SERVO-TOP

QE5542

CE

Type

R40SE

Instruction Manual

Part 3

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Part 3

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 R40SE (2Z_J00_1.HEX)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Backtack	RIE	104/107/110 523/584		
Backtack inversion	RIV	419		
Backtack suppression	RIUNT	419		
Blower	BLA	668		
Brake	DRZAB	723/851		
Control	REG	884/885/886 887/889/890 891/894		
Decorative backtack	ZRIE	522/523/530 775		
Defect search	HWT	797		
Delay	VERZ	623/730/731 732/739/740		
Direction of rotation	DRR	800		
End backtack	ER	110/149/604 731/732/740		
Engine	MOT	897		
Feed reverse	TUM	634/721	A5	X4:9
Front backtack	AR	104/105/106 107/148/739		
Hardware test	HWT	797		
Inverse rotation	RDR	618/623/801		
Machine class	MAKL	799		
Needle position	NAPO	522/700/701 702/703/706 709/710		
Needle position change-over	NPW	616/634	E2	X1:1
Needle up without trimming	NHOS	616/710		
Photocell	LS	111/112/113 199/615		
Presser foot	PF	554/651/719 729/730	A4	X4:4

A4	X4:4			
Program	PR	114/206/221 304/313/554 851		
Programming level C	EBC	798		
Repeat backtack	WRIE	731/740		
Residual brake	STBR	718		
Seam end	NE	114/206/602		
Soft start	SANL	116/117		
Speed	DRZ	105/106/107 110/117/199 221/530/605 606/607/608 609/676/850 901		
Speed decrease	DRZAB	723/851		
Speed increase	DRZAN	722		
Speed limitation	DB	221/676		
Start	START	113/603		
Start delay	STVERZ	729		
Stitch condensation	STVD	105/106/107 110/419/739		
Stop	STOP	114/206		
Stop time	STOPZ	775		
Target stitch	PEIPO	653/789		
Thread trimming	SN	601/604/609 706/709/732 734/901		
Thread wiper	WI	668/715	A3	X4:8
Time needed to switch on	EINZ	715/889		
Timing output	TA	719/721/734		

11.4 List of Parameters R40SE (2Z_J00_1.HEX)

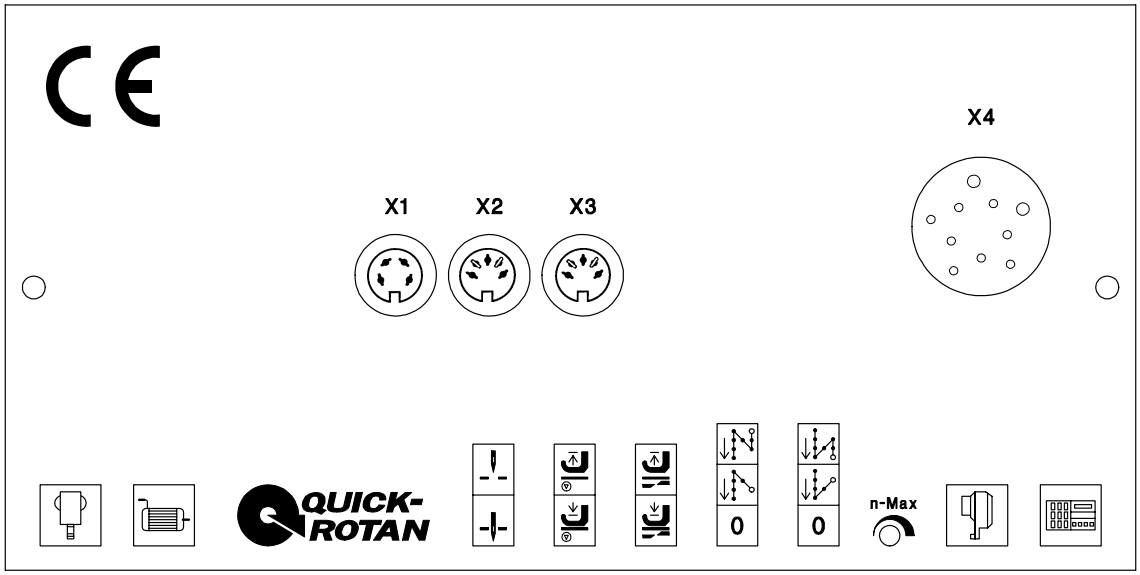
No.	Function (Meaning)	Level	Range of Values	Value	Standard
104	(AR/RIE) Front backtack correction (delayed disabling of feed reverse)	B,C	0 - 16	8	Kl. 1, 2, 3
105	(AR/DRZ/STVD) Speed for front backtack/stitch condensation (00000011)	B,C	100 - 6400	1200	Kl. 1, 2, 3
106	(AR/DRZ/STVD) Speed for front backtack/stitch condensation I variable (treadle-controlled) II constant (corresponding to <105>)	B,C		II	Kl. 1, 2, 3
107	(AR/RIE/DRZ/STVD) Speed for front backtack/stitch condensation when <106> = I I limited by <105> II limited by <607>	B,C		II	Kl. 1, 2, 3
110	(ER/RIE/DRZ/STVD) Speed for end backtack/stitch condensation	B,C	100 - 6400	1200	Kl. 1, 2, 3
111	(LS) Light barrier compensation stitches 1 (stitches from light barrier clear to seam end)	A,B,C	1 - 255	6	Kl. 1, 2, 3
112	(LS) Number of stitches for light barrier fade-out on knit fabrics (according to stitch size)	A,B,C	0 - 255	0	Kl. 1, 2, 3
113	(LS/START) Start with light barrier I when light barrier is dark only II also when light barrier is clear	B,C		II	Kl. 1, 2, 3
114	(PR/STOP/NE) Stop before seam end after stitch count (last seam section) I yes II no	B,C		II	Kl. 1, 2, 3
116	(SANL) Soft start stitches (00000111)	A,B,C	0 - 255	1	Kl. 1, 2, 3
117	(SANL/DRZ) Speed for soft start stitches	B,C	30 - 640	400	Kl. 1, 2, 3
148	(AR) Front backtack I double II single	A,B,C		I	Kl. 1, 2, 3
149	(ER) End backtack I double II single	A,B,C		I	Kl. 1, 2, 3
199	(DRZ/LS) Speed for light barrier compensation stitches	B,C	300 - 6400	1200	Kl. 1, 2, 3
206	(NE/PR/STOP) Interrupt/discontinue seam sections at speed = constant (<203> = II) I with treadle -2 II with treadle 0	B,C		II	Kl. 1, 2, 3
221	(PR/DB/DRZ) Speed limitation for sewing programs (or sewing program 1)	B,C	300 - 6400	1200	Kl. 1, 2, 3
304	(PR) Stitch compensation at feed reverse for a seam section	B,C	0 - 2550	30	Kl. 1, 2, 3
313	(PR) Programs are backtack programs (darning programs) I yes II no	B,C		II	Kl. 1, 2, 3
419	(RIV/RIUNT/STVD) Function of external key I backtack / stitch condensation inversion II backtack / stitch condensation suppression (flip-flop function)	B,C		I	Kl. 1, 2, 3
522	(NAPO/ZRIE) Needle position when stop occurs during decorative backtack (stitch in stitch) I position 2 (up) II position 1 (down) (00001101)	B,C		II	Kl. 1, 2, 3

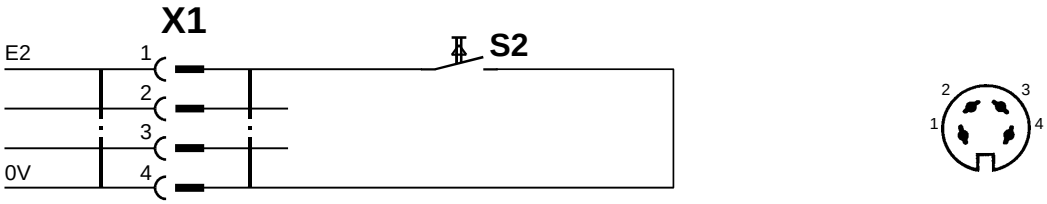
523	(RIE/ZRIE) Backtack I decorative backtack (stitch in stitch) II standard backtack	A,B,C		II	Kl. 1, 2, 3
530	(DRZ/ZRIE) Speed (max.) for decorative backtack (00001111)	B,C	100 - 6400	1000	Kl. 1, 2, 3
554	(PF/PR) Presser foot position after seam section stitch count and treadle position > +1 I up II down	B,C		I	Kl. 1, 2, 3
584	(RIE) Backtack I four times II double	B,C		II	Kl. 1, 2, 3
601	(SN) Trimming I yes II no	B,C		I	Kl. 1, 2, 3
602	(NE) Seam end at treadle position I slightly heeled (-1) II fully heeled (-2)	B,C		II	Kl. 1, 2, 3
603	(START) Start after seam end I after treadle 0 only II immediate start of operation	B,C		I	Kl. 1, 2, 3
604	(SN/ER) Trimming after single end backtack I forward II backward	B,C		I	Kl. 1, 2, 3
605	(DRZ) Actual speed in display I yes II no	B,C		II	Kl. 1, 2, 3
606	(DRZ) Speed: level 1 (min.) (00010001)	B,C	30 - 640	100	Kl. 1, 2, 3
607	(DRZ) Speed: level 12 (max.)	B,C	100 - 10000	1500	Kl. 1, 2, 3
608	(DRZ) Speed level curve (treadle characteristic) I linear II not linear	B,C		I	Kl. 1, 2, 3
609	(SN/DRZ) Trimming speed 1 (00010011)	B,C	30 - 300	250 200	Kl. 1, 2 Kl. 3
615	(LS) End recognition when photocell goes I from light to dark II from dark to light	B,C		II	Kl. 1, 2, 3
616	(NPW/NHOS) Function of external key (input E2) I needle position change-over (NPW) II needle up without trimming (NHOS)	B		II	Kl. 1, 2, 3
618	(RDR) Inverse rotation after seam end I yes II no	B,C		II	Kl. 1, 2, 3
623	(RDR/VERZ) Delay in start-up time (ms) for inverse rotation	B,C	0 - 2550	10	Kl. 1, 2, 3
634	(NPW/TUM) Function of external key (input) I TUM while the machine is stopped and while motor is running II NPW while the machine is stopped TUM while motor is running	B,C		I	Kl. 1, 2, 3
651	(PF) Presser foot with automatic descent on machine stop I yes II no	B,C		I	Kl. 1, 2, 3
653	(PEIPO) Target stitch before sewing I yes II no	B,C		II	Kl. 1, 2, 3
668	(BLA/WI) Thread wiper/thread clearer I yes II no (00010101)	B,C		I	Kl. 1, 2, 3

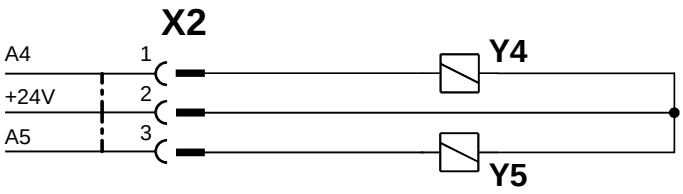
676	(DRZ/DB) Speed adjustment via potentiometer possible I yes II no	B,C		I	Kl. 1, 2, 3
700	(NAPO) Needle position 0 (reference position of the needle)	B,C	0 - 239	0	Kl. 1, 2, 3
701	(NAPO) Angular adjustment I with handwheel (teach-in) II by keys (+/-)	B,C		I	Kl. 1, 2, 3
702	(NAPO) Needle position 1 (needle down) (00010111)	B,C	0 - 239	75 85	Kl. 1, 2 Kl. 3
703	(NAPO) Needle position 2 (thread take-up lever up)	B,C	0 - 239	213 220 225	Kl. 1 Kl. 2 Kl. 3
706	(NAPO/SN) Needle position 6 (start trimming signal 2)	B,C	0 - 239	142 85 95	Kl. 1 Kl. 2 Kl. 3
709	(NAPO/SN) Needle position 7 (end of trimming signal 2) (00011001)	B,C	0 - 239	200	Kl. 1, 2, 3
710	(NAPO/NHOS) Needle position 3 (needle up) (00011011)	B,C	0 - 239	200	Kl. 1, 2, 3
715	(EINZ/WI) Duration (ms) of thread wiper	B,C	0 - 2550	120	Kl. 1, 2, 3
718	(STBR) Timing of residual brake (0 = brake off)	B,C	0 - 100	0	Kl. 1, 2, 3
719	(PF/TA) Timing output A4 (0 = 100% switching on)	B,C	0 - 100	40	Kl. 1, 2, 3
721	(TUM/TA) Timing output A5 (0 = 100% switching on)	B,C	0 - 100	40	Kl. 1, 2, 3
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B,C	1 - 50	45	Kl. 1, 2, 3
723	(DRZAB) Brake ramp 1 gradual 50 steep	B,C	1 - 50	31	Kl. 1, 2, 3
729	(STVERZ/PF) Start delay after lowering presser foot	B,C	0 - 2550	50	Kl. 1, 2, 3
730	(PF/VERZ) Lift delay for presser foot after seam end	B,C	0 - 2550	60	Kl. 1, 2, 3
731	(ER/WRIE/VERZ) Delay before stitch counting for end backtack (ERV)	B,C	0 - 2550	40	Kl. 1, 2, 3
732	(SN/ER/VERZ) Delay (ms) for trimming after single end backtack	B,C	0 - 2550	50	Kl. 1, 2, 3
734	(SN/TA) Timing output A2	B	0 - 100	10 -	Kl. 3 Kl. 1, 2
739	(AR/STVD/VERZ) Delay (ms) for speed after front backtack / stitch condensation	B,C	0 - 2550	120	Kl. 1, 2, 3
740	(ER/WRIE/VERZ) Delay before stitch counting for end backtack backward	B,C	0 - 2550	0	Kl. 1, 2, 3
775	(ZRIE/STOPZ) Stop time (ms) with stitch in stitch backtack (decorative backtack)	B,C	0 - 2550	100	Kl. 1, 2, 3
789	(PEIPO) Needle position 10 (target stitch)	B,C	0 - 239	225	Kl. 1, 2, 3
797	(HWT) Hardware test I yes II no	B,C		II	Kl. 1, 2, 3
798	(EBC) Programming level C I yes II no	B,C		II	Kl. 1, 2, 3
799	(MAKL) Machine class which has been selected (00011101)	B,C	1 - 3	1 2 3	Kl. 1 Kl. 2 Kl. 3
800	(DRR) Direction of motor rotation viewed from belt pulley I left-hand rotation II right-hand rotation	B,C		II	Kl. 1, 2, 3

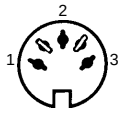
801	(RDR) Reverse rotation angle after seam end	B,C	5 - 200	30	Kl. 1, 2, 3
850	(DRZ) Maximum motor speed	C		4500	Kl. 1, 2, 3
851	(PR/DRZAB) Brake ramp for stitch-count seams I steep II gradual	C		I	Kl. 1, 2, 3
884	(REG) Proportional amplification of the speed control (in general)	B,C	4 - 50	12	Kl. 1, 2, 3
885	(REG) Integral amplification of the speed control	C	0 - 100	30	Kl. 1, 2, 3
886	(REG) Proportional amplification of the order controllers	C	1 - 50	20 30	Kl. 1 Kl. 2, 3
887	(REG) Differential amplification of the order controllers	C	1 - 100	30	Kl. 1, 2, 3
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0 - 1000	400	Kl. 1, 2, 3
890	(REG) Proportional amplification of the superior order controllers for the residual brake	C	1 - 50	25	Kl. 1, 2, 3
891	(REG) Proportional amplification of the lower speed controllers for the residual brake	C	1 - 50	20	Kl. 1, 2, 3
894	(REG) Rotational direction of motor and synchronizer I different II same	C		I	Kl. 1, 2, 3
897	(MOT) MINI motor version I long II short	C		II	Kl. 1, 2, 3
898	(SONST) Number of motor poles I 4 poles II 6 poles	C		II	Kl. 1, 2, 3
901	(DRZ/SN) Trimming release speed	C	30 - 500	350	Kl. 1, 2, 3

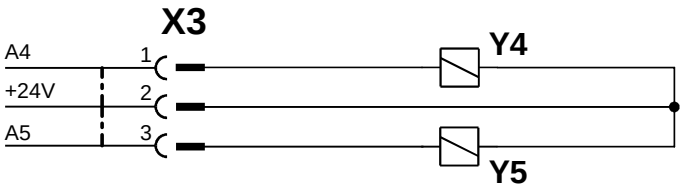
12. Electrical Connections Diagram R40SE

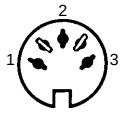


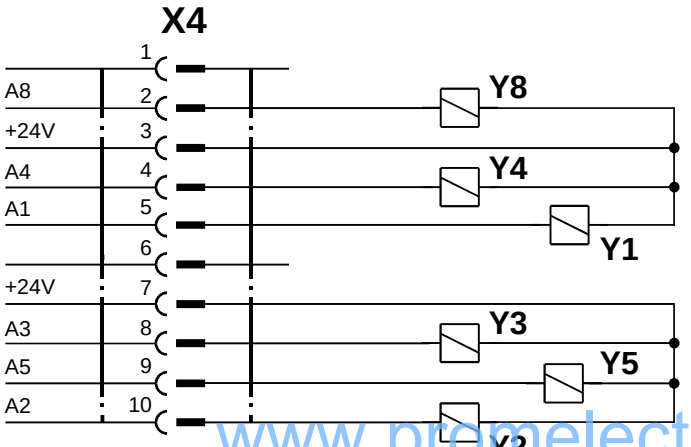


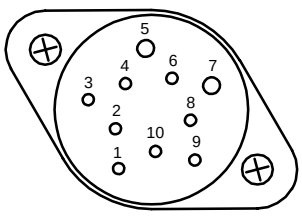




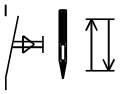
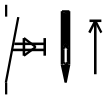
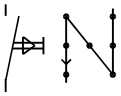
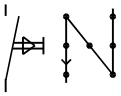
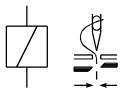
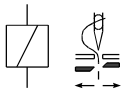
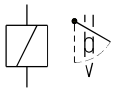
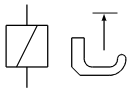
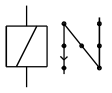
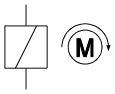








Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys
Signification des aimants resp. solenoides et touches / Significação dos imaõs e/ou as solenoidas e teclas
Significato dei magneti, delle valvole magnetiche e dei tasti / Significación de los imanes y/o los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

S2  <634> = II <616> = I	bei n = 0	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  <634> = II <616> = II	bei n = 0	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  <634> = II	bei n ≠ 0	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  <634> = I	Transportumstellung von Hand / manual feed reverse / renversement de marche manuel / mudança do transporte manual / commutazione trasporto a mano / inversión de transporte manual / handmatige transportomschakeling	
Y1 I max 8 A ✱ 	Fadenschneider vorwärts / thread trimmer forward / coupe-fil en avant / corte de linhas para a frente / rasafilo avanti / cortahilos adelante / draadsnijder voorwaarts	
Y2 I max 8 A ✱ <734> 	Fadenschneider rückwärts / thread trimmer backward / coupe-fil en arrière / corte de linhas para trás / rasafilo indietro / cortahilos atrás / draadsnijder achterwaarts	
Y3 I max 8 A ✱ 	Fadenwischer / thread wiper / écarteur de fil / retira-linhas / scartafilo / retirahilos / draadwisser	
Y4 I max 8 A ✱ 	Presserfuß heben / lifting presser foot / relevage du pied presseur / levantar do calcador / sollevamento del alzapiedino / elevación de prensatelas / drukvoet optillen	
Y5 I max 8 A ✱ 	Transportumsteller / feed reverse / renversement de marche / mudança do transporte / commutazione trasporto / inversión de transporte / transportomschakeling	
Y8 I max 8 A ✱ 	Motor läuft / motor runs / moteur en marche / motor em movimento / motore in moto / motor en marcha / loop van de machine	

- 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).

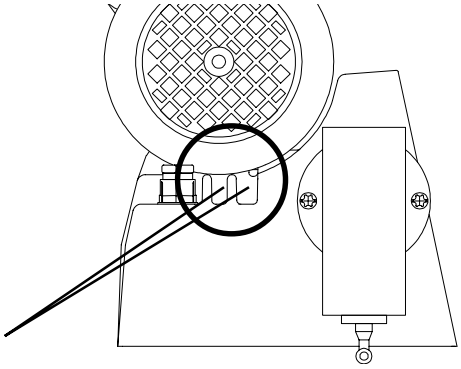


Fig. 13

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.