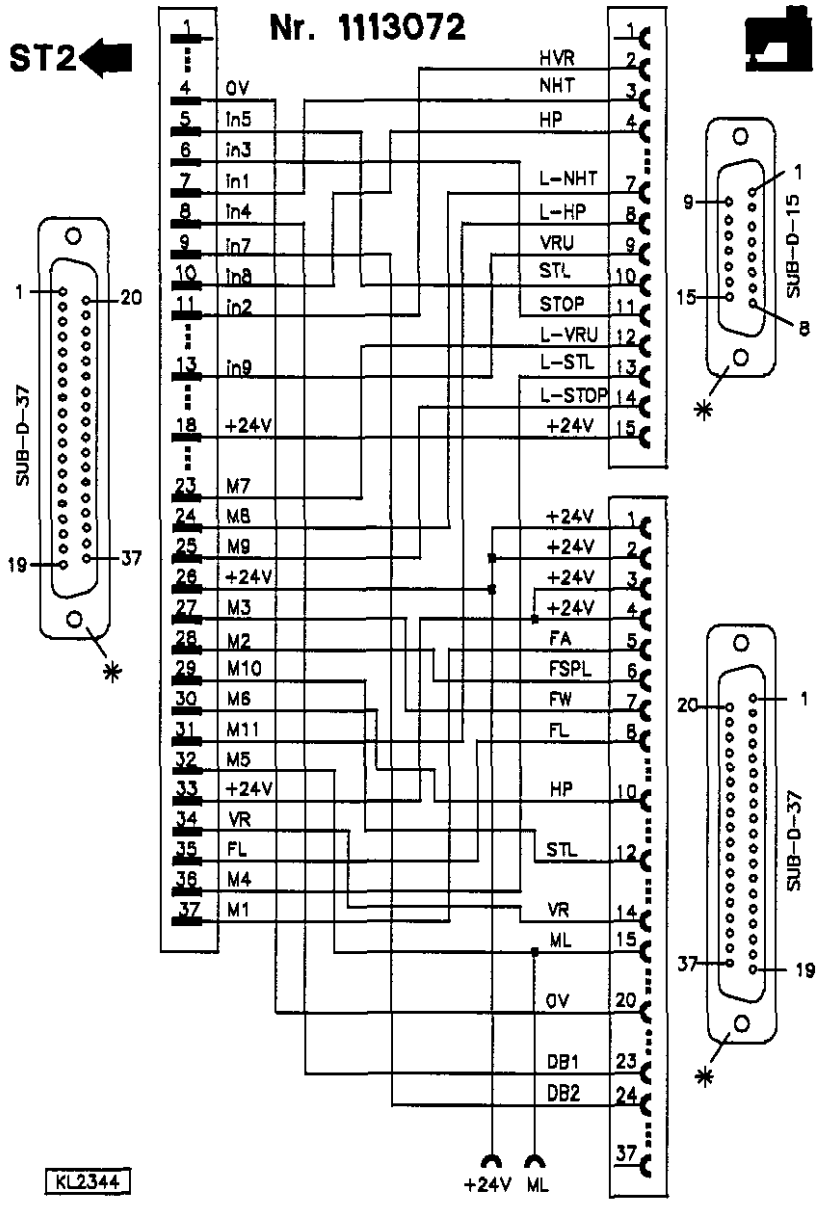


in1 = Input **machine run blockage** for thread trimming control proximity switch
in3 = Input **machine run blockage** for thread monitor
in4 = Input **unlocking the chain** corresponds to function **flatseamer (FLAT-S)**

*) Rear view (soldering side) of 37-pole plug (ST2) and the remaining sockets.

Adapter cord for PFAFF class 1425

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 13**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 2**
	Input in3	**=> Parameter 242 = 24**
	Input in4	**=> Parameter 243 = 11**



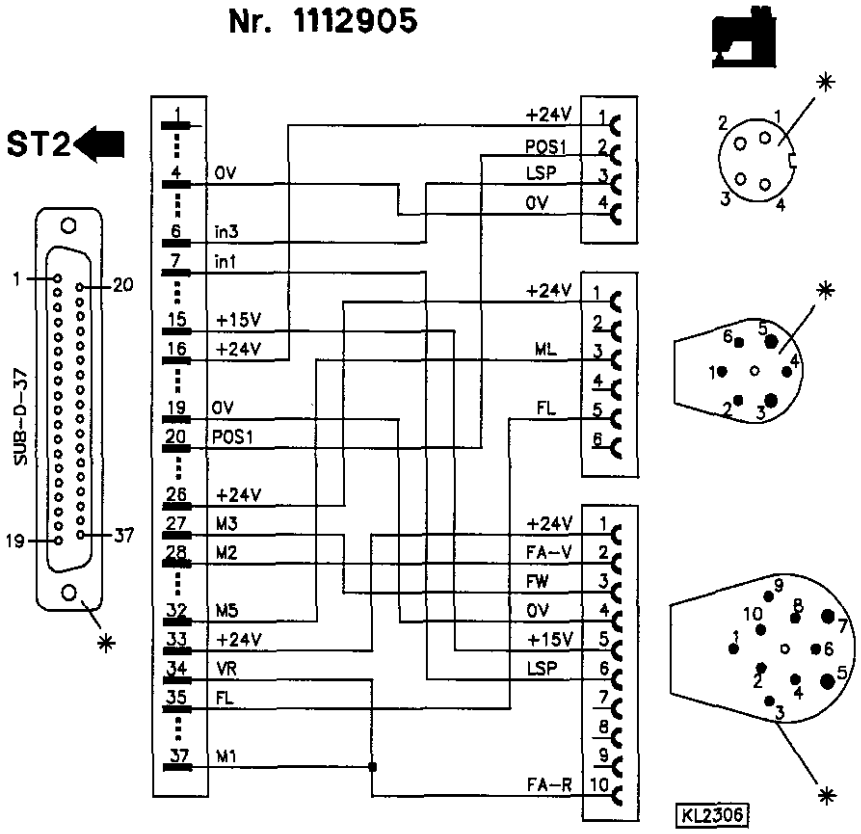
in1 = Input **needle up**
in3 = Input **needle moves from position 1 to position 2**
in4 = Input **speed limitation n12 with pedal**

*) Rear view (soldering side) of 37-pole plug (ST2) and the remaining sockets.

Adapter cord for UNION SPECIAL classes CS100 and FS100

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 4**
Setting the functions of the pushbuttons	**Input in1**	**=> Parameter 240 = 6**
	Input in3	**=> Parameter 242 = 6**

Nr. 1112905

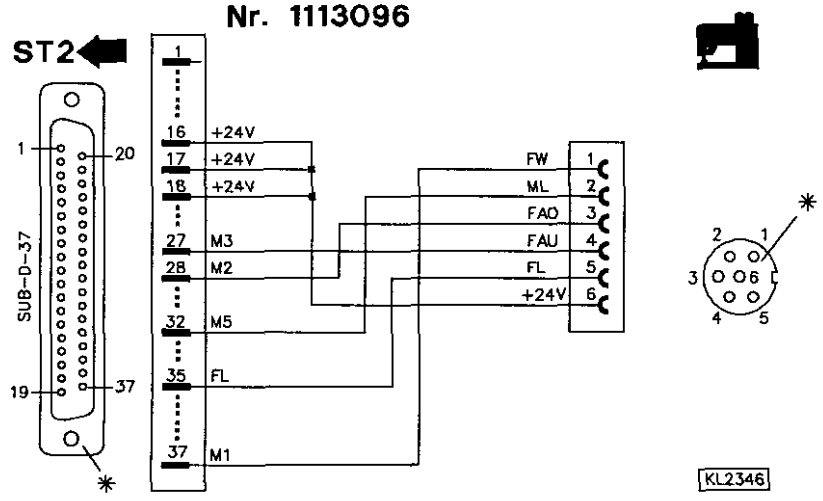


in1 = Input **machine run blockage** for thread trimming control proximity switch
in3 = Input **machine run blockage** for thread monitor

Adapter cord for RIMOLDI class F27

Setting the functional sequence	**Thread trimming mode**	**=> Parameter 290 = 5**

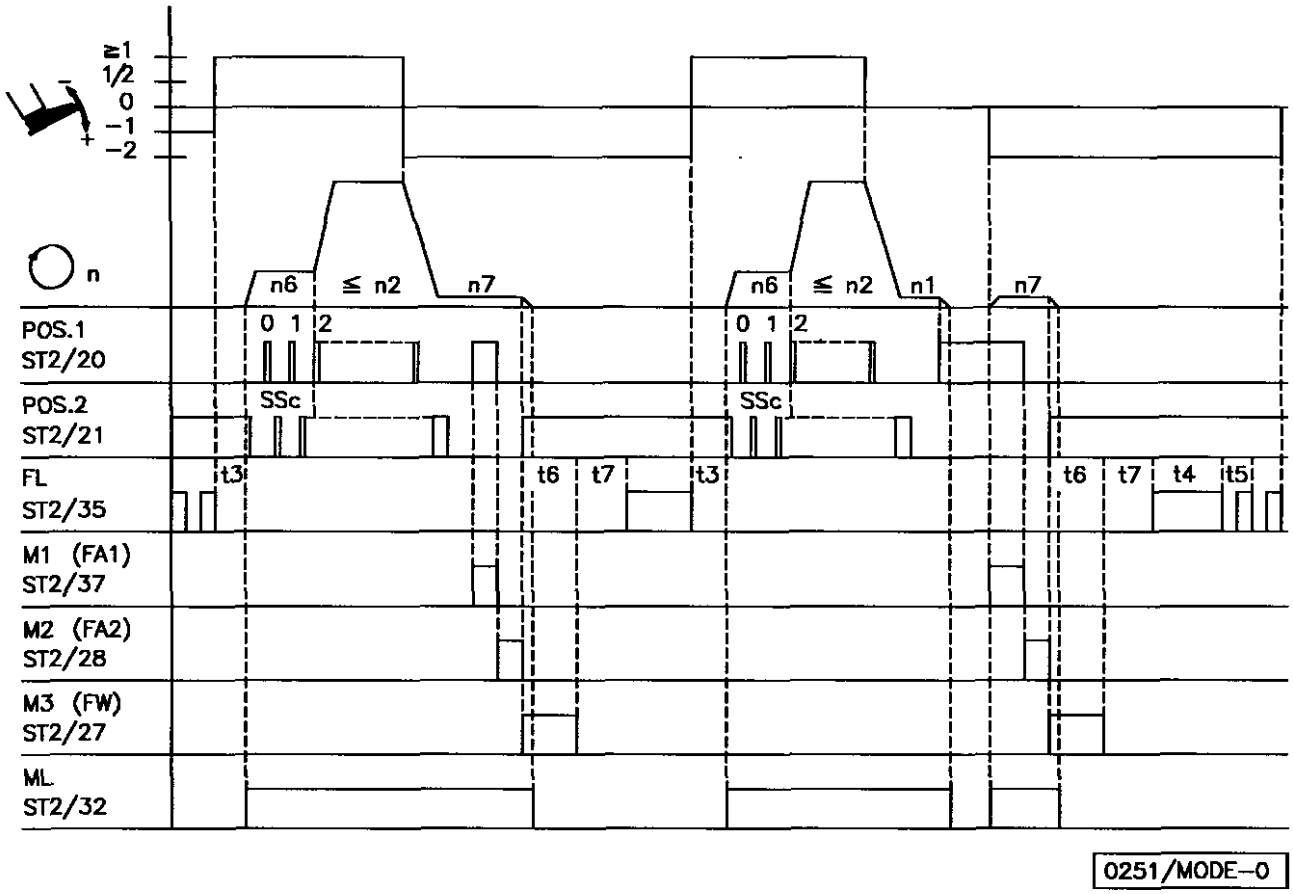
Nr. 1113096



*) Rear view (soldering side) of 37-pole plug (ST2) and the remaining sockets.

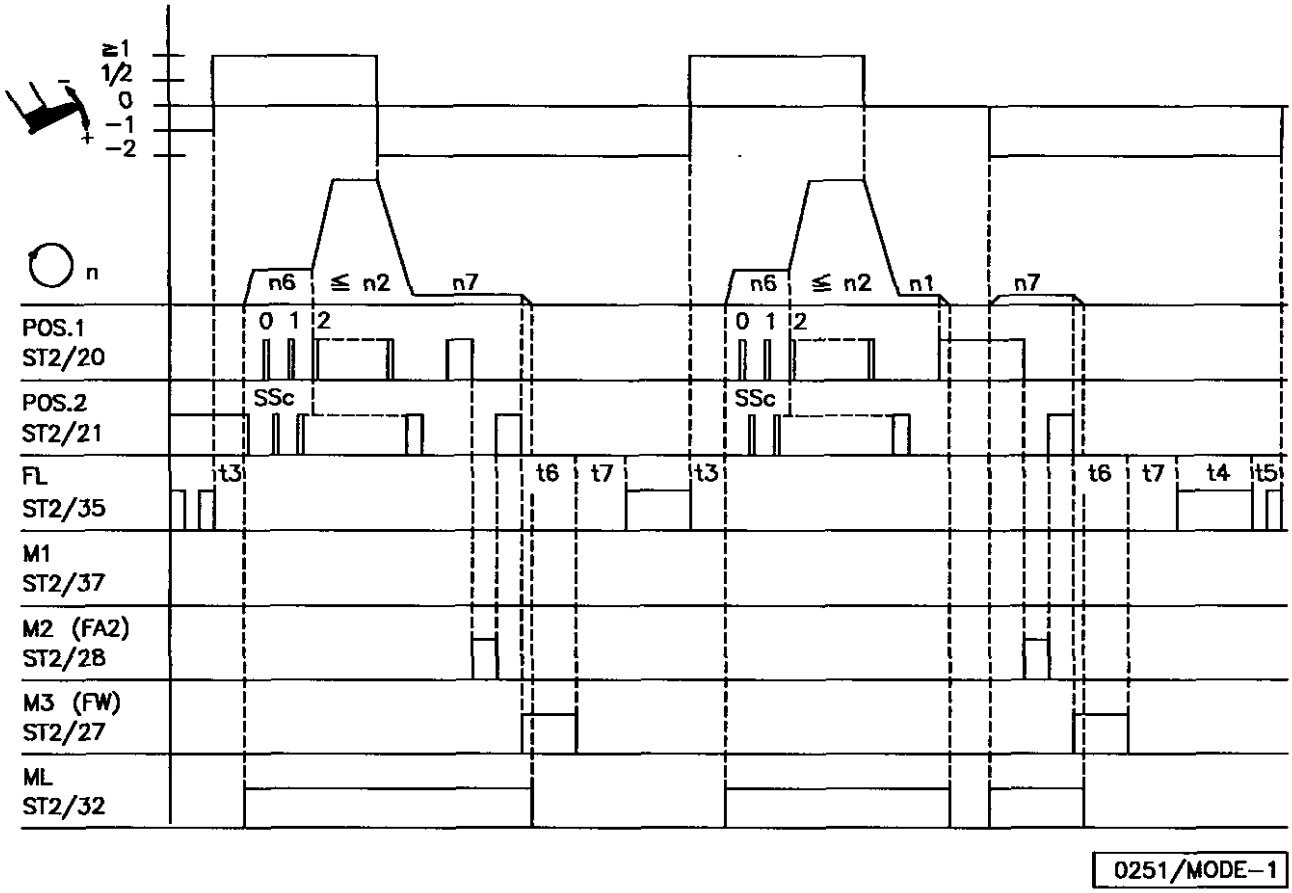
4. Timing Diagrams

Mode 0 (lockstitch)



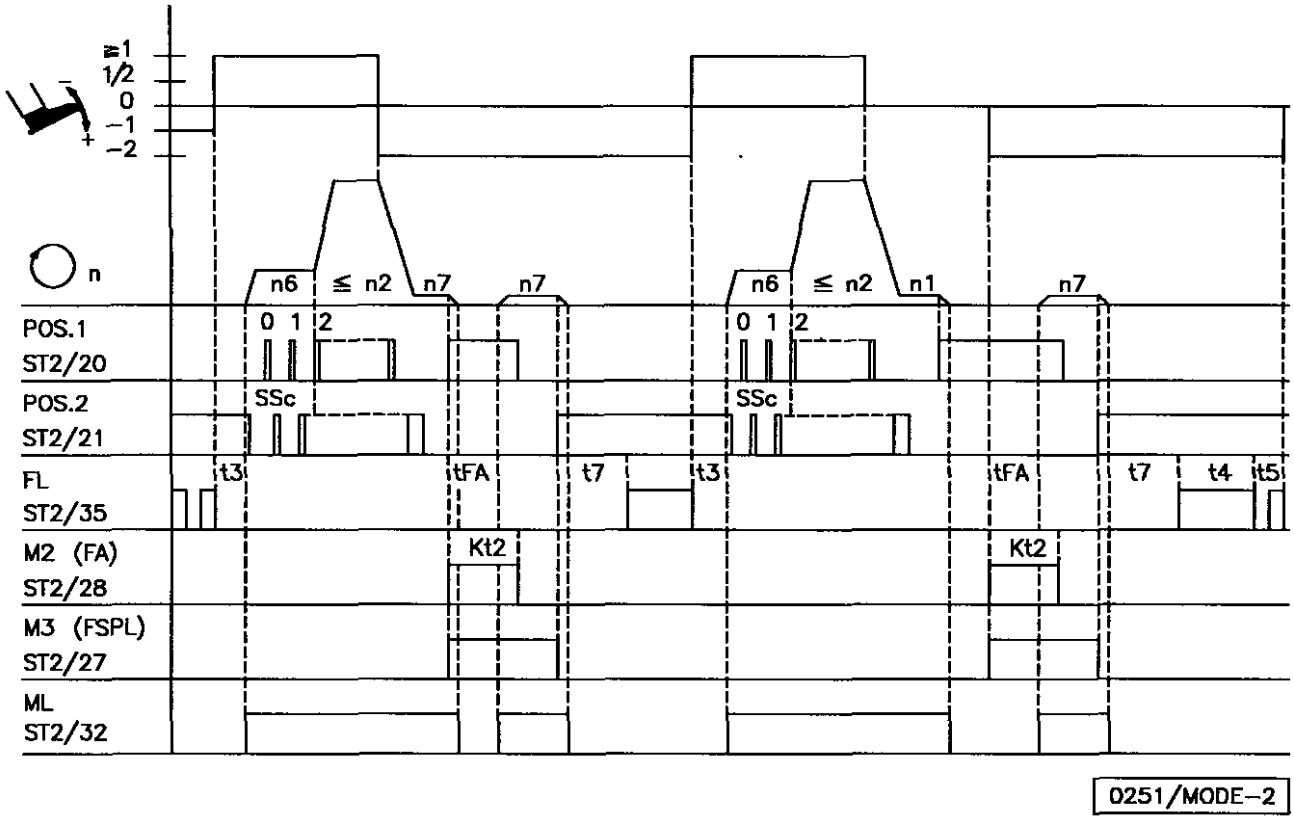
Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 0 Softstart On Thread trimmer and thread wiper On Signal M1 thread trimmer pos. 1...pos. 1A	290 = 0 145 = OFF	 Pushbutton S2 Pushbutton S3
n1 n2 n6 n7	Positioning speed Maximum speed Softstart speed Trimming speed	110 111 115 116	
t3 t4 t5 t6 t7 SSc	Start delay from lifted foot Full power of sewing foot lifting Pulsing of sewing foot lifting Activation time of thread wiper Activation delay of sewing foot after thread wiper Softstart stitches	202 203 204 205 206 100	

Mode 1 (lockstitch)



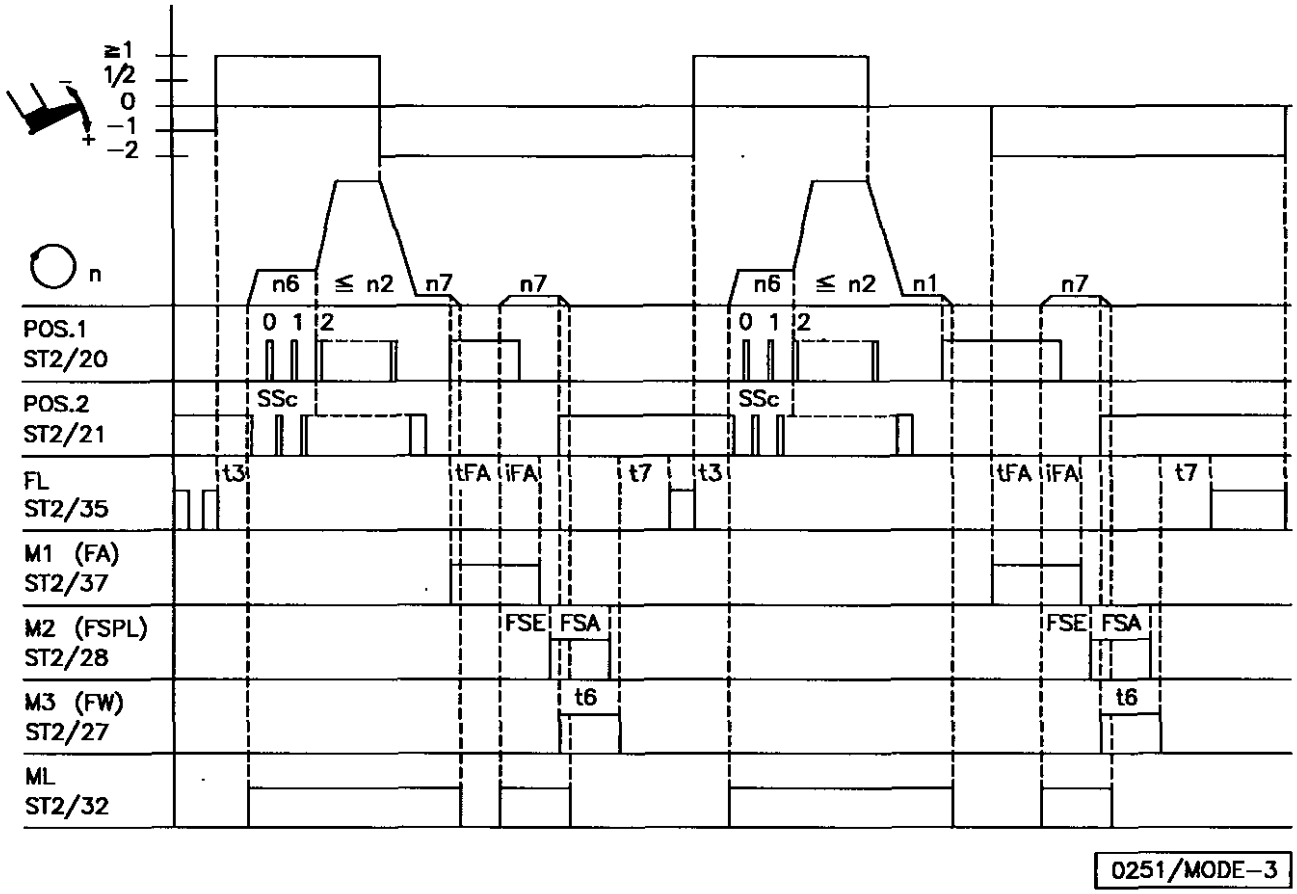
Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 1 Softstart On Thread trimmer and thread wiper On	290 = 1	 Pushbutton S2 Pushbutton S3
n1 n2 n6 n7	Positioning speed Maximum speed Softstart speed Trimming speed	110 111 115 116	
t3 t4 t5 t6 t7 SSc	Start delay from lifted foot Full power of sewing foot lifting Pulsing of sewing foot lifting Activation time of thread wiper Activation delay of sewing foot after thread wiper Softstart stitches	202 203 204 205 206 100	

Mode 2 (lockstitch)



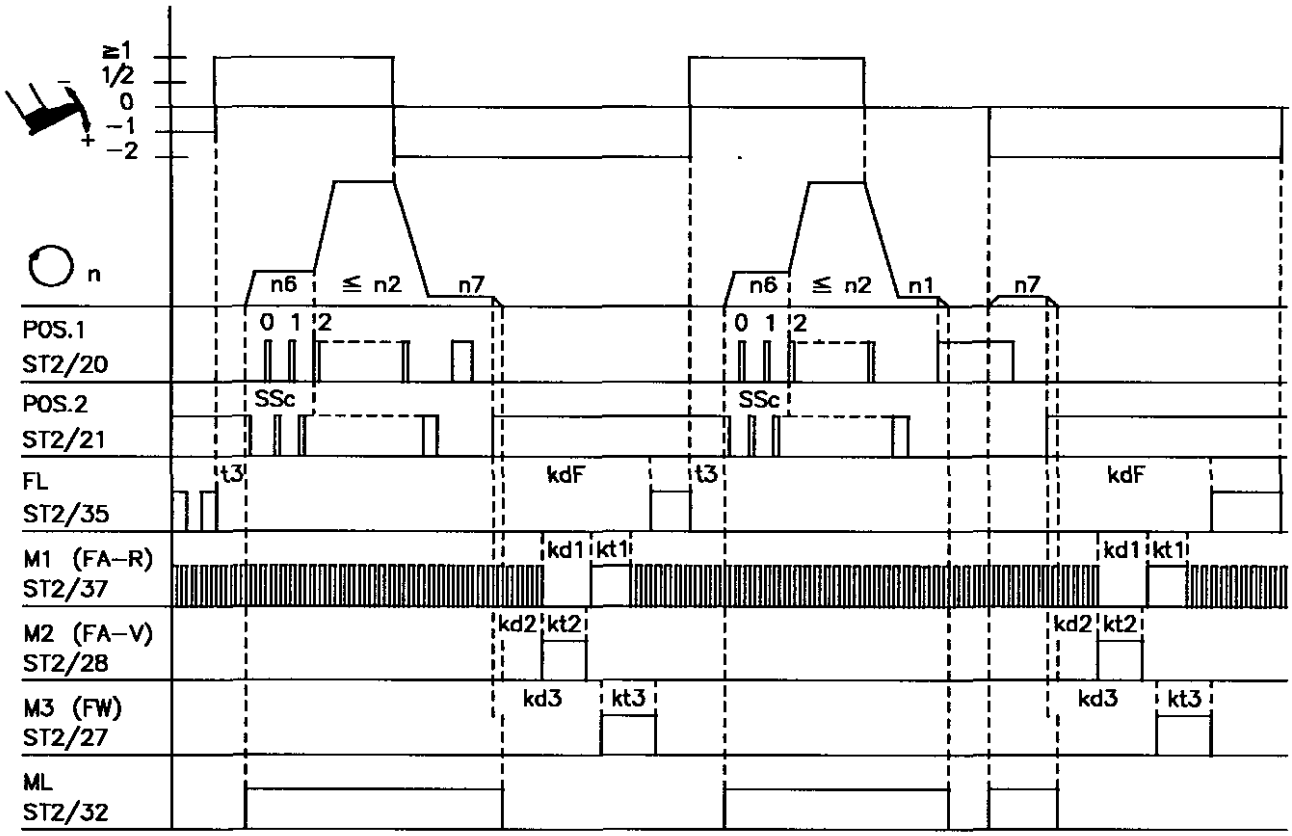
Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 2 Softstart On Thread trimmer and thread wiper On	290 = 2	 Pushbutton S2 Pushbutton S3
n1 n2 n6 n7	Positioning speed Maximum speed Softstart speed Trimming speed	110 111 115 116	
t3 t4 t5 t7 tFA kt2 SSc	Start delay from lifted foot Full power of sewing foot lifting Pulsing of sewing foot lifting Activation delay of sewing foot Stop time for thread trimmer Activation time output M1 Softstart stitches	202 203 204 206 253 283 100	

Mode 3 (lockstitch)



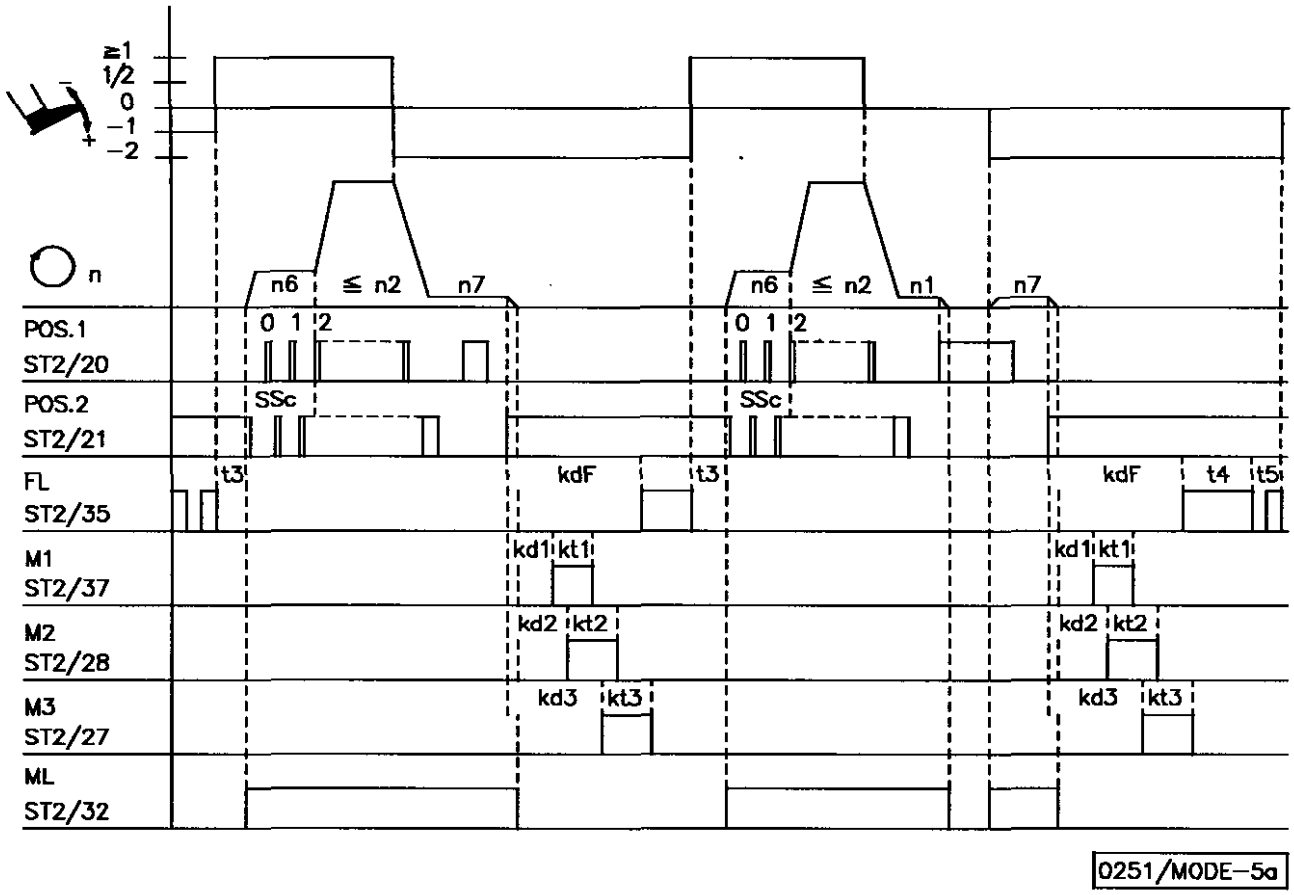
Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 3 Softstart On Thread trimmer and thread wiper On	290 = 3	 Pushbutton S2 Pushbutton S3
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t6	Activation time of thread wiper	205	
t7	Activation delay of sewing foot after thread wiper	206	
iFA	Activation angle of the thread trimmer	250	
FSA	Activation time of thread tension release	251	
FSE	Delay of thread tension release depending on angle	252	
tFA	Stop time for thread trimmer	253	
SSc	Softstart stitches	100	

Mode 4 (chainstitch)



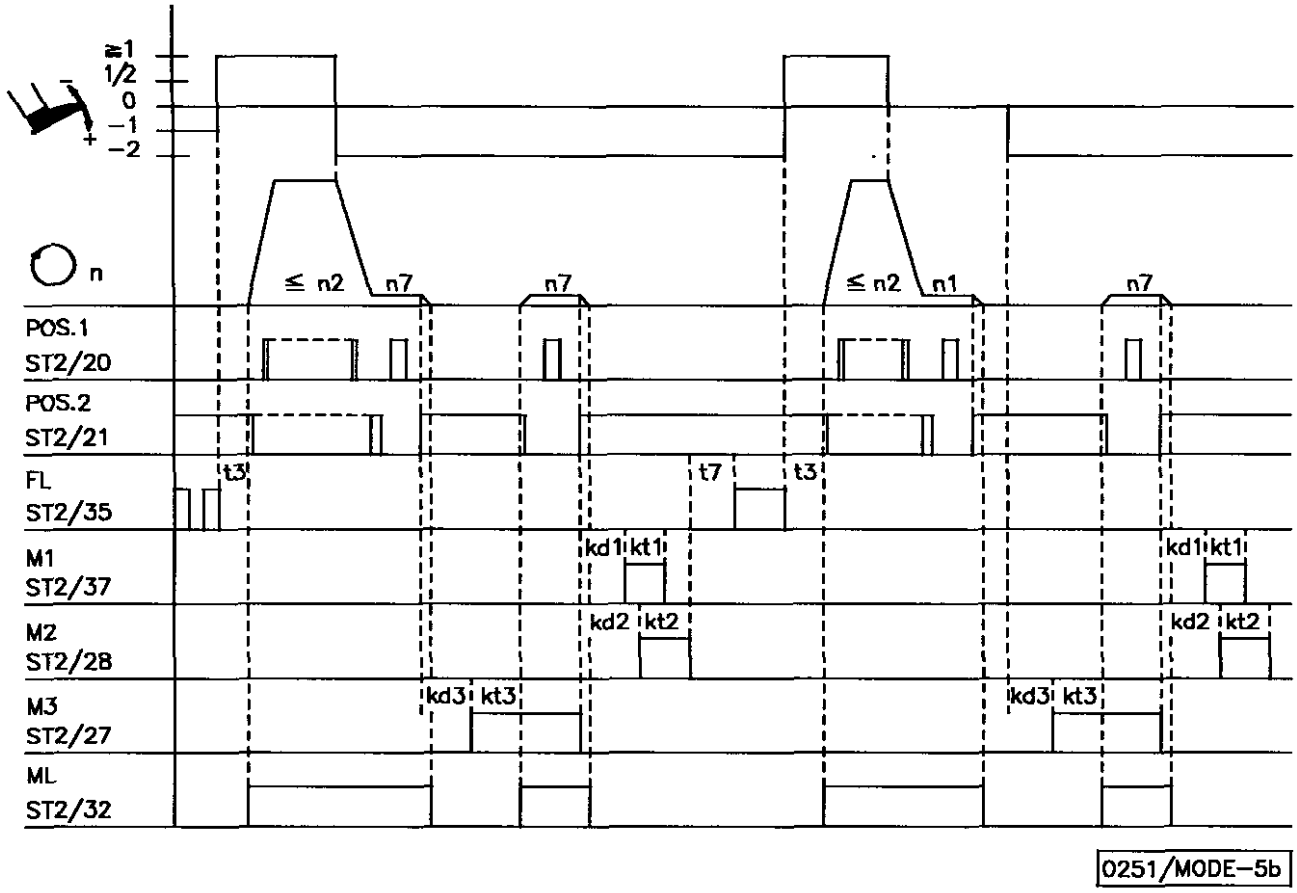
Abbreviation	Functions	Parameter	Pushbutton on the control
	Mode 4 Softstart On Thread trimmer and thread wiper On "Machine running" signal Off	290 = 4 147 = 0	 Pushbutton S2 Pushbutton S3
n1 n2 n6 n7	Positioning speed Maximum speed Softstart speed Trimming speed	110 111 115 116	
t3 kd1 kt1 kd2 kt2 kd3 kt3 kdF SSc	Start delay from lifted foot Delay time thread trimmer backward M1 Activation time thread trimmer backward M1 Delay time thread trimmer forward M2 Activation time thread trimmer forward M2 Delay time thread wiper M3 Activation time thread wiper M3 Delay time until sewing foot On Softstart stitches	202 280 281 282 283 284 285 288 100	

Mode 5 (chainstitch) parameter 196 = 0



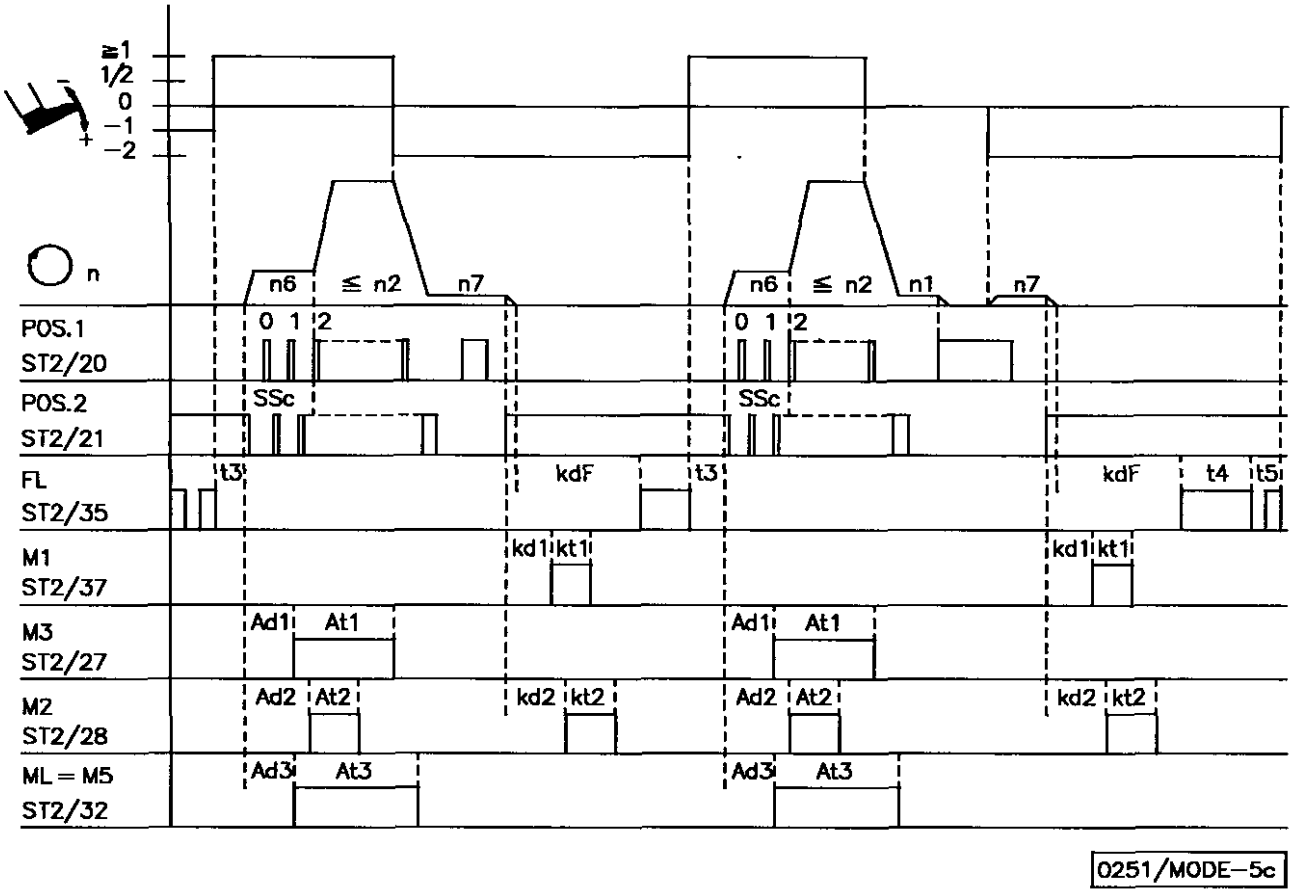
Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 5 Chainstitch in general Softstart On Thread trimmer and thread wiper On	290 = 5 196 = 0	 Pushbutton S2 Pushbutton S3
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
kd2	Delay time thread trimmer M2	282	
kt2	Activation time thread trimmer M2	283	
kd3	Delay time thread wiper M3	284	
kt3	Activation time thread wiper M3	285	
kdF	Delay time until sewing foot On	288	
SSc	Softstart stitches	100	

Mode 5 (chainstitch) parameter 196 = 1



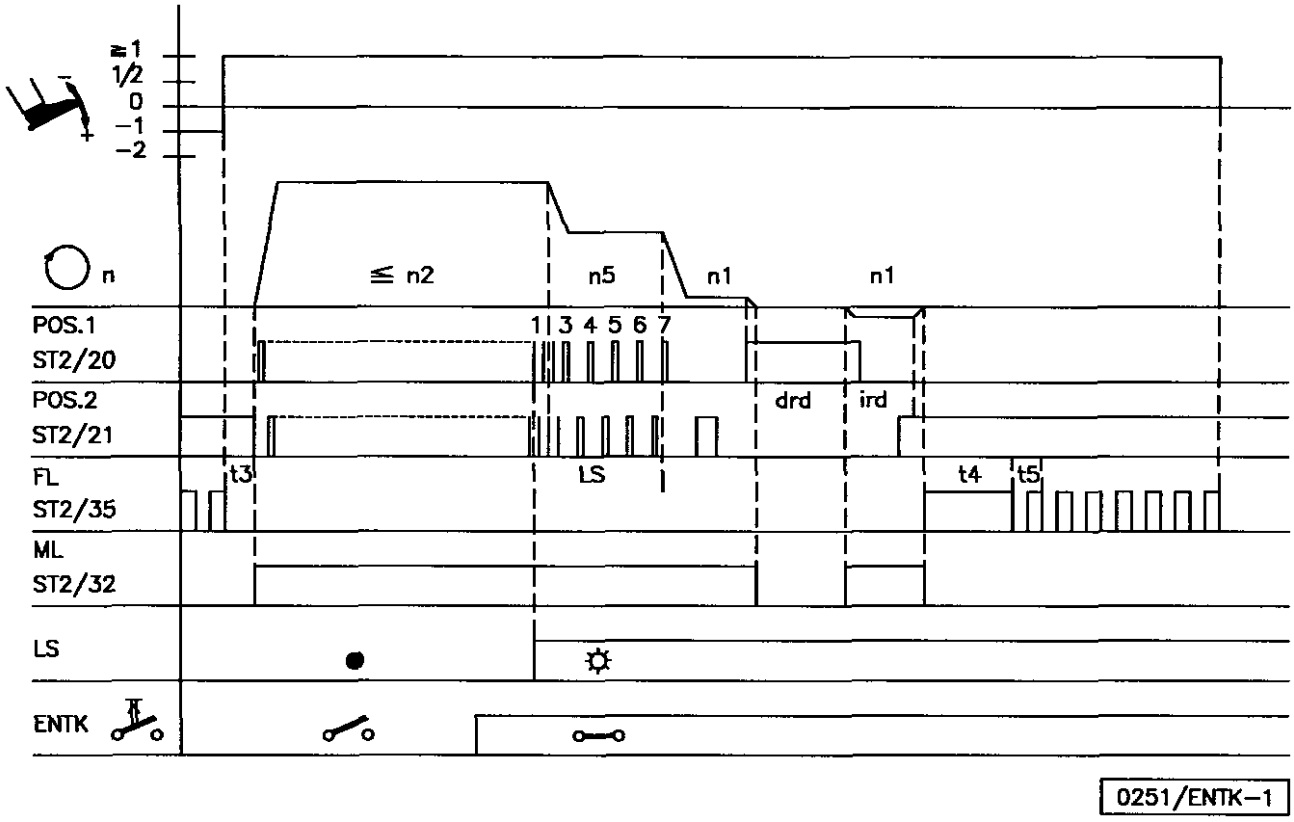
Abbreviation	Functions	Parameter	Pushbutton on the control
	Mode 5 Chainstitch Pegasus Thread trimmer and thread wiper On	290 = 5 196 = 1	Pushbutton S3
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
kd2	Delay time thread trimmer M2	282	
kt2	Activation time thread trimmer M2	283	
kd3	Delay time thread wiper M3	284	
kt3	Activation time thread wiper M3	285	
kdF	Delay time until sewing foot On	288	
SSc	Softstart stitches	100	

Mode 5 (chainstitch) parameter 273 = ON



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 5 Function "initial trimming" Softstart On Thread trimmer and thread wiper On	290 = 5 273 = ON	 Pushbutton S2 Pushbutton S3
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
Ad1	Delay time signal M3 at the start of the seam	274	
At1	Activation time signal M3 at the start of the seam	275	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
Ad2	Delay time signal M2 at the start of the seam	276	
At2	Activation time signal M2 at the start of the seam	277	
kd2	Delay time thread trimmer M2 at the seam end	282	
kt2	Activation time thread trimmer M2 at the seam end	283	
Ad3	Delay time signal M5 at the start of the seam	278	
At3	Activation time signal M5 at the start of the seam	279	
kdF	Delay time until sewing foot On	288	
SSc	Softstart stitches	100	

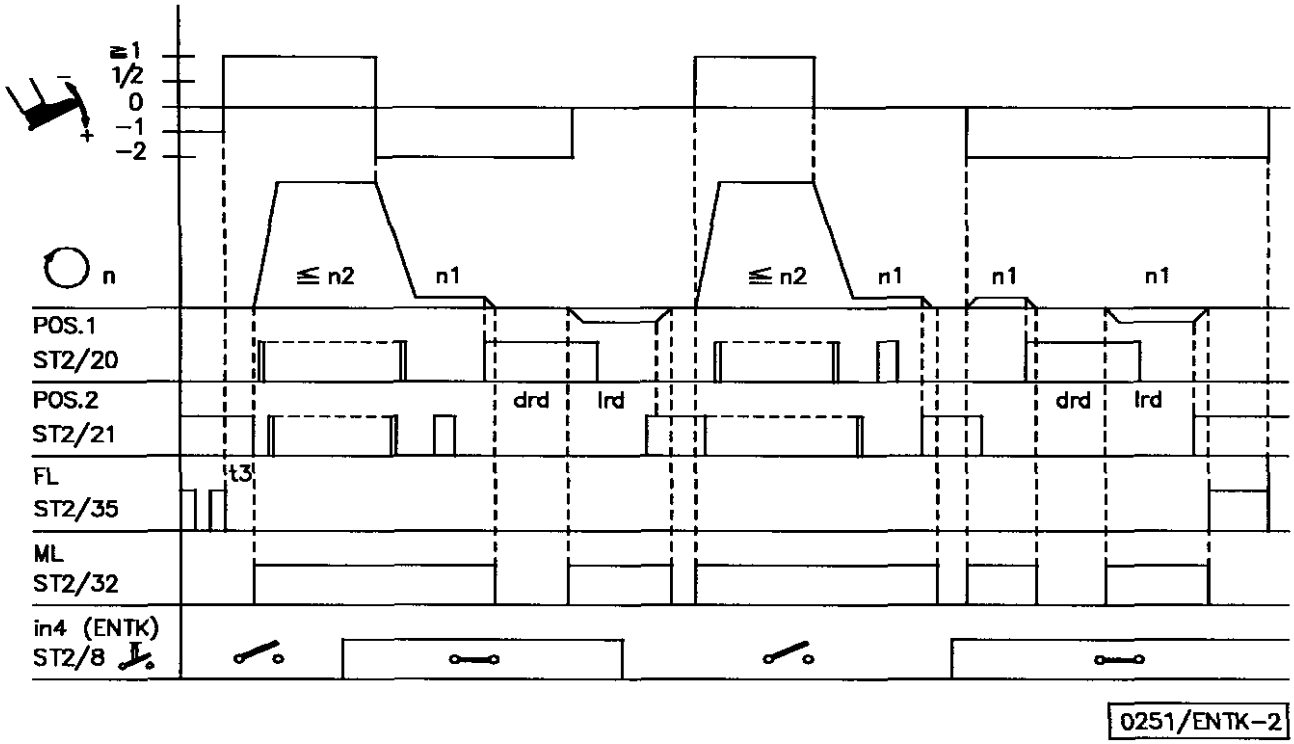
Mode 4, 5, 6 or 7 (function "unlocking the chain" with light barrier)



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 5	290 = 5	
	Direction of rotation of the motor: clockwise	161 = 0	
	Reversion On	182 = ON	
	Unlocking the chain with pedal in pos. -2 without tape cutting at the seam end	019 = 3	
	Unlocking the chain automatically with light barrier	190 = 2	
	Basic position 2		Pushbutton S5
	Thread trimmer On and/or Off *)		Pushbutton S3
	Light barrier On	009 = ON	
in..	Allocate the function "unlocking the chain" for one of the outputs in1/in3/in4	2.. = 18	
n1	Positioning speed	110	
n2	Maximum speed	111	
n5	Speed after light barrier sensing	114	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
LS	Light barrier compensating stitches	004	
ird	Number of reversion increments	180	
drd	Activation delay of reversion	181	

*) The thread trimming function is suppressed when unlocking the chain.

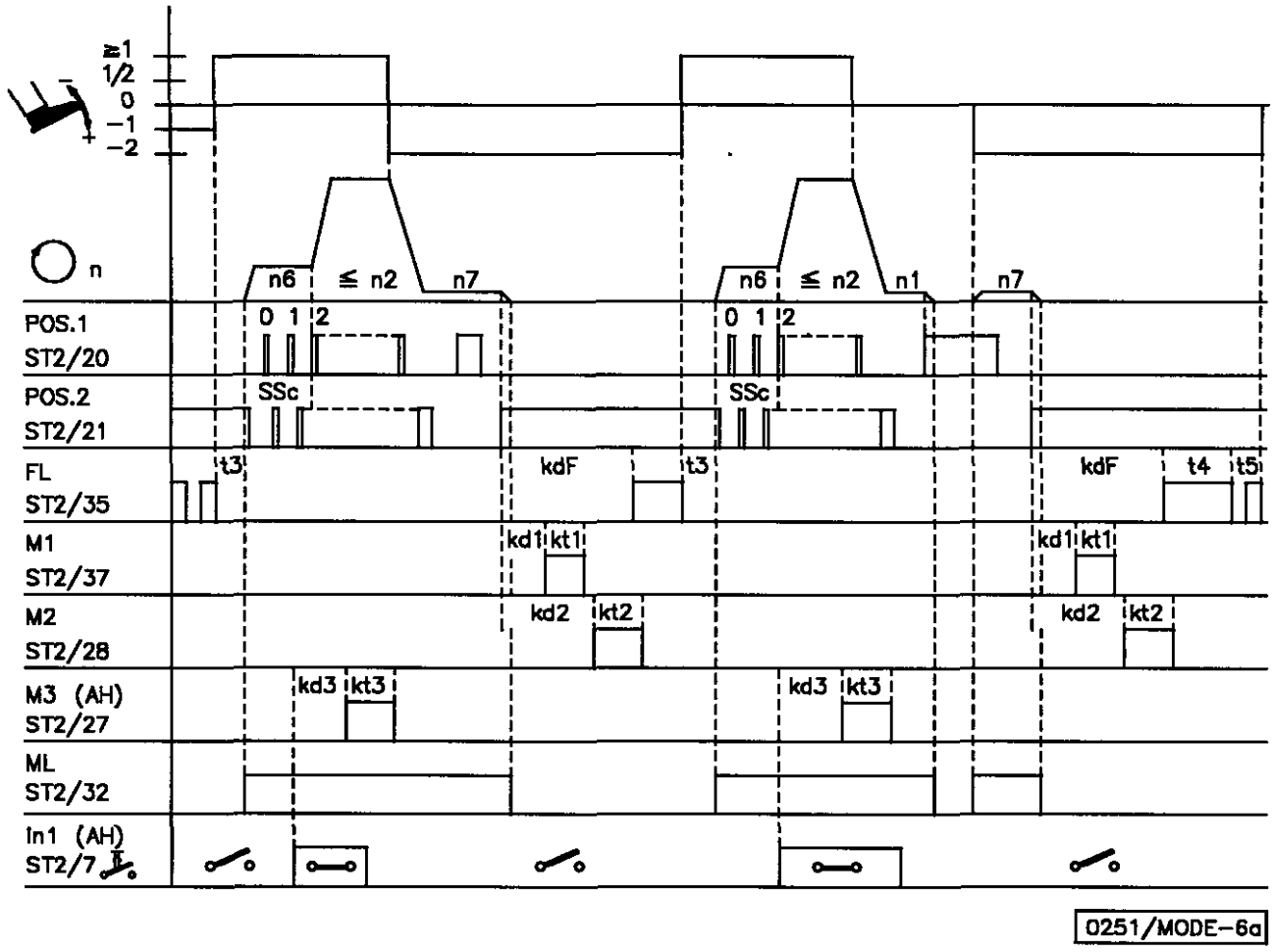
Mode 4, 5, 6 or 7 (function "unlocking the chain")



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 5	290 = 5	
	Direction of rotation of the motor: clockwise	161 = 0	
	Reversion On	182 = ON	
	Unlocking the chain manually with pedal in pos. -2	190 = 1	
	Basic position 2		Pushbutton S5
	Thread trimmer On and/or Off *)		Pushbutton S3
in1	Machine run blockage effective with open contact	240 = 6	
in3	Automatic speed (n12) without pedal	242 = 10	
in4	Function "unlocking the chain"	243 = 18	
n1	Positioning speed	110	
n2	Maximum speed	111	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
ird	Number of reversion increments	180	
drd	Activation delay of reversion	181	

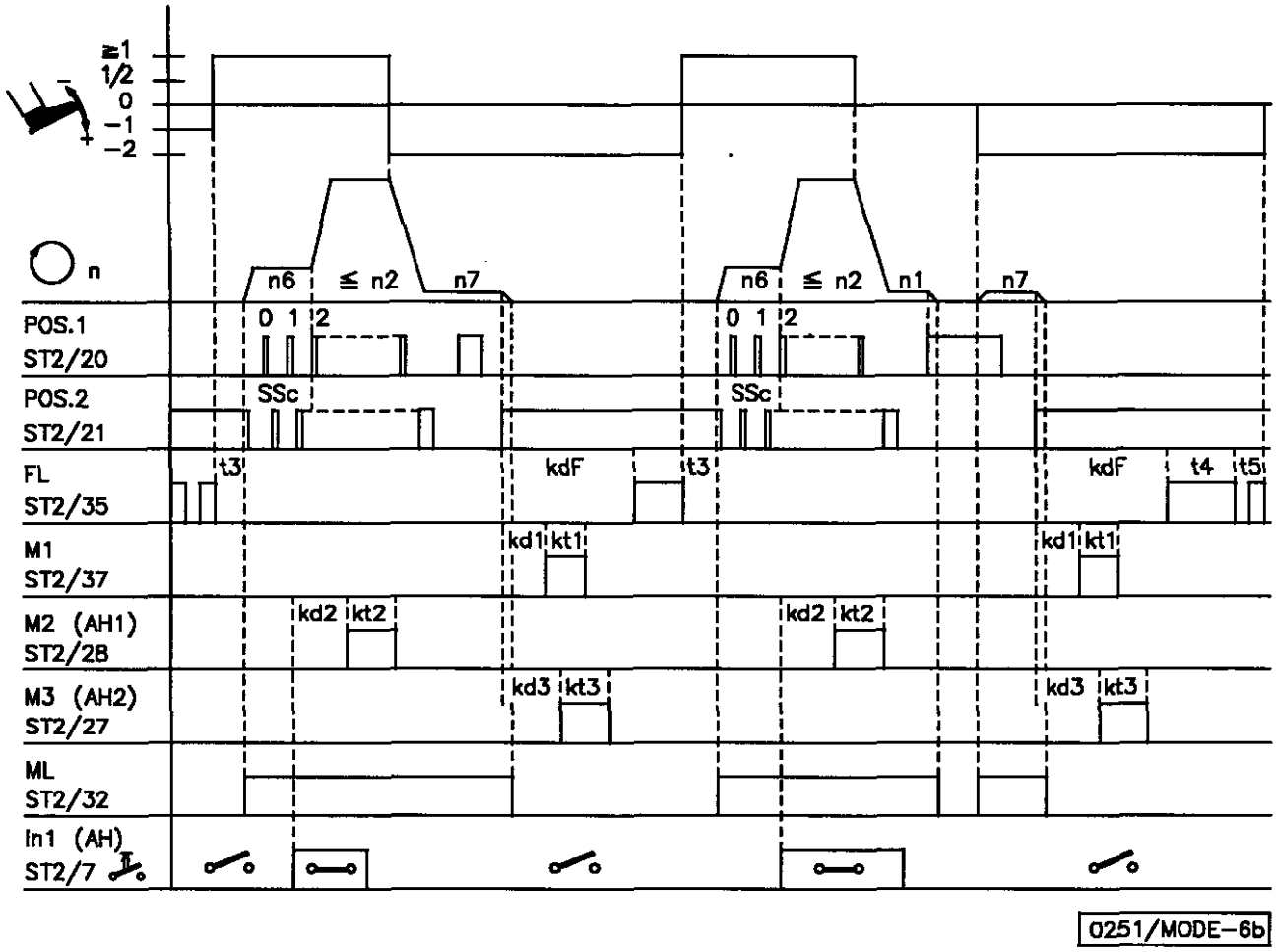
*) The thread trimming function is suppressed when unlocking the chain.

Mode 6 (chainstitch with tape cutter) parameter 232 = OFF



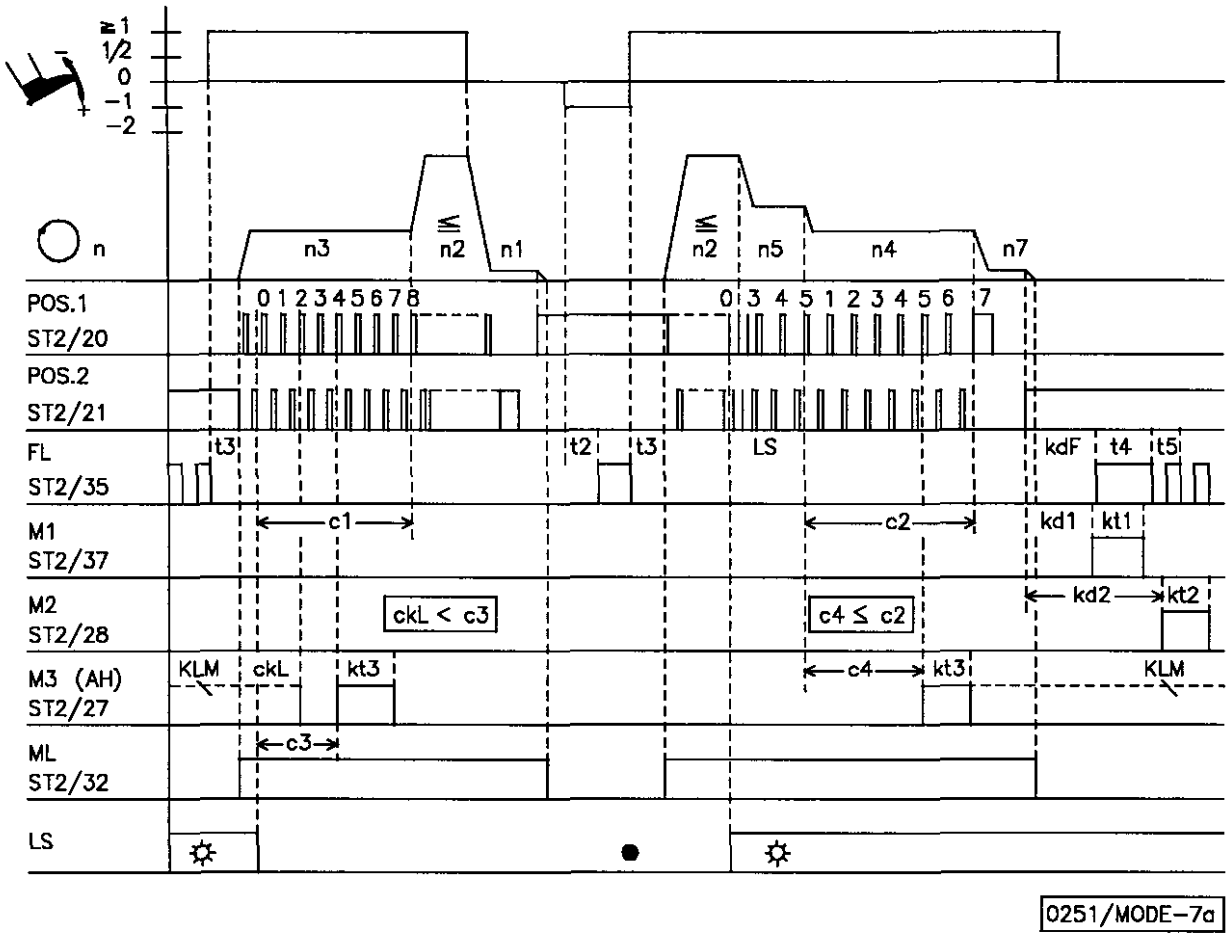
Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 6	290 = 6	
	Softstart On		Pushbutton S2
	Thread trimmer On and thread wiper Off		Pushbutton S3
	Chainstitch with tape cutter (M3)	232 = OFF	
in1	Tape cutter / fast scissors in the chainstitch and overlock mode	240 = 15	
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
kd2	Delay time thread wiper M2	282	
kt2	Activation time thread wiper M2	283	
kd3	Delay time tape cutter M3	284	
kt3	Activation time tape cutter M3	285	
kdF	Delay time until sewing foot On	288	
SSc	Softstart stitches	100	

Mode 6 (chainstitch with fast scissors) parameter 232 = ON



Abbreviation	Functions	Parameter	Pushbutton on the control
	Mode 6	290 = 6	
	Softstart On		Pushbutton S2
	Thread trimmer and thread wiper On		Pushbutton S3
	Chainstitch with fast scissors M2/M3	232 = ON	
in1	Tape cutter / fast scissors in the chainstitch and overlock mode	240 = 15	
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
kd2	Delay time for M2 (fast scissors AH1)	282	
kt2	Activation time for M2 (fast scissors AH1)	283	
kd3	Delay time for M3 (fast scissors AH2)	284	
kt3	Activation time for M3 (fast scissors AH2)	285	
kdF	Delay time until sewing foot On	288	
SSc	Softstart stitches	100	

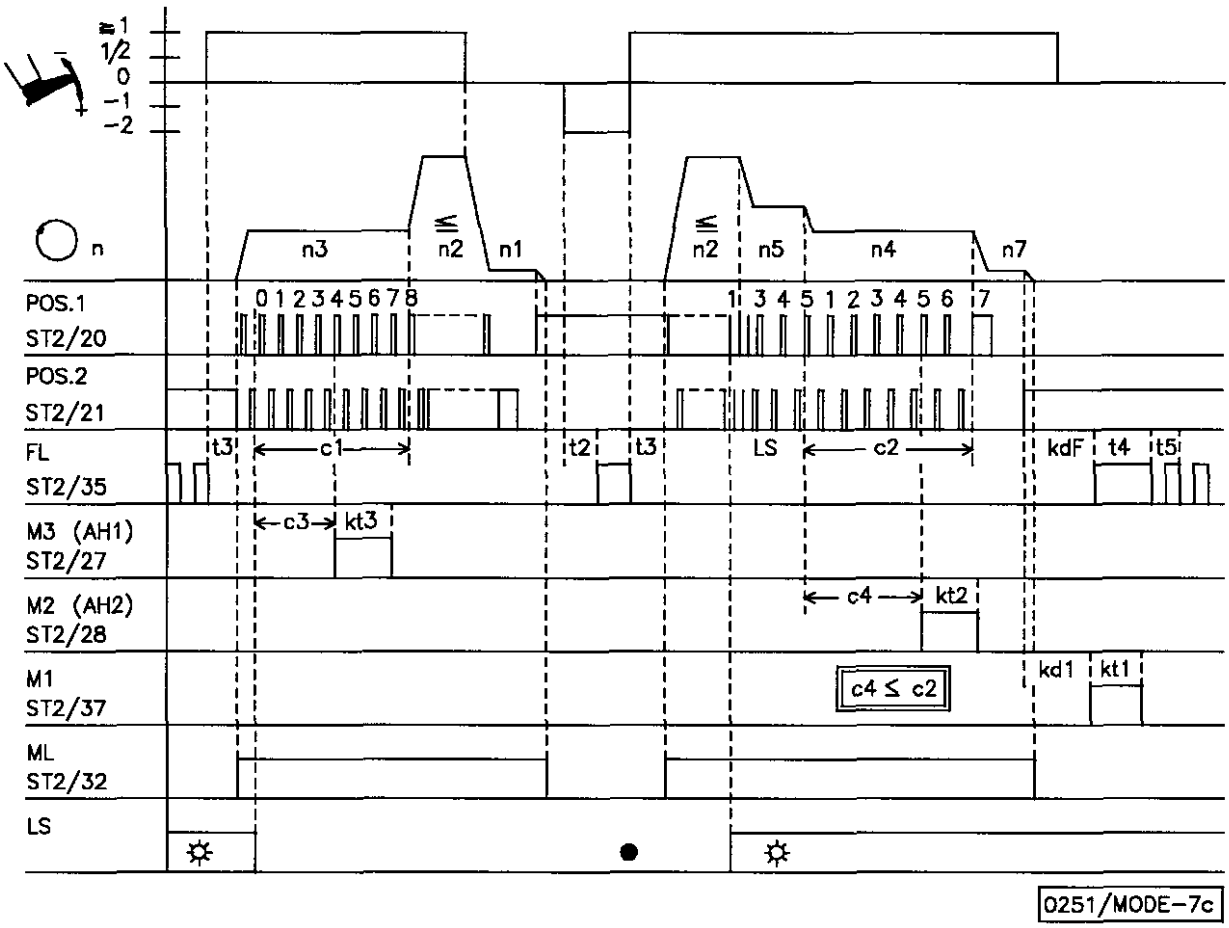
Mode 7 (overlock) parameter 232 = OFF / sequence with intermediate stop



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 7	290 = 7	
	Thread trimmer On		Pushbutton S3
	Chainstitch with tape cutter M3	232 = OFF	
	Sewing foot lifting at the seam end On		Pushbutton S4
*)	Counting c1, c2, c3 and c4 On	000...003	
	Light barrier On	009 = ON	
	Function pedal in position -1 and -2 active in the seam	019 = 3	
KLM	Clamp at the seam end On	020 = ON	
	Machine start blockage with light barrier uncovered	132 = OFF	
	Seam end after counting c2	191 = 1	
	Speed n5 after light barrier sensing	192 = OFF	
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	
t2	Activation delay of sewing foot lifting with pedal in position -1	201	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1/kd2	Delay time thread trimmer M1	280/282	
kt1/kt2	Activation time thread trimmer M1	281/283	
kt3	Activation time tape cutter M3	285	
c2	End counting limited speed until stop	000	
c1	Start counting limited speed	001	
c3	Start counting tape cutter	002	
c4	End counting tape cutter	003	
LS	Light barrier compensating stitches	004	
kdF	Delay time until sewing foot On	288	
ckL	Run-out stitches clamp at the start of the seam	021	

*) **If parameters 000...003 are set at "0" the respective countings are Off!**

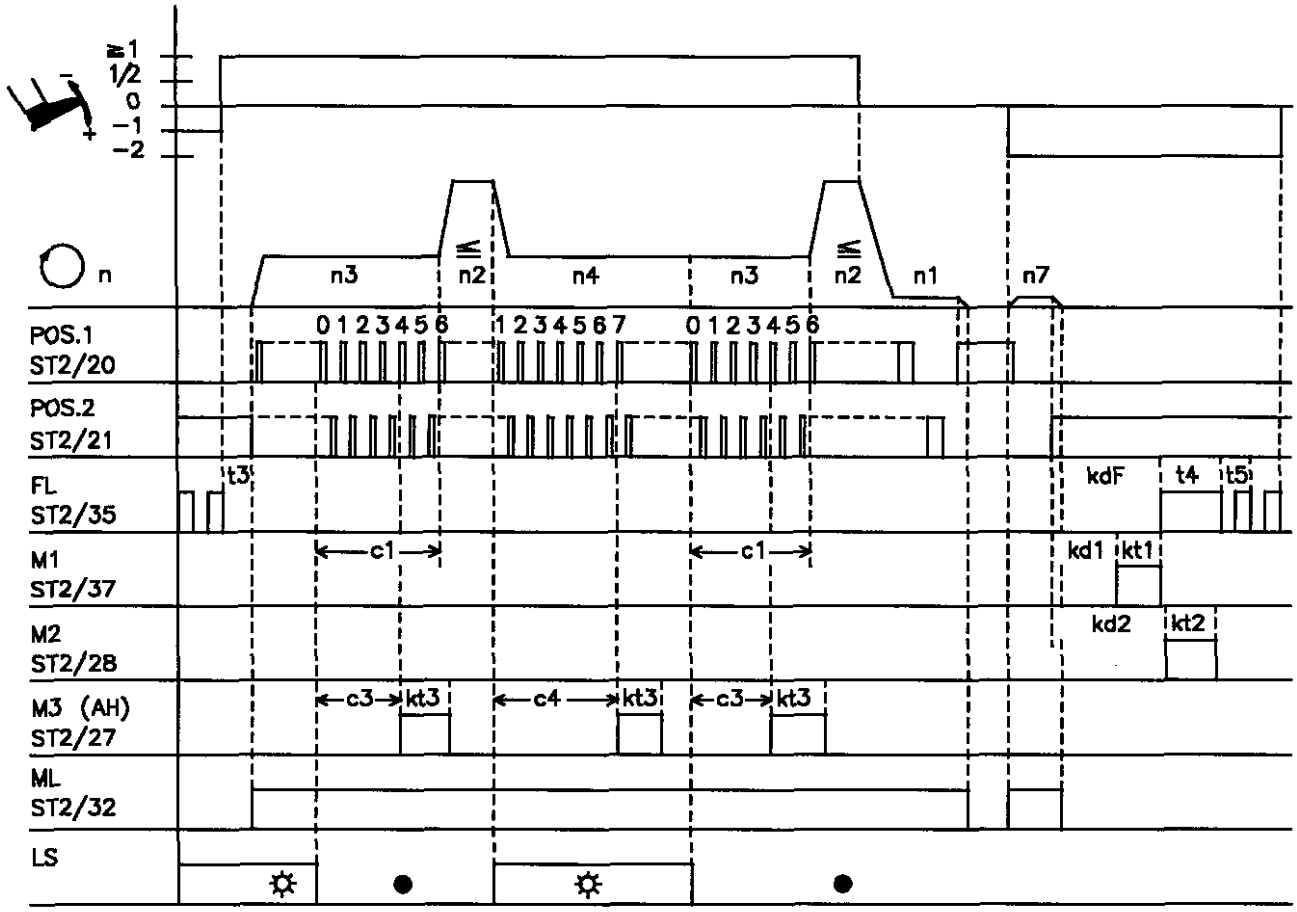
Mode 7 (overlock) parameter 232 = ON / sequence with intermediate stop



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 7	290 = 7	
	Thread trimmer On		Pushbutton S3
	Chainstitch with fast scissors M2/M3	232 = ON	
	Sewing foot lifting at the seam end On		Pushbutton S4
*)	Countings c1, c2, c3 and c4 On	000...003	
	Light barrier On	009 = ON	
	Function pedal in position -2 thread trimming blocked	019 = 2	
KLM	Clamp at the seam end On	020 = OFF	
	Machine start blockage with light barrier uncovered	132 = OFF	
	Seam end after counting c2	191 = 1	
	Speed n5 after light barrier sensing	192 = OFF	
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	
t2	Activation delay of sewing foot lifting with pedal in position -1	201	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
kd2	Delay time fast scissors M2	282 = 0	
kd3	Delay time fast scissors M3	284 = 0	
kt2/kt3	Activation time fast scissorsM2/M3	283/285	
c2	End counting limited speed until stop	000	
c1	Start counting limited speed	001	
c3	Start counting tape cutter	002	
c4	End counting tape cutter	003	
LS	Light barrier compensating stitches	004	
kdF	Delay time until sewing foot On	288	
ckL	Run-out stitches clamp at the start of the seam	021	

*) **If parameters 000...003 are set at "0" the respective countings are Off!**

Mode 7 (overlock) parameter 232 = OFF / sequence without automatic stop at the seam end

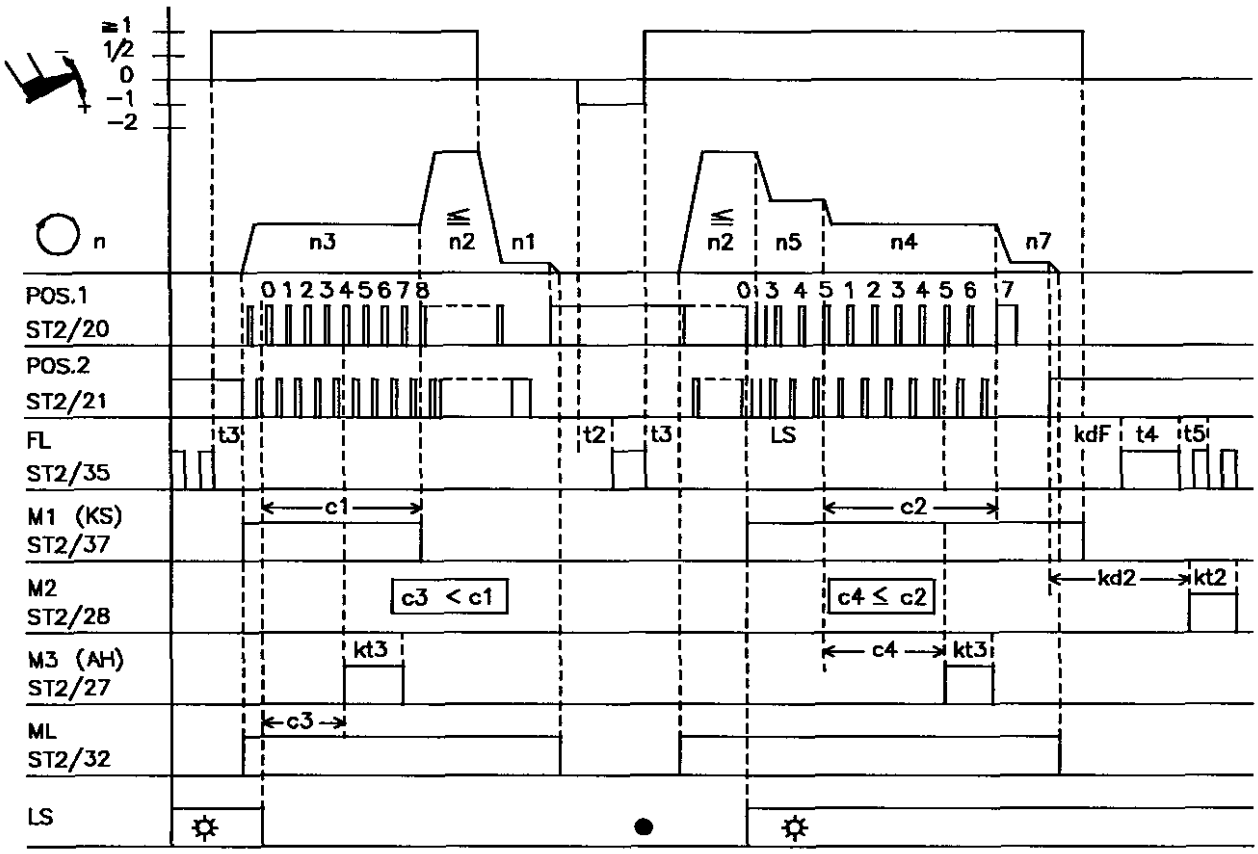


0251/MODE–7b

Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 7	290 = 7	
	Sequence without stop at the seam end	018 = ON	
	Thread trimmer On		Pushbutton S3
	Chainstitch with fast scissors M2/M3	232 = OFF	
*)	Countings c1, c2, c3 and c4 On	000...003	
	Light barrier On	009 = ON	
	Pedal in pos. -1 and -2 active in the seam	019 = 3	
	Machine start blockage with light barrier uncovered	132 = OFF	
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	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd1	Delay time thread trimmer M1	280	
kt1	Activation time thread trimmer M1	281	
kd2	Delay time thread trimmer M2	282	
kt2	Activation time thread trimmer M2	283	
kd3	Delay time tape cutter M3	284 = 0	
kt3	Activation time tape cutter M3	285	
c2	End counting limited speed until stop	000	
c1	Start counting limited speed	001	
c3	Start counting tape cutter	002	
c4	End counting tape cutter	003	
LS	Light barrier compensating stitches	004 = 0	
kdF	Delay time until sewing foot On	288	

*) **If parameters 000...003 are set at "0" the respective countings are Off!**

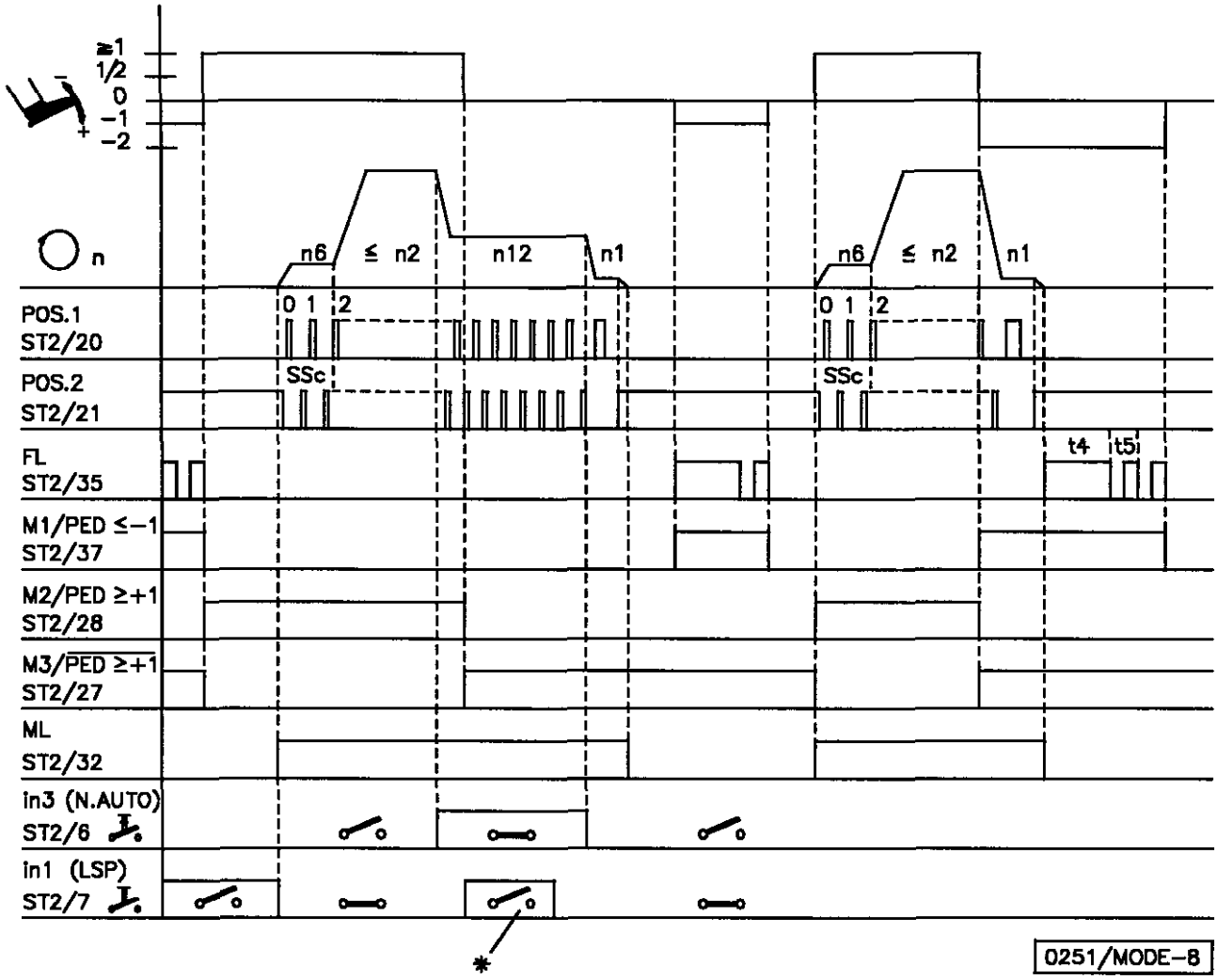
Mode 7 (overlock) parameter 232 = OFF / sequence with chain suction



Abbreviation	Functions	Parameter	Pushbutton on the control
	Unlocking the chain automatically	190 = 3	
	Mode 7	290 = 7	
	Thread trimmer On		Pushbutton S3
	Chainstitch with tape cutter M3	232 = OFF	
	Sewing foot lifting at the seam end On		Pushbutton S4
*)	Countings c1, c2, c3 and c4 On	000...003	
	Light barrier	009 = ON	
	Sequence overlock mode with stop	018 = OFF	
	Function pedal in position -1 and -2 active in the seam	019 = 3	
	Chain suction at the seam end until pedal in position 0	022 = ON	
	Machine start blockage with light barrier uncovered	132 = OFF	
	Output M1 chain suction On (only if 290 = 7)	148 = 1	
	Seam end after counting c2	191 = 1	
	Speed n5 after light barrier sensing	192 = OFF	
	Signal chain suction from light barrier uncovered onwards	193 = ON	
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	
t2	Activation delay of sewing foot lifting with pedal in position -1	201	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
kd2	Delay time thread trimmer M2	282	
kt2	Activation time thread trimmer M2	283	
kt3	Activation time tape cutter M3	285	
c2	End counting limited speed until stop	000	
c1	Start counting limited speed	001	
c3	Start counting tape cutter	002	
c4	End counting tape cutter	003	
LS	Light barrier compensating stitches	004	
kdF	Delay time until sewing foot On	288	

*) **If parameters 000...003 are set at "0" the respective countings are Off!**

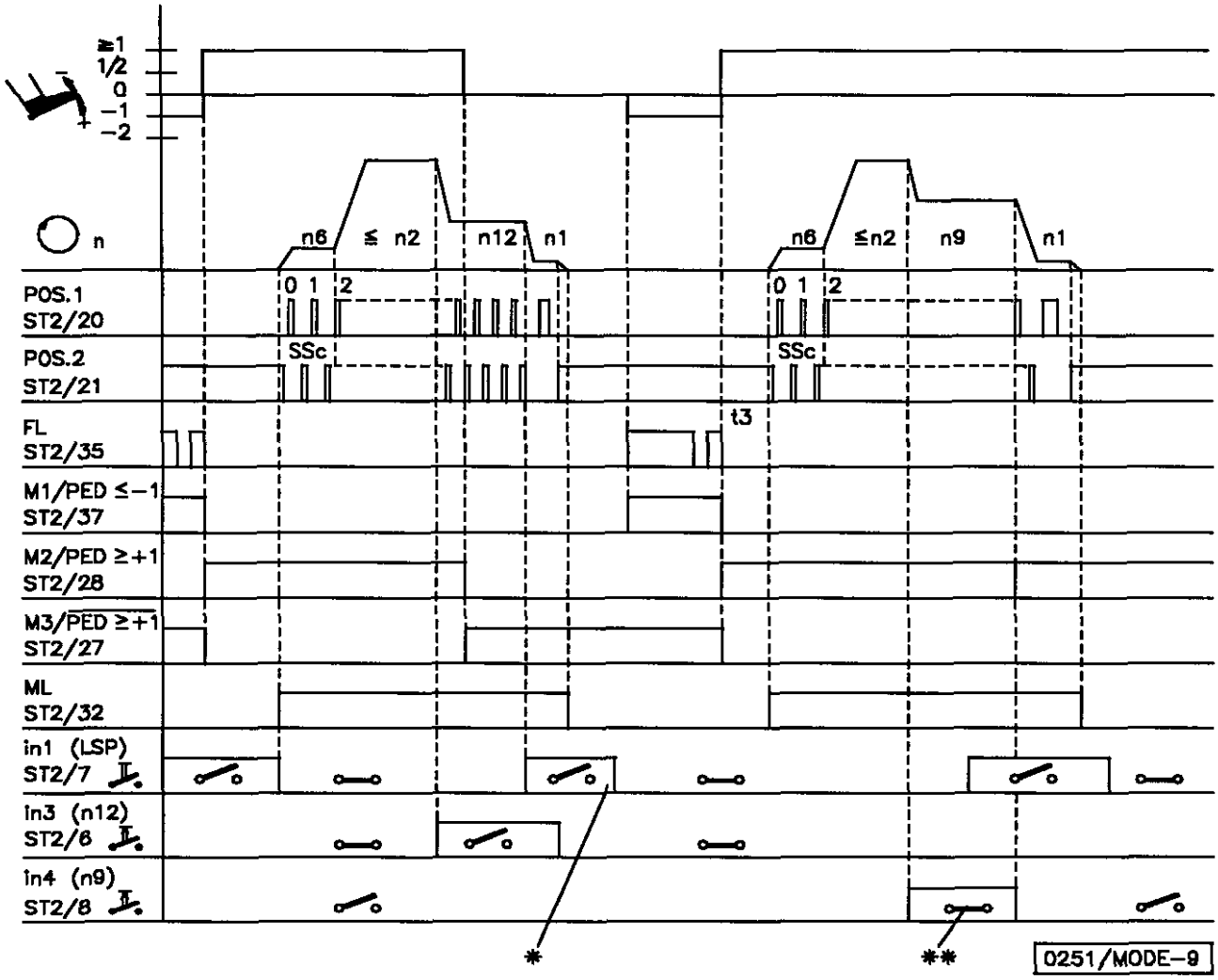
Mode 8 (backlatch Pegasus)



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 8	290 = 8	
	Basic position 2		Pushbutton S5
	Softstart On	134 = ON	Pushbutton S2
In1	Machine run blockage effective 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	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
SSc	Softstart stitches	100	

*) = When the automatic speed is on, the machine run blockage (safety switch) does not work!

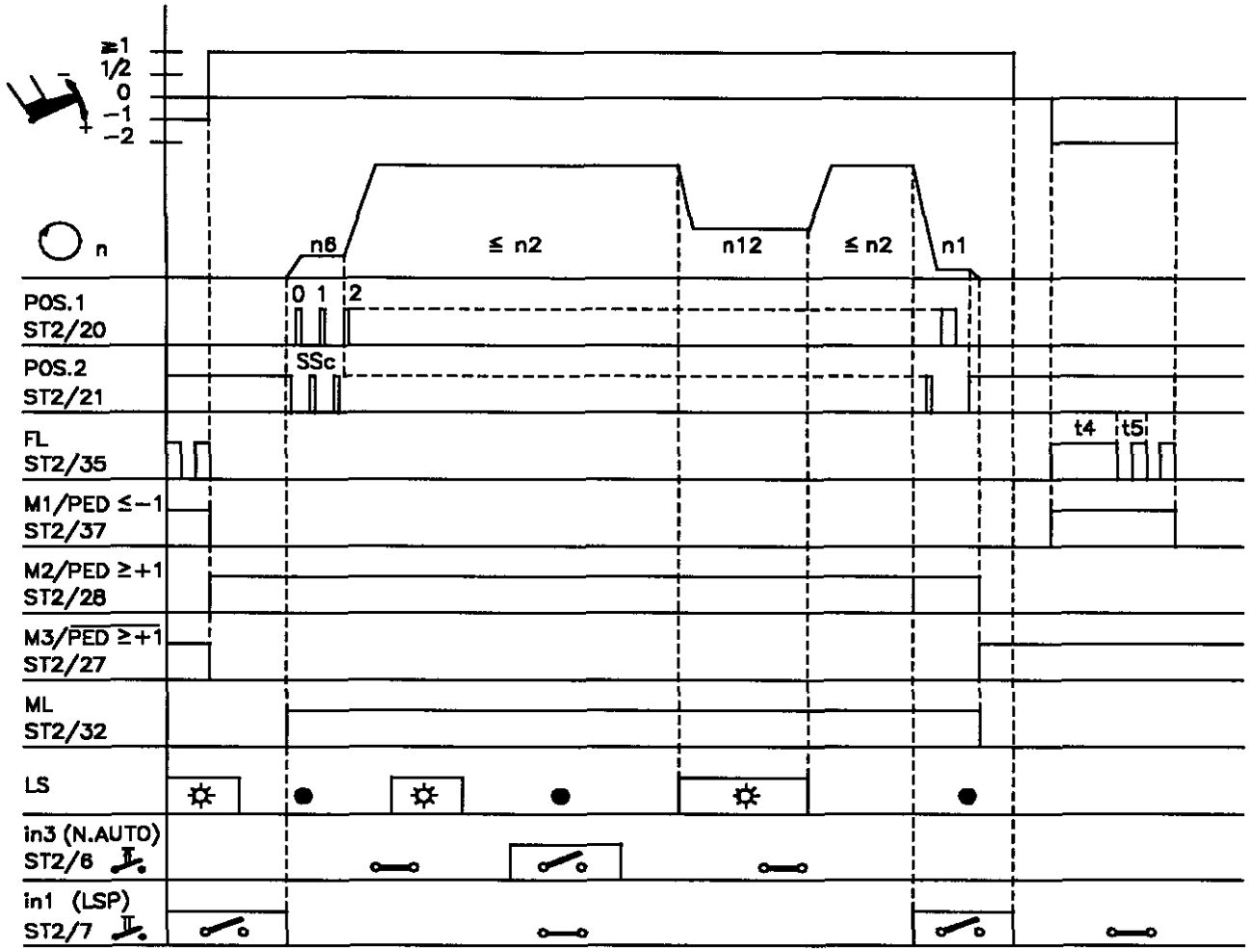
Mode 9 (backlatch Yamato) without light barrier



Abbreviation	Functions	Parameter	Pushbutton on the control
	Mode 9	290 = 9	
	Softstart On		Pushbutton S2
	Basic position 2		Pushbutton S5
in1	Machine run blockage effective with open switch	240 = 6	
in3	**n-auto with open switch (the function of input 3 is inverted in mode 9)**	242 = 10	
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n12	Automatic speed	118	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
SSc	Softstart stitches	100	

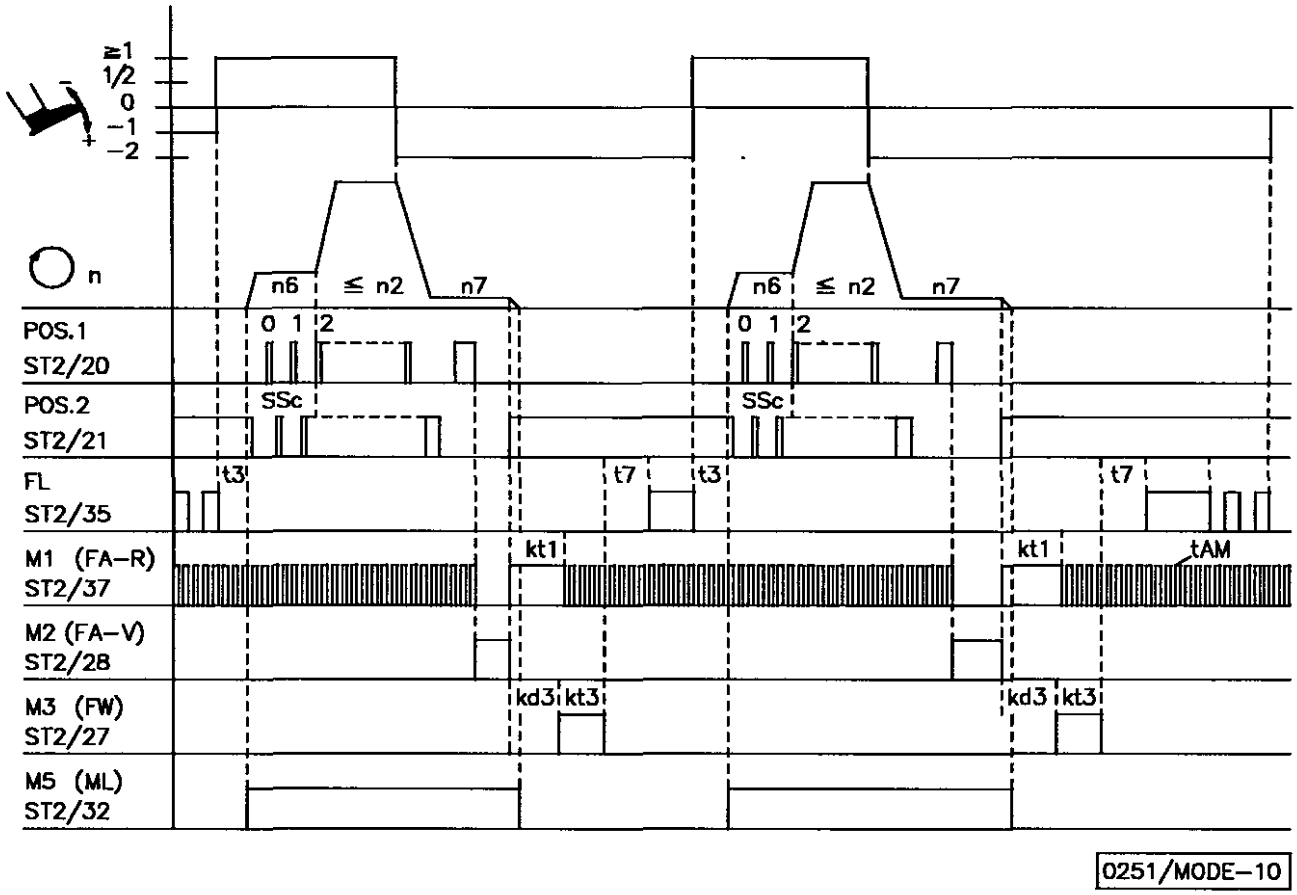
*) = With this setting, the machine run blockage (safety switch) takes priority over the automatic speed!

Mode 9 (backlatch Yamato) with light barrier



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 9	290 = 9	
	Softstart On		Pushbutton S2
	Light barrier On	009 = ON	
	Basic position 2		Pushbutton S5
	Fixed speed n12 cannot be interrupted with pedal in pos. 0 (neutral)	141 = 3	
in1	Machine run blockage effective with open switch	240 = 6	
in3	**n-auto when briefly opening the switch on input 3 and with light barrier uncovered)**	242 = 10	
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n12	Automatic speed	118	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
SSc	Softstart stitches	100	

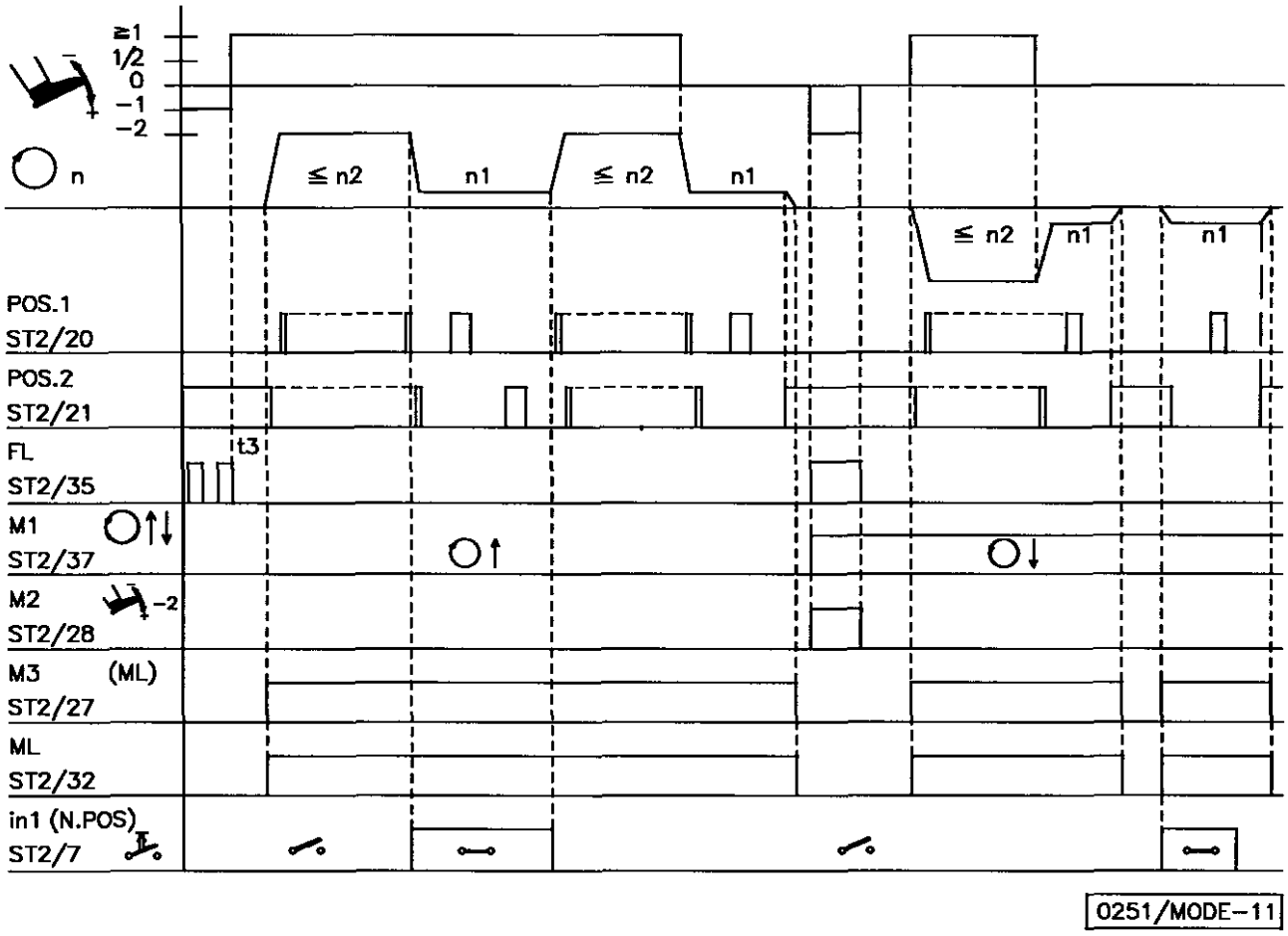
Mode 10 (lockstitch)



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 10 Softstart On Thread trimmer and thread wiper On Reversion Off	290 = 10 182 = OFF	 Pushbutton S2 Pushbutton S3
n1 n2 n6 n7	Positioning speed Maximum speed Softstart speed Trimming speed	110 111 115 116	
t3 t4 t5 t6 t7 kt1 kd3 kt3 SSc	Start delay from lifted foot Full power of sewing foot lifting Pulsing of sewing foot lifting Activation time of thread wiper Activation delay of sewing foot after thread wiper Activation time thread trimmer backward M1 Delay time thread wiper M3 Activation time thread wiper M3 Softstart stitches	202 203 204 205 206 281 284 285 100	

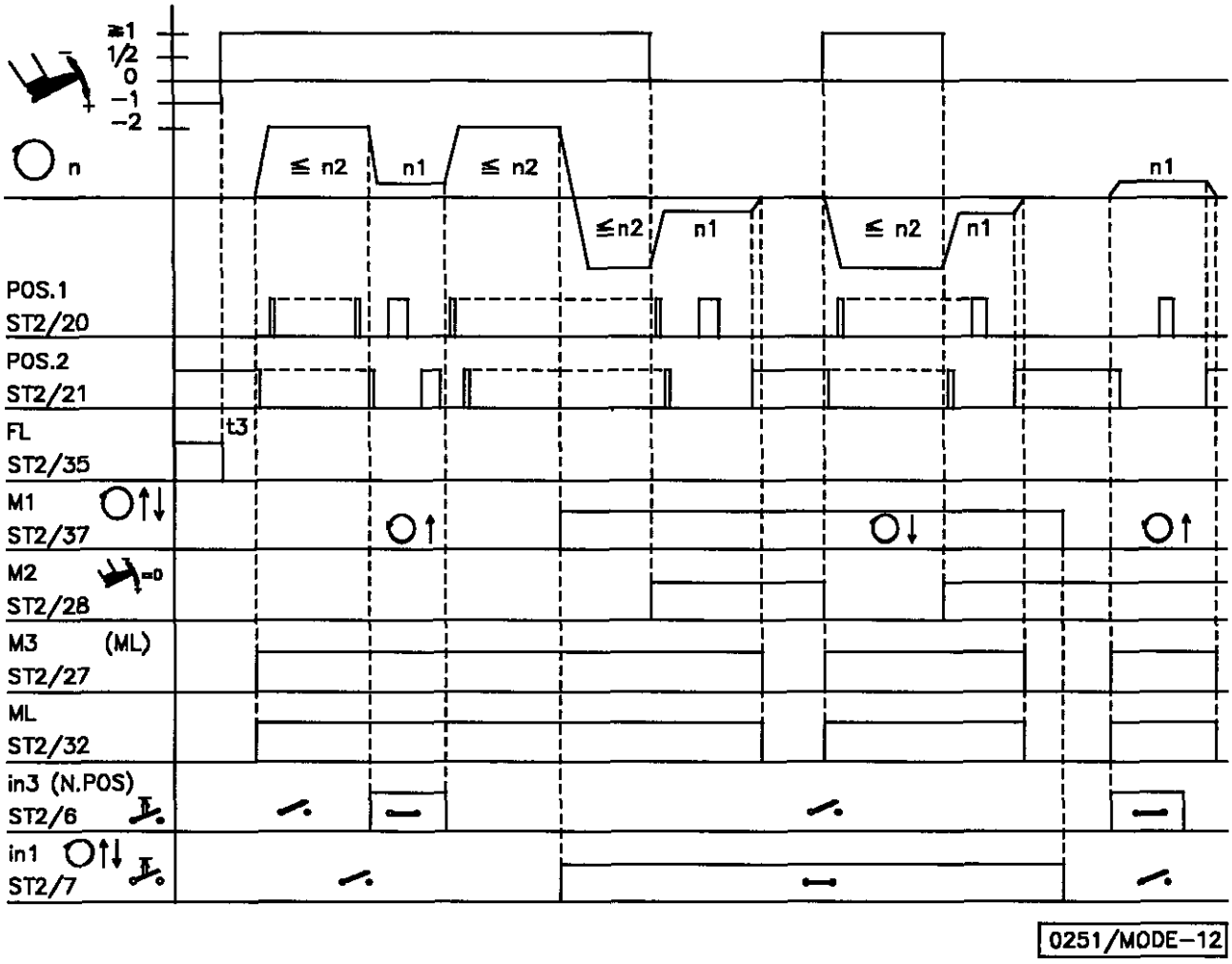
The time t7 starts only after the times kt1 and/or kt3 have elapsed!

Mode 11 sequence with reversal of the direction of rotation with pedal in position -2



Abbre-viation	Functions	Parameter	Pushbutton on the control
in1	Mode 11 Pushbutton for positioning speed	290 = 11 240 = 20	
n1 n2	Positioning speed Maximum speed	110 111	
t3 M1 M2 M3	Start delay from lifted foot Signal "reversal of the direction of rotation Signal "pedal in position -2" Signal "machine running"	202	

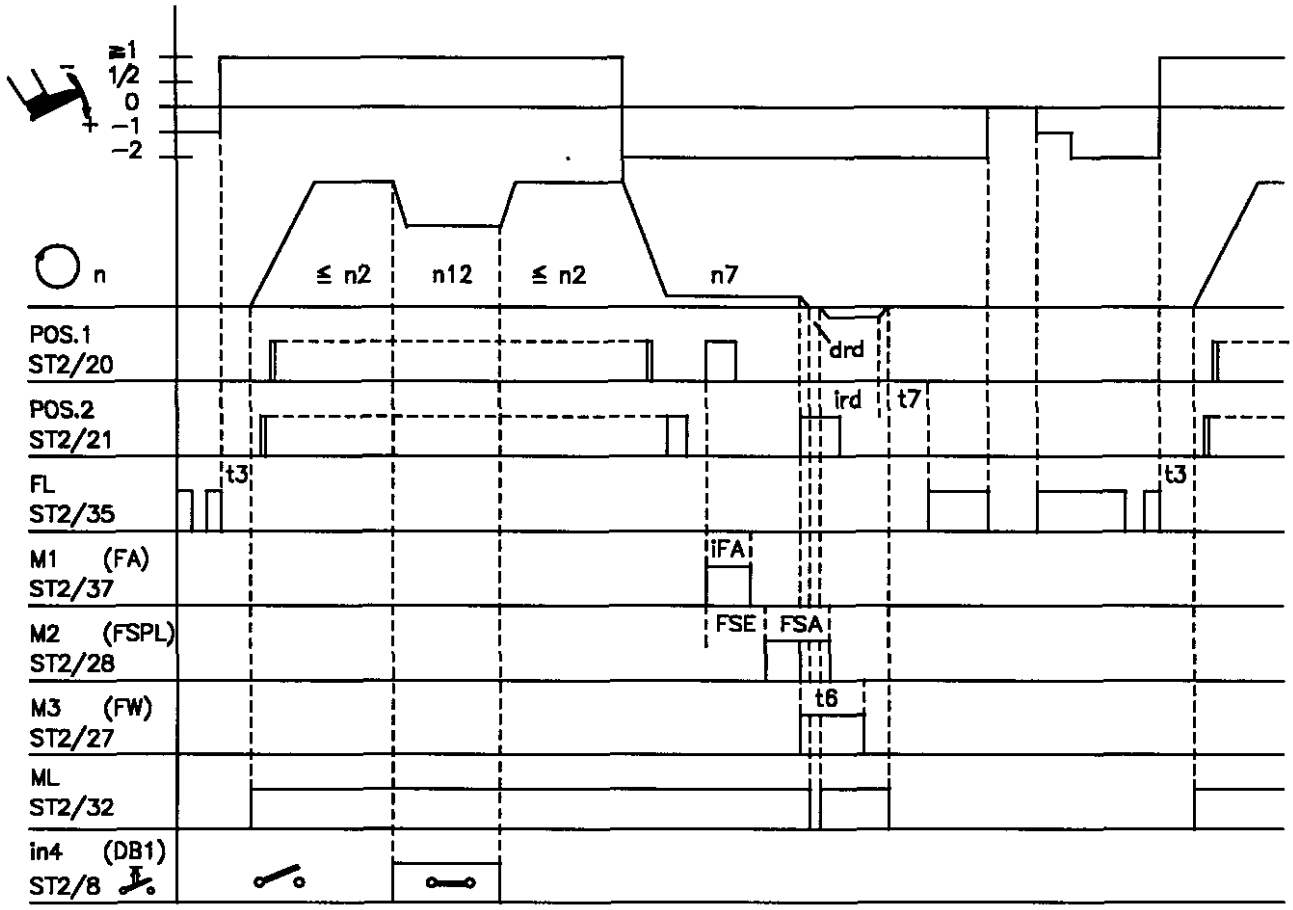
Mode 12 sequence with reversal of the direction of rotation with pushbutton In3



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 12	290 = 12	
in1	Pushbutton for positioning speed	240 = 20	
in3	Pushbutton for reversal of the direction of rotation	242 = 21	
n1	Positioning speed	110	
n2	Maximum speed	111	
t3	Start delay from lifted foot	202	
M1	Signal "reversal of the direction of rotation		
M2	Signal "pedal in position 0 (neutral)"		
M3	Signal "machine running"		

Note:
The signal "machine running" is interrupted for approx. 10ms., when pressing the pedal and the pushbutton **reversal of the direction of rotation!**

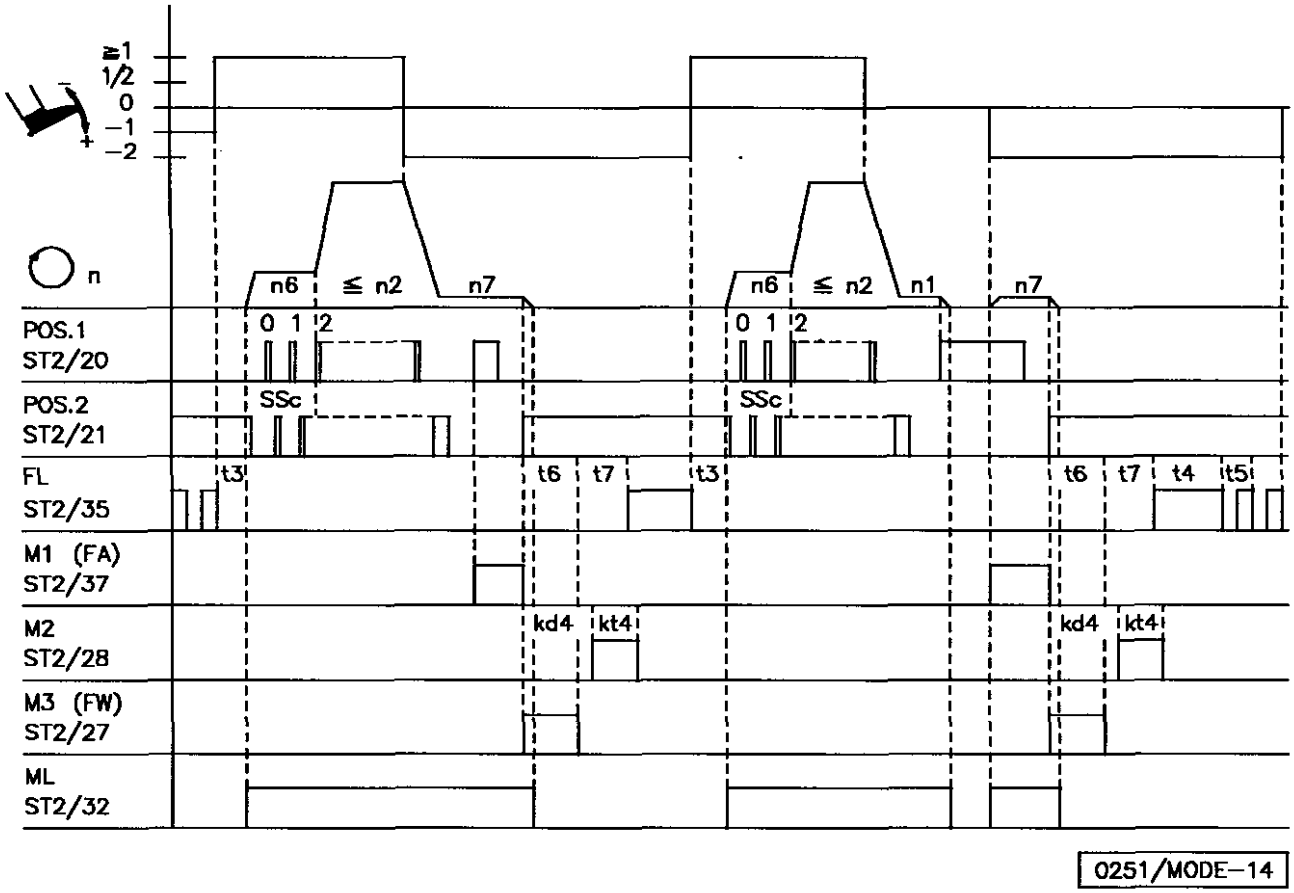
Mode 13 (lockstitch / Pfaff (1425)



Abbre-viation	Function	Param.	Pushbutton on the control
in4	Mode 13 Pushbutton for limited speed n12 Speed limitation not inverted	290 = 13 243 = 11 255 = 0	
n2 n7 n9	Maximum speed Trimming speed Limited speed	111 116 122	
t3 t6 t7 ird drd iFA FSA FSE	Start delay from lifted foot Activation time of thread wiper Activation delay of sewing foot after thread wiper Number of reversion increments Activation delay of reversion Activation angle of the thread trimmer Activation time of thread tension release Delay of thread tension release dependent on angle	202 205 206 180 181 250 251 252	

Note:
When the thread trimming operation is switched off, thread tension release will be activated parallel to sewing foot lifting (M2)!

Mode 14 (lockstitch)



Abbre-viation	Functions	Parameter	Pushbutton on the control
	Mode 14 Softstart On Thread trimmer and thread wiper On	290 = 14	 Pushbutton S2 Pushbutton S3
n1	Positioning speed	110	
n2	Maximum speed	111	
n6	Softstart speed	115	
n7	Trimming speed	116	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lifting	203	
t5	Pulsing of sewing foot lifting	204	
t6	Activation time of thread wiper	205	
t7	Activation delay of sewing foot after thread wiper	206	
kd4	Delay time output M2	286	
kt4	Activation time output M2	287	
SSc	Softstart stitches	100	

5. Parameter List

5.1 PRESET VALUES DEPENDING ON THE MODE

The preset values in the various modes are listed in the table below. When switching the mode (parameter 290), these values change automatically. Factory setting is mode 0!

Mode => Parameter	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
004	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-
005	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-
009	-	-	-	-	-	-	-	ON	-	-	-	-	-	-	-
013	-	-	-	-	-	-	-	-	OFF	OFF	-	OFF	OFF	-	-
014	-	-	-	-	-	-	-	-	OFF	OFF	-	OFF	OFF	-	-
100	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
** 110	-	-	-	-	180	-	-	-	250	250	180	-	-	180	-
** 111	-	-	-	-	5000	-	-	-	-	-	4500	-	-	3000	-
** 115	-	-	-	-	-	-	-	-	-	-	600	-	-	-	-
** 116	-	-	-	-	-	-	-	-	-	-	-	-	-	180	-
** 117	-	-	-	-	-	-	-	-	-	-	-	-	-	2000	-
** 118	-	-	-	-	-	-	-	-	-	-	-	-	-	3000	-
122	-	-	-	-	-	-	-	-	-	-	-	-	-	2600	-
130	-	-	-	-	-	-	-	ON	-	-	-	-	-	-	-
132	-	-	-	-	-	-	-	OFF	-	-	-	-	-	-	-
134	-	-	-	-	-	-	-	-	-	-	ON	-	-	-	-
147	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-
153	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-
161	-	-	-	-	0	0	0	0	0	0	0	-	-	-	-
180	-	-	-	-	-	-	-	-	-	-	7	-	-	1	-
181	-	-	-	-	-	-	-	-	-	-	230	-	-	-	-
182	-	-	-	-	-	-	-	ON	-	-	ON	-	-	ON	-
190	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-
192	-	-	-	-	-	-	-	ON	-	-	-	-	-	-	-
201	-	-	-	-	160	-	-	-	-	-	-	-	-	-	-
202	-	-	-	-	-	-	-	-	0	0	10	-	-	-	-
203	-	-	-	-	350	-	-	-	-	-	-	-	-	-	-
204	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
205	-	-	-	-	-	-	-	-	-	-	240	-	-	-	-
206	-	-	-	-	-	-	-	-	-	-	150	-	-	-	-
211	-	-	-	-	-	-	-	-	-	-		-	-	100	-
239	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-
240	-	-	-	-	6	-	-	-	6	6	-	20	20	2	-
242	-	-	-	-	3	-	-	-	10	10	-	-	21	24	-
243	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-
250	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
251	-	-	-	-	-	-	-	-	-	-	-	-	-	110	-
252	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
** 253	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-
254	-	-	-	-	-	-	-	-	-	-	4	-	-	0	-
** 280	x	x	x	x	200	-	-	100	x	x	x	x	x	x	x
** 281	x	x	x	x	-	-	-	-	x	x	280	x	x	x	x
** 282	x	x	0	x	0	-	-	200	x	x	x	x	x	x	x
** 283	x	x	x	x	200	-	-	-	x	x	x	x	x	x	x
** 284	x	x	x	x	-	-	0	0	x	x	150	100	100	-	x
** 285	x	x	x	x	200	-	-	-	x	x	70	x	x	-	x
** 288	x	x	x	x	500	-	-	-	x	x	x	x	x	-	x
Function															
Basic pos.	1	1	1	1	1	2	2	2	2	2	1	2	2	1	1

x = The positions marked with "x" are not used in the functional sequence!

- = For the positions marked with "-" the preset values listed in the parameter list are used!

** = When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

5.2 OPERATOR LEVEL

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
000 c2	Stitch counting - End counting limited speed n4 until stop		254	0	2	A
001 c1	Stitch counting - Start counting limited speed n3		254	0	2	A
002 c3	Stitch counting - Counting tape cutter at the start of the seam		254	0	2	A
003 c4	Stitch counting - Counting tape cutter at the seam end		254	0	2	A
004 LS	Light barrier compensating stitches		254	0	7 *)	A
005	Number of stitches of the light barrier filter for knitted fabrics		254	0	1 *)	A
006	Number of light barrier seams		15	1	1	A
007	Number of stitches for the seam with stitch counting		254	0	20	A
009 LS	Light barrier ON/OFF	ON/OFF			OFF *)	A
013	Thread trimmer ON/OFF	ON/OFF			ON *)	A
014	Thread wiper ON/OFF	ON/OFF			ON *)	A
015	Stitch counting ON/OFF	ON/OFF			OFF	A
018	ON = Sequence overlock mode without stop OFF = Sequence overlock mode with stop	ON/OFF			OFF	A
019	0 = Pedal in pos. -1 blocked in the seam; pedal in pos. -2, only sewing foot lifting is possible (function is possible only with "light barrier On") 1 = Pedal in pos. -1, sewing foot lifting in the seam blocked 2 = Pedal in pos. -2, thread trimming in the seam blocked (function is possible only with "light barrier On") 3 = Pedal in pos. -1 and -2 active in the seam		3	0	3	B
020 kLM	Clamp at the seam end ON/OFF	ON/OFF			OFF	A
021 ckL	Run-out stitches clamp at the start of the seam (mode 7)		254	0	2	A

*) Depending on the selected mode; see table at the beginning of the parameter list !

OPERATOR LEVEL

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
022	OFF = Chain suction until the end of counting c2 ON = Chain suction at the seam end until pedal in pos. 0 (neutral)	ON/OFF			OFF	A
023	Automatic sewing foot lift with pedal forward at the seam end, if light barrier or stitch counting is switched on 0 = Automatic sewing foot Off 1 = Automatic sewing foor On		1	0	1	A
030	0 = Bobbin thread monitor OFF 1 = Bobbin thread monitor with stop 2 = Bobbin thread monitor without stop		2	0	0	A
031	Bobbin thread monitor counting		25500 ***	0	0	A

***) When programming the 5-digit (max.) control parameter values, the and/or 3-digit value displayed must be multiplied by 100.

5.3 TECHNICIAN LEVEL

Code no. 190 with control operation

Parameter		Designation	Unit	max	min	Preset	Ind. Prg. No.
100	SSc	Number of softstart stitches		20	0	2 *)	A
110	n1	Positioning speed	RPM	390 **)	70	200 *)	A
111	n2-	Upper limit setting range n-max	RPM	9900 **)	n2_	4000 *)	A
112	n3	Stitch counting speed at the start of the seam	RPM	9900 **)	200	1200	A
113	n4	Stitch counting speed at the seam end	RPM	9900 **)	200	1200	A
114	n5	Speed after light barrier sensing	RPM	9900 **)	200	1200	A
115	n6	Softstart speed	RPM	2550 **)	70	500 *)	A
116	n7	Trimming speed	RPM	500 **)	70	200 *)	A
117	n10	High lift walking speed	RPM	9900 **)	400	1000 *)	A
118	n12	Automatic speed for stitch counting	RPM	9900 **)	400	3500 *)	A
119		Speed stage graduation 1 = linear 2 = slightly progressive 3 = highly progressive		3	1	2	A
121	n2_	Lower limit setting range of n-max	RPM	n2 **)	400	400	A
122	n9	Limited speed n9	RPM	9900 **)	400	2000 *)	A
124		Speed limitation for external potentiometer (maximum value)	RPM	9900 **)	Pa. 125	4000	A
125		Speed limitation for external potentiometer (minimum value)	RPM	Pa. 124 **)	400	400	A
126		Function speed limitation for external potentiometer 0 = Function external potentiometer Off 1 = External potentiometer always active 2 = External potentiometer only active if one of the inputs in1...in4 has been selected and activated		2	0	0	A
128		Start delay, when starting command is given by covering the light barrier (see parameter 129)	ms	2000 **)	0	0	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

**) When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

TECHNICIAN LEVEL

Code no. 190 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
129	Machine start by covering the light barrier (only in conjunction with parameter 132 = ON)	ON/OFF			OFF	A
130	Light barrier filter for knitted fabrics	ON/OFF			OFF *)	A
131	OFF = Light barrier sensing "covered" ON = Light barrier sensing "uncovered"	ON/OFF			ON	A
132	Machine start blockage, when light barrier "uncovered"	ON/OFF			ON *)	A
133	Thread trimmer, when completing the seam after light barrier sensing	ON/OFF			ON	A
134	Softstart	ON/OFF			OFF *)	A
137	High lift for walking foot/flip-flop 1	ON/OFF			ON	A
141	Speed status for a seam with stitch counting 0 = speed controllable by the pedal up to the set maximum speed (parameter 111) 1 = fixed speed (parameter 118), without influence by the pedal (machine stop by pushing the pedal to the basic position) 2 = limited speed controllable by the pedal up to the set limit (parameter 118) 3 = at fixed speed (parameter 118), can be interrupted by full heelback		3	0	0	A
142	Speed status for a seam with stitch counting 0 = speed controllable by the pedal up to the set maximum speed (parameter 111) 1 = fixed speed (parameter 118), without influence by the pedal (machine stop by pushing the pedal to the basic position) 2 = limited speed controllable by the pedal up to the set limit (parameter 118) 3 = at fixed speed (parameter 118), can be interrupted by full heelback		3	0	0	A
143	Counting at the start of the seam 0 = at fixed speed 1 = limited pedal controlled speed n3		1	0	1	A
144	Counting at the seam end 0 = at fixed speed 1 = limited pedal controlled speed n4		1	0	1	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

TECHNICIAN LEVEL

Code no. 190 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
145	OFF = Signal M1 "thread trimmer" pos.1...pos.1A ON = Signal M1 "thread trimmer" pos.1...pos.2 (only effective in mode 0)	ON/OFF			OFF	A
146	0 = Signal **high lift for walking foot/flip-flop** OFF 1 = Signal **high lift for walking foot/flip-flop** on output M1 2 = Signal **high lift for walking foot/flip-flop** on output M2 3 = Signal **high lift for walking foot/flip-flop** on output M3, if parameter 297 = 0 The connection between the adapter cord and the **high lift walking solenoid** may have to be corrected according to the setting of the outputs M1...M3. See connection diagram and routing of the adapter cord!		3	0	0	A
147	0 = Signal **machine running** OFF 1 = Signal **machine running** on output M1 2 = Signal **machine running** on output M2 3 = Signal **machine running** on output M3, if parameter 297 = 0 The connection between the adapter cord and the solenoid valve **machine running** may have to be corrected according to the setting of the outputs M1...M3. See connection diagram and routing of the adapter cord!		3	0	0 *)	A
148	0 = Signal **backtacking** OFF 1 = Signal **backtacking** on output M1 2 = Signal **backtacking** on output M2 3 = Signal **backtacking** on output M3, if parameter 297 = 0 If parameter 290 = 7, the selected output has the function **chain suction.** The connection between the adapter cord and the **backtacking solenoid** may have to be corrected according to the setting of the outputs M1...M3. See connection diagram and routing of the adapter cord!		3	0	0	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

TECHNICIAN LEVEL

Code no. 190 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
152	Run-out time high lift walking speed	ms	500	80	150	A
153	Braking power at machine standstill		50	0	10 *)	A
155	Mode signal "run" 0 = Signal OFF 1 = Signal "run" ON 2 = Switch signal "run" on and/or switch the inverted signal "run" off, if the speed > 3000 RPM 3 = Signal with pedal < > 0		3	0	1	A
156	Switch-off delay of the signal "run" or signal with pedal in pos. 0 (neutral)	ms	2550 **)	0	0	A
161	Direction of rotation of the motor 0 = Clockwise rotation 1 = Counterclockwise rotation		1	0	1 *)	A
172	**Display on the control:** Pos. 1 to 1A (LED 7 lights up) Pos. 2 to 2A (LED 8 lights up)					A
173	Checking of the signal outputs and inputs using the incorporated control panel 01 = Free on socket ST2/34 02 = Sewing foot lifting on socket ST2/35 03 = Output M1 on socket ST2/37 04 = Output M3 on socket ST2/27 05 = Output M2 on socket ST2/28 06 = Free 07 = Output ML on socket ST2/32 and/or M5 ON/OFF = By actuating the switches connected to the control the function of these switches is checked and displayed with "ON/OFF".					A
179	**Display on the control:** By pressing the "> >" button, the data will be displayed in succession. Program number, modification index and identification number will be displayed in succession (see chapter **Program Identification on the Control**).					A
180 ird	Number of reversion increments		100	0	60 *)	A
181 drd	Activation delay of reversion	ms	990	0	10 *)	A
182	Reversion ON/OFF	ON/OFF			OFF *)	A
183	Switching off the flip-flop function at the seam end 0 = Flip-flop 1 will not be switched off at the seam end 1 = Flip-flop 1 will be switched off at the seam end		1	0	0	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

**) When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

TECHNICIAN LEVEL

Code no. 190 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
184 c6	Number of run-out stitches when unlocking the chain (effective only if parameter 190 = 3 and 290 = 7)		254	0	20	A
185 cHP	Stitch counting high lift for walking foot		254	0	0	A
190	Function "unlock the chain" in modes 4, 5, 6 and 7 (parameter 290) 0 = Unlocking the chain Off 1 = Unlocking the chain manually (with pedal in pos. -2 without cutting at the seam end) 2 = Unlocking the chain automatically - with light barrier or - pedal in pos. -2 (parameter 019) without cutting at the seam end 3 = Unlocking the chain automatically - with light barrier or - pedal in pos. -2 (parameter 019) with cutting and run-out stitches (parameter 184) at the seam end, then unlock the chain (only if parameter 290 = 7)		3	0	2 *)	A
191	Seam end in the overlock mode by end counting c2 or c4 0 = Seam end after counting c4 - tape cutter 1 = Seam end after counting c2 - chain suction		1	0	0	A
192 PLS	Speed of the light barrier compensating stitches OFF = Speed n5 after light barrier sensing ON = Speed pedal controlled	ON/OFF			OFF *)	A
193	Switching on the signal chain suction OFF = Signal chain suction after the light barrier compensating stitches ON = Signal chain suction from light barrier uncovered onwards	ON/OFF			OFF	A
195	Stitches for light barrier control		2550 **)	0	0	A
196	Function chain stitch trimmer (only if parameter 290 = 5) 0 = Chain stitch trimmer in general 1 = Chain stitch trimmer Pegasus		1	0	0	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

**) When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

5.4 SUPPLIER LEVEL

Code no. 311 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
201 t2	Activation delay of sewing foot lifting with half heelback	ms	500	20	80 *)	A
202 t3	Start delay after switching off the sewing foot lift signal	ms	500	0	50 *)	A
203 t4	Time of full power of sewing foot lifting	ms	600	0	500 *)	A
204 t5	Holding power for sewing foot lifting Stages 0...7 Stage 1 = 12.5% Stage 7 = 87.5% Stage 0 = 100% Stage 1 = low holding power Stage 0 = high holding power				3 *)	A
205 t6	Thread wiper time	ms	2550 **)	0	120 *)	A
206 t7	Delay end of thread wiping until sewing foot lifting ON	ms	800	0	40 *)	A
207	Braking effect when modifying the preset value ≤ 4 stages		64	1	25	A
208	Braking effect when modifying the preset value ≥ 5 stages		64	1	64	A
211 tFL	Activation delay of sewing foot lifting with thread wiper off	ms	500	0	60 *)	A
220	Accelerating power of the drive		255	1	32	A
221	Speed gate 1	RPM	990 **)	50	100	A
222	Speed gate damping period (effective only if parameter 224 = OFF)	ms	990	0	0	A
223	Speed gate 2	RPM	6500 **)	200	1700	A
224	Speed gate 2 ON/OFF	ON/OFF			ON	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

**) When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

SUPPLIER LEVEL

Code no. 311 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
231	Execution of the first stitch after power ON at positioning speed	ON/OFF			ON	A
232	Overlock with fast scissors ON/OFF OFF = Tape cutter ON = Fast scissors (set parameter 282 = 0)	ON/OFF			OFF	A
233	Error message A1, if the pedal is not in position 0 (neutral) when switching the machine on OFF = Error message A1 is displayed ON = Error message A1 is suppressed (e. g. with automats)	ON/OFF			ON	A
234	New start after machine run blockage OFF = New start after deactivating the machine run blockage without influence by the pedal (e. g. with automats) ON = New start after deactivating the machine run blockage only if the pedal had been put to position 0	ON/OFF			ON	A
239	**Selection of the input function on socket B18/5** 0 = Light barrier function, if 009 = ON All other functions of the pushbuttons as with parameter 240. Exception is parameter 239 = 14. With this setting, the high lift for walking foot is performed with speed limitation operational mode not stored		28	0	0 *)	D

*) Depending on the selected mode; see table at the beginning of the parameter list!

SUPPLIER LEVEL

Code no. 311 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
240 in1	**Selection of the input function on socket ST2/7 and B4/1 for input 1** In mode 8, 9, 11, 12 or 13 (parameter 290) a value is preset 0 = No function 1 = Needle up/down 2 = Needle up 3 = Single stitch (basting stitch) 4 = Full stitch 5 = Needle to position 2 6 = Machine run blockage effective with open contact 7 = Machine run blockage effective with closed contact 8 = Machine run blockage (unpositioned) effective with open contact 9 = Machine run blockage (unpositioned) effective with closed contact 10 = Automatic speed without pedal (n12) 11 = Limited speed with pedal (n12) 12 = Sewing foot lifting with pedal in position 0 (neutral) 13 = High lift for walking foot with speed limitation n10 (operational mode not stored) 14 = High lift for walking foot **(flip-flop 1)** with speed limitation n10 (operational mode stored) 15 = Tape cutter / fast scissors (in chainstitch and overlock mode) 16 = Intermediate backtack / intermediate stitch condensing 17 = No function 18 = Unlocking the chain (can be activated with pushbutton and will be carried out at the seam end) **Attention!** Set parameter 182 = ON 19 = Set counter of bobbin thread monitor by parameter 031 20 = Positioning speed (n1) 21 = Reversal of the direction of rotation (only possible in mode 12) 22 = No function 23 = Speed limitation n9 24 = Needle moves from position 1 to position 2 **(flip-flop 3)**. If the needle is outside of position 1, machine start is blocked for safety reasons and the sewing foot is immediately lifted. 25 = Speed limitation can be set with external potentiometer 26 = No function 27 = Unlocking the chain (recall with pushbutton without using the pedal) 28 = External light barrier		28	0	0 *)	D

*) Depending on the selected mode; see table at the beginning of the parameter list!

SUPPLIER LEVEL

Code no. 311 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
242 in3	**Selection of the input function on socket ST2/6 and B4/4 for input 3** 0 = no function All functions of the pushbuttons as with parameter 240. In mode 8, 9, 12 or 13 (parameter 290) a value is preset.		28	0	0 *)	D
243 in4	**Selection of the input function on socket ST2/8 and B4/5 for input 4** 0 = no function All functions of the pushbuttons as with parameter 240. In mode 13 (parameter 290) a value is preset.		28	0	0 *)	D
250 iFA	Activation angle of the thread trimmer (1 increment = 3°)	incr.	120	0	100 *)	A
251 FSA	Switch-off delay of thread tension release	ms	990	0	50 *)	A
252 FSE	Activation delay of thread tension release (1 increment = 3°)	incr.	120	0	0 *)	A
253 tFA	Stop time for thread trimmer	ms	500	0	70 *)	A
254 tAM	Holding power output stitch condensing of the thread trimmer backward Stages 0...4 Stage 0 = Holding power Off Stage 1 = 6.25 % Stage 2 = 12.5 % Stage 3 = 18.75 % Stage 4 = 25 %		4	0	2 *)	A
263	High lift for walking foot operational mode not stored input in... = 13 0 = Signal "high lift for walking foot" not inverted 1 = Signal "high lift for walking foot" inverted (Function is effective if parameter 137 = ON)		1	0	0	B
266	Limited speed (n12) input in... = 11 0 = Speed limitation not inverted 1 = Speed limitation inverted (Function is effective if parameter 137 = ON)		1	0	0	B
273 ASi	Trimming function at the start of the seam On/Off (only if parameter 290 = 5)	ON/OFF			OFF	B
274 Ad1	Delay time for signal M3 at the start of the seam	ms	2550 **)	0	40	B
275 At1	Activation time for signal M3 at the start of the seam	ms	2550 **)	0	150	B

*) Depending on the selected mode; see table at the beginning of the parameter list!

**) When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

SUPPLIER LEVEL

Code no. 311 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
276 Ad2	Delay time for signal M2 at the start of the seam	ms	2550 **)	0	50	B
277 At2	Activation time for signal M2 at the start of the seam	ms	2550 **)	0	60	B
278 Ad3	Delay time for signal M5 at the start of the seam	ms	2550 **)	0	40	B
279 At3	Activation time for signal M5 at the start of the seam	ms	2550 **)	0	350	B
280 kd1	Delay time	ms	2550 **)	0	0 *)	A
281 kt1	Activation time	ms	2550 **)	0	100	A
282 kd2	Delay time	ms	2550 **)	0	100 *)	A
283 kt2	Activation time	ms	2550 **)	0	100	A
284 kd3	Delay time	ms	2550 **)	0	200 *)	A
285 kt3	Activation time	ms	2550 **)	0	100	A
286 kd4	Delay time	ms	2550 **)	0	300	C
287 kt4	Activation time	ms	2550 **)	0	100	C
288 kdF	Delay time until sewing foot On	ms	2550 **)	0	380 *)	A

*) Depending on the selected mode; see table at the beginning of the parameter list!

**) When programming the 3-digit and/or 4-digit control parameter values, the 2-digit and/or 3-digit value displayed must be multiplied by 10.

SUPPLIER LEVEL

Code no. 311 with control operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
290 AUt	**0 = Mode lockstitch;** (thread trimmer 1, 2, 3, 1+2); e.g. Brother, Dürkopp Adler, Mitsubishi, Pfaff, Toyota **1 = Mode lockstitch;** e.g. Singer (SN62AV) **2 = Mode lockstitch;** e.g. Singer (212 UTT) **3 = Mode lockstitch;** e.g Dürkopp Adler (cl. 767, N291) **4 = Mode chainstitch;** e.g. (US80A) **5 = Mode chainstitch in general** M1, M2, M3 and M4 parallel sequence **6 = Mode chainstitch with tape cutter** and/or **fast scissors** and **M1/M2** at the seam end **7 = Mode overlock;** e.g. (AC62AV1461) **8 = Mode backlatch;** Pegasus **9 = Mode backlatch;** Yamato **10 = Mode lockstitch;** Union Special (63900AMZ »replacement for US80A«) and on Refrey lockstitch machines **11 = Reversal of the direction of rotation with pedal in pos. -2** **12 = Reversal of the direction of rotation with input in3** **13 = Mode lockstitch;** Pfaff (1425) **14 = Mode lockstitch;** Juki (5550-6, 5550-7)		14	0	5	A
297	**Functions of signal M3** 0 = Function according to setting of parameter 290 1 = Signal M3 is switched on whenever the light barrier is uncovered. 2 = Signal M3 is switched on whenever the light barrier is covered. 3 = Signal M3 is switched on only after light barrier uncovered and/or covered until seam end. 4 = Signal M3 is switched on as with setting 3. Signal M5 (machine running), however, is switched off while signal M3 is emitted.		4	0	0	A

For your notes:

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