

Efka vario dc

CONTROL

DA82GM3303

with control panel V820

PARAMETER LIST

**CONNECTION DIAGRAM
TIMING DIAGRAMS**

No. 402255 English

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1. Starting Service



Attention!

This control box can only be operated in conjunction with a master PC and the corresponding Dürkopp Adler programm for documented sewing!

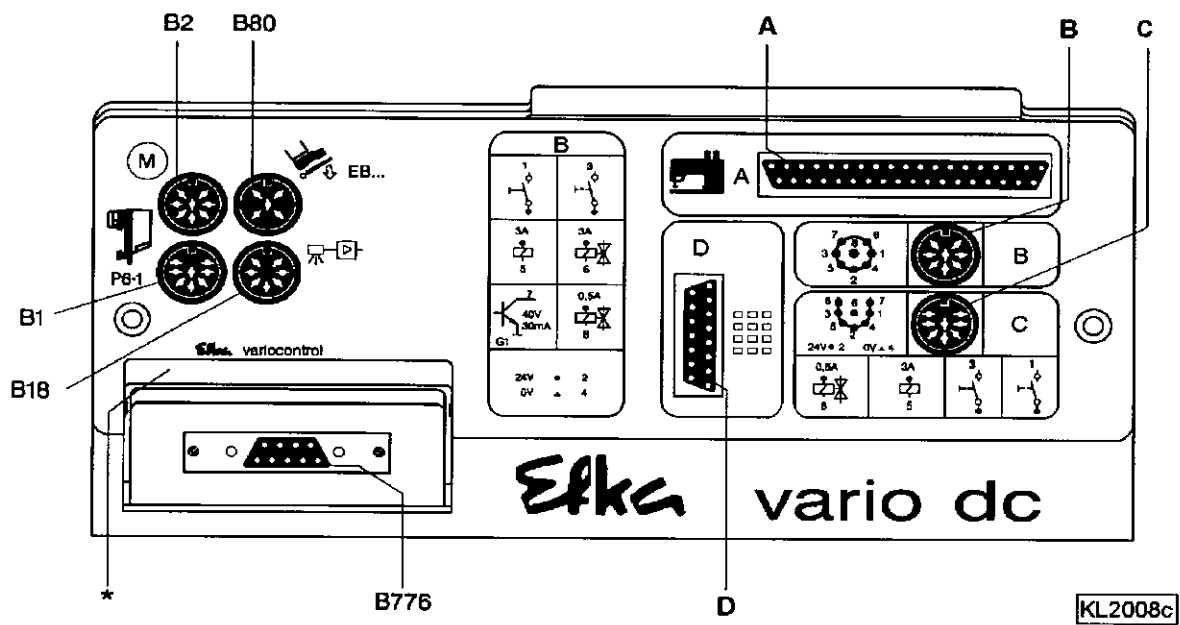
Before putting the control into operation, the following must be ensured, checked and/or adjusted:

- The correct installation of the drive, the position transmitter and accompanying devices, if necessary
- The correct connection of the control box with the master PC
- The correct adjustment of the direction of rotation of the motor with parameter 161
- The appropriate machine, which can be verified with parameter 280
- The setting of the reference position with parameter 170
- The setting of the positions with parameter 171
- The correct setting of the positioning speed with parameter 110
- The correct maximum speed compatible with the sewing machine with parameter 111
- The setting of the remaining relevant parameters
- Start sewing in order to save the set values

See instruction manual for details!

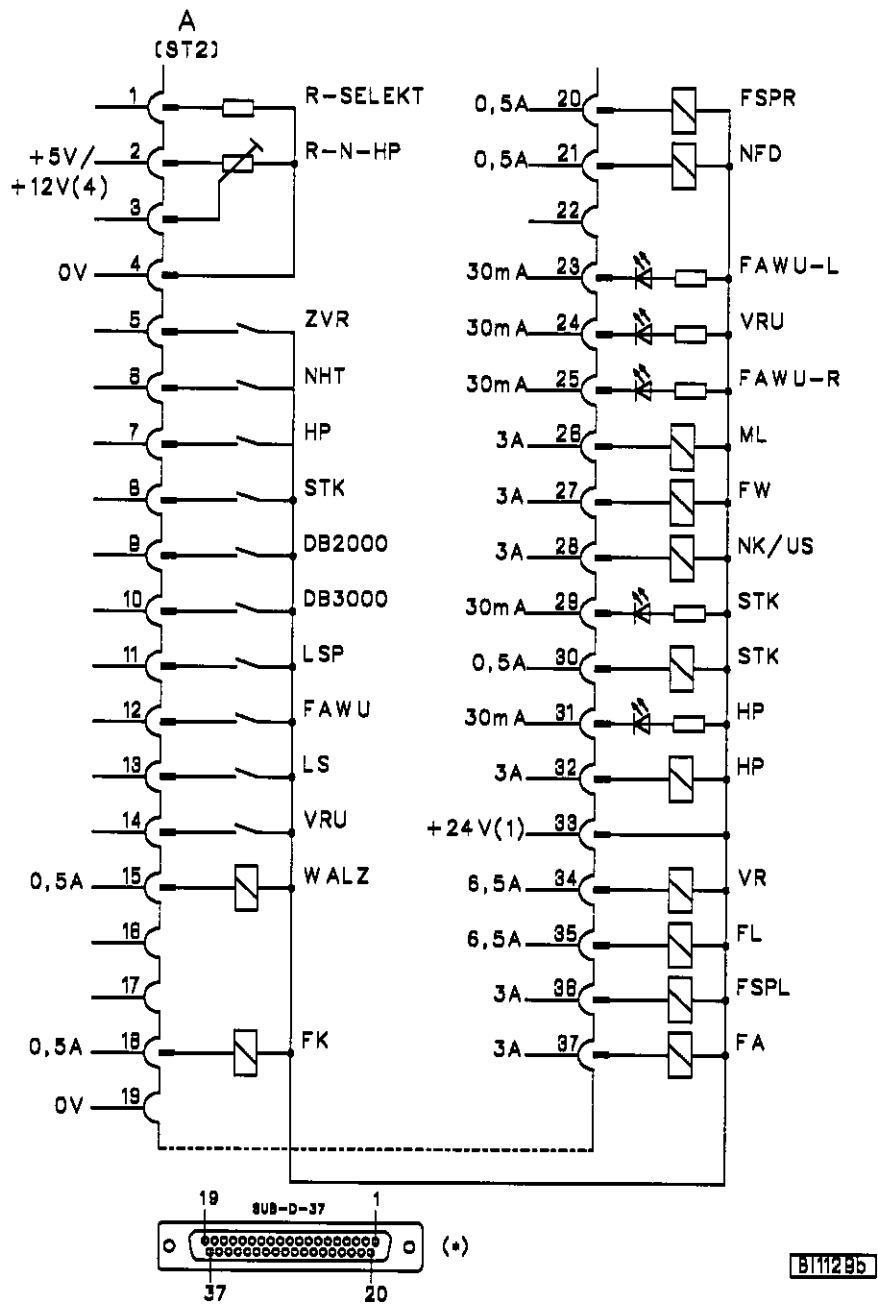
2. Socket Connectors

2.1 Position in the Control



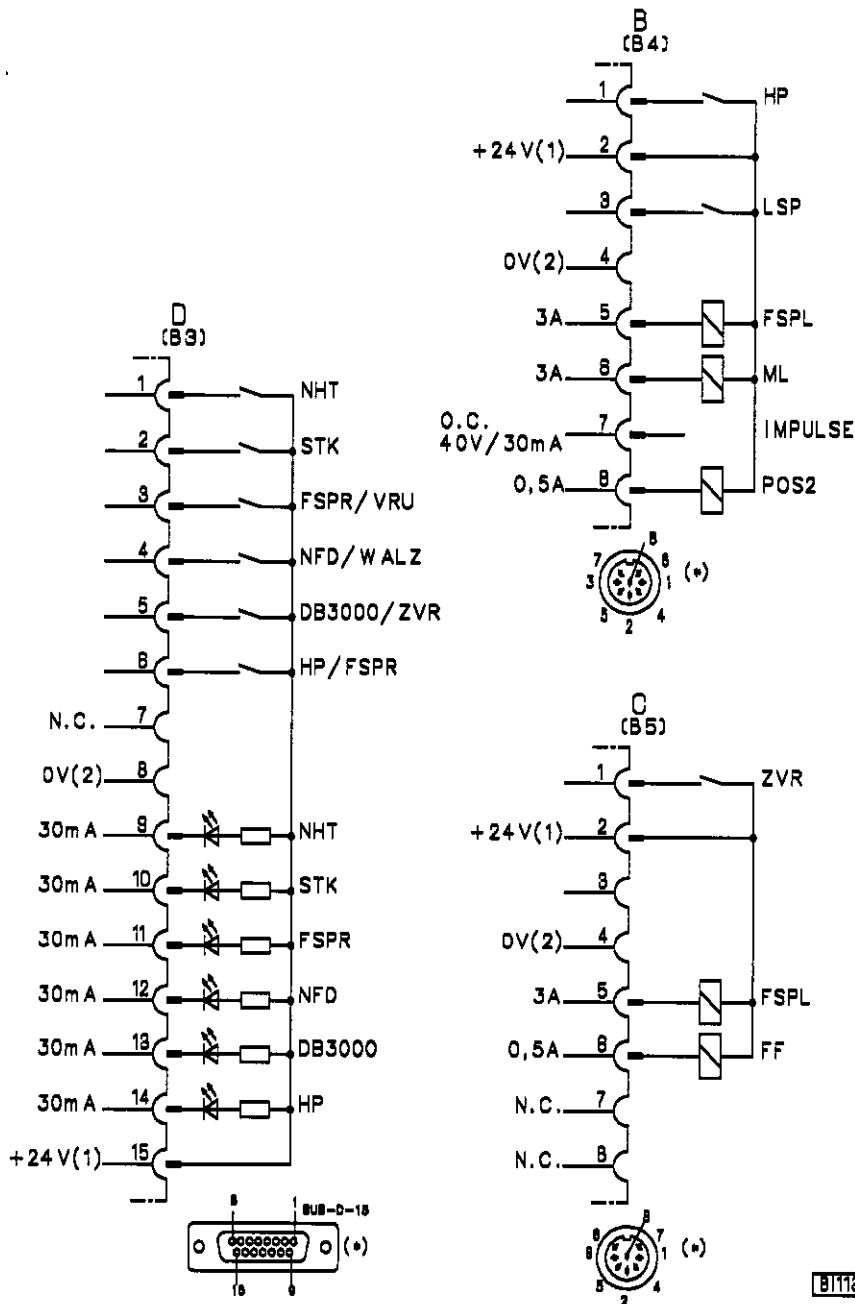
- | | | | |
|---------|--|--------|---|
| B1 | - Position transmitter | D (B3) | - Pushbuttons and light emitting diodes |
| B2 | - Commutation transmitter for d.c. motor | B18 | - Light barrier module |
| A (ST2) | - Inputs and outputs | B80 | - Actuator |
| B (B4) | - Inputs and outputs | B776 | - Control panel Variocontrol |
| C (B5) | - Inputs and outputs | * | - Type designation |

2.2 Connection Diagram



- | | | | |
|--------|--------------------------------------|----------|--|
| DB2000 | - Speed limitation 2000 RPM | ML | - Motor running |
| DB3000 | - Speed limitation 3000 RPM | NFD | - Sewing foot pressure |
| FA | - Thread trimmer | NHT | - Needle up/down |
| FAWU-L | - Thread monitor at the bottom left | NK/US | - Needle cooling / option |
| FAWU-R | - Thread monitor at the bottom right | R-N-HP | - Setpoint potentiometer for speed limitation depending on high lift |
| FK | - Thread clamp | R-SELEKT | - Resistor for machine select |
| FL | - Sewing foot lift | STK | - Switch stitch length |
| FSPL | - Thread tension release | VR | - Backtacking |
| FSPR | - Reduction of thread tension | VRU | - Backtack suppression/recall |
| FW | - Thread wiper | WALZ | - Roller feed |
| HP | - High lift limitation | ZVR | - Intermediate backtack |
| LS | - Light barrier | | |
| LSP | - Machine run blockage | | |

1) Nominal voltage 24V, no-load voltage max. 36V
 4) Nominal voltage +5V, 250 mA (can be changed to 12V, 250 mA after opening the cover)
Attention! See chapter "Supply Voltage 5V and/or 12V!"
 *) Front view of the socket (component side) and/or rear view (soldering side) of the plug



Attention!

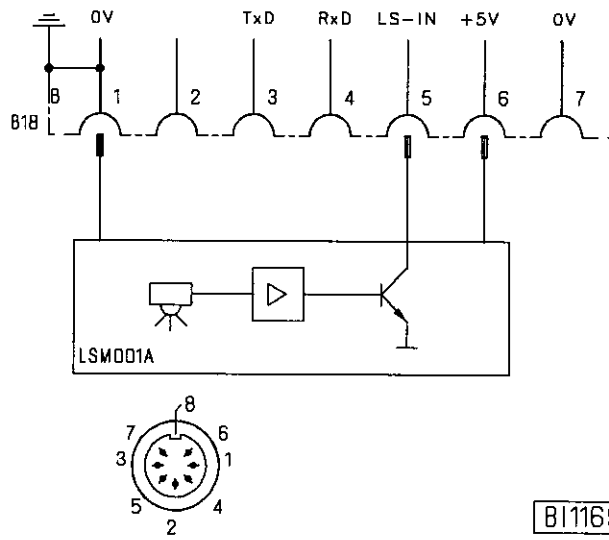
When connecting the outputs, ensure that a total power of 96VA constant load will not be exceeded !

DB3000	- Speed limitation 3000 RPM	NFD	- Sewing foot pressure
FF	- Flip-flop	NHT	- Needle up/down
FSPL	- Thread tension release	POS2	- Position 2
FSPR	- Reduction of thread tension	STK	- Switch stitch length
HP	- High lift limitation	VR	- Backtacking
IMPULSE	- Speedometer impulses (512/rotation)	VRU	- Backtack suppression/recall
LSP	- Machine run blockage	WALZ	- Roller feed
NHT	- Needle up/down	ZVR	- Intermediate backtack
ML	- Motor running		

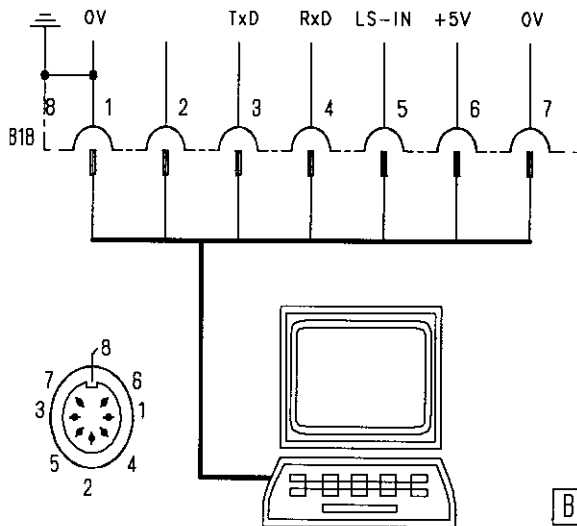
1) Nominal voltage 24V, no-load voltage max. 36V

2) OV connection of the load circuit

*) Front view of the socket (component side) and/or rear view (soldering side) of the plug



BI1169

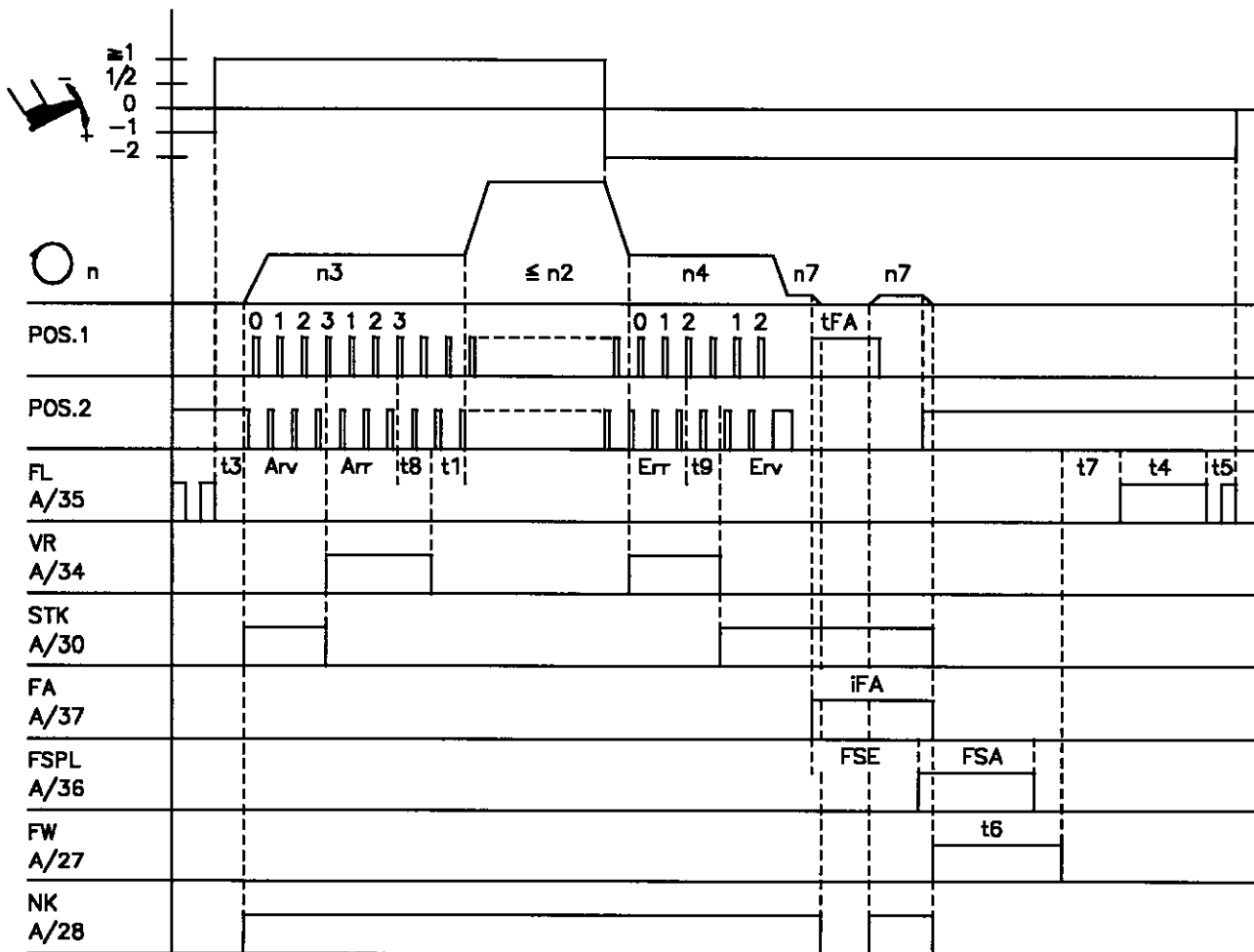


BI1168

- LS-IN - Light barrier command (identified when switched to 0V)
- LSM001A - Reflection light barrier module
- TxD/RxD - Lines for serial data communication with the PC

3. Timing Diagrams

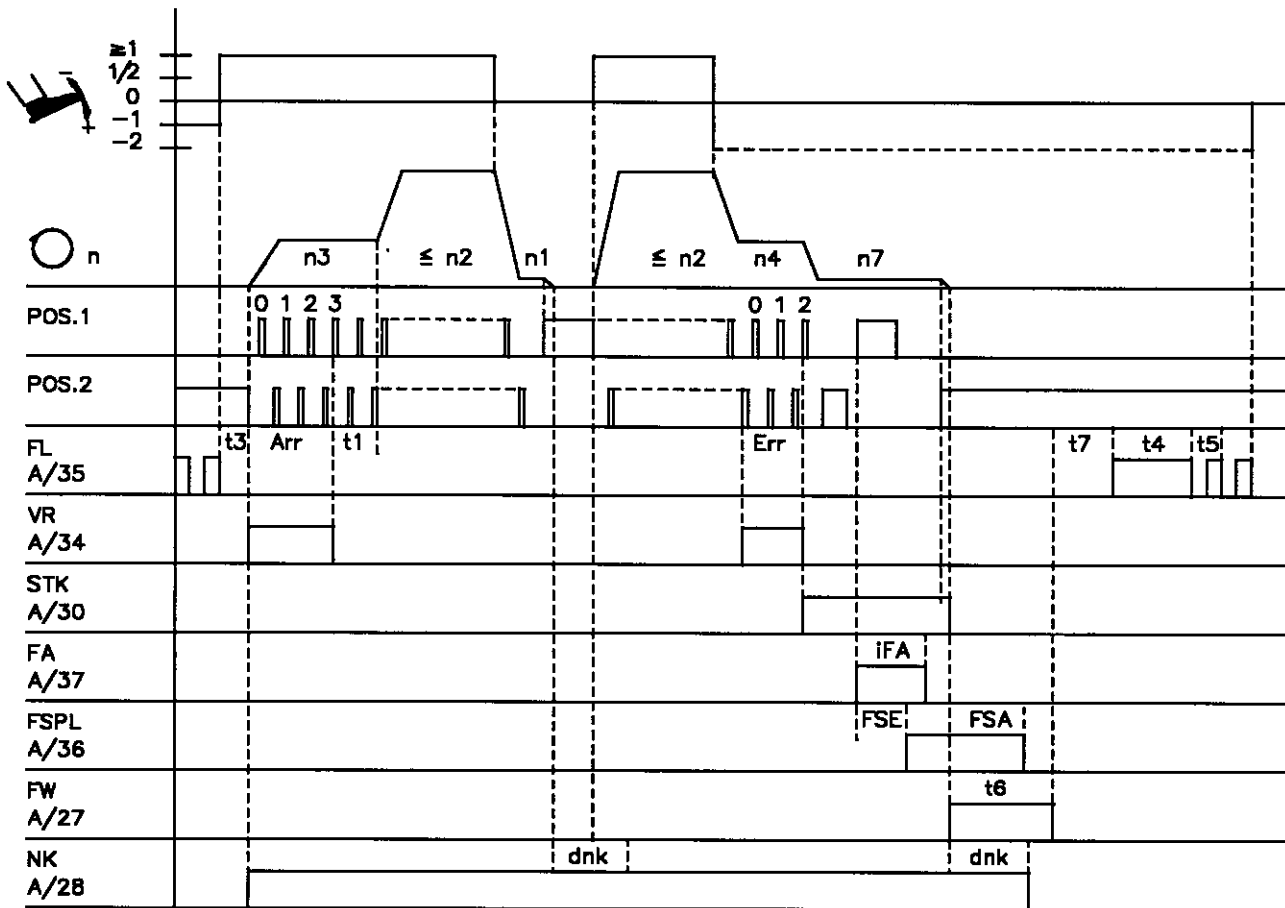
Trimming from full machine run



0214/FALAUJ

Abbreviation	Function	Param.	Pushbutton V820
	Double start backtack with stitch correction Double end backtack with stitch correction	On On	Pushb. 1 Pushb. 4
n2	Maximum speed	111	
n3	Start backtacking speed	112	
n4	End backtacking speed	113	
n7	Trimming speed	116	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
tFA	Stop time for thread trimmer in position 1	193	
t1	Delay of speed release after start backtack	200	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lift	203	
t5	Holding power of sewing foot lift	204	
t6	Operating time of thread wiper	205	
t7	Delay time of sewing foot lift after thread wiping	206	
t8	Start backtack stitch correction	150	
t9	End backtack stitch correction	151	
Arv	Start backtack stitches forward	000	
Arr	Start backtack stitches backward	001	
Err	End backtack stitches backward	002	
Erv	End backtack stitches forward	003	

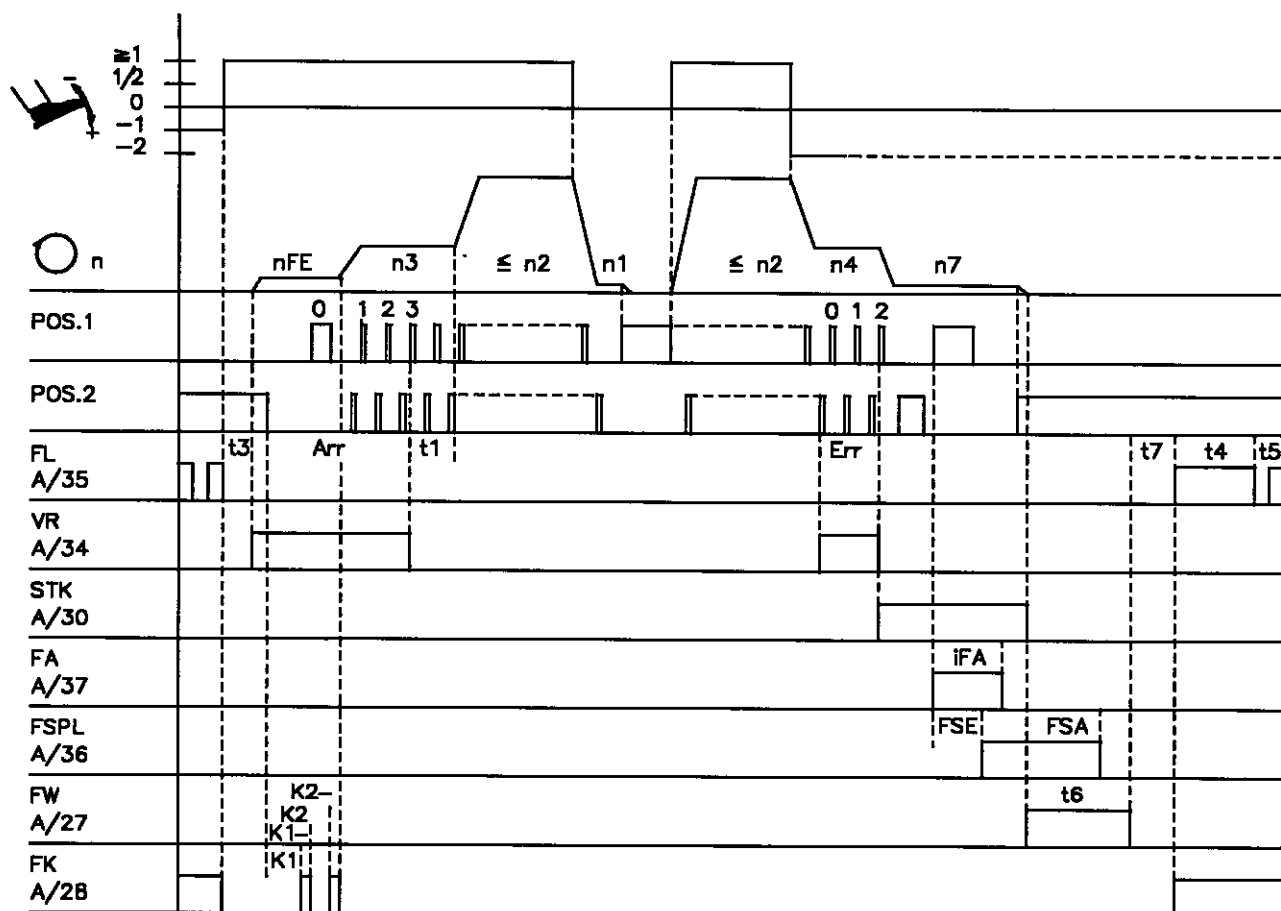
Run with intermediate stop



0214/LAUFZW

Abbreviation	Function	Param.	Pushbutton V820
	Single start backtack Single end backtack	On On	Pushb. 1 Pushb. 4
n1	Positioning speed	110	
n2	Maximum speed	111	
n3	Start backtacking speed	112	
n4	End backtacking speed	113	
n7	Trimming speed	116	
dnk	Switch-off delay of needle cooling after the stop	183	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
t1	Delay of speed release after start backtack	200	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lift	203	
t5	Holding power of sewing foot lift	204	
t6	Activation time of thread wiper	205	
t7	Delay time of sewing foot lift after thread wiping	206	
Arr	Start backtack stitches backward	001	
Err	End backtack stitches backward	002	

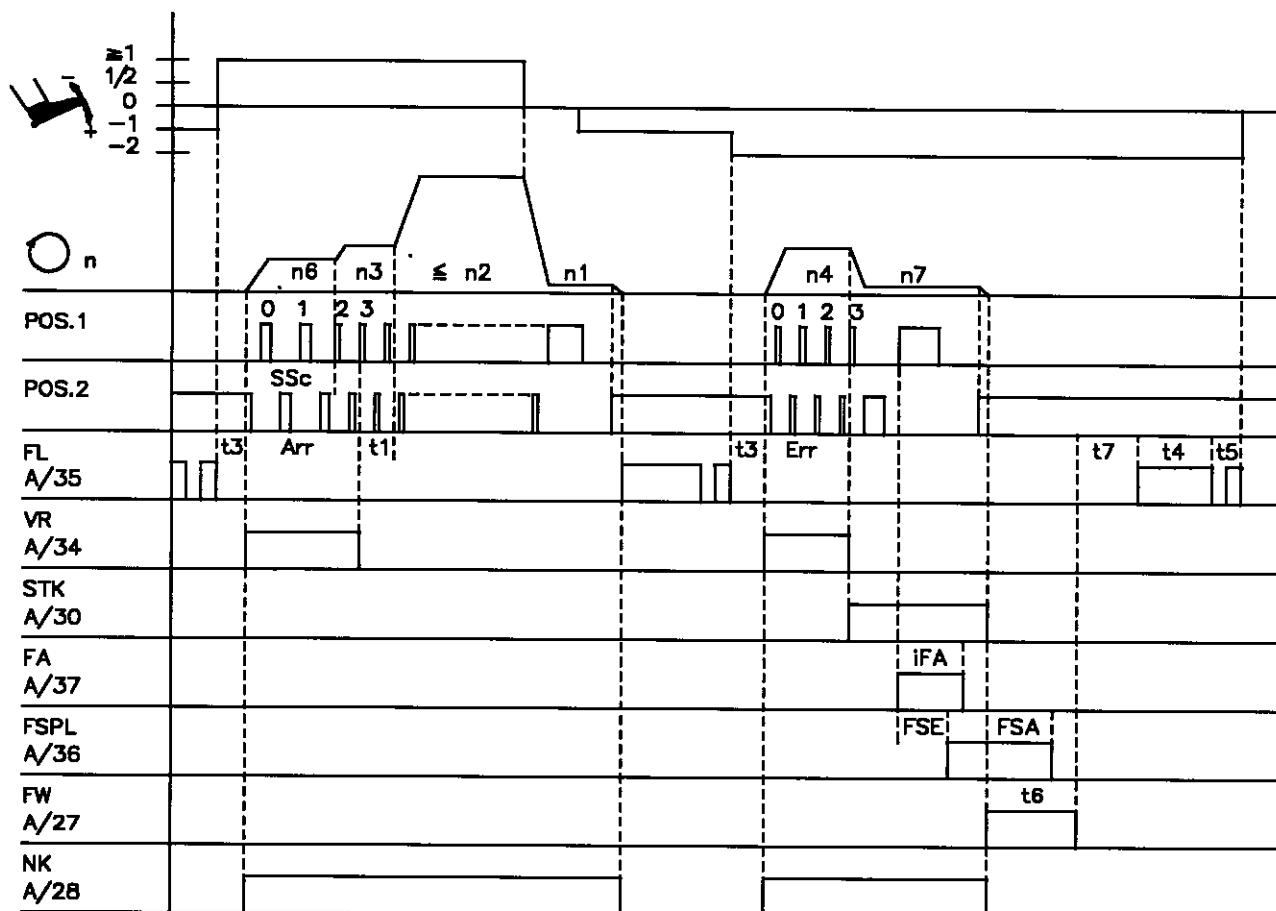
Run with intermediate stop with thread clamp switched on



0214/LAUF-FK

Abbreviation	Function	Param.	Pushbutton V820
	Single start backtack Single end backtack Thread clamp	On On On	Pushb. 1 Pushb. 4
		154	
n1	Positioning speed	110	
n2	Maximum speed	111	
n3	Start backtacking speed	112	
n4	End backtacking speed	113	
n6	Softstart speed	115	
n7	Trimming speed	116	
KL1	Increments up to switching on the thread clamp	155	
KL2	Increments up to switching off the thread clamp	156	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
t1	Delay of speed release after start backtack	200	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lift	203	
t5	Holding power of sewing foot lift	204	
t6	Activation time of thread wiper	205	
t7	Delay time of sewing foot lift after thread wiping	206	
Arr	Start backtack stitches backward	001	
Err	End backtack stitches backward	002	

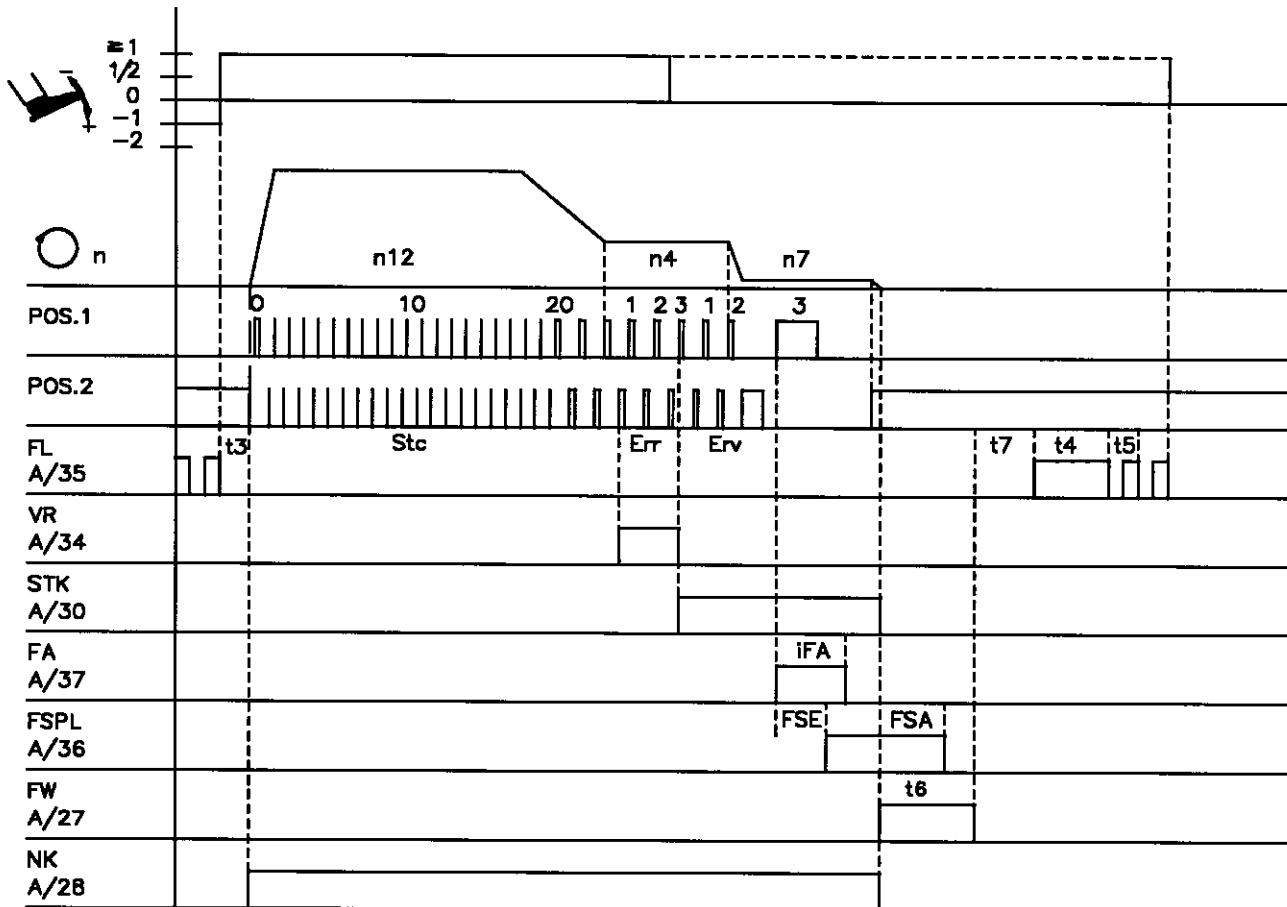
Trimming from intermediate stop



0214/FAZW

Abbreviation	Function	Param.	Pushbutton V820
	Softstart Basic position 2 Single start backtack Single end backtack	On On On On	134 Pushb. 7 Pushb. 1 Pushb. 4
n1	Positioning speed	110	
n2	Maximum speed	111	
n3	Start backtacking speed	112	
n4	End backtacking speed	113	
n6	Softstart speed	115	
n7	Trimming speed	116	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
t1	Delay of speed release after start backtack	200	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lift	203	
t5	Holding power of sewing foot lift	204	
t6	Operating time of thread wiper	205	
t7	Delay time of sewing foot lift after thread wiping	206	
SSc	Softstart stitches	100	
Arr	Start backtack stitches backward	001	
Err	End backtack stitches backward	002	

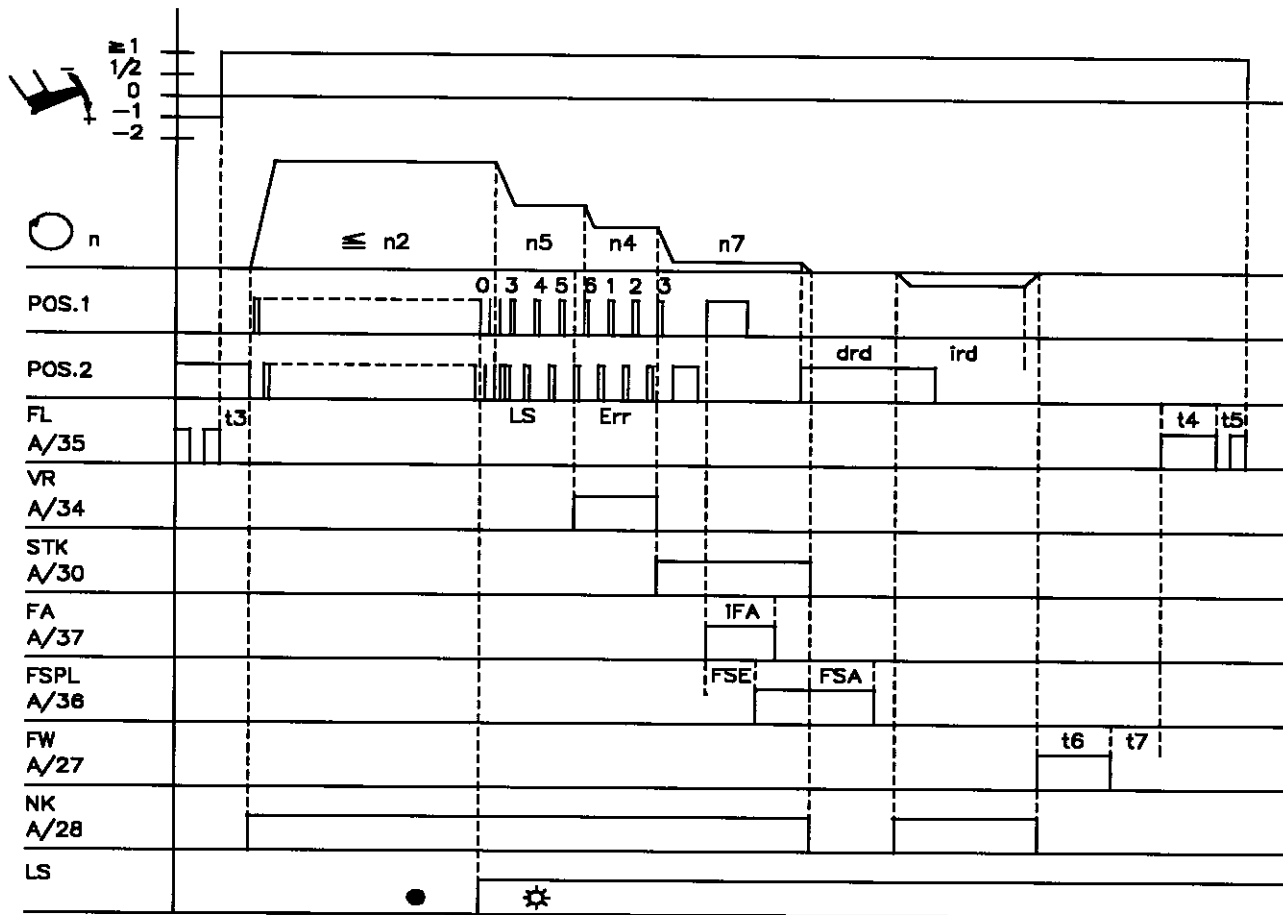
Seam end by stitch counting



0214/ENDEZAE

Abbreviation	Function	Param.	Pushbutton V820
	Stitch counting Double end backtack	On On	Pushb. 2 Pushb. 4
n4	End backtacking speed	113	
n7	Trimming speed	116	
n12	Stitch counting speed	118	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
t1	Delay of speed release after start backtack	200	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lift	203	
t5	Holding power of sewing foot lift	204	
t6	Operating time of thread wiper	205	
t7	Activation delay of sewing foot lift after thread wiping	206	
Err	End backtack stitches backward	002	
Erv	End backtack stitches forward	003	
Stc	Stitches of the seam with stitch counting	007	

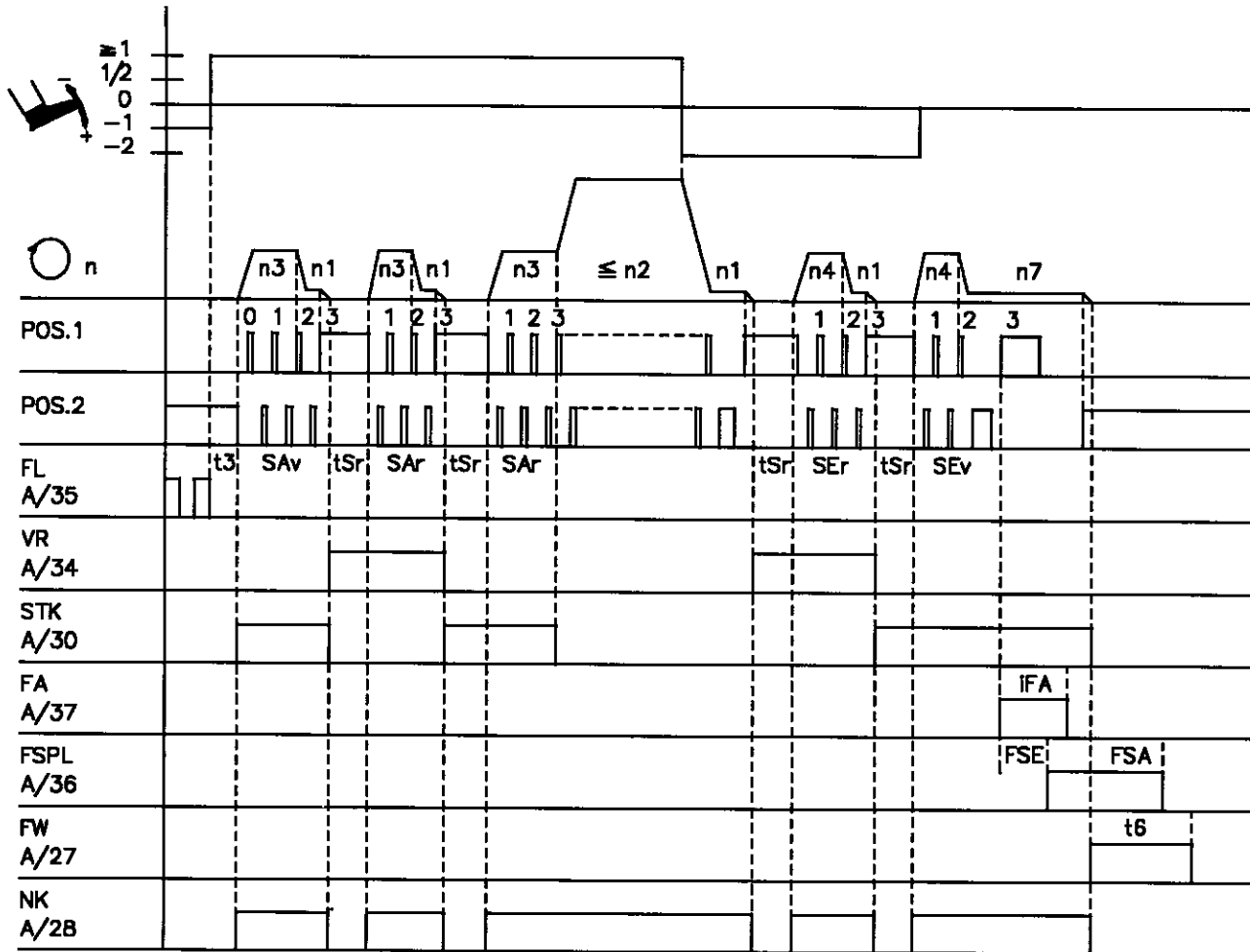
End sensing by light barrier



0214/ENDELS

Abbreviation	Function	Param.	Pushbutton V820
	Single end backtack Light barrier Light barrier covered/uncovered Reversion	On On On On	Pushb. 4 Pushb. 3
n2	Maximum speed	111	
n4	End backtacking speed	113	
n5	Speed after light barrier sensing	114	
n7	Trimming speed	116	
ird	Number of reversion increments	180	
drd	Activation delay of reversion	181	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
t3	Start delay from lifted foot	202	
t4	Full power of sewing foot lift	203	
t5	Holding power of sewing foot lift	204	
t6	Operating time of thread wiper	205	
t7	Delay time of sewing foot lift after thread wiping	206	
LS	Light barrier compensating stitches	004	
Err	End backtack stitches backward	002	

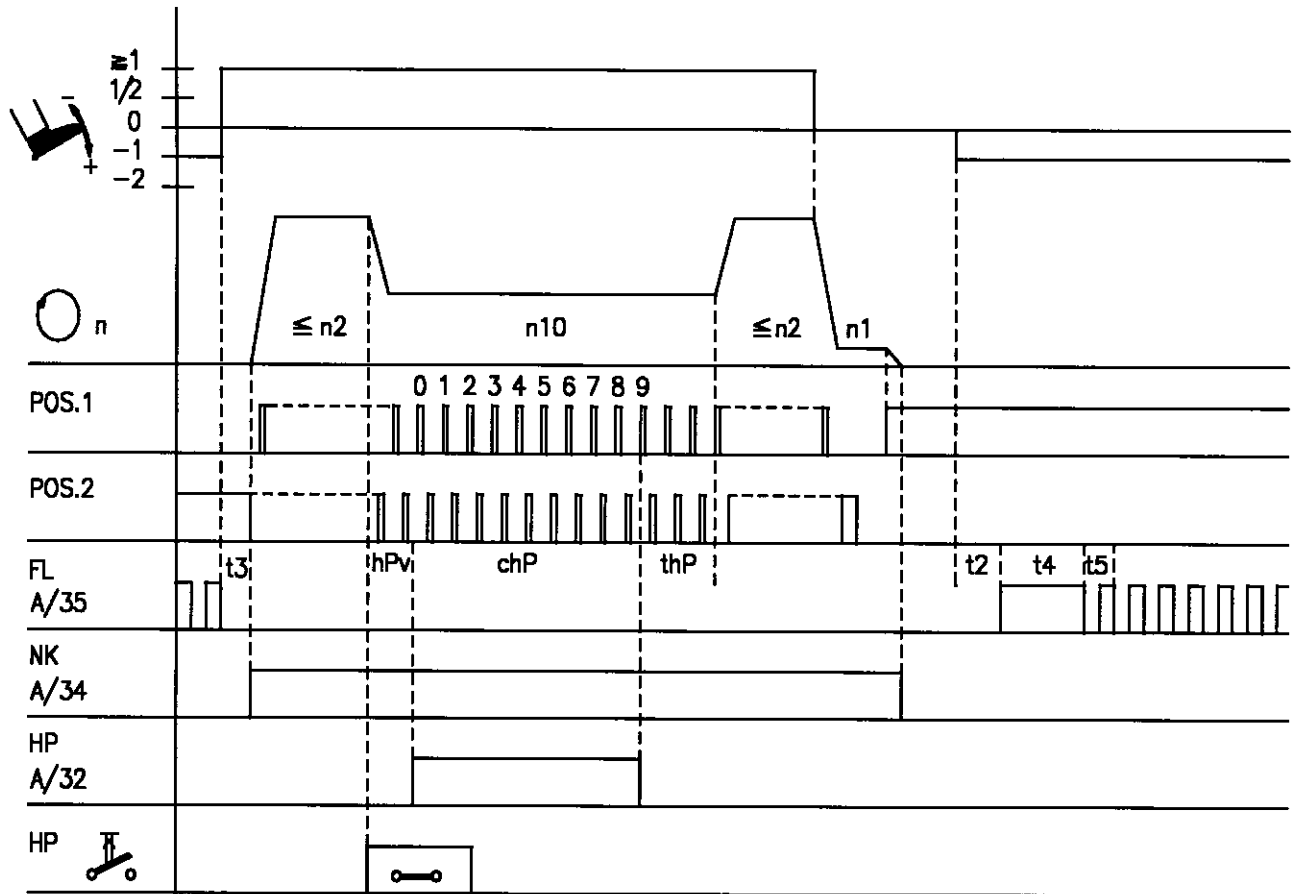
Run with ornamental backtack



0214/LAUFZVR

Abbreviation	Function	Param.	Pushbutton V820
	Ornamental backtack Sewing foot lift stored after thread trimming	On On	135 Pushb. 5
n1	Positioning speed	110	
n2	Maximum speed	111	
n3	Start backtacking speed	112	
n4	End backtacking speed	113	
n7	Trimming speed	116	
iFA	Activation angle of the thread trimmer	190	
FSA	Switch-off delay of the thread tension release	191	
FSE	Activation delay of thread tension release	192	
t3	Start delay from lifted foot	202	
t6	Operating time of thread wiper	205	
tSr	Stop time for ornamental backtack	210	
SAv	Number of start ornamental backtack stitches forward	080	
SAr	Number of start ornamental backtack stitches backward	081	
SEr	Number of end ornamental backtack stitches backward	082	
SEv	Number of end ornamental backtack stitches forward	083	

Run with high lift for walking foot



0214/LAUFHUB

Abbreviation	Function	Param.	Pushbutton V820
hPr Fc6	High lift for walking foot operation mode not stored Pushbutton on D/6 "function high lift for walking foot"	Off 1	138 149
n1 n2 n10	Positioning speed Maximum speed High lift walking speed	110 111 117	
thP chP t2 t3 t4 t5	Run-out time of the high lift walking speed Minimum number of high lift walking stitches Delay of sewing foot lift with pedal in pos. -1 or -2 Start delay from lifted foot Full power of sewing foot lift Holding power of sewing foot lift	152 184 201 202 203 204	

4. Parameter List

4.1 OPERATOR LEVEL

Parameter	Designation	Unit	Limits		Preset for				
			max	min	100Ω				1000Ω
000 Arv	Start backtack stitches forward		254	0	2				2
001 Arr	Start backtack stitches backward		254	0	4				4
002 Err	End backtack stitches backward		254	0	3				3
003 Erv	End backtack stitches forward		254	0	3				3
004 LS	Light barrier compensating stitches (for 1st stitch length / long stitch)		254	0	4				4
005 LSF	Number of stitches of the light barrier filter for knitted fabrics		254	0	0				0
006 LSn	Number of light barrier seams		15	1	1				1
007 Stc	Number of stitches for the seam with stitch counting		254	0	10				10
008 -F-	Setting of pushbutton 9 with a parameter from the technician level 1 = Softstart ON/OFF 2 = Ornamental backtack ON/OFF 3 = High lift for walking foot operation mode stored = ON / operation mode not stored = OFF 4 = Needle cooling ON/OFF 5 = Reversion ON/OFF		5	1	2				2
009 LS	Light barrier ON/OFF	ON/OFF			OFF				OFF
010 cLS	Light barrier compensating stitches (for 2nd stitch length / short stitch)		254	0	8				8
013 FA	Thread trimmer ON/OFF	ON/OFF			ON				ON
014 FW	Thread wiper ON/OFF	ON/OFF			ON				ON
015 StS	Stitch counting ON/OFF	ON/OFF			ON				OFF

Note: At the operator level, the parameter number (F-xxx) is not shown on the display, but the abbreviation (e.g. ARV) and the actual value (e.g. 004 - for 4 stitches).

OPERATOR LEVEL

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
080 SAV	Number of start ornamental backtack stitches forward		254	0	3			3
081 SAR	Number of start ornamental backtack stitches backward		254	0	3			3
082 SEr	Number of end ornamental backtack stitches backward		254	0	3			3
083 SEv	Number of end ornamental backtack stitches forward		254	0	3			3
085 cFW	Number of stitches for bobbin thread monitor Parameter 195 = 1...3 Parameter 195 = 4 If 195 = 4, the following functions are activated by pressing the appropriate pushbutton: > 1 sec. = Bobbin thread monitor function is deactivated < 1 sec. = Counter is set to preset value		2540 5000	0 0	0 0			0 0

Note: At the operator level, the parameter number (F-xxx) is not shown on the display, but the abbreviation (e.g. ARV) and the actual value (e.g. 004 - for 4 stitches).

4.2 TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	1000Ω			1000Ω
Group 0 Stitches/Counts								
100 SSc	Number of softstart stitches		254	0	2			2
Group 1 Speeds								
110 n1	Positioning speed	RPM	390	70	150			150
111 n2-	Upper limit of maximum speed (n-maxmax)	RPM	5000	n2_	4000			3500
112 n3	Start backtack speed	RPM	3000	200	1200			1200
113 n4	End backtack speed	RPM	3000	200	1200			1200
114 n5	Speed after light barrier sensing	RPM	3000	200	1200			1200
115 n6	Softstart speed	RPM	2500	70	400			400
116 n7	Trimming speed	RPM	500	70	150			150
117 n10	High lift walking speed = Speed limitation (DB2000)	RPM	2500	400	2000			2000
118 n12	Automatic/stitch counting speed dependent on speed mode	RPM	5000	400	1200			1200
119 nSt	Speed stage graduation 1 = linear 2 = slightly progressive 3 = highly progressive		3	1	1			1
121 n2_	Lower limit of maximum speed (n-maxmin)	RPM	n2_	400	400			400
123 tnS	Backtack synchronization time for end backtack	ms	500	0	0			0
124 nrS	Backtack synchronization speed for end backtack	RPM	3000	100	1200			1200
127 AKS	Acoustic signal ON/OFF				OFF			OFF
128 ASd	Start delay, when start command is given by covering the light barrier (only if parameter 129 = ON)	ms	2000	0	0			0

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
129 ALS	Automatic start with light barrier: machine start by covering the light barrier, without having heeled the pedal back to the basic position. Additional prerequisites: - Parameter 132 = ON - Function light barrier sensing switched on on the control panel - Initiation of the <u>first</u> "normal" seam section (pedal in the basic position) - Cover light barrier - Press pedal forward - Keep pedal pressed forward Deactivate this function by heeling the pedal back to the basic position.	ON/OFF			OFF			OFF
Group 3 Switching Functions								
130 LSF	Light barrier filter for knitted fabrics	ON/OFF			OFF			OFF
131 LSc	ON = Light barrier sensing "uncovered" OFF = Light barrier sensing "covered"	ON/OFF			ON			ON
132 LSS	Machine start blockage, when light barrier uncovered	ON/OFF			OFF			OFF
133 LSE	Thread trimming when completing the seam by light barrier sensing	ON/OFF			ON			ON
134 SSt	Softstart	ON/OFF			ON			ON
135 SrS	Ornamental backtack	ON/OFF			OFF			OFF
136 FAr	Trimming stitch backward	ON/OFF			OFF			OFF
137 SLu	Stitch length during backtack ON = 2nd stitch length / short stitch OFF = selected stitch length	ON/OFF			ON			OFF
138 hPr	ON = High lift for walking foot operation mode stored OFF = High lift for walking foot operation mode not stored	ON/OFF			OFF			OFF
139 nIS	Display of machine speed	ON/OFF			OFF			OFF

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
Group 4 Switching Functions								
140 nh1	Mode needle UP/DOWN (pushbutton on A/6) 1 = Needle up 2 = Needle up/down 3 = Single stitch 4 = Single stitch with 2nd stitch length / short stitch 5 = Needle up if outside of position 2		5	1	1			1
141 SGn	Speed mode for a seam with stitch counting 0 = Speed controllable by the pedal up to the maximum speed (parameter 111) 1 = Fixed speed (parameter 118), without influence by the pedal (machine stop by heeling the pedal back 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	1			1
142 SFn	Speed mode for the free seam and for the seam with light barrier 0 = Speed controllable by the pedal up to the maximum speed (parameter 111) 1 = Fixed speed (parameter 118), without influence by the pedal (machine stop by heeling the pedal back 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 (only in conjunction with light barrier on, otherwise like mode 0)		3	0	0			0
143 MnF	Mode pushbutton speed limitation (DB2000) (pushbutton on A/9) 1 = Limited speed (n10) (DB2000) 2 = Fixed speed (n10)		2	1	1			1

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
Group 4 Switching Functions								
144 nh2	Mode pushbutton needle up/down (pushbutton on D/1) 1 = Needle up 2 = Half stitch 3 = Single stitch 4 = Single stitch with 2nd stitch length / short stitch 5 = Needle up if outside of position 2		5	1	1			1
145 StL	1st stitch length / long stitch with speed limitation (pushbutton on D/2) 1 = 1st stitch length / long stitch without speed limitation 2 = 1st stitch length / long stitch with speed limitation (DB2000) 3 = 1st stitch length / long stitch with speed limitation (DB3000)		3	1	1			1
146 MFd	Reduction of sewing foot pressure (pushbutton on D/4) 1 = Reduction of sewing foot pressure with speed limitation (DB2000) 2 = Reduction of sewing foot pressure with speed limitation (DB3000) 3 = Lift roller		3	1	3			3
147 Fc3	Function of the pushbutton on D/3 1 = Reduction of thread tension 2 = Backtack suppression/recall		2	1	2			2
148 Fc5	Function of the pushbutton on D/5 1 = Speed limitation (DB3000) 2 = Intermediate backtack		2	1	2			2
149 Fc6	Function of the pushbutton on D/6 1 = High lift for walking foot 2 = Reduction of thread tension		2	1	1			1

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for				
			max	min	100Ω			1000Ω	
Group 5 Time Functions									
150	t8	Stitch correction of the double start backtack (prolongation of the operating time of the stitch regulator / not effective with ornamental backtack)	ms	500	0	0			0
151	t9	Stitch correction of the double end backtack (prolongation of the operating time of the stitch regulator / not effective with ornamental backtack)	ms	500	0	0			0
152	thP	Run-out time of the high lift walking speed after switching off the high lift for walking foot	ms	500	80	100			100
153	brt	Breaking power at machine standstill	ms	50	0	6			6
154	FKL	Thread clamp function 0 = Thread clamp off 1 = Thread clamp function when using the values of parameters 155...158 2...6 = Preset values (see table in the instruction manual)		6	0	0			0
155	K1	Increments up to switching on the thread clamp (signal 1)		500	0	100			100
156	K1-	Increments up to switching off the thread clamp (signal 1) (this parameter setting value must not be lower than that of parameter 155)		500	0	200			200
157	K2	Increments up to switching on the thread clamp (signal 2)		500	0	0			0
158	K2-	Increments up to switching off the thread clamp (signal 2) (this parameter setting value must not be lower than that of parameter 157)		500	0	0			0
Group 6 DC Motor									
161	drE	Direction of rotation of the motor 0 = Clockwise rotation (cw) 1 = Counterclockwise rotation (ccw)		1	0	1			1

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
Group 7 Service Functions								
170 Sr1	Setting the reference position (Position 0) = Needle point at the height of the needle plate, from downward movement of the needle in the direction of rotation of the motor shaft							
171 Sr2	Setting the needle positions 1 = Position 1 (leading edge) 1A = Position 1 (trailing edge) 2 = Position 2 (leading edge) 2A = Position 2 (trailing edge) 3 = Position 3 3A = Position 3		510 510 510 510 510 510	0 0 0 0 0 0	170 250 440 510 0 0			60 200 466 510 0 0
172 Sr3	Display on control panel V820 Position 1 to 1A (lefthand arrow above pushbutton 7 On) Position 2 to 2A (righthand arrow above pushbutton 7 On)							
173 Sr4	Checking the signal outputs and inputs with control panel V820 - Select the desired output with the +/- pushbuttons - Actuate the selected output with the >> pushbutton on V820 01 = Backtacking (A/34, B/6) 02 = Sewing foot lift (A/35) 03 = Thread trimmer (A/37) 04 = Thread wiper (A/27) 05 = 2nd stitch length / short stitch (A/30) 06 = Thread tension release (A/36,B/5,C/5) 07 = Reduction of thread tension (A/20) 08 = Needle cooling (A/28) 09 = Motor running (A/26)							

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
Group 7 Service Functions								
	10 = High lift for walking foot (A/32) 11 = without setting (A/22) 12 = LED needle up/down (D/9) 13 = LED 1st stitch length / long stitch (D/10) 14 = Thread clamp (A/18) 15 = LED high lift limitation (A/31) 16 = LED bobbin thread monitor at the right (A/25) 17 = LED reduction of sewing foot pressure (D/12) 18 = LED reduction of thread tension/ backtack suppression/recall (D/11) 19 = Reduction of sewing foot pressure (A/21) 20 = LED bobbin thread monitor at the left (A/23) 21 = Flip-flop (C/6) 22 = LED high lift limitation/reduction of thread tension (D/14) 23 = LED backtack suppression/recall (A/24) 24 = LED speed limitation 3000/intermediate backtack (D/13) 25 = LED 1st stitch length /long stitch (A/29) 26 = without setting (A/17) 27 = without setting (A/16) 28 = Roller feed (A/15) OFF/ON = By actuating the switches connected to the control the function of these switches is checked and displayed with "ON / OFF" on control panel V820.							
179	Display on control panel V820: Control program number with index and identification number will be displayed. Display on the control: Upon pressing the ">>" button the data will be displayed in succession.							

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for							
			max	min	100Ω			1000Ω				
Group 8 Functions of Specific Types												
180	Ird	Number of reversion increments	400	20	40			90				
181	drd	Activation delay of reversion	ms	990	0	0		0				
182	Frd	Reversion	ON/OFF		ON			ON				
183	dnk	Switch-off delay of needle cooling after stop	ms	5000	0	2500		2500				
184	chP	Minimum number of stitches for high lift for walking foot		100	0	0		0				
185	Fnk	Function of the output needle cooling 1 = Needle cooling 2 = Reserved for option		2	1	1		1				
186	ctw	Stitches up until the roller is lowered		254	0	10		10				
187	Stn	Stitch length in the next seam after thread trimming 1 = the selected stitch length remains on 2 = switch to 1st stitch length / long stitch after thread trimming 3 = switch to 2nd stitch length / long stitch after thread trimming		3	1	1		1				
188	knP	Minimum speed level for high lift for walking foot Maximum speed level for high lift for walking foot Assignment of maximum speed (Parameter 111) and minimum speed (parameter 117 = high lift walking speed) to the 21 speedomat levels. Display example: <table border="1" style="margin: 10px auto;"><tr><td>2500</td><td>10</td><td>15</td><td>19</td></tr></table> 10 = Display of the level up to which the maximum speed is effective. 19 = Display of the level from which the minimum speed is effective. 15 = Display of the level set on the speedomat (potentiometer) 2500 = Corresponding speed Change of setting: Set speedomat to the desired level, then press pushbutton E briefly.	2500	10	15	19	21	1	21	1		
2500	10	15	19									

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
Group 9 Functions of Specific Types								
190 iFA	Activation angle of the thread trimmer (1 step corresponds to 0.7°)		450	0	180			80
191 FSA	Switch-off delay of thread tension release	ms	990	0	50			50
192 FSE	Activation angle of thread tension release (1 step corresponds to 0.7°)		450	0	0			260
193 tFA	Stop time for thread trimmer	ms	500	0	0			30
195 rFW	Bobbin thread monitor 0 = no bobbin thread monitor function 1 = cl. 270 and/or short seams; without stop, sewing foot down after thread trimming 2 = cl. 767 / N291; with stop, sewing foot up after thread trimming 3 = cl. 767 / N291; with stop, sewing foot down after thread trimming 4 = with bobbin thread monitor stitch counting (max. 5000 stitches)		4	0	1			1

4.3 SUPPLIER LEVEL

Code no. 3112 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for			
			max	min	100Ω			1000Ω
Group 0 Time Functions								
200 t1	Delay of speed release after the start backtack	ms	500	50	50			50
201 t2	Activation delay of sewing foot lift with half heelback	ms	500	20	80			80
202 t3	Start delay after switching off the sewing foot lift signal	ms	500	0	80			80
203 t4	Time of full power of sewing foot lifting	ms	600	0	200			200
204 t5	Holding power of sewing foot lifting Stages 0, 1...7 Stage 0 = 100% Stage 1 = 12.5% Stage 7 = 87.5%				3			3
205 t6	Thread wiper time	ms	500	0	100			100
206 t7	Delay after thread wiping until sewing foot lifting	ms	800	0	30			30
207 br1	Braking effect when modifying the preset value ≤ 4 stages		255	1	25			25
208 br2	Baking effect when modifying the preset value ≥ 5 stages		255	1	60			60
Group 1 Time Functions								
210 tSr	Stop time for switching the stitch regulator in the ornamental backtack	ms	500	0	100			100
212 t10	Time of full power of backtacking	ms	600	0	200			200
213 t11	Holding power of backtacking Stages 0, 1...7 Stage 0 = 100% Stage 1 = 12.5% Stage 7 = 87.5%				4			4

SUPPLIER LEVEL

Code no. 3112 with Variocontrol operation

Parameter	Designation	Unit	Limits		Preset for				
			max	min	100Ω				1000Ω
Group 2 Speeds									
220 ALF	Accelerating power of the drive		255	5	32				32
Group 3 Switching Functions									
231 Sn1	Execution of the first stitch after power on at positioning speed	ON/OFF			OFF				OFF
Group 8 Functions of Specific Types									
280 SEL	Display of the select resistor values for the following machine series 100Ω = N291 1000Ω = 467, 767		1000	100	100				1000
281 Pd0	New sewing start after machine run blockage ON = Only with pedal in position 0 OFF = Immediate start	ON/OFF			ON				ON
282 LoS	Functioning of the switch for machine run blockage 0 = Make contact (N.O.) 1 = Break contact (N.C.)		1	0	0				0
283 LSP	Function machine run blockage 0 = Function off 1 = Blockage 1, without positioning 2 = Blockage 2, with positioning		2	0	1				1
284 StP	Start and end backtack can be interrupted with pedal in position 0	ON/OFF			OFF				OFF
Group 9 Speeds of Specific Types									
290 n9	Speed limitation for manual ornamental backtack	RPM	3000	200	1200				1200
291 n11	Speed limitation DB3000 for manual backtack	RPM	3000	500	3000				3000

4.4 Error Displays

General Information	
On the V820	Signification
InFo A1	Pedal not in neutral position, when switching the machine on
Symbol blinking	Machine run blockage
InFo A3	The position to which all position values refer has not been stored (reference position is missing).
InFo A5	Emergency run, no valid machine select can be identified

Programming Functions and Values (Parameters)	
On the V820	Signification
InFo F1	Wrong code number or parameter number input

Serious Situation	
On the V820	Signification
InFo E1	After power On, position transmitter or commutation transmitter defective or connecting cables have been changed by mistake. During machine run or after a sewing operation, only position transmitter defects can be identified.
InFo E2	Line voltage too low, or time between power off and power on too short.
InFo E3	Machine locks or does not reach the desired speed
InFo E4	Control disturbed by deficient grounding or loose contact

Hardware Disturbance	
On the V820	Signification
InFo H1	Commutation transmitter cord or frequency converter disturbed
InFo H2	Processor disturbed
InFo P1	Data recording device does not answer or communication interrupted
InFo P2	Communication with data recording device disturbed, device signals NAK (not acknowledge)

For your notes

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