



CRYPTO AG

No. 3225 A

C - 52

TROUBLE SHOOTING

Postadresse  
Adresse postale  
Post address

6301 Zug/Schweiz, Postfach  
6301 Zug/Suisse, Case postale  
6301 Zug/Switzerland, P.O.Box

Telefon  
Téléphone (042) 38 15 44  
Phone

Telegramme  
Télégrammes CRYPTO ZUG  
Cables

Telex 78 702  
Domizil: Steinhausen-Zug  
Zugerstrasse 42



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## TROUBLE SHOOTING C-52

### Unpacking of the machine

If a machine has been damaged during transportation, the addressee must insist on an examination of the damage. The persons respectively companies who were in charge of the final stage of transportation such as shipping agents, airline companies, etc. are to be requested to report in details about the cause of the damage. The report shall be sent to Crypto AG in order to notify the insurance company involved. The damaged machine must be carefully repaired by a competent technician. Unless a local representative of Crypto AG, or some other competent repair personnel are available, the machine must be returned to the supplier so that it can be completely overhauled, or, if necessary, replaced by a new unit. The relative costs are to be defrayed by the insurance company.

### How to prepare the machine for use

Before the machine is issued for service, the operator must carefully read the descriptions and operating instructions for use which are supplied with the machine. Each machine, before being supplied, is submitted to a number of tests. Moreover, it is properly lubricated and, therefore ready to be put into regular service.

It may, however, be possible that the machine will not function properly although the operation instructions have been thoroughly studied. Such incorrect functioning may be the cause, for example, of some damage effectuated during transportation and that had not been detected immediately. In this case, it is recommended that



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the operator tries to locate the cause of the defects considering the following suggestions. These may be of use also if defects should develop later on and have to be abolished. The following defects and causes for mal-functioning are possible:

1. The C-52 machine

(The numbers referred to in the following instructions are relating to the instruction manual no. D-036, for example 3/32 refers to part 32 in Fig. 3. Use also spare parts catalog L-063 for further reference).

1.1 The machine is blocked, i.e. the movement of the drum is immobilized

This may happen when the machine is operated manually or when mounted onto the electric drive B-62 or B-621. If for instance the operating knob 2/12 has not been turned to a proper new position (which must always be done), and if the knob is still held by means of the left hand while the operating lever 2/30 is pressed down, then the drum may become blocked if force is used.

The same will occur when using the electric drive B-62 or B-621 if the C-52 machine had been connected incorrectly to this drive, or if the typewheel drive of the B-unit had been adjusted improperly. In this case the typewheel unit 3/37 will lock the bar drum 3/47 and the B-unit will become noisy and the thermoswitch of the B-unit will eventually interrupt the current. The blocking in the C-machine can be relieved in the following manner:

Open the inner lid 3/32 (by using the key with two indentations in the grip), remove the shaft 2/29 by pulling it out completely to the right, remove the typewheel unit 3/37 and finally the key wheel groups 3/41 to 46 will be removed. In most cases the movement of the operating lever 2/30 can now be completed, and the drum also will complete its revolution. The keywheel groups can now be returned to their proper positions. Replace the typewheel unit, reinsert the shaft 2/29 through the centers of the keywheel groups and the typewheel unit, Check that the keywheels as well



as the typewheel unit are free to move. If the check pawl (8/17 in the catalog L-063) becomes worn out this can also cause the machine to be blocked. In order to replace this pawl, the machine has to be disassembled which, however, is easy to accomplish if the instructions in description 3108 are followed, and provided that the proper tools are available (small toolbag Nr. C-48084 or large toolbag C-48085). If a blocking has been due to some other cause than the aforementioned, the fault could lie in the mechanism under the side cover on the left hand side of the machine (17/1, catalog L-063). The cover is fastened with two screws (17/3 and 17/6 of L-063). If these screws are removed, the cover can be taken off, toward the left. Try to move the drum (by hand) forward and backward and observe the mechanism (function). Special attention is to be paid to levers, springs and the feeding mechanism for paper. The defective parts must then be replaced by new ones (see description 3108). When the protective cover is back, careful attention must be paid to the small driving pin on the first (unit) wheel of the counter. This pin must enter the driving slot of the five-letter grouper shaft (6/3 of L-063), which is most conveniently achieved when the reset knob 3/35 is pressed and at the same time turned counterclockwise until the drive knob reaches its slot in the shaft and the cover is returned to its normal position.

1.2 The paper feed does not work properly

1.2.1 Check that the paper roll has been placed in its correct position and that the paper has been inserted in the machine correctly, and moreover, that the tape tension regulator 4/53 regulates the paper (see Fig.4 in manual D-036).

1.2.2 The paper feed mechanism must be cleaned.

1.2.3 If unsuitable paper is used, the paper feed may be affected.  
Use always the original CRYPTO paper No. C-47072.

Gummed paper is not recommended, since it will, in most cases, clog the paper feed mechanism.

1.2.4 The paper feed mechanism is broken. This leads to frequent blocking of the machine. Replace the defective parts by new ones.

1.3 The characters on the paper strip are not legible

3.1 Clean the types on the typewheel with alcohol or gasoline and replace the ink rollers by new ones. Never try to "freshen up" dry ink rollers by means of immersing them in ink. This could ruin the typewheels. Dried ink rollers are always worn out and should therefore be exchanged regularly. Make sure that each ink roller can turn freely on the holder, independent of each other, in their respective operating positions.

1.3.2 Perhaps the paper guide (6/12 of L-063) situated behind the typewheel unit 3/37 has been placed in a wrong position after a servicing of the machine, or has been moved out of its place by other means. Check also that the printing hammers (7/4 of L-063) are undamaged. The position of the paper guide can be adjusted by loosening the two screws in the base plate. The paper is advanced with the aid of the knob 3/36, and the guide is then fastened again after the paper has been stretched out. It is assumed that all settings such as the pins in the pin discs, the lugs on the drum bars and relative position of the typewheel have been set correctly from the beginning and that the faults have appeared after quite some time of use.

1.4 The machine ciphers or decipheres incorrectly

1.4.1 Check that the red index for indication of numbers 2/15 stops at the red point 2/16 when the button "0" 2/18 is depressed and the knob 2/12 is turned counterclockwise.



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- 1.4.2 The relative position of the two typewheels can be changed inadvertently if the operator by accident pulls out the knob 2/12 while he is setting the primary letter. Check according to § 2a of D-036, page 7.
- 1.4.3 Open the inner lid 3/32 and check if any of the drum bars has lost one (or both) of the two small teeth at the left end. Check moreover (again) that the lugs are in their correct positions, i.e. straight vertically on the bars. Replace faulty bars and place lugs into their correct position.
- 1.4.4 Turn the keywheels (with the inner lid opened) until their guide arms are all in an inactive position, i.e. that they do not touch the drum.

Move each guide arm manually close against the drum, then release it and make sure that it will move back freely and easily, by action of its spring (Fig.7) This test is very important and should be performed every time when the keywheels are rearranged in the machine, or when pins on the pin discs are reset.

- 1.4.5 If only a few characters now and then will be printed incorrectly, check if the pins are all in their proper end positions either active or inactive. An intermediate position will intermittingly cause faulty results.

Excerpt from "Service and Maintenance Instructions" 3108

## 2. Maintenance

### 2.1 Lubrication

At delivery all movable parts of the machine are carefully lubricated so that it can be taken into service immediately upon receipt. Subsequent oilings of these parts should be carried out after every 800 hours' operation, i.e. about every 3 months with 10 hours of daily operation. Particular care



must be taken in connection with gear wheels, gliding surfaces, levers and bearings. To obtain a thin oil film only, the lubricant should be added dropwise. To reach every part to be oiled, the left side cover held by two screws has to be removed after which the parts are accessible. It is strongly recommended to use no other lubricants than oil CAG-12 and grease CAG-32 which can be ordered from CRYPTO AG.

## 2.2 Cleaning of the machine

The machine is easy to clean by means of an ordinary brush. At regular intervals the length of which naturally depends on the degree of working, the machine should be dismantled, thoroughly cleaned and reoiled, particularly if for any reason sand or water had crept in the mechanism.

## 2.3 Cleaning the typewheels

Since the typewheel unit 3/37 will during use get contaminated by the ink rollers, it has to be cleaned often so as to have legible print. The most convenient way of cleaning the types is to remove the typewheel unit 3/37 from the machine and then clean it with a piece of cloth or a toothbrush that has been slightly moistened with alcohol or gasoline.

## 2.4 Exchange of ink rollers

When the print becomes indistinct, it is necessary to clean the typewheels 3/37 and change the ink rollers 3/40. Spare ink rollers are available in the ink roller tube 3/8 placed in the main cover 1/2. The exchange is easily done with the aid of a couple of tweezers or a similar instrument. Make sure that the rollers can run freely on their respective holders and do not obstruct each other.



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2.5 Exchange of paper rolls

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Ample instructions how to exchange the paper rolls are given in § F. "Remarks" in the manual D-036, page 9 and 10.

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