



# TELEPRINTER TX 20 UTILIZATION MANUAL

SAGEM

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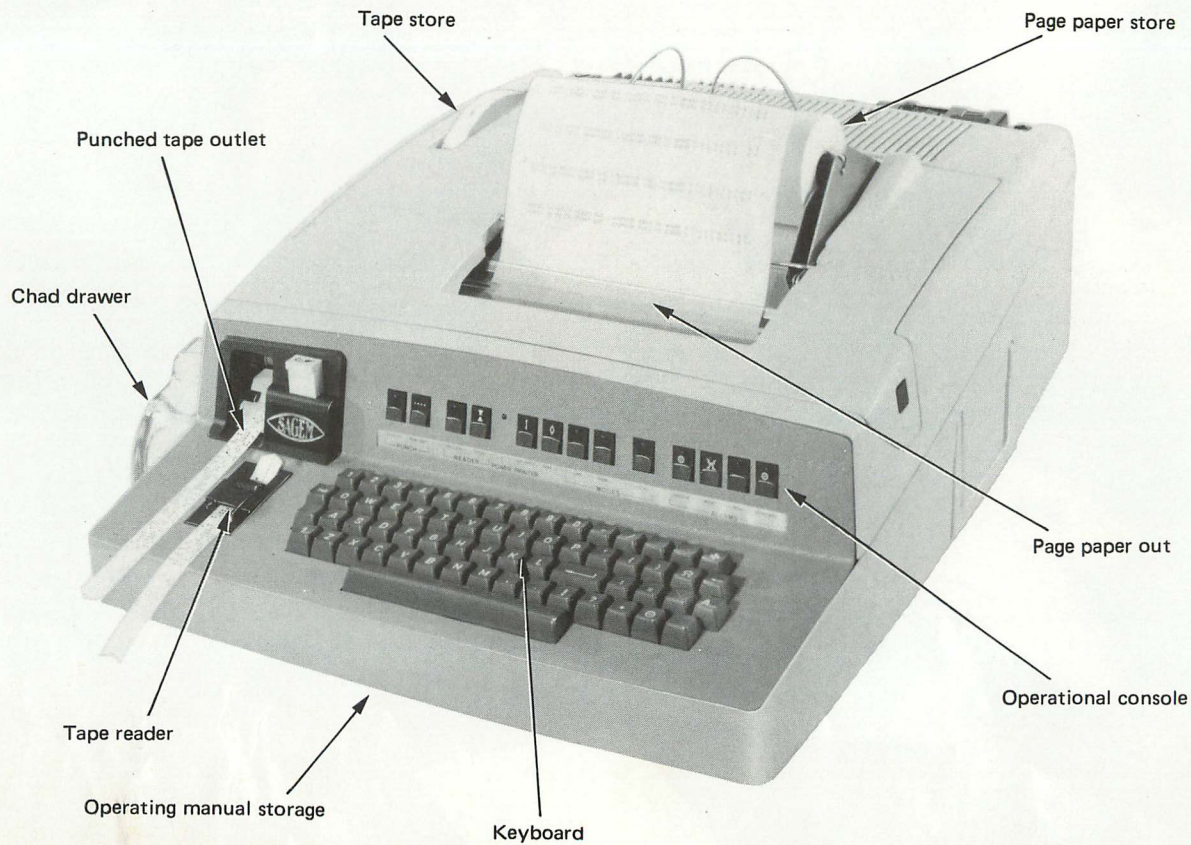
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## your TX 20 teleprinter

It resembles a typewriter but has many additional possibilities.



## printing

Three printing patterns enable the following to be distinguished either on the original or on the copies :

— a message prepared locally,

A LOCALLY PREPARED MESSAGE IS PRINTED IN CHARACTERS  
SLANTING TO THE LEFT  
ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

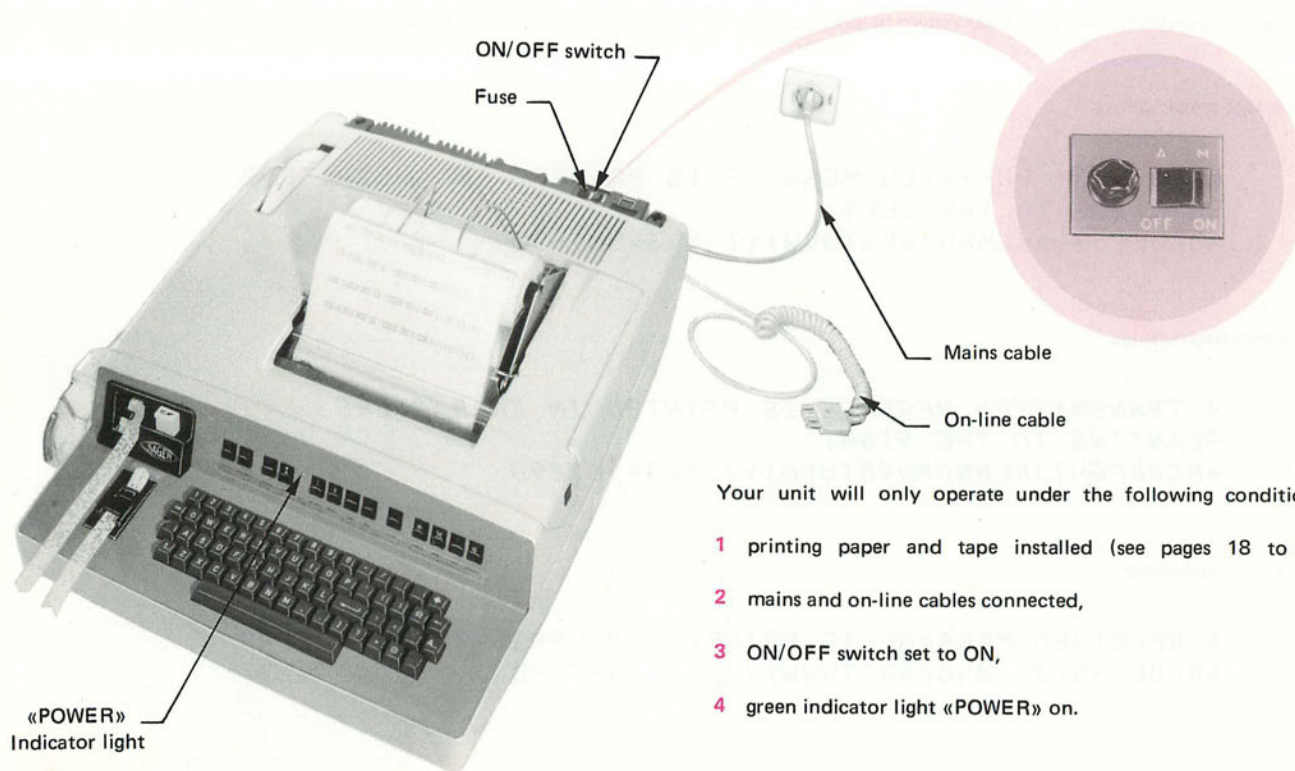
— a transmitted message,

A TRANSMITTED MESSAGE IS PRINTED IN CHARACTERS  
SLANTING TO THE RIGHT  
ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

— an incoming message,

A RECEIVED MESSAGE IS PRINTED IN UPRIGHT CHARACTERS  
ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

## starting your TX 20 teleprinter



Your unit will only operate under the following conditions :

- 1 printing paper and tape installed (see pages 18 to 23),
- 2 mains and on-line cables connected,
- 3 ON/OFF switch set to ON,
- 4 green indicator light «POWER» on.

NOTE : Check the position of the maintenance switch (see page 29).

The printing device automatically positions itself at the beginning of a line and your teleprinter is now in «STAND BY» condition.

# keyboard

## Repetition

Do you want to repeat a character ? Keep the corresponding key depressed. The character is printed once, then, after one second, it is repeated as long as the key is depressed.

### Particular keys

	LETTERS shift
	32nd combination of No 2 CCITT code
	FIGURES shift
	LINE FEED
	CARRIAGE RETURN
	CORRESPONDENT'S ANSWER-BACK CODE REQUEST (NOTE 1)
	TABULATION (See corresponding paragraph)
	CALL BELL (NOTE 2)
	NEW LINE (NOTE 3)
	OPTION

### Characters for national use

F	G	H
(in FIGURES position)		

F, G, H codes in FIGURES position are the characters used in FRENCH network.

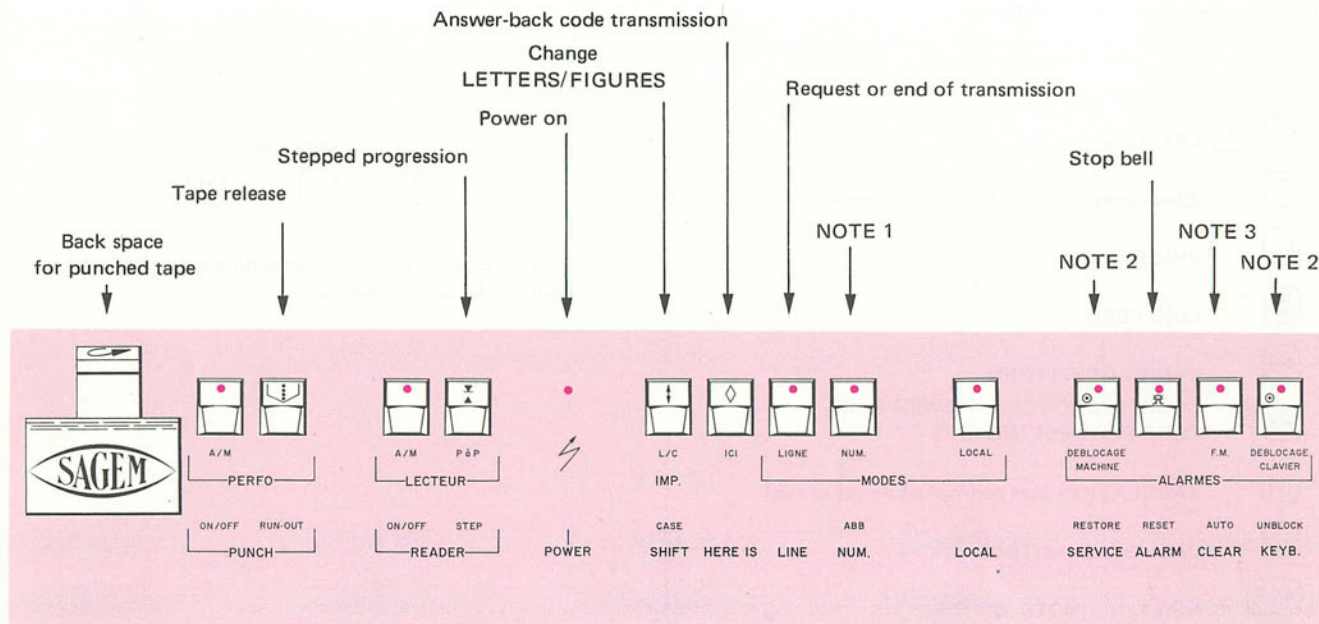
NOTE 1 : When your unit is connected to a correspondent, depressing this key automatically causes correspondent's answer-back code to be transmitted.

NOTE 2 : When your unit is connected to a correspondent, depressing this key causes correspondent's audio-alarm to ring.

NOTE 3 : Depressing this key causes the printing device to return to the beginning of the next line.

# operational console

Associated indicator lights indicate the operating conditions of your unit.



Light on = ON  
Light off = OFF

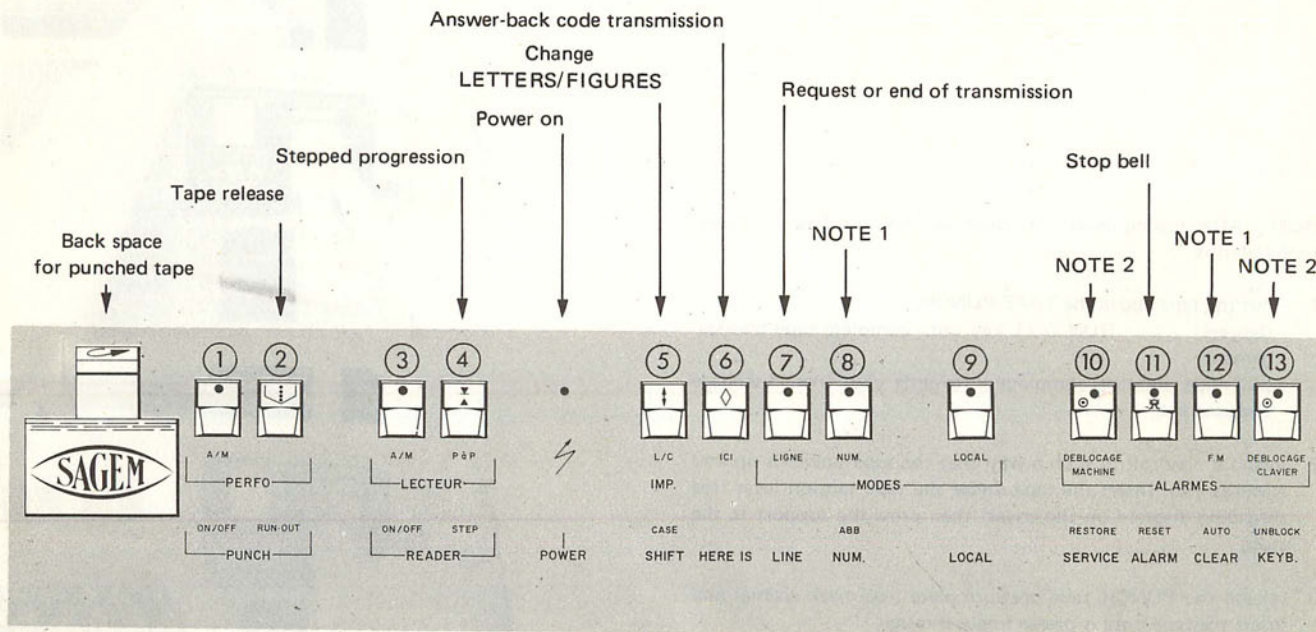
**NOTE 1**  
Abbreviated numbering (see corresponding paragraph)  
This key can be used for another optional function.

**NOTE 2**  
Indicator light on = locking.  
Clear by depressing key (light goes out).

**NOTE 3**  
Automatic end of message (see corresponding paragraph).  
This key can be used for another optional function.

## operational console

Associated indicator lights indicate the operating conditions of your unit.



## NOTE 1

These keys are reserved for optional functions.

## NOTE 2

Indicator light on = locking.  
Clear by depressing key (light goes out).

Light on = ON  
Light off = OFF

## how to receive a message ?

This is completely automatic. During the entire transmission the LINE key indicator light is illuminated.

## how to send a message ?

With unit on STAND BY depress LINE key. The associated indicator light begins to blink until CALL CONFIRMATION (at which time light remains on). If the line is busy, the indicator goes out.

With LINE light illuminated, compose CORRESPONDENT CALL NUMBER on the KEYBOARD.

After establishing communications, you can send your MESSAGE on the KEYBOARD.

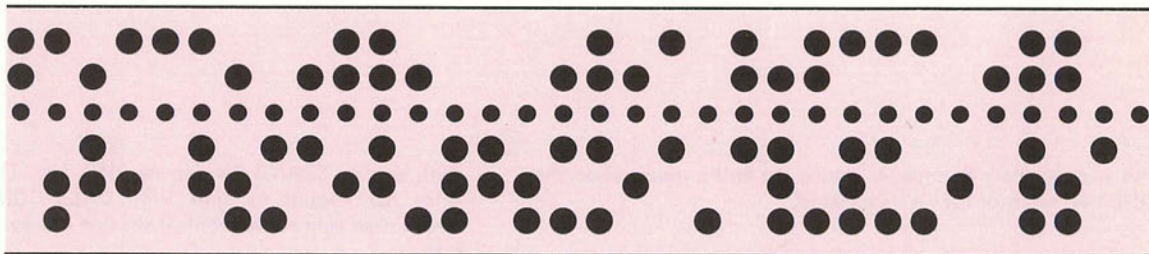
When finished, depress the LINE key again. The associated indicator light blinks until reception of END OF MESSAGE CONFIRMATION at which time the indicator light goes out. Your COMMUNICATION is then DISCONNECTED.

If your correspondent's unit has a derangement during the communication, your teleprinter will write you «DER» and the communication will be cut.

## the punched tape

What is the punched tape ? Its use ?

The punched tape enables you to keep the message you will have typed out at the most convenient time. You then will be able to transmit it later without any more waiting time, any mistake or... new typing.



* LETTERS A...	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z			*			
FIGURES 1...	-	?	:	✱	3	X	X	X	8	9	(	)	.	,	9	0	1	4	'	5	7	=	2	/	6	+	←	↓	A...	1...	→	
Combinations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32




Note : The character ✱ can be not punched.

In FIGURES position, the 6, 7 and 8 combinations are devoted to national use (See KEYBOARD paragraph).

\* The «LETTERS» symbol can be showed by «A...» or «(+».

# how to prepare a message locally on punched tape for later transmission ?

With your unit on STAND BY :

- 1 depress LOCAL key. LOCAL indicator light comes on.  
PUNCH ON/OFF indicator comes on or remains on (see page 27),
- 2 depress key  (RUN-OUT), the tape punch starts automatically, pull free several centimeters of punched tape. These will be useful for later threading on the READER,
- 3 prepare your message on punched tape using the KEYBOARD.  
Begin every message by depressing keys LETTERS and  NEW LINE,
- 4 when your message is completed, again free several centimeters of blank tape by depressing  key,
- 5 depress LOCAL key. Associated indicator light goes out.  
PUNCH ON/OFF indicator light then returns to its original condition.

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

# how to correct a " typing error " while preparing a message on punched tape ?

If a punched tape contains an error :

NOVEMBRRE 1900

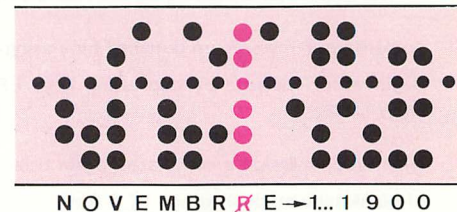
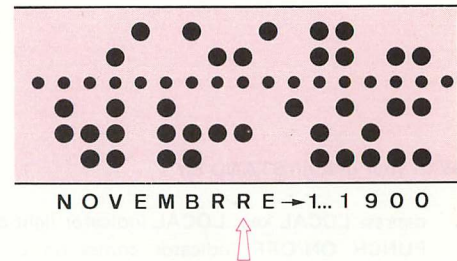


Eliminate one R on the punched tape as follows :

- 1 depress  key as many times as necessary to cause the BACK SPACE of the punched tape up to the erroneous character ; on this example 8 times for combinations 0, 0, 9, 1, 1 ..., SPACE (→), E, R. FIGURES (1 ...) combination has been automatically composed by the unit,
- 2 depress LETTERS key in order to delete the erroneous character combination,
- 3 depress 32nd COMBINATION  key as often as required to advance the punched tape ; in this example 7 times.

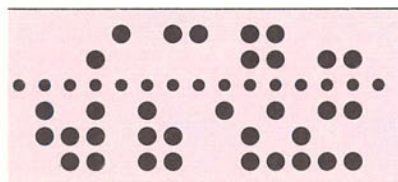
The text will then correctly appear when the corrected tape will be read :

NOVEMBRE 1900

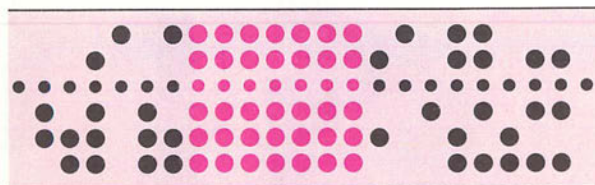


If a punched tape now contains another error :

NOVEMBE 1900



N O V E M B E → 1... 1 9 0 0



N O V E M B ~~E~~ / / ~~1~~ ~~9~~ ~~0~~ ~~0~~ R E → 1... 1 9 0 0



FIGURES (1 ...) combination (neutralized)

SPACE (→) combination (neutralized)

Add an R to the punched tape as follows :

- 1 proceed as in 1 on the preceding page, this time with 7 BACK SPACES for combinations 0, 0, 9, 1, 1 ..., SPACE (→), E,
- 2 depress LETTERS key as many times as you have depressed the BACK SPACER key in order to neutralize the characters. in this example 7 times,
- 3 type text again beginning with the character to be corrected : it will be correctly punched. In this example type R, E, SPACE (→), 1, 9, 0, 0. FIGURES (1 ...) combination is automatically composed by the unit.

The text will then correctly appear when the corrected tape will be read :

NOVEMBRE 1900

Note : Avoid making corrections requiring more than 10 BACK SPACES.

## the tape reader

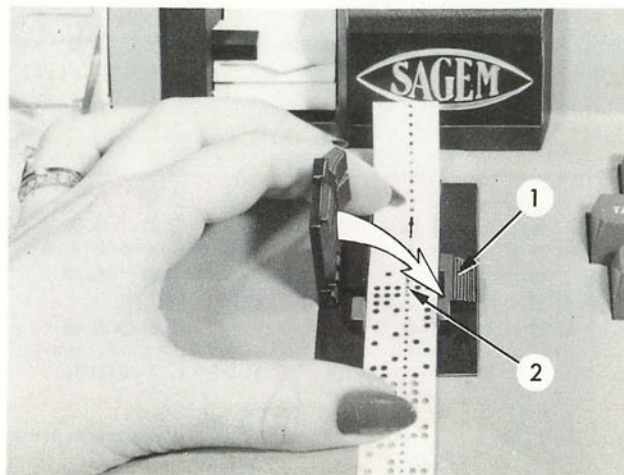
The READER allows you to :

- «read» a message by printing it on the paper page of the tele-printer (see page 13) to check for errors,
- automatically transmit a message to a correspondent after having carried out the CALL procedure.

### how to place the punched tape on the reader ?

Follow the steps as shown on the adjacent photo :

- 1 open the tape contact plate by pressing on lock (1) ,
- 2 position the tape in such a way that the arrow printed on the tape and the arrow engraved on the reader are oriented in the same direction.  
Correctly position the punched tape on the drive sprocket (2) ,
- 3 press down the pressure plate. It locks automatically.




## how to " read " a punched tape ?


With the unit on STAND BY depress LOCAL key. The associated indicator light comes on.

In order to duplicate the punched tape with your TAPE PUNCH, your PUNCH ON/OFF indicator light must be on (see page 27).

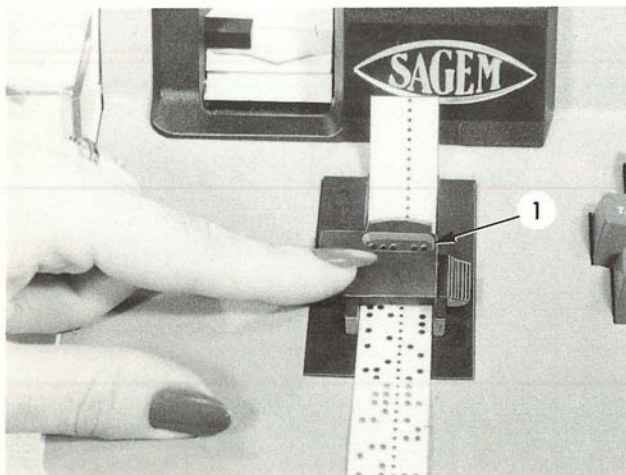
Place the punched tape on the READER then depress READER ON/OFF key. The message contained on the punched tape is then printed.

READER operation is automatically ended at the end of the punched tape, or by yourself, by depressing again READER ON/OFF key.

You can read the punched tape STEP-BY-STEP (read character-by-character) by depressing the  STEP key.

An aperture  provided in the pressure plate allows you to «read» the character which will be printed when the STEP key is depressed again.

When reading the punched tape is finished, depress the LOCAL key. The associated indicator light will go out.



## how to transmit a message using the tape reader ?

The equipment being in STAND BY mode, put the tape to be transmitted on to the TAPE READER.

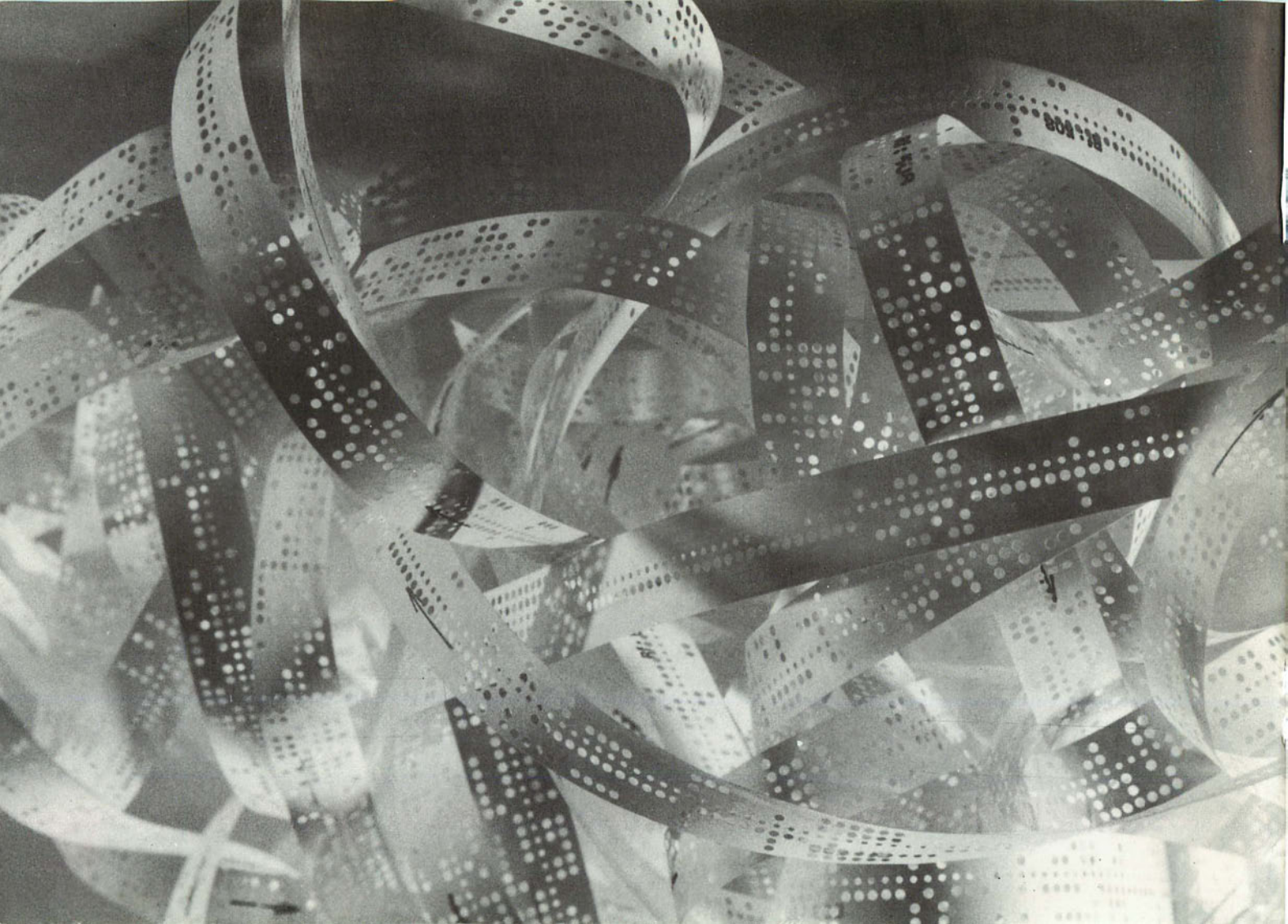
When you are linked with your correspondent, depress READER ON/OFF key. The associated indicator light comes on.

The message is then automatically transmitted.

When the tape reading is finished, the TAPE READER stops and its associated indicator light goes off.

Depress LINE key to end communication.

This possibility decreases to a minimum the line in use time and therefore reduces your operating costs.



## receipt of an incoming call during message preparation

You are preparing your message on the KEYBOARD, the text prints slanted to the left. A CALL appears, indicator light for LINE key illuminates and the associated LOCAL key indicator light goes out. The associated indicator light for PUNCH ON/OFF key remains on or extinguishes (see page 27). The printout of your message, which is occurring, stops. The incoming message for the line is printed upright and is punched if the PUNCH ON/OFF indicator light is on.

If the PUNCH ON/OFF indicator light is extinguished at the time of this reception, and if you wish, after establishing communication :

- you can continue to prepare your message «blind» with the KEYBOARD and TAPE PUNCH after having depressed a 2nd time the LOCAL key (associated indicator light comes on). Automatically, the TAPE PUNCH is available for use (associated indicator light for the PUNCH ON/OFF key comes on).
- you can communicate with your correspondent after having depressed the LOCAL key which stops your TAPE PUNCH and allows you to use your KEYBOARD «on line». The associated indicator lights for LOCAL and PUNCH ON/OFF keys extinguish. The text that you type on the KEYBOARD prints slanted to the right.

If the PUNCH ON/OFF indicator light is ON during this reception and if you wish, after establishing communication :

- you can continue to prepare your message «blind» using the KEYBOARD and TAPE PUNCH after having depressed LOCAL and PUNCH ON/OFF keys (associated indicator lights come on). The TAPE PUNCH is then automatically available for your use.
- you can communicate with your correspondent using the KEYBOARD after communication have been established.

Depress UNBLOCK KEYB. key if the associated indicator light is ON.

## preparation of a message while transmitting another message

Briefly, operational simplicity of your unit allows you to send a message with the READER and to simultaneously prepare a second message «blind» on punched tape as follows :

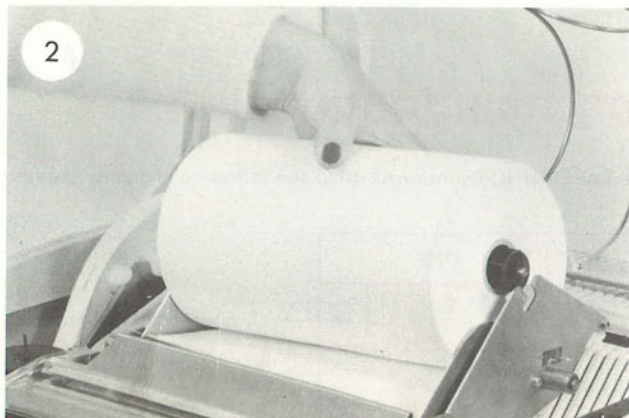
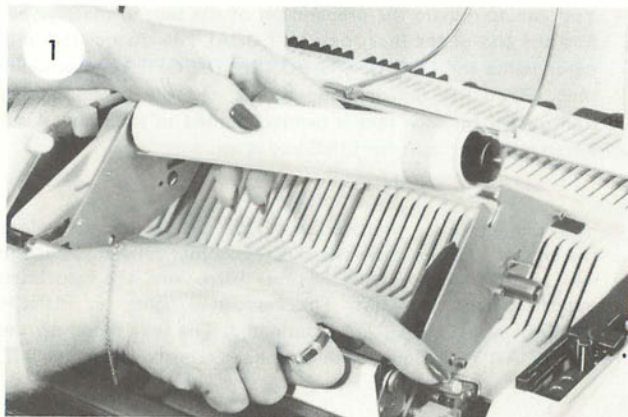
- carry out the transmission operation using the READER,
  - depress LOCAL key. The TAPE PUNCH begins to operate (associated lights come on), (See page 27),
  - prepare your message using the KEYBOARD and TAPE PUNCH.
- You can terminate the preparation of the second message before the end of the first : depress LOCAL key. Associated indicator lights for LOCAL and PUNCH ON/OFF keys extinguished. READER remains operational and the corresponding transmitted message text is printed slanted to the right. Associated indicator light for LINE key is on.
  - You can terminate preparation of the second message before the end of the first : the READER automatically stops at the end of the punched tape. Depress LINE key, the associated indicator light goes out. The associated lights for PUNCH ON/OFF and LOCAL are illuminated. The text typed on the KEYBOARD is printed with the characters slanted to the left.

## controls for correspondent's machine (optional)

You can control the stop or start of your correspondent's READER or TAPE PUNCH (optional) using the following character groups :

	ON	OFF
READER	L L L L	← Optional character group
PUNCH	C C C C	F F F F

## loading your teleprinter with page paper



**WHEN ?** Check that the paper supply is adequate. Nevertheless, your teleprinter will communicate to you by printing «PAPER OUT», then goes to LOCKING mode (indicator light and audio alarm come on), the printing device positions itself to the extreme left.

At the end of the week ensure that your teleprinter is re-supplied with sufficient paper.


**HOW ?** Stop the audio alarm by depressing the RESET ALARM key. Raise the cover lid and follow instructions as shown on the photos :

**1** move the control lever for the paper press towards you, completely unwind the remaining paper and remove the used roll ; then, extract the shaft from the latter and place it on the new roll ;

**2** install the assembly on its brackets, the paper should unwind down and towards you.

- 3 insert the paper in its rack, in front of the pressure shaft, and behind the drive roller, then under the paper cutter (See diagram for threading under the cover),
- 4 pull the paper and bring the paper edged parallel to the roller margins, then move the control lever for the paper press towards the rear of the unit.


Depress RESTORE SERVICE key, then LOCAL key. The RESTORE SERVICE associated light extinguishes and the one associated with LOCAL illuminates.

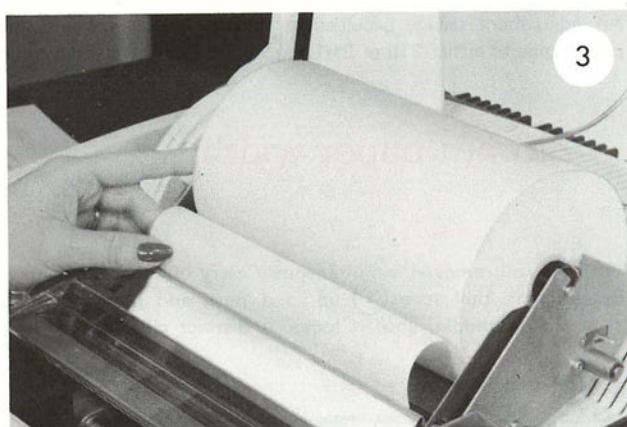
Disengage several pages of paper by depressing  key in order to ensure correct unwinding.

Depress LOCAL key, related indicator light goes out.

Your unit is now on STAND BY.

When the cover lid is opened, you can also advance the paper with a knurled knob which is located to the right of the roller.

NOTE : If you receive a call during these operations, another audio signal is available. You can stop it after about six seconds by depressing the  RESET ALARM key.

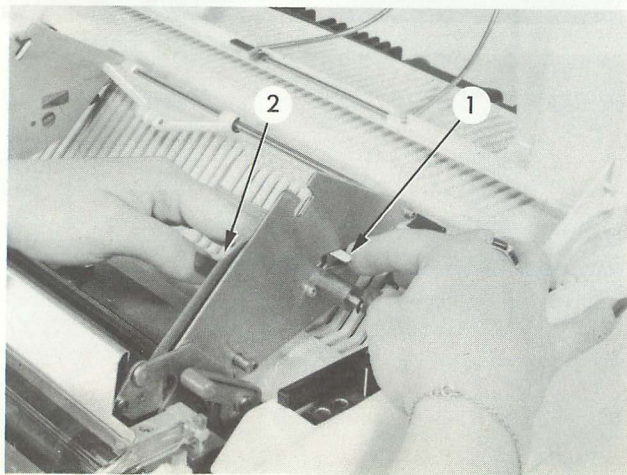


## how to change the paper width ?

An adjustment device provides for changing the width of the paper guide to either 210 or 216 mm.

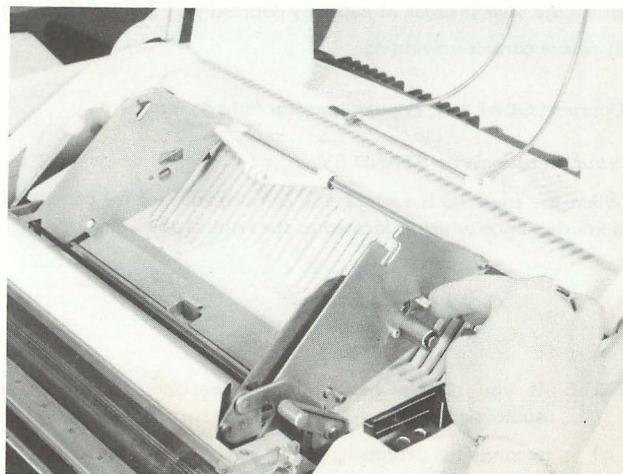
### 216mm paper width

With the roll removed, simultaneously carry out the two following operations : pull lever ① up, and push end plate ② to the right, in its middle, until it locks. A distinct click can be heard

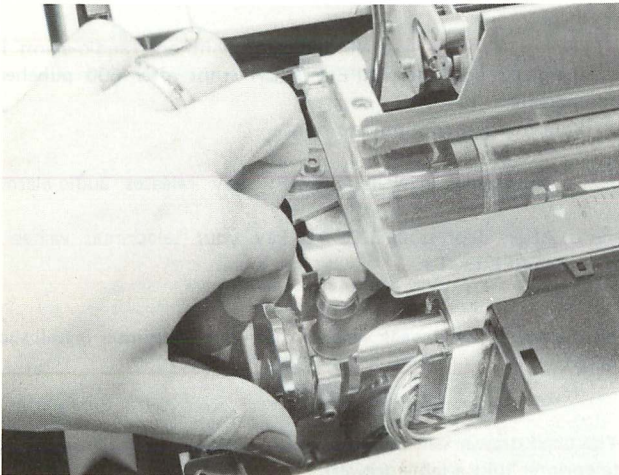


### 210mm paper width

With roller removed, pull lever ① up. The end plate ② moves and locks automatically.

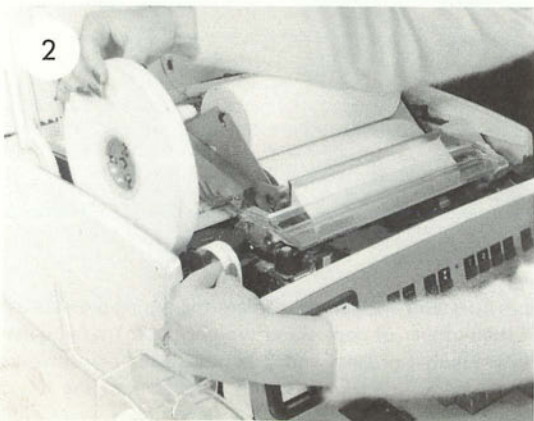
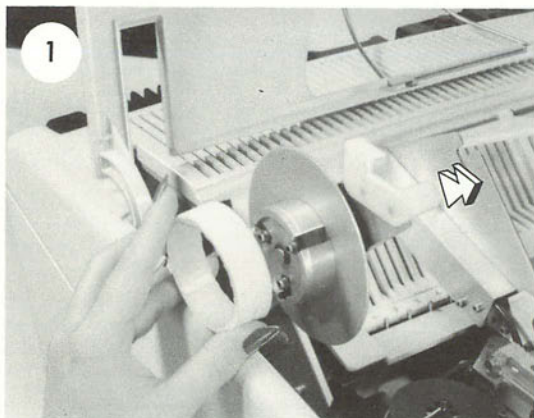


## how to adjust typing pressure ?



A device provides you with an adjustment for typing pressure as a function of the number of copies and type of paper that you have selected. (Maximum : original and 3 copies). This adjustment is provided with the knurled knob which is located to the left of the unit.

## replacing a roll of tape on your teleprinter



**WHEN ?** Your teleprinter signals the end of tape as follows :

- **during message preparation** (LOCAL indicator light on), PUNCH ON/OFF indicator light blinks and UNBLOCK KEYB. light comes on.
  - The KEYBOARD is blocked. Nevertheless you can end message after depressing the UNBLOCK KEYB. key.
  - The READER stops. Nevertheless you can end your message after depressing the READER ON/OFF key.

After 600 punched characters, the teleprinter writes you : «TAPE OUT». Indicator lights LOCAL and PUNCH ON/OFF extinguish.

- **during a message** (LINE indicator light on), audio-alarm is energized and the TAPE PUNCH stops after 600 punched characters.
 


Your message continues to print.

  - Depressing PUNCH ON/OFF key releases audio-alarm,
  - After depressing LOCAL key your teleprinter writes : «TAPE OUT».

At the end of each week, ensure that your teleprinter is well supplied.

The chad drawer can be removed by sliding it to the front of the teleprinter (like a table drawer).



**HOW ?** After having raised the cover lid, carry out steps as shown in the photos :

- 1 pull tape support completely towards you, then disengage the used roll,
- 2 install a new roll in such a way that the tape unwinds up and towards you. Insert the tape under the tape tension lever (see threading diagram on the cover) then press the support to the stop,
- 3 release the punch tape pressure plate and insert the tape until it passes completely through,
- 4 depress tape pressure plate until it locks. A distinct click can be heard,
- 5 depress  RUN-OUT key in order to check the correct threading.



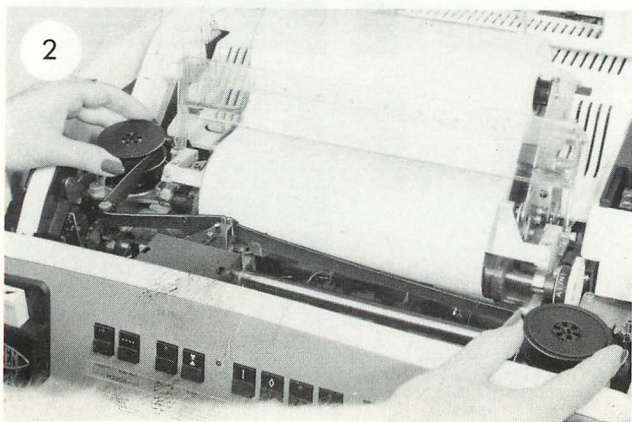
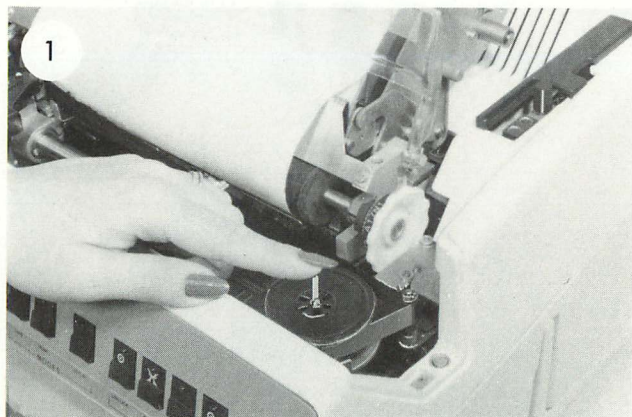
Note. Before performing this loading operation, ensure the tape threading is free from residual paper.

HOW ? After having raised the cover lid, carry out steps as shown in the photos :

- 1 - cut the tape above the TAPE PUNCH,  
 - depress  RUN OUT key until complete tape disengagement,  
 - pull tape support completely towards you, then disengage the used roll,
- 2 install a new roll in such a way that the tape unwinds up and towards you. Insert the tape under the tape tension lever (see threading diagram on the cover) then press the support to the stop,
- 3 release the PUNCH tape pressure plate (red mark visible) and insert the tape until it passes freely through,
- 4 depress tape pressure plate until it locks. A distinct click can be heard (red mark not visible),
- 5 depress  RUN-OUT key in order to check the correct threading.



## replacing the ink ribbon on your teleprinter



**WHEN ?** — When you think that the characters are too faded.

— At the end of the week ensure that your teleprinter is well supplied.

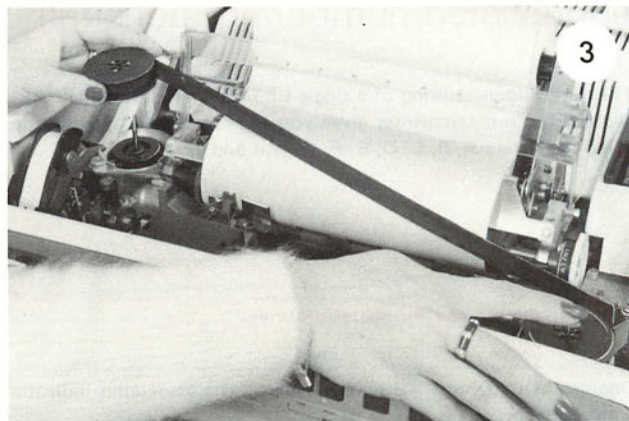
**HOW ?** — Set POWER ON/OFF switch to «OFF». POWER indicator light goes out.

— Follow the steps in the photos.

**1** raise the paper cutter and reel locks.

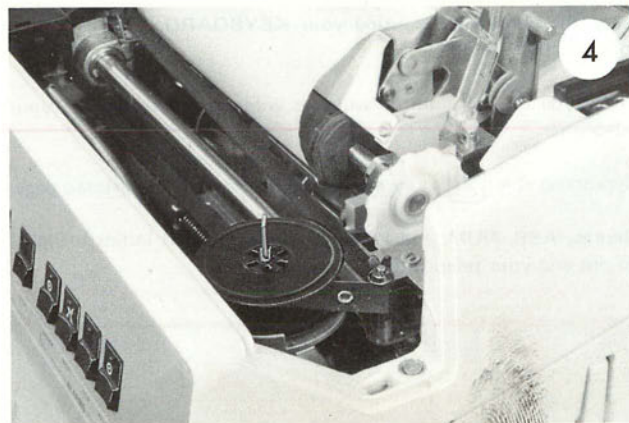
**2** remove reels and used ribbon.

- 3 position reels with new ribbon (refer to installation diagram under the cover).



- 4 install on their supports , first the RH reel then the LH reel.  
**CAUTION :** Pay careful attention to this order of installation.

Insert the ribbon in the ribbon guide with the eyelet positioned as shown in the photo. Then, fold back the paper cutter.



## particular devices

### abbreviated numbering (optional)

This unit allows striking of a single LETTER instead of the CALL NUMBER. Your teleprinter gives you ten abbreviated possibilities using the letters A, B, C, D, E, F, G, H, I and J.

#### Entering abbreviated numbers in storage

Depress LOCAL and ABB. NUM. keys ; the associated indicator lights come on.

Type the chosen letter using your KEYBOARD. This is printed followed by a colon :

Then type the call number which is entered into storage by your teleprinter.

Depressing the **Z** key allows verification on the printed page.

Depress ABB. NUM. and LOCAL. The associated indicator lights go out and your teleprinter is ou STAND BY.

### automatic end of message (optional)

This unit is used when transmitting a message using the READER. It is placed into operation by depressing the AUTO CLEAR key.

When the tape reader is finished the unit ends the message and automatically switches to STAND BY.

Indicator lights READER ON/OFF, LINE and AUTO CLEAR go out.

### tabulation

This device allows to achieve tables or lists. The tabulated positions have identical steps of 5 characters from the beginning of the line.


This function is performed by depressing **TAB** key located on the KEYBOARD.

# Erratum 26

(continuation)

## tabulation

This device allows to achieve tables or lists. The tabulated positions have identical steps of 5 characters from the beginning of the line.


This function is performed by depressing  key located on the KEYBOARD.

## automatic end of message (optional)

This unit is used when transmitting a message using the READER. It is placed into operation by depressing the AUTO CLEAR key.

When the tape reader is finished the unit ends the message and automatically switches to STAND BY.


Indicator lights READER ON/OFF, LINE and AUTO CLEAR go out.

Note - In some equipments this function is performed by depressing  key.


## transmission of cyphered texts (optional)

Note - This option allows the transmission of texts recorded on punched tape, and previously cyphered.

The equipment being ready to send, wether using the keyboard (see page 7), or the reader (see page 14),

- the changing to the "Transmission of cyphered texts" mode is realized :
  - by depressing  key,
  - by transmitting, using the keyboard or the reader, the significant sequence,
  - by receiving the same sequence.

Example of sequence : S, S, S, S

 key indicator light comes on.

- the return to normal mode is realized in the same way that above - mentioned.


Example of sequence : N, N, N, N, Letter, Letter

 key indicator light goes out.

## abbreviated numbering (optional)


This unit allows striking of a single LETTER instead of the CALL NUMBER. Your teleprinter gives you sixteen abbreviated possibilities using the letters A, B, C, D, E, F, G, H, I, J, K, L, M, N, O and P.

## ENTERING ABBREVIATED NUMBERS IN STORAGE

Depress LOCAL and ABB. NUM. (or ) keys ; the associated indicator lights come on.


## ● National number


Type the chosen letter using your KEYBOARD. This is printed followed by a colon :

Type the call number, then depress  key.

Example : A : 610762

The call number is entered into storage by your teleprinter.

Depressing the  key allows verification on the printed page.

Depress ABB. NUM. ( or ) and LOCAL keys. The associated indicator lights go out and your teleprinter is on STAND BY.

## ● International number

Number preceded of a prefix (or battery number).

Proceed as specified by entering the prefix number after the chosen letter, followed imperatively by the sign / and after another letter, the call number followed by + .

Example : C : 046000 /  
F : 21605 +

## MESSAGE TRANSMISSION USING THE ABBREVIATED NUMBERING

## ● National call

After being on line, type the letter corresponding to the number of the addressee (example : A)

The TX 20 automatically sends 610762 as above.

## ● International call

After being on line, type the letter corresponding to the prefix (example : C).

The TX 20 sends 046000 as above.

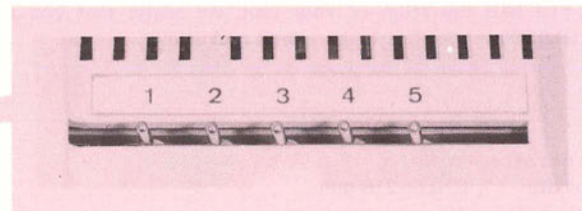
After receiving the «Invitation to number» signal (G.A.), type the letter corresponding to the number of the addressee (example : F).

The TX 20 sends 21605 as above.

The number of the addressee can also be sent normally from the keyboard.

## possible choices

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- 1 set to the **left** : lighting control for indicator light PUNCH ON/OFF.
  - on STAND BY
  - upon receipt of a CALL.

The incoming on-line message is then printed and punched. Message préparation is not possible. This can be possible after depressing PUNCH ON/OFF (light go out) and LOCAL keys (PUNCH ON/OFF and LOCAL lights come on).

set to the **right** : when PUNCH ON/OFF indicator light is extinguished you can use your TAPE PUNCH for message preparation after depressing the LOCAL key, or on-line after depressing PUNCH ON/OFF key.

- 2 set to **left** : single line spacing.  
set to **right** : double line spacing.
- 3 set to **left** : text release after 1/4 second.  
set to **right** : text release after 3/4 second.
- 4 reserved for option.
- 5 reserved for option.

## expendable material

For the best operation of your unit, we advise that you use material whose specifications are indicated below :

- rolls of **page paper**

width : 210 or 216 mm

diameter : 120 mm maximum

quality : AFNOR standard NFQ 11-002

original : 56 to 64 g/m<sup>2</sup>

copies : 20 to 30 g/m<sup>2</sup>

carbon : 17 g/m<sup>2</sup>

or self-carbon paper : 56 to 64 g/m<sup>2</sup>

- 5-unit **tape**

width : 17.4 mm

standard : DIN 66016 Bl. 1

- SAGEM **ink ribbon** with eyelets

width : 13 mm

length : 13 m

minimum distance of eyelets to the ends : 150 mm

reel : UNDERWOOD

- cartridge fuse 5 x 20 mm delayed D1TD (HA20)
  - for 220/240V : 0,8A
  - for 110/127V : 1,25A

You can order these materials from :

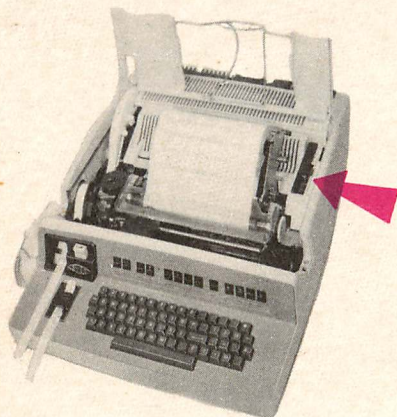
### S A G E M

Département télétransmissions.

6, avenue d'Iéna, 75783 PARIS CEDEX 16

Tél. : 745.14.60 - Téléc. : 610762 F

# your teleprinter is in derangement



Are you connected to a telegraphic network ?

Before giving a description of the derangement, ensure first that the maintenance switch (showed by the arrow) is completely turned round to the left.

This switch is for the use of the maintenance technician. Do not operate it except at the request of the maintenance service.

**WARNING :** In operation defect case, set ON/OFF switch to OFF, then to ON position. If the defect persists, call the maintenance service.

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www.cryptomuseum.com

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CM 302882

## Société d'Applications Générales d'Electricité et de Mécanique

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S.A. CAPITAL : 66 000 000 F

TELEX : 610762F — CABLES : TELESAGEM PARIS — 562082909B R.C.PARIS



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