

SERVO-TOP

QE5542

CE

Type

P143SE

Instruction Manual

Part 3

QUICK-ROTAN Elektromotoren GmbH
Gräfenhäuser Straße 85
D-64293 Darmstadt
Tel.: 06151 / 87970
Fax: 06151 / 896246

The **CE** symbol confirms that the respective drive system meets the requirements for partial machines of the following EU directives:

- EMV Directive 89/336/EEG
- Low Voltage Directive 73/23/EEG

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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 P143SE

(2A_043_c.ENO)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Brake	DRZAB	723/851		
Control	REG	884/885/886 887/889/890 891/894		
Delay	VERZ	623/730		
Direction of rotation	DRR	800		
Hardware test	HWT	797		
Inverse rotation	RDR	618/623/801		
Machine class	MAKL	799		
Needle position	NAPO	521/675/700 701/702/703 705/706	A11 A12	X1:15 X1:19
Presser foot	PF	719/729/730	E2 E3 A4	X1:3 X1:5 X1:13
Program	PR	851		
Programming level C	EBC	798		
Residual brake	STBR	718		
Soft start	SANL	116/117	E6	X1:10
Speed	DRZ	117/605/606 607/609/676 850	E4	X1:6
Speed decrease	DRZAB	723/851		
Speed increase	DRZAN	722		
Start delay	STVERZ	729		
Thread trimming	SN	601/609/705 706/761	E3 A1 A2	X1:5 X1:1 X1:9
Time needed to switch on	EINZ	889		
Timing output	TA	719		

11.4 List of Parameters P143SE

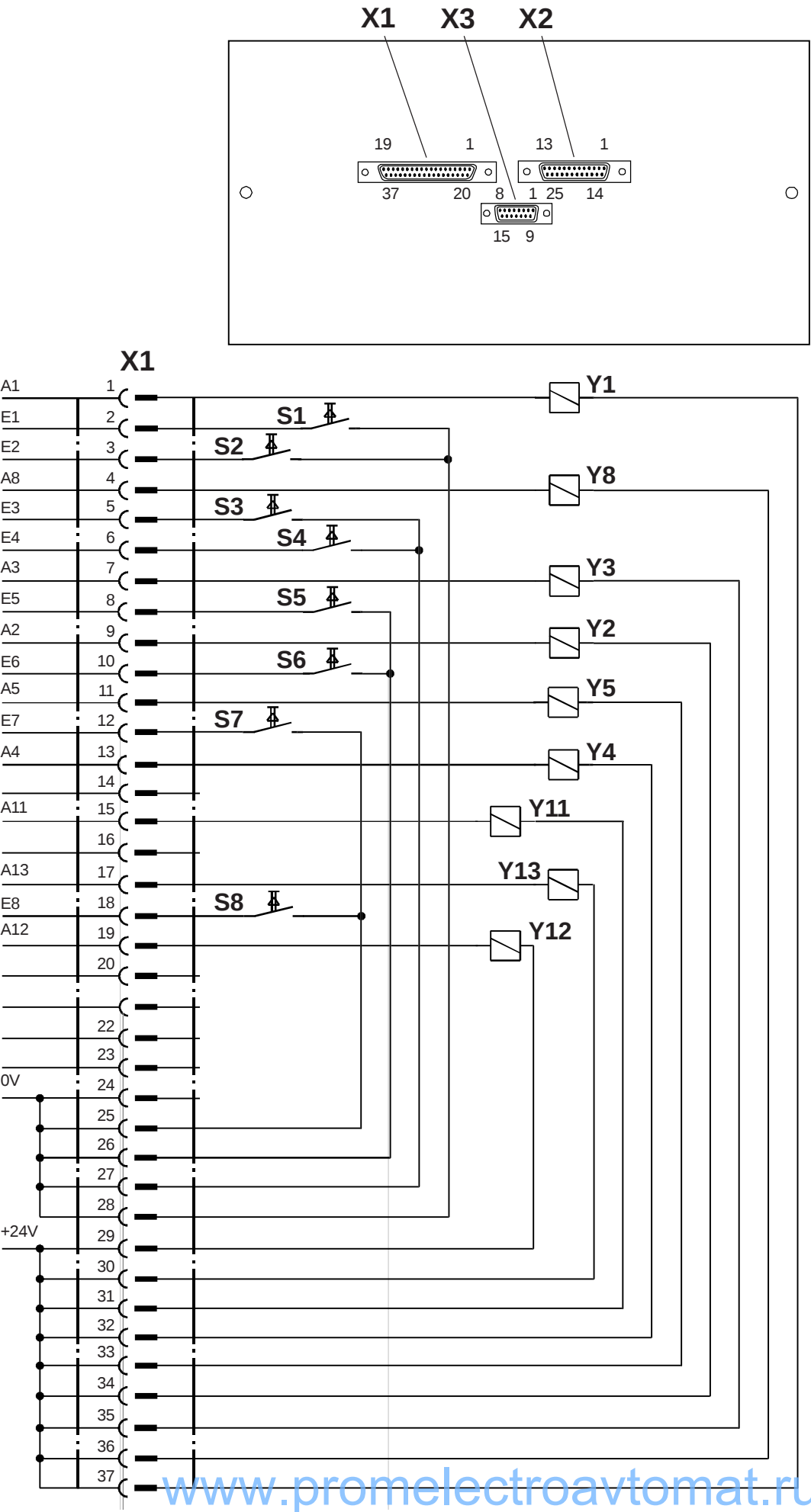
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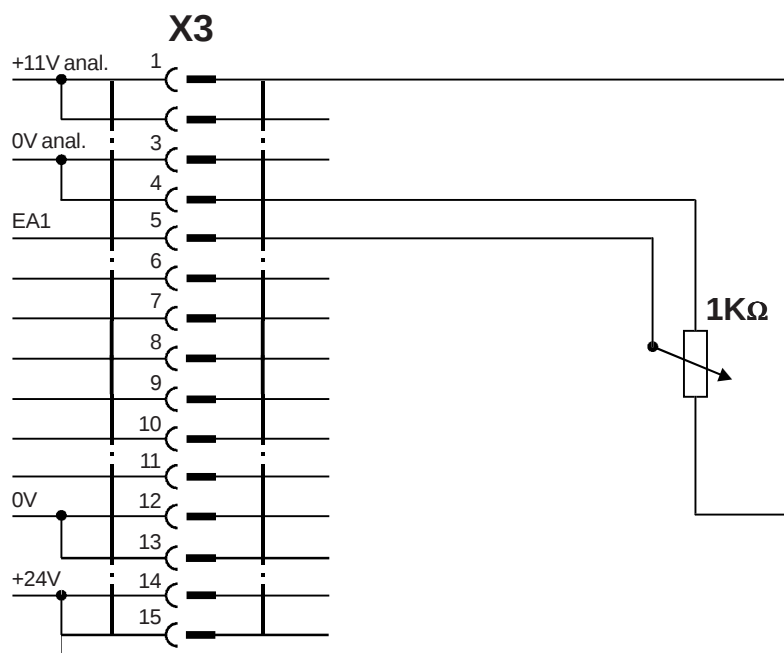
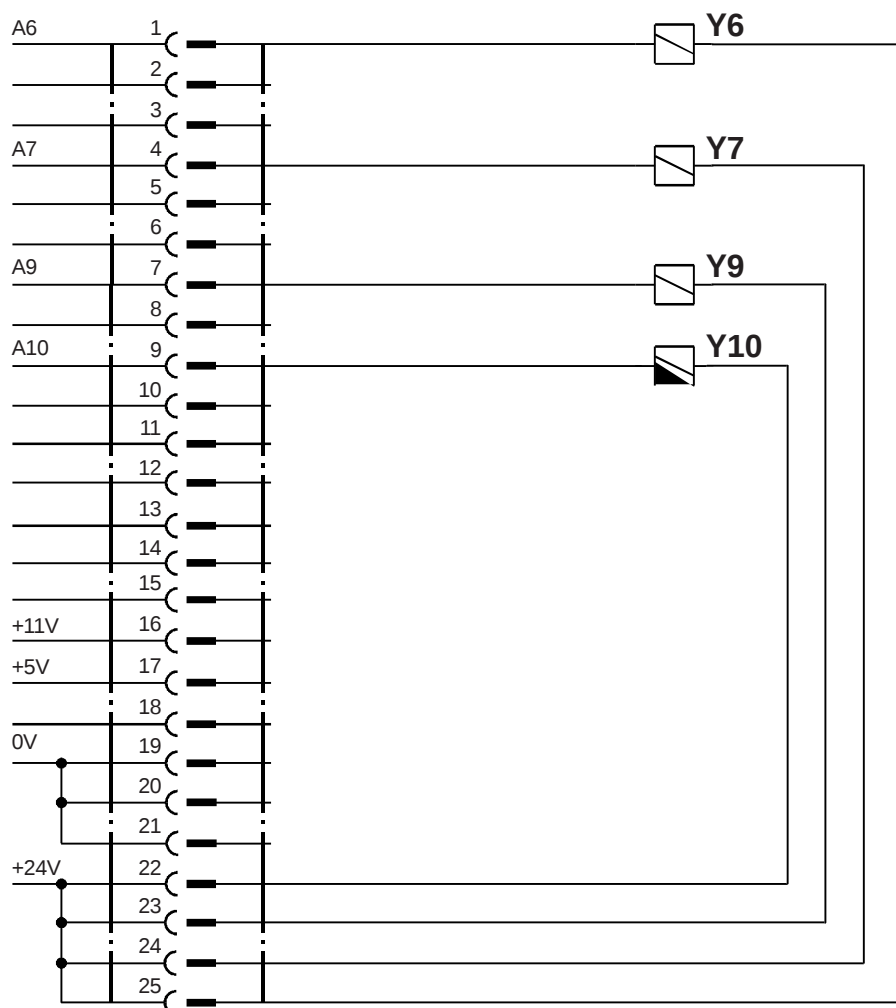
No.	Function (Meaning)	Level	Range of Values	Standard Value
116	(SANL) Soft start stitches (11100000)	A,B	0-255	1
117	(SANL/DRZ) Speed for soft start stitches (00010000)	B	30-640	400
521	(NAPO) Needle position at stop before seam end I position 2 (up) II position 1 (down)	B		II
601	(SN) Trimming I yes II no (00001000)	B		I
605	(DRZ) Actual speed in display I yes II no	B		II
606	(DRZ) Speed: level 1 (min.) (10001000)	B	30-640	180
607	(DRZ) Speed: level 12 (max.) (01001000)	B	100-10000	3500 Kl. 1 7000 Kl. 2, 3
609	(SN/DRZ) Trimming speed 1 (11001000)	B	30-400	180
618	(RDR) Inverse rotation after seam end I yes II no (00101000)	B		II
623	(RDR/VERZ) Delay in start-up time (ms) for inverse rotation	B	0-2550	100
675	(NAPO) Automatic needle change-over into position 2 (up) after enabling I yes II no	B		I
676	(DRZ) Speed adjustment via potentiometer possible I yes II no	B		II
700	(NAPO) Needle position 0 (reference position of the needle) (01101000)	B	0-239	0
701	(NAPO) Angular adjustment I with handwheel (teach-in) II by keys (+/-)	B		I Kl. 1 II Kl. 2, 3
702	(NAPO) Needle position 1 (needle down) (11101000)	B	0-239	5 Kl. 1 123 Kl. 2, 3
703	(NAPO) Needle position 2 (thread take-up lever up) (00011000)	B	0-239	215

705	(NAPO/SN) Needle position 5 (end of trimming signal 1) (10011000)	B	0-239	125 Kl. 1 170 Kl. 2, 3
706	(NAPO/SN) Needle position 6 (start trimming signal 2) (01011000)	B	0-239	119
718	(STBR) Timing of residual brake (0 = brake off) (00111000)	B	0-100	0 Kl. 1 10 Kl. 2, 3
719	(PF/TA) Timing output A4 (0 = 100% switching on)	B	0-100	30
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B	1-50	45
723	(DRZAB) Brake ramp 1 gradual 50 steep	B	1-50	40
729	(STVERZ/PF) Start delay after lowering presser foot	B	0-2550	120 Kl. 1 0 Kl. 2, 3
730	(PF/VERZ) Lift delay for presser foot after seam end	B	0-2550	50 Kl. 1 0 Kl. 2, 3
761	(SN) Extension of thread trimming after positioning	B	0-2550	0
797	(HWT) Hardware test	B		II
798	(EBC) Programming level C I yes II no	B		II
799	(MAKL) Machine class which has been selected (10111000)	B	1-3	1 Kl. 1 2 Kl. 2 3 Kl. 3
800	(DRR) Direction of motor rotation viewed from belt pulley I left-hand rotation II right-hand rotation (01111000)	B,C		I
801	(RDR) Reverse rotation angle after seam end	B,C	5-200	30
850	(DRZ) Maximum motor speed	C	2000-6000	4500
851	(PR/DRZAB) Brake ramp for stitch-count seams I steep II gradual	C		I
884	(REG) Proportional amplification of the speed control (in general)	B,C	4-50	10 Kl. 1 30 Kl. 2, 3
885	(REG) Integral amplification of the speed control	C	0-100	30
886	(REG) Proportional amplification of the order controllers	C	1-100	20
887	(REG) Differential amplification of the order controllers	C	1-100	30
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0-1000	400
890	(REG) Proportional amplification of the superior order controllers for the residual brake	C	1-100	25

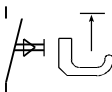
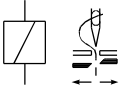
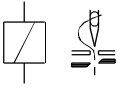
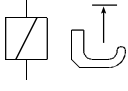
891	(REG) Proportional amplification of the lower speed controllers for the residual brake	C	1-100	20
894	(REG) Rotational direction of motor and synchronizer I different II same	C		I
897	(SONST) Commutation transmitter I ABB II QR	C		II
898	(SONST) Number of motor poles I 4 poles II 6 poles	C		II
902	(SONST) Increments on output A13 I 240 increments per revolution II 480 increments per revolution	C		II Kl. 1, 3 I Kl. 2

12. Anschlußplan Steckerplatte P143SE

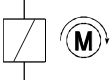




Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys
 Signification des aimants resp. solenoides et touches / Significação dos imãs e/ou as solenoidas e teclas
 Significato dei magneti, delle valvole magnetiche e dei tasti / Significación de los imanes y/o los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

S1 	Pedal sperren / treadle locking / blocage de pédale / bloqueio de pedal / pedale bloccata / bloqueo de pedal / pedaalblokkering
S2 	Presserfuß heben sperren / presser foot up locking / blocage de pied presseur en haut / bloqueio de calcador em cima / alzapiedino su bloccata / bloqueo de prensatelas arriba / drukvoet optillen blokkeren
S3 	Schneiden, Presserfuß heben, Motor stopp / trimming, presser foot up, motor stop / coupe, pied presseur en haut, moteur stop / cortar, calcador em cima, motor paragem / rasafilo, alzapiedino su, motore stop / cortar, prensatelas arriba, motor parada / snijden, drukvoet optillen, motor stop
S4 	Externe Drehzahl ein / external speed on / vitesse externe en fonction / rotação externo ligar / velocità esterna inserita / velocidad externa conectada / externe toerentalsturing aan
S5 	Stopp ohne Positionierung / stop without positioning / stop sans positionnement / paragem sem posicionamento / stop senza posizionamento / parada sin posicionamiento / stop zonder positioneren
S6 	Sanftanlauf / soft start / mise en marche douce / arranque suave / punti lenti iniziali / partida suave / zachte start
S7 	Stopp in Position 1 / stop in position 1 / stop en position 1 / paragem em posição 1 / stop in posizione 1 / parada en posición 1 / stop in positie 1
S8 	Stopp in Position 2 / stop in position 2 / stop en position 2 / paragem em posição 2 / stop in posizione 2 / parada en posición 2 / stop in positie 2
Y1 I max 8 A * 	Fadenschneider pneumatisch / pneum. thread trimmer / coupe-fil pneumatique / corte de linhas pneumático / rasafilo pneumatico / cortahilos neumático / draadsnijder pneumatisch
Y2 I max 8 A * 	Fadenschneider magnet. / magn. thread trimmer / coupe-fil magnétique / corte de linhas magnético / rasafilo magnetico / cortahilos magnético / draadsnijder magnetisch
Y3 I max 8 A * 	Fertigmeldung / finish signal / signal d'exécution / sinal de execução / segnalazione finito / señal de ejecución / eindsignaal
Y4 I max 8 A * 	Presserfuß heben / presser foot up / pied presseur en haut / calcador em cima / alzapiedino su / prensatelas arriba / drukvoet optillen

Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys
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 y pulsadores / Betekenis van de magneten resp. magneetkleppen, toetsen

Y5 I max 8 A *		Pedal in Ruhelage / treadle in rest / pédale au repos / pedal em posição de repouso / pedale in posizione di riposo / pedal en reposo / pedaal in rust
Y6 I max 8 A *		Pedal vorwärts erste Stufe / treadle forward 1st level / pédale en avant 1ère étape / pedal para a frente primeiro escalão / pedale avanti primo stadio / pedal adelante primero grado / pedaal vooruit eerste niveau
Y7 I max 8 A *		Pedal vorwärts zweite Stufe / treadle forward 2nd level / pédale en avant 2ème étape / pedal para a frente segundo escalão / pedale avanti secondo stadio / pedal adelante dos grad / ipedaal vooruit tweede ni
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
Y9 I max 8 A *		Pedal rückwärts erste Stufe / treadle backward 1st level / pédale en arrière 1ère étape / pedal para trás primeiro escalão / pedale indietro primo stadio / pedal atrás primero grado / pedaal achteruit eerste niveau
Y10 I max 8 A *		Pedal rückwärts zweite Stufe / treadle backward 2nd level / pédale en arrière 2ème étape / pedal para trás segundo escalão / pedale indietro secondo stadio / pedal atrás dos grados / pedaal achteruit tweede niveau
Y11 I max 8 A *		Position 1 erreicht / arrived at position 1 / position 1 atteinte / posição 1 alcançar / posizione 1 raggiunta / posición 1 llegada / positie 1 bereikt
Y12 I max 8 A *		Position 2 erreicht / arrived at position 2 / position 2 atteinte / posição 2 alcançar / posizione 2 raggiunta / posición 2 llegada / positie 2 bereikt
Y13 I max 80 mA		480 Impulse pro Umdrehung / 480 pulses per revolution / 480 impulsions/révolution / 480 impulsos/rotação / 480 impulsi/giro / 480 impulsos/revolución / 480 pulsen per omwenteling

- Q Die Summe der Lastströme aller gleichzeitig eingeschalteten Stellglieder (Magnete, Magnetventile) darf den Wert von 4A nicht überschreiten (siehe hierzu Kapitel 2. Technische Daten).
- Q 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).
- Q 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").
- Q 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).
- Q La somma delle correnti di carico di tutti gli attuatori inseriti contemporaneamente (magnet, elettrovalvole) non deve essere superiore a 4 A (vedere il capitolo 2. Dati Tecnici).
- Q 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).
- Q De belastingsstroom van alle tegelijkertijd ingeschakelde bedieningsschakels (magneten, magneetventielen) mag in totaal niet meer dan 4 A bedragen (zie hiervoor hoofdstuk 2. Technische gegevens).

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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 is 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).

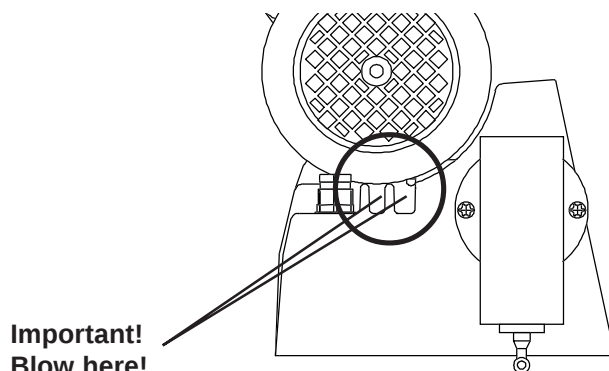


Fig. 13

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.

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