

EcoDrive

QE3760/QE5540

CE

Type

J40ED

Instruction Manual

Part 3

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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, 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 1 or 0. In the case of such parameters, column 4 is empty.

Parameter numbers in acute brackets; e.g. <105>, mean the value (content) set for the parameter in question.

Example:

107 Speed for front backtack when <106> = 1

1 limited by <105>

0 limited by <607>

Explanation:

Parameter 107 is valid only if the value (content) of parameter <106> = 1.

If parameter 107 is set to 1 (<107> = 1), then the speed for the front backtack is limited by parameter 105, e.g. <105> = 1500. If parameter 107 is set to 0 (<107> = 0), then the speed for the front backtack is limited by the value of parameter 607, e.g. <607> = 4000.

11.3 Parameter survey J40ED

1_F40_03 (PARAM.ENO)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Backtack	RIE	105/107/110 364/523/584 585		
Backtack inversion	RIV	748		
Backtack suppression	RIUNT	748		
Blower	BLA	668		
Brake	DRZAB	723		
Catcher	FANG	707		
Chopper	MESSE	105/110		
Control	REG	880/884/885 886/887/889 890/900		
Decorative backtack	ZRIE	522/523/530 775		
Defect search	HWT	797		
Delay	VERZ	623/642/643 730/761/770		
Direction of rotation	DRR	800		
Display	ANZ	605		
Edge trimmer	KS	356/387/776		
End backtack	ER	110		
Engine	MOT	897		
Feed reverse	TUM	301/364/643 721		
Front backtack	AR	105/106/107		
Hardware test	HWT	797		
Inverse rotation	RDR	618/623/801		
Linear motor	LINMOT	668		
Machine class	MAKL	799		
Machine run	ML	387		
Needle position	NAPO	522/700/702 703/705/706 707/710/748		

Needle position change-over	NPW	446/748
Needle up without trimming	NHOS	446/710/748
Number of stitches	STZA	111/112/760
ON period	EINZ	528/715/889
Photocell	LS	111/112/113 199/615
Presser foot	PF	356/642/651 668/719/729 730/770
Program	PR	206/311/313
Programming level C	EBC	798
Residual brake	STBR	718
Seam end	NE	110/206
Seam start	NA	105
Single stitch	EST	446/748
Soft start	SANL	116/117
Speed	DRZ	105/106/107 110/117/199 530/585/605 606/607/608 609
Speed decrease	DRZAB	723
Speed increase	DRZAN	722
Speed limitation	DB	585
Stacker	STAP	528/776
Start	START	113
Start delay	STVERZ	729
Stitch condensation	STVD	105/106/107 110/364
Stitchcounter	STZ	760
Stop	STOP	206
Stop time	STOPZ	775
Target stitch	PEIPO	653/789
Thread monitor	FW	382/660/760
Thread puller	FZ	761

Thread tension release	FSL	538/707/761
Thread trimming	SN	311/609/705 706/734
Thread wiper	WI	668/715
Time needed to switch on	EINZ	528/715/889
Timing output	TA	538/642/643 705/719/721 734
Vacuum	SAUG	105/110/356

11.4 List of Parameters J40ED

1_F40_03 (PARAM.EN)

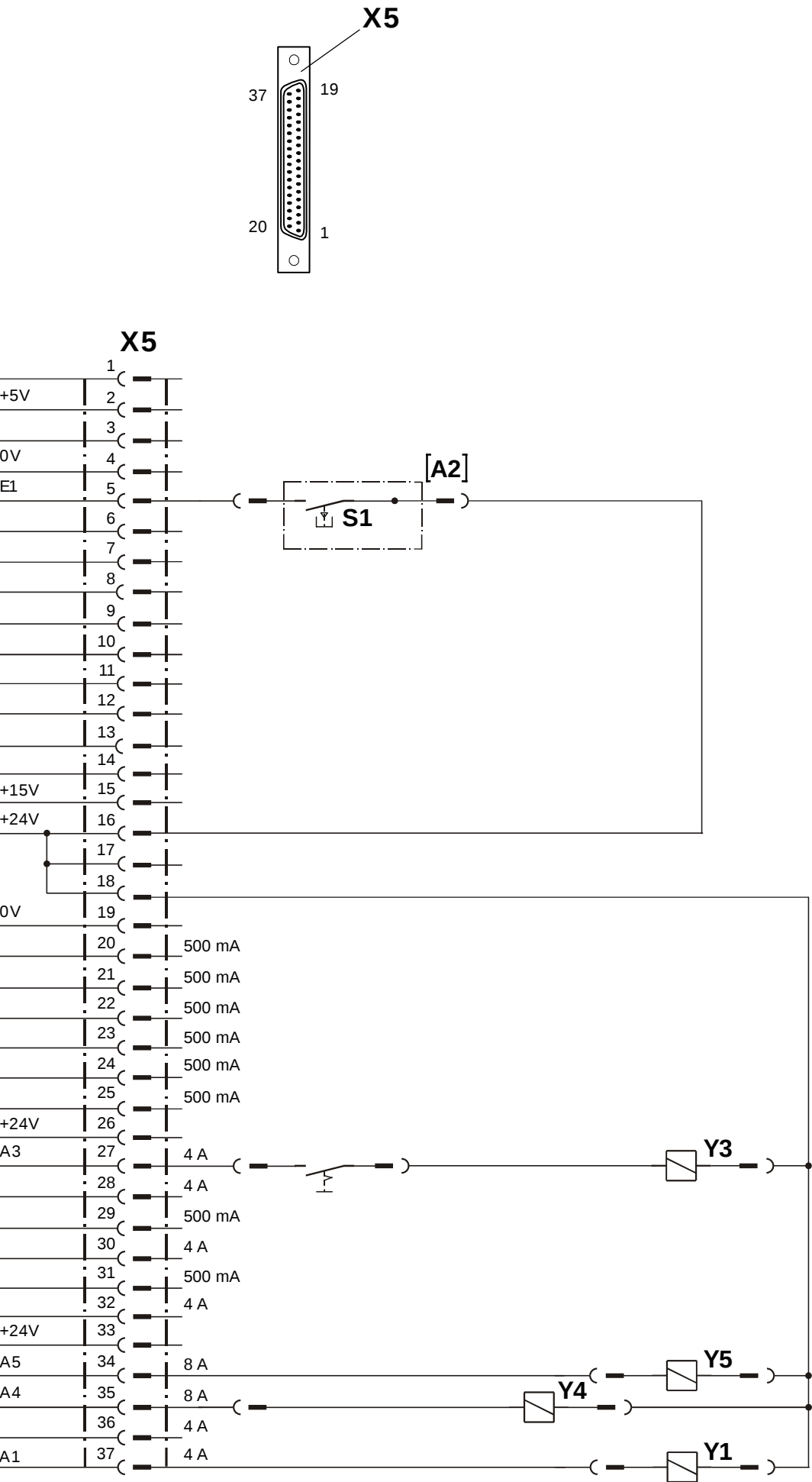
No.	Function (Meaning)	Level	Range Values	of Value	Standard
105	(AR/RIE/DRZ/MESSER/NA/SAUG/STVD) Speed for front backtack / stitch condensation	B,C	0300 - 2000	1200	KI. 1
106	(AR/DRZ/STVD) Speed for front backtack / stitch condensation 1 variable (treadle-controlled) 0 constant (corresponding to <105>)	B,C		0	KI. 1
107	(AR/RIE/DRZ/STVD) Speed for front backtack / stitch condensation when <106> = I 1 limited by <105> 0 limited by <607>	B,C		0	KI. 1
110	(ER/RIE/DRZ/MESSER/NE/SAUG/STVD) Speed for end backtack / stitch condensation	B,C	0300 - 2000	1200	KI. 1
111	(LS/STZA) Light barrier compensation stitches 1 (stitches from light barrier clear to seam end)	A,B,C	0001 - 0050	8	KI. 1
112	(LS/STZA) Number of stitches for light barrier fade-out on knit fabrics (according to stitch size)	A,B,C	0000 - 0100	0	KI. 1
113	(LS/START) Start with light barrier 1 when light barrier is dark only 0 also when light barrier is clear	B,C		0	KI. 1
116	(SANL) Soft start stitches	A,B,C	0000 - 0030	0	KI. 1
117	(SANL/DRZ) Speed for soft start stitches	B,C	0030 - 0640	400	KI. 1
199	(DRZ/LS) Speed for light barrier compensation stitches	B,C	0300 - 2000	1200	KI. 1
206	(NE/PR/STOP) Interrupt/discontinue seam sections at speed = constant (<203> = II) 1 with treadle -2 0 with treadle 0	B,C		0	KI. 1
301	(TUM) Switch-on voltage of the magnet for transport change-over 1 24V 0 32V	C		0	KI. 1
311	(PR/SN) Cancellation of stitch count 1 with thread cutting 0 without thread cutting	B,C		1	KI. 1
313	(PR) Programs are backtack programs (darning programs) 1 yes 0 no	A,B,C		0	KI. 1
356	(PF/SAUG/KS) Input is at 1 Presser foot 0 Vacuuming	B,C		1	KI. 1
364	(RIE/STVD/TUM) Transport change-over means for 1 Back-tack 0 Stitch condensation	B,C		1	KI. 1
382	(FW) Switching threshold of the analogue input for the thread monitor	B,C	0000 - 0100	15	KI. 1
387	(ML/KS) Output (motor run) is active 1 With Pedal = 1D (Motor running) 0 With Pedal = 1 (Lower presser foot)	B,C		1	KI. 1
446	(NHOS/NPW/EST) Input is 1 = needle up without trimming 2 = needle position change-over 3 = single stitch 4 = single stitch with reduced length 5 = backtack inversion 6 = backtack suppression 7 = change-over position 8 = puller lift switched off 9 = change-over needle position step by step, forward 10 = change-over needle position step by step, backward	B,C	0001 - 0007	1	KI. 1

522	(NAPO/ZRIE) Needle position when stop occurs during decorative backtack (stitch in stitch) 1 position 2 (up) 0 position 1 (down)	B,C	0	Kl. 1
523	(RIE/ZRIE) Backtack 1 decorative backtack (stitch in stitch) 0 standard backtack	A,B,C	0	Kl. 1
530	(DRZ/ZRIE) Speed (max.) for decorative backtack	B,C	0300 - 2000 1000	Kl. 1
538	(FSL/TA) Timing of output (thread tension release) (0 = 100%)	B,C	0010 - 0050 30	Kl. 1
584	(RIE) Backtack 1 four times 0 double	B,C	0	Kl. 1
585	(DRZ/DB/RIE) Speed limitation	B,C	0300 - 2500 1000	Kl. 1
605	(DRZ/ANZ) Actual speed in display (<725>) 1 yes 0 no	B,C	0	Kl. 1
606	(DRZ) Speed: level 1 (min.)	B,C	0030 - 0300 180	Kl. 1
607	(DRZ) Speed: level 12 (max.)	B,C	0300 - 5500 4000	Kl. 1
608	(DRZ) Acceleration curve (Pedal characteristic) 1 = linear 0 = non linear	B,C	1	Kl. 1
609	(SN/DRZ) Trimming speed 1	B,C	0060 - 0300 180	Kl. 1
615	(LS) End recognition when photocell goes 1 from light to dark 0 from dark to light	B,C	0	Kl. 1
618	(RDR) Inverse rotation after seam end 1 yes 0 no	B,C	0	Kl. 1
623	(RDR/VERZ) Delay in start-up time (ms) for inverse rotation	B,C	0000 - 2000 30	Kl. 1
642	(PF/VERZ/TA) presser foot time from switch-on to voltage reduction (cycling)	B,C	0010 - 0150 100	Kl. 1
643	(TUM/VERZ/TA) feed reverse time from switch-on to voltage reduction (cycling)	B,C	0010 - 0150 100	Kl. 1
651	(PF) Presser foot with automatic descent on machine stop 1 yes 0 no	B,C	1	Kl. 1
653	(PEIPO) Target stitch before sewing 1 yes 0 no	B,C	0	Kl. 1
660	(FW) Bobbin thread monitoring 0 without (= *II*) 1 via a sensor (= **I*) 2 by a stitch count	A,B,C	0000 - 0002 0	Kl. 1
668	(BLA/LINMOT/PF/WI) Thread wiper/thread clearer 1 yes 0 no	B,C	0	Kl. 1
700	(NAPO) Needle position 0 (reference position of the needle)	B,C	0000 - 0255 0	Kl. 1 *
702	(NAPO) Needle position 1 (needle down)	B,C	0000 - 0255 80	Kl. 1
703	(NAPO) Needle position 2 (thread take-up lever up)	B,C	0000 - 0255 226	Kl. 1
705	(NAPO/SN/TA) Needle position 5 (end of trimming signal 1 (magnetic thread trimmer) / clock pulses start of the trimming signal 1)	B,C	0000 - 0255 200	Kl. 1
706	(NAPO/SN) Needle position 6 (start trimming signal 2 (pneumatic thread trimmer))	B,C	0000 - 0255 80	Kl. 1

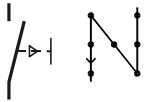
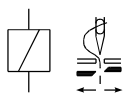
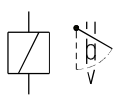
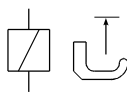
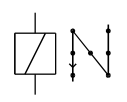
707	(NAPO/FSL/FANG) Needle position 9 (thread tension release or thread catcher start)	B,C	0000 - 0255 164	Kl. 1
710	(NAPO/NHOS) Needle position 3 (needle up)	B,C	0000 - 0255 212	Kl. 1
715	(EINZ/WI) Duration (ms) of thread wiper	B,C	0000 - 2000 120	Kl. 1
718	(STBR) Timing of residual brake (0 = brake off)	B,C	0000 - 0100 0	Kl. 1
719	(PF/TA) Timing output (lifting presser foot) (0 = 100% switched on)	B,C	0010 - 0060 40	Kl. 1
721	(TUM/TA) Timing output (feed reverse) (0 = 100% switched on)	B,C	0010 - 0060 40	Kl. 1
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B,C	0001 - 0060 50	Kl. 1
723	(DRZAB) Brake ramp 1 gradual 50 steep	B,C	0001 - 0060 40	Kl. 1
729	(STVERZ/PF) Start delay after lowering presser foot	B,C	0010 - 2000 120	Kl. 1
730	(PF/VERZ) Lift delay for presser foot after seam end	B,C	0000 - 2000 50	Kl. 1
734	(SN/TA) Timing output (thread trimmer) (0=100% switched on)	B,C	0010 - 0060 40	Kl. 1
748	(NHOS/NPW/EST/RIV/RIUNT/NAPO) Input is 1 = needle up without trimming 2 = needle position change-over 3 = single stitch 4 = single stitch with reduced length 5 = backtack inversion 6 = backtack suppression 7 = change-over position 8 = puller lift switched off 9 = change-over needle position step by step, forward 10 = change-over needle position step by step, backward	B,C	0001 - 0007 5	Kl. 1
760	(FW/SPFW/STZ/STZA) - Stitch count for the remnant thread after the bobbin thread monitor responds with direct bobbin thread monitoring - Multiplier for the fixed value (200) for determining the start value of the stitch counter with indirect bobbin thread monitoring	A,B,C	0000 - 0250 5	Kl. 1
761	(FSL/FZ/VERZ) Prolongation thread tension release / thread puller	B,C	0000 - 0080 0	Kl. 1
770	(PF/VERZ) Lifting delay of presser foot at threadle- position „-1“	B,C	0010 - 0250 80	Kl. 1
775	(ZRIE/STOPZ) Stop time (ms) with stitch in stitch backtack (decorative backtack)	B,C	0010 - 1000 100	Kl. 1
789	(PEIPO) Needle position 10 (target stitch)	B,C	0000 - 0255 240	Kl. 1
797	(HWT) Hardware test 1 yes 0 no	C	0	Kl. 1
798	(EBC) Programming level C 1 yes 0 no	B,C	0	Kl. 1
799	(MAKL) Machine class which has been selected	C	0001 - 0001 1	Kl. 1 *
800	(DRR) Direction of motor rotation viewed from belt pulley 1 left-hand rotation 0 right-hand rotation	C	0000 - 0001 1	Kl. 1 *
801	(RDR) Reverse rotation angle after seam end	B,C	0010 - 0212 32	Kl. 1
880	(REG) Starting current max. [A]	C	0001 - 0010 5	Kl. 1
884	(REG) Proportional amplification of the speed control (in general)	B,C	0001 - 0024 9	Kl. 1

885	(REG) Integral amplification of the speed control	C	0010 - 0080 50	Kl. 1
886	(REG) Proportional amplification of the order controllers	C	0001 - 0015 8	Kl. 1
887	(REG) Differential amplification of the order controllers	C	0001 - 0015 8	Kl. 1
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0000 - 2500 200	Kl. 1
890	(REG) Proportional amplification of the superior order controllers for the residual brake	C	0001 - 0025 15	Kl. 1
897	(MOT) MINI motor version 1 long 0 short	C	0000 - 0001 0	Kl. 1 *
900	(REG) Additional P-Amplification of the speed control	B,C	0001 - 0024 9	Kl. 1
901	(DRZ/SN) Trimming release speed	B,C	0030 - 0500 300	Kl. 1
933	(ANZ) Display change-over 1 diagnosis 0 normal display	C	0	Kl. 1
939	(VERZ/TUM) Rate time (premature change-over) for the transport changer when switching on	B,C	0010 - 0200 30	Kl. 1

12. Electrical Connections Diagram X5 J40ED



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

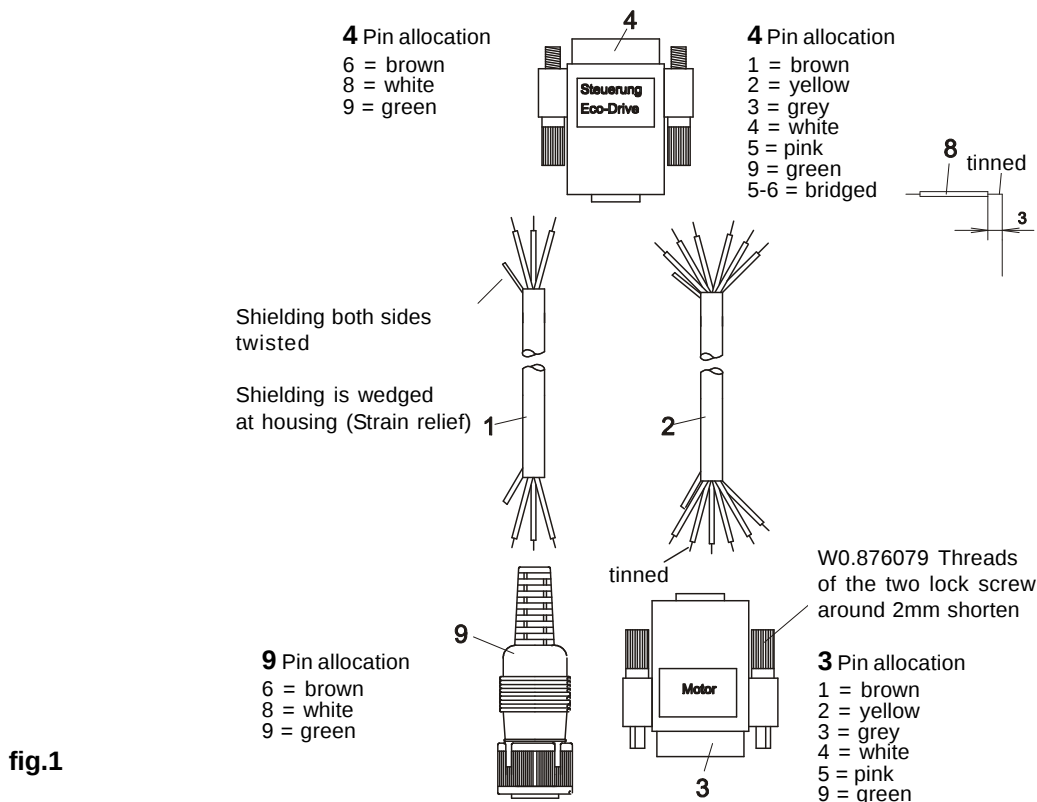
S1 	Transportumstellung von Hand / manual feed reverse / renversement de marche manuel / mudança do transporte manual / commutazione trasporto a mano / inversión de transporte manual / handmatige transportomschakeling
Y1  1 max 4 A *	Fadenschneiden / thread trimmer / coupe-fil / corte de linhas / rasafilo / cortahilos / draadsnijder
Y3  1 max 4 A *	Fadenwischer / thread wiper / écarteur de fil / retira-linhas / scartafilo / retirahilos / draadwisser
Y4  1 max 8 A *	Presserfuß heben / lifting presser foot / relevage du pied presseur / levantar do calcador / sollevamento del alzapiedino / elevación de prensatelas / drukvoet optillen
Y5  1 max 8 A *	Transportumsteller / feed reverse / renversement de marche / mudança do transporte / commutazione trasporto / inversión de transporte / transportomschakeling
[A2]	Tastergehäuse an der Nähmaschine / key case at the sewing 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 atuadores ligados ao mesmo tempo (ímãs, 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 (magnet, 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 (magnet, magneetventielen) mag in totaal niet meer dan 4 A bedragen (zie hiervoor hoofdstuk 2. Technische gegevens).

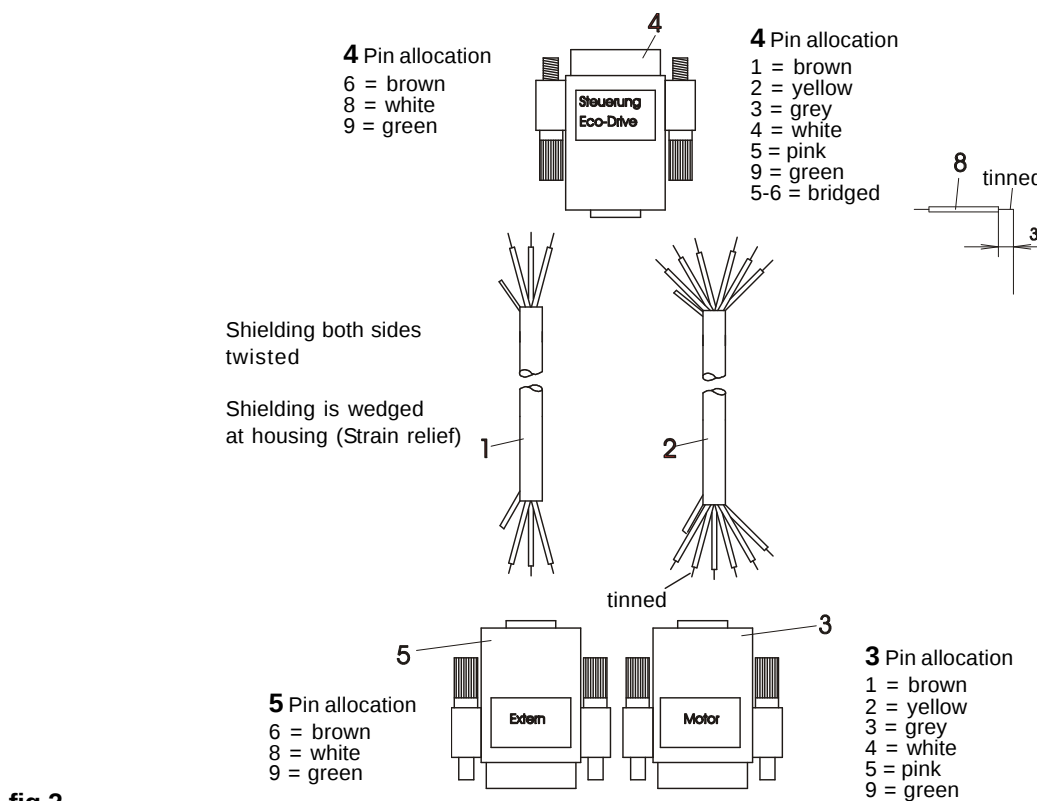
Appendix

The connection of the pulse generator for the synchronisation signal of a Juki sewing machine, is accomplished with Y-adapter cable (Art.-Nr. 55.571, **fig.1**) on motor socket X2.

See **instructions manual part 2, chapter 7.2**



The connection of the pulse generator or a synchronizer (PD3) on a different sewing machine is accomplished with Y-adapter cable (Art.-Nr. 55.570, **fig.2**) on motor socket X2. See **instructions manual part 2, chapter 7.2**



Important Notice!

Your newly purchased **EcoDrive** control system is designed to be connected to a sewing machine/system via connector X5. This connector X5 is a 37 pole sub-d jack as shown in the wiring diagram.

*The connections/wiring of X5 **is not identical nor compatible** with the connections of the same type of jack X5 of the **Ministop control box**, nor with the same type of 37 pole sub-d jack of a **Servo control box**!*

In order to avoid damage to the control box, you may only connect the **EcoDrive** to machines wired according to VDMA Regulations

EN 60204-31

If you wish to replace a Ministop or Servotop control box with an EcoDrive, you must either use the appropriate adapter cable or rewire your machine!

We offer following adapter cables:

Replacement for Q40MS:	Q40ED with adapter	Art.-No. 55.591
Replacement for P40/51/52/47 MS	P40ED with adapter	Art.-No. 55.592
Replacement for PE40MS	PE40ED with adapter	Art.-No. 55.580
Y-Adapter for synchronizer (position control unit)		Art.-No. 55.570
Extension cable for synchronizer (position control unit) 1,5m		Art.-No. 55.506
Extension cable for speed control unit 1,5m		Art.-No. 55.507
Extension cable for operator panel EcoTop 5m		Art.-No. 55.573
Serial data cable for Q-Prog		Art.-No. 55.577