INSTRUCTION

INSTRUCCION

E-6000 SERVICE STAGE 1



		SERVICE	ELECTRONIC 6000)
	ANLEITUNG	INSTRUCTION	INSTRUCT	
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	SERV	ICE		CTRONIC	6000	
ANLEITUNG	INS	TRUCTION	1		INSTRUCTION	INSTRUC
GENERAL						
The Use of Do	cumentatio	n				
Illustrated List	with Drawi	ings				
This serves as an a	iid towards as	sembly a	nd orientati	on, as well as for t	he identificat	ion of spare parts.
Structure of the pa	rt numbers:					
<u>05</u> •	<u>160</u> •			02		
		Ma difi		Turne al	Dort	
e.g. 05 = E-6000)	MOGIN	cation inde	x iypeoi 0	= M Gro	up
-	Δ			4	= VM Su	b-group
12 = E - 3000				I		
12 = E-3000 TEST PROCED	DURE E-600	00 STA	<u>GE 1</u>	2+3	= single	parts
12 = E-3000 <u>TEST PROCEE</u> This serves to loca lers or persons with	DURE E-600 lize possible n h no knowledg	DO STA nalfunctic ge of elec	GE 1 ons (Electro stronics.	' 2+3 onic Unit, Reader, E	= single E-Lock or in t	parts he Spiral Cable) by de
12 = E-3000 TEST PROCEL This serves to loca lers or persons with Important notes	DURE E-600 lize possible n h no knowledg	20 STA nalfunctic ge of elec	GE 1 ons (Electro ctronics.	2+3 onic Unit, Reader, E	= single E-Lock or in t	parts he Spiral Cable) by de
12 = E-3000 TEST PROCED This serves to loca lers or persons with Important notes The electronic un	DURE E-600 lize possible n h no knowledg	DO STA malfunctio ge of elec	GE 1 ons (Electro otronics.	2+3 onic Unit, Reader, E	= single E-Lock or in t	parts he Spiral Cable) by de before its opening.
12 = E-3000 TEST PROCEL This serves to loca lers or persons with Important notes The electronic un	DURE E-600 lize possible n h no knowledg it must always	DO STA nalfunctic ge of elec	GE 1 ons (Electro etronics.	2+3 onic Unit, Reader, E	= single E-Lock or in t ricity supply	parts he Spiral Cable) by de before its opening.
12 = E-3000 TEST PROCEL This serves to loca lers or persons with Important notes The electronic un - The defective eco	DURE E-600 lize possible n h no knowledg it must always quipment parts	20 STA nalfunctio ge of elec s be disco	GE 1 ons (Electro etronics.	2+3 onic Unit, Reader, E om the mains elect ied by a fault repor	= single E-Lock or in t ricity supply	parts he Spiral Cable) by de before its opening. ble on page 4.
12 = E-3000 TEST PROCED This serves to loca lers or persons with Important notes The electronic un - The defective economic - The following economic shown below:	DURE E-600 lize possible n h no knowledg it must always quipment parts	20 STA nalfunctio ge of elec s be disco s shall be s may onl	GE 1 ons (Electro stronics.	2+3 onic Unit, Reader, E om the mains elect ied by a fault repor ched or transporte	= single E-Lock or in t ricity supply t, see examp d in their pre	parts he Spiral Cable) by de before its opening. ble on page 4.
12 = E-3000 TEST PROCED This serves to loca lers or persons with Important notes The electronic un - The defective economic - The following economic shown below: M-ELECTRONIC	DURE E-600 lize possible n h no knowledg it must always quipment parts quipment parts	20 STA nalfunctio ge of elec s be disco s shall be s may onl IN 05	GE 1 ons (Electro stronics.	2+3 onic Unit, Reader, E om the mains elect ied by a fault repor ched or transporte 4-PACKING E-UNI	= single E-Lock or in t ricity supply t, see examp d in their pre T 6000	parts he Spiral Cable) by de before its opening. ble on page 4.
12 = E-3000 TEST PROCED This serves to loca lers or persons with Important notes The electronic un - The defective economic - The following economic shown below: M-ELECTRONIC M-CAM BOX FR	DURE E-600 lize possible n h no knowledg it must always quipment parts quipment parts C-UNIT	20 STA nalfunctio ge of elec s be disco s shall be s may onl IN 05 IN 05	GE 1 ons (Electro etronics.	2+3 onic Unit, Reader, E om the mains elect ied by a fault repor ched or transporte A-PACKING E-UNI A-PACKING CAM E	= single E-Lock or in t ricity supply t, see examp d in their pre T 6000 BOX FRONT	parts he Spiral Cable) by de before its opening. ble on page 4. escribed packing as
12 = E-3000 TEST PROCED This serves to loca lers or persons with Important notes The electronic un - The defective economic - The following economic shown below: M-ELECTRONIC M-CAM BOX FR VM-MAIN CIRCU	DURE E-600 lize possible n h no knowledg it must always quipment parts quipment parts C-UNIT ONT JIT BOARD	20 STA nalfunctio ge of elec s be disco s shall be s may onl IN 05 IN 05 IN 05	GE 1 ons (Electro stronics. onnected fro accompania y be dispate .488.01 VM .487.01 VM .491.02/05.	2+3 onic Unit, Reader, E om the mains elect ied by a fault repor ched or transporte A-PACKING E-UNI A-PACKING CAM E 492.02 PACKING E	= single E-Lock or in t ricity supply t, see examp d in their pre T 6000 BOX FRONT BOX/STYRO	parts he Spiral Cable) by de before its opening. ble on page 4. escribed packing as E-6000 POR

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTIO	N INSTRUCCION
EXAMPLE OF	A FAULT REPORT	Ľ	
Company:	Franz Muster	AG	
Address:	Bahnhofstrass	se 10	
	D-6720 Hinter	tupfingen	
Where applicable	mark with 🗵		
M-ELEC	TRONIC UNIT		
	BOX FRONT (E-LOCK)		
	N CIRCUIT BOARD	SERIAL NUN	IBER
	ECTOR SUPPORT		
O VM-PAT	TERN READER		
	DER HEAD)	
E-6000		SERIAL NUN	IBER
VOLTAG	E: 🗌 240 V	□ 220 V □ 110V	□ 100 V
PROG.		DATE:	
MUSTER	(Pattern)	DATE:	
FAULTY	AS FROM TEST NUMB	ER:	
OBSERV	ATIONS:		
DATE:		SIGNATURE	

ANLEHUNG			
BASIC DESCR	IPTION		
Description of	the Unit E-6000		
The electronic unit the electronic lock possible to feed the	contains knitting and p on the front needle bec e reader with own patte	attern techniques which are transferred thr d to enable the round pusher to be selected ern.	ough the spiral cable to accordingly. It is also
,			
_		····· , -·····	
ELECTRON	IC UNIT		
		SPIRAL CABLE	
			·····
		ELECTRONIC LOCK	



SERVICE	
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ELECTRONIC 6000

ANLEITUNG

INSTRUCTION

INSTRUCTION

Mains Unit

The mains unit is mounted on the main circuit board and contains 2 fuses, a transformer as well as stabilizing circuits for the electronic supply.

Electronics

The heart of the electronic is the microprocessor which controls all functions and calculates the actual position of the lock by position detection. The required programs are stored in a 32 K Byte program memory and in part of the 32 K Byte pattern memory.

A working memory of 8 K Byte is available as a CMOS RAM which is safe against mains failure. The keyboard and the 8-digit alphanumeric display are used for communication between the operator and the unit. Only the keys which should be in use, in a suposed time sequence, are activated for operation. By present questions to the user the display leads the user through the different stages of programming and with different displays, through the knitting operation itself.

The Reader

By means of two optical reflex light barriers a reference scale and the relevant data information are feed from a reader page, bit by bit to the electronics, where they are stored. At the end of each line the page advances automatically.

The Electronic Lock

The position on the sensor guide rail is scanned by means of two optical sensors and the electronics calculates the movement of the lock by the change of the signal.

The electronic selector displaces the round pusher which is in use, according to the information output from the electronics.

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST PROCE	DURE E-6000 STAG	iE 1	
(Persons without k	nowledge in the field of	electronics)	
The objective of th cable are in order	e following test is to dete if something is not opera	ermine whether the electronics, electronic lo ating correctly.	ock and the spiral
The test consists c	f the following:		
00	I	Notes on possible operating errors	
10 +	20	Functional Test	
30 +	40 [Diagnostic Test	
50	ſ	Dismounting and Mounting Instructions	
60	,	Adjustment Instructions	
70	(Check-List	
80	(Cleaning and Oiling Instructions	

WHICH FUNCTIONAL TEST DO I HAVE TO CARRY OUT IF

Important:

first of all, check again whether an operating error has been made !

- Faults by programming; "Test-Number 10"
- Faults with the reader; "Test-Number 14"
- Faults by knitting; "Test-Number 20"

		SERVIO	CE	ELECTRONIC	6000	
	ANLEITUNG	INSTR	UCTION		INSTRUCTION	INSTRUCC
00 N	OTES ON I	POSSIBLE O	PERA	TING ERRORS		
	E	RROR		CAUSE	S	SOLUTION
01	ELECTRON	lics				
01.0	Key does no	ot function	Not all	ways all keys are red	Press the co	prrect key
01.2	Loss of stor	red data	Electro for mo	onic unit has not been used re than 10 days		
			Perha instead	os ERASE was confirmed, d of ENT		
			Perhaj confirr	os all ST. PATT were ned, instead of ENT		
01.3	Error numb the display	er appears on	Variou	S .	See list of er book	rors in the Instruction
02	READER					
02.1	Transport w	vheel is blocked	The sli hand t	de knob is not in the left ransport position	Move the slid hand transpo	de knob to the left ort position
02.2	Page canno	ot be moved	The slo is defe	eeve near the transport holes ctive	Replace the sheet	sleeve for pattern
02.3	The pattern ported at or	sheet is trans- nce by 2 lines	The pa numbe numbe	ittern sheet is set to an even er of lines instead of an odd er	Set pattern s ber of lines	sheet to an odd num-
02.4	Error numbe when readir	er appears ng in	Page t positic	badly drawn or incorrectly ned	See list of en book	rors in the Instruction
03	KNITTING					
03.1	The Form h knitted	as not been	No FO key in	RM was entered or the NO the FORM was pressed	Check the fo again, if nece	orm input and enter it essary
03.2	The required not knitted	d pattern was	Incorre given	ect pattern or technique was	Check the in and techniqu	puts of the pattern Je
			Round	pusher selected incorrectly	Move the loc	ck slowly
					Check wheth can be move use a cloth o needle chant lightly. Repla pushers.	ner all round pushers ed easily. If necessary or a brush to clean the nels and oil them nee damaged round

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
	FUNCTIONAL TEST		
	If at any stage during in the column "CONT	the test, no test number is given INUE AT" follow the next test number.	
10	TESTING THE ELEC	FRONIC UNIT (E-UNIT)	
11	Switch-on test of the E	Unit	
11.1	- Disconnect the spir	al cable from the E-Unit	
11.2	- Plug in the main plu	Ig	
11.3	- Switch on the main	s switch on the E-Unit	
	. The display show	VS ENGLISH, PROGR, STARTPOS,	
	MEMO or RETUR	RN XX or one of the three lan-	10
	guages. None of the abov	le texts appears or the	12
	display flashes:	ve texts appears of the	
	a) check if on t	he mains plug is supply	
	b) check the fu	se SI2 (5 V) on the VM-Main	
	circuit board	, the supply cable and the	
	mains switch	1	50
	c) change the \	/M-Main circuit board	50
12	Self-test of the Electro	nic	
12.1	- Depending upon th	e display, press the keys	
	ENT and/or >>> t PROGR	o make the E-Unit display	
12.2	 Press the key R the Language 	display shows the first	
12.3	 If necessary press t shows ENGLISH 	he key NO until the display	
12.4	 Press the key ENT 		
	. The display show	vs PROGR	13
	. The display show	VS:	
	a) ERR 4: cha	ange IC 1 (PROGR)	50
	b) ERR 5: chá IC i	ange IC 2 (pattern) or 8 (interface)	50
	c) other: cha	ange the VM-Main circuit board	50

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCIO
EST NUMBER	DESCRIPTION		CONTINUE AT
13	Testing the Keyboard		
13.1	- Check the operation ABC). Each time a l must sound. It is im when this test is car input will be erased.	n of all keys (without key key is pressed the buzzer portant to remember, that ried out all previous data	
	Press key	Check the display	
	ENT	ERASE	
	ENT	CAST ON	
	0	CAST ON 0	
		CAST ON 0.	
	-	CAST ON -0.	
	1	CAST ON -0.1	
	CLR	CAST ON	
	2	CAST ON 2	
	3	CAST ON 23	
	4	CAST ON 234	
		CAST ON 2345	
	6	CAST ON 6	
	7	CAST ON 67	
	8	CAST ON 678	
	9	CAST ON 6789	
	CLR	CAST ON	
	1	CAST ON 1	
	ENT	ALL ST.PATT	
	NO	ST.PATT A	
	R	CAST ON 1	
	>>>	START CAST ON	
	COR	L.ND -90	
	ENT	R.ND +90	
	ENI	START POS	
	. The display is con and the buzzer so E-Unit is working	rrect after each key press ounds every time when the correctly (without reader)	
	. If one of the displ	ays is not correct.	
	a) Check the ke face of the ke board	y board and the contact sur- eys on the VM-Main circuit	50
	h) Change the \	M-Main circuit board	50
			JU
			50
		SE OLI (15 V)	50
	D) Uneck the bu	122er 501.	50

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION		INSTRUCCIO
TEST NUMBER	DESCRIPTION		CONTINUE AT
14	Testing the Reader		
	Perfect operation of the of the test reader page	ne reader is checked by means e 33.625.23. Do not use copies!	
14.1	Depending upon the c or ENT to make the E	lisplay, press the keys >>> and/ Unit display PROGR.	
14.2	- Press key	Display shows	
	ENT ENT 1 ENT NO	ERASE CAST ON ALL ST.PATT ST.PATT A	
14.3	- Set the slide knob t	o the left.	
14.4	- Insert the test page the test page using this into the E-Unit to line 1 (see numb	into the pattern sleeve and fix the three red press studs, insert and use the transport wheel to set er in position cut-out).	
14.5	- Press key	Display shows	
	ENT	READER	
14.6	- Reading in of the te moving the slide kn to the right until the transport forwards again until the com (during reading-in, accepted are show	est pattern 1 from row 1 to 22 by nob alternately without stopping e end, so that the page will by one row, and then to the left plete pattern has been read in the number of rows already read n on the display).	
	. If the display sho	ows ALTER, the reader is working	



	SERVICE	ELECTRONIC 6000	
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TEST NUMBER	DESCRIPTION		CONTINUE AT
20	TESTING THE ELEC	TRONIC LOCK (E-LOCK)	
	To enable a testing of operating knitting mad	the E-lock a correctly chine E-6000 is required.	
	Note: In this test, t be erased.	he already stored data will	
21	Checking the E-Lock		
21.1	- Check that the E-Lu barriers and the se sary clean it with a	ock in the area of the light lectors is clean. If neces- cloth or brush.	
21.2	- Check the adjustm (see 62).	ent of the VM-Selector support	
21.3	- Set the E-Lock on t	the needle bed front	
21.4	- Check the setting of (see 61)	of the auxiliary guidance	
22	Checking the needle	bed front	
22.1	- Check that the sen E-6000 are not dirt rail with a cloth or I	sing holes in the guide rail y. If necessary clean the guide brush.	
22.2	- Check that all roun essary clean the ro channels with a clo Bellodor oil. Replac	d pushers move easily. If nec- ound pushers and the needle oth or brush and lubricate with ce damaged round pushers.	
22.3	- Move all round pus	shers to the rest position	23

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
23	Testing the VM-Select	or Support	
	Important: If the incorr	lock operates too quickly, an ect selection can occur.	
23.1	 Prepare the connect cable and E-Unit-sp 	tion between E-Lock-spiral piral cable	
23.2	 Depending upon th and/or ENT severa the display. 	e display, press the keys > > > I times until PROGR appears on	
23.3	- Submit the test pro	gram as shown below:	
	Press key	Display shows	
	ENT ENT 99 ENT >>> ENT	ERASE CAST ON ALL ST.PATT (99 = Test CAST ON) START CAST ON START POS	
23.4	 Push the lock to the right hand side of the right hand side of right hand side right hand side of right hand side right hand side of r	e start position at the needle bed.	
23.5	- Press key	Display shows	
	ENT ENT ENT ENT	CAST ON SX (set SX on E-Lock) GX (set GX on back lock) R.EMPTY	
	Note: Up to now it the settings f	is only necessary to perform or the E-Lock.	

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	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
23.6	- Move the lock to the the needle bed	e far left until the end of	
	. The display show	/s 🗋 and all round pushers	
	are located in the	e working position	23.7
	does not app	bear	41
	. An error number	appears	42
	. If single round pu	ushers are incorrect	43
	. If all round pushe	ers are incorrect	44
23.7	- Press key	Display shows	
	ENT ENT	ND R.EMPTY	
23.8	 Move the lock to the position 	e right; to the start	
	. The display show	vs COL 1 and all round	
	pushers are loca	ted in working position	23.9
	. If COL 1 does no	t appear	41
	. An error number	appears	42
	. If single round pu	shers are incorrect	43
	. If all round pushe	ers are incorrect	44
23.9	- Press key	Display shows	
	ENT	ST SIZE	
	ENT	STRIP O	
	ENT	KX (set KX on E-Lock)	
	ENT	···· AX	
	ENT	RC O	

	SERVICE	ELECTRONIC 6000	
ANLEITUN	IG INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
23.10	- Move the lock to the	left, display: RC 1	
	. All round pushers position	are located in the rest	23.11
	. Single round push . All round pushers	ners are incorrect are incorrect	43 44
23.11	- Move the lock to the	right, display: RC 2	
	. All round pushers rest position	are located in the	23.12
	Single round push All round pushers	ers are incorrect are incorrect	43 44
23.12	 Move the lock to the If every time 2 rou 	left, display: END C O nd pushers are varying	
	in the working and . If single round pus	I in the rest position shers are incorrect	23.13 43
02.12	. If all round pusher	s are incorrect	44
23.13	- Press key	Display snows	
	ENT ENT ENT	LX (set LX on E-Lock) BX RC 3	

		1	
	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	I INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
23.14	- Move the lock to th	ie right, display: RC 4	
	 If every time 2 ro in the working ar If single round p If all round push 	ound pushers are varying nd in the rest position ushers are incorrect ers are incorrect	23.15 43 44
23.15	- The sequence of se continuously, when	election is now repeated	
	2 rows>	all round pushers at rest position	
	4 rows>	2 round pushers at rest position, 2 at working position (every second row alternately)	
	2 rows>	all round pushers at working position	
	. If no malfund reviewed and	ction appears, then the E-Lock is d in order	
	. If an error ap	opears	42
	. If single rour	nd pushers are incorrect	43
	. If all round p	ushers are incorrect	44

	SERVICE	ELECTRONIC 6000	
ANLEITUN	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
	DIAGNOSTIC TEST		
30	D-TEST PATTERN RI	EADER	
30.1	- Dismount the VM-P	attern reader (see 50)	
30.2	- Mount in a function (see 57.3)	ing VM-Pattern reader	
30.3	- Carry out Test Num	ber 14	
	. If the test result is	s positive	
	a) Check the di if necessary head . If the test result i	smounted VM-Pattern reader, exchange the VM-Reader s negative.	58
	a) Check the co circuit board	onnector ST 4 on the VM-Main	
	b) Check the ICc) exchange th	8, if necessary change it e VM-Main circuit board	50
	<u></u>		<u> </u>

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
40	D-TEST E-Lock		
41	Display R.EMPTY doe	s not change	
41.1	 Check whether the if not repeat the tes 23 onwards. 	full needle bed front width was used, It as from test number	
41.2	- Check whether the correctly, if not rep- number 23 onward	spiral cable is connected eat the test as from test s.	
41.3	- Repeat the tests as connect directly the without a spiral cab spiral cable.	from test number 23, but e E-Lock cable to the E-Unit de or using a different	
	. Test result is pos	sitive	41.4
	. Test result is neg	jative	41.5
	E a la sur su dh a su fac	1	00
41.4	- Exchange the spira	Il Cable	23
41.5	b) is there anoth	er functioning E-Onic	41.6
	b) is there anoth		41.7
41.6	 Repeat the test nur other E-Unit 	nber 23 with this	
	. Test result is pos the faulty E-Unit:	sitive, then on	
	a) change IC	8 (Interface)	50
	b) change VM	I-Main circuit board	50
	. Test result is neg	gative	
	a) change the	VM-Selector support	50
	on the E-LC	JCK	59
41.7	- Repeat the test nur	nber 23 with this E-Lock	
	. Test result is pos	sitive:	
	a) change the	/M-Selector support	
	on the faulty	E-Lock	59
	. Test result is neg	gative:	
	a) change on	the faulty E-Unit the	50
	b) change the	auey VM-MAIN circuit board	50
	by change the	TAN-MANA CITCUIL DUATU	50

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
42	ERROR 207/200		
41.1	- Check whether the	buzzer sounds	
	. Yes . No		42.2 42.5
42.2	- Check whether the the light barriers is c	E-Lock in the area of clean	
42.3	- Check whether the guide rail E-6000 are	sensing holes in the e not dirty	
42.4	- Repeat test number	23	
	. Test result is pos E-Lock are in ord	itive; E-Unit and Ier	
	. Test result is neg	ative	41.2
42.5	 Open the E-Unit (se 15 V fuse fuse is defective, 	e 50) and check the exchange it	23
	. fuse is not defect	ive	42.6
42.6	- Exchange the VM-M	lain circuit board	50



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	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
44	All round puebers are	incorrot selected	
44	All round pushers are	Incorrect selected	
44.1	- If in both directions		44.2
	- If in one direction		41.2
44.2	- Check whether the	buzzer sounds:	
	Yes		41.2
	. No		42.5

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
50	DISMOUNTING AND	MOUNTING INSTRUCTION	
51	To open the E-Unit (se	<u>e Fig. 1)</u>	
	Attention: Before opening the ele sure to disconnect it fr supply.	ectronic unit make always om the mains electricity	
51.1	 turn the E-Unit loosen the four scre lower part B remove the casing I 	ews "A" from the casing ower part B upwards	(Fig. 1)
D E F			B

51.2	Exchange of:

-	 supply cable 	52
-	IC's	53
-	VM-Main circuit board	54
-	Key board	54
-	VM-Pattern reader	57
-	VM-Reader head	57



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	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
53	To exchange one inte VM-Main Circuit Board	grated circuit (IC) on the	
	<u>Attention:</u> Do not touch any pins risk of damage!	s in order to eliminate any	
53.1	 To avoid a possible possibility is given if or even an earthed Switch off the E-Un To remove such an such to be exchang an orange tool smother side. The satisfies on the other side. He with two fingers, put position. These IC's on an adequate nois it in the same direct cessors. Take notic positioned in the application of the spacing. Attention the space of the space	e static overcharge, the in touching a water pipe device. hit a IC, according to Fig. 4, hold ged with an angular twister or bothly raising it up on the ame procedure shall be done holding the both shorter parts ull now the IC out of its is shall be placed immediately ne static foamed plastic. the same manner and insert tion like the other IC-pro- be, that all pins should be opropriate place. If an ad- ing the spacing between the essary, press the pin legs to ensure a suitable to the polarity of the IC's!	51.3

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ANLEITUNG

INSTRUCTION

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INSTRUCTION

TEST NUMBER DESCRIPTION

CONTINUE AT

INSTRUCCION

54	Dismounting and Mounting of the VM-Main circuit board
54.1	 To dismount the VM-Main circuit board Switch off the E-Unit Disconnect both connections "A", see Fig. 5 or Fig. 6 Remove the plug "B" of the reader cable from the main circuit board Screw off the cable holder "C" of the reader cable, then remove the cable "D" from the main circuit board Screw off the 6 screws "E" Screw off the four screws "F" of the transformer Raise out the VM-Main circuit board of the casing upper part by holding the transformer.
	(Fig.5) F G B D F F F F F F F F F F F F F F F F F F
-	

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	G INSTRUCTION	INSTRUCTION	INSTRUCCIO
TEST NUMBER	DESCRIPTION		CONTINUE AT
54.2	<u>To exchange:</u>		
	. VM-Main Circuit Bo . Key Board	ard	55 56
54.3	 To mount the VM-Main Check if the key boin the casing upper Hold the main circuing and let it sink carbon of the correct circuit board. Screw on the transfinition of the cable Plug in the plug "B" main circuit board and "D" between the transfinition components. Screw on the remainded the transfinition of the tr	n Circuit Board (Fig. 5 and 6) ard is correctly integrated part it board by the transformer arefully on the casing upper ct positioning of the main former with the four screws "F". holder "C" with the reader cable. of the reader cable to the and pass the reader cable nsformer "G" and the elec-	
	- Plug in the two plug Fig. 6	gs "A", see Fig. 5 or	51 3
		(Fig.5)	
-		(<u>Fig.6</u>)	

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
55	To exchange the VM-N	Main Circuit Board	
55.1	 First of all, it has to be verified that the IC 1 and IC 2 should have the same characteri- zation as those of the damaged VM-Main circuit board (Program AZ, respectively pattern AZ). If the characterization of the new IC 1/ IC 2 should not meet with those IC's of the damaged VM-Main circuit board exchange them by the ones which were used on the damaged VM-main circuit board. Subsequently the VM-main circuit board has to be testet. 		54.3
56	To exchange the Key I	Board	
56.1	 Remove the damag upper part. Insert the new key b 	ed key board from the casing	
	upper part and pres position bolts pierce the key board.	es it down so that all 6 e through the holes of	
	 Control if the inscription keys are situated control 	otion of the respective prrectly.	54.3



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ANLEITUNG

INSTRUCTION

INSTRUCTION

INSTRUCCION

TEST NUMBER DESCRIPTION

CONTINUE AT

58	<u>To exchange the VM-Reader Head</u> (Fig. 8, 9 and 10 on page 33)	
58.1	 Set into position the 3 gears by turning the drive wheel "A" according to Fig. 10. 	
	 Snap out the drive wheel "A" from the axis (loose snap). 	
	 Screw off the intermediate wheel "B" on the left side (Fig. 8) 	
	 Remove the safety washer "E" placed on the right side from the axis "D" (Fig. 8 and 10) 	
	 Pull out the feed wheel "C" from the VM-Pattern reader, together with the axis "D" to the left 	
	(Fig. 8 and 9). - Remove the damaged VM-Reader head "G", avoid an	
	overstress of the reference scale "H" (Fig. 8) Insert the new VM-Reader head "G"	
	 Insert the feed wheel left "C" with the axis "D" from the left side into the frame guides on and through the both openings on the reader head. If the axis has been mounted correctly, right out- side of the feed wheel "F" the slot for the safety washer "E" becomes visible (Fig. 8). Check the cor- rect position of the 3 gears (Fig. 10). 	
	 Insert the safety washer "E" again on the axis "D" (Fig. 8 and 10). 	
	 Move the VM-Reader head "G" to the left and right hand looking for a gentle running of the reader head. 	
	 Screw-on the intermediate wheel "B" (Fig. 8 and 9), looking for a correct positioning of the gears (Fig. 9). 	
	 Snap the drive wheel "A" into the axis (Fig. 8). Check again the correct posi- tion of the gears (Fig. 9 and 10). 	
	- Turn the drive wheel and control, that	



	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
TEST NUMBER	DESCRIPTION		CONTINUE AT
59	To exchange the VM-S	Selector Support	
A B C D E F			
59.1	- Set KX on E-Lock		
59.2	 Dismount the handle volume volu	e and the hood front A, the "B", the cam-slider "C" and the d right "D".	
59.3	Turn the E-Lock Dismount the light t return cam "F". Turr	parrier brush "E" and the again the E-Lock.	59.4



59.8	Dismount all the single parts shown in Fig. 12 from
	the faulty VM-Selector support and mount them in the new VM-Selector support.
59. 9	Mount the new VM-selector support in reverse order,
	as from Test No. 59.7 up to Test No. 59.3

62

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION

60 ADJUSTMENTS



61

 Adjustment of the auxiliary guide (A) on the E-6000 By lifting up the handle (D) check if the E-Lock front has not too much free scope but can however be shifted easily on the needle bed.
 Should the cam-box have too much free scope or a heavy movement:

- 1. Loosen the 2 screws (B) of the auxiliary guide (A).
- 2. Raise the auxiliary guide (A) slightly upwards with the fingers by pressing on the cam (C).
- 3. Tighten the 2 screws (B) again.

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
62	ADJUSTMENT OF T	HE SELECTOR SUPPORT E-6000 (05.11	1.01)
	IMPORTANT: set the	E-Lock on KX	
1.	- Disassembling of:	Ę.	
	a) Hood front		
	b) VM-Handle	support	
	c) Cam slider f		
	d) Pusher cam left right	is S	S
2.	- Set the selector ga	uge "C" 03.700.01 on the lock, according	
3.	- Adjust the VM-Sele "A" and "B" (Fig. 11 "C" and "D" (Fig. 11 that no light gap is 1, 2 and 3 (Fig. 10)	ector support by turning the screws) for the left selector and screws) for the right selector in such a way to be seen on the bearing surface	
	It is important to p all 4 screws (A, B, ground plate of th K would be wrong	bay attention to the fact that , C and D) lie tightly upon the le cam box (Fig. 10 / J is correct, g).	
4.	- Press VM-Selector direction F (Fig. 10	support "E" (Fig. 10) in arrow) and let it spring back.	

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
5.	 Check the adjustm readjust it, should it 	ent again by using the gauge and it be necessary.	
6.	- Set lock on needle lock and with the e	bed and connect it with the back lectronic unit as well.	
7.	 Switch on the elect either by pressing i display PROGR to 	tronic unit. According to the display repeatedly key > > > and/or ENT to get show.	
8.	- Enter test progra	am:	
	Press key	Display shows	
	ENT ENT 97 ENT (test pr >>> ENT	ERASE CAST ON ogram) ALL ST. PATT START CAST ON START POS	
9.	- Push lock in start p of the needle bed.	osition to the right hand side	
	Press key	Display shows	
	ENT ENT ENT ENT	CAST ON SX GX R.EMPTY	
10.	- Move the lock to the	e very left end of the needle bed.	
	. Display shows position (working	and all round pushers are in upper gosition).	

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
11.	- Press key	Display shows	
	ENT	ND	
	ENT	R.EMPTY	
12.	- Move the lock back	< to the start position	
	. Display shows C	OL 1 and all round pushers are	
	in the so called 1	1:1 position, i.e.:	
	1 round pusher (up (working position)	
	1 round pusher of	down (rest position)	
13.	- Press key	Display shows	
	ENT	ST SIZE	
	ENT	STRIP O	
	ENT	LX	
	ENT	BX	
	ENT	RC O	
14.	- Now the selection p	procedure will repeat as follows:	
	20 rows> 1 : 1 s	election	
	20 rows> 2 : 2 s	election	
	32 rows> 7 : 1 s	election	
	. If there are no fai	ult selections showing,	
	assemble lock ag	gain.	
	. If Incorrect select	tions appear moving from the	
	nghi to the left si	de, continue at 20.	
	If incorrect select	tions appear moving fromt the	
	left to the right si	de, continue at 30.	
	3.10		

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
20.	Incorrect selections y (Lock is on the mach - Turn screw "A" (Fig clockwise direction	yhen moving from the right to the left side ine body) g. 11) by 1/4 turning in n.	$\mathbf{\Phi}$
22.	 With the entered te checking the selection. If no incorrect set the lock again. If still incorrect set a) Turn screw same direction. b) See point 23 	est program 97, keep on tions. elections appear assemble selections appear, then "A" (Fig. 11) by another 1/4, ion. 3.	
23.	 With the entered te checking the selection If no incorrect set the lock again. If still incorrect set a) Turn screw in anti-clock b) See point 24 	est program 97, keep on tions. elections appear assemble elections appear, then 'A" (Fig. 11) by a 3/4 turning wise direction.	
24.	 With the entered te checking the select If no incorrect set the lock again. If still incorrect s a) Turn screw " turning in an b) See point 25 	st program 97, keep on tions. elections appear assemble elections appear, then A [•] (Fig. 11) by another 1/4 ti-clockwise direction.	
25.	 With the entered teachecking the select If no incorrect set the lock again. If still incorrect set exchange and ac 05.111.01, accord 	st program 97, keep on ion. elections appear assemble elections appear, then djust VM-Selector support ding Test No. 59/62.	

	SERVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
30.	Inccorect selections y (Lock is on machine b	vhen moving from the left to the right side xody)	4
31.	 Turn screw "C" (Fig clockwise direction 	i. 11) by 1/4 turning in	\bigcirc
32.	 With the entered technology checking the select If no incorrect set the lock again. 	st program 97, keep on tions. elections appear assemble	
	. If still incorrect se a) Turn screw *C turning, sam b) See point 33	elections appear, then " (Fig. 11) by another 1/4 e direction.	\leftarrow
33.	 With the entered tes checking the select 	st program 97, keep on ions.	
	. If no incorrect se the lock again.	lections appear assemble	1
	 If still incorrect se a) Turn screw "(in anti-clocky b) See point 34. 	elections appear, then C" (Fig. 11) by 3/4 turning vise direction.	Φ
34.	- With the entered tes checking the selecti	t program 97, keep on ons.	
	If no incorrect sel the lock again.	ections appear assemble	
	If still incorrect se a) Turn screw "C turning in anti b) See point 35.	lections appear, then 2" (Fig. 11) by another 1/4 -clockwise direction.	$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{$
35.	 With the entered test checking the selection 	program 97, keep on ons.	
	. If no incorrect sele the lock again.	ections appear assemble	
	. If still incorrect sel exchange and adj 05.111.01, accord	ections appear, then ust VM-Selector support ing to Test No. 59/62.	





- If this is not the case, these 2 flaps "E" and "F" have to be adjusted by turning the hexagon sleeve nut "G".
- 3. Set the E-Lock on N:
 - Check and adjust as described above under point 2.



 If step 1 and/or step 2 are incorrect, readjust again. The bed distance and bed height can only be adjusted together, according to step 3, a-d.

3. Adjustment of the bed distance and bed height

 a) On the front bed, left and right, according to Figure 1 drive out the 4 pins "A" and loosen a little the 4 screws "B".

	SERV	ICE	ELECTRONIC 6000	
ANLEITUNG	INS	TRUCTION	INSTRUCTION	INSTRUCCION
	3. b) Ma is ac ad c) Aff an d) Th an ne 4 t	ove the fro between t cording to ljust the bo ter the adj d bed heig he holes fo hymore. To cessary to holes with	ont bed until the bed distance he tolerance of 4,85 - 5,15 mm o step 1. At the same time ed height according to step 2. ustment of the bed distance ght, refasten the 4 screws "B". or the 4 pins (Fig.1) will not fit o drive in again the 4 pins "A", it is o drill the previous additional a twist drill, diameter 2,9 mm.	
65 .	Checking/a	djustment	of the racking	



- 1. Turn racking handle upwards.
- 2. Insert gauge W9.50 <u>3.4 mm</u> into the front striking comb and push backwards. The adjustment is correct if the gauge enters without jamming into the back striking comb, according to Fig. 3.
- 3. Adjustment is wrong if the gauge knocks against the back striking comb, as shown in Figure 4 and must be readjusted again according to step 4, a-d.
- 4. Adjustment of the racking
 - a) Hold with screw driver at the racking spindle
 "A" (Fig. 5) and loosen slightly screw "B" with a 8 mm fork spanner.



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SE	RVICE	ELECTRONIC 6000	
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION
2.	 f) If all the back are closed, n from the righ g) Check wheth opened on th 	k and front latch needles, on the top nove with both locks on N position slowly it side to the left side. her the brushes (on the lock back) have be back and front all the latches of the	
	front must be	opened latch needles on the back and e marked on the main rail by a pencil.	
	to the top ed latch needles damaged late move slowly	ge of the main rail and close all s using a sheet of paper. See also (e) ch needles. With both locks on N position from the left to the right side.	
	 Check wheth opened on the needles. Not front must be 	her the brushes (on the lock back) have the back and front all latches of the opened latch needles on the back and the marked on the main rail by a pencil.	
	j) Push all mark wards and ch are damaged open, have n reason for no caused by th worn-out bru worn-out bru	ked latch needles on the main rails up- neck whether the needle head or the latch d or bended. Latches which are not not to be classified as damaged. The bt opening could also be a vibration ne locks or because of defective or ishes. See pictures on page 51, ishes.	
	k) Damaged bri	ushes have to be replaced.	
	rtant:		
- Da mis the any	maged latch nee stakes, e.g. longit a latch needles, fir y knitting mistake	dles give rise to manifold knitting tudinal rows, etc. This means, that rst of all, have to be checked if as appear.	
- Da mis On bef op	maged resp. wor stakes, because t the one hand the fore knitting and c en during the knit	n-out brushes give rise for knitting the 3 brushes have a double function. ey have to open the latch needles on the other hand, they keep them tting to feed the yarn.	

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- All turning and sliding parts on the M-Lock unit shall often be cleaned and oiled.
- Worn-out parts causes several mistakes.
 If necessary change the VM-Support 14.641.01 as pointed out above by arrow.



	SERVICE	ELECTRONIC 6000					
ANLEITUNG	INSTRUCTION	INSTRUCTION	INSTRUCCION				
80	CLEANING AND OILING/GREASING						
•	1. After approxim has to be clear picture on the a cloth and the	After approximately 10 hours of operation the E-6000 has to be cleaned and oiled at the parts as shown in the picture on the next page (57). Clean always first with a cloth and then oil easily with a clean brush.					
	 For a larger cleater the following m 90 % surgical p 10 % oil this mixture ca guide rails on t 	For a larger cleaning (wet-cleaning) we recommend the following mixture: 90 % surgical petrol + 10 % oil this mixture can also be utilized to lubricate the guide rails on the needle bed during the					
	operation.						
	3. We recommen - SHELLSOL K - BP ENERGOI - EXXSOL D 80	(D70) L HPO (ESSO)					
	4. We recommen						
	- SHELL VEXIL - VEXILLA ISSO - TELURA Z 32 - TEXTILMACH	DA OIL & (BELLODOR OIL) D 32 (SHELL) (ESSO) IINE OIL S46 (ESSO)					
	5. We recommen	d following grease:					
	- SHELL UNED - BP ENERGRE - CAZAR K2 (E	DO GREASE 2 EASE PR 2 SSO)					
	Important						
	A good maintenance of the E-6000 always clean and well oiled prolongs the live of the single parts enormously !						

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