SERVO-TOP

QE5542

CE

Type

Q60SE

Instruction Manual

Part 3

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Part 3

Technical updatings reserved!

11. Survey and List of Parameters

11.1 Explanation of Parameter Survey

The parameter survey is designed as an aid for finding parameters quickly. It is a summary of references for the parameter list. Listed behind each reference are all parameters which exert an influence on the function described by the reference.

The parameter survey is divided into five columns:
Column 1 shows the references (functions) to which parameters are assigned.
Column 2 shows the abbreviations of the respective functions.
Column 3 shows all parameters (setting numbers) belonging to the respective reference.
Column 4 shows, for each function (reference) which controls inputs or outputs, the applicable indications such as Ex or Ax which can also be found on the connections diagram.
Column 5 shows, for each function (control inputs (Ex) or control outputs (Ax)), the respective plugs with the number of contacts (see connections diagram).

Example for searching a parameter:
Keyword (function): inverse rotation
The parameter survey shows in column 3 the parameter numbers 618, 623, 801.

Suppose that the inverse rotation function is to be enabled. The parameter list shows this function under parameter number 618.

11.2 Explanation of Parameter List

The parameter list is divided into 5 columns. These comprise, in

column 1: the parameter number,
column 2: is the explanation (meaning) of the parameters and the coding system of row 1 of the keys of the mini operator's panel, used when the parameter concerned can be programmed with the mini operator's panel,
column 3: the programming level (A, B, C) on which the parameter in question can be accessed,
column 4: the range of values within which the parameter in question can be set,
column 5: the value of the parameter in question is set on delivery ex factory.

Parameters having "either/or" validity (software switches) can merely be set to value I or II. In the case of such parameters, column 4 is empty.

11.3 Parameter survey J60SE (2Z_F00_7.HEX)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Backtack	RIE	104/107/110 139/523/585 768		
Backtack inversion	RIV	419/442	E5 A23	X1:14 X1:24
Backtack suppression	RIUNT	419		
Blower	BLA	668		
Brake	DRZAB	723/758/851		
Catcher	FANG	707		
Control	REG	758/884/885 886/887/889 890/891/894 990		
Decorative backtack	ZRIE	522/523/530 679/775		
Defect search	HWT	797		
Delay	VERZ	403/623/679 730/731/732 739/740		
Direction of rotation	DRR	800		
End backtack	ER	110/139/149 604/731/732 740		
Engine	MOT	897		
Feed reverse	TUM	448/721/768	E1 A3	X1:5 X1:34
Front backtack	AR	104/105/106 107/148/739		
Hardware test	HWT	797		
Inverse rotation	RDR	618/623/801		
Machine class	MAKL	799		
Needle cooling	NAKU	119	A8	X1:28
Needle position	NAPO	522/700/701 702/703/705 707/768		

Needle position change-over	NPW	446/447	E2 E21	X1:6 X2:1
Needle up without trimming	NHOS	446/447		
Photocell	LS	111/112/113 199/450/451 615		
Presser foot	PF	444/554/651 719/729/730	A2	X1:35
Program	PR	114/206/221 304/313/554 851		
Programming level C	EBC	798		
Puller	PULL	444/445	A9	X1:15
Repeat backtack	WRIE	731/740		
Residual brake	STBR	718		
Seam end	NE	114/206		
Single stitch	EST	446/447		
Soft start	SANL	116/117		
Speed	DRZ	105/106/107 110/117/199 221/402/403 448/530/585 586/605/606 607/609/676 850/901		
Speed decrease	DRZAB	723/758/851		
Speed increase	DRZAN	722		
Speed limitation	DB	221/402/448 585/586/676	E11	X1:9
Speedomat	SPEED	501/502		
Start	START	113/454/603		
Start delay	STVERZ	729		
Starting block	ANLSP	452/453/454 665	E6	X1:11
Stitch condensation	STVD	105/106/107 110/419/442 739		
Stitchlength	STL	449/450		
Stitchlength change-over	STLU	441/449	E3 A11 A12 A27	X1:8 X1:30 X1:29 X2:10

Stop	STOP	114/206/452 453/665		
Stop time	STOPZ	712/775		
Stroke adjustment	HV	401/402/403 404/443	E4	X1:7
Target stitch	PEIPO	653		
Thread monitor	FW	144/170/171 172	E13	X1:12
Thread puller	FZ	761		
Thread tension reduction	FSR	442/443	E23 A18 A28	X2:3 X1:20 X2:11
Thread tension release	FSL	707/761	A6	X1:36
Thread trimming	SN	601/604/609 705/732/901	A1	X1:37
Thread wiper	WI	668/715	A4	X1:27
Time needed to switch on	EINZ	119/715/889		
Timing output	TA	719/721/766		

11.4 List of Parameters J60SE (2Z_F00_7.HEX)

No.	Function (Meaning)	Level	Range Values	of Value	Standard
104	(AR/RIE) Front backtack correction (delayed disabling of feed reverse)	B	0 - 15	0 4	Kl. 1, 2, 3, 4, 6 Kl. 5
105	(AR/DRZ/STVD) Speed for front backtack/stitch condensation (00000011)	B	100 - 3000	1200 200 900	Kl. 1, 5, 6 Kl. 2, 3 Kl. 4
106	(AR/DRZ/STVD) Speed for front backtack/stitch condensation I variable (treadle-controlled) II constant (corresponding to <105>)	B		II	Kl. 1, 2, 3, 4, 5, 6
107	(AR/RIE/DRZ/STVD) Speed for front backtack/stitch condensation when <106> = I I limited by <105> II limited by <607>	B		I	Kl. 1, 2, 3, 4, 5, 6
110	(ER/RIE/DRZ/STVD) Speed for end backtack/stitch condensation	B	100 - 3000	1200 200 900	Kl. 1, 5, 6 Kl. 2, 3 Kl. 4
111	(LS) Light barrier compensation stitches 1 (stitches from light barrier clear to seam end)	A,B	1 - 255	4	Kl. 1, 2, 3, 4, 5, 6
112	(LS) Number of stitches for light barrier fade-out on knit fabrics (according to stitch size)	A,B	0 - 255	0	Kl. 1, 2, 3, 4, 5, 6
113	(LS/START) Start with light barrier I when light barrier is dark only II also when light barrier is clear	B		I	Kl. 1, 2, 3, 4, 5, 6
114	(PR/STOP/NE) Stop before seam end after stitch count (last seam section) I yes II no	B		II	Kl. 1, 2, 3, 4, 5, 6
116	(SANL) Soft start stitches (00000111)	A,B	0 - 255	2 1	Kl. 1, 2, 3, 6 Kl. 4, 5
117	(SANL/DRZ) Speed for soft start stitches	B	30 - 800	400 150 250	Kl. 1, 6 Kl. 2, 3 Kl. 4, 5
119	(EINZ/NAKU) Time for needle cooling including time after stop	B	0 - 2550	2550	Kl. 1, 2, 3, 4, 5, 6
139	(ER/RIE) End backtack correction(delayed disabling of feed reverse)	B	0 - 15	0 6	Kl. 1, 2, 3, 4, 6 Kl. 5
144	(FW) Function of residual thread monitor 0 without function 1 no stop, presser foot after seam end down 2 stop, presser foot after seam end up 3 stop, presser foot after seam end down 4 residual thread monitor function via stitchcount (without light barrier)	B	0 - 4	0	Kl. 1, 2, 3, 4, 5, 6
148	(AR) Front backtack I double II single	A,B		I	Kl. 1, 2, 3, 4, 5, 6
149	(ER) End backtack I double II single	A,B		I	Kl. 1, 2, 3, 4, 5, 6
170	(FW) Stitches x 1000 for bobbin thread reserve	B	0 - 9	0	Kl. 1, 2, 3, 4, 5, 6
171	(FW) Stitches x 100 for bobbin thread reserve	B	0 - 9	1	Kl. 1, 2, 3, 4, 5, 6
172	(FW) Stitches x 10 for bobbin thread reserve	B	0 - 900	100	Kl. 1, 2, 3, 4, 5, 6
199	(DRZ/LS) Speed for light barrier compensation stitches	B	300 - 3000	1200 200 800	Kl. 1, 5, 6 Kl. 2, 3 Kl. 4
206	(NE/PR/STOP) Interrupt/discontinue seam sections at speed = constant (<203> = II) I with treadle -2 II with treadle 0	B		II	Kl. 1, 2, 3, 4, 5, 6

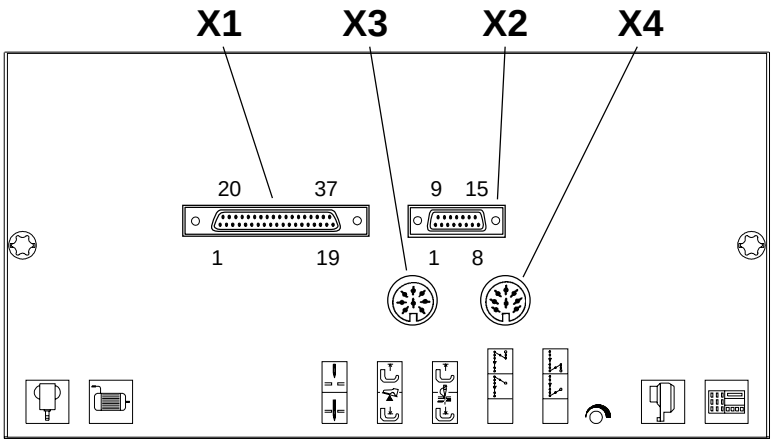
221	(PR/DB/DRZ) Speed limitation for sewing programs (or sewing program 1)	B	300 - 4800	1200 200 800	Kl. 1, 5, 6 Kl. 2, 3 Kl. 4
304	(PR) Stitch compensation at feed reverse for a seam section	B	0 - 2550	0	Kl. 1, 2, 3, 4, 5, 6
313	(PR) Programs are backtack programs (darning programs) I yes II no	B		II	Kl. 1, 2, 3, 4, 5, 6
401	(HV) Input „stroke adjustment“ I switch operation II push-button operation	B		II	Kl. 1, 2, 3, 4, 5, 6
402	(HV/DRZ/DB) Speed at stroke adjustment	B	300 - 2500	2000 600 400 900	Kl. 1, 5, 6 Kl. 2 Kl. 3 Kl. 4
403	(HV/DRZ/VERZ) Delay (ms) of the speed variation at end of stroke adjustment	B	0 - 2550	100	Kl. 1, 2, 3, 4, 5, 6
404	(HV) Number of stitches with stroke adjustment	B	0 - 255	0	Kl. 1, 2, 3, 4, 5, 6
419	(RIV/RIUNT/STVD) Function of external key I backtack / stitch condensation inversion II backtack / stitch condensation suppression (flip-flop function)	B		I	Kl. 1, 2, 3, 4, 5, 6
441	(STLU) Input E3/E22 is 1 = stitchlength change-over without speed limitation 2 = stitchlength change-over with speed limitation 2 3 = stitchlength change-over with speed limitation 3	B	1 - 3	1	Kl. 1, 2, 3, 4, 5, 6
442	(FSR/RIV/STVD) Input E23 is I thread tension reduction II backtack / stitch condensation inversion	B		I II	Kl. 1, 2, 3, 4, 6 Kl. 5
443	(HV/FSR) Input E26 is I stroke adjustment II thread tension reduction	B		I	Kl. 1, 2, 3, 4, 5, 6
444	(PF/PULL) Input E24 is 1 = presser foot pressure with speed limitation 2 2 = presser foot pressure with speed limitation 3 3 = puller	B	1 - 3	3	Kl. 1, 2, 3, 4, 5, 6
445	(PULL) Stitches for puller delay	B	0 - 255	10	Kl. 1, 2, 3, 4, 5, 6
446	(NHOS/NPW/EST) Input E2 is 1 = needle up without trimming 2 = needle position change-over 3 = single stitch 4 = single stitch with reduced length	B	1 - 5	1	Kl. 1, 2, 3, 4, 5, 6
447	(NHOS/NPW/EST) Input E21 is 1 = needle up without trimming 2 = needle position change-over 3 = single stitch 4 = single stitch with reduced length	B	1 - 5	1 2	Kl. 1, 2, 3, 4, 6 Kl. 5
448	(DB/DRZ/TUM) Input E25 is I speed limitation 3 II feed reverse	B		II	Kl. 1, 2, 3, 4, 5, 6
449	(STL/STLU) Stitchlength change-over after seam end 1 without change-over 2 standard stitchlength 3 reduced stitchlength	B	1 - 3	1	Kl. 1, 2, 3, 4, 5, 6
450	(LS/STL) Light barrier compensation stitches at reduced stitchlength	A,B	1 - 255	8	Kl. 1, 2, 3, 4, 5, 6
451	(LS) Light barrier connection I directed to the control system II via the external operator panel	B		I	Kl. 1, 2, 3, 4, 5, 6
452	(ANLSP/STOP) Input „run locking“ I yes II no (without function)	B		II	Kl. 1, 2, 3, 4, 5, 6

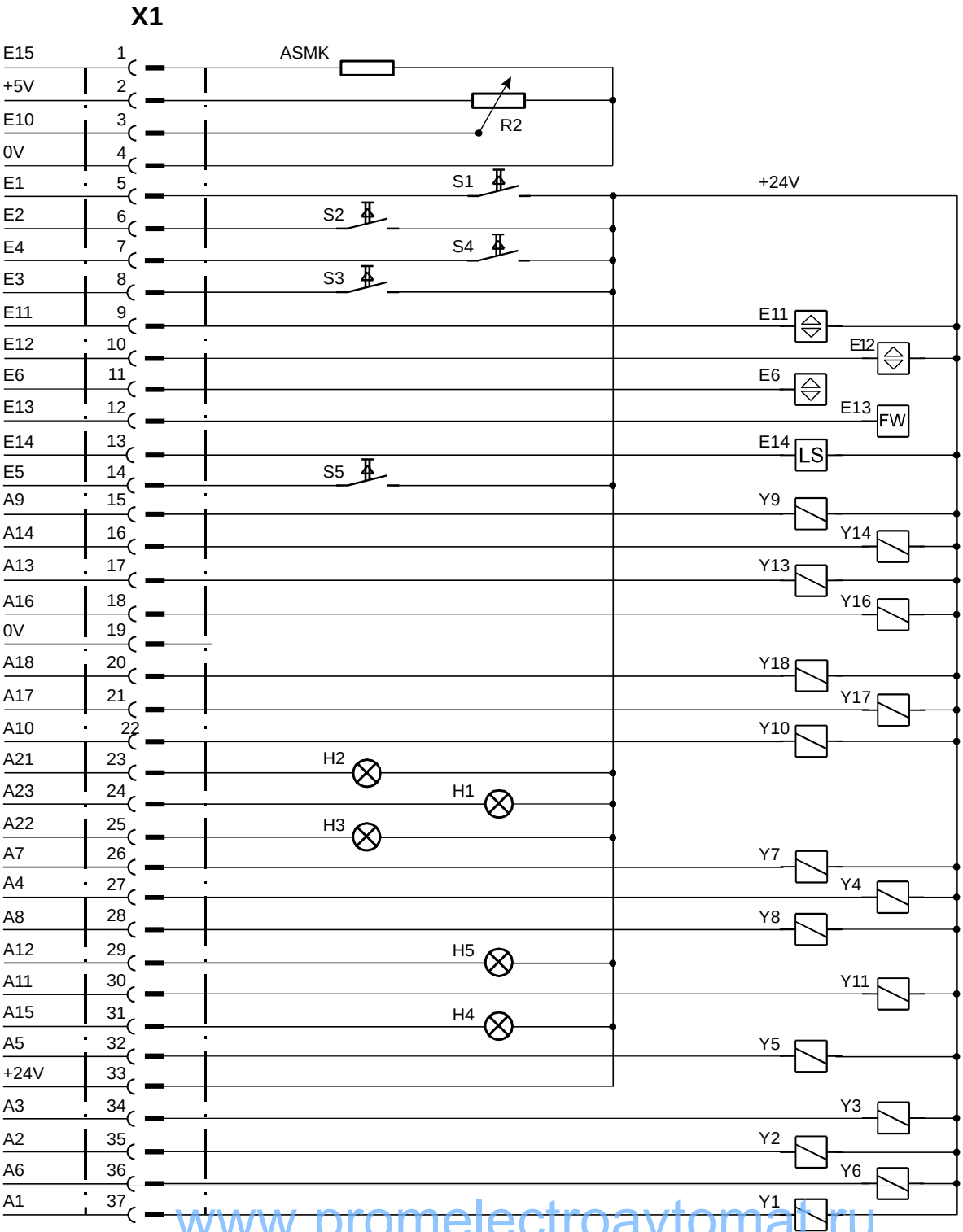
453	(ANLSP/STOP) Action of the „run lock“ input I drive system not functional II seam end can be performed	B		I	Kl. 1, 2, 3, 4, 5, 6
454	(ANLSP/START) Start after „run lock“ signal cancellation I after treadle 0 only II immediate (by any treadle position >+1)	B		I	Kl. 1, 2, 3, 4, 5, 6
501	(SPEED) Speedomat: elevation step of presser foot where speed reduction begins = upper kink of characteristic curve (<501> < <502>)	B	1 - 255	1	Kl. 1, 2, 3, 4, 5, 6
502	(SPEED) Speedomat: elevation step of presser foot where minimum speed (<402>) is reached = lower kink of characteristic curve (<502> > <501>)	B	1 - 255	21	Kl. 1, 2, 3, 4, 5, 6
522	(NAPO/ZRIE) Needle position when stop occurs during decorative backtack (stitch in stitch) I position 2 (up) II position 1 (down) (00001101)	B		II	Kl. 1, 2, 3, 4, 5, 6
523	(RIE/ZRIE) Backtack I decorative backtack (stitch in stitch) II standard backtack	A,B		II I	Kl. 1, 2, 3, 5, 6 Kl. 4
530	(DRZ/ZRIE) Speed (max.) for decorative backtack (00001111)	B	100 - 3000	1200 200 900 100	Kl. 1 Kl. 2, 3 Kl. 4, 5 Kl. 6
554	(PF/PR) Presser foot position after seam section stitch count and treadle position > +1 I up II down	B		I	Kl. 1, 2, 3, 4, 5, 6
585	(DRZ/DB/RIE) Speed limitation	B	100 - 4000	2000	Kl. 1, 2, 3, 4, 5, 6
586	(DRZ/DB) Speed limitation	B	100 - 4000	2000 3000	Kl. 1, 5 Kl. 2, 3, 4, 6
601	(SN) Trimming I yes II no	B		I	Kl. 1, 2, 3, 4, 5, 6
603	(START) Start after seam end I after treadle 0 only II immediate start of operation	B		I	Kl. 1, 2, 3, 4, 5, 6
604	(SN/ER) Trimming after single end backtack I forward II backward	B		I	Kl. 1, 2, 3, 4, 5, 6
605	(DRZ) Actual speed in display I yes II no	B		II	Kl. 1, 2, 3, 4, 5, 6
606	(DRZ) Speed: level 1 (min.) (00010001)	B	30 - 640	150 50 100	Kl. 1, 5, 6 Kl. 2, 3 Kl. 4
607	(DRZ) Speed: level 12 (max.)	B	100 - 6000	4000 1000 800 1700 3300 3500	Kl. 1 Kl. 2 Kl. 3 Kl. 4 Kl. 5 Kl. 6
609	(SN/DRZ) Trimming speed 1 (00010011)	B	30 - 300	150 120 180	Kl. 1, 5, 6 Kl. 2, 3 Kl. 4
615	(LS) End recognition when photocell goes I from light to dark II from dark to light	B		II	Kl. 1, 2, 3, 4, 5, 6
618	(RDR) Inverse rotation after seam end I yes II no	B		II I	Kl. 1, 2, 3, 6 Kl. 4, 5
623	(RDR/VERZ) Delay in start-up time (ms) for inverse rotation	B	0 - 2550	30	Kl. 1, 2, 3, 4, 5, 6

651	(PF) Presser foot with automatic descent on machine stop I yes II no	B		I	Kl. 1, 2, 3, 4, 5, 6
653	(PEIPO) Target stitch before sewing I yes II no	B		II	Kl. 1, 2, 3, 4, 5, 6
665	(ANLSP/STOP) Run locking/stop I contact closed II contact open	B,C		I	Kl. 1, 2, 3, 4, 5, 6
668	(BLA/WI) Thread wiper/thread clearer I yes II no (00010101)	B		II	Kl. 1, 2, 3, 4, 5, 6
676	(DRZ/DB) Speed adjustment via potentiometer possible I yes II no	B		I	Kl. 1, 2, 3, 4, 5, 6
679	(ZRIE/VERZ) Fancy tack: time from positioning to switch-on of reverse feed	B	0 - 2550	100	Kl. 1, 2, 3, 4, 5, 6
700	(NAPO) Needle position 0 (reference position of the needle)	B	0 - 239	0	Kl. 1, 2, 3, 4, 5, 6
701	(NAPO) Angular adjustment I with handwheel (teach-in) II by keys (+/-)	B		I	Kl. 1, 2, 3, 4, 5, 6
702	(NAPO) Needle position 1 (needle down) (00010111)	B	0 - 239	68 75 22	Kl. 1 Kl. 2, 3, 4, 6 Kl. 5
703	(NAPO) Needle position 2 (thread take-up lever up)	B	0 - 239	210 211 219	Kl. 1 Kl. 2, 3, 4, 6 Kl. 5
705	(NAPO/SN) Needle position 5 (end of trimming signal 1) (00011001)	B	0 - 239	210 150 70	Kl. 1 Kl. 2, 3, 4, 6 Kl. 5
707	(NAPO/FSL/FANG) Needle position 9 (thread tension release or thread catcher start)	B	0 - 239	143 90	Kl. 1, 5 Kl. 2, 3, 4, 6
712	(STOPZ) Time for stop in needle position 1	C	0 - 2550	30 0	Kl. 1, 2, 3, 4, 6 Kl. 5
715	(EINZ/WI) Duration (ms) of thread wiper	C	0 - 2550	100	Kl. 1, 2, 3, 4, 5, 6
718	(STBR) Timing of residual brake (0 = brake off)	C	0 - 100	5 0	Kl. 1, 2, 3, 6 Kl. 4, 5
719	(PF/TA) Timing output A4 (0 = 100% switching on)	C	0 - 100	40	Kl. 1, 2, 3, 4, 5, 6
721	(TUM/TA) Timing output A5 (0 = 100% switching on)	C	0 - 100	40	Kl. 1, 2, 3, 4, 5, 6
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B,C	1 - 50	45	Kl. 1, 2, 3, 4, 5, 6
723	(DRZAB) Brake ramp 1 gradual 50 steep	B,C	1 - 50	31 28 25	Kl. 1, 2, 3, 6 Kl. 4 Kl. 5
729	(STVERZ/PF) Start delay after lowering presser foot	B,C	0 - 2550	80 100 120	Kl. 1, 2, 3, 6 Kl. 4 Kl. 5
730	(PF/VERZ) Lift delay for presser foot after seam end	B,C	0 - 2550	0 50	Kl. 1, 2, 3, 6 Kl. 4, 5
731	(ER/WRIE/VERZ) Delay before stitch counting for end backtack (ERV)	B	0 - 2550	120 100 70	Kl. 1, 2, 3, 6 Kl. 4 Kl. 5
732	(SN/ER/VERZ) Delay (ms) for trimming after single end backtack	C	0 - 2550	30	Kl. 1, 2, 3, 4, 5, 6
739	(AR/STVD/VERZ) Delay (ms) for speed after front backtack/stitch condensation	B	0 - 2550	150 250	Kl. 1, 2, 3, 4, 6 Kl. 5

740	(ER/WRIE/VERZ) Delay before stitch counting for end backtack backward	B	0 - 2550	70 100 10	Kl. 1, 2, 3, 6 Kl. 4 Kl. 5
758	(REG/DRZAB) Deceleration ramp I braking as per <723> II braking with maximal moment	B		II	Kl. 1, 2, 3, 4, 5, 6
761	(FSL/FZ) Prolongation Thread tension release/ Thread puller	C	0 - 2550	50	Kl. 1, 2, 3, 4, 5, 6
766	(TA) cycling output A2 (0=100% enable)	B	0 - 239	225	Kl. 1, 2, 3, 4, 5, 6
768	(TUM/NAPO/RIE/ERIE) Needle position for backtack correction	B	0 - 239	155 100 80	Kl. 1 Kl. 2, 3, 4, 6 Kl. 5
775	(ZRIE/STOPZ) Stop time (ms) with stitch in stitch backtack (decorative backtack)	C	0 - 2550	100	Kl. 1, 2, 3, 4, 5, 6
797	(HWT) Hardware test I yes II no	B		II	Kl. 1, 2, 3, 4, 5, 6
798	(EBC) Programming level C I yes II no	B		II	Kl. 1, 2, 3, 4, 5, 6
799	(MAKL) Machine class which has been selected (00011101)	B	1 - 6	1 2 3 4 5 6	Kl. 1 Kl. 2 Kl. 3 Kl. 4 Kl. 5 Kl. 6
800	(DRR) Direction of motor rotation viewed from belt pulley I left-hand rotation II right-hand rotation	B		I	Kl. 1, 2, 3, 4, 5, 6
801	(RDR) Reverse rotation angle after seam end	B	0 - 200	40	Kl. 1, 2, 3, 4, 5, 6
850	(DRZ) Maximum motor speed	C		4500	Kl. 1, 2, 3, 4, 5, 6
851	(PR/DRZAB) Brake ramp for stitch-count seams I steep II gradual	C		I	Kl. 1, 2, 3, 4, 5, 6
884	(REG) Proportional amplification of the speed control (in general)	B,C	4 - 255	13 40 20	Kl. 1, 2, 3, 6 Kl. 4 Kl. 5
885	(REG) Integral amplification of the speed control	C	0 - 100	30	Kl. 1, 2, 3, 4, 5, 6
886	(REG) Proportional amplification of the order controllers	C	1 - 255	20 80	Kl. 1, 2, 3, 5, 6 Kl. 4
887	(REG) Differential amplification of the order controllers	C	1 - 255	30 200	Kl. 1, 2, 3, 5, 6 Kl. 4
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0 - 2550	400	Kl. 1, 2, 3, 4, 5, 6
890	(REG) Proportional amplification of the superior order controllers for the residual brake	C	1 - 50	20	Kl. 1, 2, 3, 4, 5, 6
891	(REG) Proportional amplification of the lower speed controllers for the residual brake	C	1 - 50	20	Kl. 1, 2, 3, 4, 5, 6
894	(REG) Rotational direction of motor and synchronizer I different II same	C		I	Kl. 1, 2, 3, 4, 5, 6
897	(MOT) MINI motor version I long II short	C		II	Kl. 1, 2, 3, 4, 5, 6
898	(SONST) Number of motor poles I 4 poles II 6 poles	C		II	Kl. 1, 2, 3, 4, 5, 6
901	(DRZ/SN) Trimming release speed	C	30 - 500	400	Kl. 1, 2, 3, 4, 5, 6
990	(REG) Distance to position at switch over from speed control to position control	C	1 - 255	32 64	Kl. 1, 2, 3, 5, 6 Kl. 4

12. Electrical Connections Diagram J60SE





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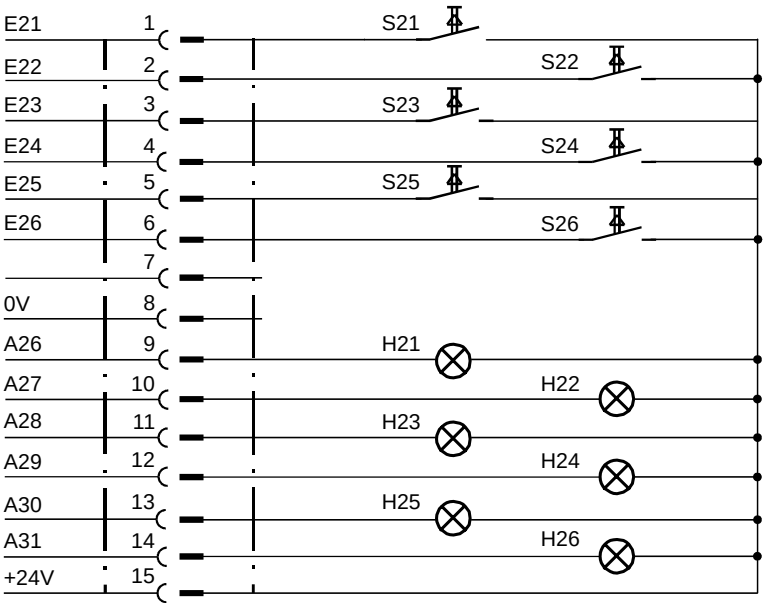

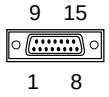

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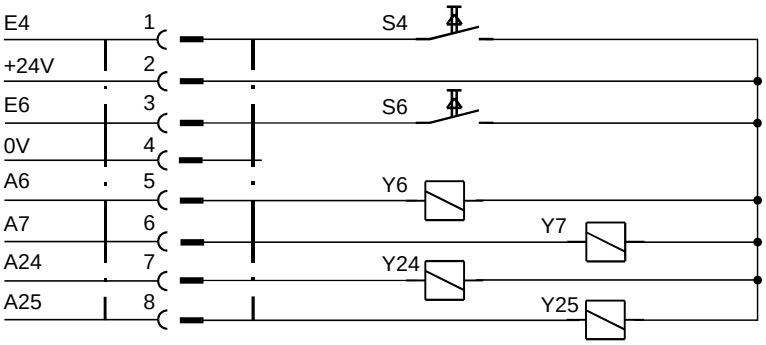
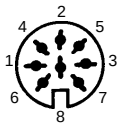
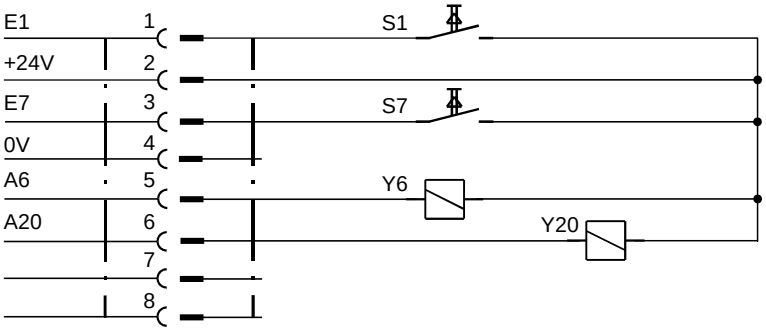
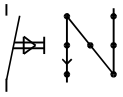
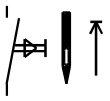
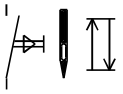
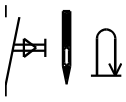
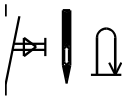
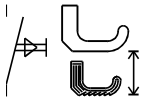
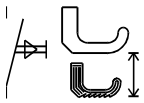




X4



Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys
Signification des aimants resp. solenoides et touches / Significação dos imaõs e/ou as solenoidas e teclas
Significato dei magneti, delle valvole magnetiche e dei tasti / Significación de los imanes y/o los solenoides y pulsadores / Betekenis van de magneten resp. magneetkleppen, toetsen

S1 	Transportumstellung von Hand / manual feed reverse / renversement de marche manuel / mudança do transporte manual / commutazione trasporto a mano / inversión de transporte manual / handmatige transportomschakeling
S2  <446> = 1	Nadel hoch ohne Schneiden / needle up without thread trimming / aiguille en haut sans coupe / agulha para cima sem corte de linhas / ago su senza taglio / aguja arriba sin corte / naald omhoog zonder snijden
S2  <446> = 2	Nadelpositionswechsel / needle position change-over / changement de position d´aiguille / troça de posição da agulha / cambio di posizione dell´ago / cambio de posición de aguja / naaldpositie-verwisseling
S2  <446> = 3	Einzelstich / single stitch / point unique / ponto individual / punto singolo / puntada individual / enkele steek
S2  <446> = 4	Einzelstich verkürzt / single stitch with reduced length / point unique à longueur réduite / ponto individual com comprimento reduzido / punto singolo con lunghezza accorciata / puntada individual con longitud de puntada reducida / enkele steek verkort steeklengte
S3  <441> = 1	Stichlängenumschaltung und max. Drehzahl / stitchlength change-over and max. speed / commutation longueur de point et vitesse maximum / mudança de comprimento dos pontos e rotação máxima / commutazione lunghezza punti e velocità massima / cambio de longitud de la puntada y velocidad máxima / steeklengteomschakeling en maximaal toerental
S3  <441> = 2	Stichlängenumschaltung mit Drehzahlbegrenzung 2 / stitchlength change-over with speed limitation 2 / commutation longueur de point avec limitation de vitesse 2 / mudança de comprimento dos pontos com limitação das rotações 2 / commutazione lunghezza punti con limitazione velocità 2 / cambio de longitud de la puntada con limitación de velocidad 2 / steeklengteomschakeling met beperking van het toerental 2
S3  <441> = 3	Stichlängenumschaltung mit Drehzahlbegrenzung 3 / stitchlength change-over with speed limitation 3 / commutation longueur de point avec limitation de vitesse 3 / mudança de comprimento dos pontos com limitação das rotações 3 / commutazione lunghezza punti con limitazione velocità 3 / cambio de longitud de la puntada con limitación de velocidad 3 / steeklengteomschakeling met beperking van het toerental 3
S4  <401> = I	Hubverstellung (Schalter) / stroke adjustment (switch) / variation de course (sélecteur) / alteração do curso (interruptor) / regolazione della corsa (interruttore) / ajuste de carrera (selector) / hefhoogteverstelling (schakelaar)
S4  <401> = II	Hubverstellung (Taster) / stroke adjustment (push-button) / variation de course (touche) / alteração do curso (tecla) / regolazione della corsa (tasto) / ajuste de carrera (pulsador) / hefhoogteverstelling (toets)

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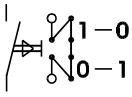
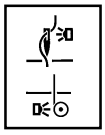
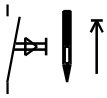
Betekenis van de magneten resp. magneetkleppen, toetsen

S5 	Nachfolgende Riegelfunktion invertieren / invert subsequent backtack function / inverser la prochaine fonction de bridage / inverter o próximo remate / invertire la funzione d'affr. successiva / invertir la próxima función de remate / inverteren op elkaar volgende hechtfunctie
E6 	Laufsperre / safety switch no run / verrouillage de remise en marche / bloqueio de arranque / blocco avviamento / bloqueo de repuesta en marcha / startblokkering
S7 	Flip-Flop
E10  **R2**	DB1 Drehzahlbegrenzung 1 (max. Drehzahl) / DB1 speed limitation 1 (max. speed) / DB1 limitation de vitesse 1 (vitesse maximum) / DB1 limitação das rotações 1 (rotação máxima) / DB1 limitazione velocità 1 (velocità massima) / DB1 limitación de velocidad 1 (velocidad máxima) / DB1 beperking van het toerental 1 (maximaal toerental)
E11 	DB2 Drehzahlbegrenzung 2 / DB2 speed limitation 2 / DB2 limitation de vitesse 2 / DB2 limitação das rotações 2 / DB2 limitazione velocità 2 / DB2 limitación de velocidad 2 / DB2 beperking van het toerental 2
E12 	DB3 Drehzahlbegrenzung 3 / DB3 speed limitation 3 / DB3 limitation de vitesse 3 / DB3 limitação das rotações 3 / DB3 limitazione velocità 3 / DB3 limitación de velocidad 3 / DB3 beperking van het toerental 3
E13 	Fadenwächter / thread monitor / garde-fil / guarda da linha / controllafilo / guardahilos / draadcontrole
E14 	Lichtschranke / photocell / photocellules / barreira luminosa / cellula fotoelettrica / fotocélulas / foto-elektrische beveiliging
E15 **ASM**	Auto Selekt Maschinenklasse / autoselect machine class / autosélectionner classe de machine / classe de máquinas de auto-selecção / categoria macchine autoselect / autoseleccionar clase de máquina / autoselectie machineklasse
S21  <447> = 1	Nadel hoch ohne Schneiden / needle up without thread trimming / aiguille en haut sans coupe / agulha para cima sem corte de linhas / ago su senza taglio / aguja arriba sin corte / naald omhoog zonder snijden

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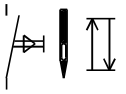
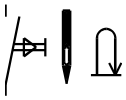
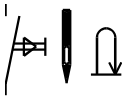
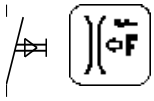
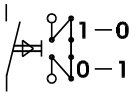
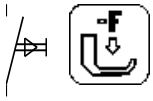
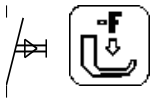
Betekenis van de magneten resp. magneetkleppen, toetsen

S21  <447> = 2	Nadelpositionswechsel / needle position change-over / changement de position d´aiguille / troça de posição da agulha / cambio di posizione dell´ago / cambio de posición de aguja / naaldpositie-verwisseling
S21  <447> = 3	Einzelstich / single stitch / point unique / ponto individual / punto singolo / puntada individual / enkele steek
S21  <447> = 4	Einzelstich verkürzt / single stitch with reduced length / point unique à longueur réduite / ponto individual com comprimento reduzido / punto singolo con lunghezza accorciata / puntada individual con longitud de puntada reducida / enkele steek verkort steeklengte
S22  <441> = 1	Stichlängenumschaltung und max. Drehzahl / stitchlength change-over and max. speed / commutation longueur de point et vitesse maximum / mudança de comprimento dos pontos e rotação máxima / commutazione lunghezza punti e velocità massima / cambio de longitud de la puntada y velocidad máxima / steeklengteomschakeling en maximaal toerental
S22  <441> = 2	Stichlängenumschaltung mit Drehzahlbegrenzung 2 / stitchlength change-over with speed limitation 2 / commutation longueur de point avec limitation de vitesse 2 / mudança de comprimento dos pontos com limitação das rotações 2 / commutazione lunghezza punti con limitazione velocità 2 / cambio de longitud de la puntada con limitación de velocidad 2 / steeklengteomschakeling met beperking van het toerental 2
S22  <441> = 3	Stichlängenumschaltung mit Drehzahlbegrenzung 3 / stitchlength change-over with speed limitation 3 / commutation longueur de point avec limitation de vitesse 3 / mudança de comprimento dos pontos com limitação das rotações 3 / commutazione lunghezza punti con limitazione velocità 3 / cambio de longitud de la puntada con limitación de velocidad 3 / steeklengteomschakeling met beperking van het toerental 3
S23  <442> = I	Fadenspannungsreduzierung / thread tension reduction / réduction tension de fil / redução da tensão do fio / riduzione tenditura filo / reducción de la tensión del hilo / draadspanningsreductie
S23  <442> = II	Nachfolgende Riegelfunktion invertieren / invert subsequent backtack function / inverser la prochaine fonction de bridage / inverter o próximo remate / invertire la funzione d'affr. successiva / invertir la próxima función de remate / inverteren op elkaar volgende hechtfunctie
S24  <444> = 1	Presserfußdruck mit Drehzahlbegrenzung 2 / presser foot pressure with speed limitation 2 / pression du pied presseur avec limitation de vitesse 2 / pressão do calcador com limitação das rotações 2 / pressione alzapiedino con limitazione velocità 2 / presión del prensatelas con limitación de velocidad 2 / naaivoetdruk met beperking van het toerental 2
S24  <444> = 2	Presserfußdruck mit Drehzahlbegrenzung 3 / presser foot pressure with speed limitation 3 / pression du pied presseur avec limitation de vitesse 3 / pressão do calcador com limitação das rotações 3 / pressione alzapiedino con limitazione velocità 3 / presión del prensatelas con limitación de velocidad 3 / naaivoetdruk met beperking van het toerental 3

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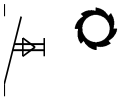
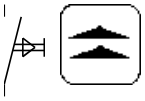
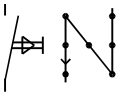
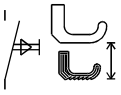
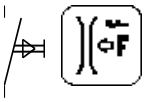
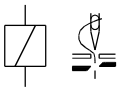
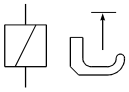
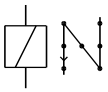
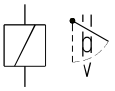
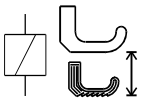
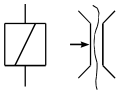
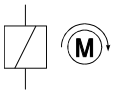
Betekenis van de magneten resp. magneetkleppen, toetsen

S24  <444> = 3	Puller / puller / puller / puller / puller / estirar / puller
 <448> = I	Drehzahlbegrenzung 3 / speed limitation 3 / limitation de vitesse 3 / limitação das rotações 3 / limitazione velocità 3 / limitación de velocidad 3 / beperking van het toerental 3
S25  <448> = II	Transportumstellung von Hand / manual feed reverse / renversement de marche manuel / mudança do transporte manual / commutazione trasporto a mano / inversión de transporte manual / handmatige transportomschakeling
S26  <443> = I	Hubverstellung / stroke adjustment / variation de course / alteração do curso / regolazione della corsa / ajuste de carrera / hefhoogteverstelling
S26  <443> = II	Fadenspannungsreduzierung / thread tension reduction / réduction tension de fil / redução da tensão do fio / riduzione tenditura filo / reducción de la tensión del hilo / draadspanningsreductie
Y1 I max 3 A* 	Fadenschneiden / thread trimmer / coupe-fil / corte de linhas / rasafilo / cortahilos / draadsnijder
Y2 I max 6,5 A* 	Presserfußlüftung / presser foot lift / relevage du pied presseur / elevação do calcador / sollevamento del alzapiedino / elevación de prensatelas / drukvoet optillen
Y3 I max 6,5 A* 	Transportumstellung / feed reverse / renversement de marche / mudança do transporte / commutazione trasporto / inversión de transporte / transportomschakeling
Y4 I max 3 A* 	Fadenwischer / thread wiper / écarteur de fil / retira-linhas / scartafilo / retirahilos / draadwisser
Y5 I max 3 A* 	Hubverstellung / stroke adjustment / variation de course / alteração do curso / regolazione della corsa / ajuste de carrera / hefhoogteverstelling
Y6 I max 3 A* 	Fadenspannungslösen / thread tension release / détendeur de fil / soltar tensão da linha / sbloccaggio tendifilo / detensión del hilo / verbreken van de draadspanning
Y7 I max 3 A* 	Motorlauf / motor runs / moteur en marche / motor em movimento / motore in moto / motor en marcha / loop van de machine

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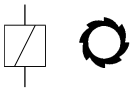
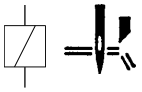
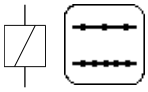
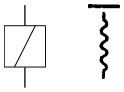
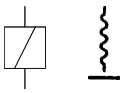
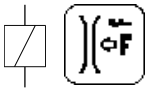
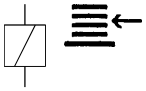
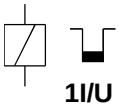
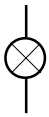
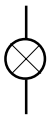
Y8 I max 3 A✱ 	Nadelkühlung / needle cooling / refroidissement d'aiguille / refrigeração da agulha / rafreddamento ago / refrigeración de aguja / naaldkoeling
Y9 I max 0,5 A✱ 	Puller / puller / puller / puller / puller / estirar / puller
Y10 I max 0,5 A✱ 	Kantenschneider / edge trimmer / coupe de bord / corte cantos / rasa bordi / corta bordes / zoomsnijder
Y11 I max 0,5 A✱ 	Stichlängenumschaltung / stitchlength change-over / commutation longueur de point / mudança de comprimento dos pontos / commutazione lunghezza punti / cambio de longitud de la puntada / steeklengteomschakeling
Y13 I max 0,5 A✱ 	Mehrweite unten / extra width down / largeur additionnelle en bas / largura adicional em baixo / superampiezza giù / anchura adicional abajo / extra wijdte beneden
Y14 I max 0,5 A✱ 	Mehrweite oben / extra width up / largeur additionnelle en haut / largura adicional em cima / superampiezza su / anchura adicional arriba / extra wijdte boven
Y16 I max 0,5 A✱ 	Fadenklemme / thread clamp / serre-fil / pinça fixar a linha / serrafilo / garra de hilo / draadklem
Y17 I max 0,5 A✱ 	Presserfußdruck / presser foot pressure / pression du pied presseur / pressão do calcador / pressione alzapiedino / presión del prensatelas / naaivoetdruk
Y18 I max 0,5 A✱ 	Fadenspannungsreduzierung / thread tension reduction / réduction tension de fil / redução da tensão do fio / riduzione tenditura filo / reducción de la tensión del hilo / draadspanningsreductie
Y19 I max 0,5 A✱ 	Stapler / stacker empileur / empilhadeira / impilatore / apiladora / hefinstrument
Y20 I max 0,5 A✱ 	Flip-Flop
Y24 I max 80 mA INKREMENTE 	480 Impulse pro Umdrehung / 480 pulses per revolution / 480 impulsions/révolution / 480 impulsos/rotação / 480 impulsi/giro / 480 impulsos/revolución / 480 pulsen per omwenteling

Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys
Signification des aimants resp. solenoides et touches / Significato dei magneti, delle valvole magnetiche e dei tasti
Significación de los imanes y/o los solenoides y pulsadores / Significação dos imaõs e/ou as solenoidas e teclas
Betekenis van de magneten resp. magneetkleppen, toetsen

Y25 I max 80 mA  **1I/U**	Zählsignal / count signal / signal de comptage / sinal de contagem / segnale conteggio / señal del contador / telsignaal
H1 (A23) 	Anzeige Riegelinvertierung / display backtack inversion / affichage d'inversion de bridage / indicação inversão do remate / visualizzazione inversione dell'affrancatura / indicador inversión del remate / indicatie omkering van het strookje
H2 (A21) 	Anzeige Fadenwächter links / display thread monitor left / affichage garde-fil à gauche / indicação guarda-linha anti-horário / visualizzazione controllafilo antiorario / indicador guardahilo izquierda / indicatie draadcontrole links
H3 (A22) 	Anzeige Fadenwächter rechts / display thread monitor right / affichage garde-fil à droite / indicação guarda-linha horário / visualizzazione controllafilo orario / indicador guardahilo derecha / indicatie draadcontrole rechts
H4 (A15) 	Anzeige Hubverstellung / display stroke adjustment / affichage variation de course / indicação alteração do curso / visualizzazione regolazione della corsa / indicador ajuste de carrera / indicatie hefhoogteverstelling
H5 (A12) 	Anzeige Stichlängenumschaltung / display stitchlength change-over / affichage commutation longueur de point / indicação mudança de comprimento dos pontos / visualizzazione commutazione lunghezza punti / indicador cambio de longitud de la puntada / indicatie steeklengteomschakeling
H21 (A26) 	Anzeige für Taster S21 / display for push-button S21 / affichage pour touche S21 / indicação para tecla S21 / visualizzazione per tasto S21 / indicador para pulsador S21 / indicatie voor toets S21
H22 (A27) 	Anzeige für Taster S22 / display for push-button S22 / affichage pour touche S22 / indicação para tecla S22 / visualizzazione per tasto S22 / indicador para pulsador S22 / indicatie voor toets S22
H23 (A28) 	Anzeige für Taster S23 / display for push-button S23 / affichage pour touche S23 / indicação para tecla S23 / visualizzazione per tasto S23 / indicador para pulsador S23 / indicatie voor toets S23
H24 (A29) 	Anzeige für Taster S24 / display for push-button S24 / affichage pour touche S24 / indicação para tecla S24 / visualizzazione per tasto S24 / indicador para pulsador S24 / indicatie voor toets S24
H25 (A30) 	Anzeige für Taster S25 / display for push-button S25 / affichage pour touche S25 / indicação para tecla S25 / visualizzazione per tasto S25 / indicador para pulsador S25 / indicatie voor toets S25
H26 (A31) 	Anzeige für Taster S26 / display for push-button S26 / affichage pour touche S26 / indicação para tecla S26 / visualizzazione per tasto S26 / indicador para pulsador S26 / indicatie voor toets S26

* Die Summe der Lastströme aller gleichzeitig eingeschalteten Stellglieder (Magnete, Magnetventile) darf den Wert von 4A nicht überschreiten (siehe hierzu Kapitel 2. Technische Daten).

* The total of load currents of all servos activated simultaneously (solenoids, solenoid valves) is not allowed to exceed 4 amps (see also section 2. Technical Specifications).

* Le total des courants de charge de tous les vérins (aimants, électro-vannes) activés simultanément ne doit pas dépasser 4 A (voir aussi le chapitre 2. "caractéristiques techniques").

* A soma das correntes sob carga de todos os actuadores ligados ao mesmo tempo (ímans, solenóides) não pode ultrapassar o valor de 4A (ver também capítulo 2. Dados Técnicos).

* La somma delle correnti di carico di tutti gli attuatori inseriti contemporaneamente (magneti, elettrovalvole) non deve essere superiore a 4 A (vedere il capitolo 2. Dati Tecnici).

* La suma de las corrientes bajo carga de todos los elementos de todos los componentes de regulación conectados simultáneamente (imanes, válvula magnética) no podrá sobrepasar el valor de 4A (véase también el capítulo 2. de datos técnicos).

* De belastingsstroom van alle tegelijkertijd ingeschakelde bedieningsschakels (magneten, magneetventielen) mag in totaal niet meer dan 4 A bedragen (zie hiervoor hoofdstuk 2. Technische gegevens).

13. Maintenance and Repair

!! Before starting maintenance or repair work, switch off the SERVO-TOP,
separate the drive system from mains power (for instance by pulling out the mains plug)
and wait for the motor to come to a complete stop.

General maintenance work must only be done by specially trained personnel paying close attention to the operating instructions.

The SERVO-TOP ist largely maintenance-free.
However, make sure to perform the following maintenance work:

Depending on the operating conditions, clean the drive system regularly, at least once a week, from any dust or lint. Make sure in particular that the ventilation louvres and cooling fins of the motor, especially the cooling fins between the motor and the control box, are perfectly clean (Fig. 13).

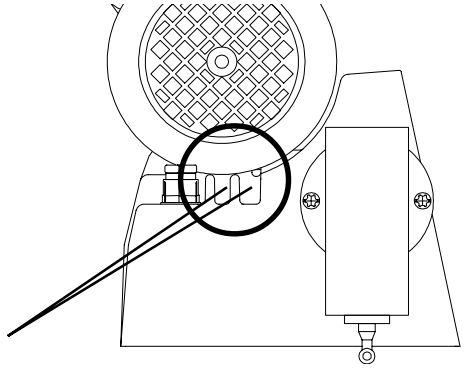


Fig. 13

Remove any threads caught on the synchronizer shaft or on the belt pulley and/or motor shaft.

Check if the drive system is perfectly secured to the stand and that the accessories (synchronizer on machine shaft, speed control unit on control box) are safely mounted in their respective positions.

Check the drive belt for any wear and for correct tension.
Incorrect belt tension can increase noise and vibrations.

When opening covers or removing parts, apart from those removable by hand,
live elements can be exposed.
Connections can also be electrically live.

If you require to open the drive system before starting maintenance or repair work or before replacing any parts, disconnect the drive system from any and all power sources.

If maintenance or repair work on the open unit is unavoidable, this may only be done by qualified personnel familiar with the risks involved. Observe all regulations as per EN 50110.

There can still be capacitors carrying a charge in the power electronics system, even when the drive system has been disconnected from all power sources. To avoid injury by electrical shock, it is therefore essential to wait at least 10 minutes between mains power shutoff and opening the control box.

In order to protect semi-conductor components from overvoltage, use only high-resistivity measuring equipment when making checks on the control system.

Any repair or servicing work requiring skilled knowhow may only be done by qualified personnel authorized by Quick-Rotan.

We emphasize that in accordance with the product liability law we are under no responsibility for damages caused by our products if these are due to

- unqualified repair
- the use of components not authorized by us
- actions made by any persons not authorized by us.