

MINI-STOP

QE3760

CE

Type

T355SE

Instruction Manual

Part 2

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Technical updatings reserved!

7 Control system - External operator panel OC-TOP/G

7.1 Control system Q355SE

The control system is accommodated in a control housing of the **SERVO-TOP** drive QE5542.

The control system has three components:

- base board
- type board
- step motor control board

The front panel of the control system is equipped with the following **outlets**:

X1, X2, X3	for connection of solenoids/solenoid valves and sensors (approximation switch, light barrier)
X4	with serial interface
X5	for connection of an auxiliary drive
X2.1, X2.2	for connection of two step motors
X10	for connection of the operator panel OC-TOP

The control system has **inputs (Ex)** for the following functions:

E1	clamp sensor left
E2	clamp sensor right
E3	label clamp
E4	start
E5	presserfoot down
E6	lightbarrier machine
E7	lightbarrier label
E8	lightbarrier stacker

The control system has **outputs (Ax)** for the following functions:

A1	stacker - product out
A2	cloth clamp
A3	clamp close
A4	product tension
A5	folder blade
A6	table up
A7	table down
A8	enable start 1
A9	enable start 2
A10	knife
A11	label clamp after transport
A12	label fold
A13	label arm
A14	label hold clamp close
A15	label hold clamp forward
A16	blower
A18	Initialisation label scanner

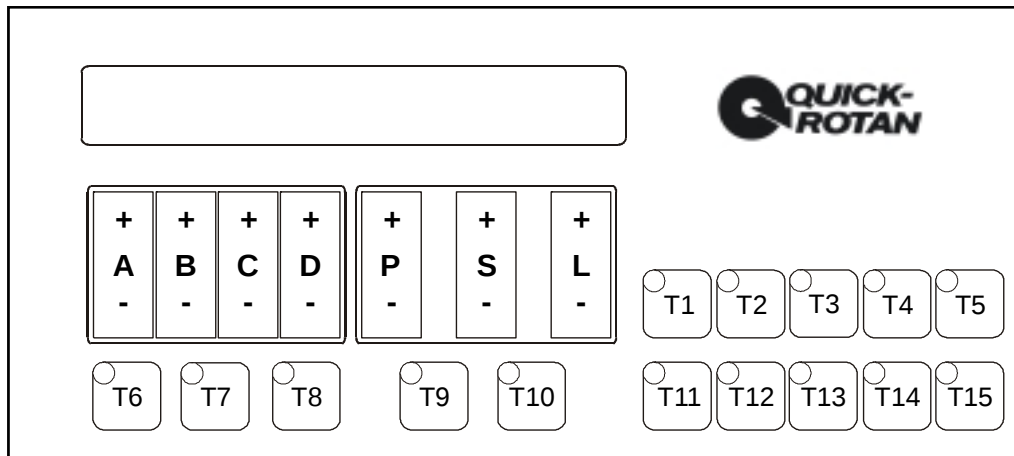
Connection of the control system to mains power

The operating voltage for the control system is 230 V AC +10%/ -30% 50 cps.

Connection to mains power is made on the rear of the control system via a three-conductor cable with flat plug contacts.

Prefuse: 6 Amps slow.

7.2 External operator panel OC-TOP/G



- Functions of the various keys

A+/A-	tape feed, manual
T8	test cycle (entire cycle)
T11	test knife
T12	test label arm
T13	test clamp label arm
T14	small cycle (step motor, folder, blower)
T15	reset T11, T12, T13
T1	stacker on/off
T2	reset output A4 (product tensioning)
T5+T4	piece count on display
T4	reset of piece counter

- Information on display

*WAIT-ST	machine is ready to start
*SEWING	machine is in sewing cycle
SENS-L	left-hand sensor not reached (error)
SENS-R	right-hand sensor not reached (error)
LABEL?	Error: No label tape inserted, or tape transport failure, no start possible
0078	piece count (keys T5 + T4 must be depressed)

8. Error Messages (Malfunction Diagnostics)

The control system of the drive cyclically tests its own functional condition and the functional condition of the complete drive system.

Malfunctions are signalled via the display of the external operator panel, for instance:



List of possible error codes:

62	Short circuit on 24 V (32 V) DC
63	Overload on 24 V (32 V) DC, load current > 4 amps
64	Power supply monitor: voltage too low (90 V - 150 V)
65	Power electronics not operational after mains power ON, mains power < 130 V
66	Earth short (motor or motor supply line has earth short in one or more phases)
67	Internal malfunction
68	Power electronics shut-off
	a) Overcurrent, short circuit in motor or supply line
	b) Overvoltage, mains voltage too high (>300 V), motor overloaded while decelerating
	c) Undervoltage
75	Internal malfunction
90	EEPROM does not exist
91	EEPROM not programmable
92	Start lock while motor running
93	Wrong EEPROM
100-117	Internal malfunction

Reset: Control system reset is possible only by mains power OFF/ON.

9. Programming by the user

Enables machine functions and parameters to be switched on or set up.

The **SERVO-TOP** is user-programmed by means of the external control panel **OC-TOP**

The user programming of the **SERVO-TOP** is possible by means of an external operator's control panel via:

- **direct programming** (only with drives from function level 40) and/or
- **programming parameters.**

The programming of parameters is possible via three levels of program:

- **Programming on level A** (operator level)
- **Programming on level B** (technician's level)
- **Programming on level C** (special level)

9.1 User programming with operator panel OC-TOP/G

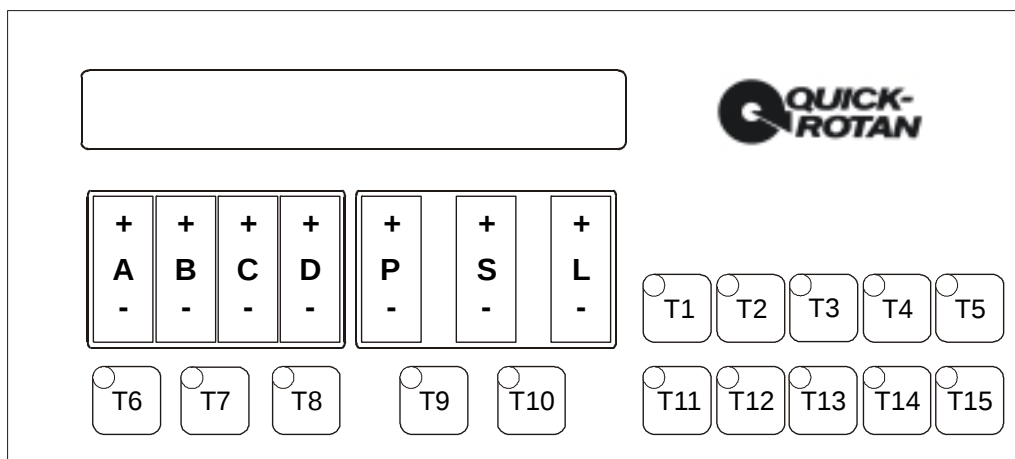


Fig. 9.

9.1.1 Parameter programming

9.1.1.1 Programming level A (operator level)

a) Activation of programming level A

Conditions

Mains power switch ON

Drive system not running

Operating mode: manual sewing must be ON (key T9 dark, key T10 dark)

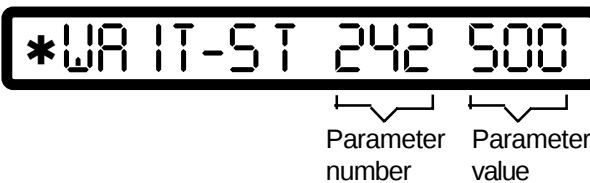
Display: 

Press key T10

Response:

Key T10 becomes bright, the display shows in its righthand half the first parameter (parameter no. and parameter value) associated with programming level A.

Sewing is not possible

Display: 

Programming:

Modification of parameter number:

for hundreds of parameter numbers use key P+ or P-

for tens and units of parameter numbers use key S+ or S-

Modification of parameter value: via key L+ or L-

b) Deactivation of the programming level A

Press key T10

Response:

Key T10 goes dark, the display returns to initial condition.

Sewing is possible.

Display: 

9.1.1.2 Programming level B (technician level)

This level is used for programming the control parameters which have to be modified or adapted very rarely or only for starting operation of the system.

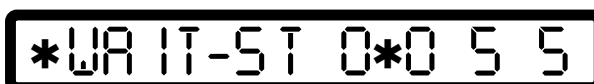
a) Preparation for activation of the programming level B

Turn mains power switch OFF
Press and hold keys T9 and T10 simultaneously
Turn mains power switch ON
Release keys

Response:

The display shows a „*“ between program number and seam section.
Sewing is possible.

Display:

The LCD display shows the text "*WA IT-ST 0*0 5 5". The asterisk is positioned between the program number "WA IT-ST" and the seam section "0".

b) Activation of programming level B

Press key T9 (not becoming bright) and press key T10 (becoming bright)

Response:

In the righthand half of the display are shown: a parameter number (at first 104, then the number selected last) and the associated value.
Sewing is not possible.

Display:

The LCD display shows the text "*WA IT-ST 240 0". The parameter number "240" and the value "0" are shown in the right half of the display.

Parameter number Parameter value

Programming:

Modification of parameter number:
for hundreds of parameter numbers use key P+ or P-
for tens and units of parameter numbers use key S+ or S-

Modification of parameter value: via key L+ or L-

c) Deactivation of programming level B

Press key T10 (not becoming bright)

Response:

Parameters shown disappear from the display, the display returns to initial condition
Sewing is possible.

Display:

The LCD display shows the text "*WA IT-ST 0*0 5 5", which is the same as the initial state in section (a).

9.1.1.3 Programming level C (special level)

Attention!

At this level, control parameters are stored the values of which have to be modified in exceptional cases only. Correction of these parameters should therefore be made only after consultation of the manufacturer.

Activation of programming level C:

- a) Activate programming level B (see 9.1.2.2b)
- b) Call up parameter 798
- c) Set parameter value <798> to I
- d) Deactivate programming level B (see 9.1.2.2c)
- e) Turn mains power switch OFF, wait for >2 secs. to elapse
- f) Turn mains power switch back ON
- g) Press key T10 (becoming bright)

Response:

In the righthand half of the display appears the first parameter of programming level C.

Calling up further parameter numbers and correcting the parameter values can be made in the same way as described for programming levels A and B.

Deactivation of programming level C:

- Press key T10 (not becoming bright)
- Turn mains power switch OFF

9.1.2 Reset of parameter values

All parameter values having been modified from the ex-factory condition (standard value) are reset to their standard values by this procedure.

Exceptions: parameters, which are marked with a star (*) in the column "standard value" of the parameter list.
For these parameters, the values programmed by the user are retained even after -Reset- has been performed.

-Reset- procedure:

- turn mains power switch OFF
- press and hold keys P- or P+, S- or S+ and L- or L+ simultaneously
- turn mains power switch ON
- release the three keys

Response:

Display:

RESET Y - - N

Now -Reset- can be performed.

Located below the display Y (yes) there is key P+. Press this key P+ to start the reset. The display briefly shows:

Display:

MASTER-RESET

After that the display shows the power-on display for approx. 2 secs.

Display:

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and then shows the display corresponding to the operating mode selected

Display:

*WAIT-ST 0/0 5 5

If it is not desired to start the -Reset-, press key L+ located below the display saying N (no).

10. Hardware Test

Hardware Test is a check routine permitting to use the operator panel OC-TOP for testing various components of the drive system (control system) and of the machine installation.

Hardware testing is made via test blocks. These are called up consecutively via key A+ or A-.

Activation of the „hardware test“ routine

- a) Activate programming level „B“ and call up parameter 797
- b) Set <797> to I
- c) Deactivate programming level „B“
- d) Turn mains power switch OFF
- e) Wait for approx. 2 secs. to elapse, and turn mains power switch back ON

Response: The display shows „HARDWARE TEST“ for approx. 2 secs.

After that, the display shows the first test block: Inputs.
All OC-TOP keys equipped with LEDs become bright

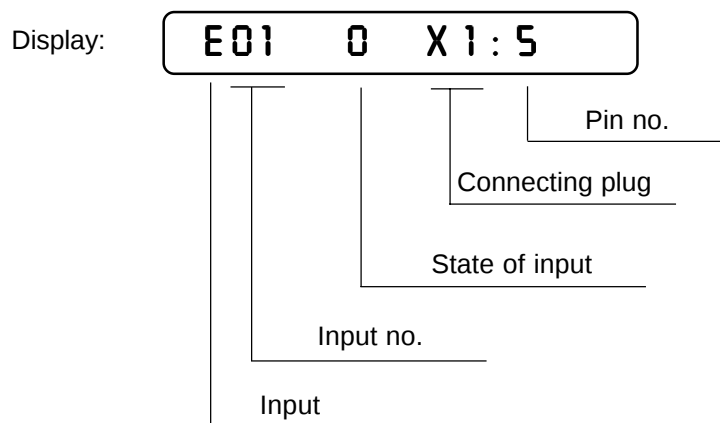
Survey of test blocks:

Test Block	Check	Display
1	Inputs	E 01 0 X 1 : 5
2	Outputs	A 02 0 X 2 : 4

To call up the test blocks (advancing from test block to test block), use keys A+ and A-.

To call up various functional elements within a test block (advancing from functional element to functional element), use keys B+ and B-.

Test block 1: Inputs



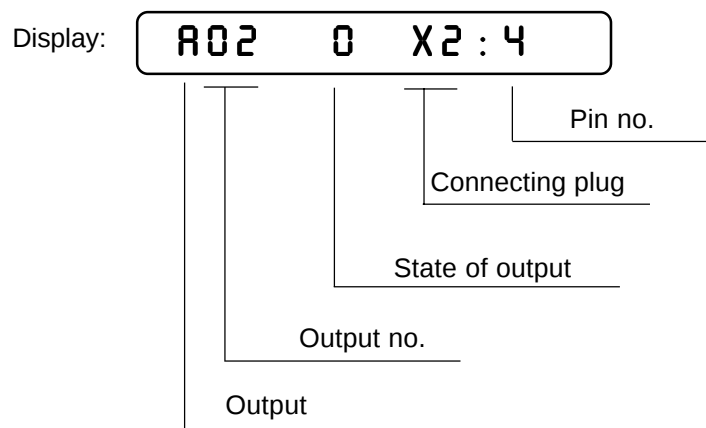
The function assigned to the input displayed can be seen from chapter 12 „Connections Diagram for Connectors“.

The designations E (for input) are located on the lefthand side of the connectors shown.
 The keys or selectors assigned to the inputs are designated S in the connections diagram and have the same numbers as the associated inputs, i.e.
 key S1 is connected to input E1
 key S2 is connected to input E2
 key Sx is connected to input Ex.

The operating state of the input is signalled in the 7th digit of the display.
 Key/switch open → display: 0
 Key/switch closed → display: 1

In the righthand part of the display, the connecting plug and the pin number to which the displayed input is connected are shown for the purpose of reference.

Test block 2: Outputs



The function assigned to the output displayed can be seen from chapter 12 „Connections Diagram for Connectors“.

The designations A (for output) are located on the lefthand side of the connectors shown.
 The solenoids/solenoid valves assigned to the outputs are designated Y in the connections diagram and have the same numbers as the associated outputs, i.e.
 solenoid Y2 is connected to output A2
 solenoid Y3 is connected to output A3
 solenoid Yx is connected to output Ax

The operating state of the output displayed is signalled in the 7th digit of the display.
 Output not activated → display: 0
 Output activated → display: 1

To activate an output, use key D+. Deactivation is made automatically after approx. 2.5 secs have elapsed or can be caused by using key D-.

In the righthand part of the display, the connecting plug and the pin number to which the displayed output is connected are shown for the purpose of reference.

Deactivate the test routine: turn the mains power switch OFF.