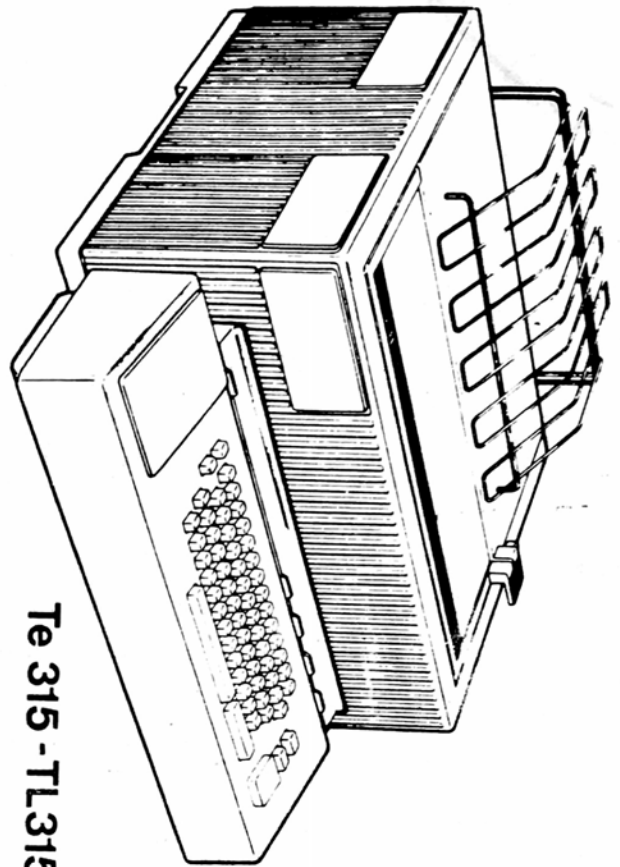
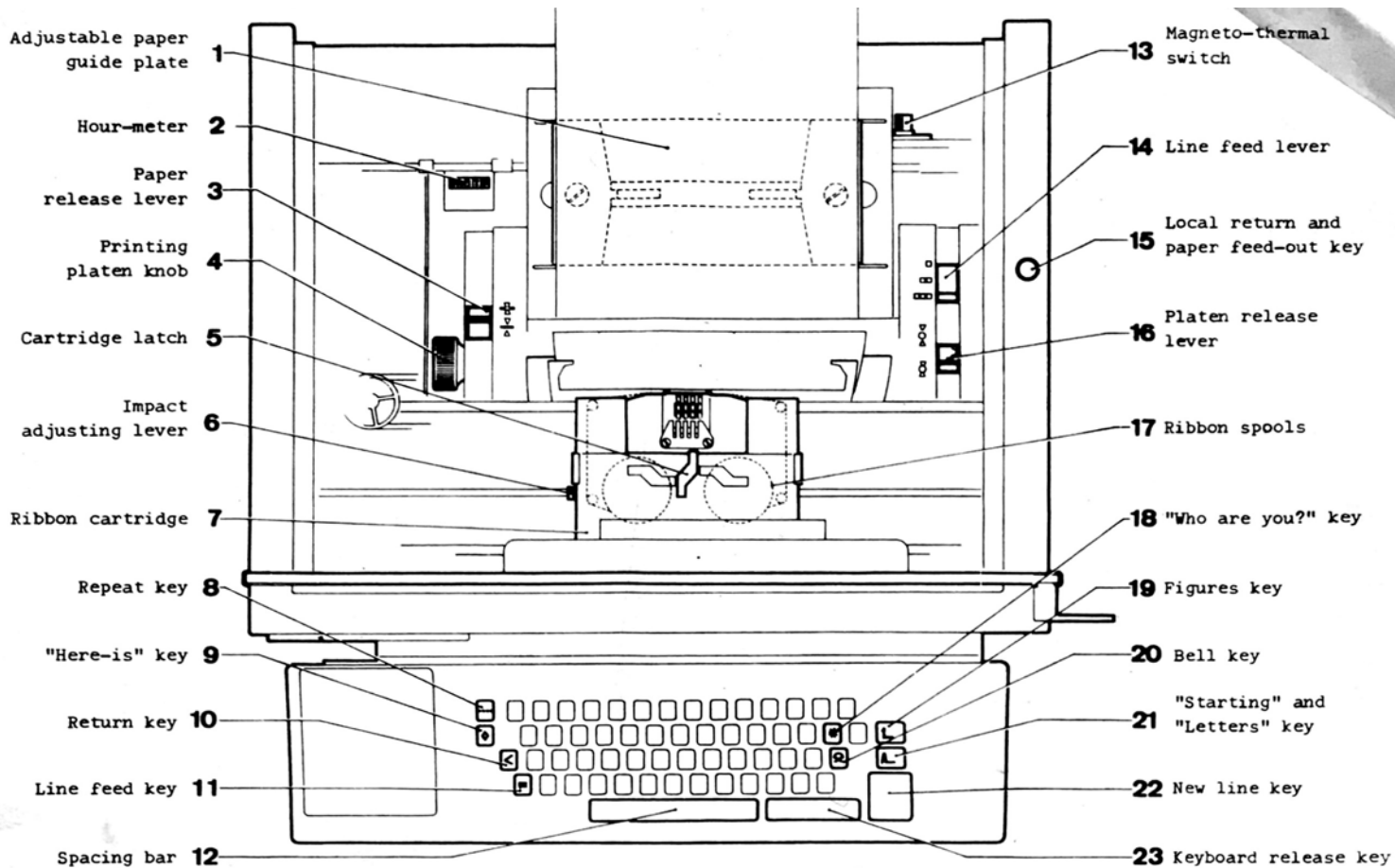


Re 315



Te 315 - TL315

PERFORMANCE AND FEATURES



3

Send unit

Keyboard

The keyboard is fitted with four rows of key-tops and is very similar to that of the standard electric typewriters. A very light pressure is needed to depress a key as the entry is completely motor powered.

Quick storage device (valid for one stroke)

The machine is provided with a quick storage device, which gives the possibility to store two subsequent code combinations at a speed of 2000 strokes per minute (at 50 Bauds).

Storage device (operating up to ten strokes)

This device gives the possibility to store, at the limit speed of 694 strokes per minute, (at 50 Bauds), up to ten code combinations. These codes are then automatically sent into the line at the rated telegraphic speed.

In this way the typist can reach (especially at 50 Bauds operation) instant speeds higher than the rated one.

"Letters" (21) and "Figures" (19) keys

When the "Letters" key is depressed, the following takes place:

- a) a "Letters" code combination is sent into the line;
- b) the teleprinter motor starts.

When the "Figures" key is depressed, the corresponding telegraphic signal is sent into the line. This signal, sent with other codes, forms a sequence which is used on special machines connected in "Party-line".

"Return" key (10)

This key controls the return of the printing unit to the beginning of the line, independent of its position on the line.

"Line Feed" key (11)

This key makes the printing platen, and therefore the paper, rotate a step, which allows the operator to write a line under the other.

"New Line" key (22)

It controls the line feed and the return to the beginning of line, by automatically sending the sequence "Return - Line Feed - Return".

"Release" key (23)

When the keyboard is locked (i.e. when the storage device is full or two keys are depressed at the same time), depress the release key to clear.

"Here-is" key (9)

It trips the Answer Back Device, which automatically sends a sequence of twenty pre-established code combinations, forming the Identity of the teleprinter.

"Who are you" key (18)

It sends a signal on the line, which trips the Answer Back Device of the distant teleprinter.

"Bell" key (20)

It sends a signal which actuates the bell of the distant teleprinter, to get the operator's attention.

"Repeat" key (8)

It causes the last signal sent to be continuously repeated. The transmission continues as long as the "repeat" key is held depressed.

Spacing bar (12)

It sends a signal which makes the printing unit progress a step.

Receive Unit

Printing unit

The printing unit can print up to 64 different characters.

When in operation, the unit horizontally spaces from left to right.

Two-colour printing

To distinguish the outgoing from the incoming messages, the teleprinter prints the outgoing in red and the incoming in black.

To obtain this, red portion of the ribbon must be assembled upwards. The ribbon spools (17) are housed in a cartridge (7), which can be easily removed by actuating the latch lever (5).

Printing line and platen

The length of the printing line can be adjusted up to 80 spaces. One space = 2.54 mm. (equivalent to 10 spaces per inch). In case the printing platen is worn out, it may be easily replaced without disassembling any other part of the machine.

End-of-line signalling

Ring of the bell indicates the approaching of the printing unit to the end of line.

The bell may be set to ring from 29 to 80 spaces.

Line Feed operation

The "Line feed" is the distance between two printing lines.

By positioning line feed lever (14), it is possible to obtain the following line spaces:

- 4.23 mm. (1/6 inch.) : the lever (14) has to be set near the sign
- 6.34 mm. (1/4 inch.) : the lever (14) has to be set near the sign
- 8.46 mm. (1/3 inch.) : the lever (14) has to be set near the sign

Paper feed-out

The push-button (15), when depressed, controls the motor starting in off-line operation and continuous paper feed-out; it also controls the return of the printing unit to the beginning of the line without transmission of signals.

Paper roll

Standard or multi-copy paper roll may be used.

Max. length of the sheet: about 241 mm.

Max. external diameter of the roll: 170 mm.

The teleprinter is also provided with a paper guide plate (1); the right side of the plate can be manually adjusted according to the width of the paper.

Local return and paper feed-out

A special unit automatically controls line feed and return of the printing unit to the beginning of the line.

This unit only comes into play when the teleprinter is receiving from the distant subscriber and the printing unit spaces beyond the end of line.

Platen release lever (16)

Platen release lever (16) allows the manual rotation of the printing platen by means of knob (4).

When this lever is set on the sign \square , the platen is locked.

When this lever is set on the sign \square , the platen is released.

Note that, as soon as the machine performs a line feed operation, the lever automatically shifts from the "released" to the "locked" position (should it not be already there).

Paper release lever (3)

The paper release lever allows manual positioning of the paper on the platen.

When this lever is set on the sign ∇ , the sheet is locked; when it is set on the sign Δ , the sheet is released.

Note that, as soon as the machine performs a line feed operation, the lever automatically shifts from the "released" to the "locked" position (should it not be already there).

Stroke adjusting lever (6)

This lever allows adjustment of impact on the paper.

The impact increases or decreases according to whether the lever 6 is displaced rear- or frontwards.

Function cycle unit

As soon as the "bars entry" unit has transferred the code combination to the printing unit by means of the code bars, the "function cycle" controls:

- 1) the printing unit so that, through a particular linkage, it performs a printing stroke.
- 2) the "horizontal control" unit, causing it to space the printing unit one step.

"Function box" unit

1) This unit, controlled by the "bars entry" unit, recognizes the code combinations set on the five code bars corresponding to one of the following functions: Return - Line Feed - Letters - Figures - Space - Bell - Blank - Who are you?

It also sends a start control to the units which perform the concerned function. In particular, on reception of the code "letters" or "figures", it controls the "Letters-Figures" bar.

Note that the "function box" recognizes the functions "Bell" - "Who are you?" only when the "letters-figures" bar is in "figures" position.

- 2) It suppresses spacing and printing or both when the corresponding function requires it.
- 3) It performs particular functions on request.

Note - On receive-only teleprinters, no output control is sent by the function box unit when in presence of the "Who are you?" code.

For this reason, this control has been only indicated in the block diagram including the teleprinter send unit, and not in the diagram on the opposite page.

Recognition of codes "Blank" and "Space" causes:

- for the code Blank, the print and space suppression;
- for the code Space, the print suppression.

For this reason, the function box unit output controls corresponding to Blank and Space functions are the same as the space and print suppression controls already represented in the figure.

"Horizontal control" unit

This unit:

- 1) makes the printing unit space one step when controlled by the function cycle;
- 2) makes the printing unit return to the beginning of the line when controlled by the function box;
- 3) sends a control to the "local return and paper feed-out" unit when the printing unit goes behind the end of the line.

Printing unit

This unit:

- 1) selects the character corresponding to the code combination received when controlled by the function box (through the "Letters-Figures" bar) by the "bars entry" unit (through the five code bars);
- 2) prints the character selected on the paper when controlled by the function cycle unit (through the print bar);
- 3) draws the operator's attention by actuating a bell when it is near the end of line.

Vertical control

This unit sends a control to the "printing platen functions", which performs a line feed, when controlled by the "function box" or by the "local return and paper feed-out" unit. The line feed space may be manually chosen by the operator.

Printing platen functions unit

- 1) This unit displaces the paper sheet upwards for a quantity determined by the operator, when actuated by the vertical control unit.
- 2) It also releases, when controlled by the operator, the paper sheet from the platen. This allows adjustment, positioning or removal of the paper, independent of the rotation of the platen.

"Local return and paper feed-out" unit

Sends a command to the "vertical control" and another command to the "horizontal control" units which respectively control line feed and the return of the printing unit to the beginning of the line, when actuated by the "local return and paper feed-out" key or by the "horizontal control" unit.

"Local return and paper feed-out" key

Besides the above mentioned function, this key also starts the motor by closing the local switch contacts (INT.LOC.). As long as this key is kept depressed, it controls the continuous paper feed out.

Hour-meter

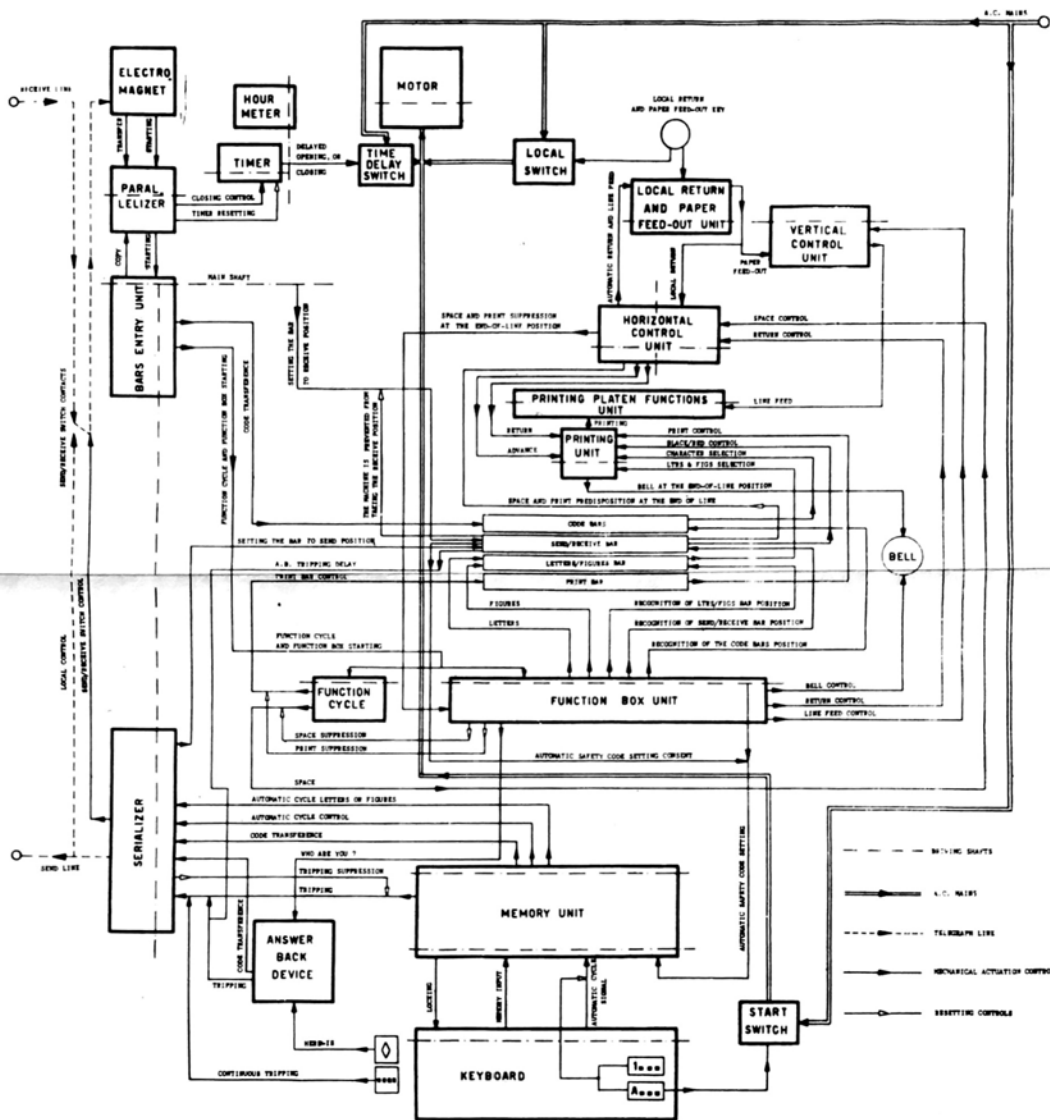
It counts the hours the motor is running.

Timer

- 1) As soon as the teleprinter receives the first telegraphic signal, the timer closes the time delay switch contacts (INT.TEMP.), so causing the motor to start.
- 2) When a pre-determined period of time has elapsed since the last reception of a telegraphic signal, the timer opens the time delay switch contacts, causing the motor to stop.

TRANSMITTER PART

11



12

Foreword

purpose of the Send Unit is to send the code combinations corresponding to the depressed key on the line. The Send Unit essentially consists of the keyboard, the memory and the serializer. As you can see in the figure, these units have been added to the receive units already explained. Also the Answer Back device and other groups (start switch, send/receive bar, which are connected both with the send and receive units, are represented in the figure.

Description

Emission of a code combination

As soon as a key corresponding to a letter, a figure or a punctuation mark is depressed, it trips a linkage which enters the corresponding code into the memory (see the line: "memory input"). Since a code combination consists of five mark or space pulses, due to this operation five elements of the memory take the position corresponding to the entered code. From the memory the code is subsequently transferred to the serializer (see the line: "code transference"), which thus trips (see the line: "tripping"). The serializer, after converting the mechanical elements of the code combination into electric pulses, sends them, one after the other, to the telegraph line. The serializer prevents the memory from sending another tripping control until the emission of the pulses of the previous code combination has been completed (see the line: "tripping exclusion"). In such a case, the 2nd code combination keeps waiting in the memory. This may occur when the interval of time elapsing between the depression of two subsequent keys is less than the time of emission of the 1st code pulses. When this fact occurs for many keys, the respective code combinations keep waiting into the memory, which has the possibility to store up to 10 codes. As soon as this limit is reached, the keyboard becomes locked. Before starting the emission of the code pulses, the serializer sends a control to the send/receive switch central contact (see the line: "send/receive switch control"). In some cases of polar current operation, this control gives the possibility to monitor the message sent by the serializer on the electromagnet.

Emission of the automatic cycle "letters" or "figures"

When changing state from "figures" to "letters" or vice versa, the keyboard sends to the serializer, through the memory, the code "letters" or "figures" (see the line "automatic cycle signal" between keyboard and memory, and the line "automatic cycle letters or figures" between memory and serializer). Of course, this signal is sent before the emission of the code combination corresponding to the key depressed. At the same time the memory trips the serializer (see the line "automatic cycle control") so that the latter may send the code "letters" or "figures". To avoid the emission of two subsequent automatic cycles, the automatic cycle is cancelled as soon as the keys "letters"(A....) or "figures"(1....) are depressed.

Answer Back device

Purpose of the Answer Back device is to transfer 20 code combinations (corresponding to the teleprinter identity) to the serialer.

This operation (see the line "code transference") may be controlled by the "Here-is" key or by the function box unit (see the line "Who are you") as soon as the code "Who are you?" is received from the distant teleprinter. At the same time the Answer Back device controls the tripping of the serializer (see the line "tripping"), so that the identity code combinations may be sent on the line one after the other.

When the machine is still sending another message, the tripping and consequent emission of the A.B. device is delayed. Purpose of this operation is to avoid mixing of the message with the A.B. device identity. The tripping control is kept in the memory up to the end of message, when it starts the serializer.

The delay is originated by a control coming from the "send/receive" bar (see the line "A.B. tripping delay").

Send/receive bar

Purpose of the send/receive bar is to distinguish the state of emission from the state of reception, and vice versa. It can take two positions corresponding to the send and receive states of the machine.

The bar is set to "send" position by the serializer (see the line "setting the bar to send position"). At the end of emission, it is always reset to "receive" position by the main shaft (see the line "setting the bar to receive position"). According to whether the bar is set to send or receive position the printing unit receives a control which makes it ready to write red or black (see the line "black/red control").

The position of the bar is also signalled to the function box unit (see the line "send or receive position").

In this way, when the bar is set in the send position, the function box unit cannot trip the Answer Back device if the "Who are you" key is depressed. As a matter of fact, depression of the "Who are you" key causes the emission of a code combination tripping the A.B. device of the distant teleprinter.

The same code combination, monitored by the local teleprinter, must not trip the local A.B. device, to avoid mixing the identity of the two teleprinters. As already explained, the send/receive bar, when in send position, also prevents the tripping of the serializer by the A.B. device (see the line "A.B. tripping delay").

Start switch

Purpose of the start switch is to make the electric motor circuit, as soon as key A.... is depressed.

Automatic phase device between the printing unit and the keyboard

Without this device, it may happen that the receive units (local and distant) to write in "figures", while the send unit sends in "letters" or vice versa.

To avoid this inconvenience which may occur in some cases that will be explained later, the machine has been provided with a special phase device.

This device, controlled by the function box unit shaft (see the line "automatic safety code setting") and upon consent of the send/receive bar (see the line "automatic safety code setting consent"), sends a control to the memory. The memory, in turn, if the receive unit is not in phase with the send unit, controls the emission of an automatic cycle "letters" or "figures".

Repetition of the last signal emitted

The last signal emitted can be repeated without interruption by depressing the "repeat" key ...]. As long as the repeat key is held depressed, it keeps running the serializer (see the line "continuous tripping"). In this way the serializer goes on sending the pulses of the last code entered on it.

LOCK OR UNLOCK OF KEYBOARD

LOCK OF KEYBOARD

- With the simultaneous depression of two keys, the keyboard is neither locked or deactivated D1
- The keyboard locks abusively D2
- The keyboard does not lock when the memory is full D3
- The keyboard is locked but it is not deactivated D4
- The memory locks the keyboard before 10 codes are stored D5
- The keyboard lock for full memory occurs too quickly (abusive automatic cycles) D6
- With keyboard unlocked the key depression is stiff D7
- The keyboard is deactivated but lacks the stiffness D8

UNLOCK OF KEYBOARD

- When the release key, is depressed the keyboard is not released. D9

D - lock or unlock of key board

THE KEYBOARD DOES NOT LOCK WHEN THE MEMORY IS FULL

	CAUSE	D3	Intervention Guide mechanical check nr
	Rest position of "codes in memory" check lever		154
	Work position of "codes in memory" check lever		155
	Work position of "codes in memory" check lever		156
	Work position of lock shaft lever by the full memory		157
	Release of the "lock clutch" by the full memory		158

THE KEYBOARD IS LOCKED BUT IT IS NOT DEACTIVATED

	CAUSE	D4	Intervention Guide mechanical check nr
	Position of entry levers with "locked keyboard" (condition)		164

THE MEMORY LOCKS THE KEYBOARD BEFORE 10 CODES ARE STORED

	CAUSE	D5	Intervention Guide mechanical check nr
	Rest position of the "codes in memory" check lever		154
	Work position of the "codes in memory" check lever		155

LOCKS

- If a key is depressed, and the automatic reply drum is working, the keyboard does not lock E1
- If a key is depressed and the reader is working the keyboard does not lock E2
- The reader can be started abusively when the machine is sending E3
- The automatic reply can be started abusively when the machine is in sending E4

IF A KEY IS DEPRESSED, AND THE AUTOMATIC REPLY DRUM IS WORKING, THE KEYBOARD DOES NOT LOCK

CAUSE	E1	Intervention Guide mechanical check nr
Clearance of "keyboard lock hook" controlled by reader and automatic reply		195
"Keyboard lock" with automatic reply in operation		197

IF A KEY IS DEPRESSED AND THE READER IS WORKING THE KEYBOARD DOES NOT LOCK

CAUSE	E2	Intervention Guide mechanical check nr
Clearance of "keyboard lock hook" controlled by "reader" and automatic reply		195
"Keyboard lock" with "reader" in operation		198

THE READER CAN BE STARTED ABUSIVELY WHEN THE MACHINE IS SENDING

CAUSE	E3	Intervention Guide mechanical check nr
Exclusion of double tothing sector pawls		170
Setting the SEND/RECEIVE bar in send position		171
Passage clearance of the "start reader blocking arm"		537

THE AUTOMATIC REPLY CAN BE STARTED ABUSIVELY WHEN THE MACHINE IS IN SENDING

CAUSE	E4	Intervention Guide mechanical check nr
Locking of the serializer clutch during tripping		115-116
Exclusion of double tothing sector pawls		170
Setting the SEND/RECEIVE bar in send position		171

RECEPTION

ERRORS IN PRINTING AND IN THE SERVICES

- PRELIMINARY CHECKSF1

- ABUSIVE PRINTING OR SERVICES :

- abusive parallelizer cyclesF2
- abusive start of transfer or copying cyclesF3

- ABSENT PRINTING OR SERVICES :

- the parallelizer does not startF4
- transfer or copying cycles are not startedF5

- WRONG PRINTING OR SERVICES :

- errors in the electromagnetF6
- errors in the parallelizerF7
- errors in the copyingF8
- errors in the transfersF9

PRELIMINARY CHECKS

	CAUSE	F1	Intervention Guide mechanical check nr
	Correct motor speed		240-241
	Correct position of the timer		283
	Position of the electromagnet unbalancing knob		264-265

ABUSIVE PARALLELIZER CYCLES

	CAUSE	F2	Intervention Guide mechanical check nr
	Rest position of the parallelizer release crank		266
	Rest position of the parallelizer stop lever		267
	Rest position of the parallelizer "holding bridge"		270
	Work position of the parallelizer "holding bridge"		273-274
	Work position of the stop reset lever		276

ABUSIVE START OF TRANSFER OR COPYING CYCLES

	CAUSE	F3	Intervention Guide mechanical check nr
	Rest position of the entry bar clutch		285
	Rest position of the entry bar clutch housing		286
	Rest position of the 1st transfer hooking lever		297
	Rest position of the 1st transfer release crank		298
	Reload of the 1st transfer release bridge		301
	Rest position of the 2nd transfer hooking lever		304
	Rest position of the 2nd transfer release bridge		305
	Reload of the 2nd transfer release bridge		308

ERRORS IN THE ELECTROMAGNET

	CAUSE	F6	Intervention Guide mechanical check nr
	Electromagnet air gaps		260
	Positioning of the shunts		261
	Positioning of the electromagnet armature stop plate		262
	Antibounce levers		263
	Electromagnet balancing (for double current operation)		264
	Electromagnet unbalancing (for single current operation)		265

ERRORS IN THE PARALLELIZER

	CAUSE	F7	Intervention Guide mechanical check nr
	Release crank positioning with parallelizer in operation		272
	Positioning of the entry wedge		277
	Damper plate		278
	Positioning of the antijam mechanism		279
	Locking of the anticlash mechanism		280
	Positioning of the sensed levers relative to bits 1 and 2		281
	Positioning of the sensed levers relative to bits 3, 4 and 5		282
	Rest position of the copying frame		288

ERRORS IN THE COPYING

	CAUSE	F8	Intervention Guide mechanical check nr
	Positioning of the clearing plate		289
	Friction of the entry rockers		290
	Axial position of the entry rockers		291
	Positioning of the entry rockers guide rack		292
	Copying of the sensed levers		293
	Positioning of the 1st transfer bails		294
	Positioning of the 1st entry levers after the copying		295-296

ERRORS IN THE TRANSFERS

	CAUSE	F9	Intervention Guide mechanical check nr
	Quantity of travel of 1st entry slotted link		302
	Positioning of the 2nd entry bails		303
	Quantity of travel of 2nd entry slotted link		309
	Transfer bars positioning		310

THE PRINT HEAD DOES NOT PRINT

	CAUSE	G5	Intervention Guide mechanical check nr
	Rest position of routine services performance levers		322
	Rest position of the routine services clearing hooks		323
	Position of the stroke bar		324
	Axial positioning of the stroke clutch idler		360

THE PRINT HEAD DOES NOT FEED AFTER THE RECEPTION OF A "RETURN OR NEW LINE"

	CAUSE	G6	Intervention Guide mechanical check nr
	Release of printing head return control latch detent		396

WRONG PRINTING

	CAUSE	G7	Intervention Guide mechanical check nr
	Axial positioning of "wheel" and "character" selection clutch idlers of the print head		311
	Positioning of the 5 code bars		335-336
	Positioning of the "FIGURES/LETTERS" bar		337-338
	Positioning of the carry-characters wheel during the printing		371-372
	Setting FIGURES/LETTERS bar in "FIGURES" position		429
	Setting FIGURES/LETTERS bar in "LETTERS" position		430

THE PRINTING IS NOT ALIGNED

	CAUSE	G8	Intervention Guide mechanical check nr
	Rest position of wheel selection positioner		365
	Print wheel positioning during the stroke		371
	Print wheel positioning during the stroke		372
	Print wheel positioning during the stroke		373
	Free print head travel		386
	Platen angular positioning		413

THE PRINTING IS NOT WELL IMPRESSED

	CAUSE	G9	Intervention Guide mechanical check nr
	Writing sliders freedom		363
	Writing sliders positioning frame		367
	Rest position of the writing sliders		368
	Impression control		369

TROUBLE WITH THE RIBBON FEED

	CAUSE	G10	Intervention Guide mechanical check nr
	Play of the ribbon feed control bridge		374
	Positioning of the crank controlling the ribbon feed and ribbon reverse shaft		375-376
	Axial position of the feed pawl control crank		377
	Quantity of control on the advance		378

TROUBLE WITH RIBBON REVERSAL

CAUSE	G11	Intervention Guide mechanical check nr
Play of ribbon feed control bridge		374
Axial position of inversion pawl control crank		379
Positioning of ribbon feed and ribbon reverse control crank		380
Ribbon reversal		381
Ribbon reverse allowed		382

TROUBLE WITH THE RIBBON CARTRIDGE

CAUSE	G12	Intervention Guide mechanical check nr
Angular position of ribbon cartridge holding key		383
Vertical position of ribbon cartridge holding key		384
Play of ribbon cartridge		385

BLACK INSTEAD OF RED PRINT

CAUSE	G13	Intervention Guide mechanical check nr
Exclusion of double tothing sector pawls		170
Setting SEND/RECEIVE bar in send position		171
Feed of SEND/RECEIVE bar positioning sector		174
Positioning of ribbon plate with the SEND/RECEIVE bar in send position		177
Positioning of ribbon plate with the SEND/RECEIVE bar in send position		178
Positioning of the "SEND/RECEIVE bar		333-334

RED INSTEAD OF BLACK PRINT

	CAUSE	G14	Intervention Guide mechanical check nr
	Feed of SEND/RECEIVE bar positioning sector		172
	Feed of SEND/RECEIVE bar positioning sector		173
	Setting SEND/RECEIVE bar in receive position		175
	Positioning of ribbon plate, with SEND/RECEIVE bar in receive position		176
	Positioning of the SEND/RECEIVE bar		333-334

TROUBLE WITH THE TRIPLE SHIFT

	CAUSE	G15	Intervention Guide mechanical check nr
	Positioning of triple shift bridge control extension		565
	Positioning of triple shift bar control bridge extension		566
	Positioning of triple shift bar control bridge extension		567
	Positioning of triple shift bar control bridge extension		568
	Positioning of the FIGURES/LETTERS bar crank controlled by the triple shift bar		569
	Positioning of the FIGURES/LETTERS bar crank controlled by the triple shift bar		570
	Positioning of transmission bridge for triple shift bar inversion		571
	Positioning of transmission bridge for triple shift bar inversion		572

CARRIAGE RETURN AND END WRITING OF LINE

- CARRIAGE RETURN :

- the carriage return is performed abusively H1
- the carriage return is not performed H2
- the print head starts the carriage return,
travel but stops before reaching the beginning
of line position H3
- the print head is not exactly placed at beginning
of line position H4
- after the reception of a RETURN or NEW LINE,
the print head does not feed H5
- the print head stopping at the beginning of line
is not dampened H6

- END OF LINE :

- with machine in RECEPTION the automatic
return does not occur on the planned position H7
- with machine in RECEPTION, the print head
does not perform "automatic carriage return"
when at end of line H8
- with machine in SEND position the print head
performs an abusive carriage return when at
end of line H9
- the end of line feed and stroke clearing does
not occur on the planned position H10

H - carriage retrn and end
writing of line

THE CARRIAGE RETURN IS PERFORMED ABUSIVELY

	CAUSE	H1	Intervention Guide mechanical check nr
	Positioning of the 5 code bars		335-336
	Positioning of actuators recovery frame		341

THE CARRIAGE RETURN IS NOT PERFORMED

	CAUSE	H2	Intervention Guide mechanical check nr
	Work position of the feelers control frame		331
	Quantity of travel of the feelers control frame		332
	Positioning of the 5 code bars		335-336
	Work position of intermediate levers recovery frame		340
	Axial rest position of print head feed and return clutch cups		390
	Maximum opening of the driving housing of the printing head return clutch		391
	Work position of the housing of the printing head return clutch		393

THE PRINT HEAD STARTS THE CARRIAGE RETURN, TRAVEL BUT STOPS BEFORE REACHING THE BEGINNING OF LINE POSITION

	CAUSE	H3	Intervention Guide mechanical check nr
	Position of print head return control rod detent		392
	Work position of head return clutch cups		393

THE PRINT HEAD IS NOT EXACTLY PLACED AT BEGINNING OF LINE POSITION

	CAUSE	H4	Intervention Guide mechanical check nr
	Print head "beginning of line" position		394
	Angular position of the driving cup		395

AFTER THE RECEPTION OF A RETURN OR NEW LINE, THE PRINT HEAD DOES NOT FEED

	CAUSE	H5	Intervention Guide mechanical check nr
	Release of print head return control rod detent		396

WITH MACHINE IN SEND POSITION THE PRINT HEAD PERFORMS AN ABUSIVE CARRIAGE RETURN WHEN AT END OF LINE

	CAUSE	H9	Intervention Guide mechanical check nr
	Exclusion of double toothing sector pawls		170
	Setting SEND/RECEIVE bar in send position		171
	Print head feed and stroke allowed at end of line		180
	SEND/RECEIVE bar positioning		333-334
	Angular positioning of "stroke and feed" at end of line clearing bridge		345
	Work position of "stroke and feed" at end of line clearing lever controlling rod		347
	Hold the clearing of "stroke and feed" at end of line		349
	Clearing of "stroke and feed" operation at end of line		350
	Exclusion of the automatic return and line space with machine in send condition		406

THE END OF LINE FEED AND STROKE CLEARING DOES NOT OCCUR ON THE PLANNED POSITION

	CAUSE	H10	Intervention Guide mechanical check nr
	Angular positioning of "stroke and feed" clearing bridge at end of line		345

TROUBLE TO THE LINE SPACE AND TO THE "RILOC" KEY

- LINE SPACE :

- the line space is performed abusively L1
- the line space is not performed L2
- the line space pitch is not correct L3
- problems of line space selection. L4

- "RILOC" KEY L5

L - trouble to the line space
and to the "RILOC" key

THE LINE SPACE IS PERFORMED ABUSIVELY

	CAUSE	L1	Intervention Guide mechanical check nr
	Positioning of the 5 code bars		335-336
	Positioning of the actuators recovery frame		341
	Axial position of the vertical controller duct		407
	Positioning of the vertical controller expulsion cam		408-409

THE LINE SPACE IS NOT PERFORMED

	CAUSE	L2	Intervention Guide mechanical check nr
	Work position of the feelers control frame		331
	Quantity of travel of the feelers control frame		332
	Positioning of the 5 code bars		335-336
	Work position of intermediate levers recovery frame		340
	Work axial position of the vertical control clutch idler		410

THE LINE SPACE PITCH IS NOT CORRECT

	CAUSE	L3	Intervention Guide mechanical check nr
	Coupling play of vertical control		412
	Platen angular position		413

PROBLEMS RELATIVE TO THE PLATEN RELEASE LEVER

	CAUSE	M1	Intervention Guide mechanical check nr
	Axial play of the platen release lever		414
	Release of the platen		415
	Release of platen-release lever reloading arm		416
	Axial positioning of "platen release lever" reloading cam		417
	Axial positioning of "platen-release lever" reloading cam		418
	Quantity of control of "platen-release lever" reload		419

PROBLEMS RELATIVE TO THE PLATEN LOCKING LEVERS

	CAUSE	M2	Intervention Guide mechanical check nr
	Platen locking levers		420

PROBLEMS RELATIVE TO THE PAPER

	CAUSE	M3	Intervention Guide mechanical check nr
	Tension of the paper-guide blade springs		424
	Angular positioning of the paper-guide blades		425
	Axial positioning of the paper-guide blades		426
	Springs for paper holding bail		427
	Positioning of the left paper-guide blade stop pin		428

PROBLEMS RELATIVE TO THE PAPER RELEASE LEVER

	CAUSE	M4	Intervention Guide mechanical check nr
	Rest position of the paper release control crank		421
	Work position of the paper release control crank		422
	Positioning of the crank for exclusion and reload of the "platen release lever"		423

THE TIME SWITCH DOES NOT STOP THE MOTOR

	CAUSE	M5	Intervention Guide mechanical check nr
	Clearance between ratchet and pawl of the hour counter		244
	The "open" circuit position of the time delay microswitch		248
	Positioning of time microswitch release bridge		249
	Reload of presetting lever		253
	Reload of exclusion lever		254
	Rest position of the clearing bridge		255

THE TIME SWITCH DOES NOT STOP THE MOTOR IN THE SPECIFIED TIME

	CAUSE	M6	Intervention Guide mechanical check nr
	Hooking of pawl on hour counter feed ratchet		245
	Hour counter pawl travel		246
	Positioning of time microswitch release bridge		251
	Work position of the clearing bridge		256

PROBLEMS RELATIVE TO THE HOUR COUNTER

	CAUSE	M7	Intervention Guide mechanical check nr
	Hour counter group		247

PROBLEMS RELATIVE TO THE BELL

	CAUSE	M8	Intervention Guide mechanical check nr
	Work position of the feelers control frame		331
	Quantity of travel of feelers control frame		332
	Positioning of the 5 code bars		335-336
	Positioning of the FIGURES/LETTERS bar		337-338
	Work position of intermediate levers recovery frame		340
	Positioning of the actuators recovery frame		341
	Setting the LETTERS/FIGURES bar in figures position		429
	Setting the LETTERS/FIGURES bar in letters position		430
	Rest position of the bell clapper, controlled by reception		431
	Rest position of the bell, clapper for "next end of line" signalling		432
	Control of bell operation for "next end of line" signalling		433

PROBLEMS RELATIVE TO SERVICES CONTROLLED BY WIDE OR NARROW SEQUENCES

	CAUSE	M9	Intervention Guide mechanical check nr
	Positioning of the 5 code bars		335-336
	Rest position of the "sequence kinematic chain"		437
	Positioning of sequences intermediate lever		438
	Positioning of the memorization hook for narrow sequences		439-440
	Work position of sequences release lever		441
	Positioning of the memorization hook for wide sequences		442
	Release of the memorization hook for wide sequences		443

PROBLEMS RELATIVE TO PRINT AND FEED EXCLUSION MECHANISM ON MACHINES WITHOUT A SUPPRESSION BAR

	CAUSE	M10	Intervention Guide mechanical check nr
	Rest position of print and feed exclusion bridge		445
	Work position of print and feed exclusion mechanism		446-447
	Reload of print and feed exclusion mechanism		448

PROBLEMS RELATIVE TO PRINT AND FEED EXCLUSION
MECHANISM ON MACHINES WITH A SUPPRESSION BAR

PROBLEMS OF THE SUPPRESSION BAR

	CAUSE	M11	Intervention Guide mechanical check nr
	Suppression bar in "suppression" position		550-551
	Suppression bars rest position		552-553-554
	Suppression bars in "suppression" position		555-556
	Suppression bar rest position		557-558-559

TROUBLES ON THE READER

- TAPE RELEASE KEY N1

- START READER :

- the reader does not start N2
- abusive reader cycles N3
- the reader starts with raised tape guide plate N4

- STOP READER :

- the reader does not stop:
 - reader stop key for lack of tape
 - raised tight-tape lever . . N5
- the reader does not stop N6
- the reader stops abusively N7

- TAPE FEEDING :

- the tape does not feed N8
- the tape wears out or tears N9

TROUBLES IN CODES TRANSMISSION N10

READER

TAPE RELEASE KEY

	CAUSE	N1	Intervention Guide mechanical check nr
	Hooking of "tape release" key		500
	Release of "tape guide" plate		501

THE READER DOES NOT START

	CAUSE	N2	Intervention Guide mechanical check nr
	Rest position of reader start key control lever		502 502
	Travel of SEND/RECEIVE bar positioning sector		172-173
	Setting SEND/RECEIVE bar in receive position		175
	Rest position of "reader clutch lever" release pawl		517-518
	Release of the "reader clutch lever"		523
	Tripping of the "reader clutch tooth"		525
	"Lock" position of reader start locking arm		538
	"Serializer clutch" release controlled by the reader		542

ABUSIVE READER START CYCLES

	CAUSE	N3	Intervention Guide mechanical check nr
	Rest position of the "reader clutch lever"		519-520
	Angular work position of "reader clutch lever" release pawl		524
	Clearance of reader start locking arm		537
	Rest position of the serializer clutch release rod controlled by the reader		539

THE READER STARTS WITH RAISED TAPE GUIDE PLATE

	CAUSE	N4	Intervention Guide mechanical check nr
	Work position of the lever controlling reader start key		504

THE READER DOES NOT STOP:

- READER STOP KEY FOR LACK OF TAPE
- RAISED TIGHT-TAPE LEVER

	CAUSE	N5	Intervention Guide mechanical check nr
	Work position of reader stop bridge controlled by tape release key		505
	Work position of end of tape signalling mechanism with tape inserted		507-508
	Work position of reader stop universal bridge controlled by reader stop key		511

THE READER DOES NOT STOP

	CAUSE	N6	Intervention Guide mechanical check nr
	Work position of reader stop hook		512-513-514
	Reload of "reader clutch lever"		516
	Clearance of reader start locking arm		537
	Rest position of serializer clutch release rod controlled by the reader		539

THE TAPE WEARS OUT OR TEARS

	CAUSE	N9	Intervention Guide mechanical check nr
	Tape feed sprocket engagement		527
	Feed sprockets disengagement from the tape		528
	Centering of the feed pins during the insertion in the tape feed holes		530
	Rest positioning of tape friction pins		531
	Work position of tape operation pins		532

TROUBLES IN CODES TRANSMISSION

	CAUSE	N10	Intervention Guide mechanical check nr
	Positioning of the copying hooks support		119
	Quantity of travel of the serializer blocks sliders controlled by the reader		533-534
	Positioning of the serializer blocks sliders controlled by the reader		535
	Clearance of reader start locking arm		537
	Rest position of serializer clutch release rod controlled by the reader		539
	Exclusion of automatic reply copying hook controlled by the reader		540
	Exclusion of normal copying hook controlled by the reader		541

TROUBLES ON THE TAPE PUNCH

- QUALITY OF THE PUNCHING :

- the codes are punched slantways with respect to the axis of the tape P1
- the tape is torn P2
- the holes are not punched regularly P3

- TAPE REMOVAL AND INSERTION P4

- TAPE BACK SPACE :

- the tape does not move when the return key is depressed P5
- the tape back space travel is incorrect when the RETURN key is depressed P6
- abusive tape back space cycles P7

- TROUBLES ON THE FEEDING OR PUNCHING :

- the "WHO ARE YOU" code is punched abusively . . . P8
- abusive punching of LETTERS or FIGURES codes P9
- although the punching is wrong, the printing is correct P10
- the tape feed is regular but the tape is not punched P11
- the tape feed pitch is not correct P12

- TAPE REMOVAL KEY :

- tape does not move when the tape removal key is depressed P13

- TAPE PUNCH "INCLUSION-EXCLUSION" KEY :

- with tape punch included the tape is neither fed nor punched P14
- the tape is fed and abusively punched with tape punch excluded P15
- the tape punch "inclusion-exclusion" signalizer does not signal the tape punch state correctly P16

THE CODES ARE PUNCHED SLANTWAYS WITH RESPECT TO THE AXIS OF THE TAPE

	CAUSE	P1	Intervention Guide mechanical check nr
	Positioning of the tape guide frame		453

THE TAPE IS TORN

	CAUSE	P2	Intervention Guide mechanical check nr
	Rest position of the punch control frame		471
	Positioning of the punches guide comb		473
	Rest position of tape punch clutches		478
	Work position of tape punch clutches		479

THE HOLES ARE NOT PUNCHED REGULARLY

	CAUSE	P3	Intervention Guide mechanical check nr
	Rest position of the punch control frame		472
	Positioning of the punches guide comb		473

TESTS

TESTS

DIAGNOSTIC TESTS:

This check, divided by functions, allows to single out a series of malfunctions and points out for each of them, the relative "Diagnostic Guide" section.

EMISSION

- codes emission	page 1.01 + 1.03
- keys: letters/figures, new line, repeat, space bar "	1.04
- automatic reply	" 1.05
- keyboard lock and release	" 1.06
- reciprocal lockings	" 1.07

RECEPTION

- errors in printing and services	" 1.08
- errors in printing only	" 1.09 + 1.10
- carriage return and end of line	" 1.11
- line space and RILOC	" 1.12
- platen release lever, platen locking levers, paper, paper release lever	" 1.13
- time switch, counter and bell	" 1.14
- special services	" 1.15

READER	" 1.16
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TAPE PUNCH	" 1.17
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<u>GENERAL OPERATIONAL CHECK</u>	" 1.18 + 1.26
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TESTS RELATIVE TO "CODE EMISSIONS"

Fully depress, one at the time all writing and service keys type a line of R and Y, and check if:

- a) THE MACHINE TRANSMITS ABUSIVELY
- b) THE MACHINE DOES NOT TRANSMIT
- c) THE TRANSMISSION IS WRONG

a) If the machine TRANSMITS ABUSIVELY, check if

the clutches close abusively:

- bail (A2)
- memory input (A3)
- memory output (A4)
- serializer (A5)

b) If the machine DOES NOT TRANSMIT remove the power supply and check if.....

the clutches do not close:

- bail (A6)
- memory input (A7)
- memory output (A8)
- serializer (A9)

If all these clutches close properly check A11 causes.

With machine on alternatively operate the keys relative to codes, letters and figures and if the machine (besides sending codes relative to the depressed keys), sends also the CFR or LTR service codes, check.....

A10 causes.

* the item in parenthesis indicates the "DIAGNOSTIC GUIDE" section relative to the malfunction.

c) If the TRANSMISSION IS WRONG:

- With machine on perform a writing test and check if.....

the transmitted codes are always the same (A15)

- With machine on depress alternatively the letters and figures keys and check if.....

the printed codes correspond to those to be printed (A18)

- With machine on, depress a key relative to a letter code

- SEND/RECEIVE bar in receive position

- Perform a parallelizer cycle

- LETTERS/FIGURES bar in figures position

- Depress a second key and check if...

the last printed code corresponds to the one to be printed (A19)

- With machine on, depress a key relative to a figure code

- Depress the "HERE IS" key

- After sending the codes that form the Automatic Reply, depress a figure key and check if.....

the last printed code corresponds to the one to be printed (A19)

- With machine on perform a writing test, accumulate codes in the memory, unload the memory and check if.....

only the codes accumulated in the memory are improperly transmitted (A16)

- With machine on depress a key and check if.....

the code entered on the keyboard doesn't correspond to that shown on:

- input drums (A12)

- memory output drums (A13)

- Perform a writing test (with machine off) alternating letters and figures keys and check if.....

the codes present on the serializer blocks do not correspond to the entered codes (A14).

If the code on the serializer blocks is always correct, check the A17 causes.

TEST RELATIVE TO THE KEYS:

- FIGURES/LETTERS
- NEW LINE
- REPEAT
- SPACE BAR

- Make sure, with a writing test, that the other keys also have transmission errors (in this refer to test relative to CODES EMISSION page 1.01), or:

FOR FIGURE OR LETTER KEY refer to B1

FOR NEW LINE KEY refer to B2

FOR REPEAT KEY refer to B3

FOR SPACE BAR refer to B4

TEST RELATIVE TO THE "AUTOMATIC REPLY" (A.R.)

- With machine on perform a writing test, then start a few times A.R. and check if
 - the A.R. drum doesn't move forward (C8)
 - the A.R. doesn't start with the depression of the key (C1)
 - the A.R. starts abusively (C4)
 - the A.R. stops before sending all the codes (C3)
 - the A.R. drum moves abusively (C7)
 - the A.R. doesn't stop (C9)
 - the A.R. always transmits the same code (C6)
 - the transmitted codes are wrong (C5)
-
- With machine off enter the "WHO ARE YOU" code on the writing bars of the receiver
 - Insert the operations clutch idler ; perform the relative cycle and check if.....
 - the A.R. doesn't start (C2)

TEST RELATIVE TO "KEYBOARD LOCK AND RELEASE"

- "KEYBOARD LOCK" TEST

- Depress a fewtimes the Y key and check if

the keyboard locks for full memory, due to the abusive emission of automatic cycles (D6)

- Simultaneously depress two keys and check that if

- the keyboard doesn't stiffen and doesn't activate (D1)

- the keyboard doesn't activate but stiffens (D4)

- the keyboard activates but lacks the stiffening (D8)

- Perform a writing test and check if..

- the keyboard locks abusively (D2)

- Quickly and alternatively depress figures and letters keys and check if.....

- the keyboard doesn't lock (D3)

- the keys depression is stiff (D7)

- Set the machine in "lock" position for full memory and check if.....

- the memory locks the keyboard before accumulating 10 codes (D5)

- "KEYBOARD RELEASE" TEST

- Set the machine in "lock" position, depress the release key and check if.....

- the keyboard is not released (D9)

"RECIPROCAL LOCKING" TEST

- Start the A.R. and immediately after depress a writing key, then check if.....

- Start the reader (with tape inserted), depress a writing key and check if...

- Start the A.R. and immediately after start the reader (with tape inserted) and check if.....

- Set the EM/REC bar in EMISSION position, depress the "HERE IS" key and check if

- the keyboard doesn't lock (E1)

- the keyboard doesn't lock (E2)

- the reader starts abusively

- the A.R. starts abusively

TEST RELATIVE TO "ERRORS IN PRINTING AND IN THE SERVICES"

By performing a writing test with R Y, or asking for a text, or examining the documents that have the error, make sure that the machine:

- PERFORMS ABUSIVE PRINTS OR SERVICES
- PERFORMS MISSING PRINTS OR SERVICES
- PERFORMS WRONG PRINTS OR SERVICES

a) In case of ABUSIVE PRINTS OR SERVICES check if.....

- the following abusive cycles start:
 - parallelizer (F2)
 - transfers or copying (F3)

b) In case of MISSING PRINTS OR SERVICES check if.....

- the following cycles do not start:
 - parallelizer (F4)
 - transfer or copying (F5)

c) In case of WRONG PRINTS OR SERVICES check in their order, cards relative to

- errors in transfers (F9)
- errors in copying (F8)
- errors in parallelizer (F7)
- errors in electromagnet (F6)

TEST RELATIVE TO "ERRORS IN PRINTING ONLY"

- By performing a writing test with machine on, or asking for a text, or examining documents that have the error; check if.....

- the printing head moves abusively (G1)
- the printing head doesn't move and simultaneously doesn't print (G3)
- the movement only is missing (G4, H5)
- the printing only is missing (G5)
- the printing is disaligned (G8)
- the characters are lightly impressed (G9)
- the printing is wrong (G7) and, in case of a six wheels printing head (G15)

- With machine off enter on the writing bars the service codes, that do not foresee the print, perform the relative cycle and check if.....

- the printing head prints abusively (G2)

- With machine on type the following text:
Q - J , / - % , 7 - C ,) - 7 and check if.....

- the characters are printed in black (G13)

- Ask for the previous text and check if.....

- the characters are printed in red (G14)

- Operating the writing keys check if..

- Remove and insert the ribbon cartridge and check if

- the tape doesn't move properly (G10)

- the tape does not reverse properly (G11)

- the cartridge can be removed and properly inserted without excessive plays (G12)

TESTS RELATIVE TO "CARRIAGE RETURN" AND "END OF LINE"

- Operating the "return" or "new line" keys, or asking for the relative codes, check if.....

- Operate the writing keys or ask for a text and check if.....

- Ask for a text which takes the printing head to the end of the line and check if.....

- Type a text which takes the printing head to the end of the line and check that if

- the printing head doesn't return always to the beginning of the line (H2)

- the printing head is not properly positioned at the beginning of the line (H3 or H4)

- the stopping of the printing head at the beginning of the line is not dampened (H6)

- after the reception of the "return" or "new line" codes the printing head doesn't move forward (H5)

- the printing head returns to the beginning of the line abusively (H1)

- with the machine in Reception the automatic return doesn't occur on the proper pitch (normally after the 70th stroke) (H7)

- the automatic return doesn't occur (H8)

- with the machine in Emission, when the printing head is at the end of the line, the stroke and feed are not cleared (H10)

- the automatic carriage return is performed abusively (H9).

TESTS RELATIVE "TO THE LINE SPACE AND RILOC KEY"

- Operate a fewtimes alternatively the "X" and "line space" keys or ask for the relative codes and check if.....

- the line space is not performed (L2)

- the line space pitch is not correct (L3)

- the line space is performed abusively (L1)

- Operate the line space selector dial. Operate a fewtimes alternatively the "X" and "line space" keys (or ask for the relative codes) and check if...

- the selection doesn't occur properly (L4)

- Operate the "RILOC" key and check if.....

- the line space and return are not properly performed (L5)

- TESTS RELATIVE TO :
- PLATEN RELEASE LEVER
 - PLATEN LOCKING LEVERS
 - PAPER MALFUNCTIONS
 - PAPER RELEASE LEVER

For malfunctions on the platen release lever, check	M1
For malfunctions on the platen locking levers, check	M2
For malfunctions on the paper, check ...	M3
For malfunctions on the paper release lever, check	M4

TEST OF : TIME SWITCH
COUNTER
BELL

"TIME SWITCH" TEST

- Start the machine and check if

- the time switch doesn't stop the motor

- the motor stops before 42 seconds and after 68 seconds (M6)

- For any counter malfunctions, check

M7

- For any bell malfunction check

M8

TEST RELATIVE TO SPECIAL SERVICES

- Enter, on the writing bars, one at the time, the codes necessary for the formation of a narrow or wide sequence, relative to the print and feed exclusion, or to the service to be cleared; perform the relative cycles, and for any problem relative to these chains refer to the following causes:

- for problems relative to narrow or wide sequences, refer to

M9

- - for problems relative to the print and feed exclusion machines without suppression bar, refer to

M10

- for problems relative to the print and feed exclusion on machines with suppression bar, or problems relative to the suppression of a service by the suppression bar, refer to

M11

"READER" TEST

- | | |
|--|--|
| <ul style="list-style-type: none">- Operate the tape release key and for any problem refer to- Operate the start reader key and check if.....- Leave the tape guide board raised, depress the reader start key and check if- Insert a punched tape, start the reader and check if- With the reader in motion and tape inserted, operate the reader stop key and check if- Start the reader, hold the tape, and check if- Remove the tape, start the reader and check if- With the reader in motion and tape inserted check if | <p>(N1)</p> <ul style="list-style-type: none">- the reader doesn't start (N2)- the reader performs abusive cycles (N3)- the reader starts abusively (N4)- the reader stops abusively (N7)- the reader doesn't stop at the end of tape reading (N6)- the reader doesn't stop (N5)- the reader doesn't stop (N5)- the reader doesn't stop (N5)- the tape doesn't feed (N8)- the tape tears or is spoiled (N9)- there is no output (N10)- there are emission errors (N 10) |
|--|--|

TAPE PUNCH TEST

- Insert a tape and for any problem relative to the manual insertion or removal of the tape refer to

- With tape punch inserted perform a writing test and check if

- Operate the tape return key and check if

- Enter the "HERE IS" code on the writing bars and check with EM/RIC bar first in EM, then in RIC, if.....

- Send or ask for a text which alternates 10 figure codes with 10 letter codes and check if

- Operate the tape extraction key and check if

- Operate the tape punch inclusion key and check if

- Operate the tape punch exclusion key and check if

(P4)

- the codes are not punched perpendicular to the axis of the tape (P1)

- the tape is torn (P2)

- the hole is not regular (P3)

- the tape doesn't move (P5)

- the tape moves back of an improper quantity (P7)

- this code is punched abusively (P8)

- the letter or figure codes are punched abusively (P9)

- the punching is wrong (P10)

- the punching doesn't occur (P11)

- the tape doesn't move of the proper pitch (P12)

- the tape doesn't move (P13)

- the tape doesn't move and is not punched (P14)

- the tape moves and is punched abusively (P15)

- the inclusion-exclusion signalizer operates incorrectly (P16)

GENERAL OPERATIONAL CHECK

The operational check of the Te 315 must occur through the following phases:

Te 315 - Check the keyboard cover and keys in perfect condition.

Te 315 - Check that the reader or tape punch masks found on the cover, are properly secured.

Te 315 - Check the platen cover perfect condition and turn the machine on.

Te 315 - Check the switches: at starting time.

Te 315 - Fully depress all keys, one at a time, and keeping them depressed, check that the keyboard makes a single cycle.

Te 315 - Slowly depress all keys, one at a time, and check their freedom (especially during the return travel).

Te 315 - Depress the local "Rit-Int" key, make sure of its freedom, and its performance.

Also check that the sheet coming out of the glass window isn't jammed.

Te 315 - Perform the return to the 1st, 2nd, 3rd, 4th, 5th, 35th, 36th, 37th, 38th, 39th, 40th, 67th, 68th, stroke and check that the printing head does not rebound to beginning of the line.

Te 315 - Starting with the printing head in the "beginning of line" position, type a series of "M" and make sure that the spaces between the letters are equal.

Te 315 - Check the operation of the line space change.

Te 315 - Enter repeatedly "figures" and "letters" keys, and check their proper performance following the movement of the printing head

- Depress repeatedly the shift key and check the proper performance of the keyboard after the shift operation.

Te 315 - Alternate a "figure" code (ex. 4) with a "letter" code (ex. R) until the bunching is loaded. Make sure that the keyboard locks, and that during the unloading of the accumulation, by depressing several times the release key the keyboard doesn't lock until the end of the unloading operation check the test 3 or 4 times.

Te 315 - Type four complete lines entering codes R - Y , and two lines inserting a space between R and Y .

- Type four complete lines entering codes U - , and two lines inserting a space between U and , check the accuracy.

Te 315 - Type all characters on the machine (figures and letters).

- Type all characters, inserting (once every key) the shift movement.

Te 315 - Test the correct operation of the "repeat" key, and its performance for all characters.

Te 315 - Check the keyboard lock pressing simultaneously two keys at a time (for example the two keys at the extreme left side and two at the extreme right side).

The test must be performed for each row of keys.

Te 315 - Print the figures starting from 0 for eight times and check if after 69 strokes (if not otherwise specified on the machine card) the print and feed exclusion occurs: with machine in reception, check if, after 70 strokes (if not otherwise specified on the machine card) the automatic linespace-return occurs.

To perform the last check, manually move the ribbon selection bar, or make use of an emitting unit.

Te 315 - Enter the numbers from 1 to 0 and check that at the 59th stroke (if not otherwise specified on the machine card) the bell rings.

Te 315 - Type the bell and H codes, for about 30 times and listen to the bell, which must ring clearly, once every two cycles.

Te 315 - Slowly depress the "HERE IS" key releasing it as soon as the emission cycle starts, and make sure that the A.R. does not stop, but continues its until the complete emission of 20 codes inserted on the drum.

Te 315 - Check the winding reversal of the inked ribbon.

Note : to speed up the test, remove the spool cartridge and perform a manual winding.

During the reversal phase, an irregular inking is allowed for a certain number of characters and that is:

50 Bd - 5 Bit = 4 + 6 Characters
75 Bd - 5 Bit =

Te 315 - Type the XX - Interline codes, about 30 times and check the correct paper drive (during the test move the line space change)

Te 315 - Type the following text:

Q - J, / - %, 7 - C,) - 7

and check if, in emission, the characters are printed entirely in red, and, in reception, entirely in black.

Note: for this last check manually position the ribbon selection bar, or make use of an emitting unit.

Te 315 - Perform a test by typing a free-text and make sure that it is printed without errors; check simultaneously the precision and uniformity of the impression.

Te 315 - Check the motor speed with a diaspon of 125 Hz.

Te 315 - If the suitable instruments are available (distortion-meter and sample generator) perform the telegraphic tests and detect the distortion values and the electric margins, (see note 5.29.4); make sure that they correspond to:

Minimum values of the electric margins at synchronism
(25 mA - 60V)

Bd		
50 / 5 Bits		+ 40%
		-
75 / 5 Bits		+ 39%
		-

Maximum values of the distortion at repeat synchronism

Bd		
50 / 5 Bits		4%
75 / 5 Bits		5%

Maximum values of the distortion at stroke synchronism

Bd		
50 / 5 Bits		5%
75 / 5 Bits		6%

Note - Te 315 - To perform the margin check, send the sample text repeatedly for a total of about 2000 codes; on such a number of codes, 1 error is permitted. (E = 0,05%).

Te 315 - To perform the repeat distortion check, send a sequence of about 150 R codes depressing the repeat key. Repeat the check sending a sequence of about 150 Y codes.

Te 315 - To perform the stroke distortion check enter 15 + 20 R codes with an entry frequency of about 2 characters per second.

Te 315 - If the proper instruments are not available (generator and distortion-meter), check the mechanical margin in local; the minimum values to be checked are the following :

50 / 5 Bits	+ 35%
75 / 5 Bits	+ 30%

To perform this test operate alternatively the R and Y keys.

Pe 305 operational check

It must occur through the following phases:

Check that the exchange "Tape Punch inserted or removed" (green and red) occurs, by operating on the two proper console keys.

Punch a tape section with the "Letter" code
check the pitch with the proper gage; (tolerance of ± 0.075 mm. on single pitch = $1/2$ of a tape feeding hole on 50 pitches), the lateral centering and squareness of the code punching in relation to the zone feed punching, the coincidence of the punching after withdrawal.

Depress the proper black key and check the possibility of freely pulling manually the tape towards the outside.

Check the perfect freedom of tape unwinding.

Se 305 operational check

Must occur through the following phases:

Insert a testing tape and check a few times the feed step by step.

Start and stop the reader repeatedly, with the stop key.

Start the reader and hold the tape, to allow the tension tape device to operate.

Start the reader again depress the tape release key and observe the reader stop.

Insert the tape, depress the start key and during reading enter some codes into the keyboard, observing that the reader output is not altered.

Observe, on the testing tape, that the tape feeding hole is not damaged.

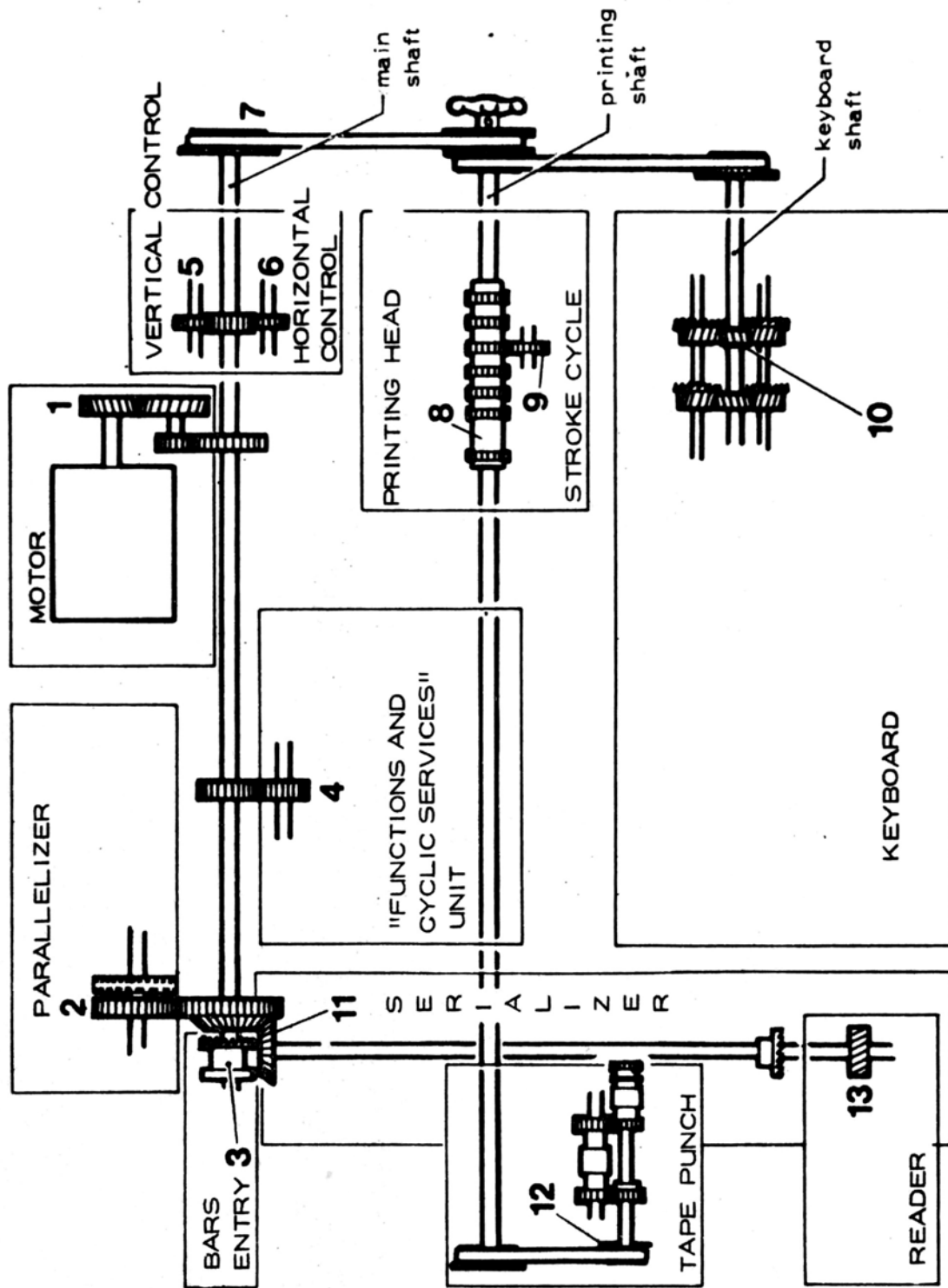
Check that the reader, when preset, stops at the reading of the code which controls the self-locking operation of the reader (such a code is specified on the machine identification card).

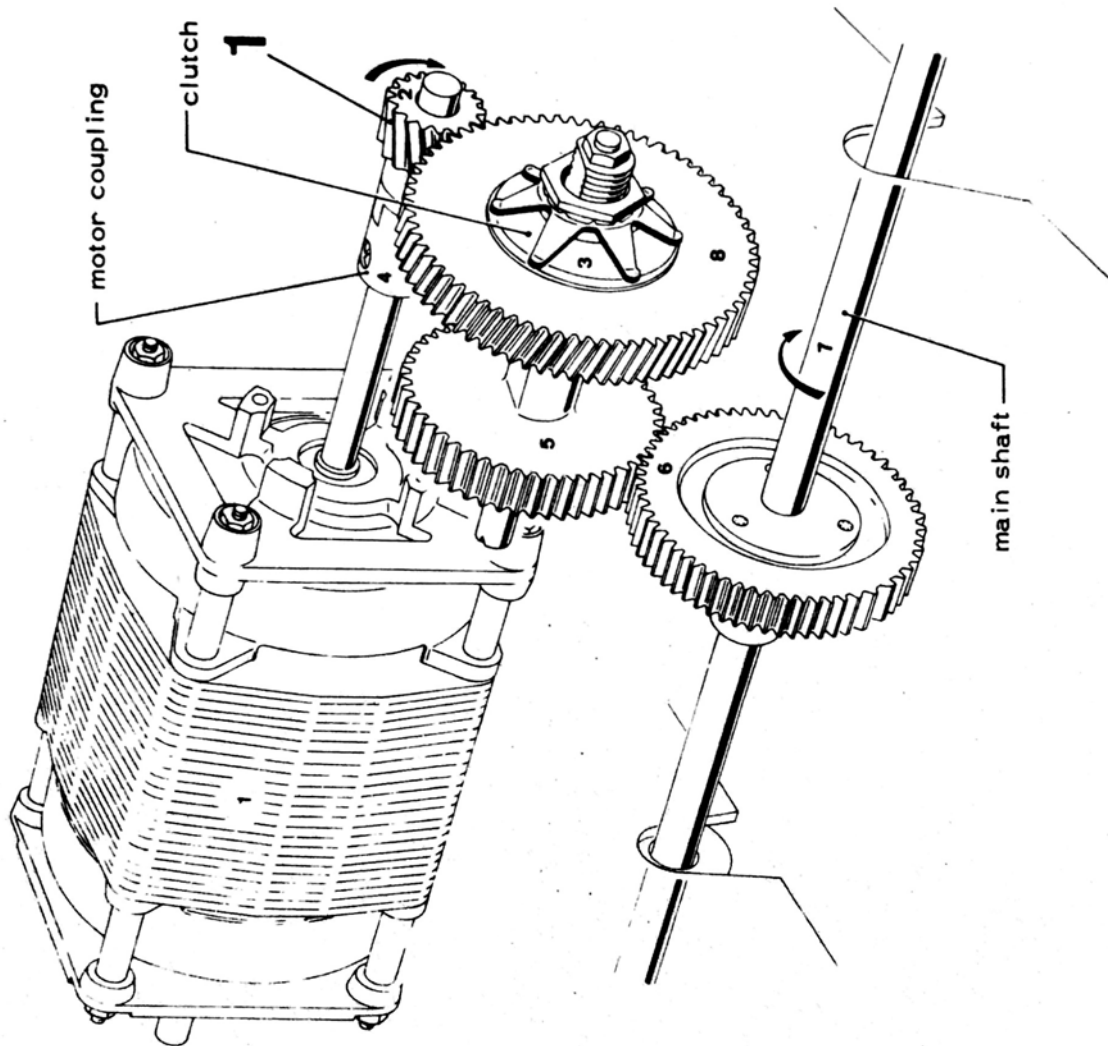
MOTION TRANSMISSION
AND TIMINGS

MOTION TRANSMISSION AND TIMINGS

	fig.
- motion transmission general diagram	0
- motor	1
- parallelizer	2
-timing of the parallelizer cams	2a
- bars entry	3
-timing of the goniometer pulley	3a
-timing of the eccentric to restore the EM/RIC in RIC position	3b
- functions and cyclic services	4
-timing of the "functions and services cycles" cams	4a
-timing of the "functions and cyclic services" clutch driving gear	4b
- vertical control	5
-timing of the vertical control driving gear	5a
-timing of the linespace selection wheels	5b
-timing of the cam for linespace and return in local	5c
- horizontal control	6
-timing of the horizontal control driving gear	6a
-timing of the line space release and return in reception ring	6b
- timing between main shaft and printing head shaft	7
- printing head	8
-timing of the printing racks	8a
-timing of the character selection eccentrics	8b
-timing of the wheel selection eccentrics (4 wheels head) ...	8c
-timing of the wheel selection eccentrics (6 wheels printing head)	8g
-timing of the clutch idlers (4 wheels printing head)	8d-8e-8f
-timing of the clutch idlers (6 wheels printing head)	8h-8i-8l
- stroke	9
-timing of "the ribbon feed and reverse" cams and and "carriage positioner"	9a
-timing of the "print and stroke recovery sliders" cams	9b
- keyboard	10
-timing of the bail and lock eccentrics	10a
-timing of the realiser clutch controlling cam	10b
- realizer	11
-timing of the copying, knife deviator control cams	11a
-timing of the modulator controlling cam	11b
-timing of the serializer shaft	11c
- tape punch	12
-timing of the tape punch belt	12a
-timing of the tape punch clutch idlers	12b
-timing of the tape punch driving gear	12c
- reader	13
-timing of the reader cams and wheels	13a
-timing of the reader clutch	13b

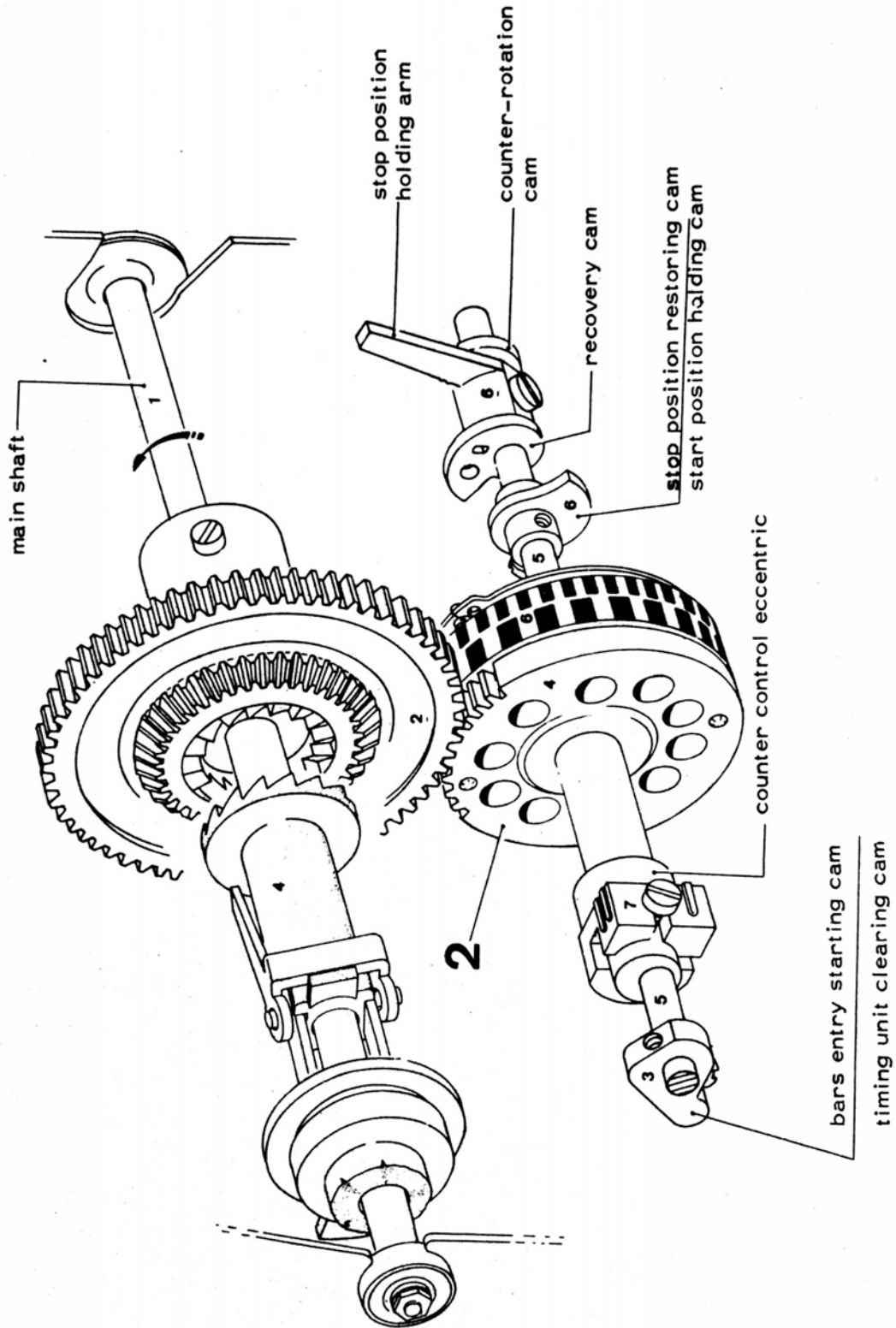
MOTION TRANSMISSION GENERAL DIAGRAM





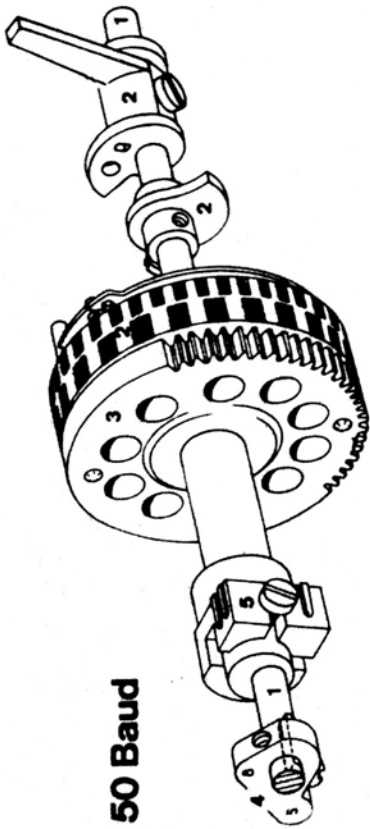
MOTOR

PARALLELIZER



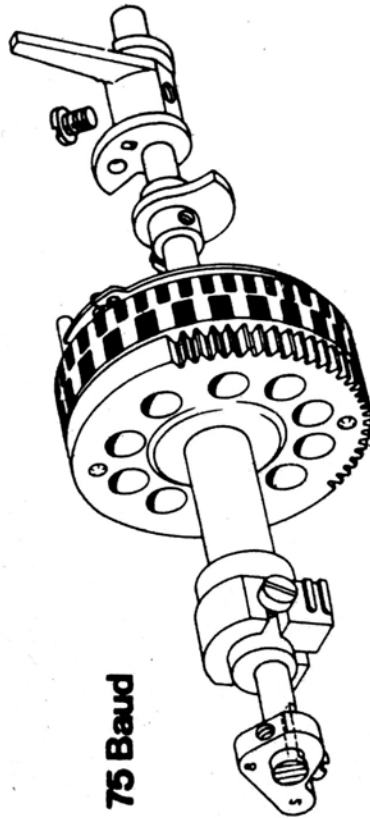
TIMING OF THE CAMS ON THE PARALLELIZER SHAFT

50 Baud

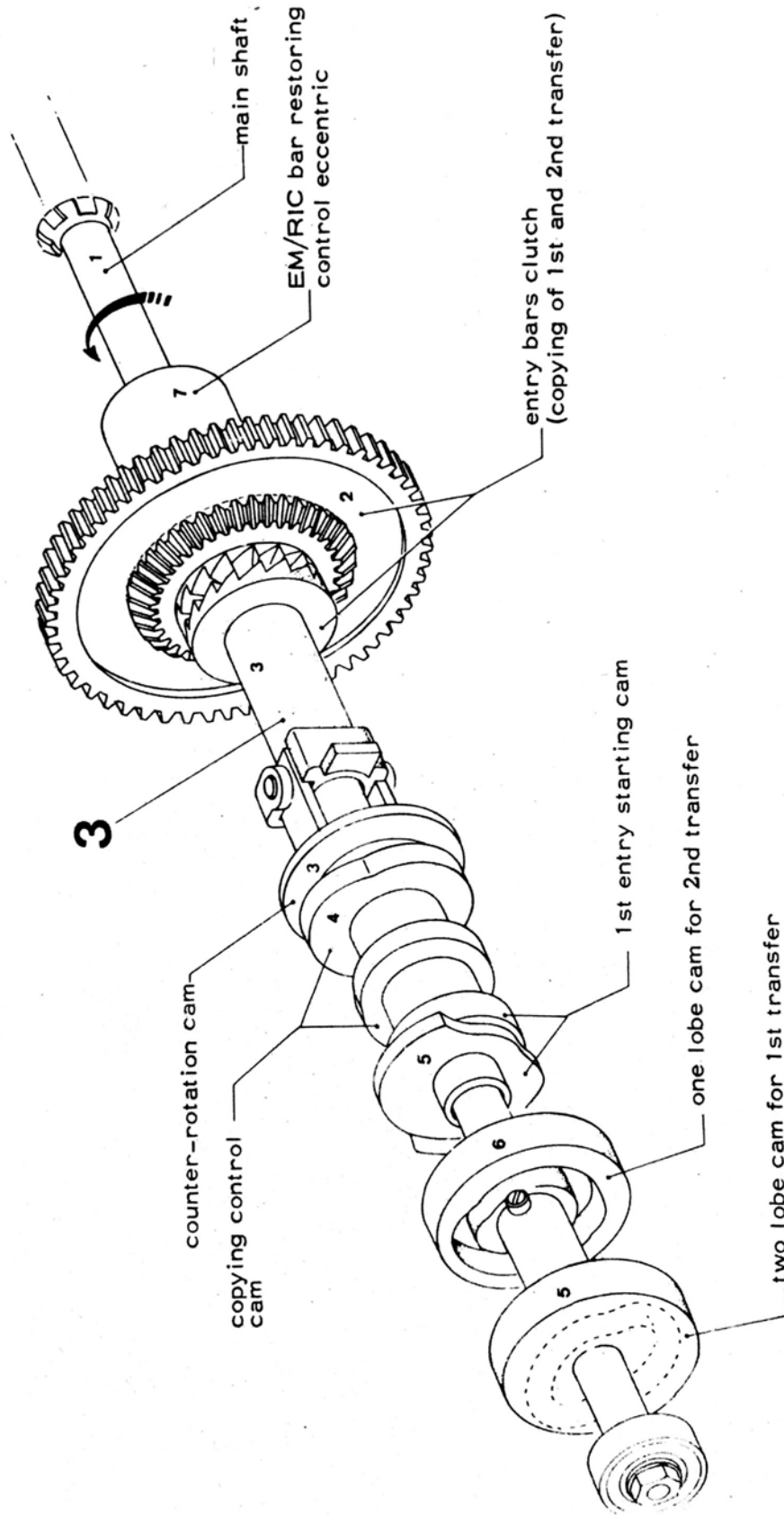


(2a) - according to the telegraphic speed, check that the cam screws are oriented as shown in the respective figures

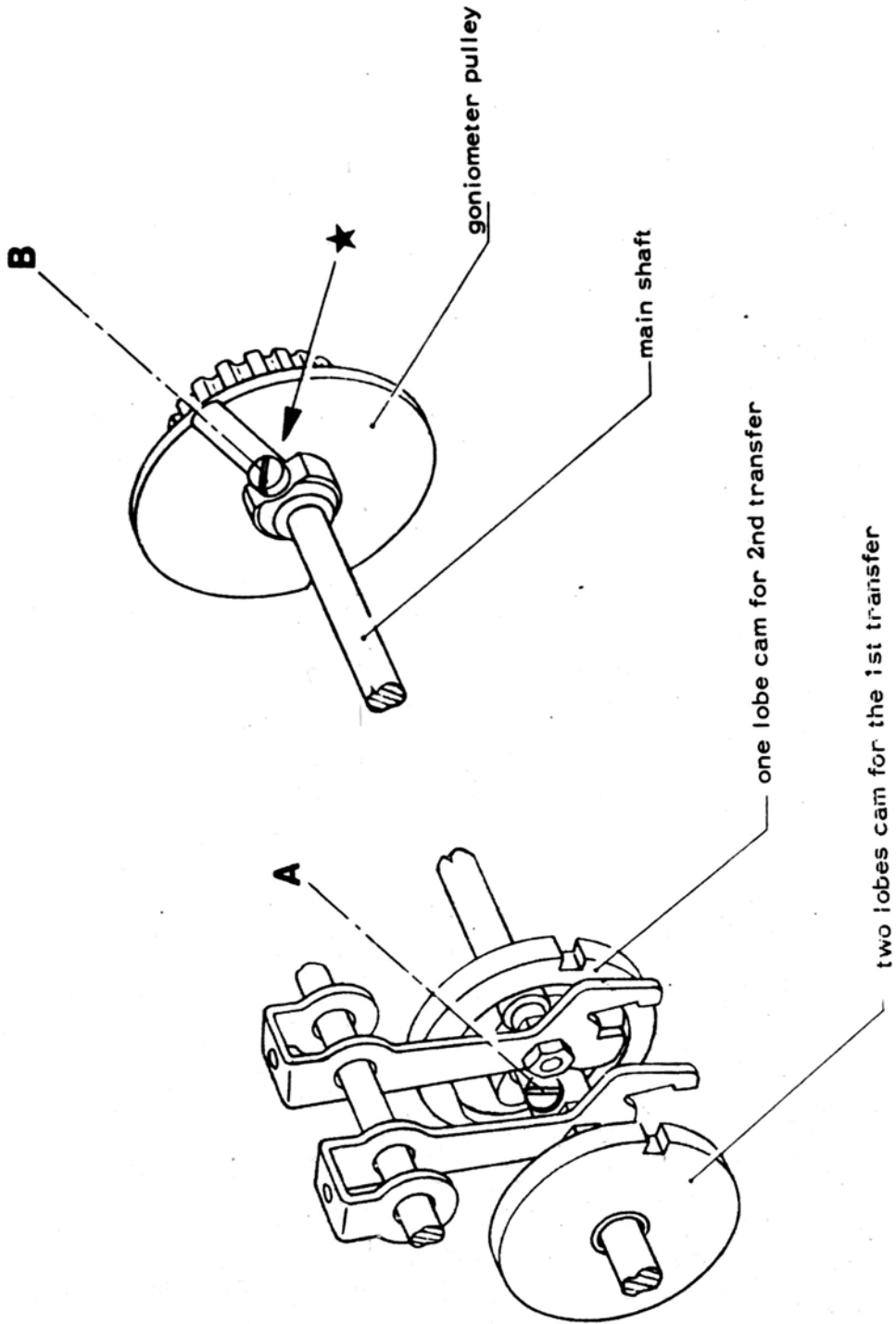
75 Baud



BARS ENTRY



TIMING OF THE GONIOMETER PULLEY WITH RESPECT TO THE LOBE CAMS

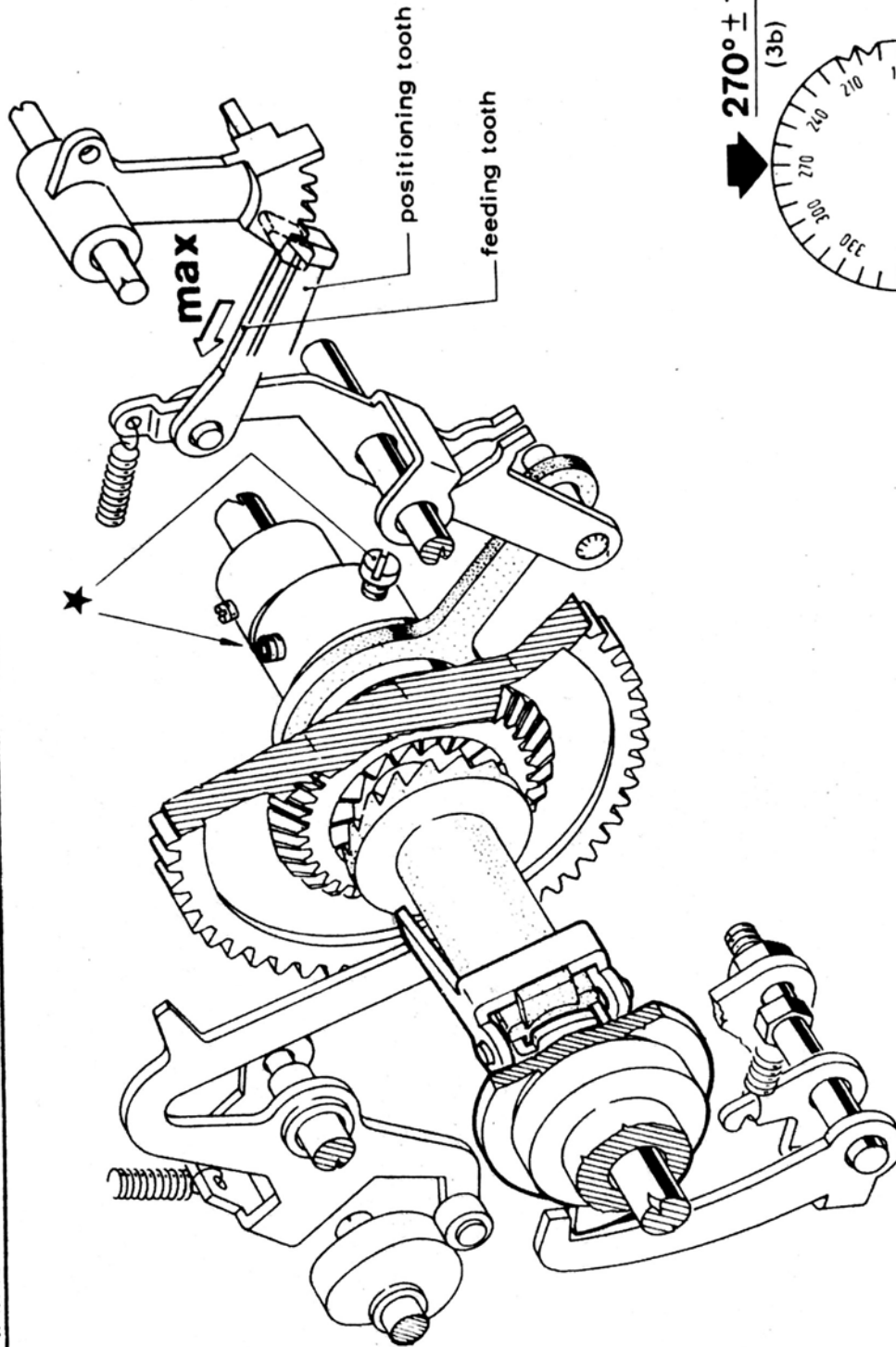


(3a) - check that the two screws A and B are aligned as shown the figure

3a

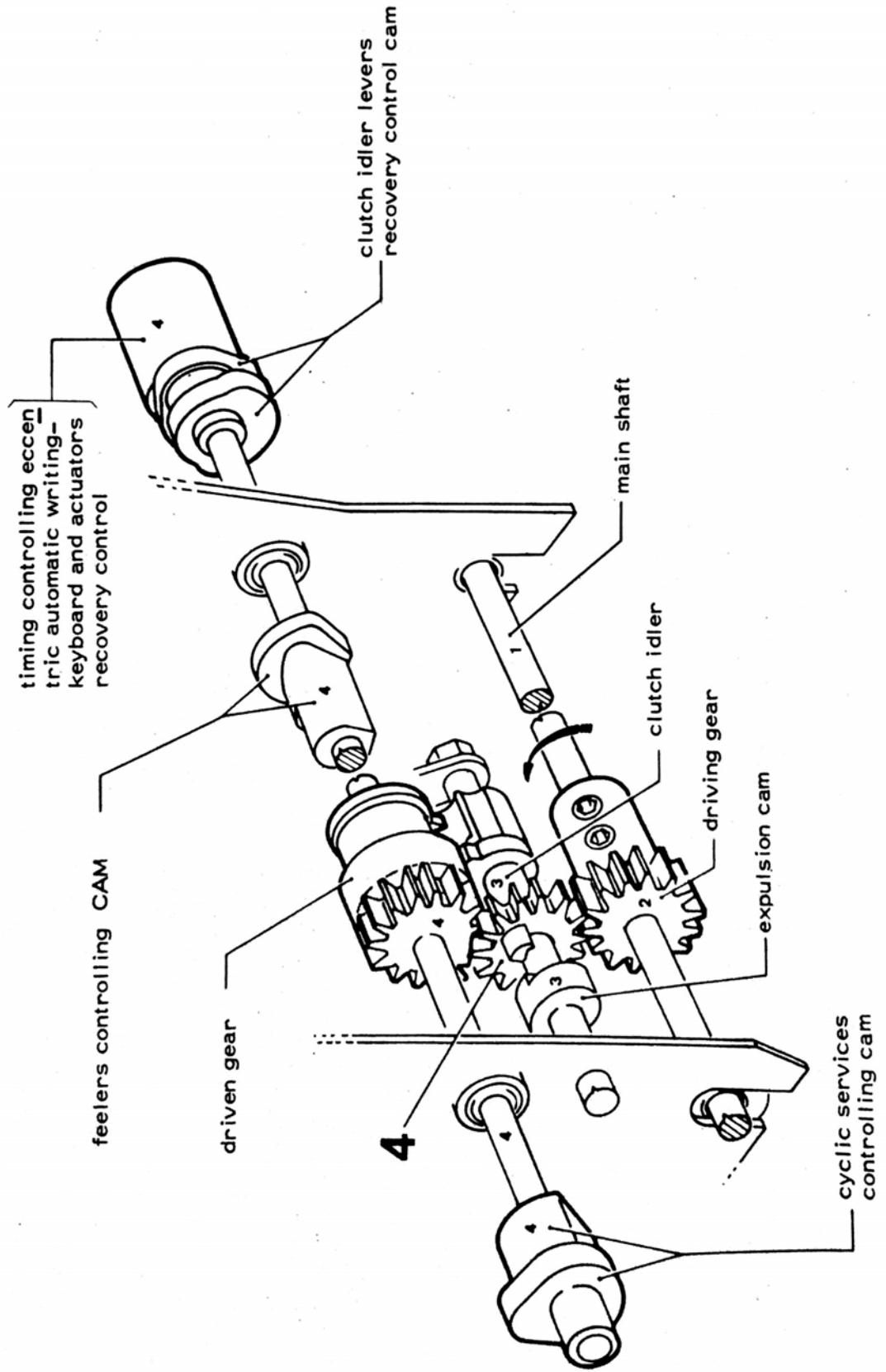
3b

TIMING OF THE ECCENTRIC TO RESTORE THE EM/RIC BAR IN RECEPTION



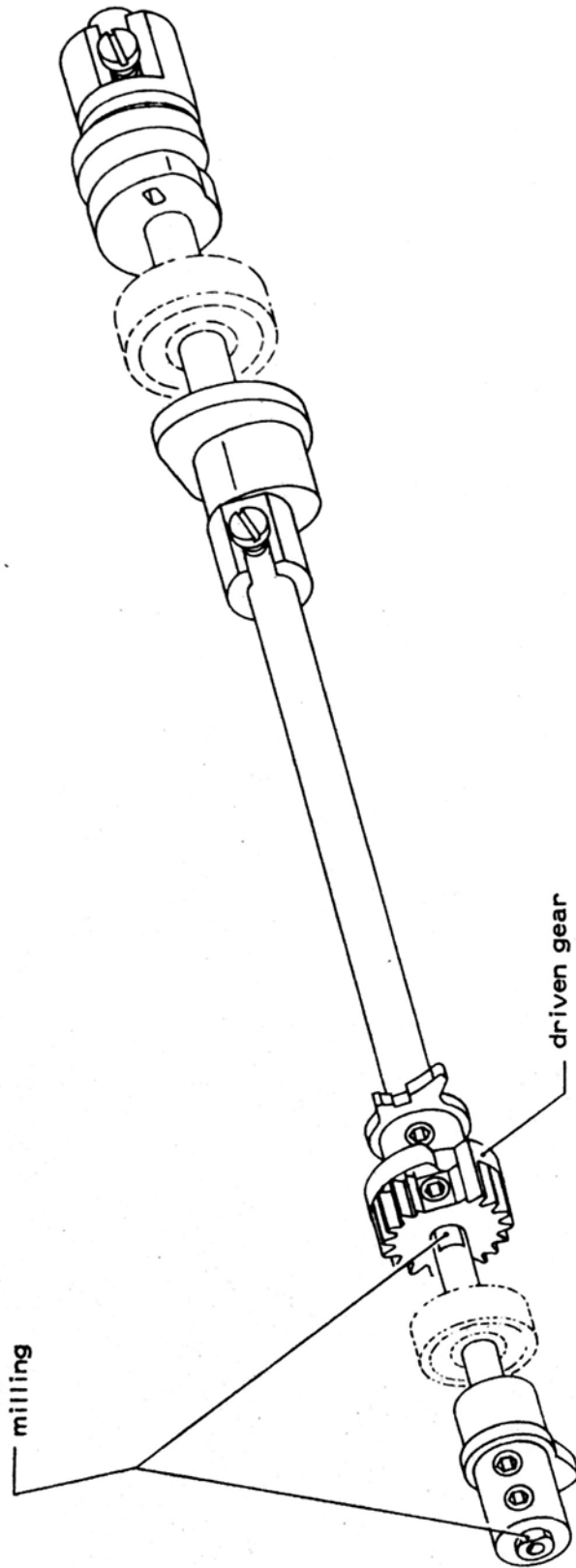
- move the feeding tooth to a maximum backwards control
check that the goniometer is placed at $270 (\pm 10)$

FUNCTIONS AND CYCLIC SERVICES



4a

TIMING OF THE "FUNCTIONS AND CYCLIC SERVICES" CAMS

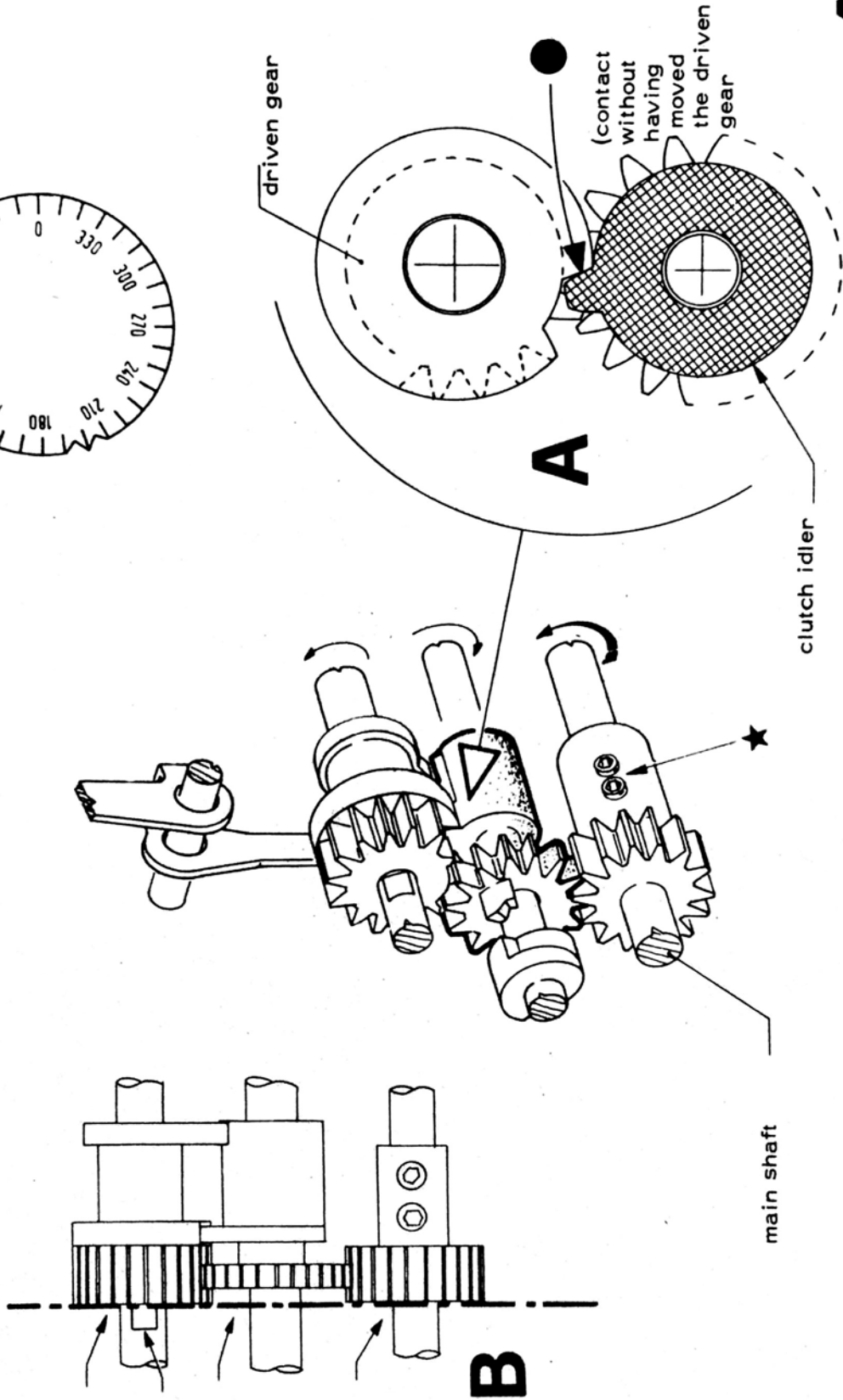
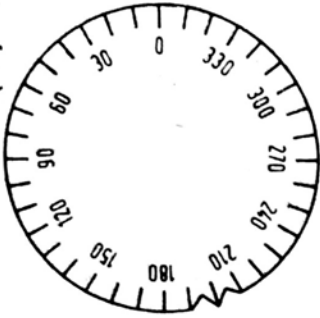


(4a) - make sure that the four screws on the left are in the direction of the millings and check that the other two screws on the right of the drawing are in the same direction

TIMING OF THE "FUNCTIONS" AND CYCLIC SERVICES" CLUTCH DRIVING GEAR

- move the pulley-protractor between 20 and 80
- engage the clutch idler and obtain the condition shown in fig. A
- 4b - check that the goniometer is placed at 90°

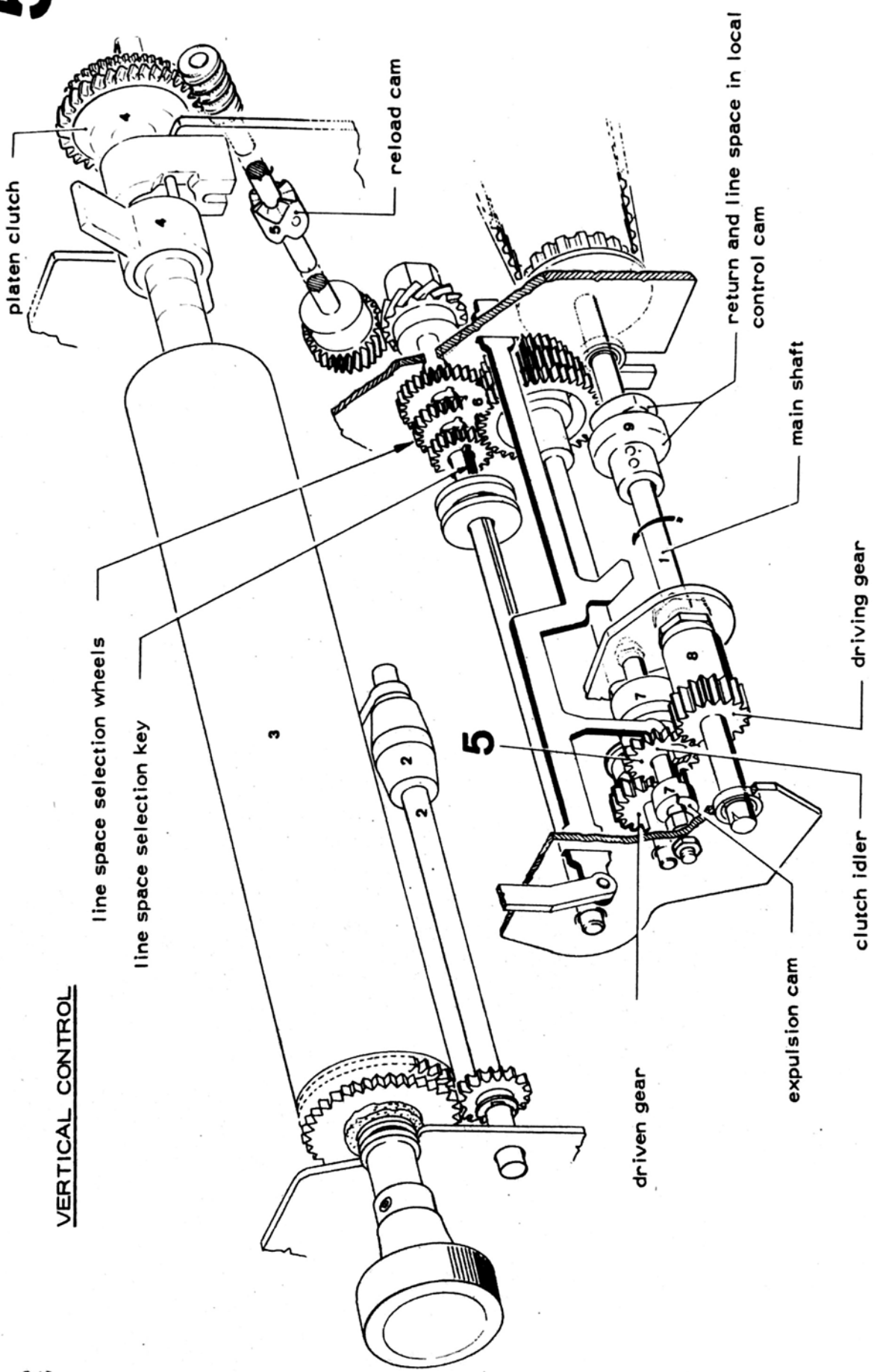
90°
(4b)



NOTE - make sure that the axial position of the driving gear is that shown in fig. B, that is, alignment with the shaft milling (if the repair has been made; perform checks 318 and 321)

4b

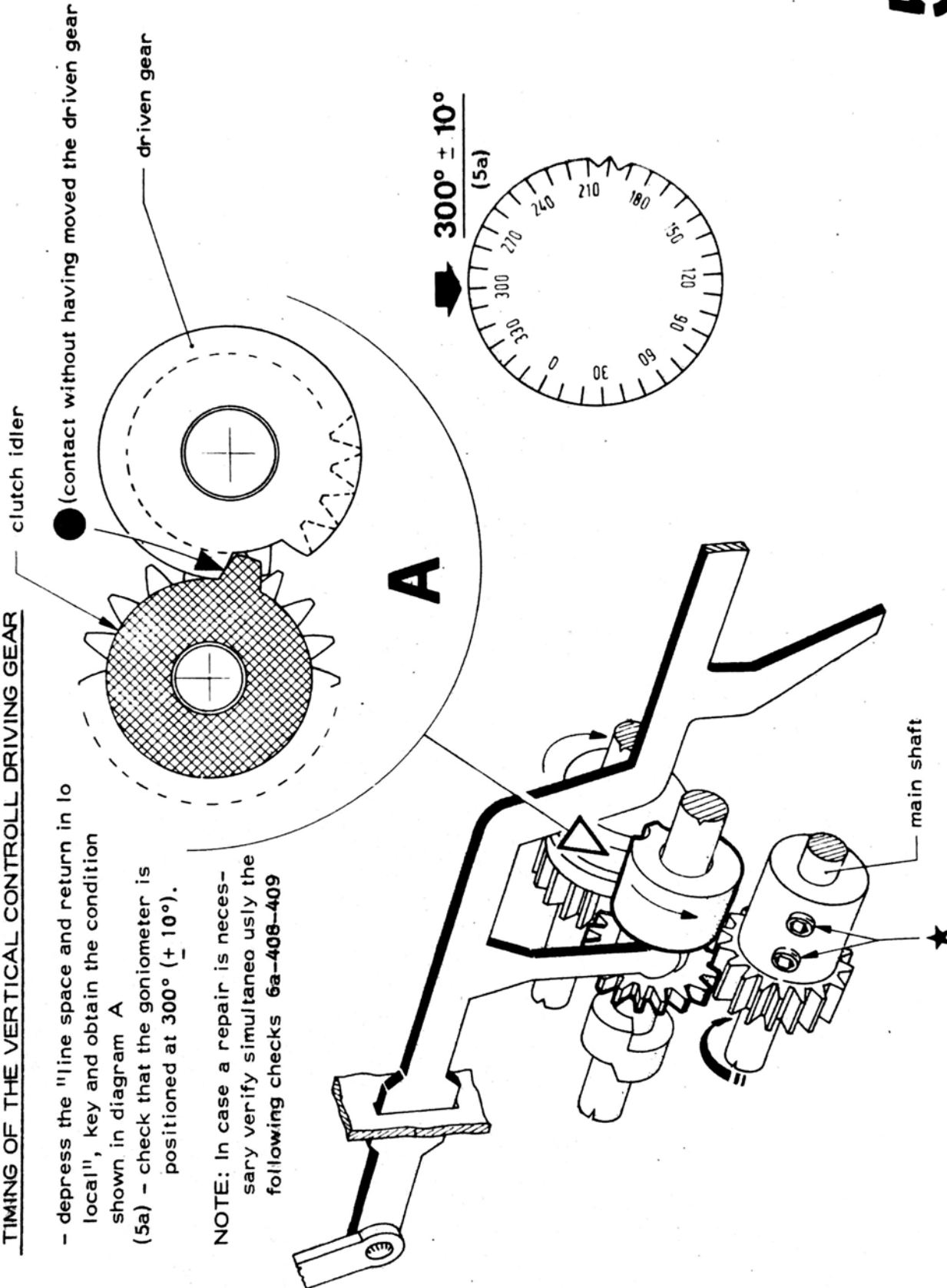
VERTICAL CONTROL



TIMING OF THE VERTICAL CONTROL DRIVING GEAR

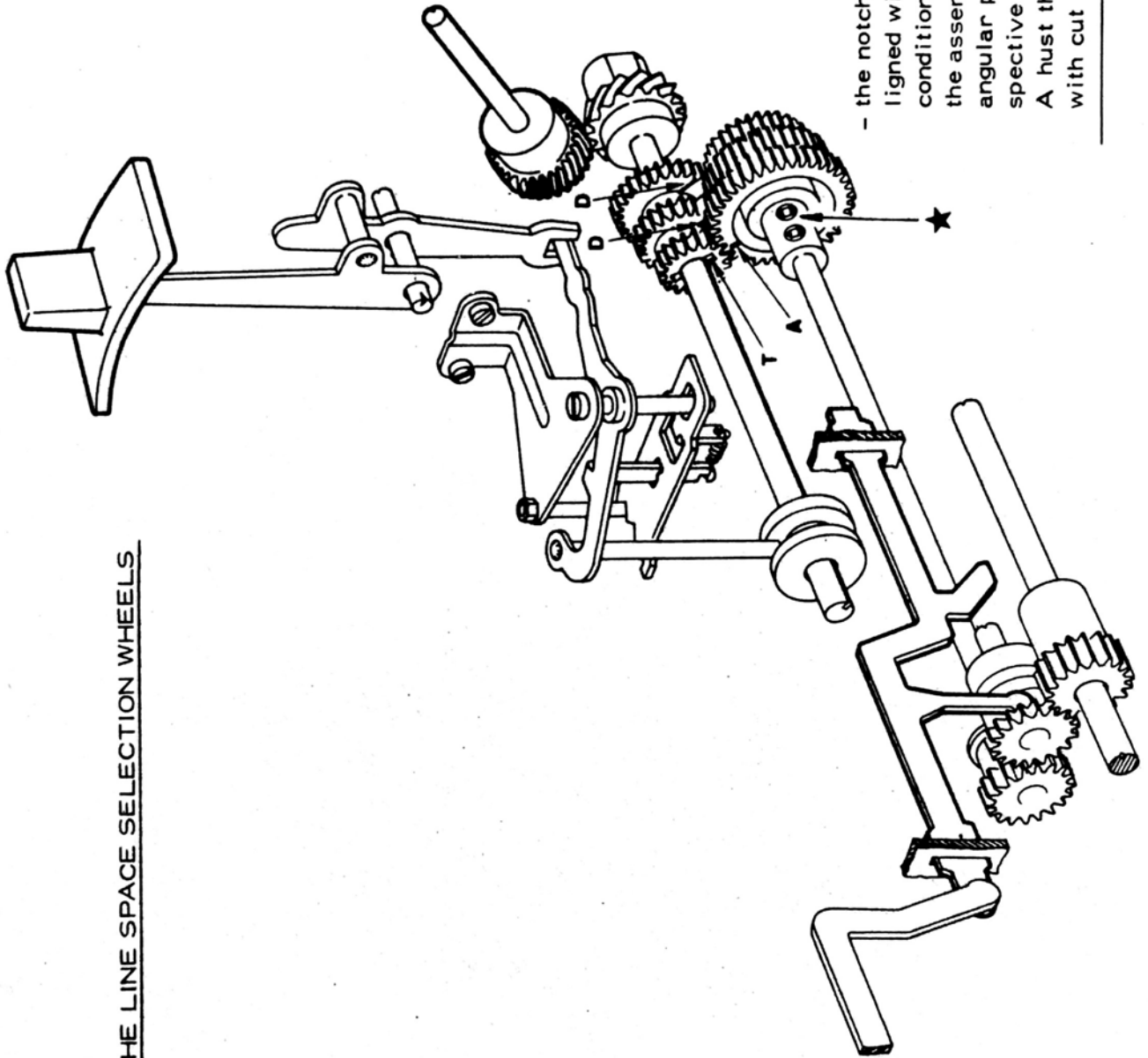
- depress the "line space and return in local", key and obtain the condition shown in diagram A
- (5a) - check that the goniometer is positioned at $300^\circ (\pm 10^\circ)$.

NOTE: In case a repair is necessary verify simultaneously the following checks 6a-408-409



5b

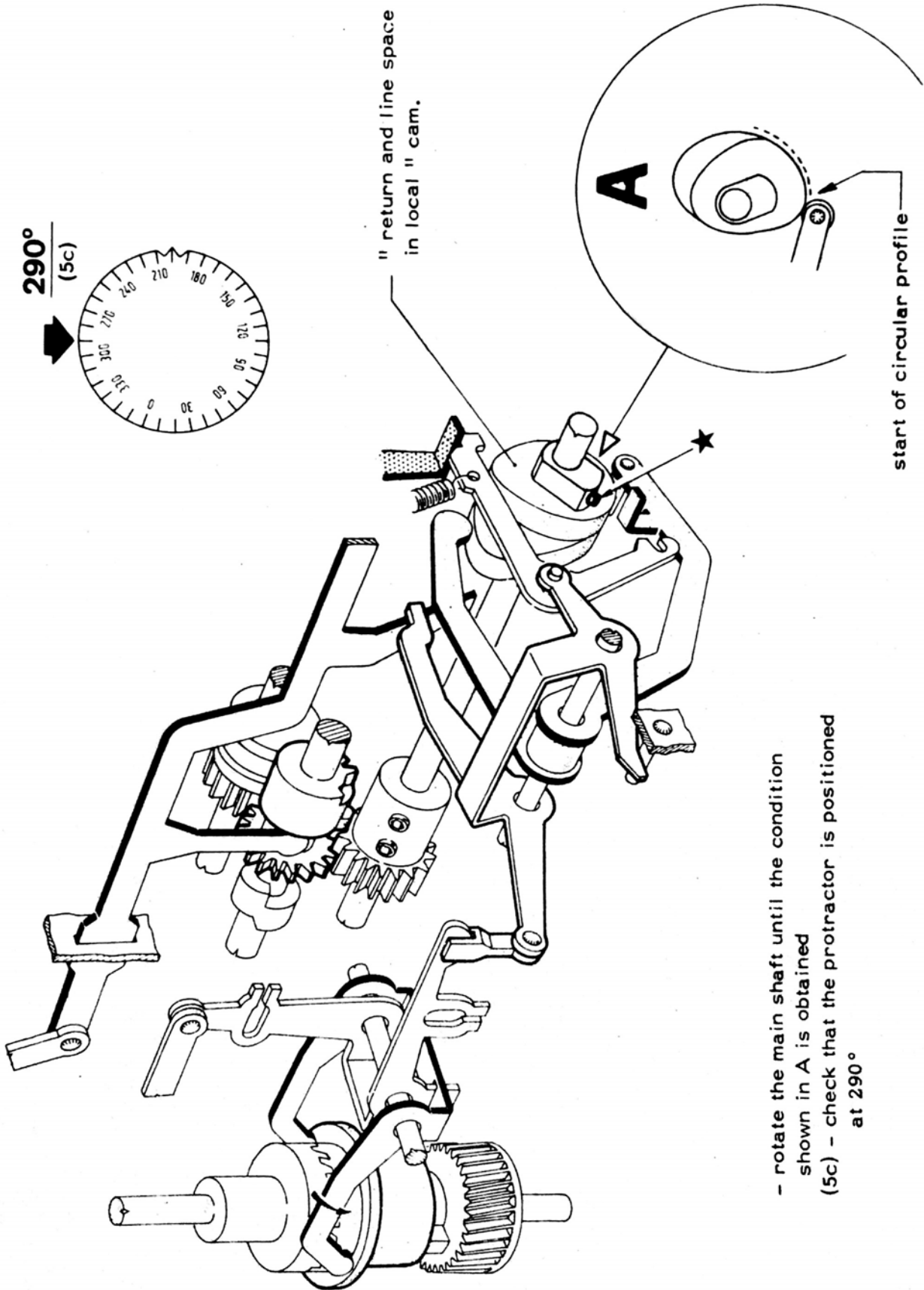
TIMING OF THE LINE SPACE SELECTION WHEELS



- the notches "D" must be aligned with cut "T" (this condition is obtained during the assembly, by varying the angular position of the respective wheels). The notch A must therefore be aligned with cut "T"

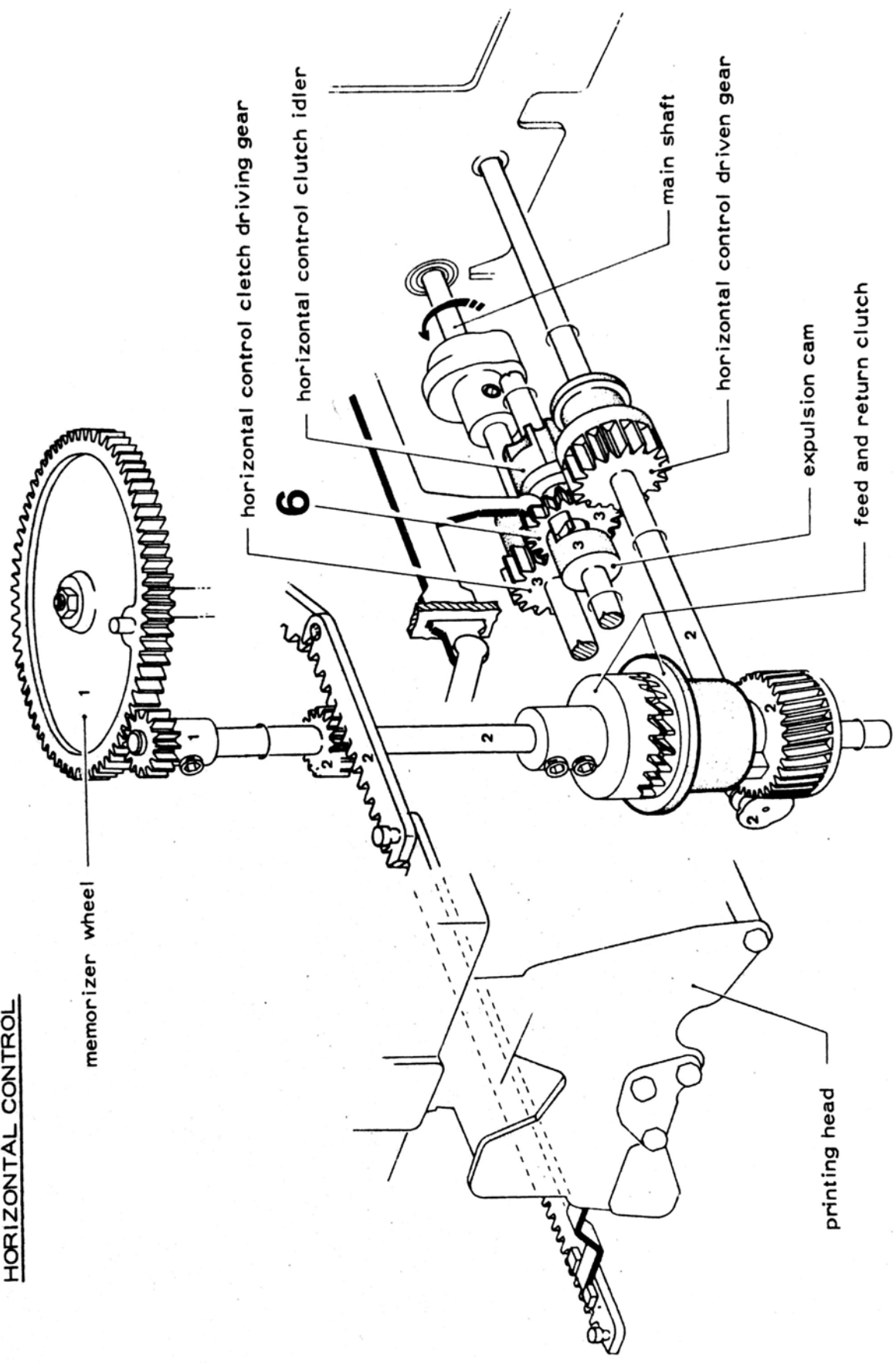
(5b).

TIMING OF THE CAM LINE SPACE AND RETURN IN LOCAL

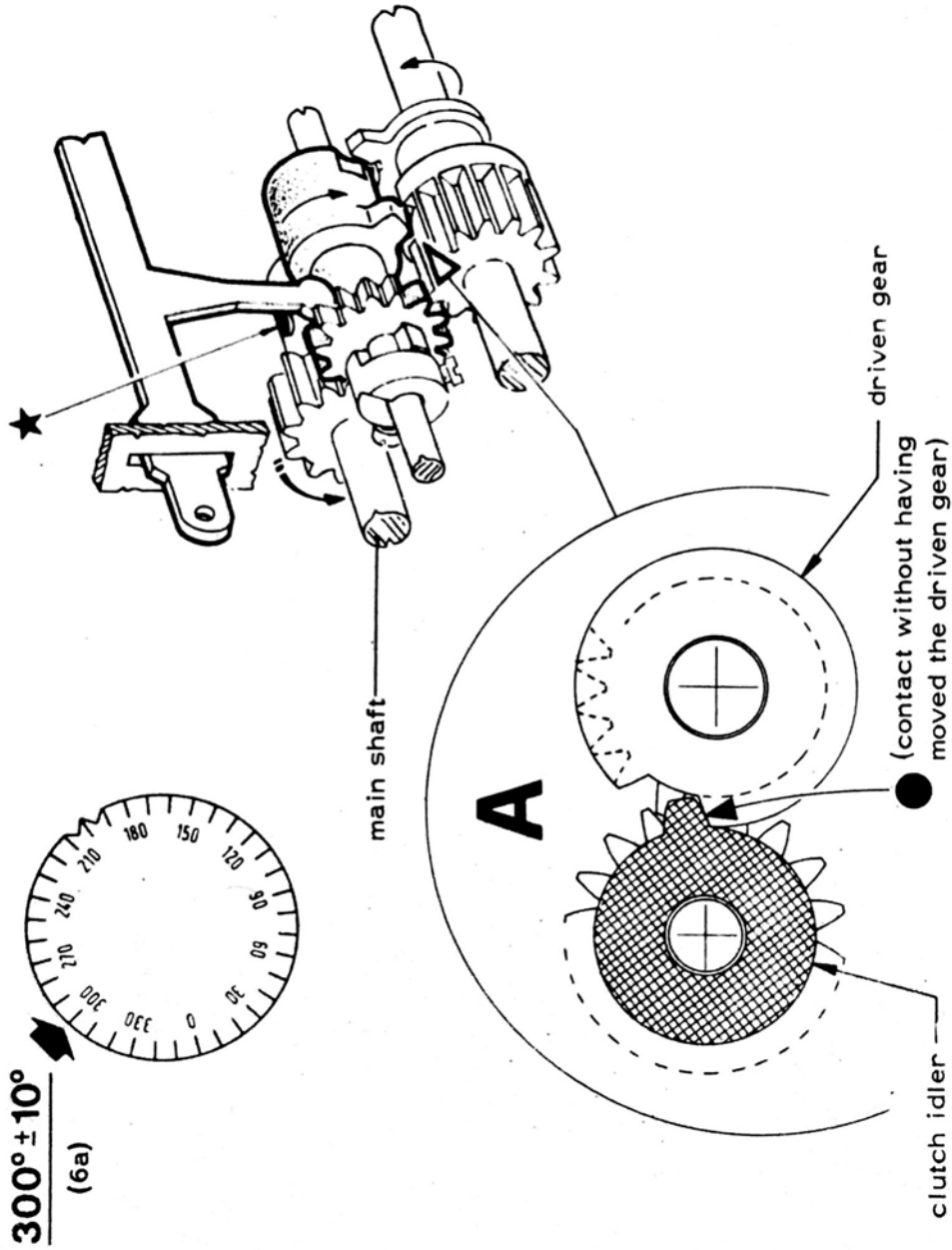


- rotate the main shaft until the condition shown in A is obtained
- (5c) - check that the protractor is positioned at 290°

HORIZONTAL CONTROL



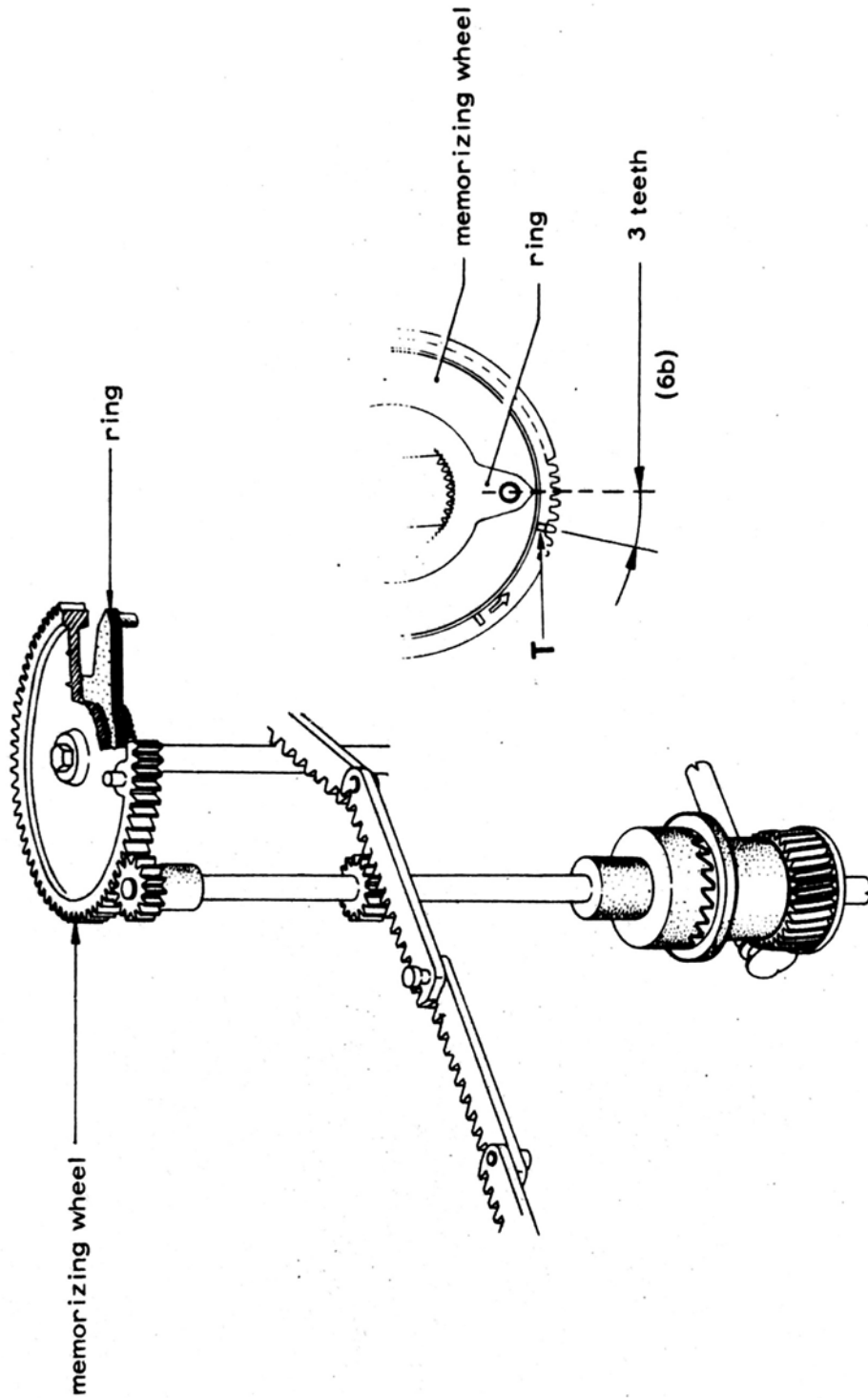
TIMING OF THE HORIZONTAL CONTROL DRIVING GEAR



- goniometer pulley between 220 and 280
 - start the clutch idler and before obtaining the condition shown in figure A
 - (6a) - check that the goniometer is positioned at $300 (+ 10)$
- NOTE: In case a repair is necessary: perform simultaneously following checks: 5a - 327 - 328

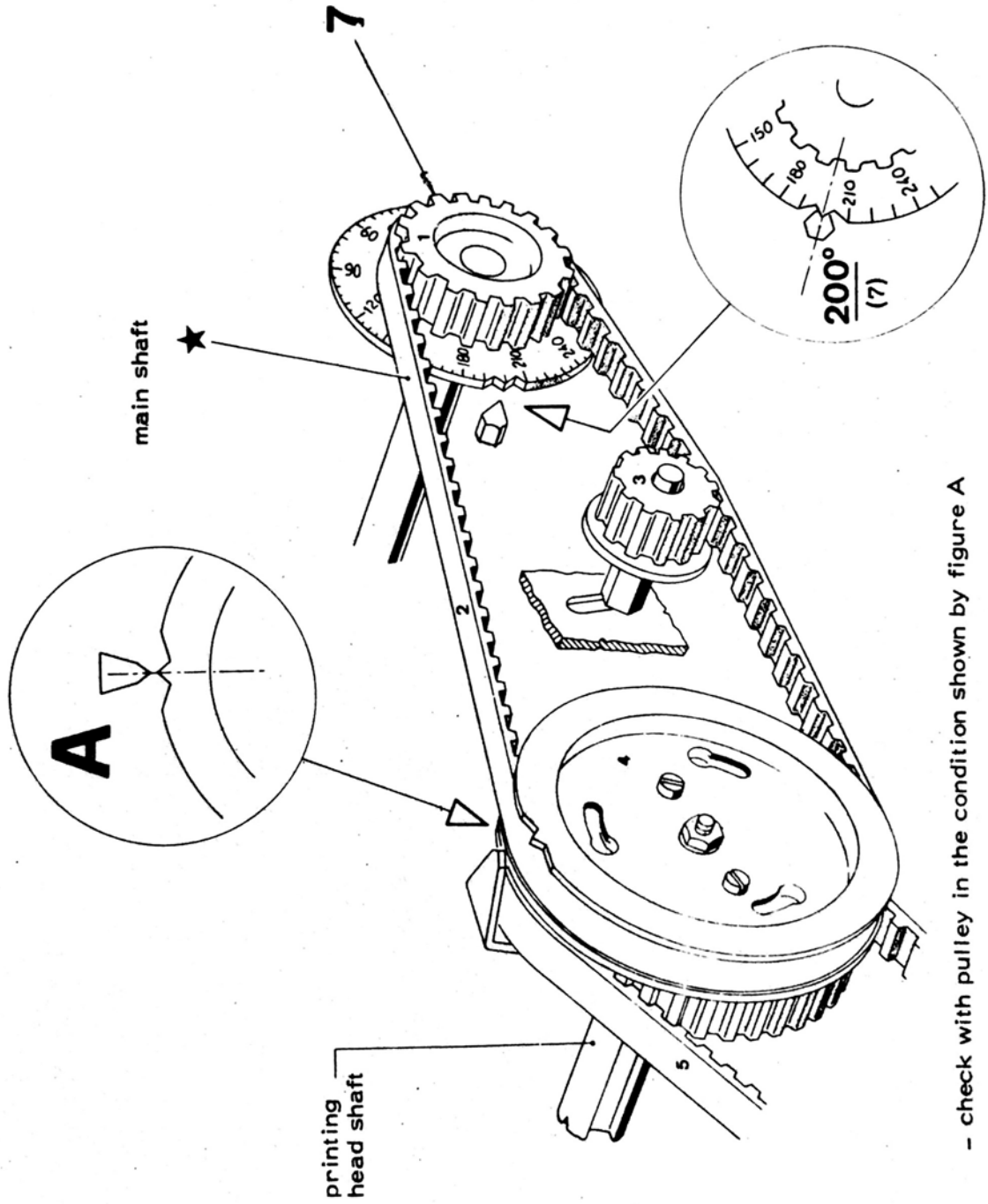
TIMING OF THE LINE SPACE RELEASE AND RETURN IN RECEPTION RING

6b



- to check, remove the memorizing wheel and during the assembly perform the check
- for machines with more than 69 strokes per line, the ring index must be near the T notch by one additional tooth for every stroke after the 69th

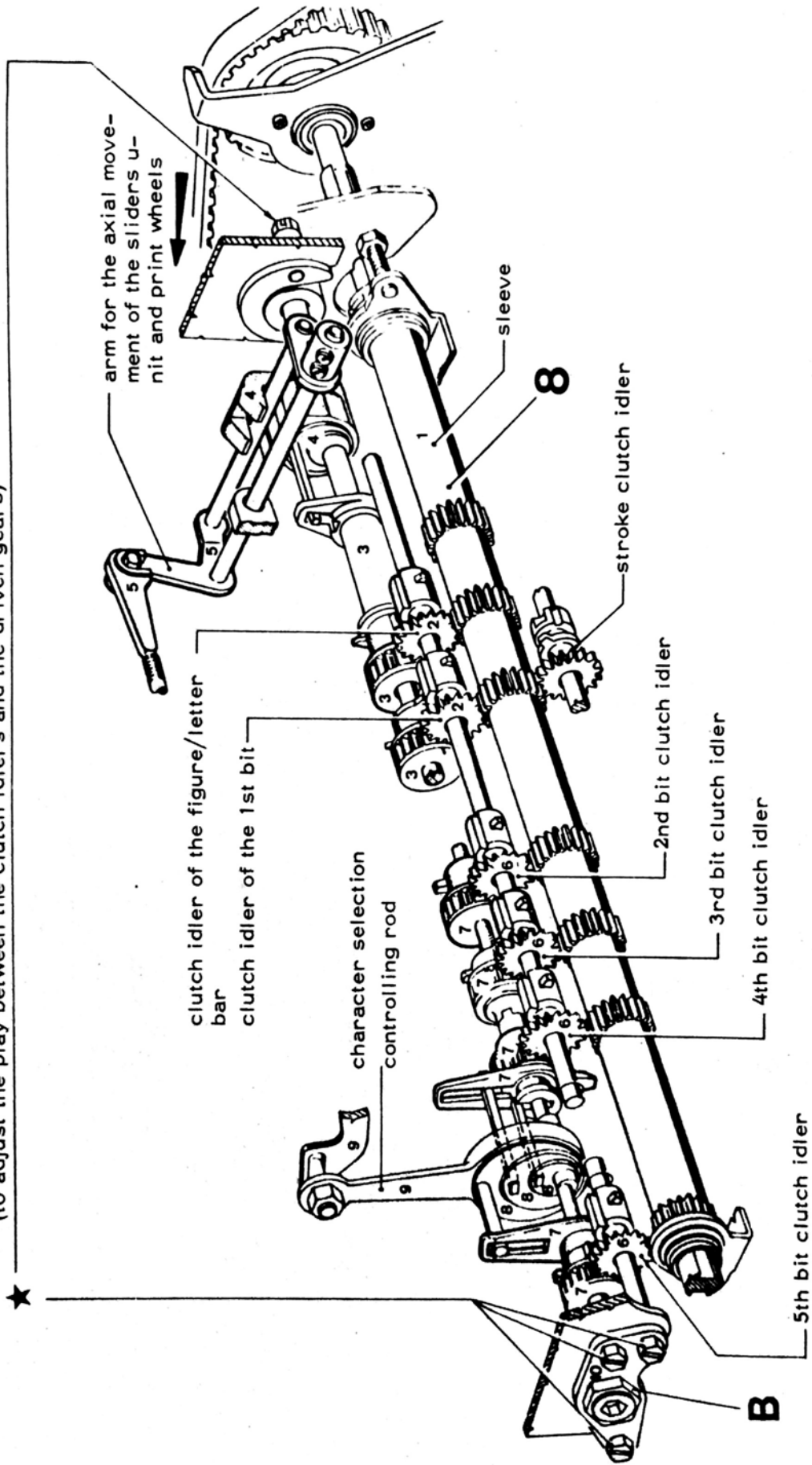
TIMING BETWEEN MAIN SHAFT AND THE PRINTING HEAD SHAFT



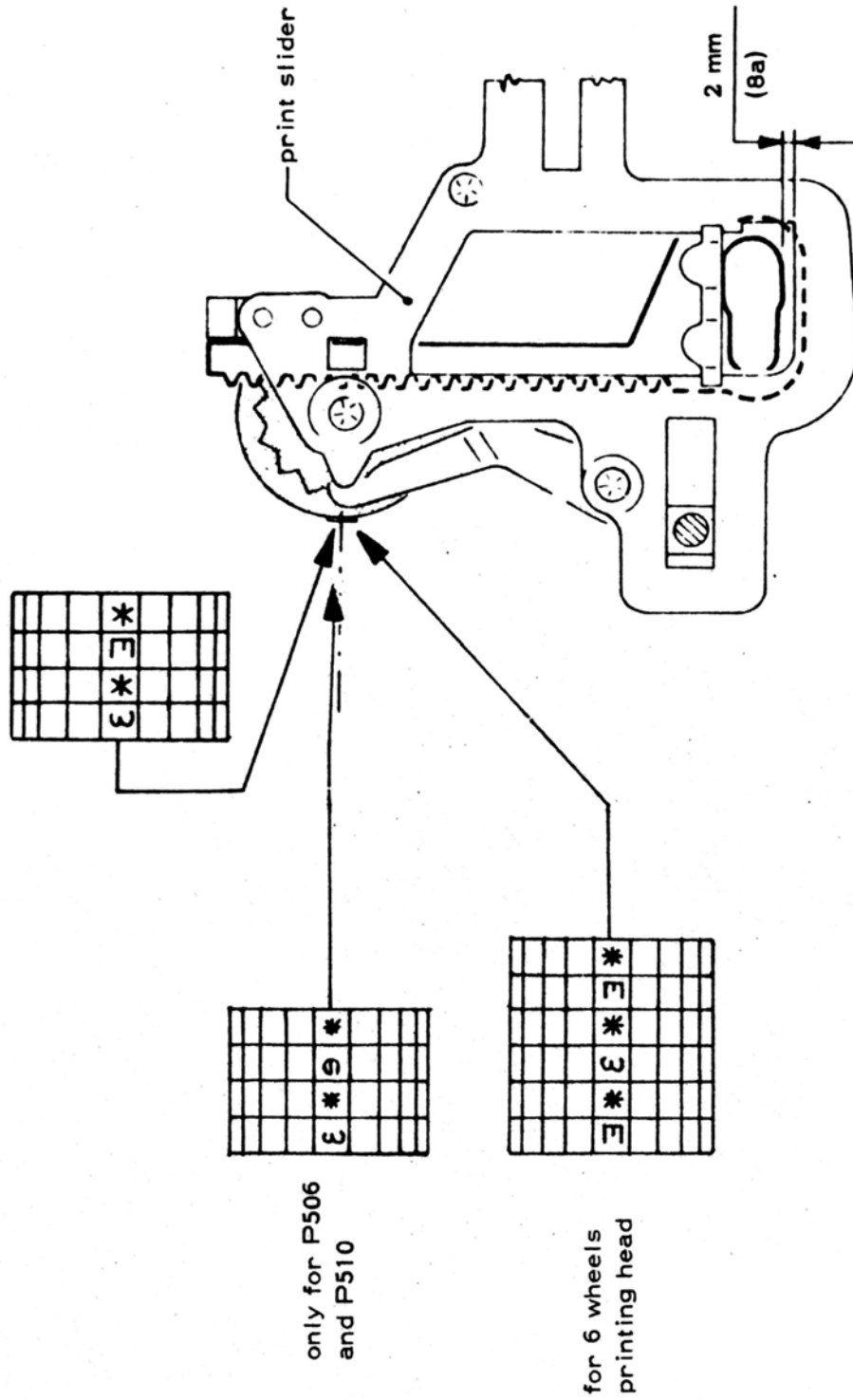
- check with pulley in the condition shown by figure A

PRINTING HEAD

★ (to adjust the play between the clutch idlers and the driven gears)

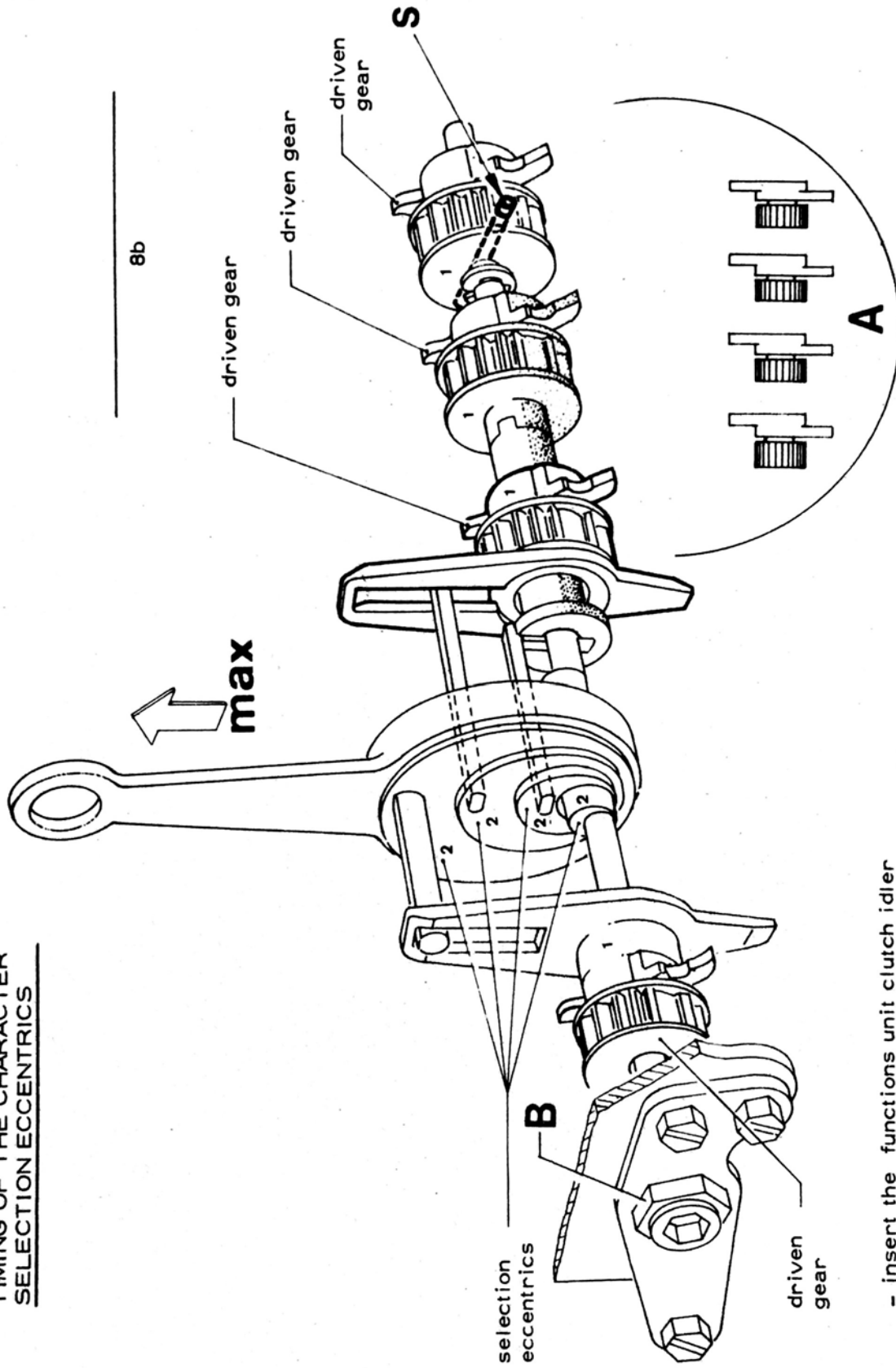


TIMING OF THE PRINTING WHEELS RACKS



- to check enter the " BLANK" code

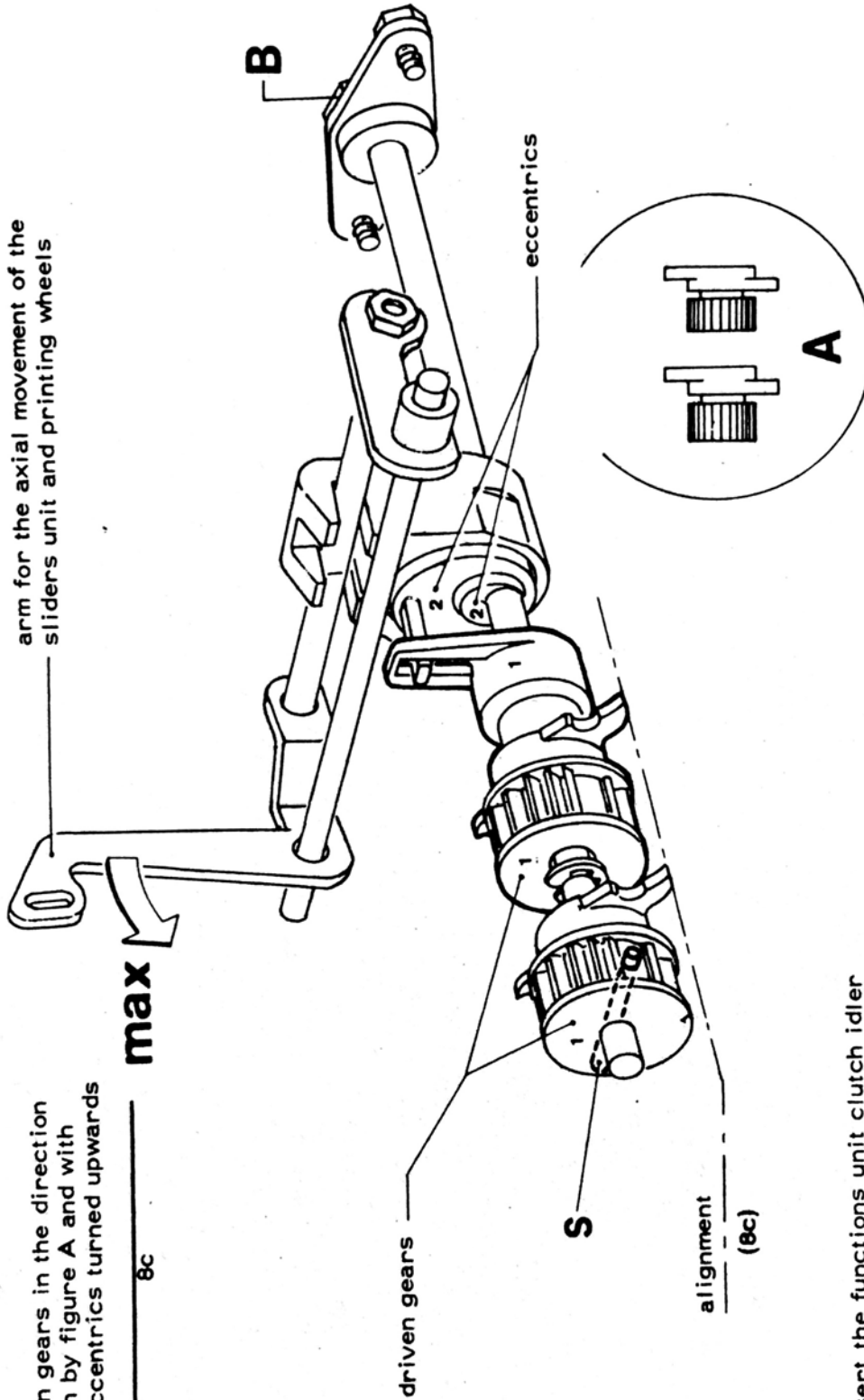
TIMING OF THE CHARACTER SELECTION ECCENTRICS



- insert the functions unit clutch idler
- enter the "letter" code on the writing bars
- perform a function cycle

NOTE: act on pin S or bushing B according to which driven gear has to be timed

TIMING OF THE WHEEL SELECTION ECCENTRICS



arm for the axial movement of the sliders unit and printing wheels

driven gears in the direction shown by figure A and with the eccentrics turned upwards

max

8c

driven gears

eccentrics

S

alignment
(8c)

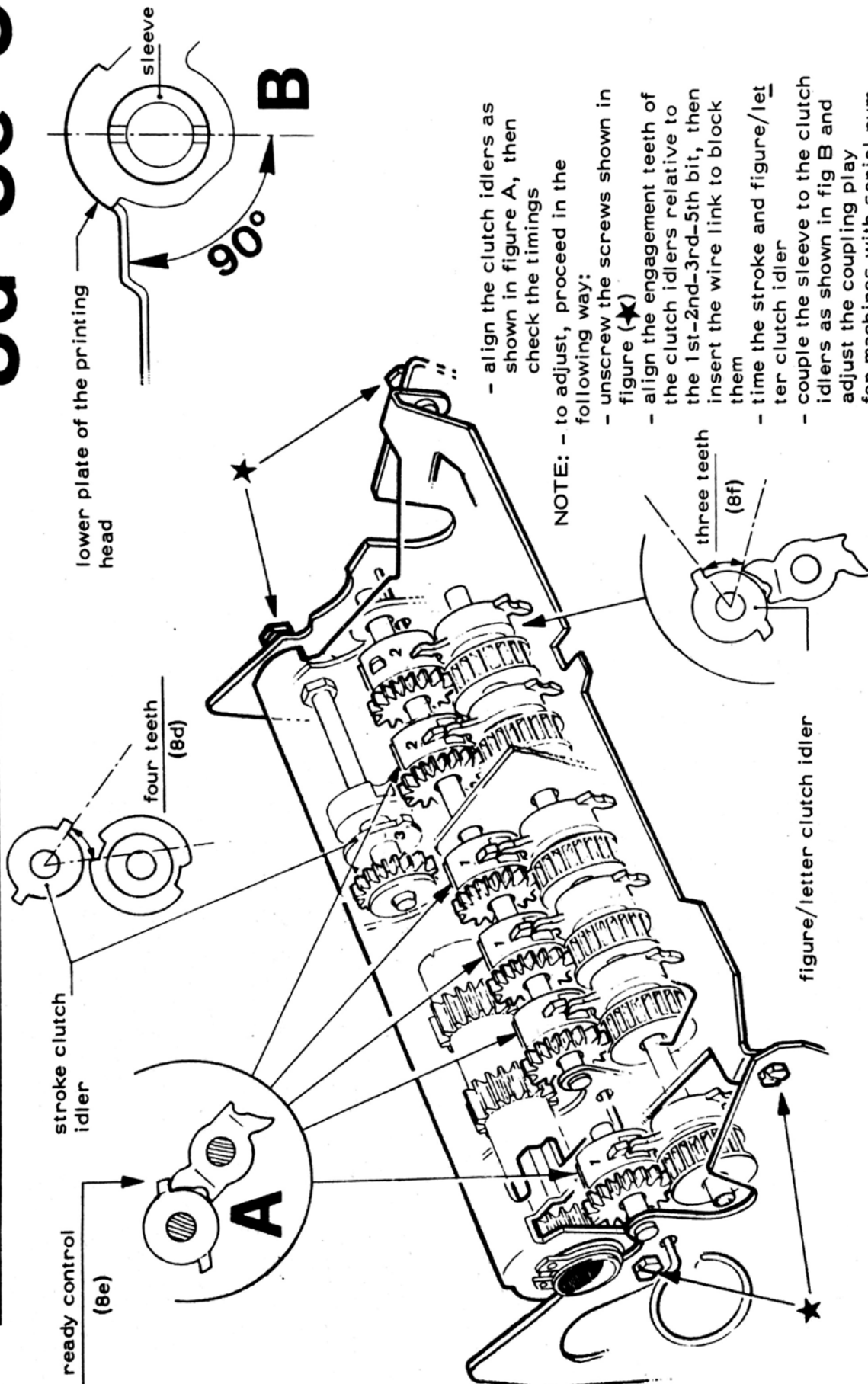
- insert the functions unit clutch idler
- enter the "letter" code on the writing bars
- perform a functions cycle

NOTE: act on pin S or bushing B according to which driven gear has to be timed

8C

8d-8e-8f

TIMING OF THE FOLLOWING STROKE (8d), WHEEL AND CLUTCH IDLERS:



- align the clutch idlers as shown in figure A, then check the timings
- to adjust, proceed in the following way:
 - unscrew the screws shown in figure (*)
 - align the engagement teeth of the clutch idlers relative to the 1st-2nd-3rd-5th bit, then insert the wire link to block them
 - time the stroke and figure/letter clutch idler
 - couple the sleeve to the clutch idlers as shown in fig B and adjust the coupling play
 - for machines with serial number below 522659, the stroke clutch idler must be of 3 teeth out of phase, and the figures/letters clutch idler of 2.

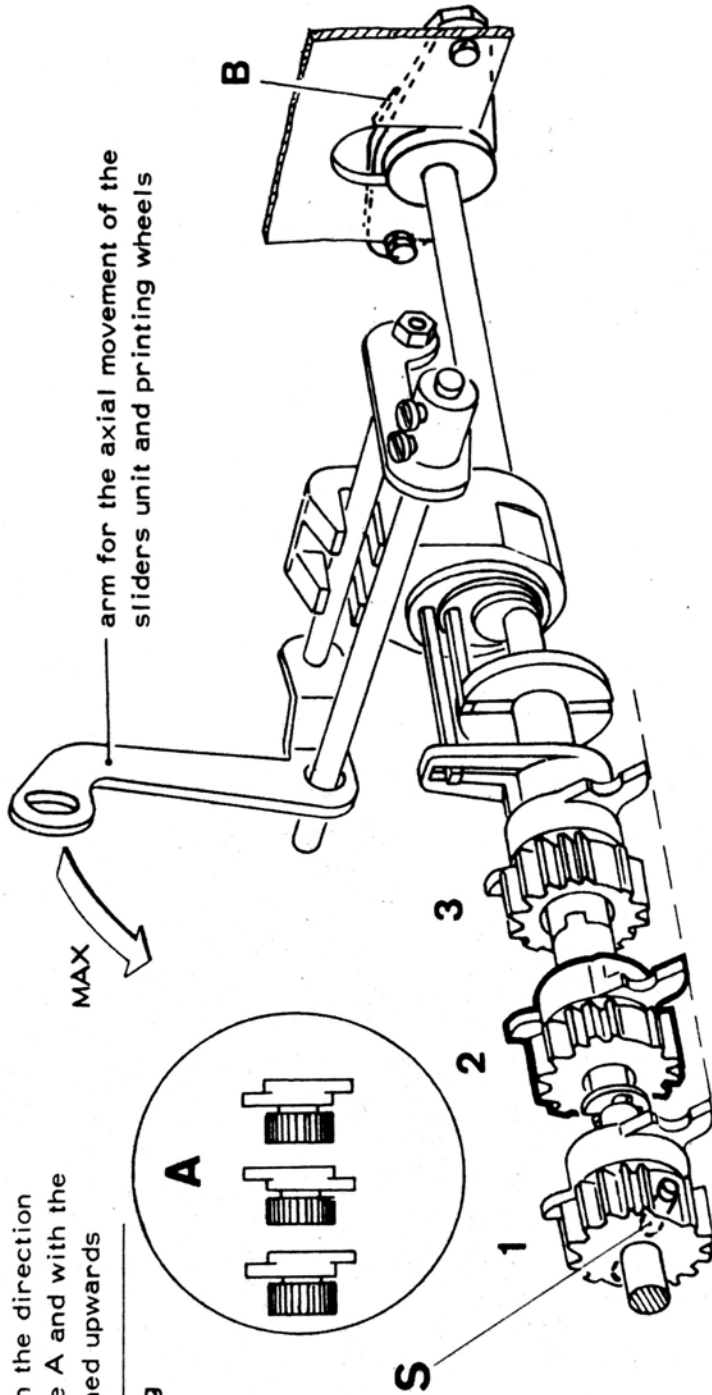
NOTE: - to adjust, proceed in the following way:

- unscrew the screws shown in figure (*)
- align the engagement teeth of the clutch idlers relative to the 1st-2nd-3rd-5th bit, then insert the wire link to block them
- time the stroke and figure/letter clutch idler
- couple the sleeve to the clutch idlers as shown in fig B and adjust the coupling play
- for machines with serial number below 522659, the stroke clutch idler must be of 3 teeth out of phase, and the figures/letters clutch idler of 2.

TIMING OF THE WHEELS SELECTION ECCENTRICS (6 WHEELS PRINTING HEAD)

Driven gears in the direction shown by figure A and with the eccentrics turned upwards

8g



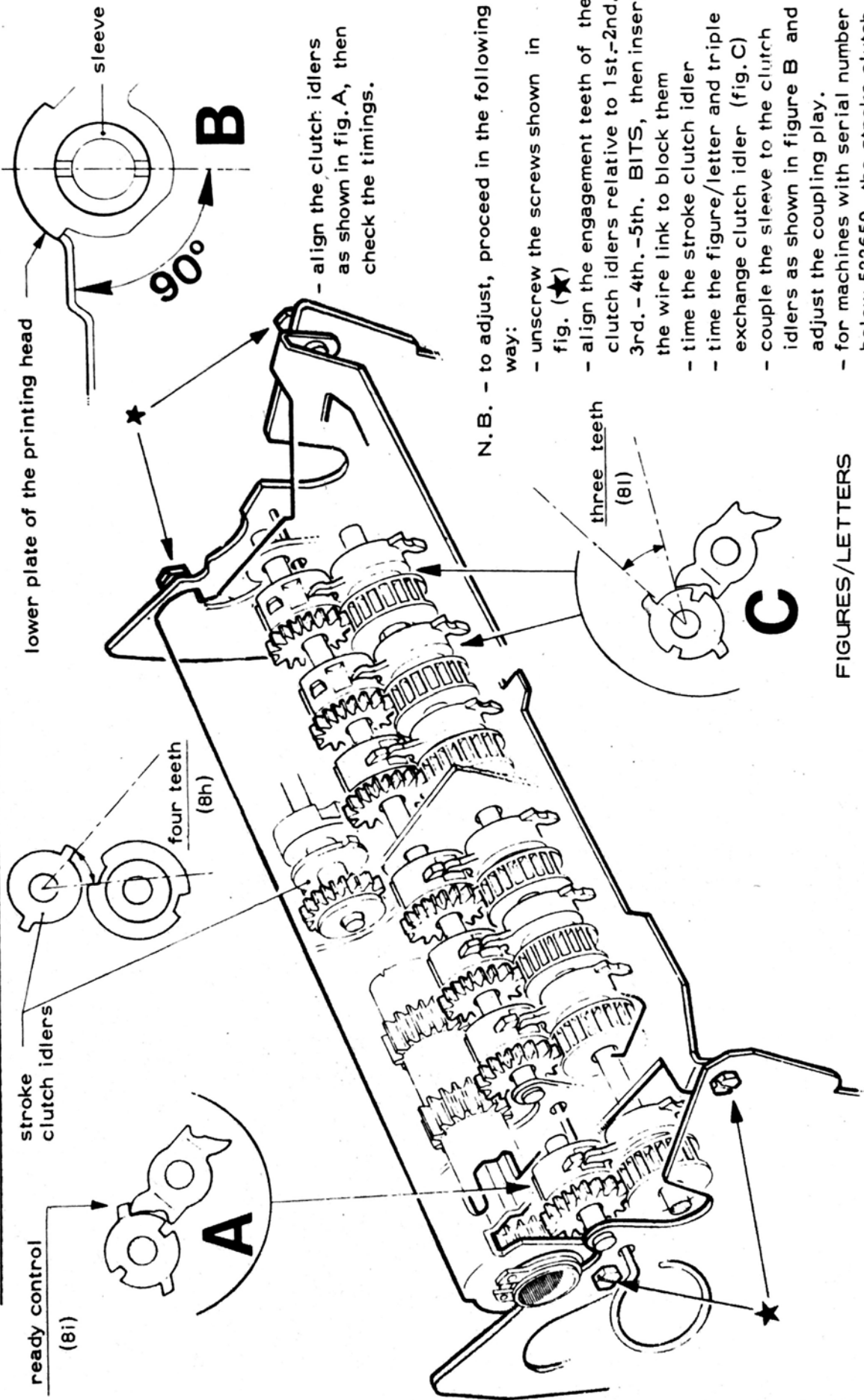
alignment
(8g)

- Insert the functions unit clutch idler
 - enter the "letter"code on the writing bars
 - perform a functions cycle
- (8g) - check that the driven gears are in the proper direction (clutch idler 2 has a 180° rotation in relation to clutch idlers 1 and 3).

NOTE.- act on pin S or bushin B, according to which driven gear has to be timed.

8h-8i-8l

TIMING OF THE FOLLOWING CLUTCH IDLERS: STROKE (8h), WHEEL AND CHARACTER SELECTION (8i), FIGURE/LETTER AND TRIPLE EXCHANGE (8l)



- align the clutch idlers as shown in fig. A, then check the timings.

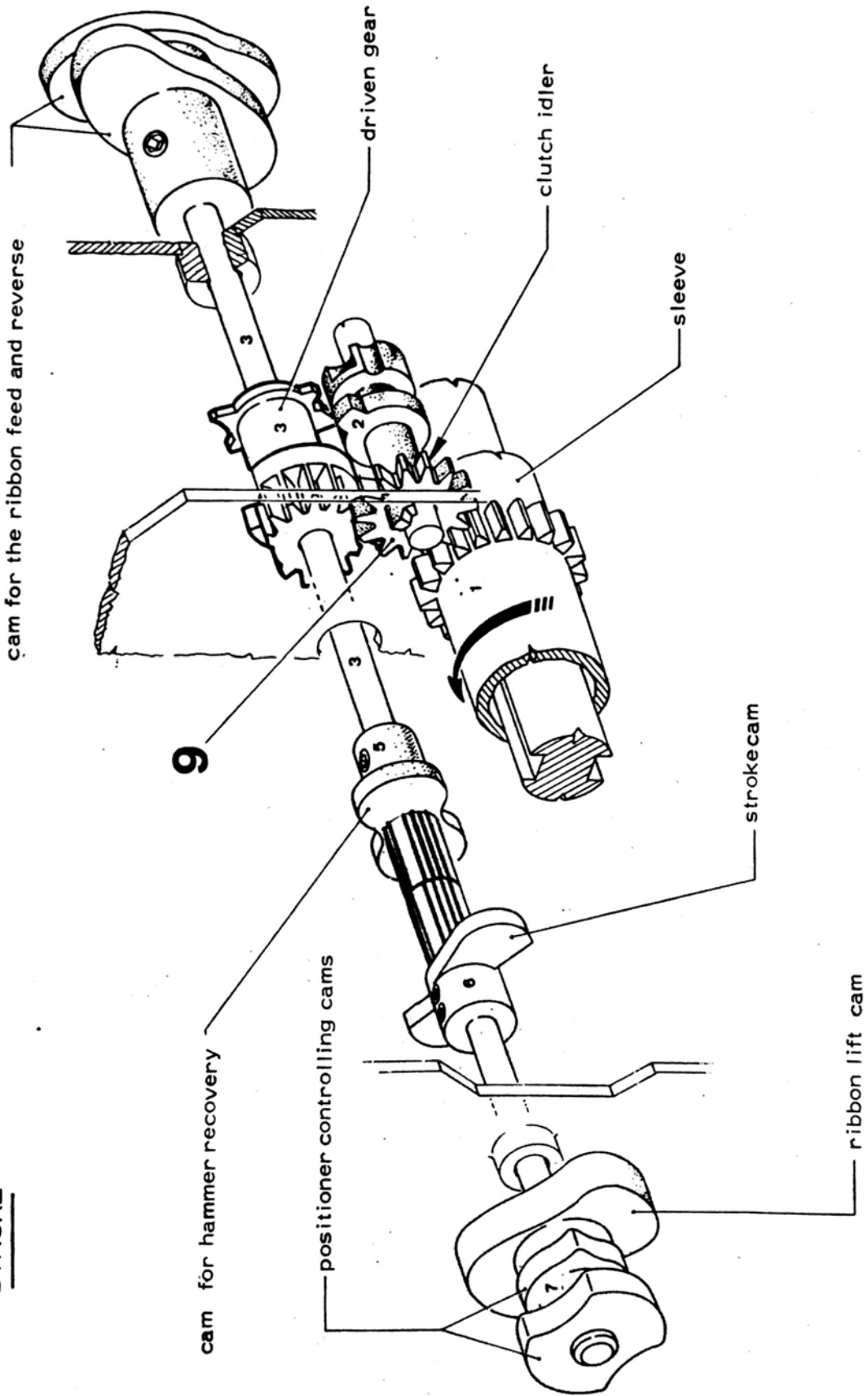
N. B. - to adjust, proceed in the following way:

- unscrew the screws shown in fig. (*)
- align the engagement teeth of the clutch idlers relative to 1st.-2nd. 3rd.-4th.-5th. BITS, then insert the wire link to block them
- time the stroke clutch idler
- time the figure/letter and triple exchange clutch idler (fig. C)
- couple the sleeve to the clutch idlers as shown in figure B and adjust the coupling play.

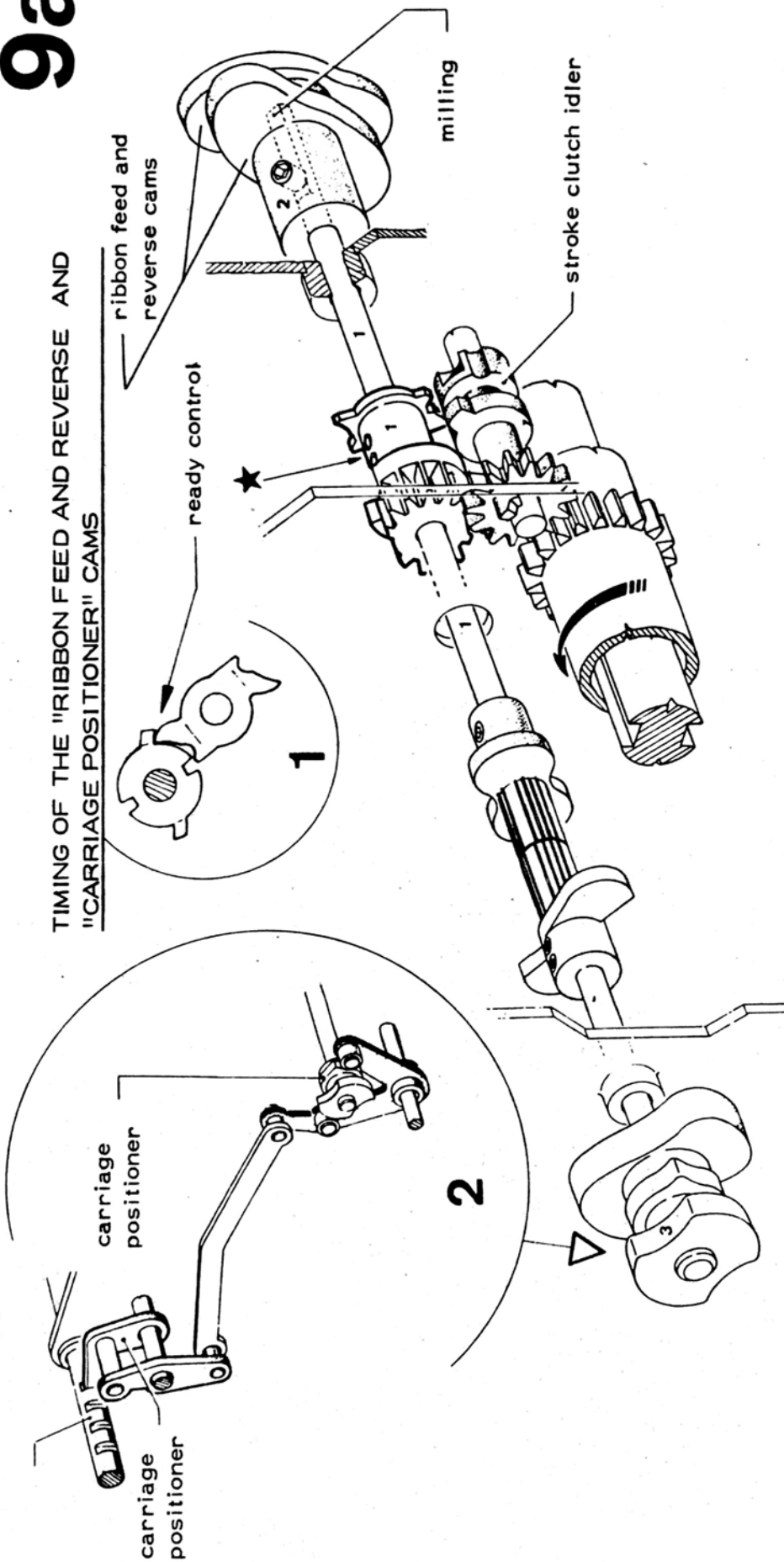
FIGURES/LETTERS

- for machines with serial number below 522659, the stroke clutch idler must be of 3 teeth out of phase, and the figures/letters clutch idler of ?

STROKE



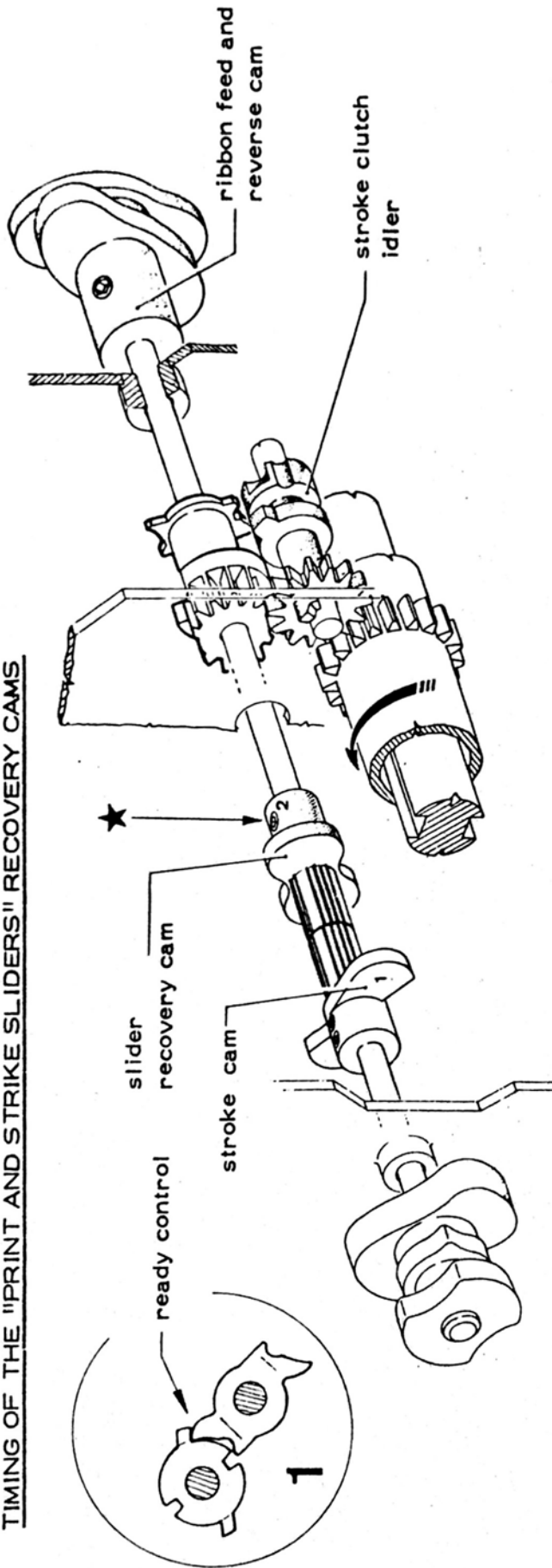
TIMING OF THE "RIBBON FEED AND REVERSE AND "CARRIAGE POSITIONER" CAMS



Checking the carriage positioner cam

- a) - operate the 3rd bit bar and single out at what degree the selection clutch idler meets the driven gear (175° : 195°) (fig.1)
- b) - engage the stroke clutch idler and rotate the cycle until the instant when the carriage positioner starts the disengagement from the bar (fig.2); check that this instant is included between 7° before and 3° after with respect to the previous value found at point "a"

TIMING OF THE "PRINT AND STRIKE SLIDERS" RECOVERY CAMS



Print sliders recovery cam

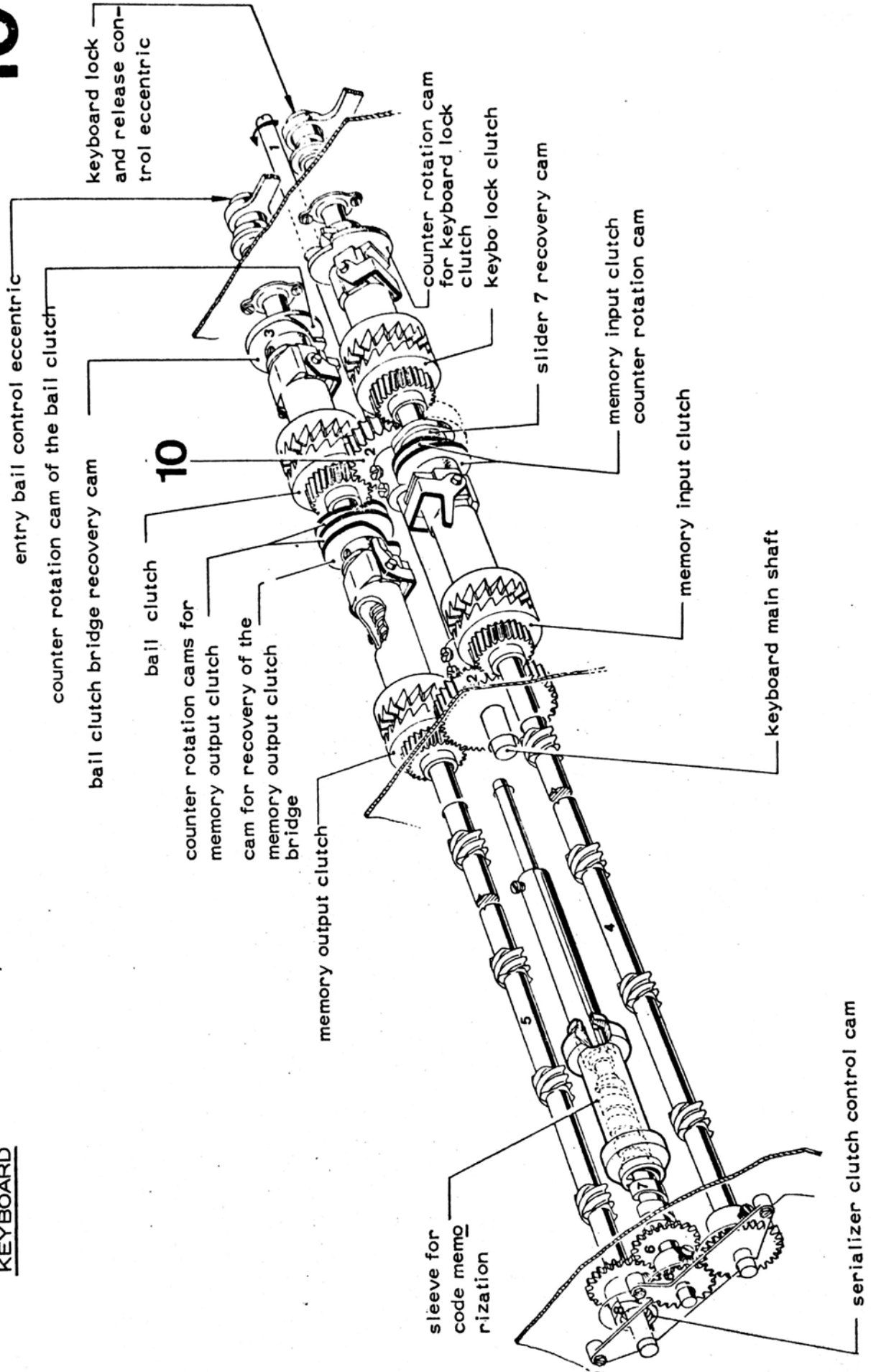
- a) - operate the 3rd bit bar and single out at what degree the selection clutch idler meets the driven gear (175° - 195°) (fig. 1)
- b) - engage the stroke clutch idler rotate the cycle taking the print slider to the platen, keep it in this position and continue the rotation until the slider recovery cam is the "start recovery position"
 - check that the "start recovery" instant is included between 7° + 17° before with respect to the value previously seen at point "a)".
 - adjust the slider recovery cam (the starting position is determined by the alignment with the ribbon feed cam screws

stroke cam

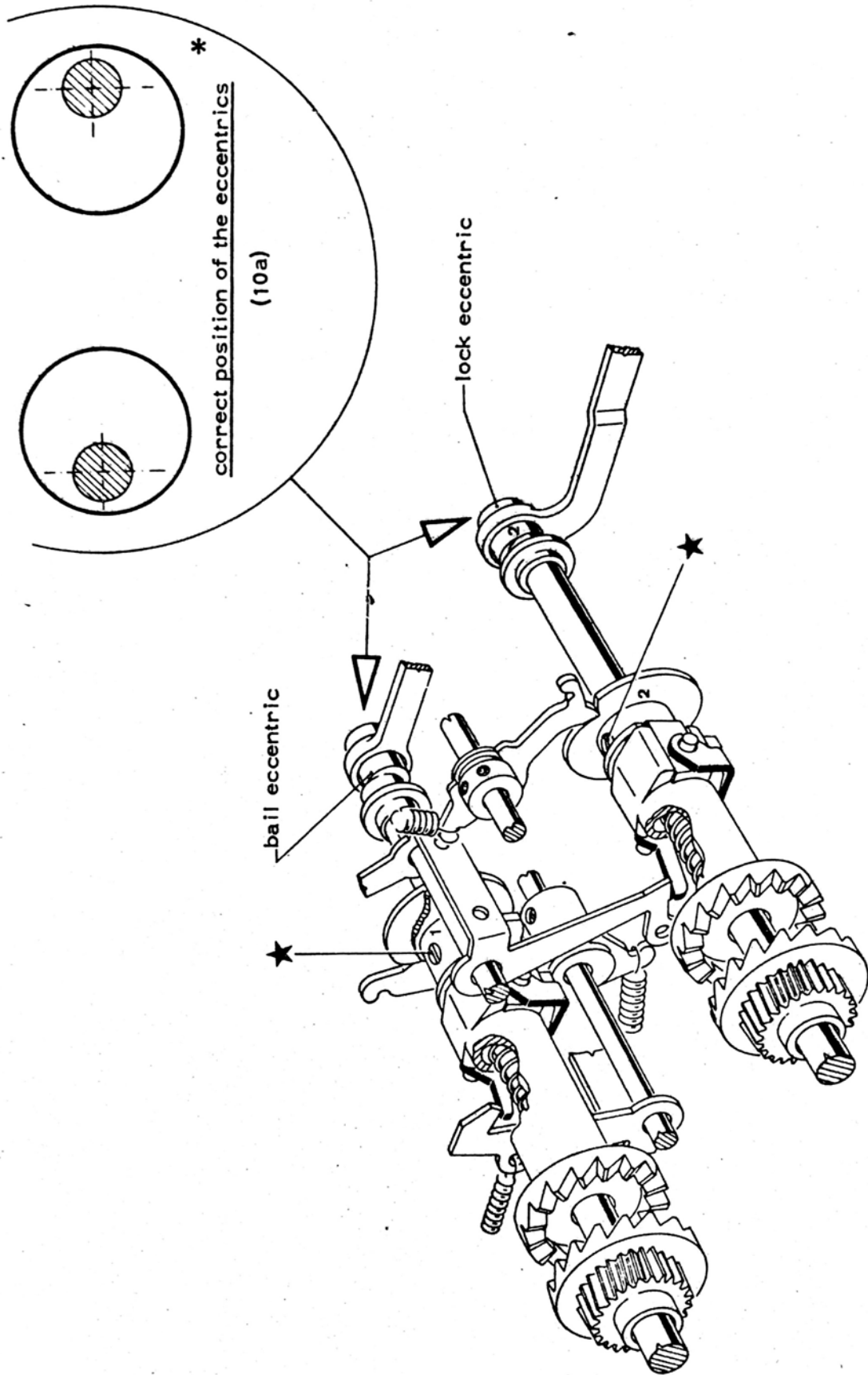
- perform a writing test with minimum strokes
- check that the print is clear and the impression uniform
- adjust the stroke cam (the starting position is determined by the alignment with the slider recovery cam notches).

KEYBOARD

10

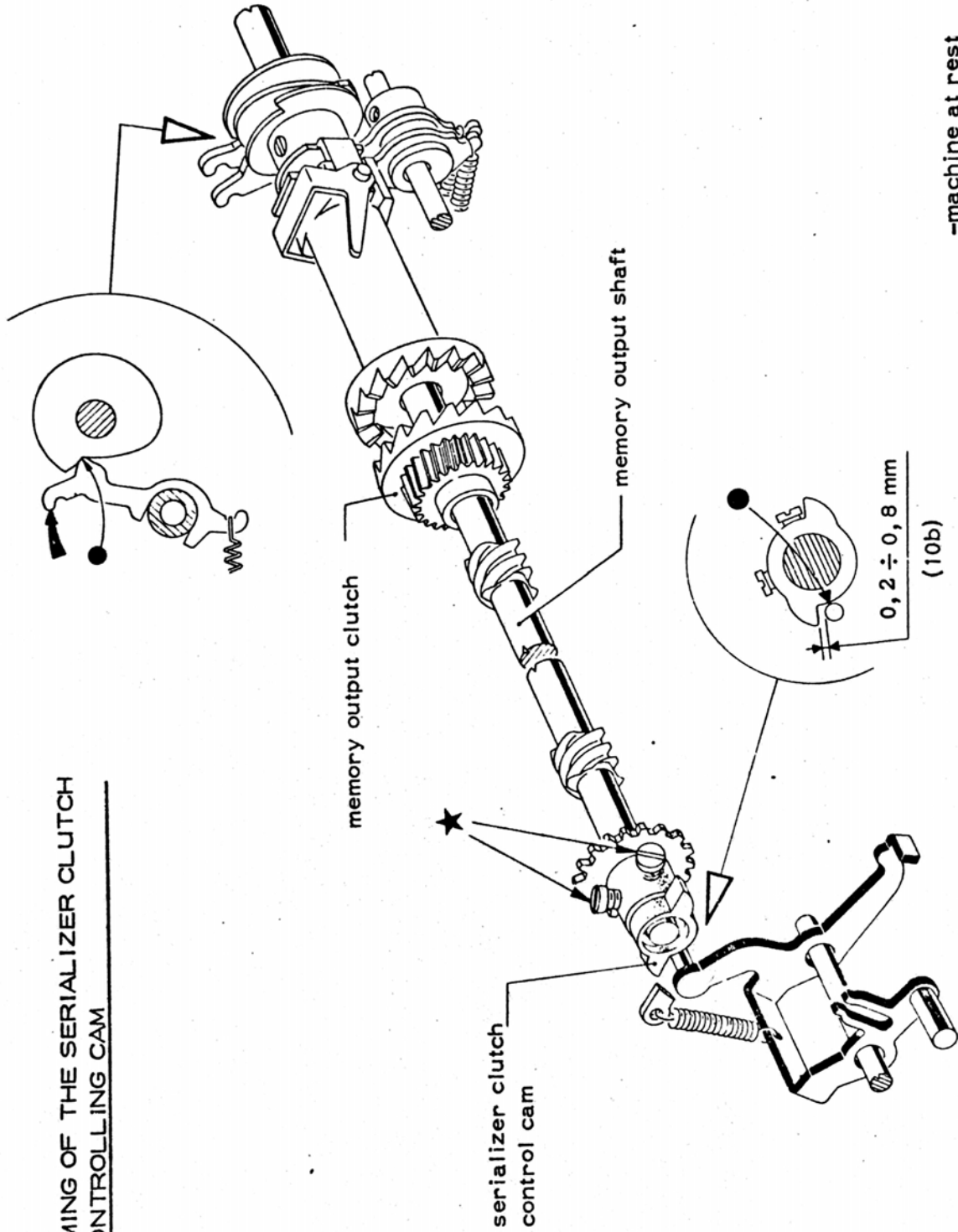


TIMING OF THE BAIL AND LOCK ECCENTRICS



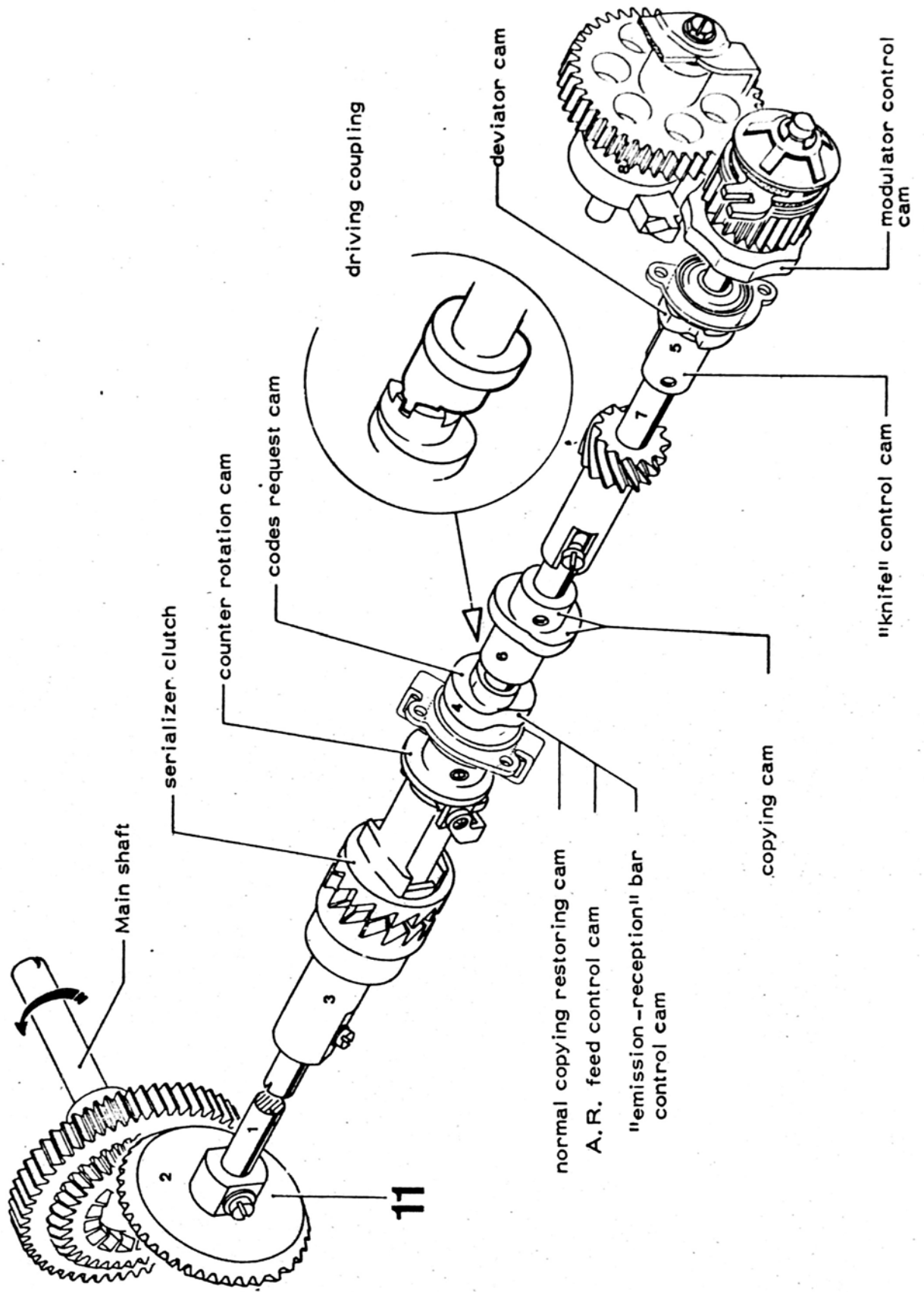
-machine in keyboard lock phase
check that the eccentrics high part is turned in wards

TIMING OF THE SERIALIZER CLUTCH CONTROLLING CAM

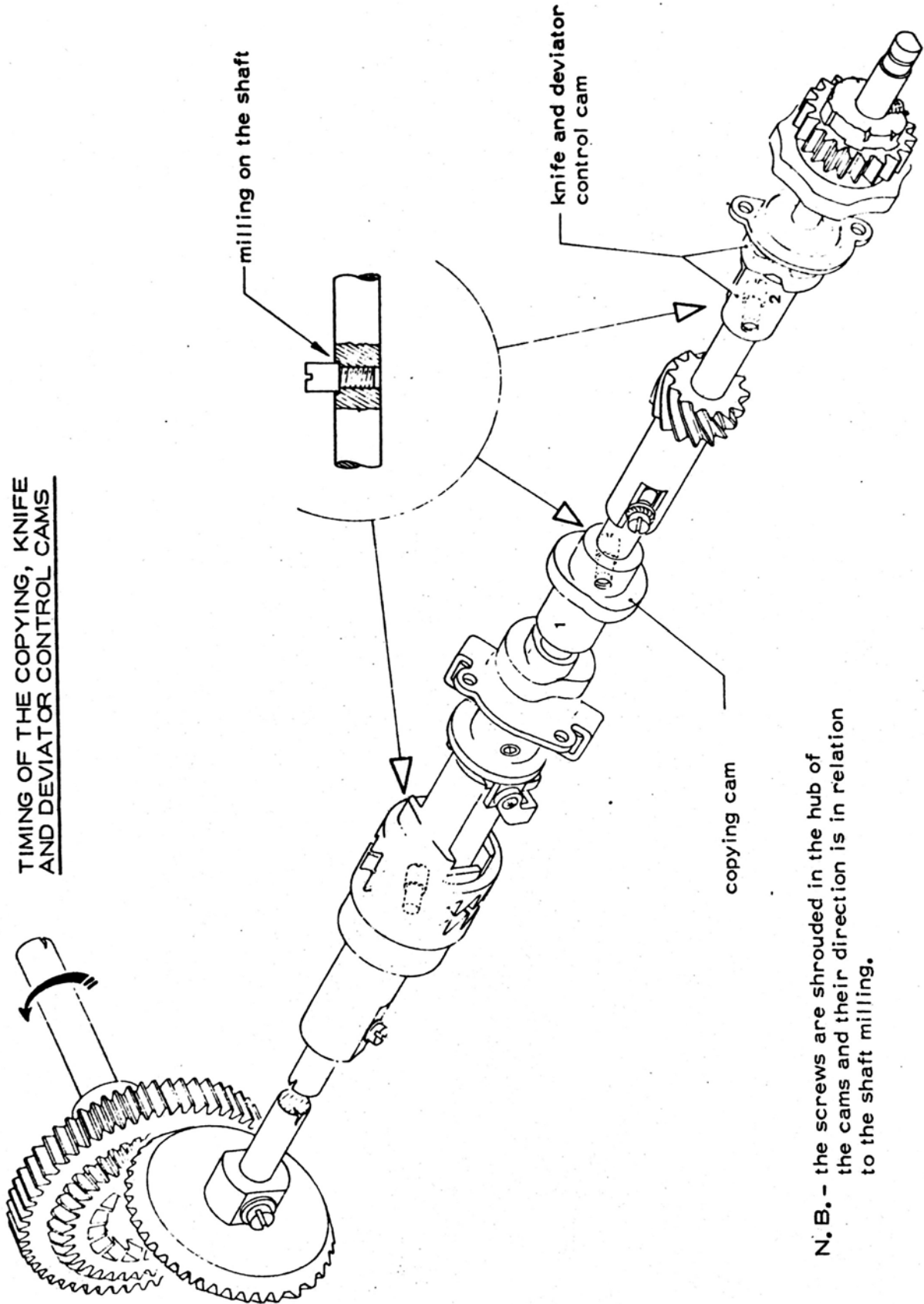


-machine at rest

SERIALIZER

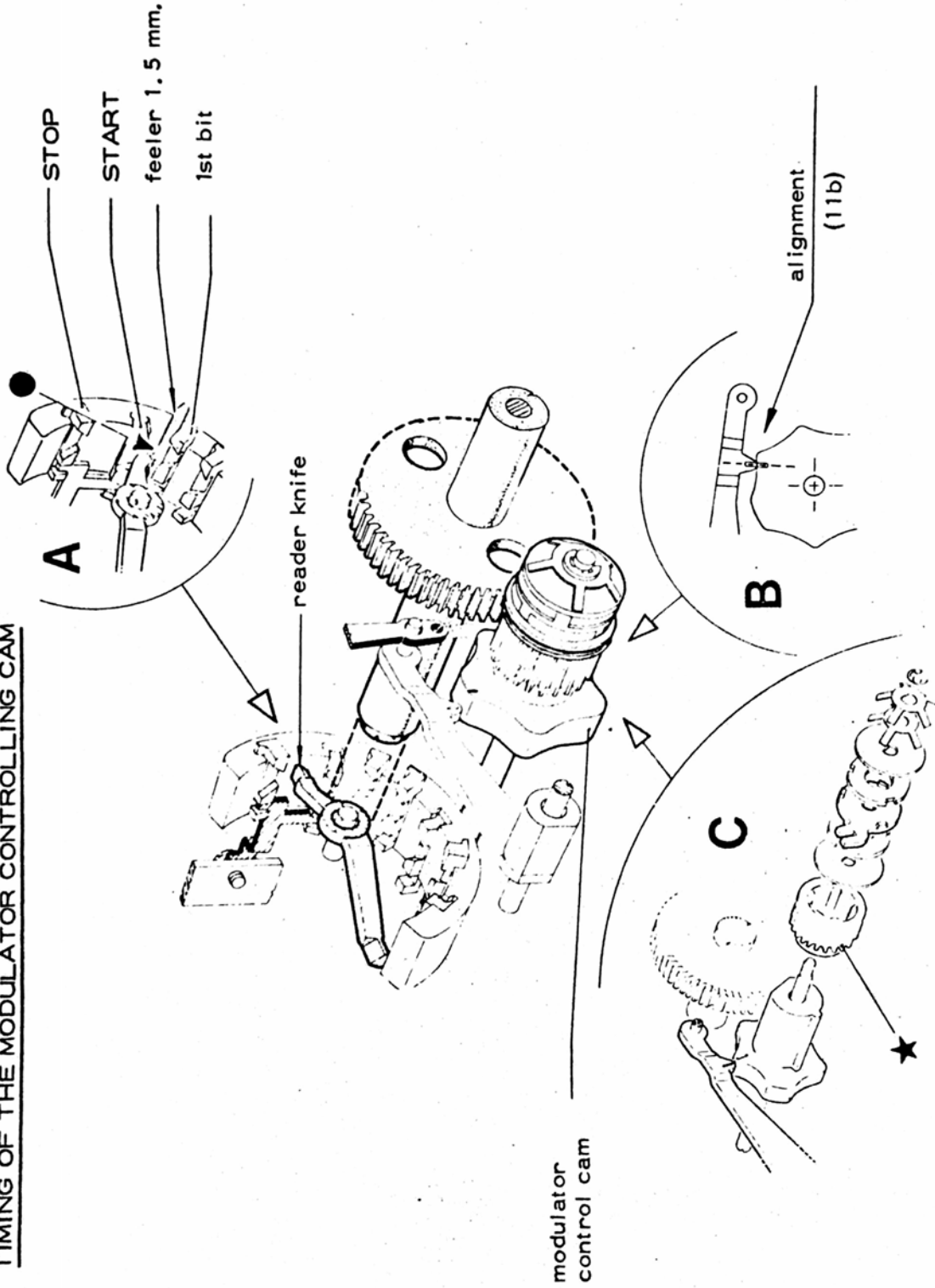


TIMING OF THE COPYING, KNIFE AND DEVIATOR CONTROL CAMS



N. B. - the screws are shrouded in the hub of the cams and their direction is in relation to the shaft milling.

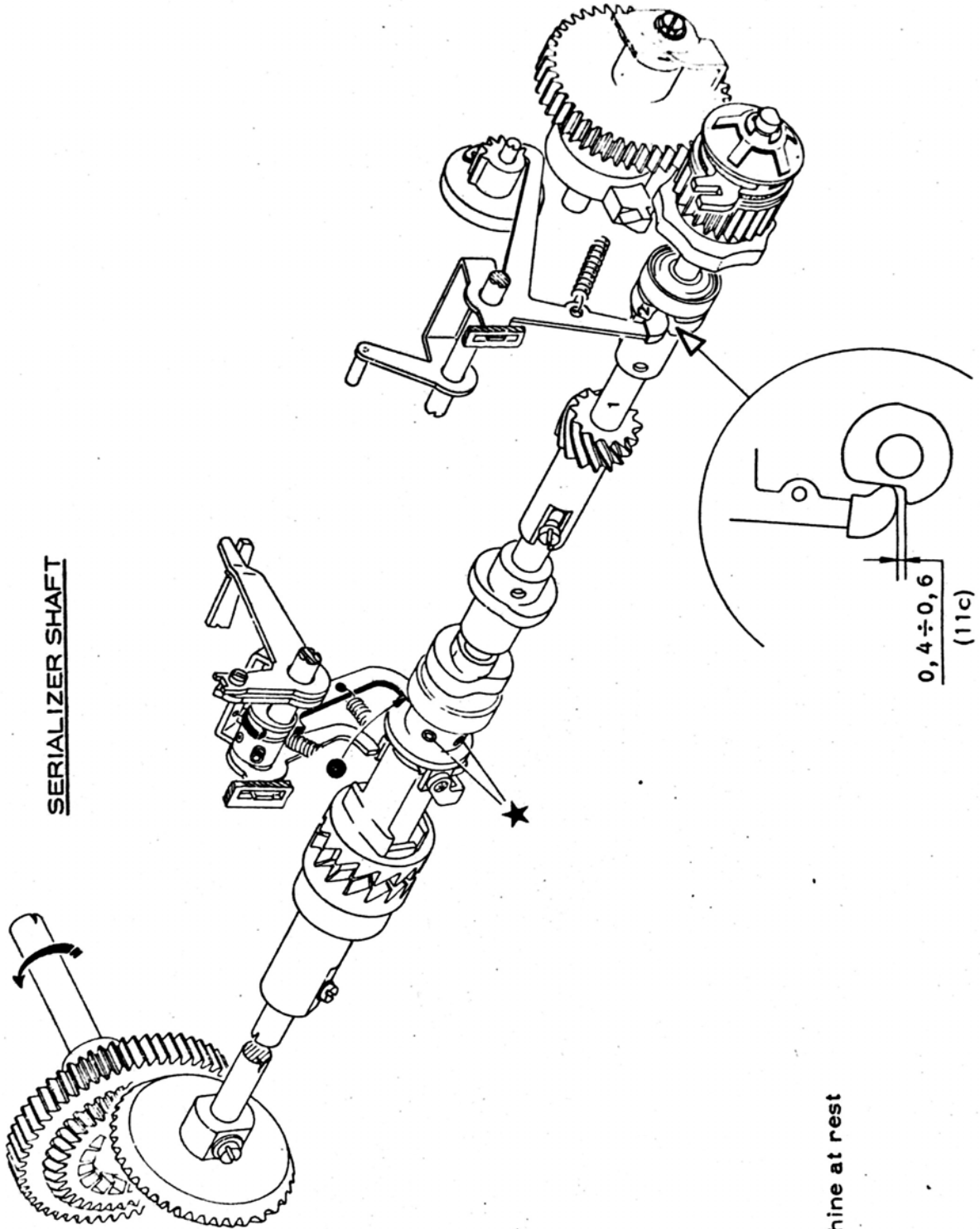
TIMING OF THE MODULATOR CONTROLLING CAM



- insert a 1.5mm. feeler in the point indicated by fig. A
- close the serializer clutch and move the reader knife against the feeler, then:
- (11b) - check the alignment shown in fig. B
- N.B. - to adjust, remove the parts shown in fig. C.

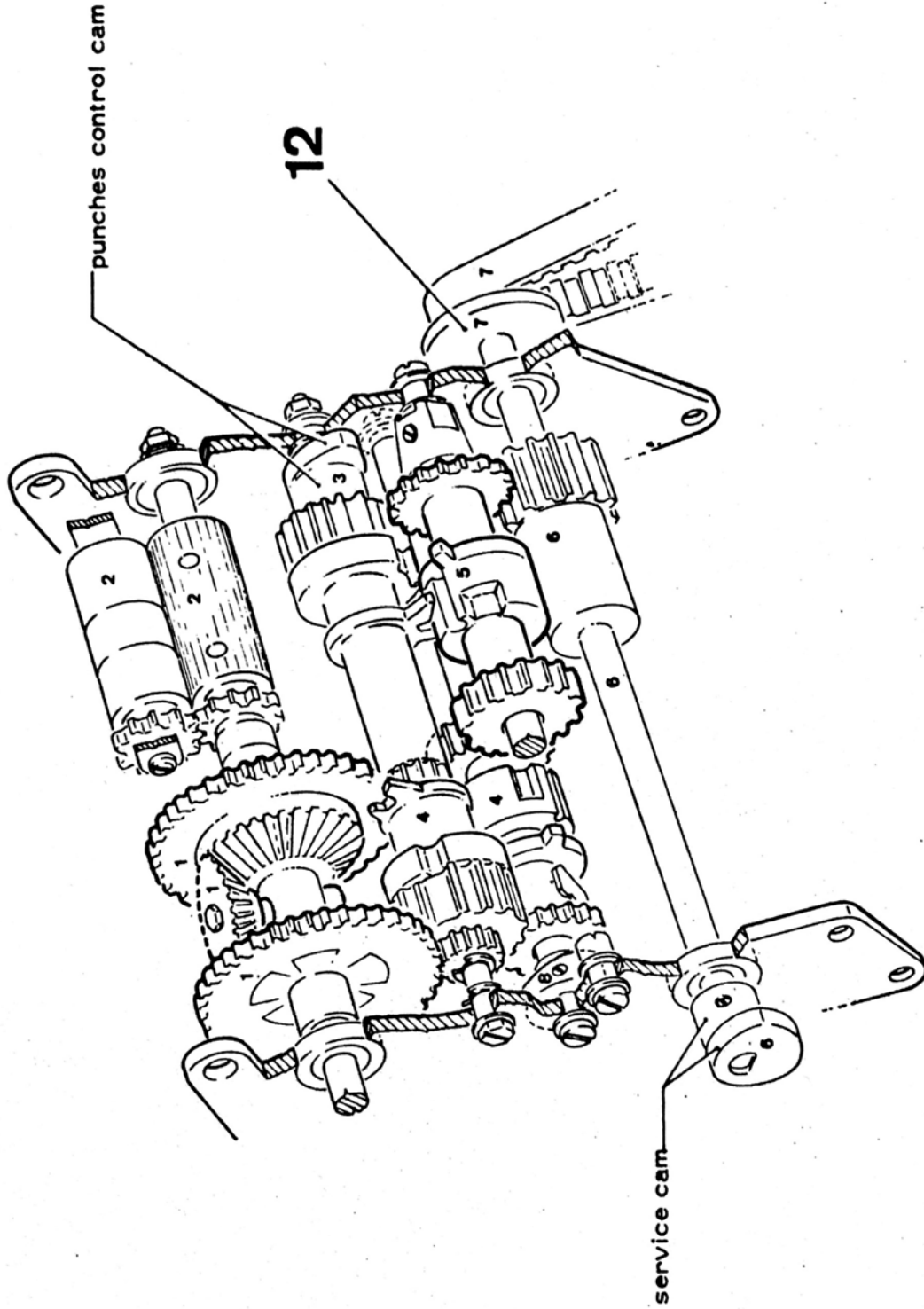
11c

SERIALIZER SHAFT

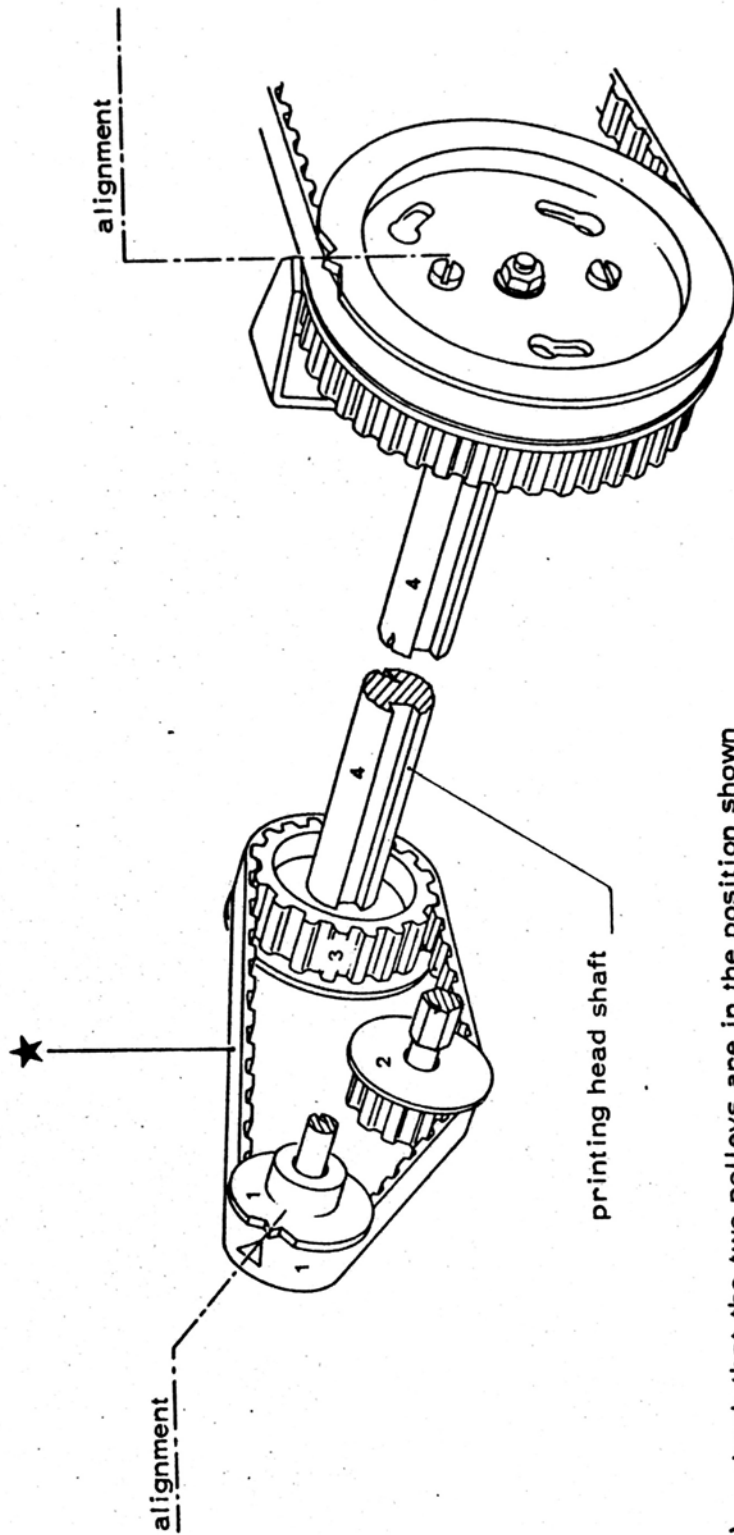


- machine at rest

TAPE PUNCH

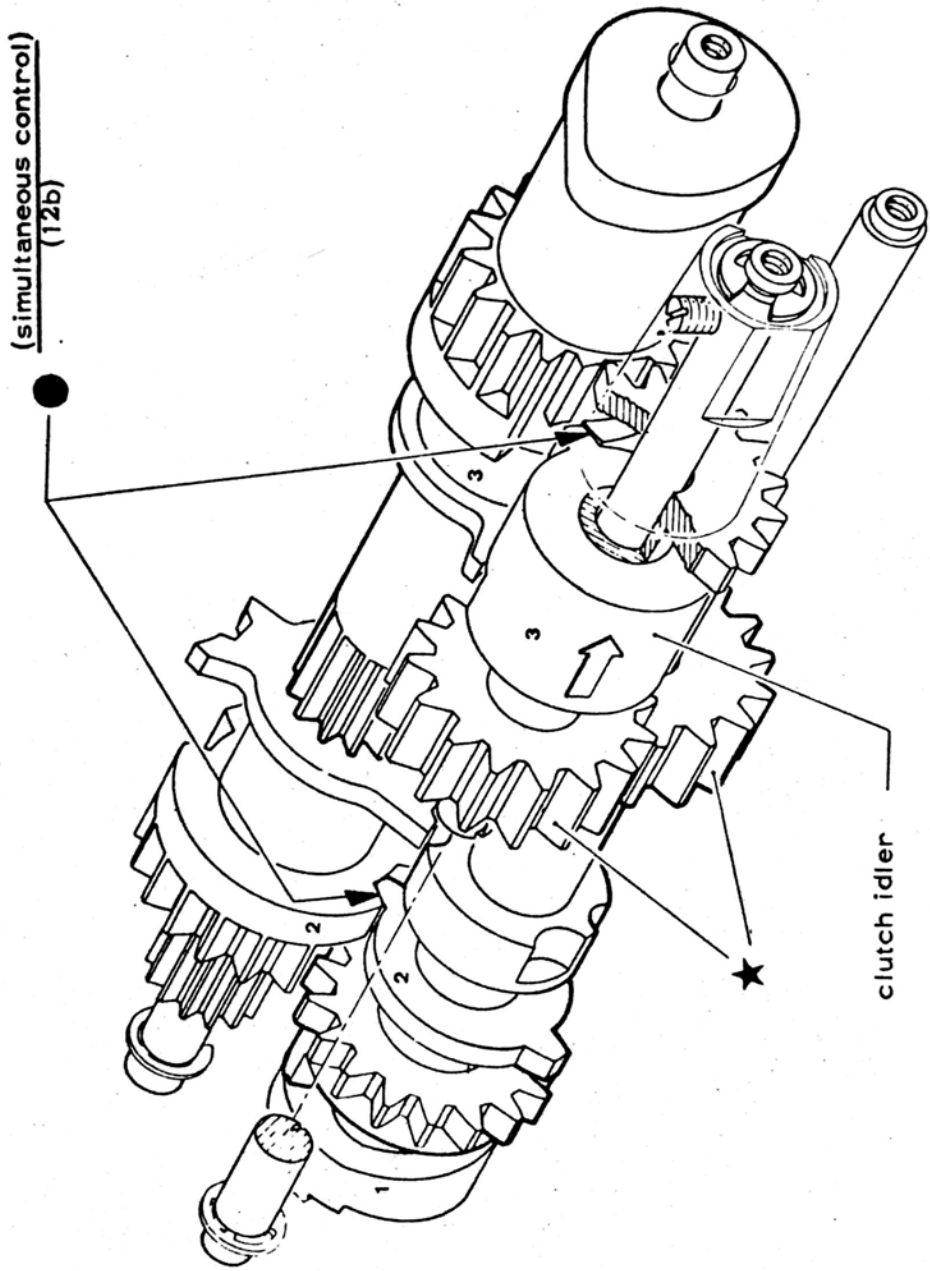


TIMING OF THE TAPE PUNCH BELT



(12a) – check that the two polleys are in the position shown

TIMING OF THE TAPE PUNCH CLUTCH IDLERS



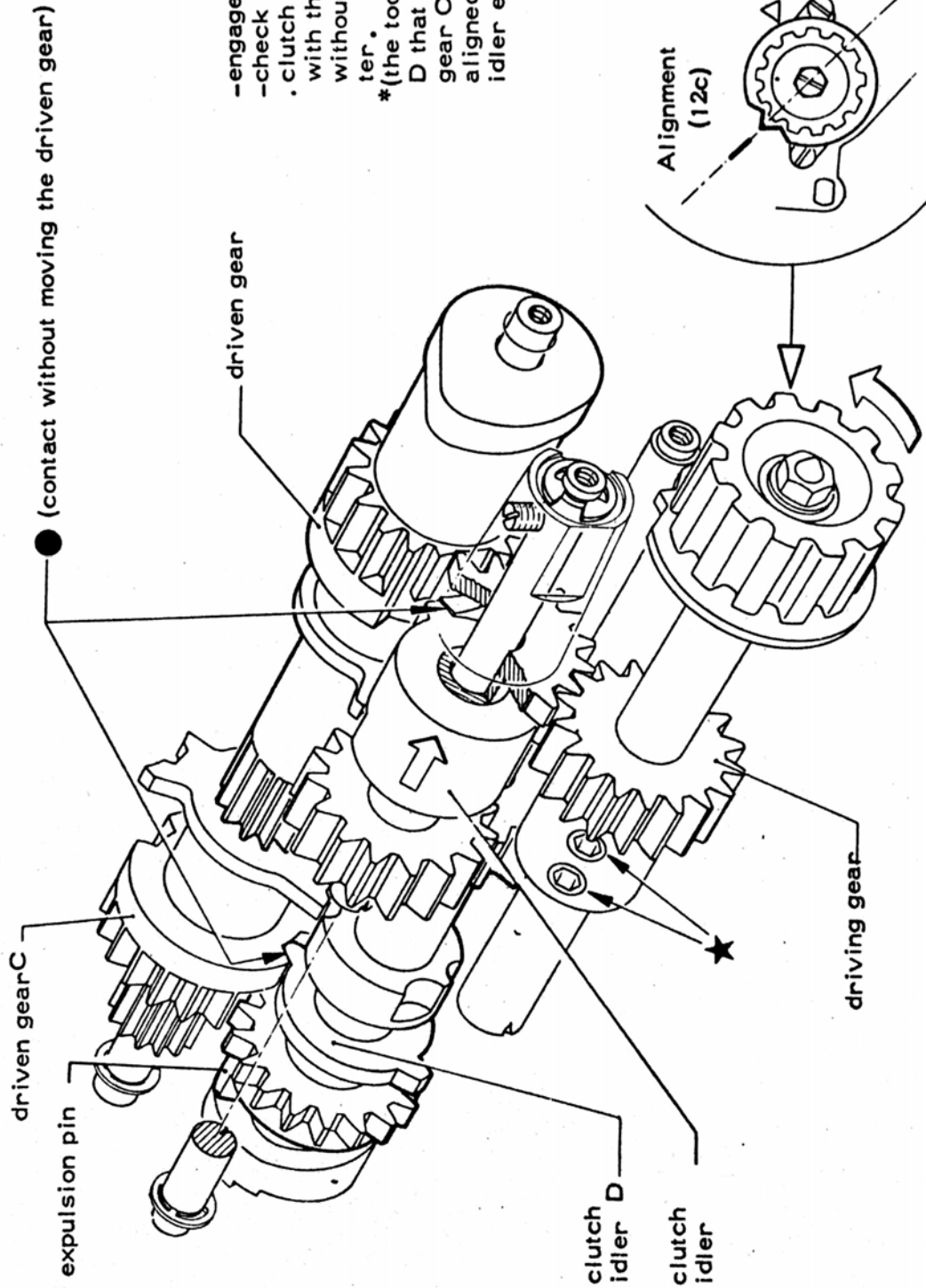
-engage the clutch idler and check by slowly controlling the tape punch if there is no simultaneous control (12b) untimed the two wheels, shown by sign (*).

(★).

12b

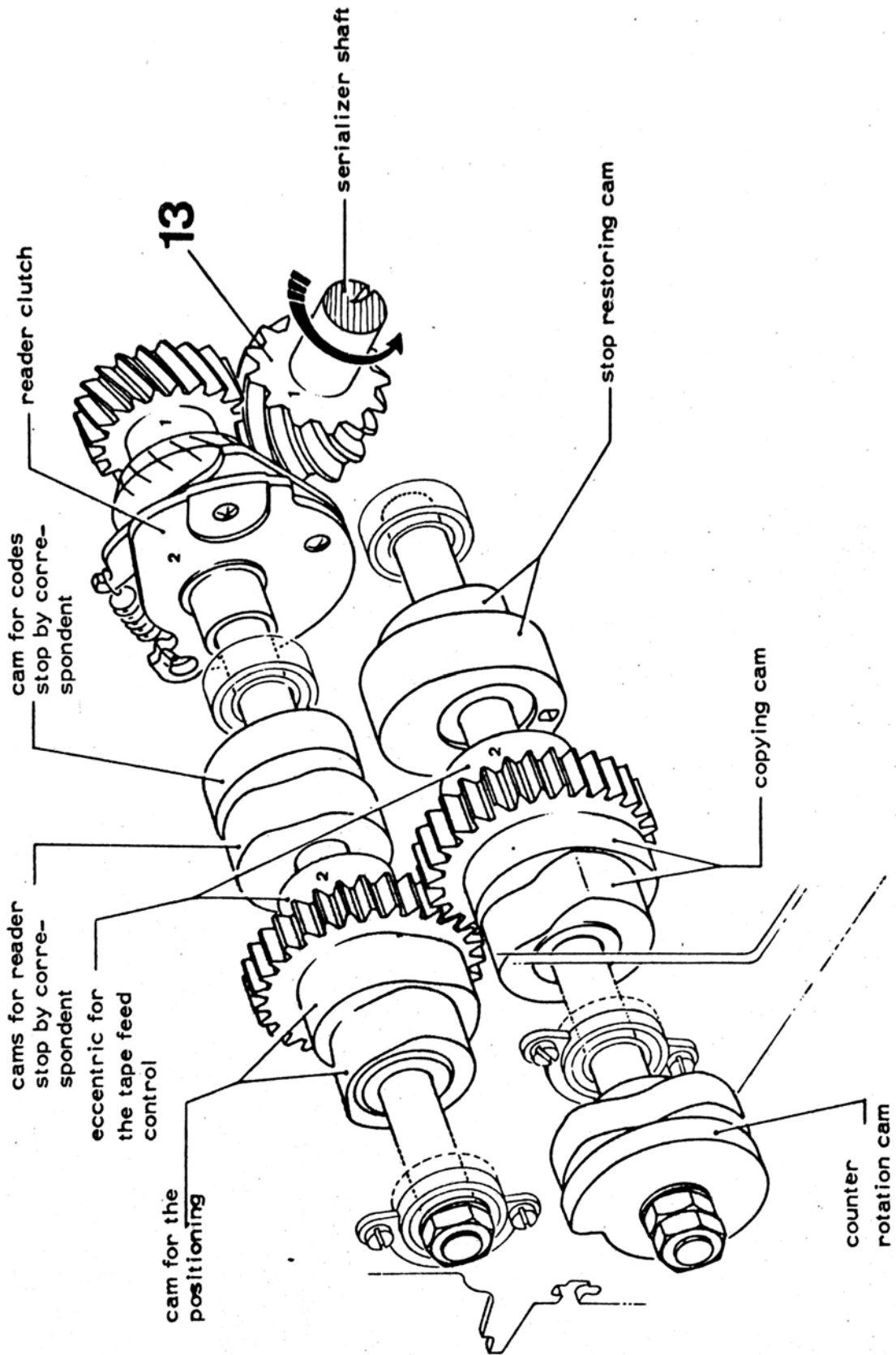
TIMING OF THE TAPE PUNCH DRIVING GEAR

12c

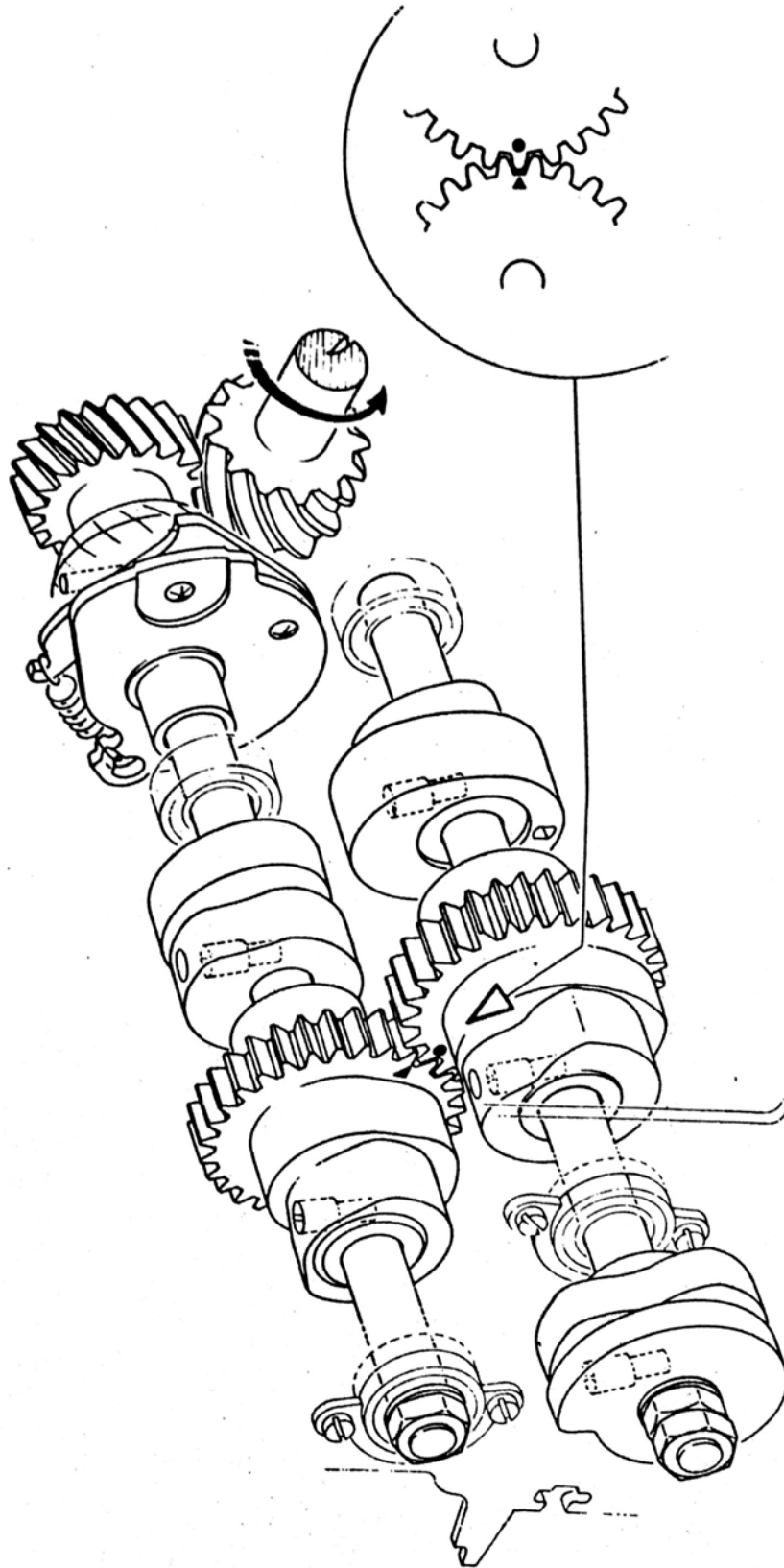


- engage the clutch idler
- check after moving the
- . clutch idlers in contact with the driven gears without moving the latter.*
- *(the tooth of clutch idler D that will control driven gear C must be the one aligned to the clutch idler expulsion pin).

READER

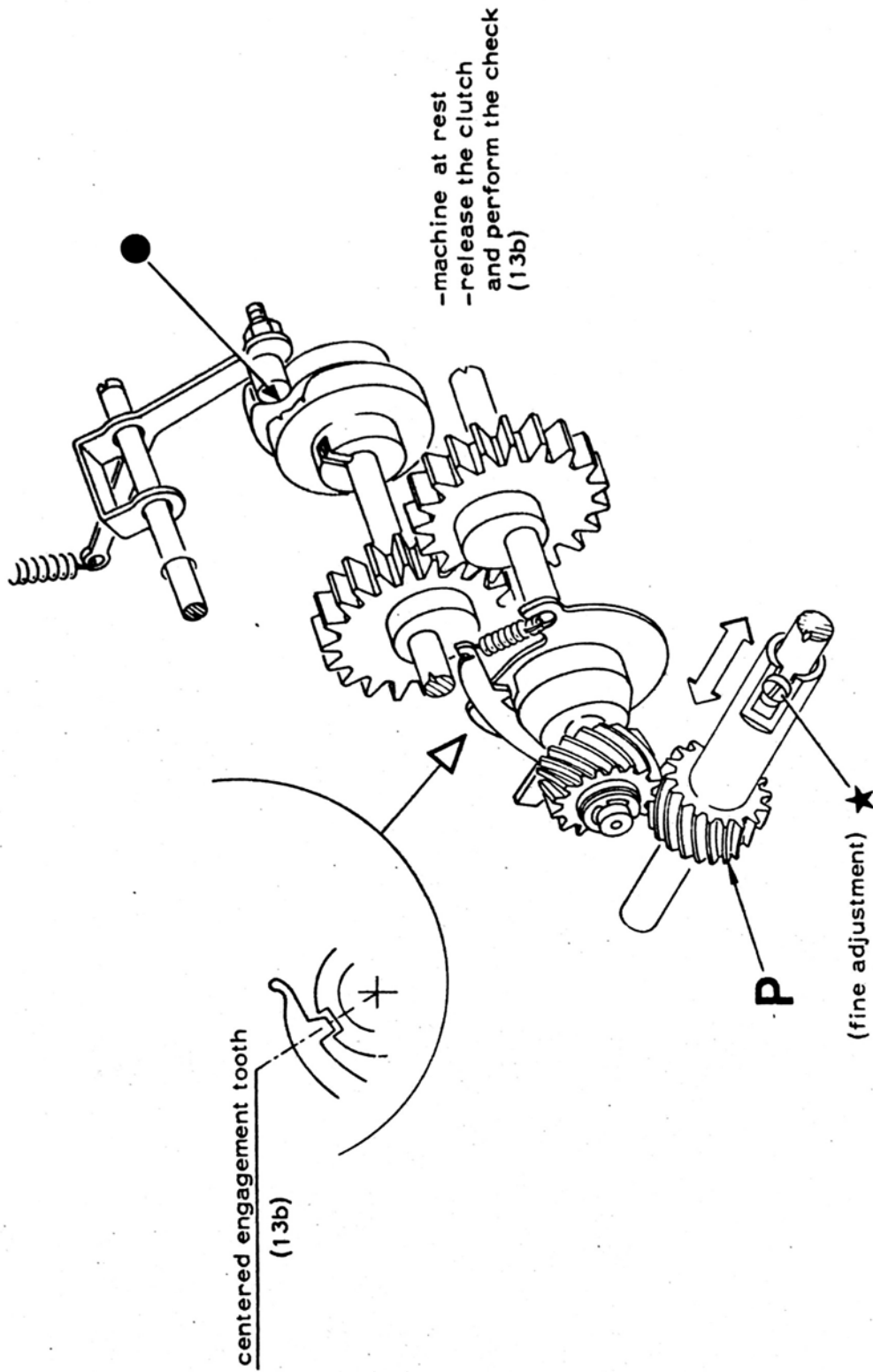


TIMING OF THE READER CAMS AND WHEELS



(13a) - time the cams positioning the screws as indicated and the wheels as drawn in the circle

TIMING OF THE READER CLUTCH



NOTE - when the condition shown (13b) cannot be obtained, acting on the (fine) adjustment screws; disengage the pinions (bending the reader unit with the help of a screwdriver) and engage them again with one tooth out of phase, until the requested condition is obtained (13b)

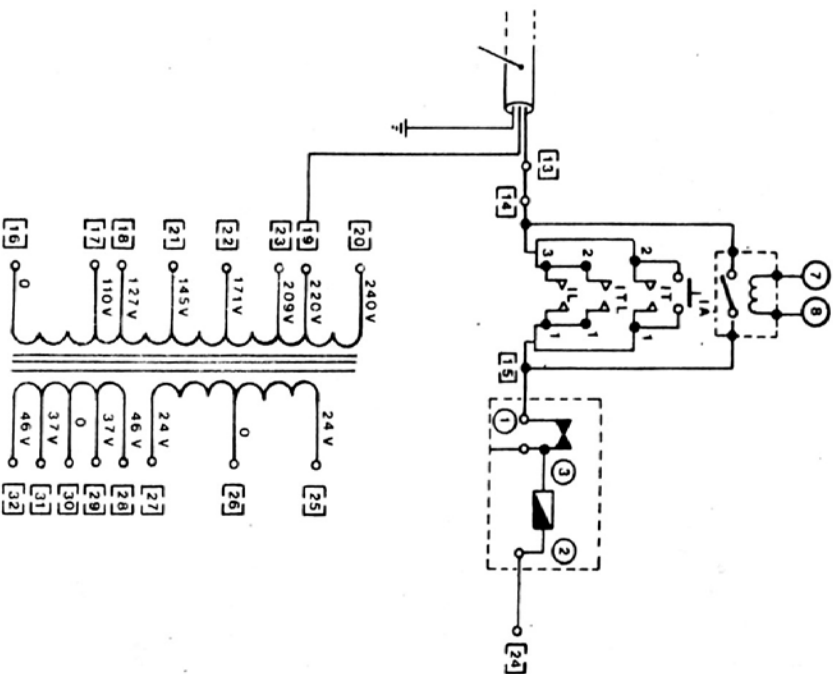
MOTOR AND
TELEGRAPHIC
CIRCUITS

MOTOR AND TELEGRAPHIC CIRCUIT

Index

- Power supply transformer electric check	page	3.01
- Motor circuit components electric checks motor	"	3.02
- TE, RE circuits (lay outs), and their components . .	"	3.03
- Motor circuit complete electric diagram	"	3.04
- Motor circuits general wiring	"	3.05
- Telegraphic circuit components electric checks . . .	"	3.07
- Telegraphic circuits electric diagrams	"	3.08
- Telegraphic circuits general wiring	"	3.09
- TL motor circuit	"	3.10
- TL motor circuit general wiring	"	3.11

POWER SUPPLY TRANSFORMER ELECTRIC CHECK



CHECK PROCEDURE

- disconnect the power supply plug
- move the wire of the power supply cord from point 13 to point 16 of terminal block M1
- connect the power supply plug
- check the voltages shown on the diagram

MOTOR CIRCUIT COMPONENTS ELECTRIC CHECK

BALLAST RESISTANCE (R. Z.) ELECTRIC CHECK

- Disconnect terminals R, 12, K and U of (R. Z.)
- Check a resistance of about 100 Ω between terminal R and 12
- Check a resistance of about 350 Ω (R. Z.) between terminal R and K
- Check a resistance of about 100 Ω (R. L.) between terminal K and U

MOTOR FILTER (F. M.) ELECTRIC CHECK

- Disconnect the terminals that arrive at (F. M.)
- Check the continuity between terminals M and R-P and Z-S and T - U and V
- No continuity between the terminals and between terminals and ground

SPARK SUPPRESSOR FILTER (F. S.) ELECTRIC CHECK

- Disconnect terminals J, K, H, that arrive at (F. S.)
- Check the continuity between terminals H and K - J and L
- No continuity between terminals L-H and H-L, and between the terminals and ground

MOTOR (M. T.) ELECTRIC CHECK

- Check a resistance of about 33 Ω between eyelet T and Z
- Check a resistance of about 61 Ω between eyelet T and V
- No continuity between the terminals and ground

CHECK OF THE RATING-PLATE DATA STARTING CONDENSOR (C. A.)

- Disconnect a terminal
- Check load and unload

CAPACITY 8 μ F

WORK VOLTAGE V/ 450

FREQUENCY Hz 50 ± 60

MOTOR RELAY (R. M.) CHECK

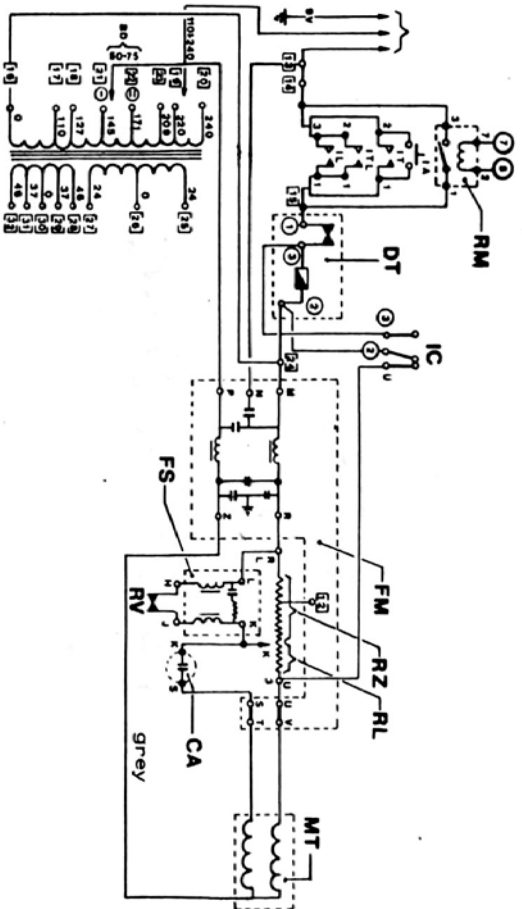
- Remove the (RM) from the base
- Check that with 20 VCC applied to pins 2 and 7, the relay switches safely
- Continuity at rest between pins { 1 and 4
5 and 8
- With stimulated relay, continuity between pins { 8 and 6
1 and 3

MOTOR CIRCUITS (LAYOUTS) AND THEIR COMPONENTS.

COMPONENTS	MOTOR LAYOUTS													
	SIGN	DENOMINATION	M02	M03	M04	M06	M24	M25	M26	M28	M29	M30	M33	M34
CA	Start condenser	X	X	X	X	X	X	X	X	X	X	X	X	X
DT	Thermo switch	X	X	X	X	X	X	X	X	X	X	X	X	X
FM	Motor filter	X	X	X	X	X	X	X	X	X	X	X	X	X
FS	Spark suppressor filter	X	X	X	X	X	X	X	X	X	X	X	X	X
I.L.T	Letters switch	X	X	X	X	X	X	X	X	X	X	X	X	X
IA	Start switch													X
IC	Centrifugal switch	X	X	X	X	X	X	X	X	X	X	X	X	X
IL	Local switch	X	X	X	X	X	X	X	X	X	X	X	X	X
IT	Time switch	X	X	X	X	X	X	X	X	X	X	X	X	X
MT	Motor	X	X	X	X	X	X	X	X	X	X	X	X	X
RL	Limiting resistance	X	X	X	X	X	X	X	X	X	X	X	X	X
RM	Motor relay						X	X	X	X	X	X	X	X
RV	Speed adjuster	X	X	X	X	X	X	X	X	X	X	X	X	X
RZ	Ballast resistance	X	X	X	X	X	X	X	X	X	X	X	X	X
TR	Transformer	X	X	X	X	X	X	X	X	X	X	X	X	X
SSC	Cylindrical Souriau plug				X									
SP	Polarized plug				X							X		
SS	Schuko plug	X	X				X						X	
ST	Tetral plug		X					X						
SI	English plug											X		

3.03

MOTOR CIRCUIT COMPLETE ELECTRIC DIAGRAM



NOTE 1

For **M03** motor layout the diagram variant consist of a jumper between points 13 and 15 of M1.

NOTE 2

For motor layouts M04-06-25-26-28 the diagram variant consist in the addition of a wire which connects point 16 of M1 to point 3 of the ST plug.

NOTE 3

For M25 motor layout (AUSTRIA) the diagram variant consist in the elimination of the jumper between points 13 and 14 of M1 and the insertion of a fuse between them.

NOTE 4

For M06 motor layout the diagram variant consist in the addition of a SSC plug on the secondary transformer (for connections see the wiring diagram).

3.04

Tab. A - COMPONENTS TERMINOLOGY

SYMBOL	DENOMINATIONS
CA	Motor start condenser
DT	Thermo switch
FM	Motor filter
FS	Spark suppressor filter
IA	Start switch
I.L.T	Letters switch
IC	Centrifugal switch
IL	"Local" switch
IT	Time switch
M1	Terminal blocks
M2	
M3	
M4	
M5	
MT	Motor
RL	Limiting resistance
RM	Motor relay
RV	Speed adjuster
RZ	Ballast resistance
TR	Transformer
SSC	Cylindrical Sourniau plug
SS	Schnko plug
ST	Tetral plug
SI	English plug
SC	Cannon plug
SP	Polarized plug

Tab. 1 - WIRE CONNECTIONS TO MATCH THE LINE VOLTAGE

Line Voltage	M1 terminal block contact
110	17
127	18
220	19
240	20

Tab. 2 - WIRE CONNECTIONS TO MATCH THE VOLTAGE TO THE MOTOR

Telegraphic speed	M1 terminal block contact
75 Bd	22
50 Bd	21

NOTE 1: JUMPER FOR POWER SUPPLY

- For M03, jumper between points 13 and 15 of M1.

- For all the other layouts connection between points 13 and 14 of M1.

NOTE 2: JUMPER FOR SWITCHES AND MOTOR RELAY DISABILITY

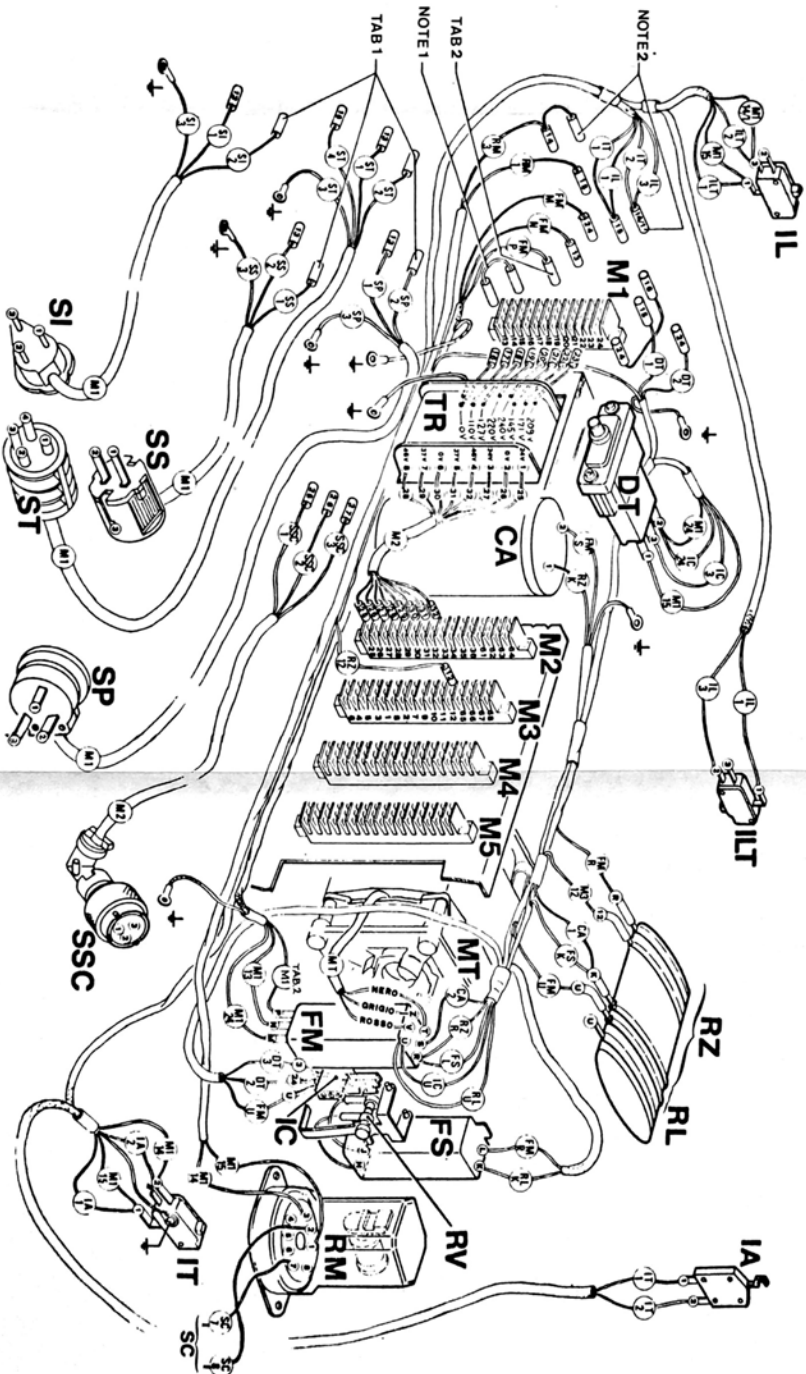
(Note valid only for layouts: M24-25-26-28-29-30-33-34)

a) To simultaneously disable the 3 switches (IL, IT, (L.T) and RM, move the jumper from point 13 to 15M1.

b) To simultaneously disable only the 3 switches, move terminal 14/1 (only n°14 will appear printed on the tube) at point 15 of M1.

c) To disable one of the three switches, operate on the respective micros, moving the central terminal (still connected to point 1) on the free mat.

THE MOTOR CIRCUITS GENERAL WIRING



TELEGRAPHIC CIRCUIT T01 COMPONENTS ELECTRIC CHECK

- check continuity between terminals:

A e B
C e D
E e F

- check lack of continuity between terminals E-C and E-A and between these terminals and 'ground'

RECEPTION ELECTROMAGNETS CHECK

- disconnect the wires of the coils from the relative terminal blocks
- join the two violet wires together
- join the two white wires together
- check 105Ω between the two white and violet wires (each coil measures 210Ω).

POWER SUPPLY VOLTAGE CHECK

- disconnect the telegraphic plug wire connected at point [2] of terminal block M3.
- connect the amperemeter between the wire previously removed and point [2] of M3 terminal n block (fig. 1) and check that the voltage is:

20 mA in D. C.
35 mA in S. C.

- when the measured voltages are lower than the anticipated values and when such values cannot be obtained with calibration instruments, it will be possible to start the reception electromagnet by connecting the two coils in series (see fig. 2). Such a connection will however be possible only if it will give a power supply voltage not lower than:

15 mA in D. C.
25 mA in S. C.

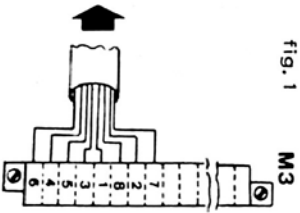


fig. 1

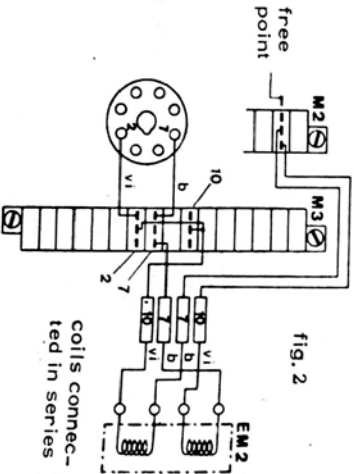
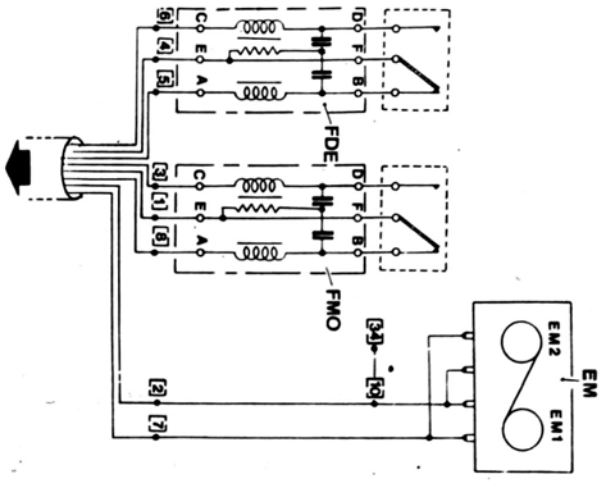


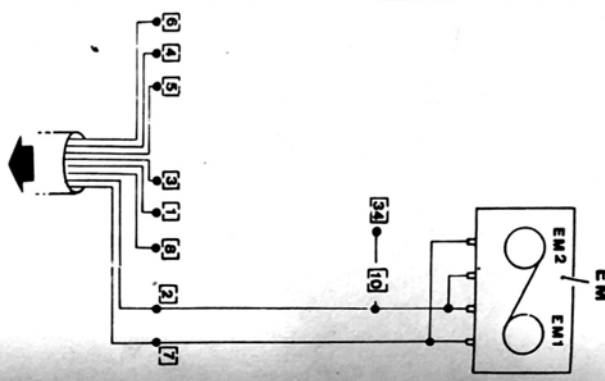
fig. 2

TELEGRAPHIC CIRCUITS T01 AND T02 ELECTRIC DIAGRAM



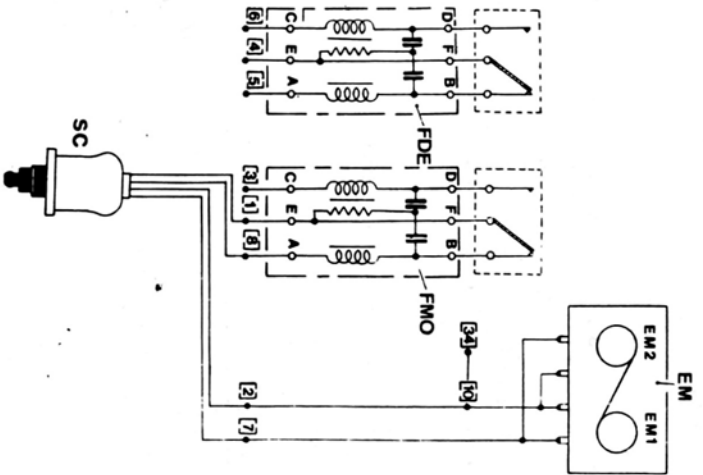
To the telegraphic plug:
 a) -KLUKE (with green notches) for T01 telegraphic circuit
 b) -OCTAL for T02 telegraphic circuit
 For plug connections see the relative wiring diagram.

TELEGRAPHIC CIRCUITS T03 AND T04 ELECTRIC DIAGRAM



To the telegraphic plug:
 a) -KLUKE (with green notches) for T03 telegraphic circuit
 b) -OCTAL for T04 telegraphic circuit
 For plug connections see the relative wiring diagram.

TELEGRAPHIC CIRCUITS T03 AND T04 ELECTRIC DIAGRAM



For connections of SC plug see the relative wiring diagram.

TELEGRAPHIC CIRCUITS T06 ELECTRIC DIAGRAM

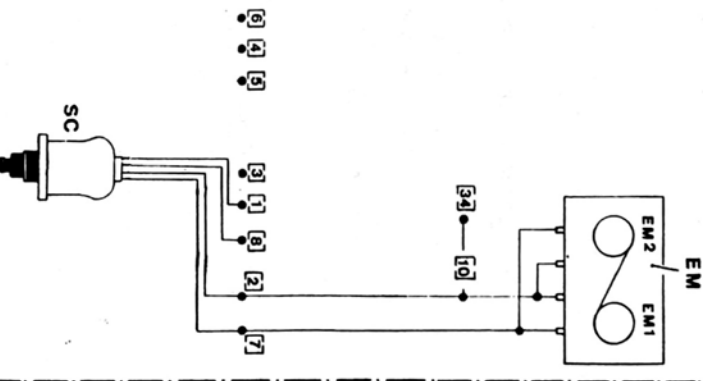
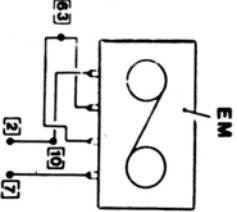
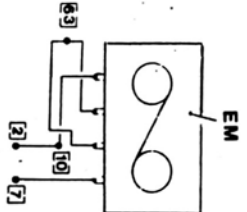


figure A



NOTE: the EM coils relative to the diagrams shown above, are connected in parallel. For the diagram of their connection in series see figure A.

figure A



NOTE: the EM coils relative to the diagrams shown above, are connected in parallel. For the diagram of their connection in series, see figure A.

TELEGRAPHIC CIRCUITS GENERAL WIRING

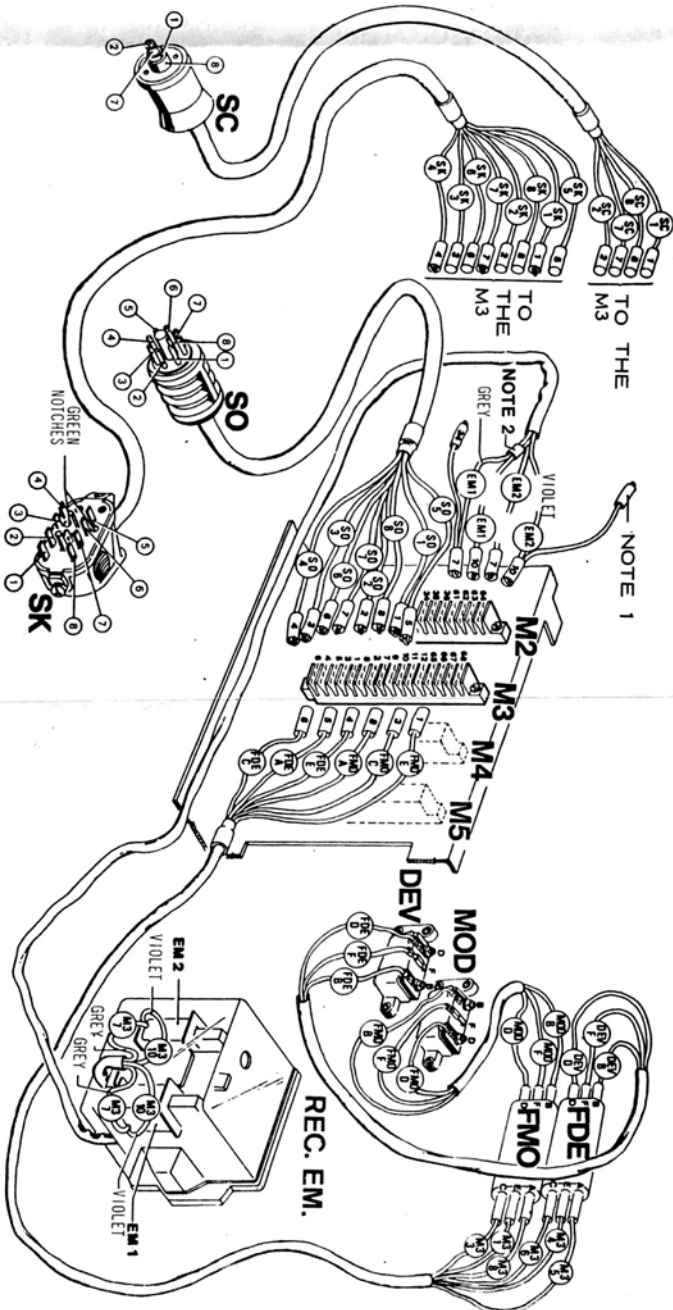
COMPONENTS NOMENCLATURE	CIRCUITS DESTINATION AND COMPOSITION					
	TE T01	TE T02	RE T03	RE T04	TE T05	RE T06
ABREV. NOMENCLATURE						
DEV Send-Receive Switch	X	X				
FDE Send-Receive switch filter	X	X			X	
FMO Modulator Filter	X	X			X	
EM2 Receive Electromagnets	X	X	X	X	X	X
EM1 Send Modulator	X	X			X	
SC 4-pole co-axial plug					X	X
SO Octal plug		X		X		
SK Kuke plug	X		X			

NOTE 1

The strap indicated 1s always connected to point 2 of terminal M3. However, if the machine is working in double current and with D022 device, the strap must be connected to point 35 of terminal M2.

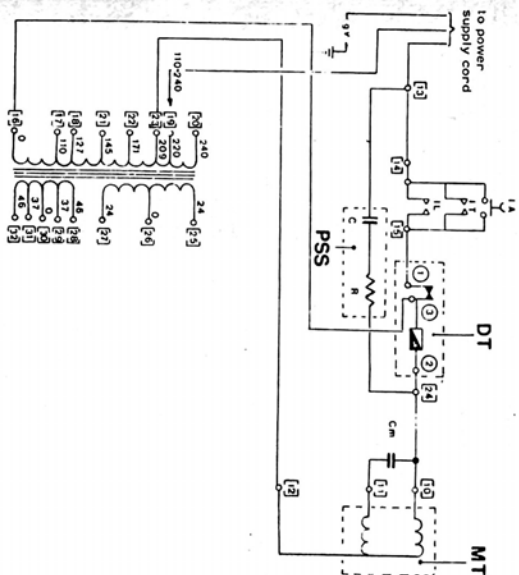
NOTE 2

The sticker holds together the two leads abutting to electromagnet EM1.

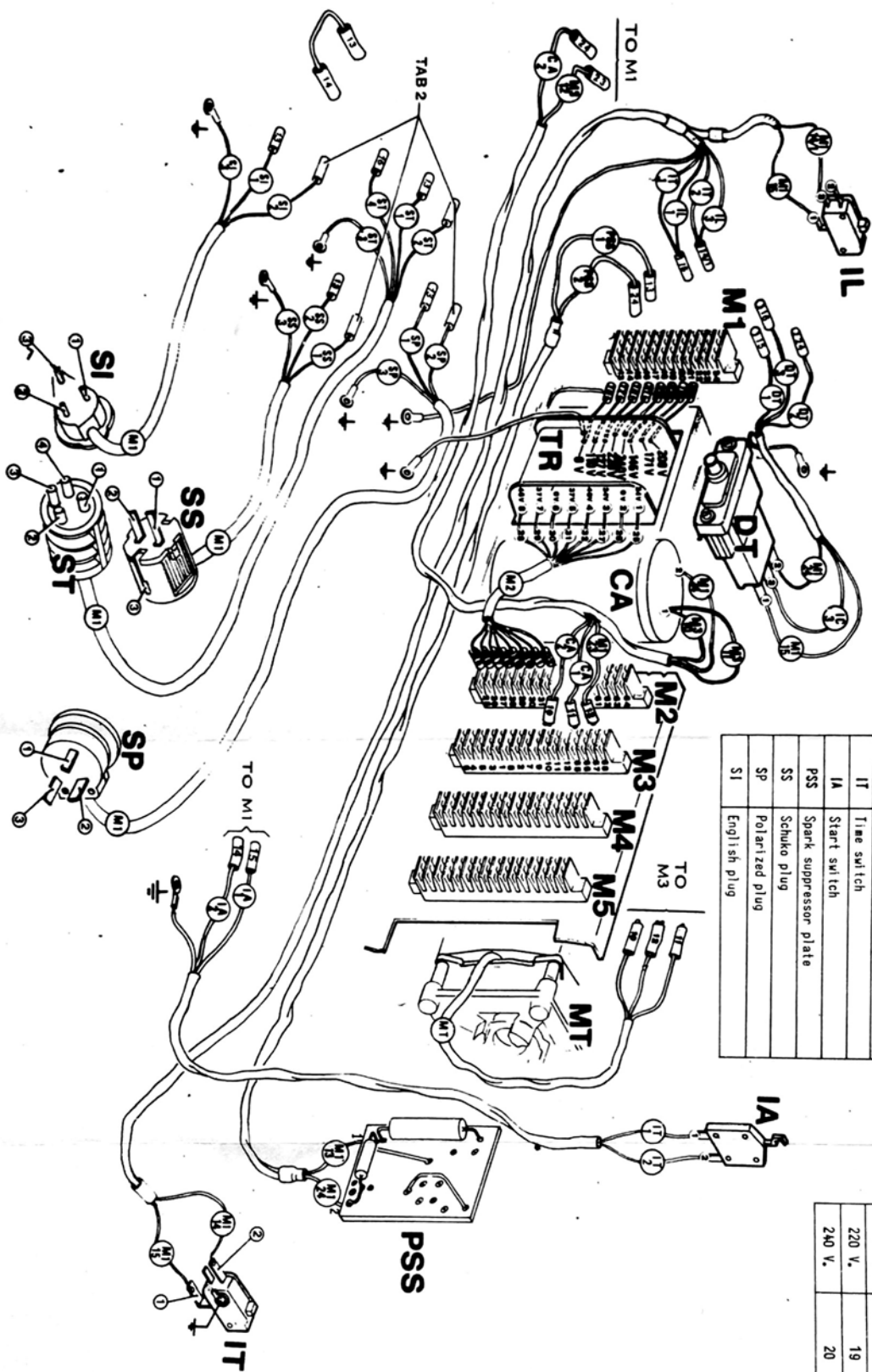


TL MOTOR CIRCUIT ELECTRIC DIAGRAM

- the electric checks to be performed on the components are shown on page 3.01 - 3.02.



TL MOTOR CIRCUIT GENERAL WIRING



CA	Motor start condenser
DT	Thermo switch
TR	Transformer
MT	Motor
M1-M2	Terminal blocks
M3-M5	Terminal blocks
IL	Local switch
IT	Time switch
IA	Start switch
PSS	Spark suppressor plate
SS	Schuko plug
SP	Polarized plug
S1	English plug

TABLE 1 - WIRE CONNECTION TO MATCH THE LINE VOLTAGE

LINE VOLTAGE	M1 Terminal block contact
110 v.	17
127 v.	18
220 v.	19
240 v.	20

MECHANICAL CHECKS

MECHANICAL
4. CHECKS

MECHANICAL CHECKS

<u>EMISSION</u>	page
- printing keys and memory (1 + 44)	4.01
- serializer (45 + 87)	4.01
- automatic cycle (90 + 103)	4.01
- automatic reply (105 + 137)	4.02
- keyboard lock and release (140 + 167)	4.02
- EM/REC bar services (170 + 180)	4.02
- special keys (185 + 194)	4.02
- interlock and automatic timing between print - keyboard (195 : 206)	4.02
 <u>RECEPTION</u>	
- motor - hour counter - time switch (240 + 256)	4.03
- electromagnet - parallelizer (260 + 283)	4.03
- copying and 1st and 2nd transfer (285 + 311)	4.03
- cyclic services (315 + 329)	4.03
- functions unit (330 + 341)	4.03
- cyclic services clearing (345 + 356)	4.04
- printing head and ribbon (360 + 386)	4.04
- functions (390 + 433)	4.04
- narrow and wide sequences (435 : 443)	4.04
- permanent exclusion of feed and stroke by "functions" (445 : 448)	4.04
<u>TAPE PUNCH</u> (450 + 485)	4.04
 <u>READER</u> (500 + 542)	4.05
 <u>SPECIAL KINEMATIC CHAINS and TL</u> (550 : 535)	4.05

EMISSION

printing keys and memory

objective

- bail clutch	1 + 4 and 7 + 10
- entry levers	5 + 6
- space key	11
- entry bail	12 + 15
- keyboard bar	16 + 20
- memory input clutch	21 + 27
- memory input wheels	28 + 29
- memory output clutch	30 + 35
- codes request	36 + 38
- codes accumulation	39 + 41
- memory output	42 + 44

serializer

- serializer start by memory output	45 + 48
- serializer clutch memorization	49 + 51
- copying presetting	52 + 55
- copying	56 + 60
- knife positioner	61 + 66
- deviator	67 + 77
- serialization	78 + 82
- modulation contacts	83 + 86
- serializer friction	87

automatic cycle

- 7th memory cell entry	90 + 91
- 7th memory cell slider recovery	92 + 93
- entry of automatic cycle on the serializer	94 + 97
- presetting of the serializer to perform the automatic cycle	98 + 100
- copying of FIGURES/LETTERS bar (6a) and sliders positioning	101 + 102
- copying hook recovery	103

automatic reply

objective

- serializer clutch release by "HERE IS" key and by "WHO ARE YOU" code 105 + 114
- control of the EM/REC bar at the start of A.R. 115 : 117
- presetting of the serializer to the copying of the A.R. 118 + 124
- copying of the A.R. codes 125 + 128
- A.R. drum feed 129 + 136
- serializer clutch opening. 137

keyboard lock and release

- block clutch 140 + 143
- block clutch release by simultaneous depression of two or more keys 144 + 151
- block clutch release for full memory 152 + 160
- lock 161 + 164
- release 165 + 167

EM/REC bar services

- positioning in emission 170 + 171
- positioning in reception 172 + 175
- bicolor 176 + 178
- position of the "end of line stroke and feed clearing presetting bridge" 179 + 180

special keys

- LETTERS/FIGURES key 185 + 186
- NEW LINE key 187 + 192
- REPEAT key 193 + 194

interlock and automatic timing between print and keyboard

- interlock 195 : 198
- print-keyboard automatic timing 200 : 206

RECEPTION

motor - hour counter - time switch

objective

- motor	240 + 243
- hour counter	244 + 247
- time switch	248 + 256

electromagnet - parallelizer

- electromagnet.	260 + 265
- parallelizer clutch	266 + 274
- stop restoring	275 + 276
- wedge presettings.	277 + 278
- unlocking	279 + 280
- positioning of the sensed levers	281 + 282
- timer	283 + 284

copying and 1st and 2nd transfer

- bars entry clutch	285 + 287
- sensed levers copying	288 + 289 and 293
- entry rockers	290 + 292
- 1st transfer levers	294 + 296
- 1st transfer clutch	297 + 301
- 2nd transfer levers	302 + 303
- 2nd transfer clutch	304 + 308
- transfer bars	309 + 310
- axial position of the printing head clutch idlers	311

cyclic services

- cyclic services and functions start	315 + 321
- intermediate levers, clearing hooks	322 + 323
- command to the stroke bar	324
- feed command (horizontal control)	325 + 329

functions unit

- feelers controlling frame	330 + 332
- positioning of the EM/REC bar; 5 code bars and FIGURE/LETTER bar.	333 + 338
- intermediate levers recovery frame	339 + 340
- actuators recovery frame	341

cyclic service clearing

objective

- "end of line feed and stroke" clearing 345 + 351
- stroke and feed clearing intermediate hooks
and levers 352 + 354
- punching clearing hook 355 + 356

printing head

- stroke clutch idler 360
- carriage positioning of the printing head, .361 + 362 and 364 + 366
- print sliders positioning 363 - 367 + 368
- stroke adjuster 369
- character holding wheels positionig. 370 + 373
- ribbon feed 374 + 378
- ribbon reverse. 374 - 379 - 382
- ribbon cartridge. 383 + 385
- sliding of the printing head. 386

functions

- return 390 + 397
- automatic return and line space at the line end. 406
- return and line space in local (Riloc). 398 : 403 - 405
- line space. 407 : 413
- platen release lever 414 + 419
- platen locking levers. 420
- paper release lever 421 + 424
- paper hold-paper guide 424 + 428
- FIGURES/LETTERS 429 + 430
- bell 431 + 433

narrow and wide sequences 435 : 443

- stroke and feed permanent exclusion by
"functions" 445 : 448

TAPE PUNCH

- tape release frame and key. 450 + 452
- tape guide frame. 453
- back space key. 454 + 461
- repeat extraction key 462 + 468
- punching kinematic 469 + 473
- inclusion key 474
- punching command by cyclic services kinematic 475 + 476
- tape punch clutches. 477 + 480
- exclusion key. 481 + 482
- punching repeat inclusion. 483
- tape punch inclusion-exclusion signalizer 484 + 485

READER

objective

- tape release key 500 + 501
- reader start key 502 : 505 and 517 : 518 and 523 + 525
- end tape feeler 506 + 508
- reader stop key 509 + 516
- reader clutch 519 + 522
- repeated reader cycles 526
- tape feed 527 + 530
- tape positioning 531 + 532
- code copying 533 + 535
- reader stop by service code frame 536
- serializer clutch release 537 + 542

SPECIAL KINEMATICS AND TL

- suppression bars 550 : 559
- triple exchange 565 : 572
- TL 580 : 585

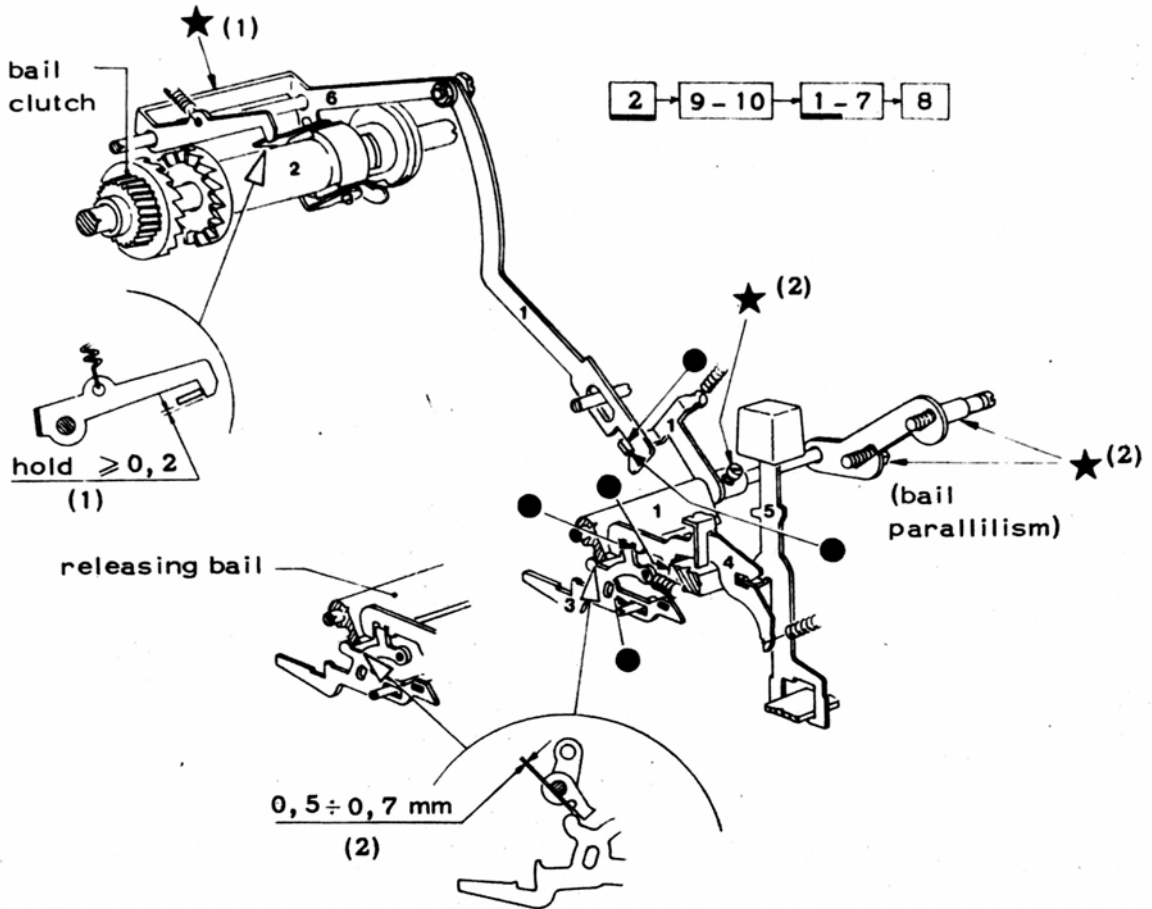
MECHANICAL CHECKS •

(OBJECTIVES)

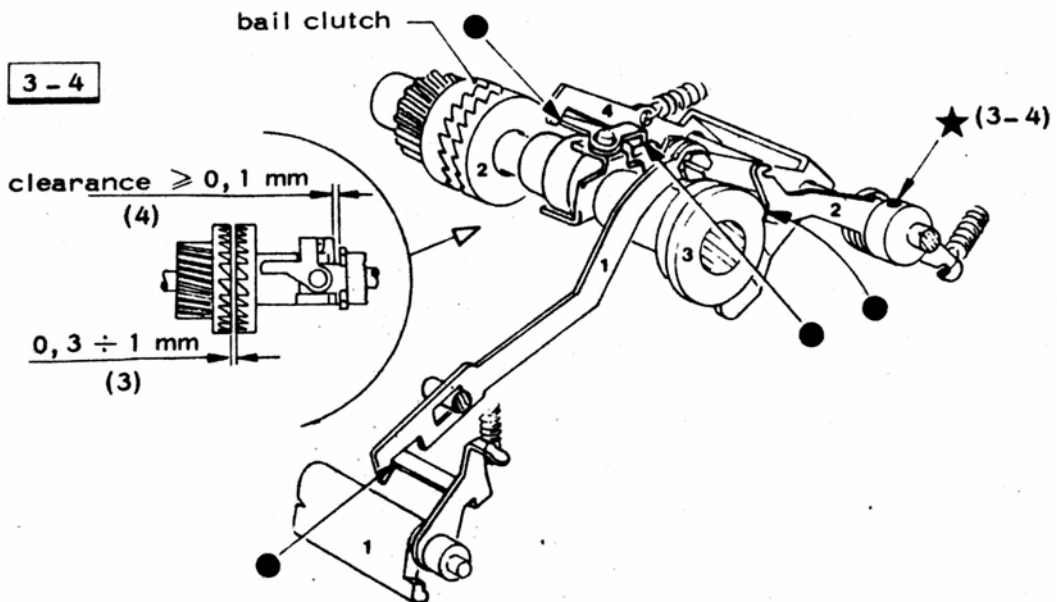
The numeration starts
from # 1 and continues
without quoting the num-
ber of the chapter.

EMISSION

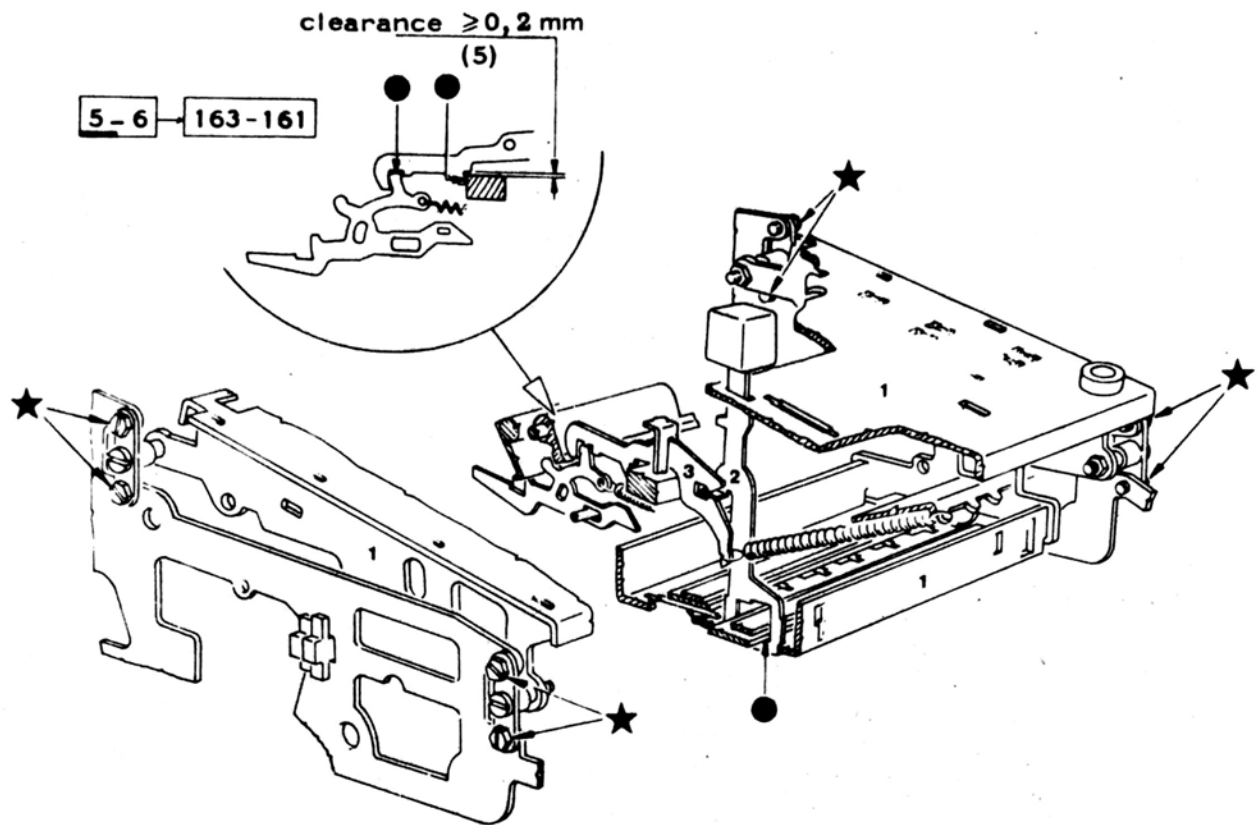
- 1) CHECK THE "OPEN" POSITION OF THE BAIL CLUTCH
- 2) CHECK THE REST POSITION OF THE BAIL CLUTCH RELEASING BAIL



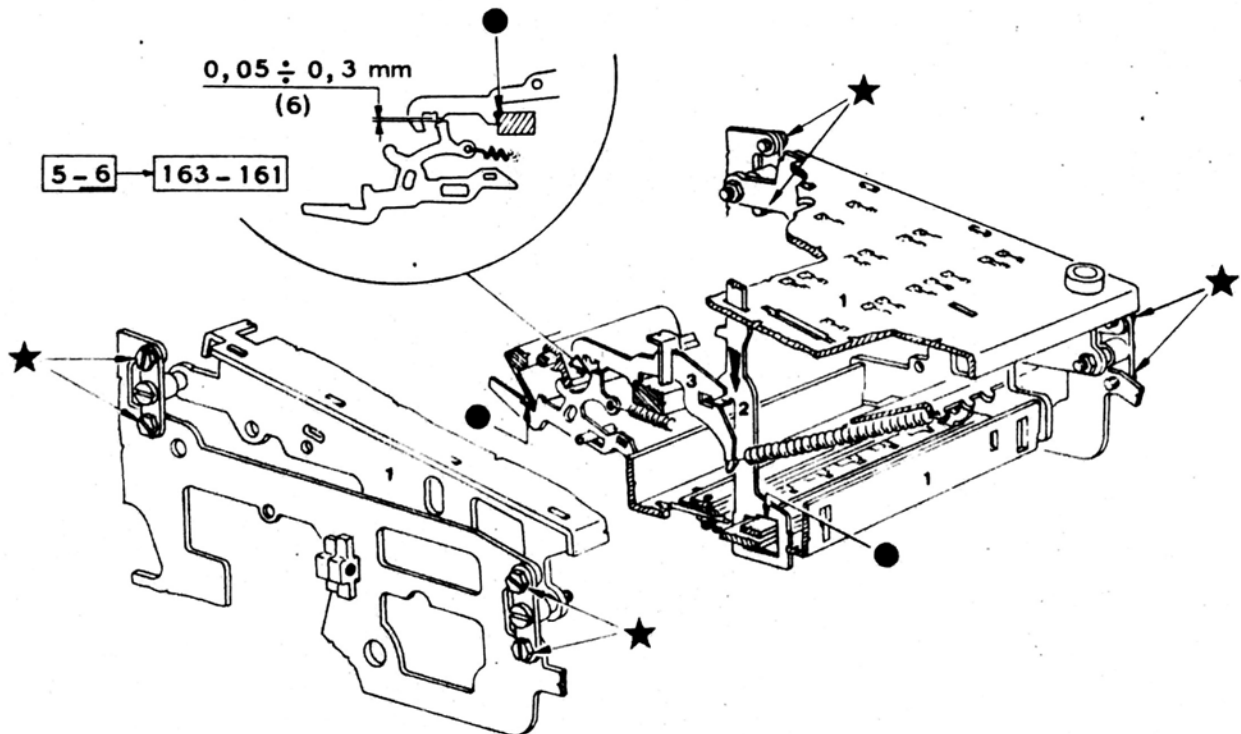
- 3) CHECK THE REST POSITION OF THE BAIL CLUTCH CUPS
- 4) CHECK ON THE REST POSITION OF THE BAIL CLUTCH



5) CHECK THE REST POSITION OF THE ENTRY LEVER

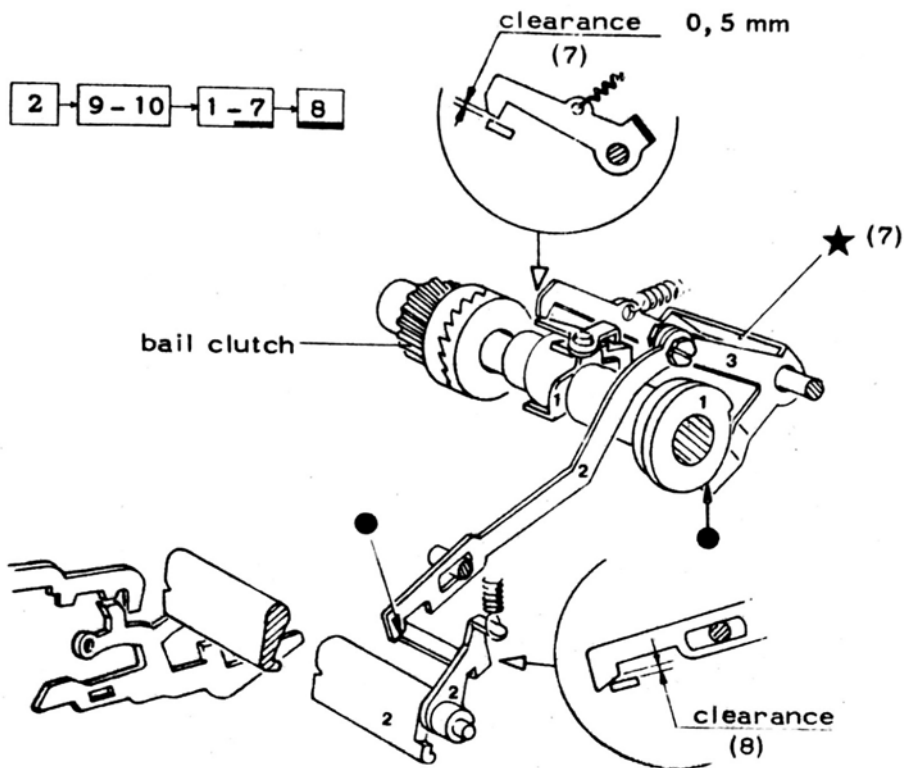


6) CHECK THE WORK POSITION OF THE ENTRY LEVER

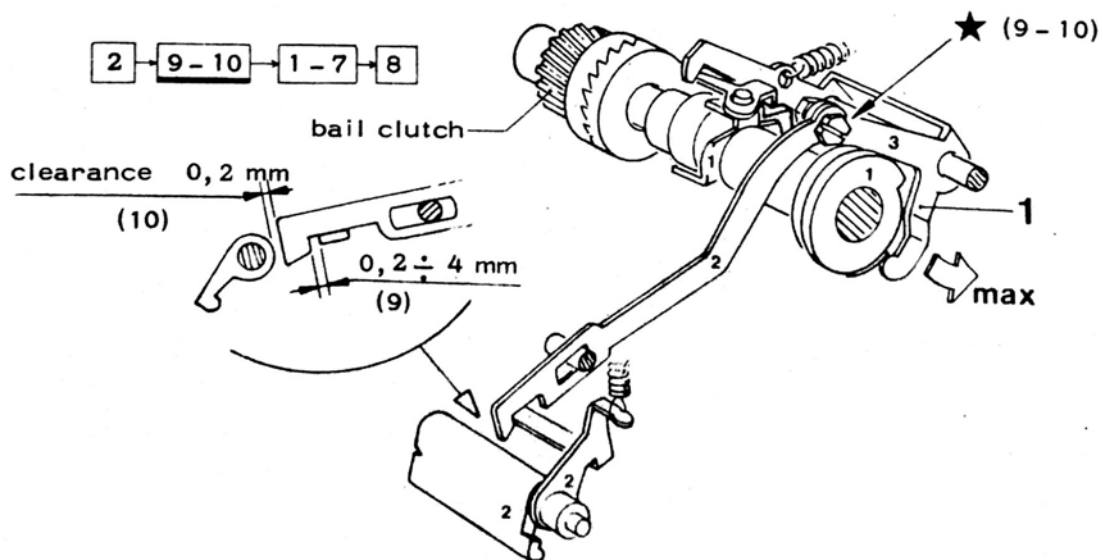


- keep the "space" key depressed and check the condition on the release and entry lever relative to the key.

- 7) CHECK THE CLOSING POSITION OF THE BAIL CLUTCH
- 8) CHECK THE RELEASE OF THE BAIL CLUTCH ROD



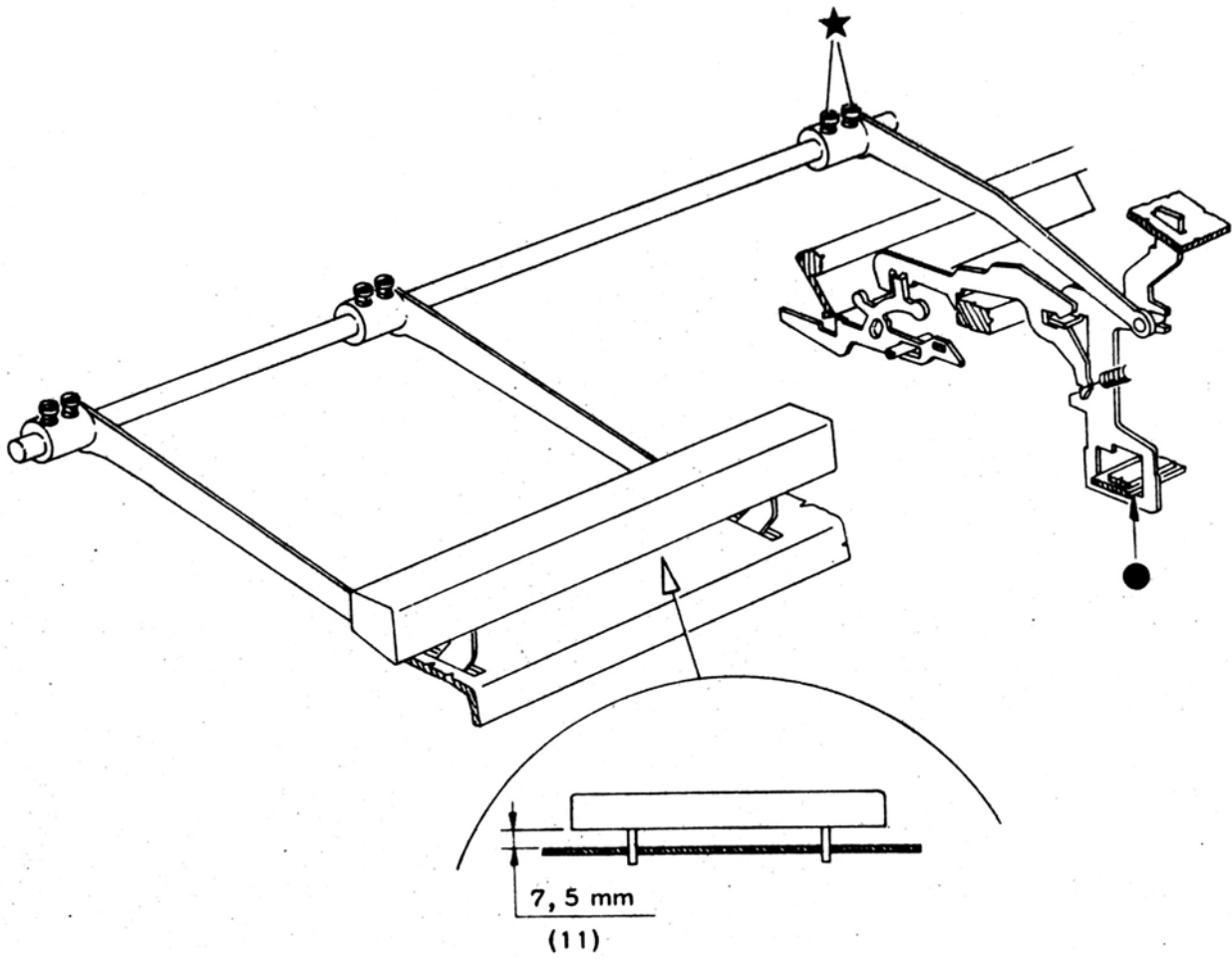
- 9) CHECK THE HOOKING OF THE BAIL CLUTCH ROD
- 10) CHECK THE RELOAD QUANTITY OF THE BAIL CLUTCH ROD



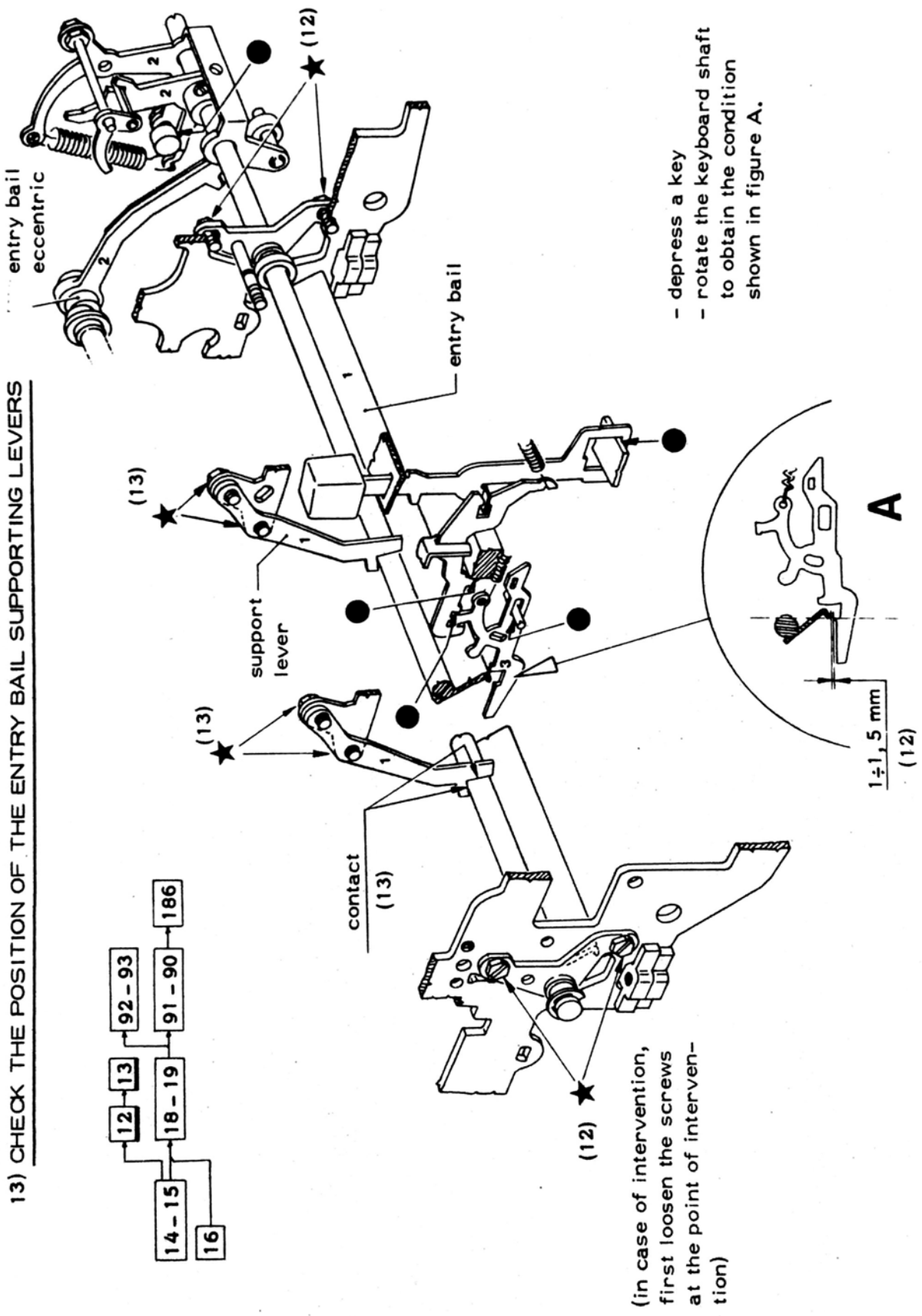
- depress a key
- rotate the keyboard shaft for maximum control of bridge 1.

11) CHECK THE REST POSITION OF THE SPACE BAR

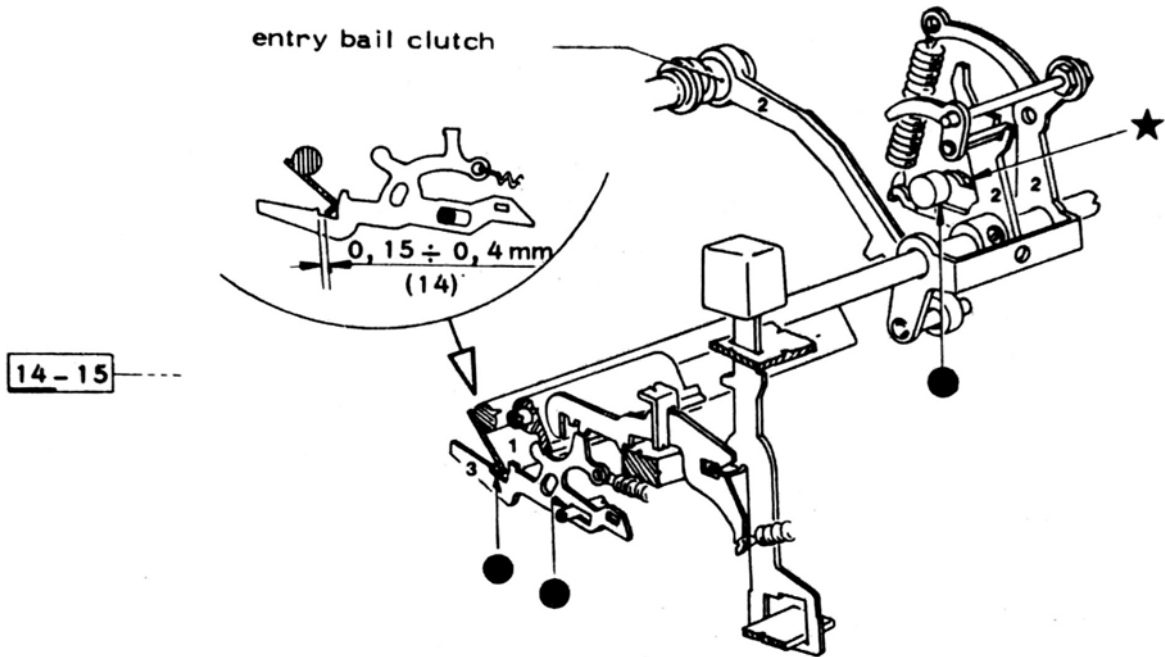
11



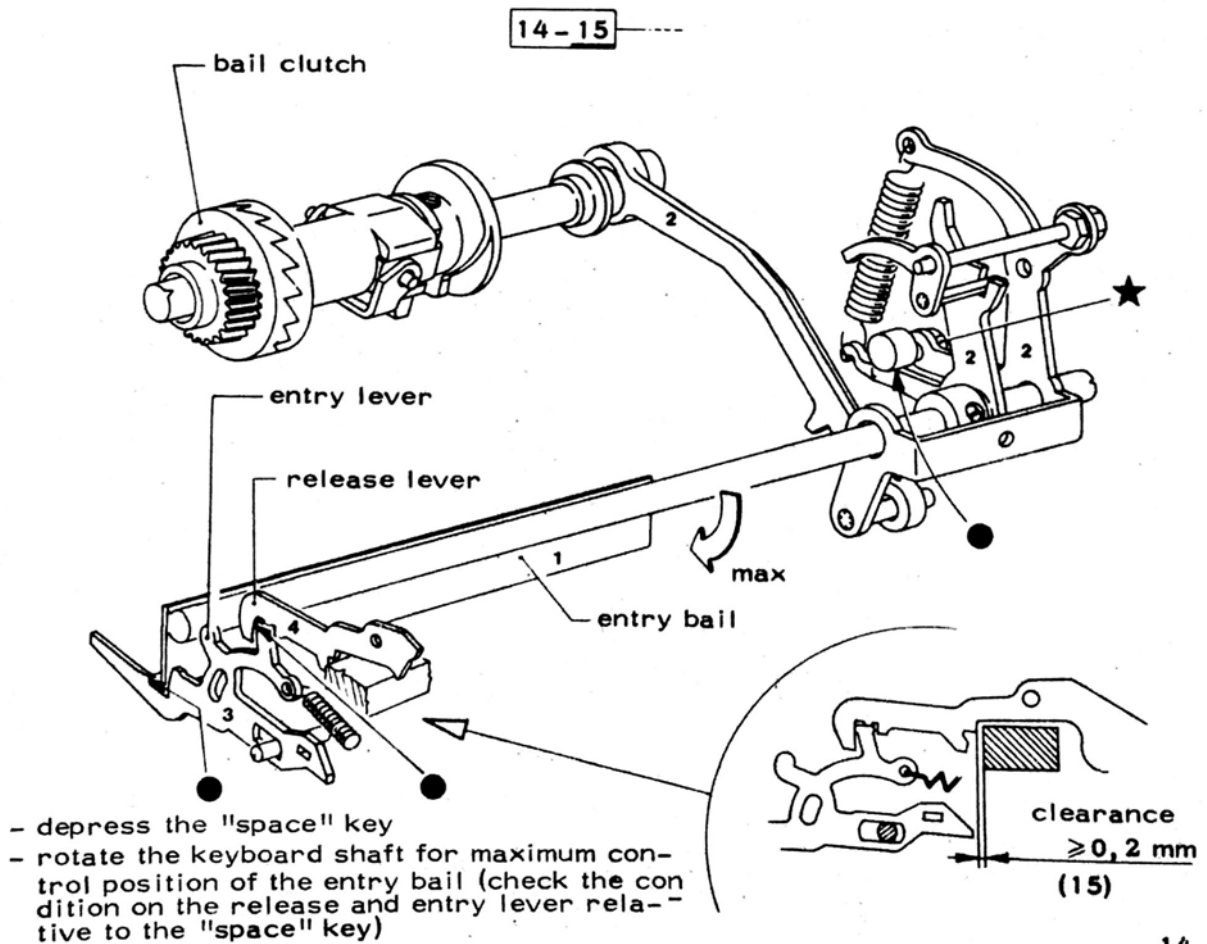
- 12) CHECK THE POSITION OF THE ENTRY BAIL SUPPORTING BUSHINGS
- 13) CHECK THE POSITION OF THE ENTRY BAIL SUPPORTING LEVERS



14) CHECK THE REST POSITION OF THE ENTRY BAIL

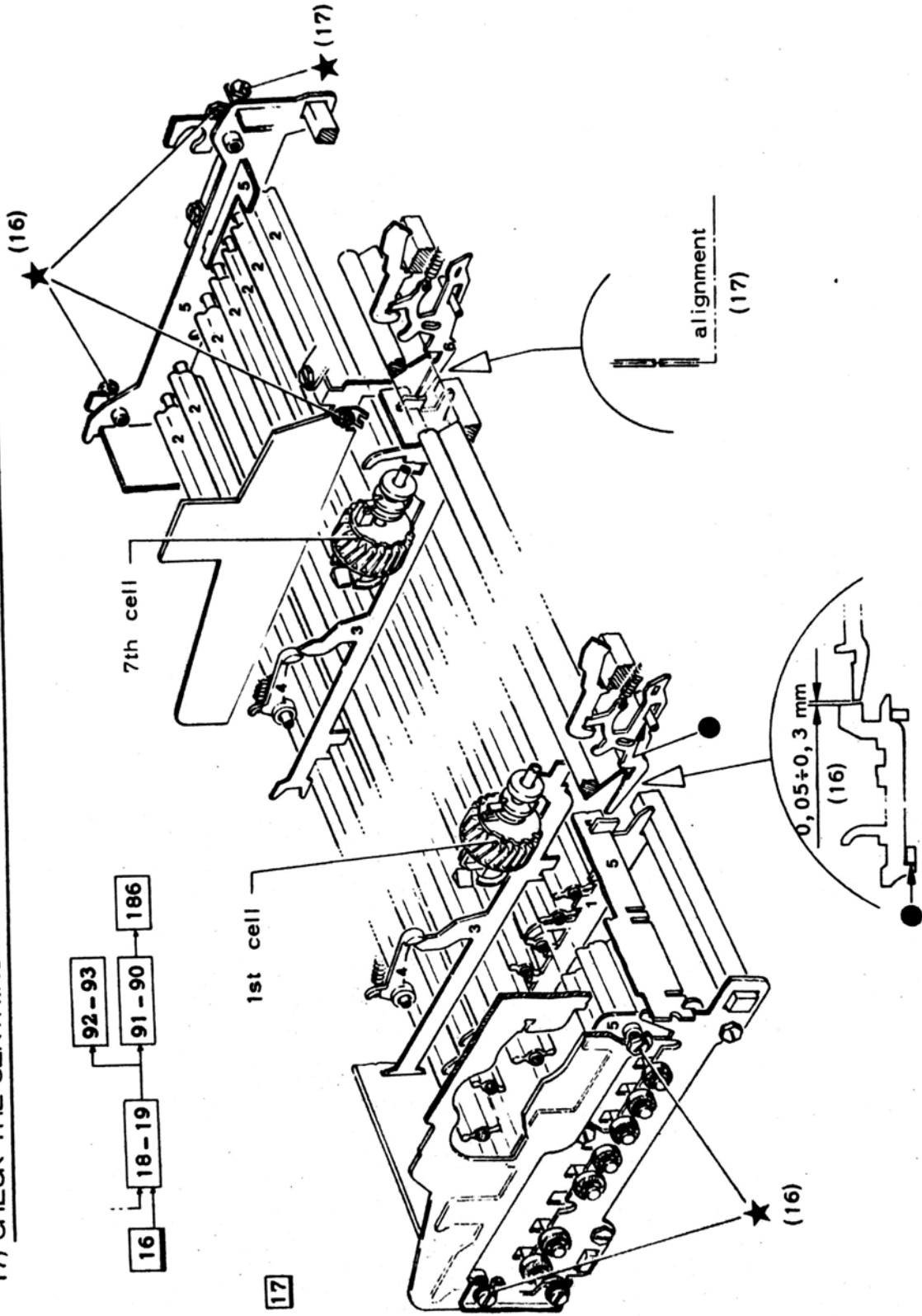


15) CHECK THE WORK POSITION OF THE ENTRY BAIL



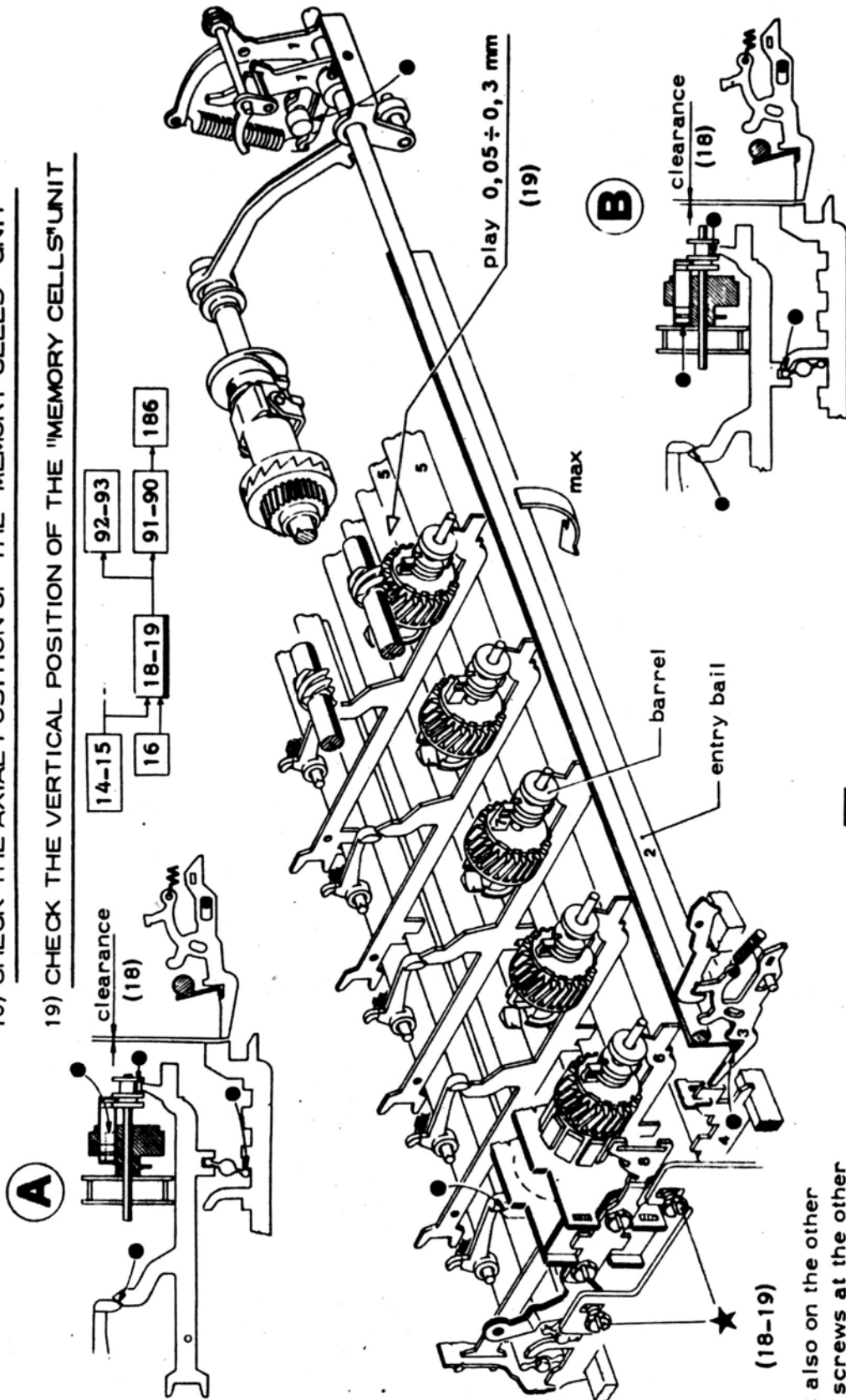
16) CHECK THE POSITION OF THE BARS UNIT

17) CHECK THE CENTRING OF THE ENTRY LEVERS ON THE BARS ENTRY SLIDERS



18) CHECK THE AXIAL POSITION OF THE "MEMORY CELLS" UNIT

19) CHECK THE VERTICAL POSITION OF THE "MEMORY CELLS" UNIT

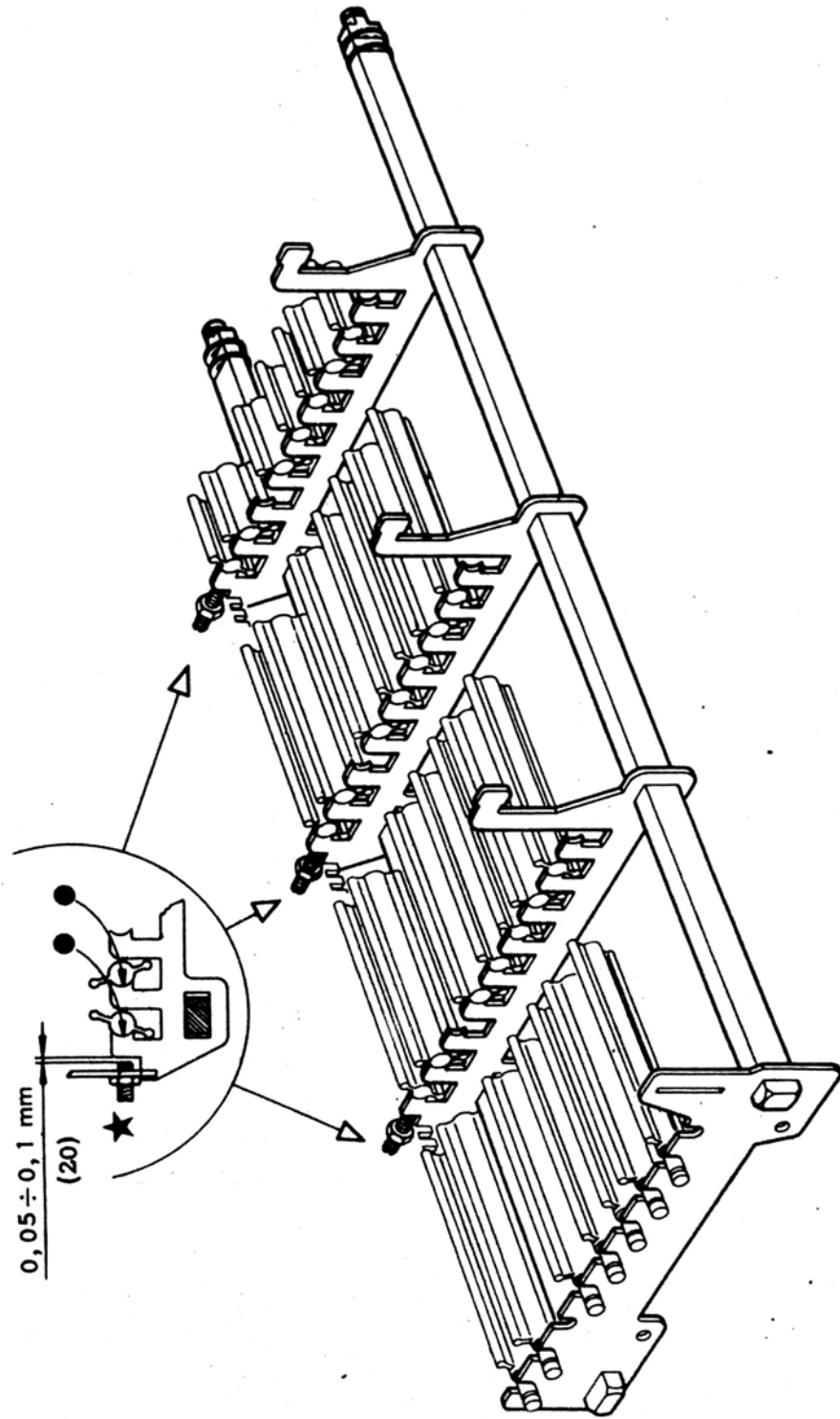


(act also on the other two screws at the other parts of the unit)

- depress key **Y**
- rotate the keyboard shaft for maximum control of the entry bail
- check the conditions shown in figures A and B feeling the bail on the barrels
- repeat the test with key **4**

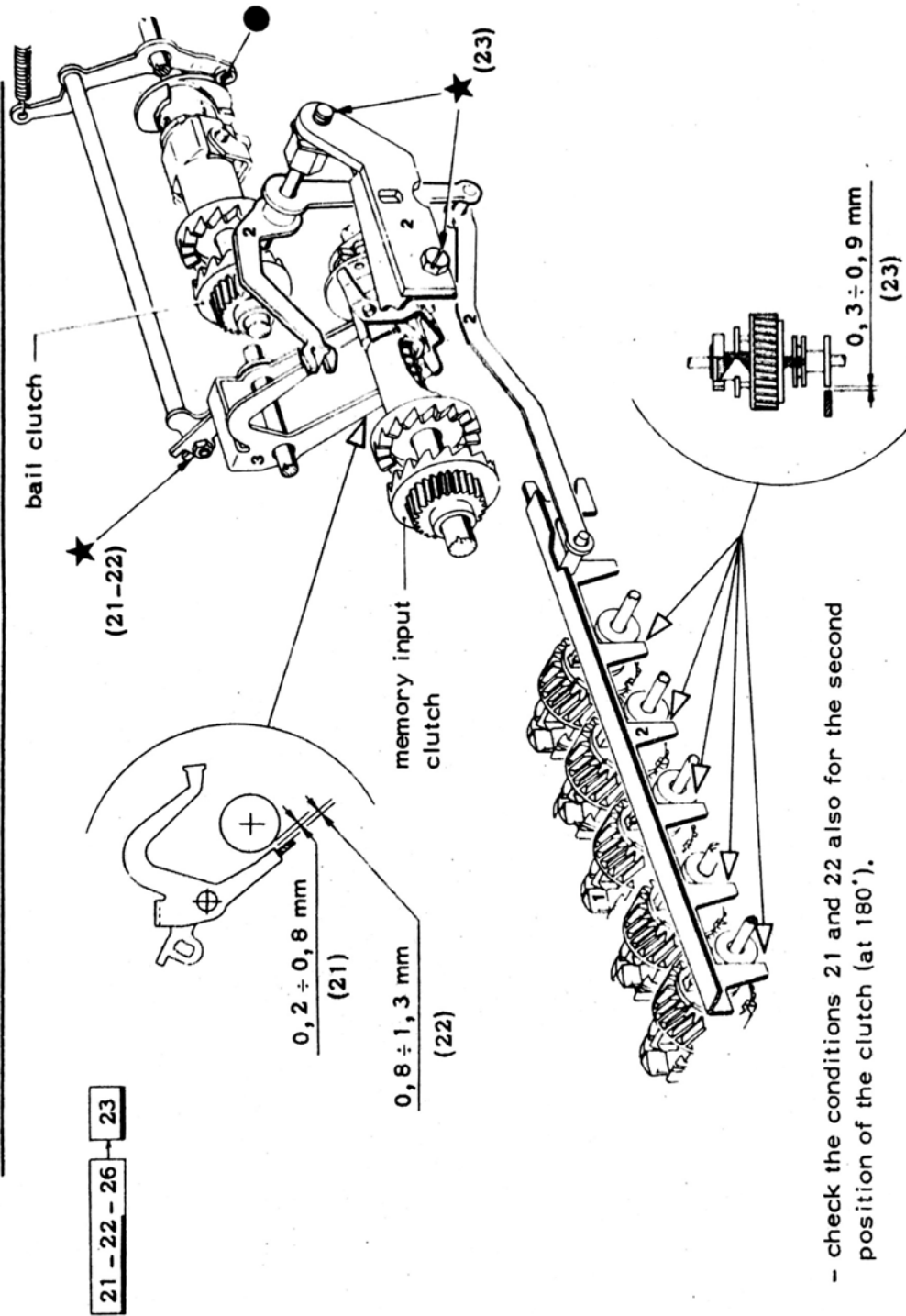
20) CHECK THE PLAY OF THE KEYBOARD BARS SUPPORTS

20



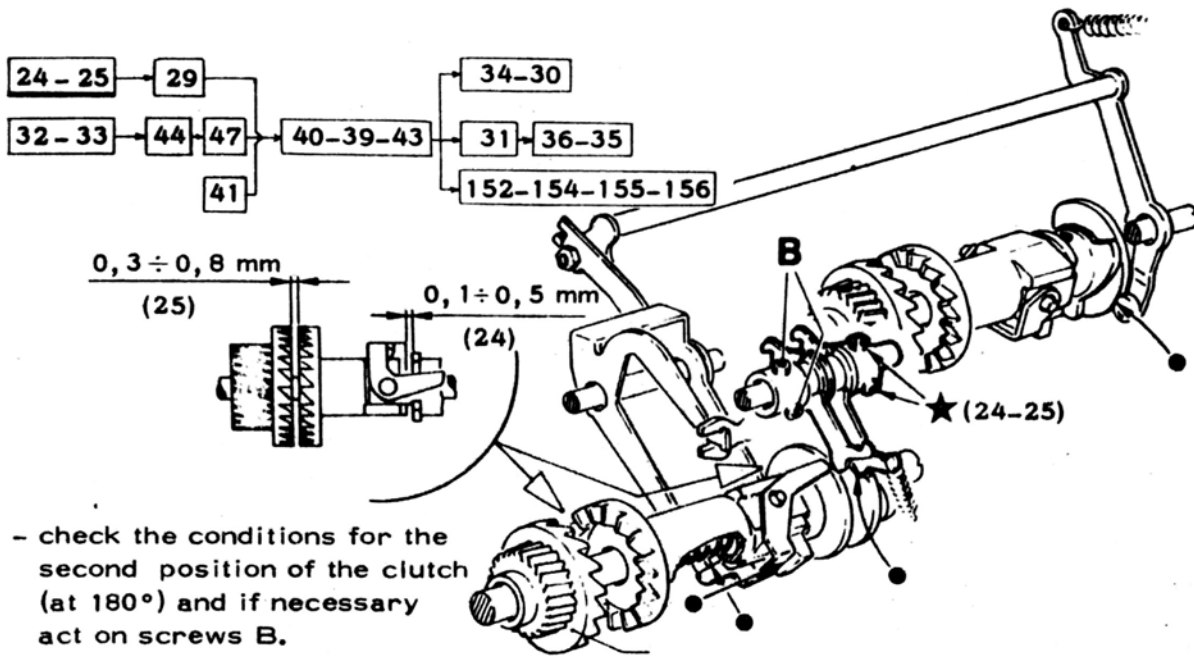
21-22) CHECK THE REST POSITION OF THE MEMORY INPUT CLUTCH FRAME

23) CHECK THE AXIAL REST POSITION OF THE MEMORY INPUT CONTROL SLIDER

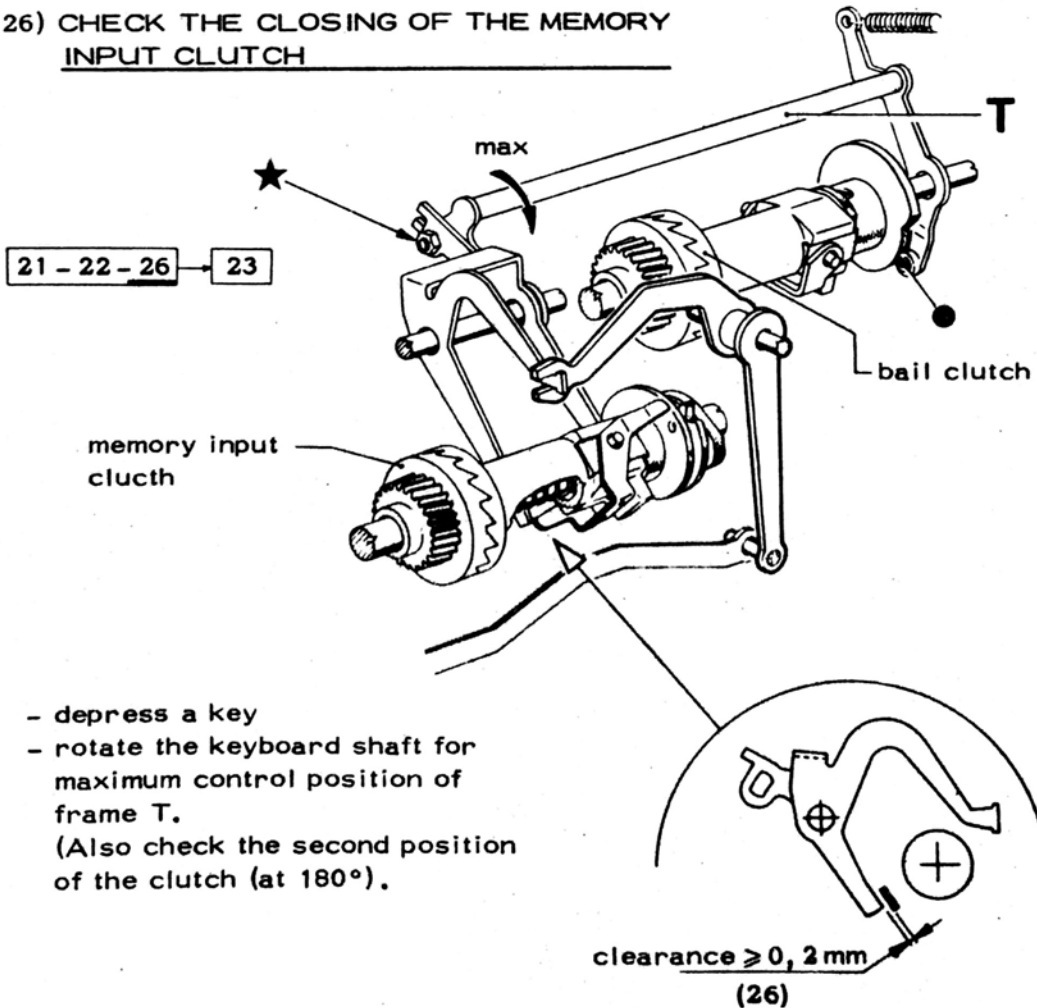


- check the conditions 21 and 22 also for the second position of the clutch (at 180°).

- 24) CHECK THE REST POSITION OF THE MEMORY INPUT CLUTCH
 25) CHECK THE REST POSITION OF THE MEMORY INPUT CLUTCH CUPS



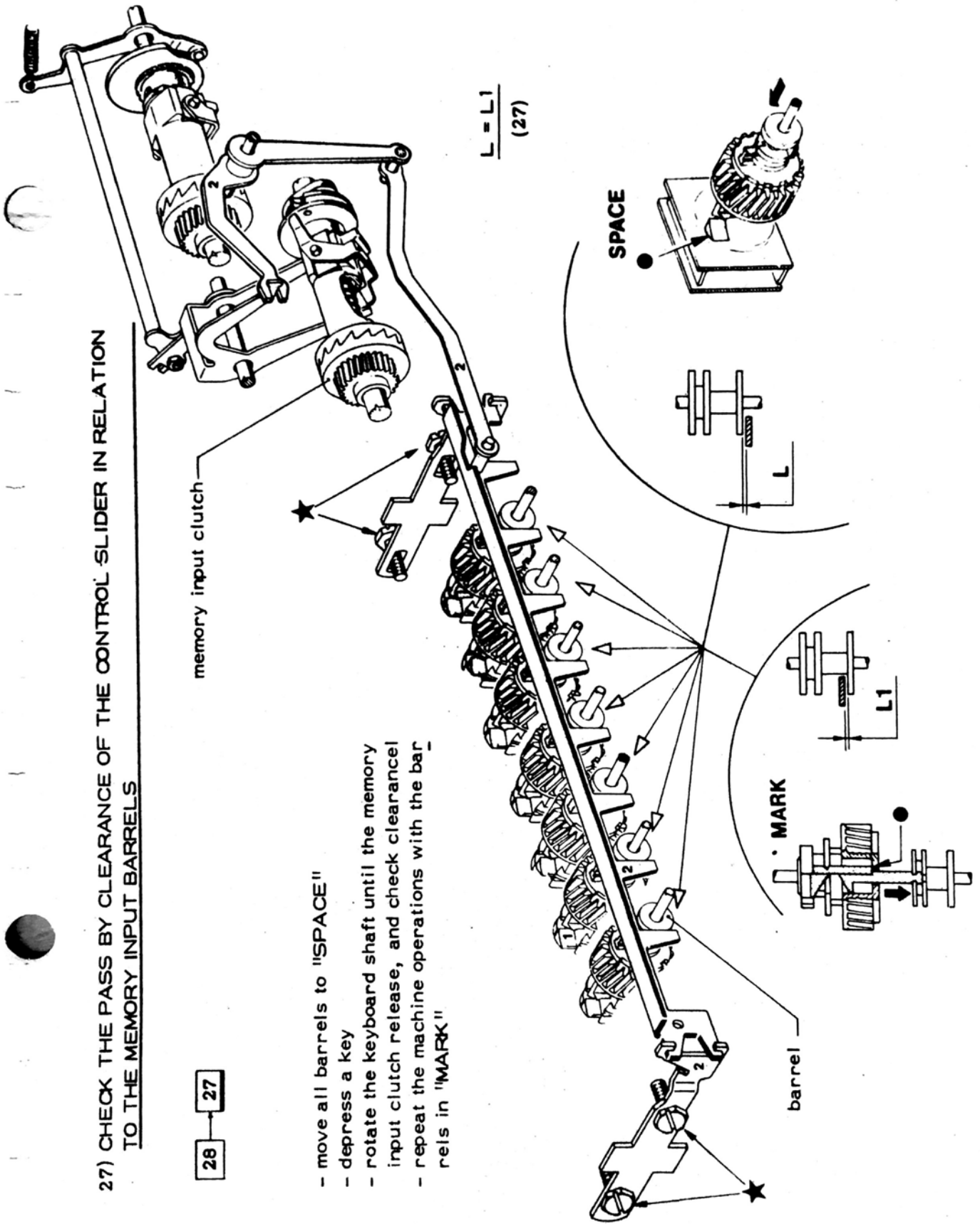
- 26) CHECK THE CLOSING OF THE MEMORY INPUT CLUTCH



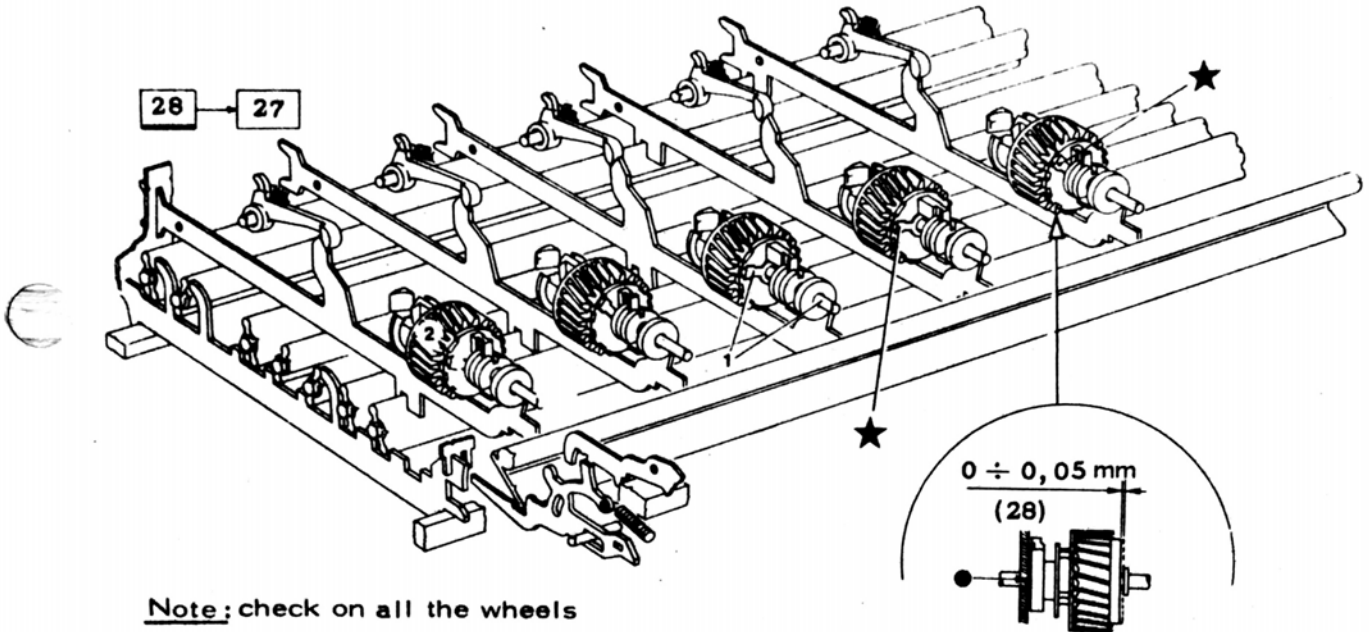
27) CHECK THE PASS BY CLEARANCE OF THE CONTROL SLIDER IN RELATION TO THE MEMORY INPUT BARRELS

28 → 27

- move all barrels to "SPACE"
- depress a key
- rotate the keyboard shaft until the memory input clutch release, and check clearance
- repeat the machine operations with the barrels in "MARK"

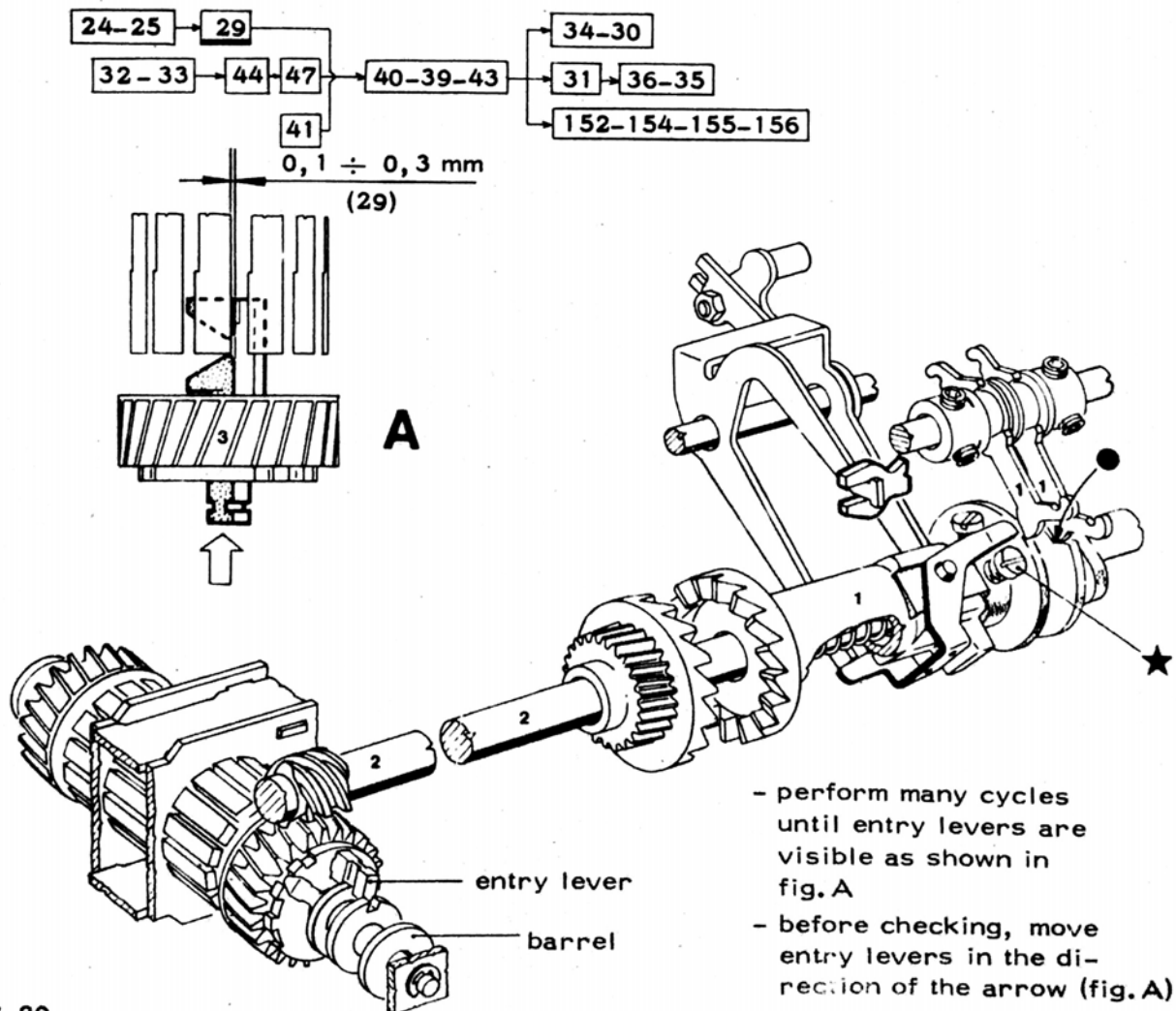


28) CHECK THE PLAY OF THE MEMORY INPUT WHEEL



Note: check on all the wheels

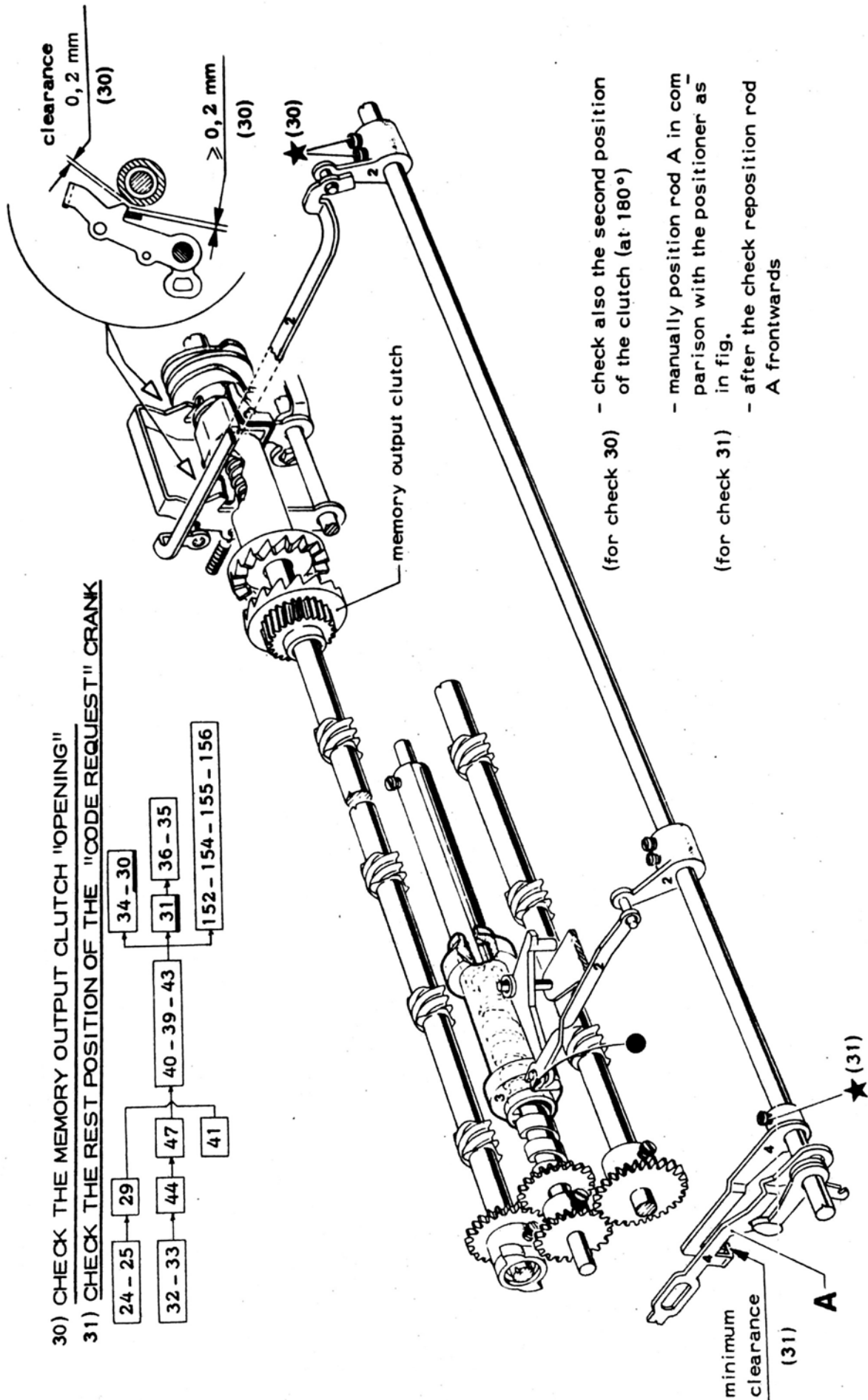
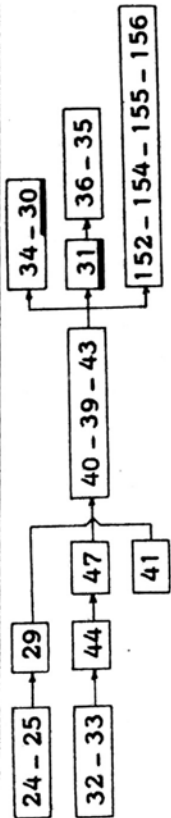
29) CHECK THE ANGULAR POSITION OF THE MEMORY INPUT ENTRY LEVER



- perform many cycles until entry levers are visible as shown in fig. A
- before checking, move entry levers in the direction of the arrow (fig. A)

30) CHECK THE MEMORY OUTPUT CLUTCH "OPENING"

31) CHECK THE REST POSITION OF THE "CODE REQUEST" CRANK

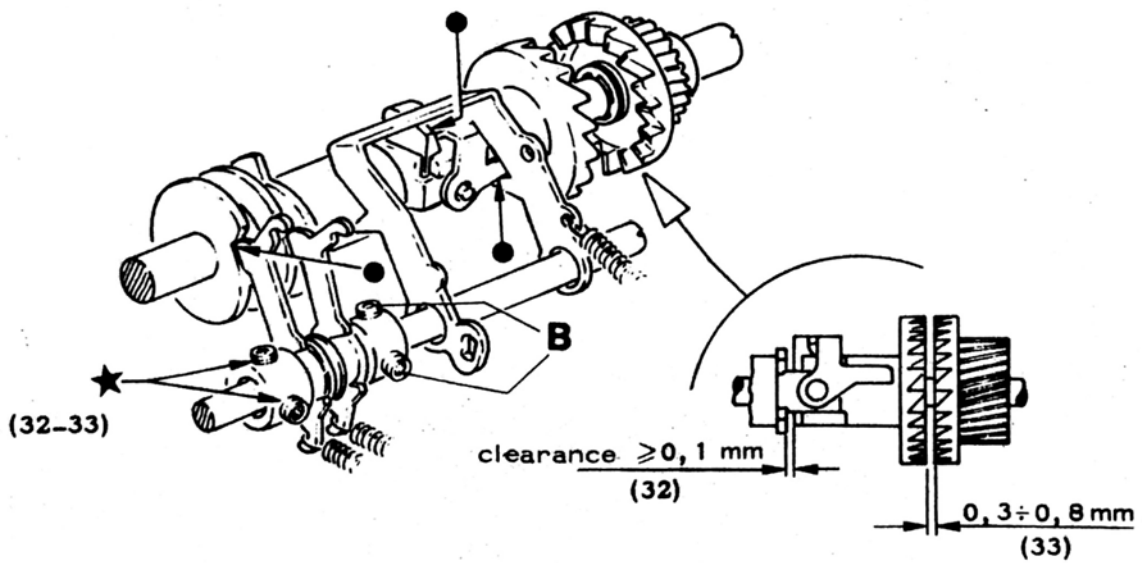
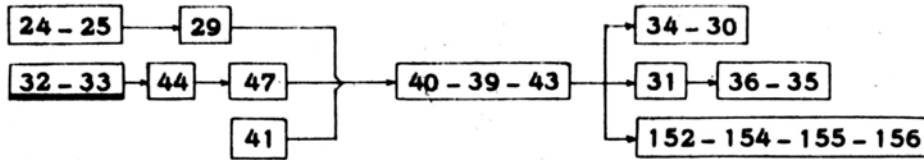


(for check 30) - check also the second position of the clutch (at 180°)

(for check 31) - manually position rod A in comparison with the positioner as in fig. - after the check reposition rod A forwards

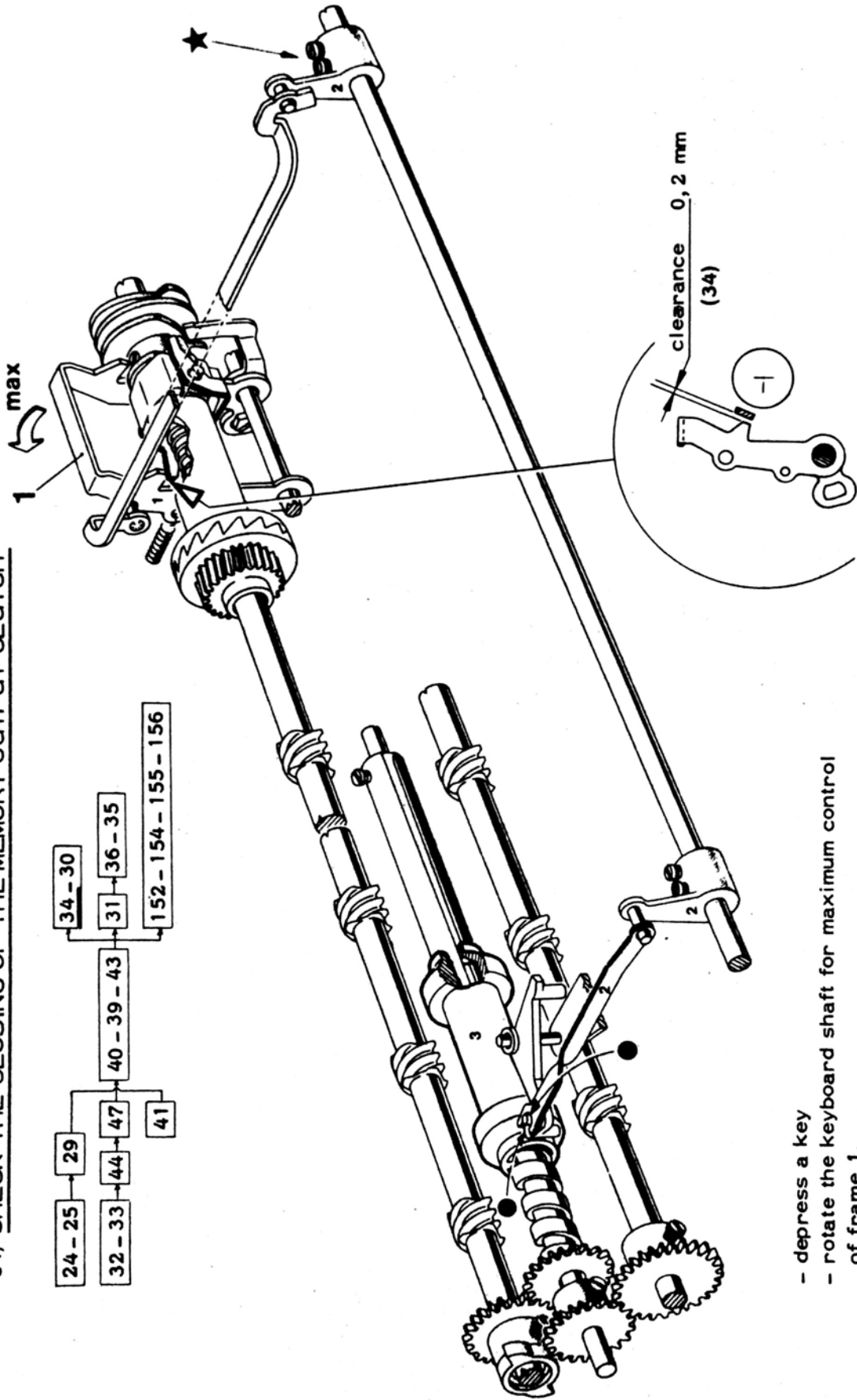
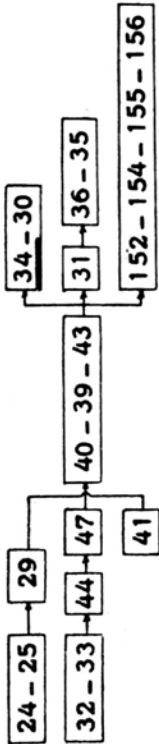
32) CHECK THE REST POSITION OF THE MEMORY OUTPUT CLUTCH

33) CHECK REST POSITION OF THE MEMORY OUTPUT CLUTCH CUPS



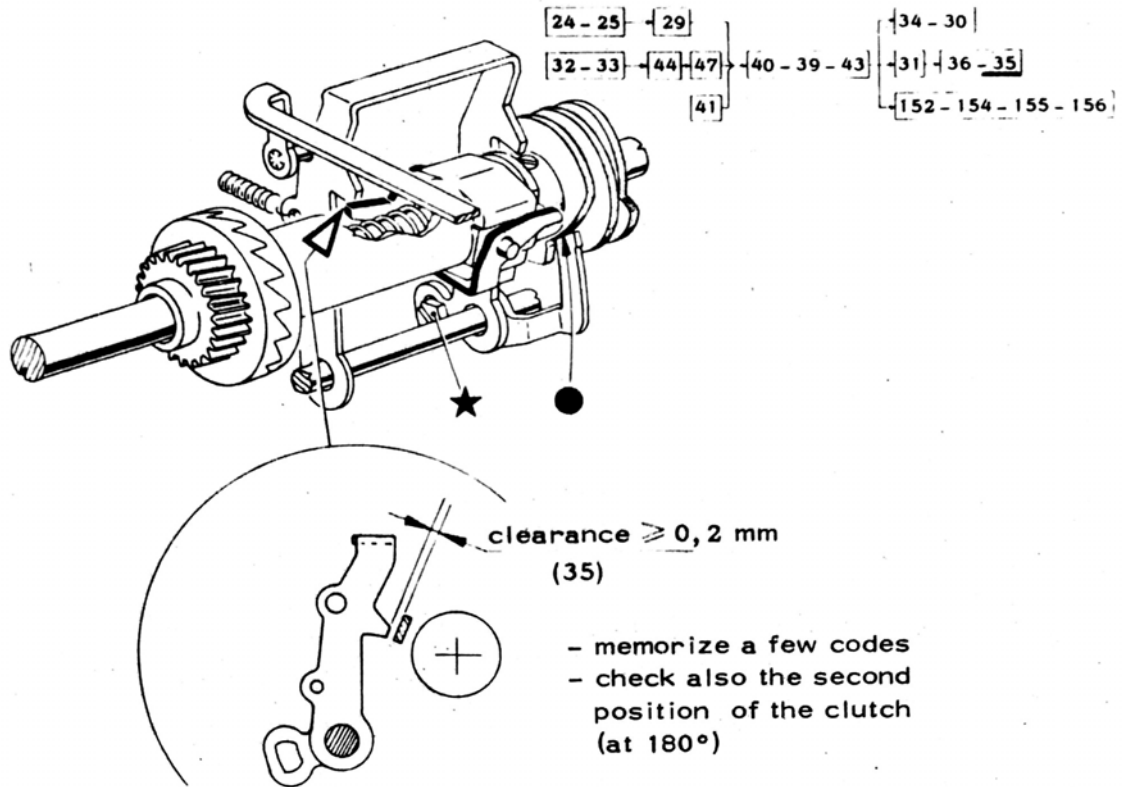
- check also the conditions of the clutch second position (at 180°)
(if necessary act on screws B)

34) CHECK THE CLOSING OF THE MEMORY OUTPUT CLUTCH

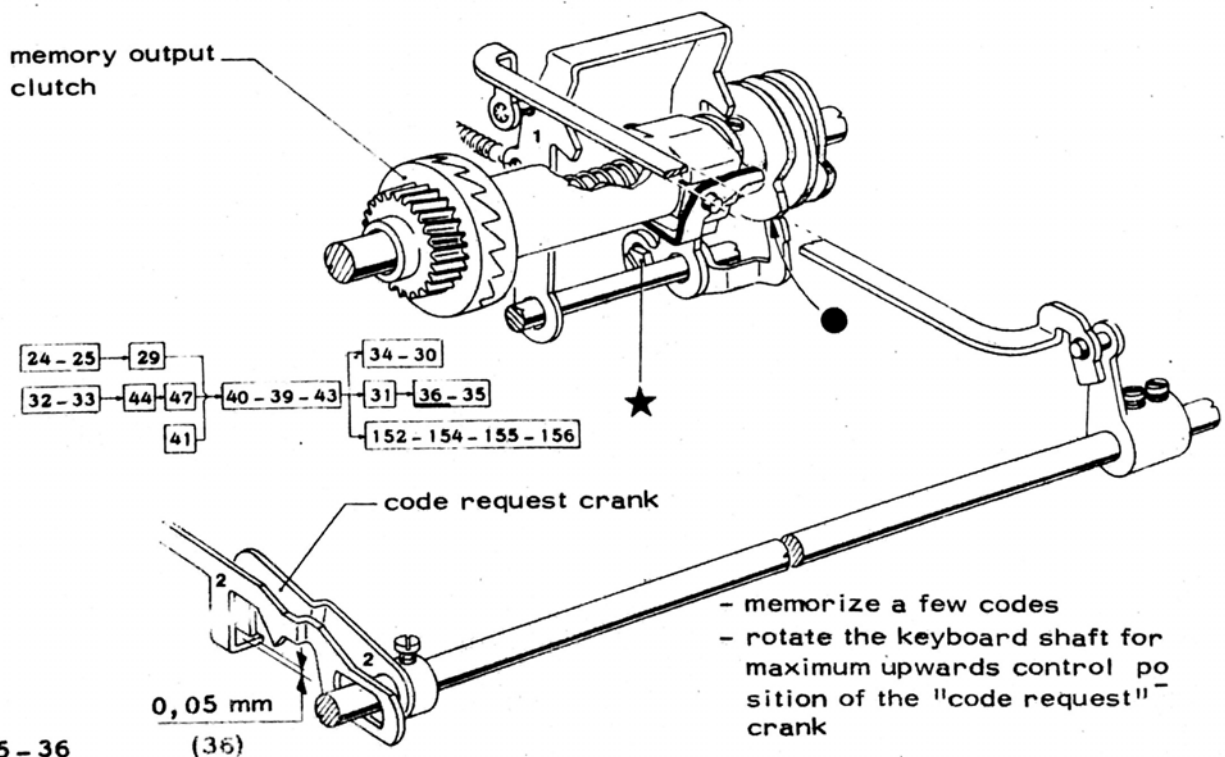


- depress a key
 - rotate the keyboard shaft for maximum control of frame 1.
- Note : check also the second position of the clutch (at 180°)

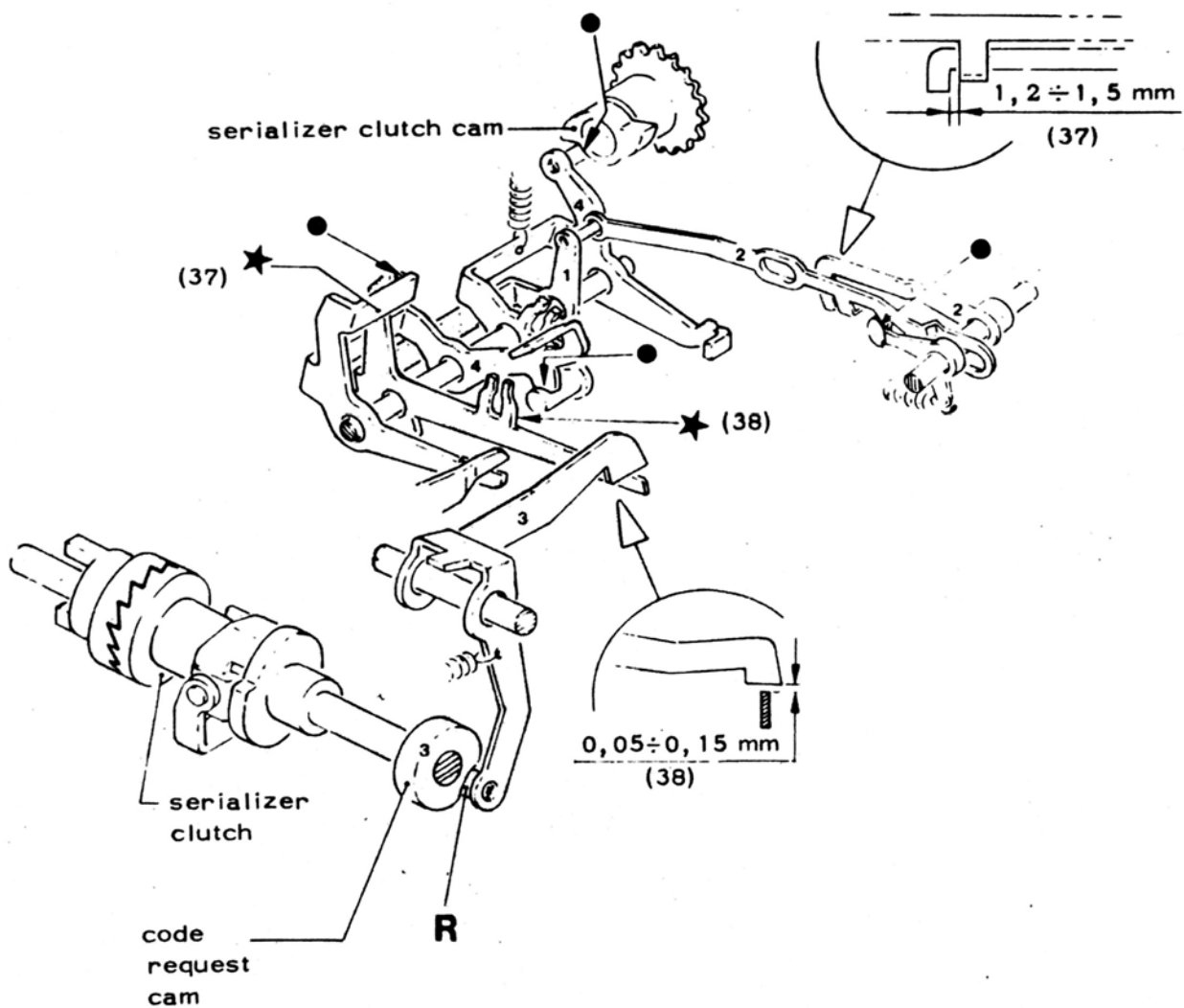
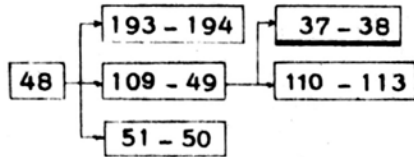
35) CHECK THE CLOSING OF THE MEMORY OUTPUT CLUTCH WITH MEMORIZED SLEEVE



36) CHECK THE WORK POSITION OF THE "CODE REQUEST" CRANK

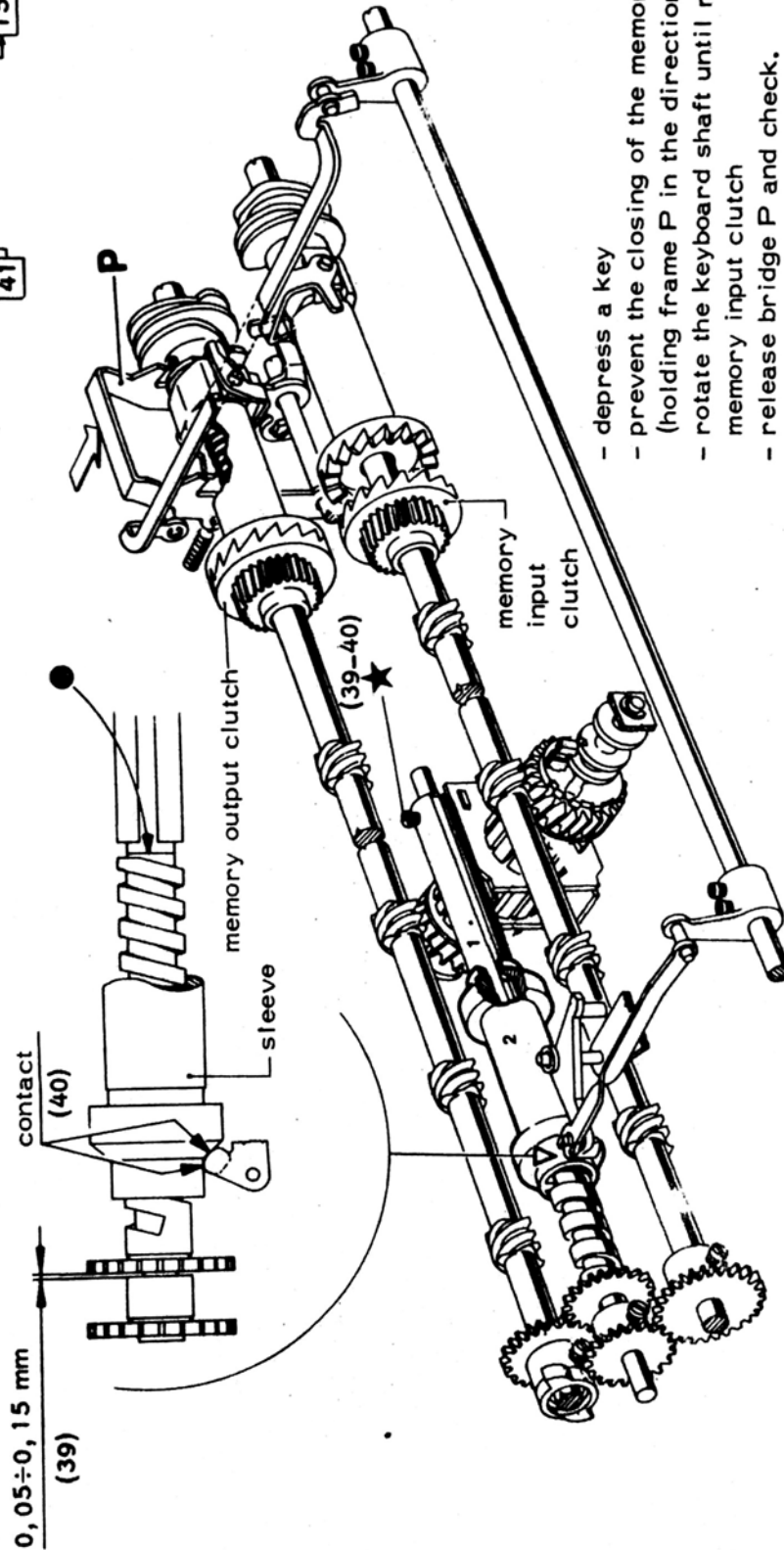
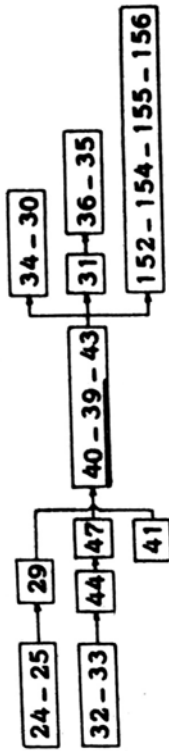


- 37) CHECK THE PASS-BY CLEARANCE BETWEEN THE "CODE REQUEST" CRANK AND THE CONTROLLING ROD
- 38) CHECK THE POSITION OF THE "CODE REQUEST" CRANK CONTROLLING ROD



- depress a key
- rotate the keyboard shaft to place roller R on the tow profile of the cam

- 39) CHECK THE PLAY OF THE MEMORY SLEEVE WORM SCREW
- 40) CHECK OF THE AXIAL POSITION OF THE MEMORY SLEEVE

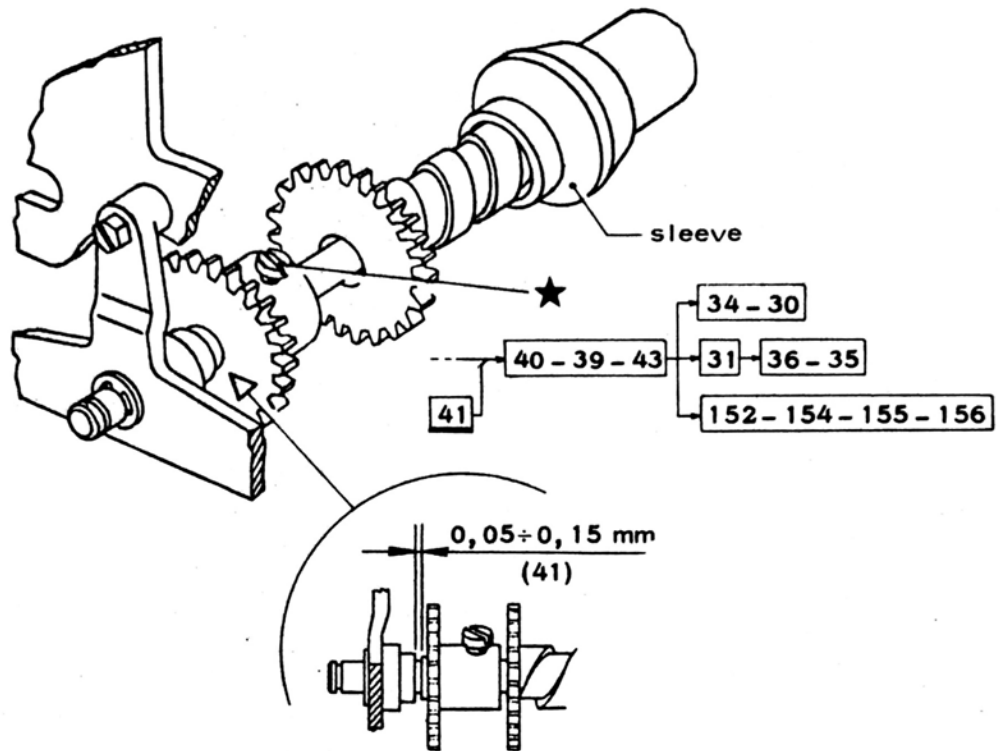


- depress a key
- prevent the closing of the memory output clutch (holding frame P in the direction of the arrow)
- rotate the keyboard shaft until reopening the memory input clutch
- release bridge P and check.

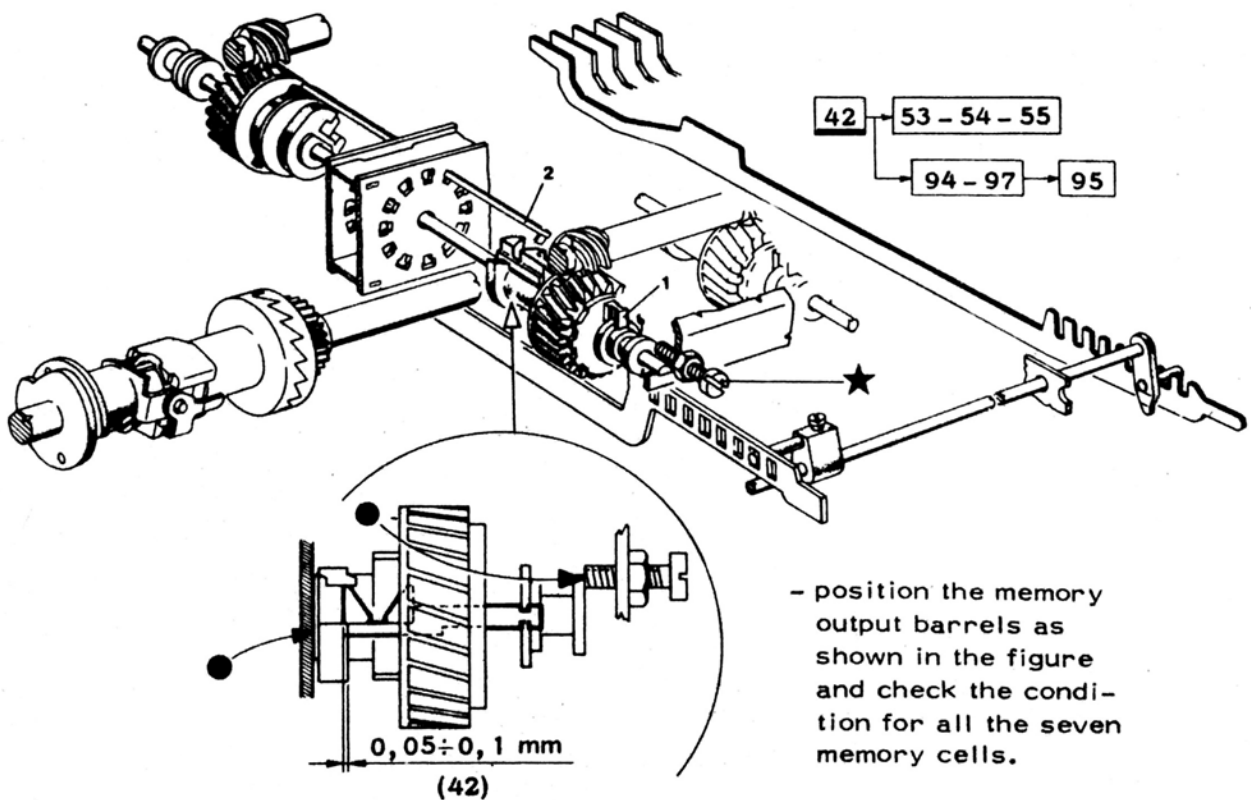
Note : the conditions can be further checked in this way:

- depress a key
- rotate the keyboard shaft to the instant when the memory output clutch closes, from this moment, continuing the rotation, check that the memory input clutch opens after it rotates of not more than two teeth.

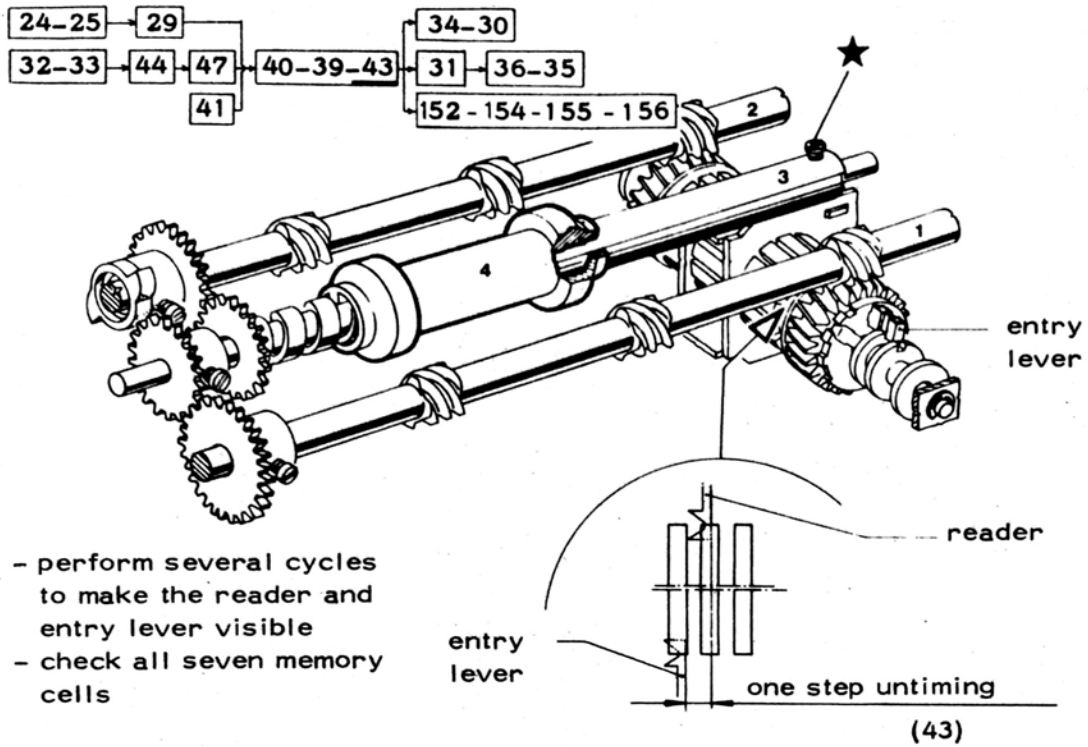
41) CHECK THE PLAY OF THE SUPPORT SHAFT OF THE MEMORY SLEEVE WORM SCREW



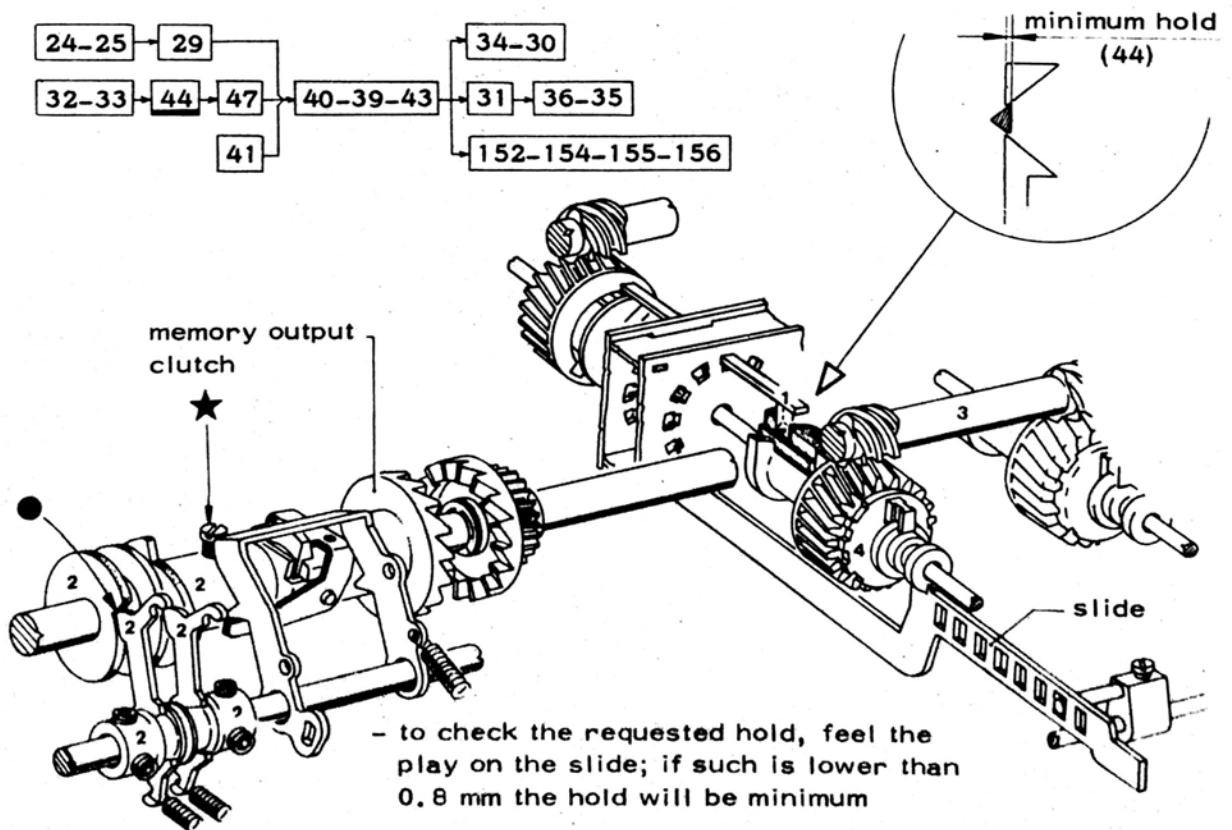
42) CHECK THE POSITION OF THE MEMORY OUTPUT BARRELS



43) CHECK THE TIMING BETWEEN MEMORY OUTPUT READER AND MEMORY INPUT ENTRY LEVER

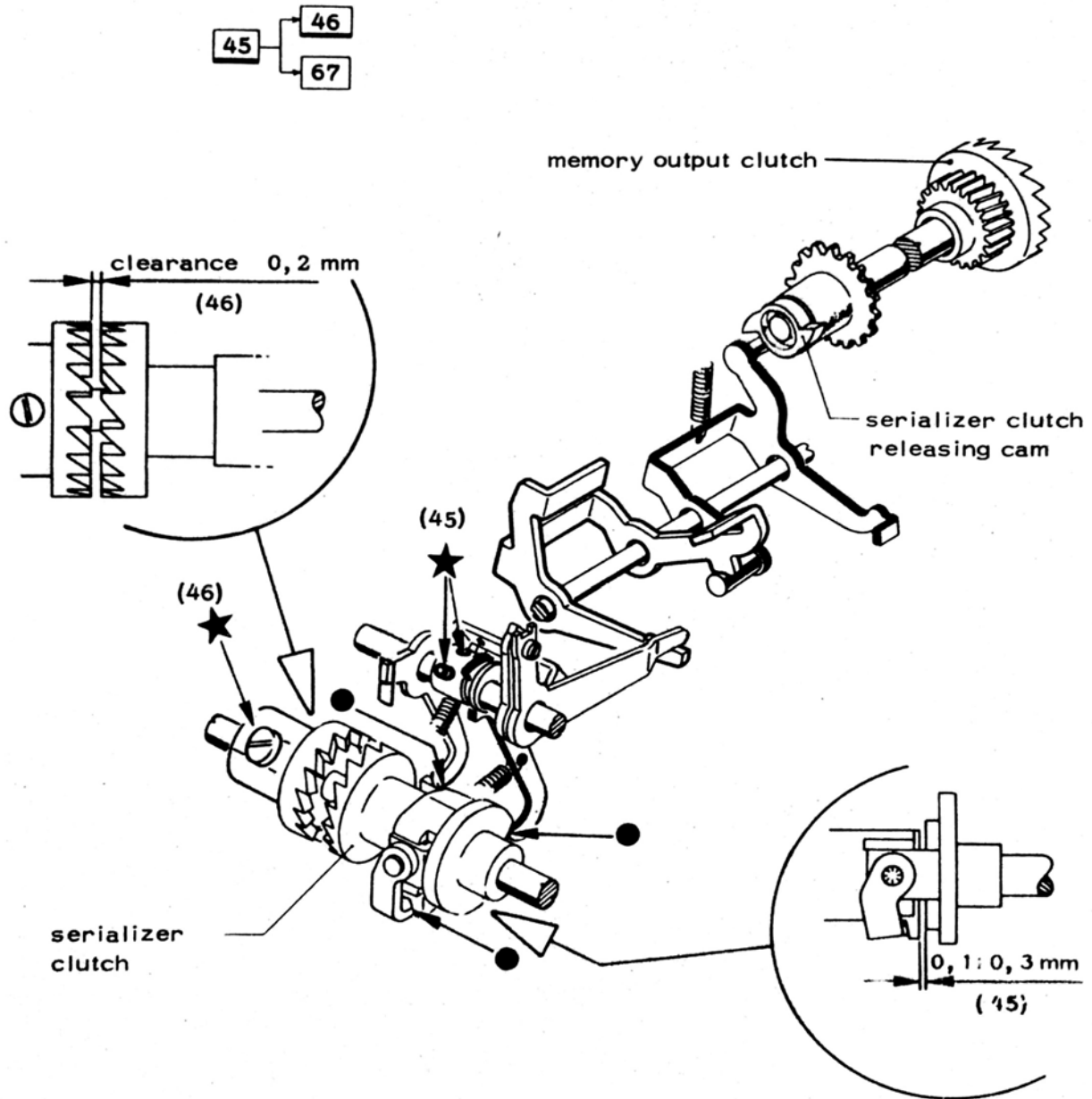


44) CHECK THE ANGULAR POSITION OF MEMORY OUTPUT READER

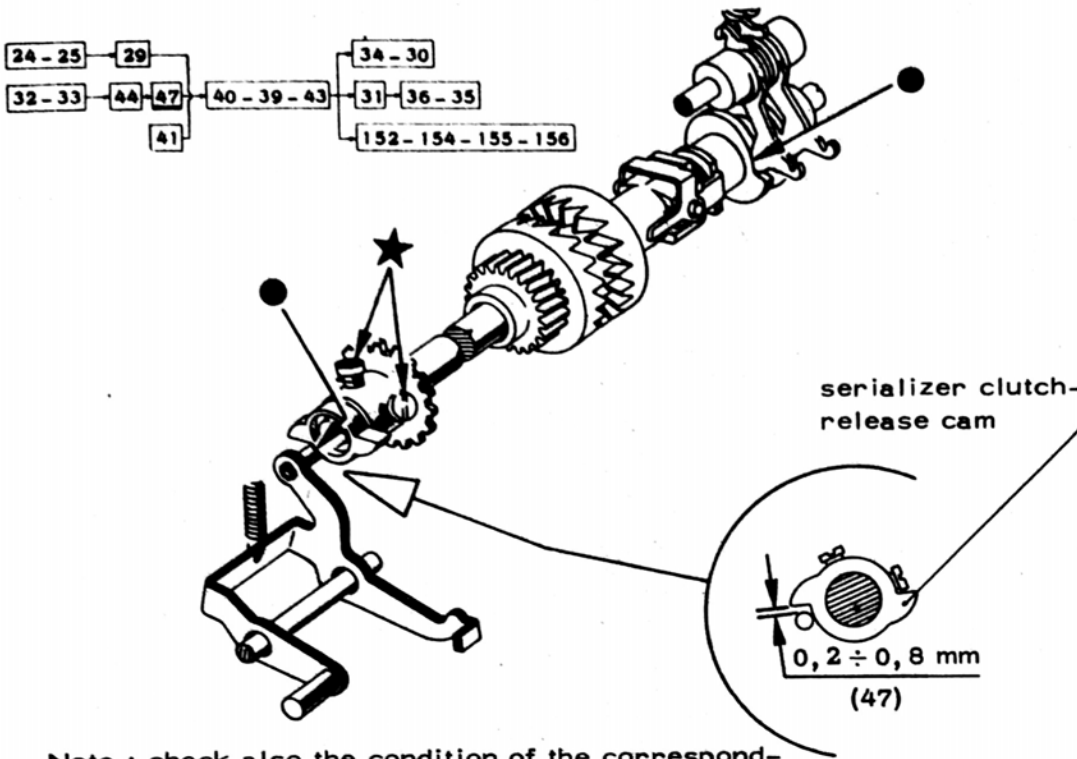


45) CHECK THE REST POSITION OF THE SERIALIZER CLUTCH

46) CHECK THE REST POSITION OF THE SERIALIZER CLUTCH CUPS

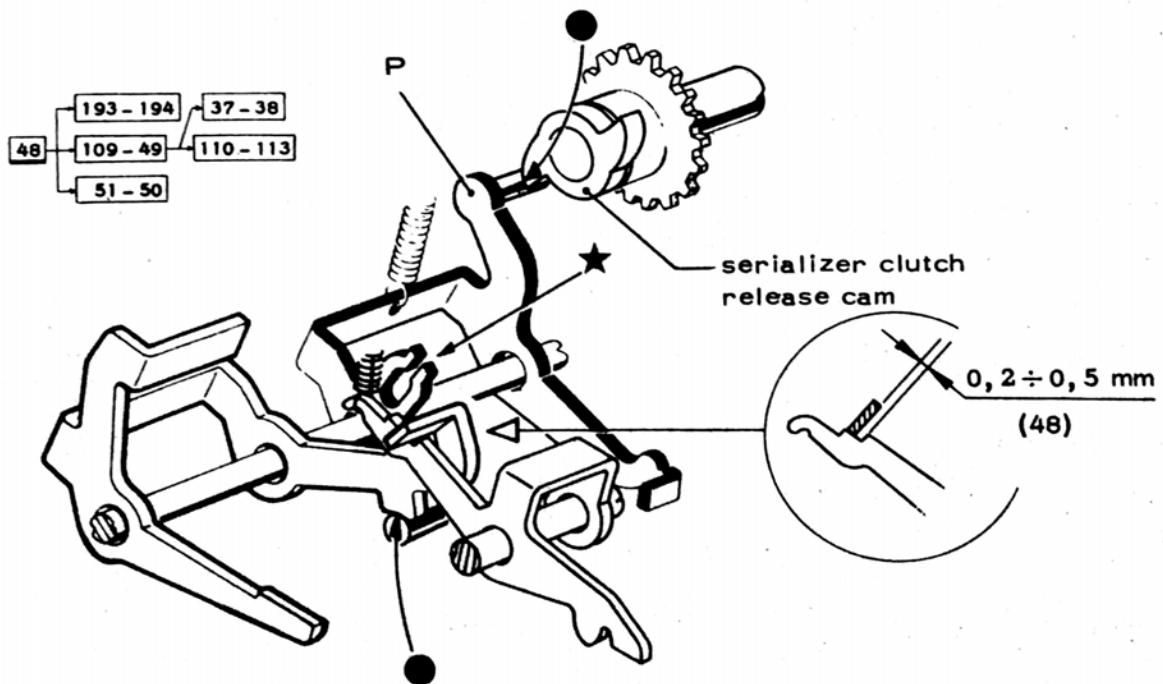


47) TIMING OF THE SERIALIZER CLUTCH RELEASE CAM



Note : check also the condition of the corresponding position at 180°.

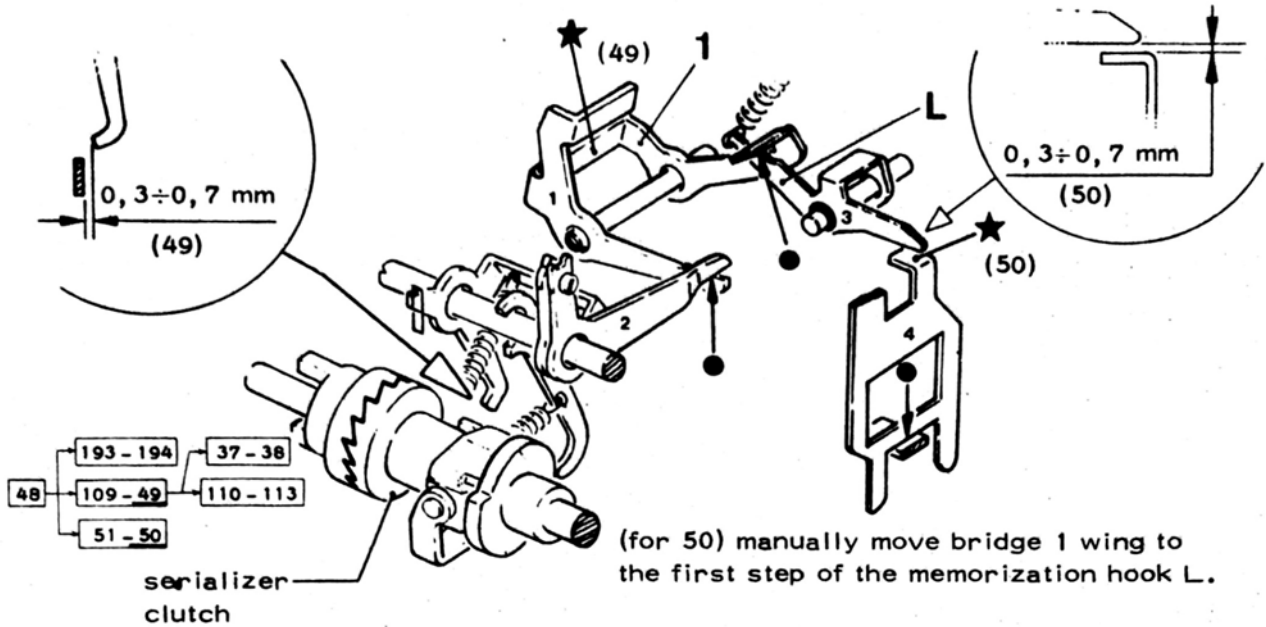
48) CHECK IF THE SERIALIZER CLUTCH IS KEPT CLOSED



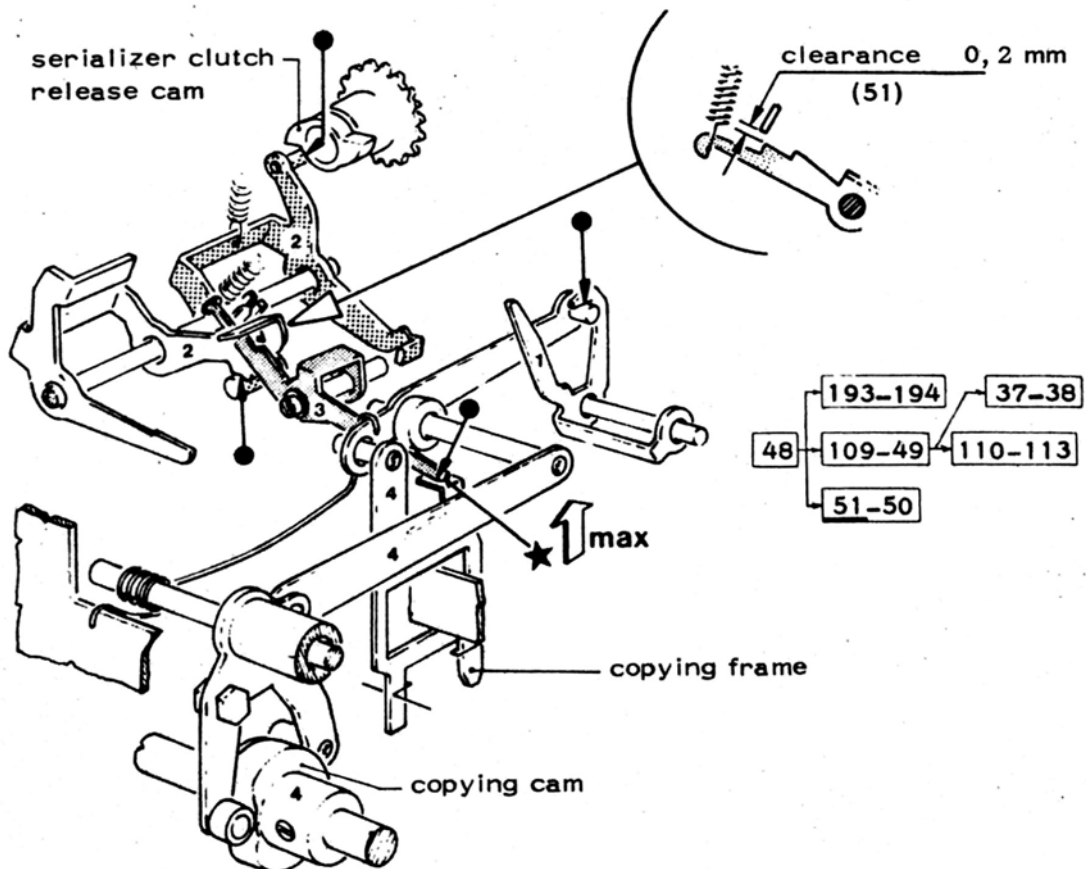
- depress a key
- rotate the printing shaft for maximum control position of bridge P.

49) CHECK THE RELEASE OF THE SERIALIZER CLUTCH FROM "MEMORY OUTPUT"

50) CHECK THE REST POSITION BETWEEN COPYING FRAME AND MEMORIZATION HOOK

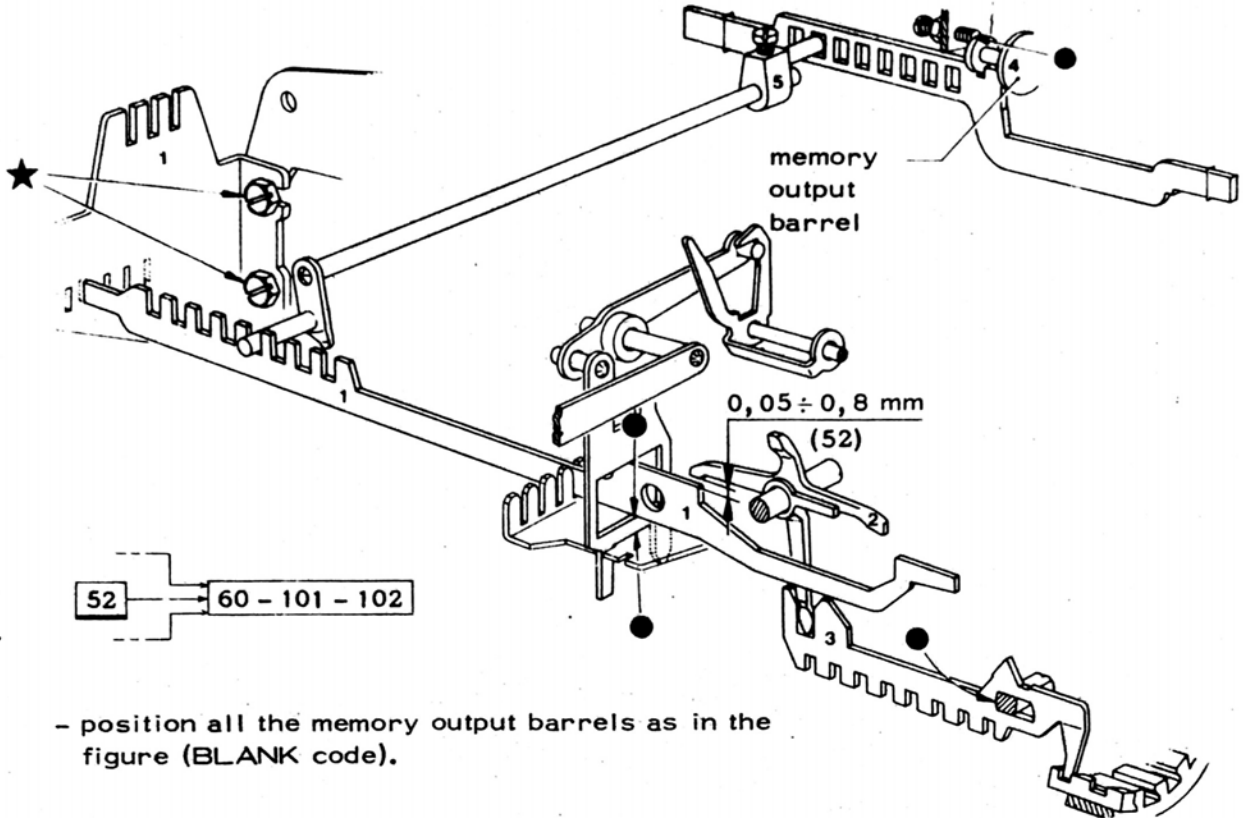


51) CHECK THE RELEASE OF THE MEMORIZATION HOOK



- depress a key
- rotate the printing shaft for maximum control position of the copying frame.

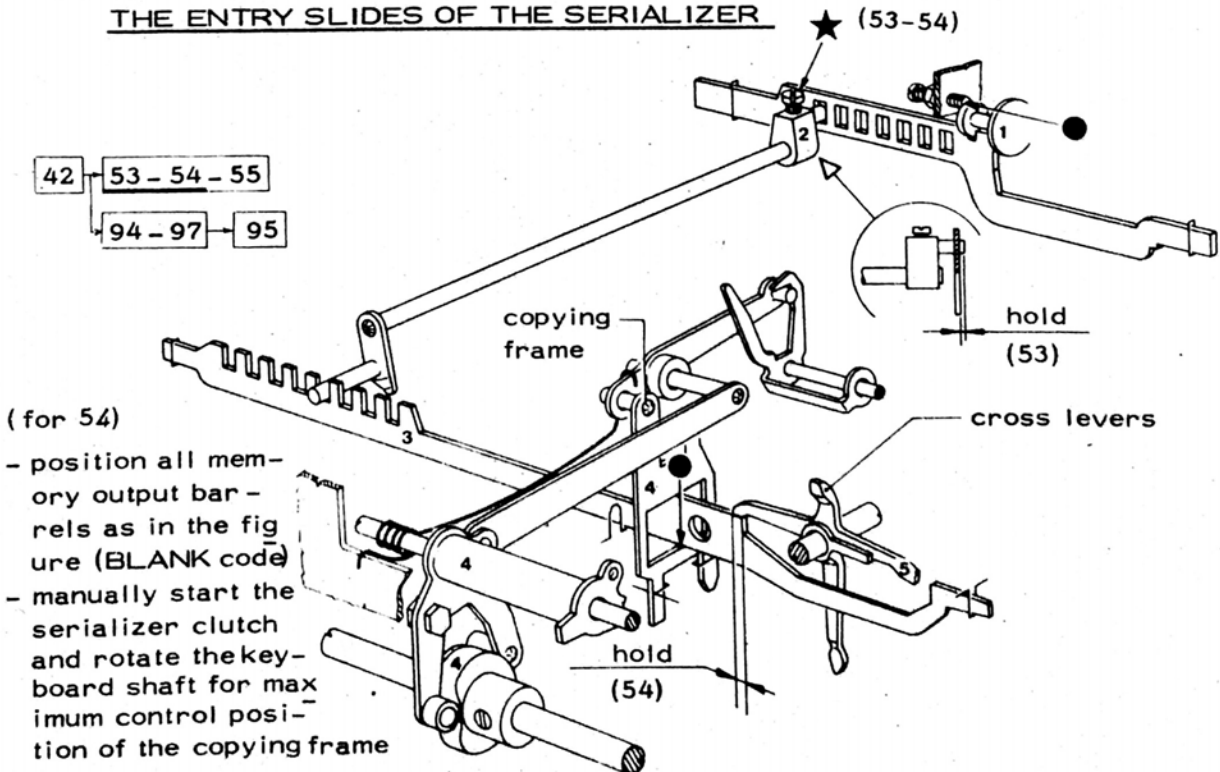
**52) CHECK THE PASS-BY CLEARANCE BETWEEN THE COPYING
CROSSES AND THE SERIALIZER ENTRY SLIDERS**



- position all the memory output barrels as in the figure (BLANK code).

**53) CHECK THE TRANSFER CRANKS HOLD WITH THE MEMORY
OUTPUT SLIDERS**

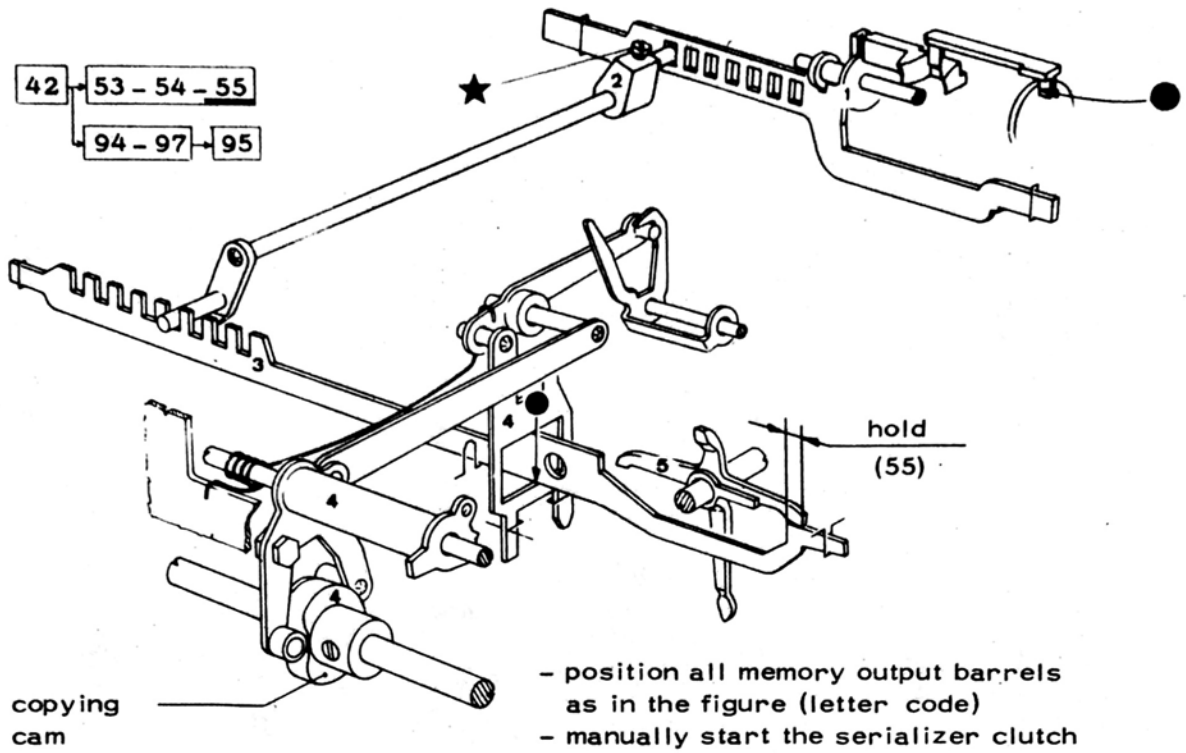
**54) CHECK THE CROSS LEVERS HOLD ON
THE ENTRY SLIDES OF THE SERIALIZER**



(for 54)

- position all memory output barrels as in the figure (BLANK code)
- manually start the serializer clutch and rotate the keyboard shaft for maximum control position of the copying frame

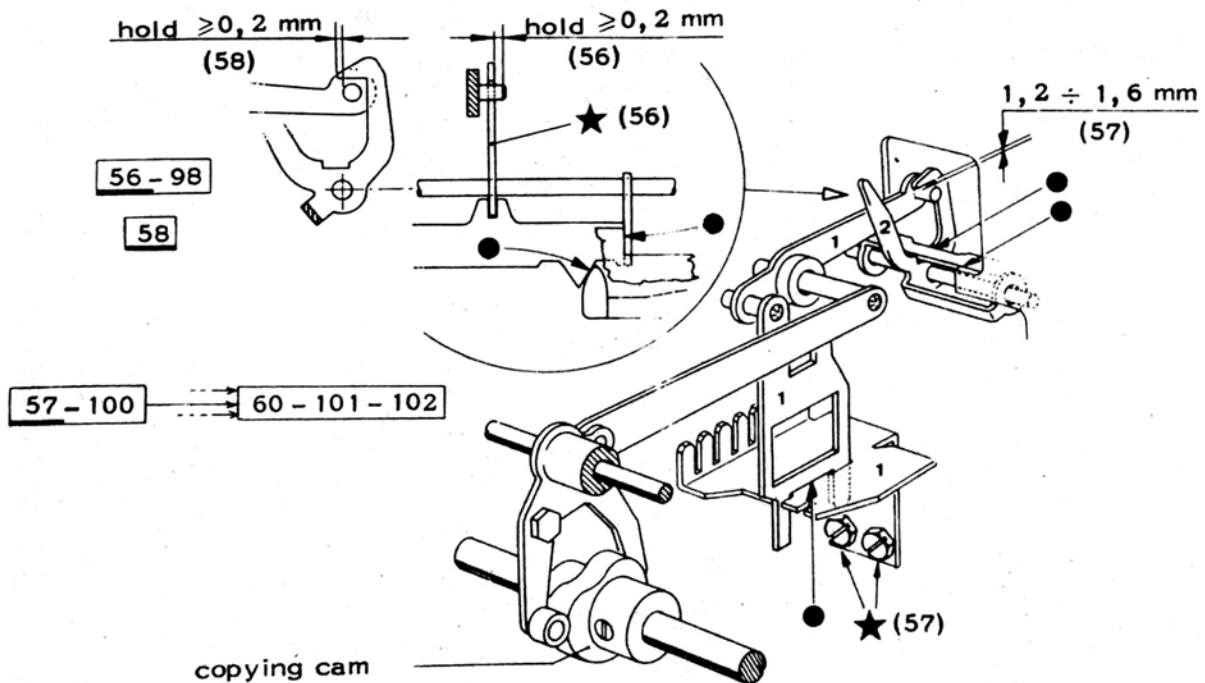
55) CHECK THE CROSS LEVERS HOLD ON THE SERIALIZER ENTRY SLIDES



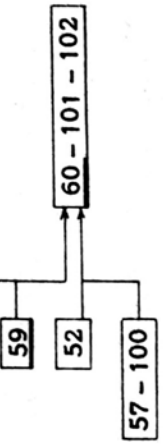
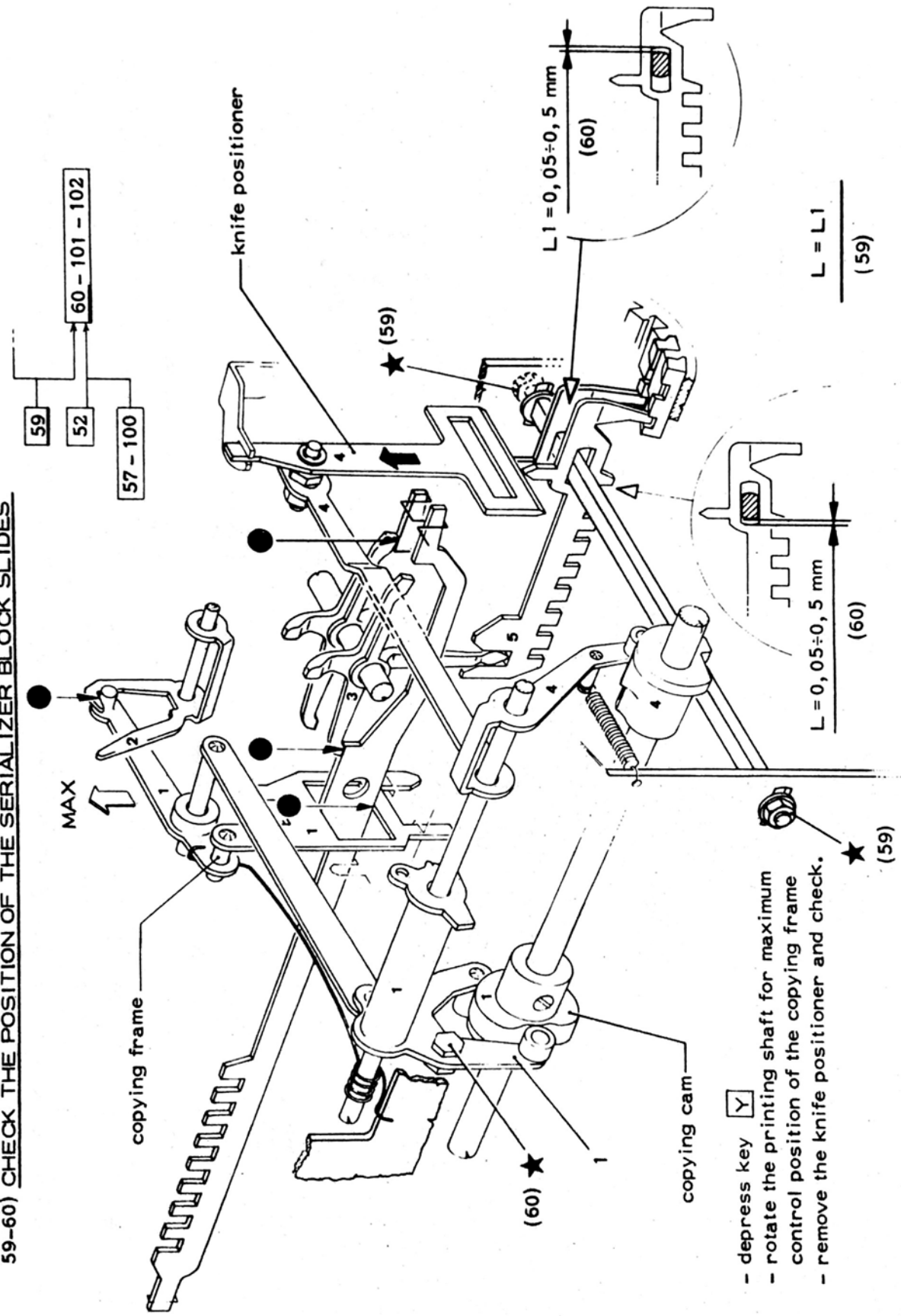
56) CHECK THE AXIAL POSITION OF THE COPYING HOOK

57) CHECK THE PASS-BY CLEARANCE OF THE COPYING HOOK

58) CHECK THE HOLD OF THE COPYING HOOK



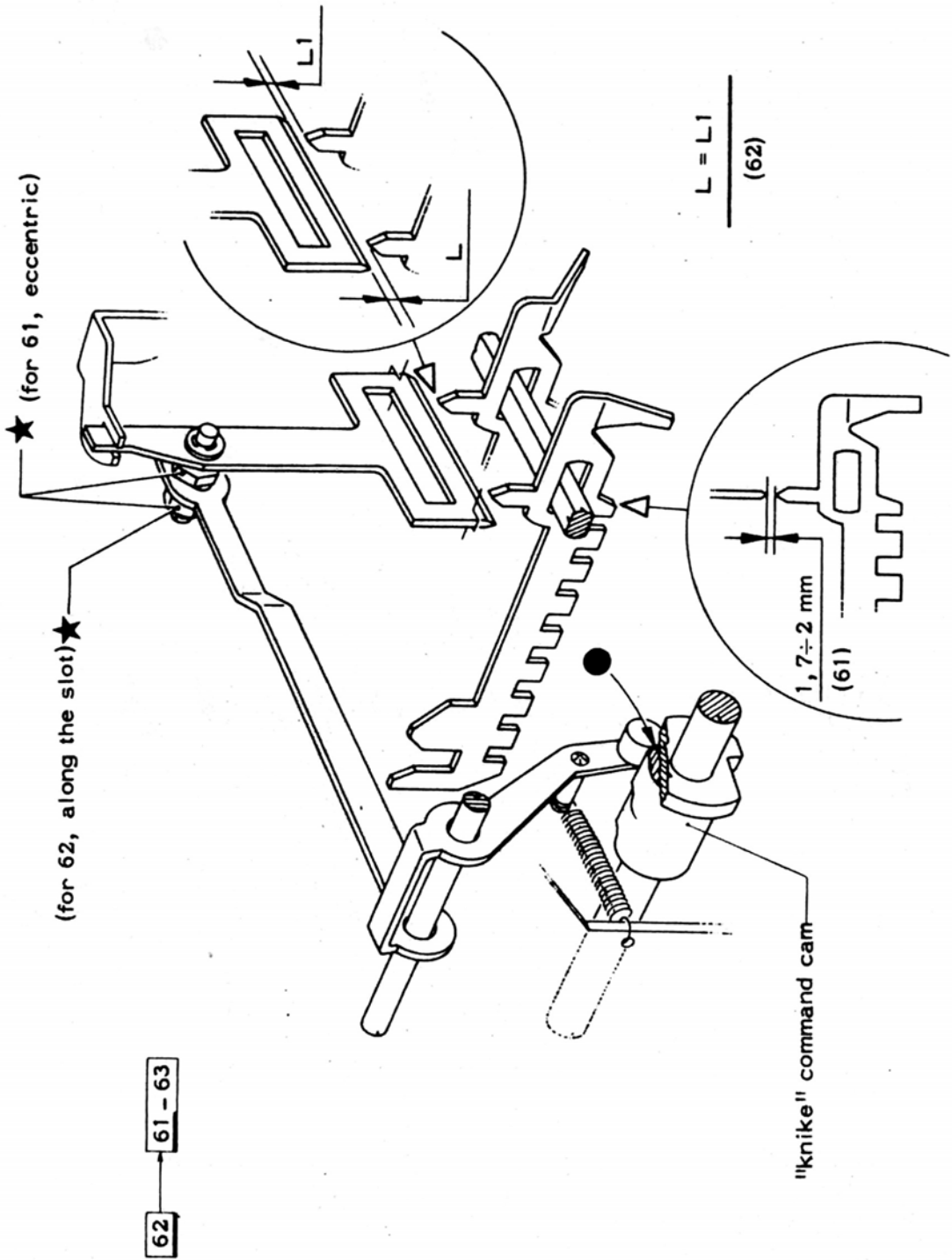
59-60) CHECK THE POSITION OF THE SERIALIZER BLOCK SLIDES



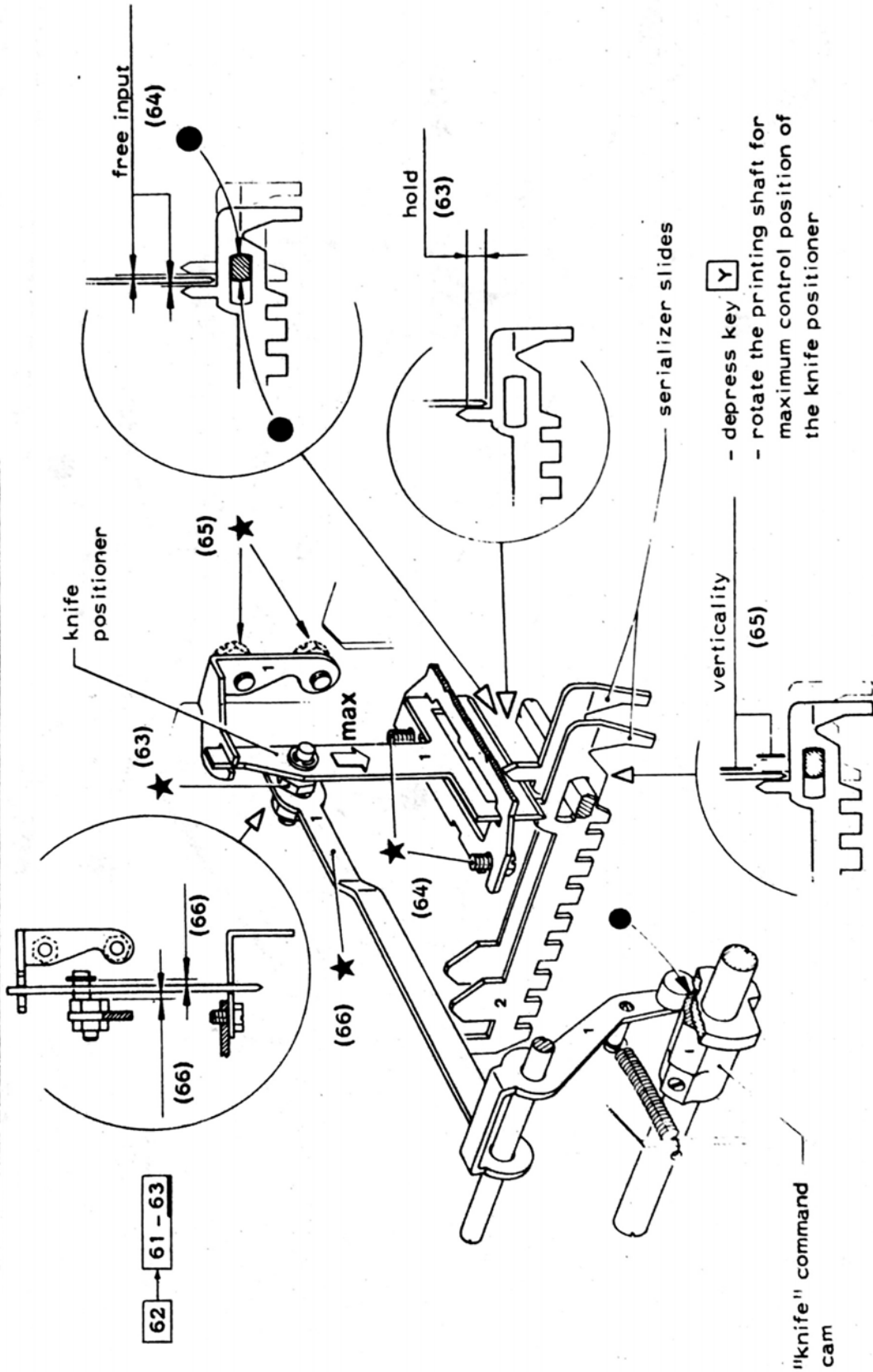
- depress key Y
- rotate the printing shaft for maximum control position of the copying frame
- remove the knife positioner and check.

61) CHECK THE PASS-BY CLEARANCE OF THE SERIALIZER SLIDES IN RELATION TO THE KNIFE POSITIONER

62) CHECK THE PARALLELISM OF THE KNIFE POSITIONER IN RELATION TO THE SERIALIZER SLIDES



- 63) CHECK THE POSITION OF THE SERIALIZER SLIDES
- 64) CHECK THE CENTERING OF THE KNIFE POSITIONER
- 65) CHECK THE VERTICALITY OF THE KNIFE POSITIONER
- 66) CHECK THE FREEDOM OF MOVEMENT OF THE KNIFE POSITIONER

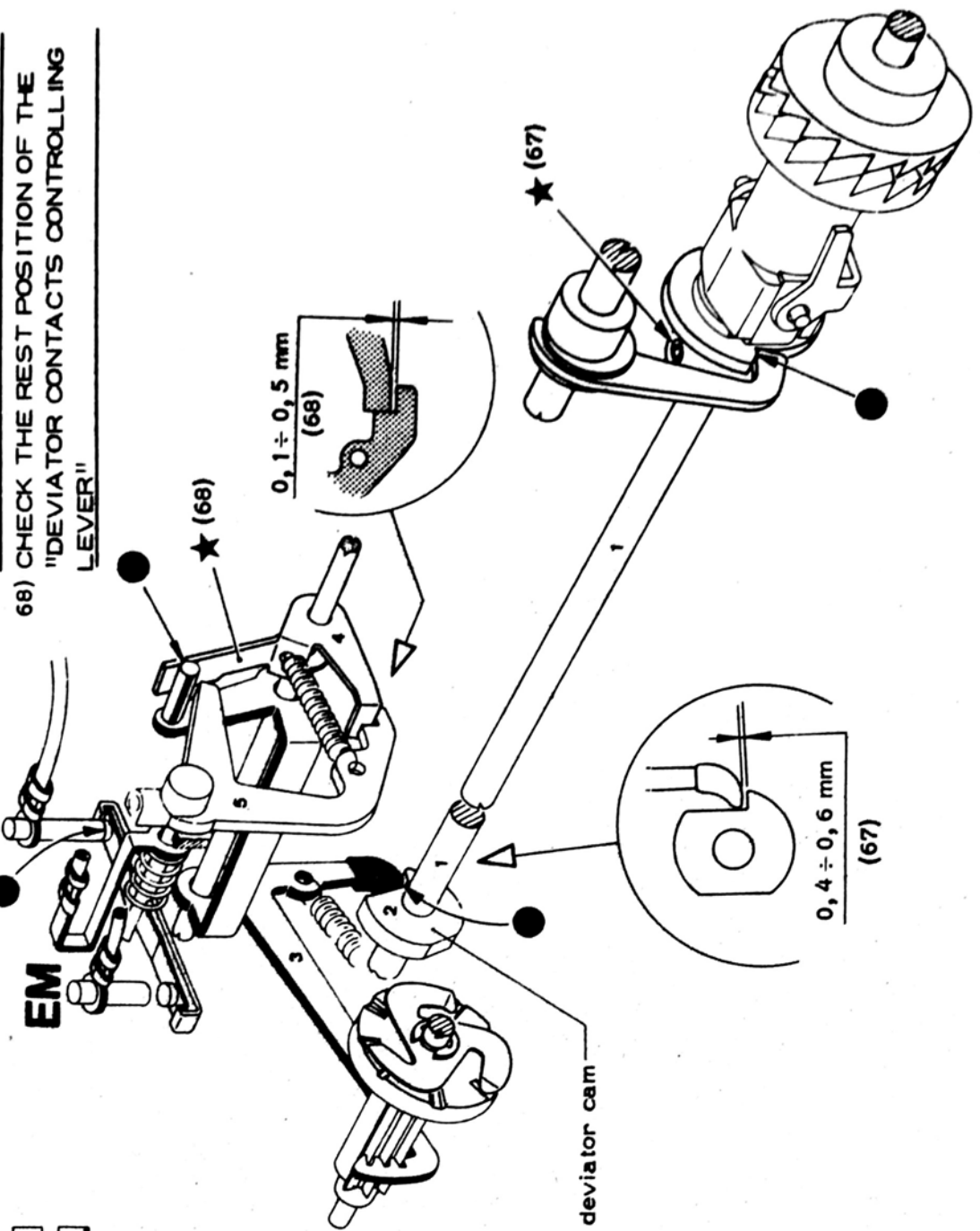


67) CHECK THE TIMING OF THE DEVIATOR CAM

68) CHECK THE REST POSITION OF THE "DEVIATOR CONTACTS CONTROLLING LEVER"

RIC

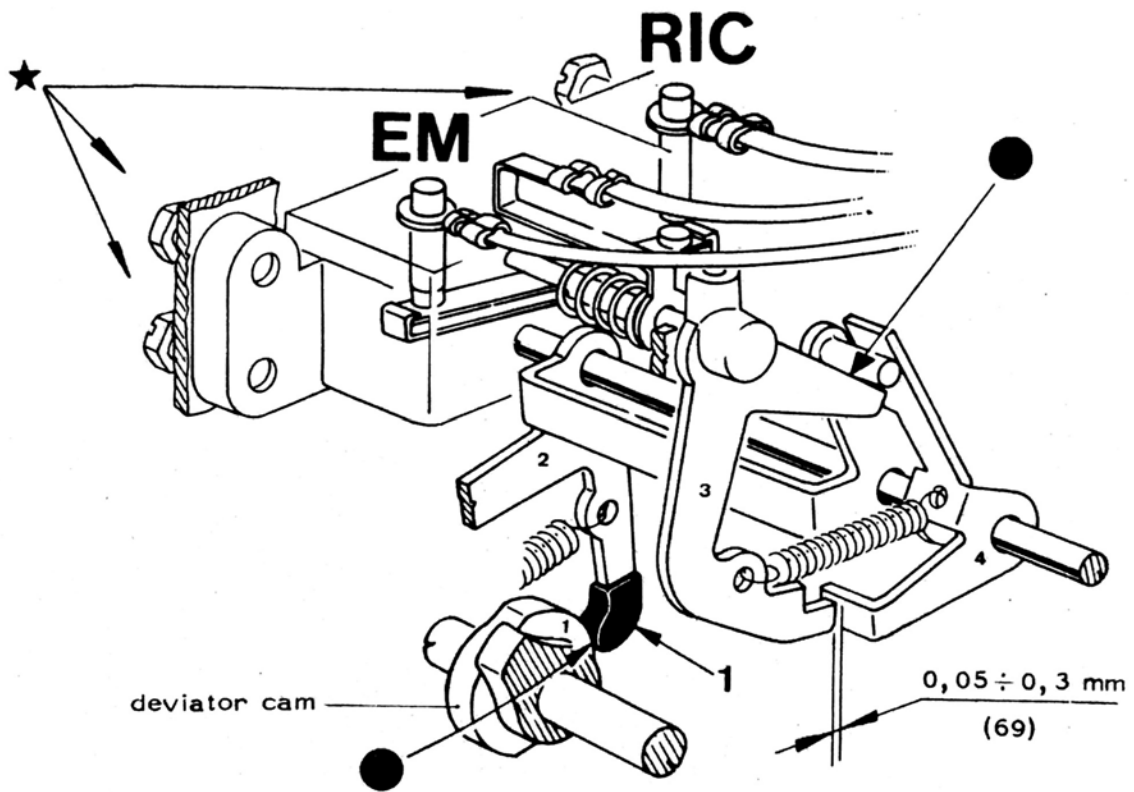
EM



68

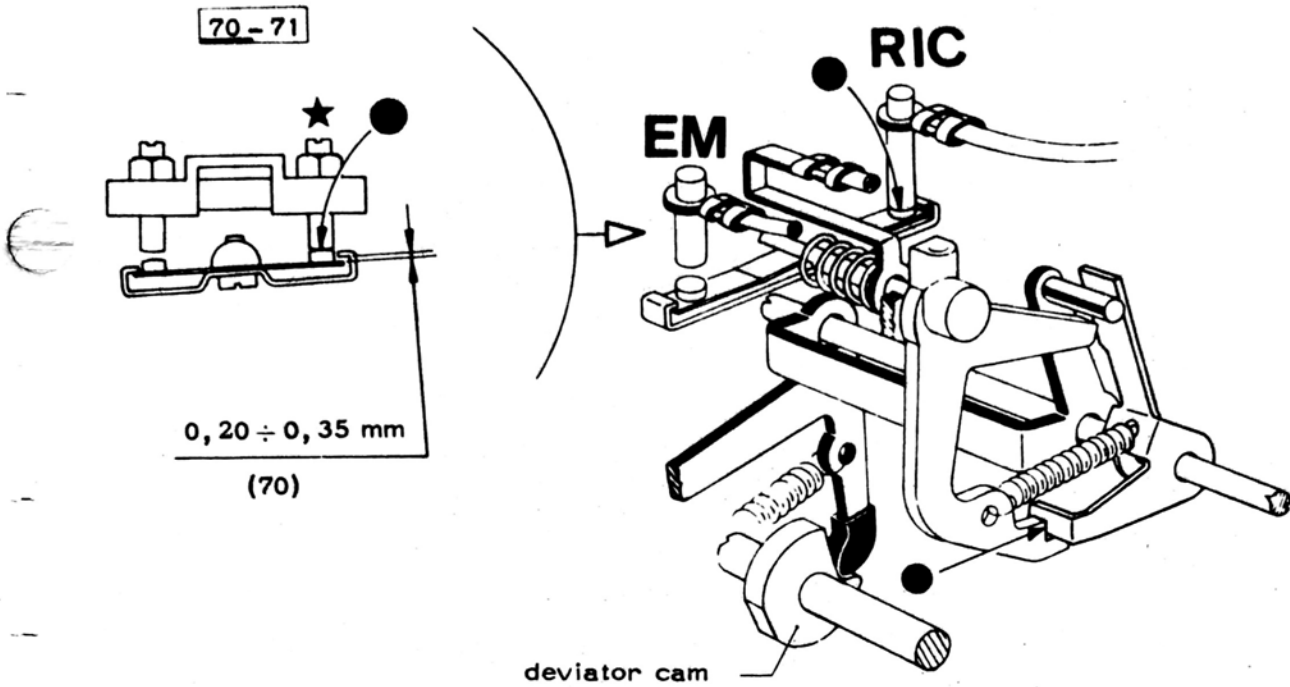
**69) CHECK THE WORK POSITION OF THE DEVIATOR CONTACTS
CONTROLLING LEVER**

69

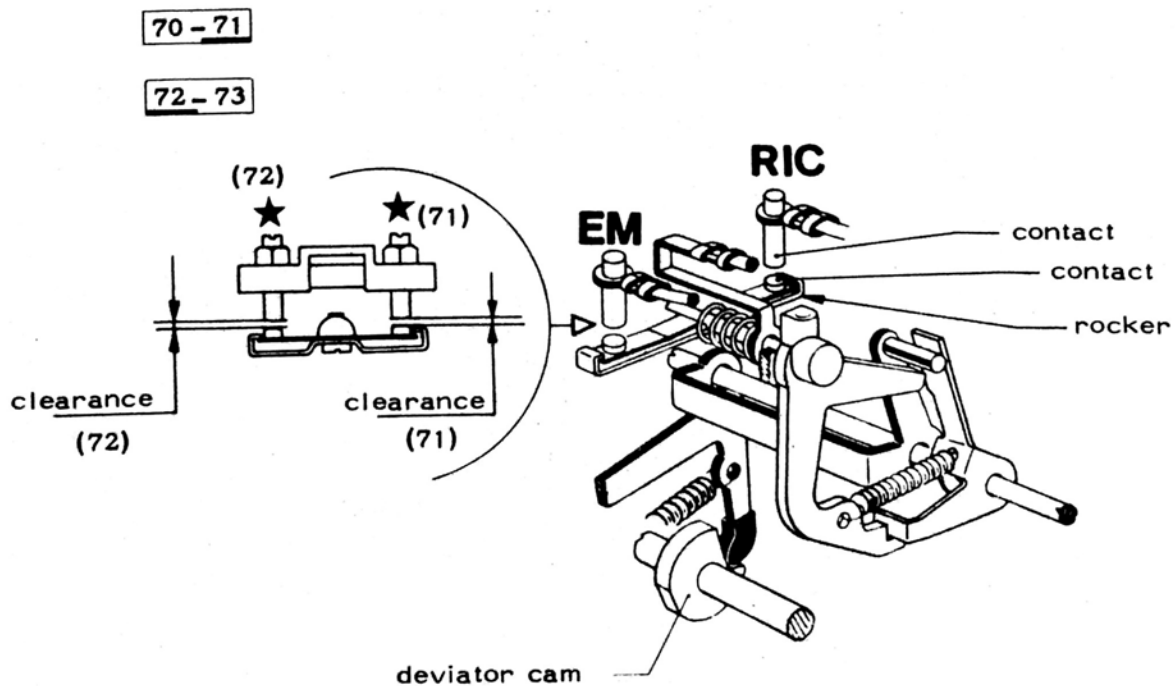


- release the serializer clutch
- rotate the printing shaft to move lever 1 to contact the maximum circular profil of the deviator cam

70) CHECK THE RECEPTION POSITION OF THE DEVIATOR CONTACTS

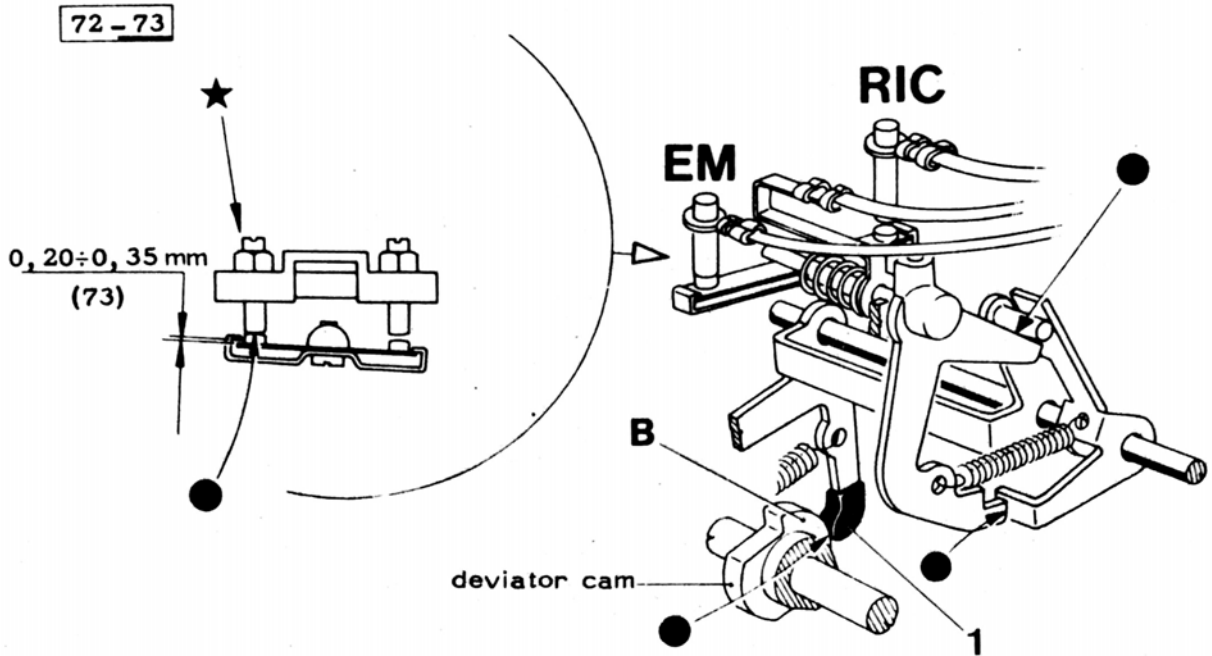


71-72) CHECK THE DEVIATOR CONTACTS



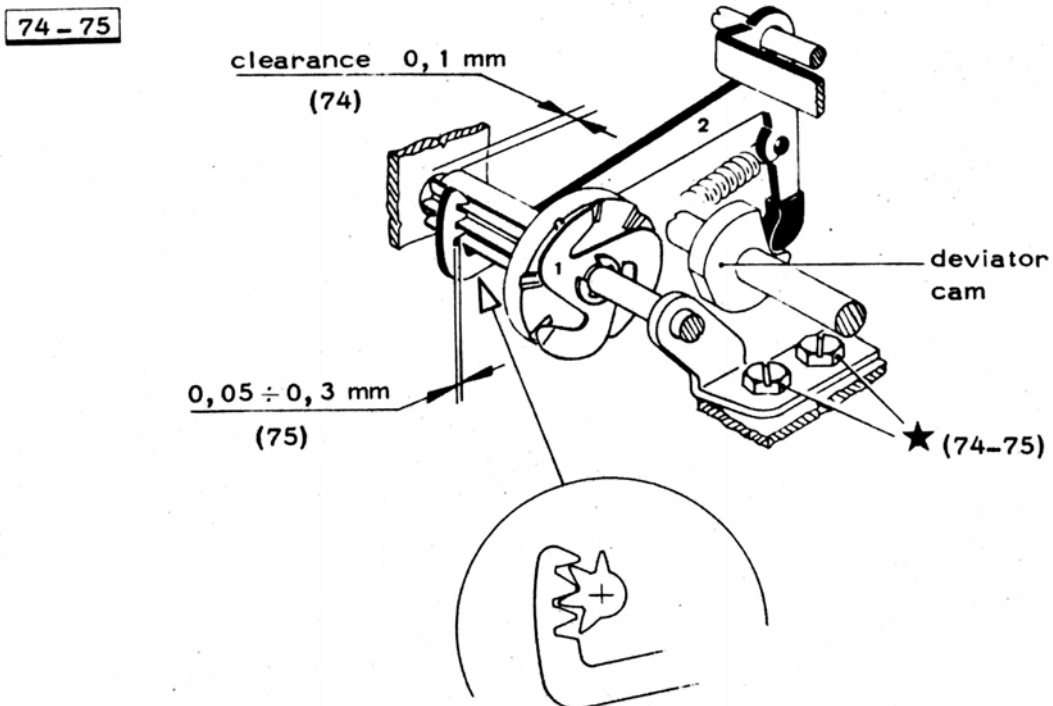
Note: angularly move the rocker and check the existence of a position where the contacts are disjoined

73) CHECK THE DEVIATOR CONTACTS EMISSION POSITION



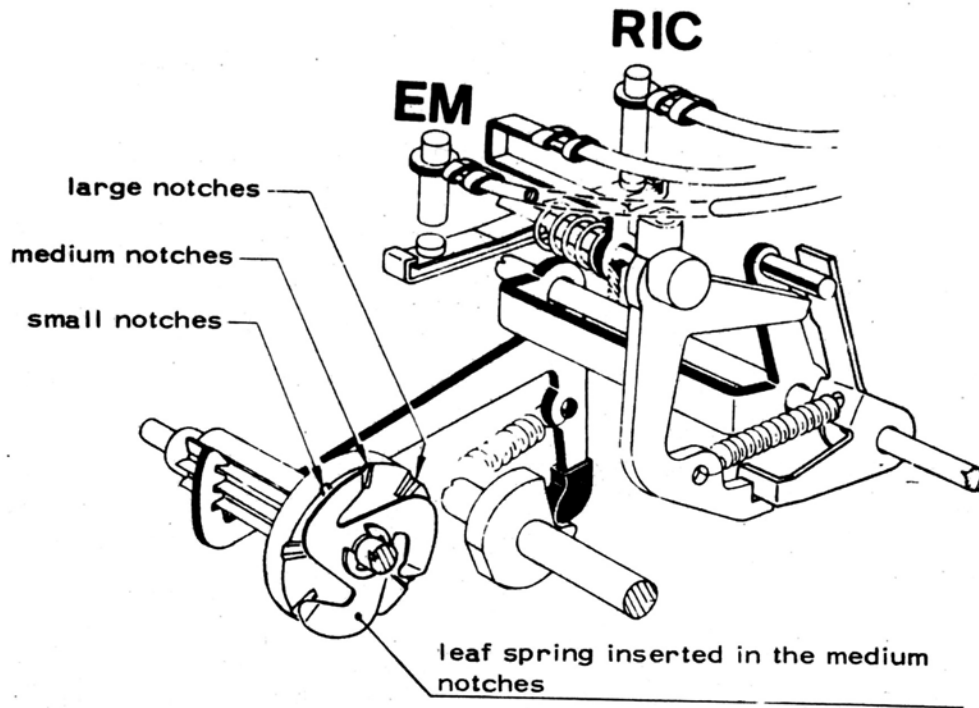
74) CHECK THE AXIAL POSITION OF THE DEVIATOR FLYWHEEL SUPPORT

75) CHECK THE COUPLING OF THE DEVIATOR FLYWHEEL GEARS



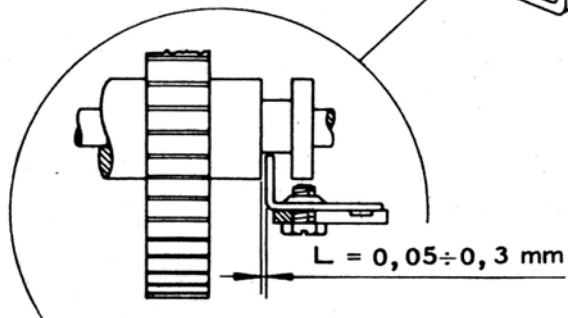
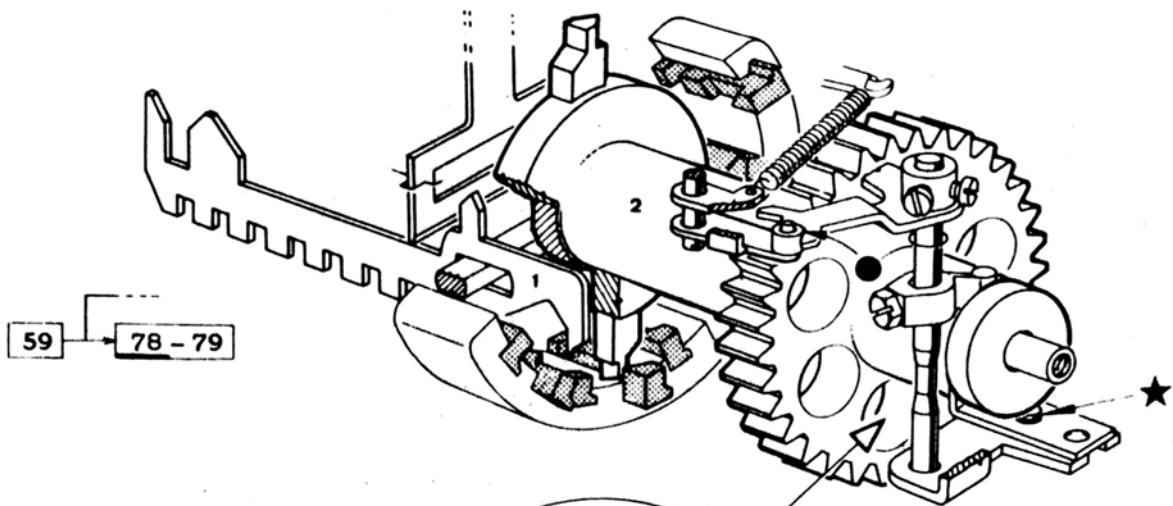
77) CHECK THE DEVIATOR FRICTION

77



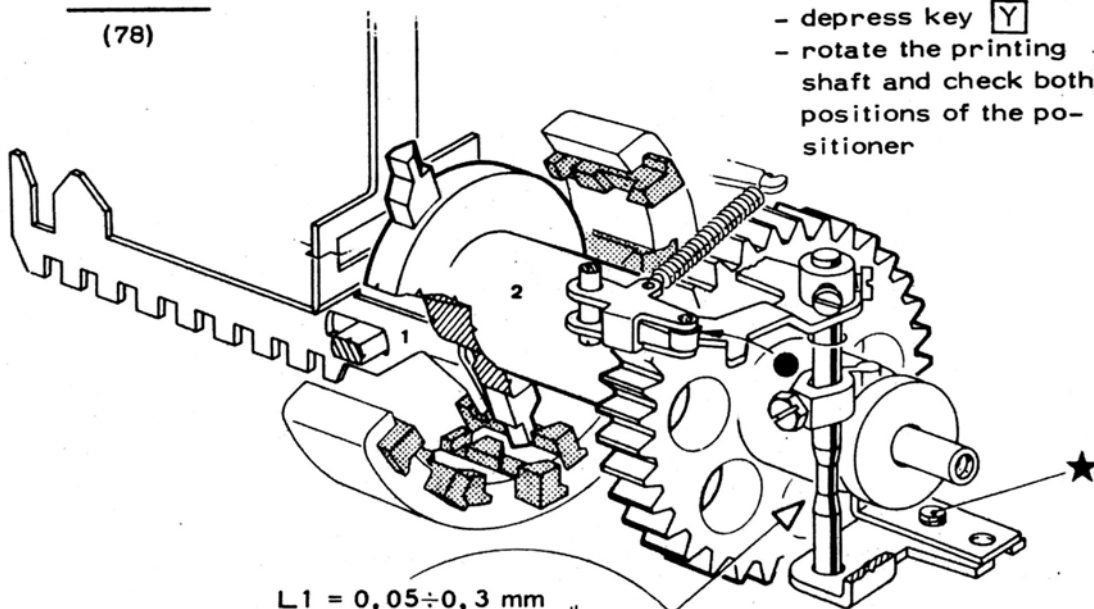
(77)

78) CHECK THE READER KNIFE SHAFT AXIAL POSITIONS RELATIVE TO THE 5 CODE BITS

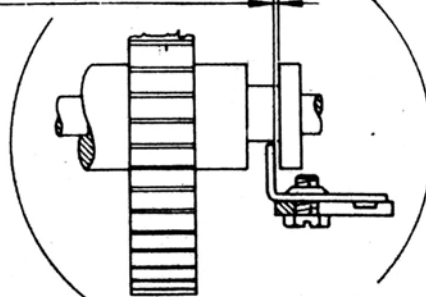


$L = L1$
(78)

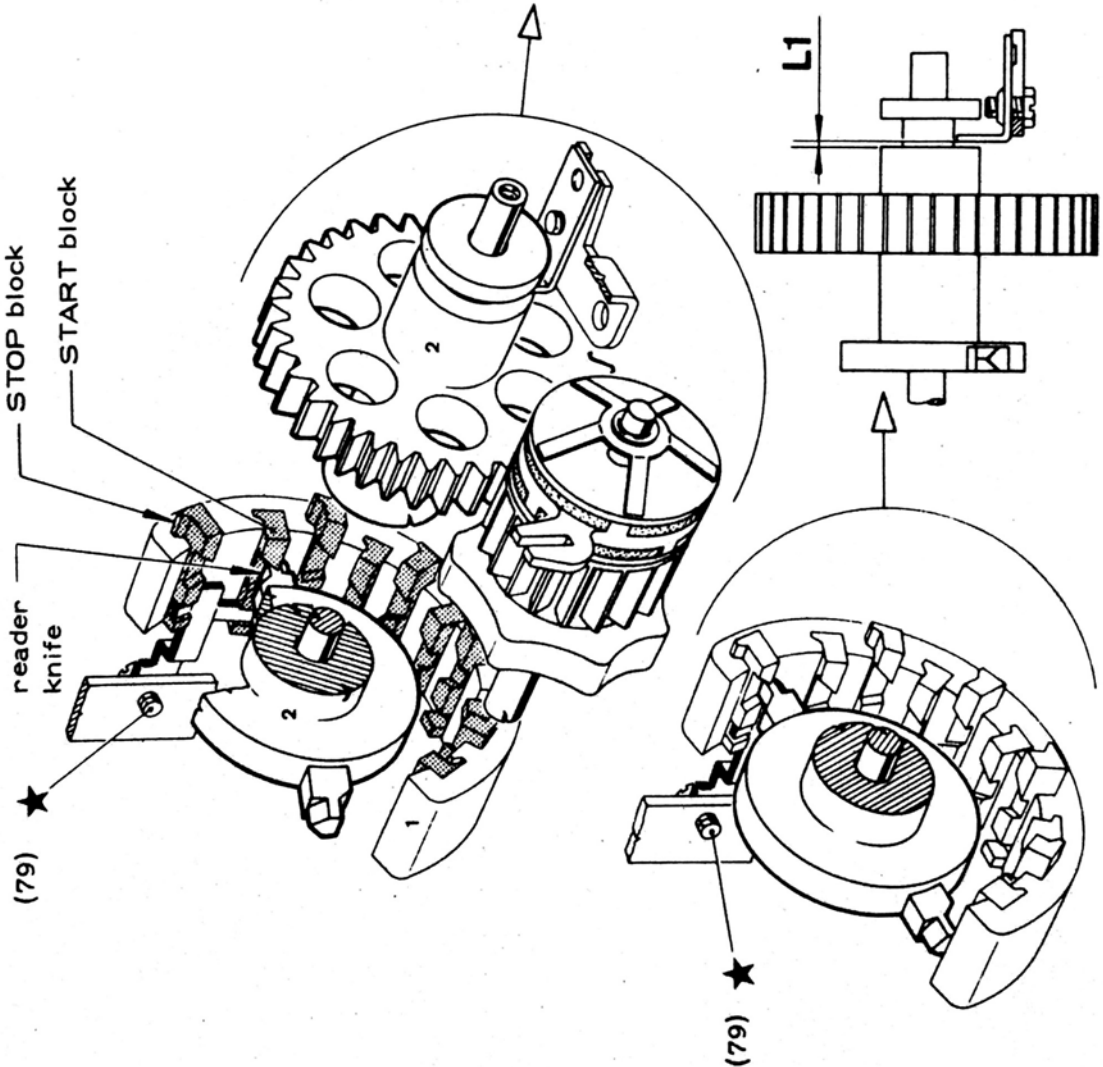
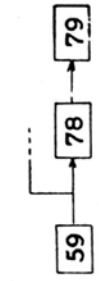
- depress key **Y**
- rotate the printing shaft and check both positions of the positioner



$L1 = 0,05 \div 0,3 \text{ mm}$



79) CHECK THE READER KNIFE SHAFT AXIAL POSITIONS, RELATIVE TO THE "START" AND "STOP" IMPULSES



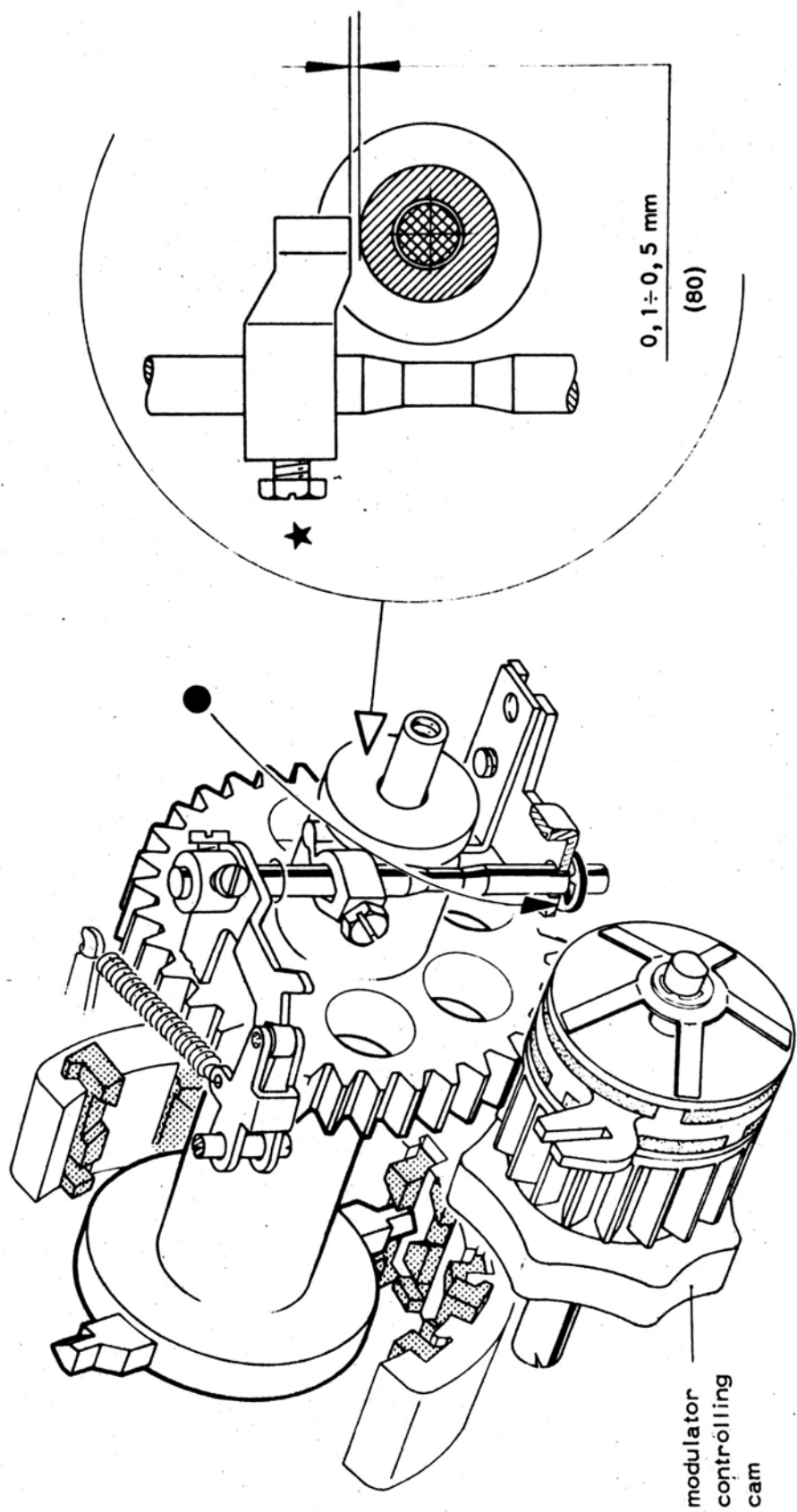
$$L = L1$$

(79)

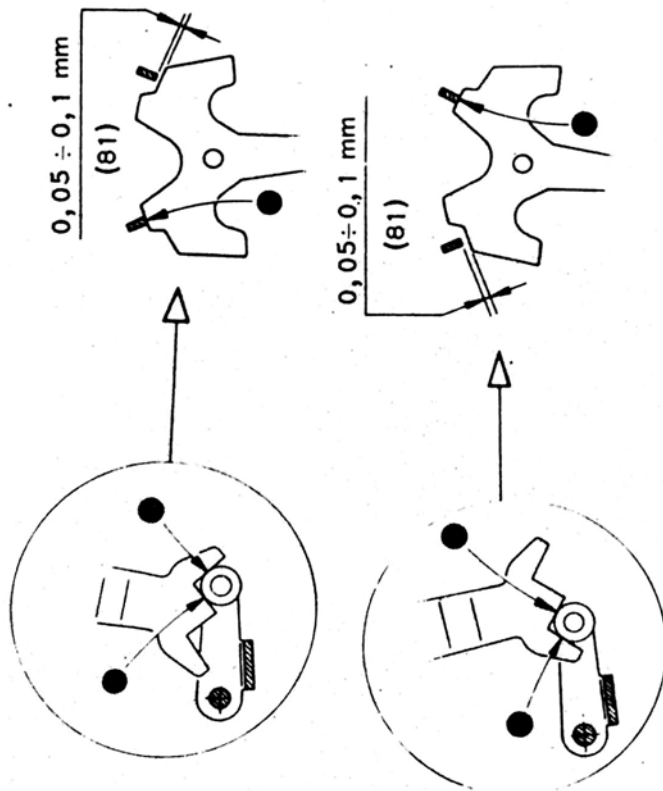
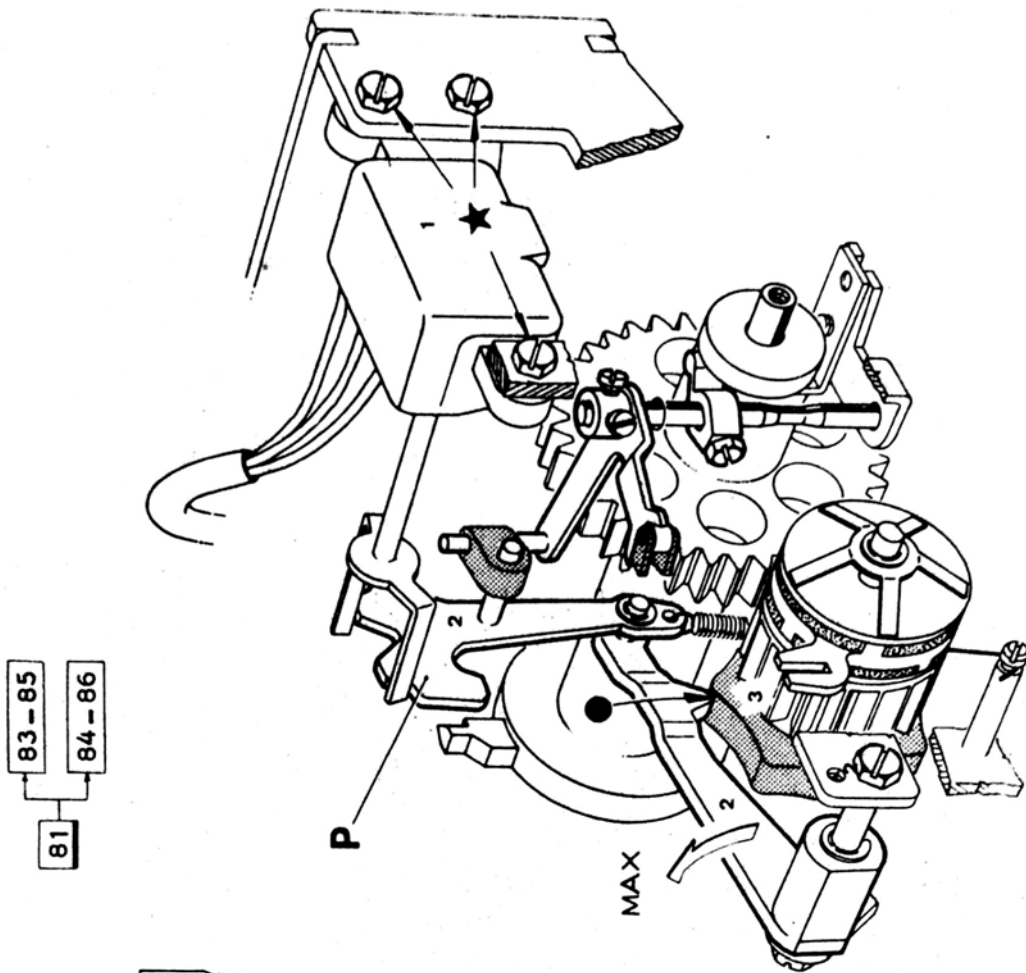
- start the serializer
- check by moving the reader knife first on the START block and then on the STOP block

80) CHECK THE POSITION OF THE MODULATION CONTROLLING CRANK

82 → 80

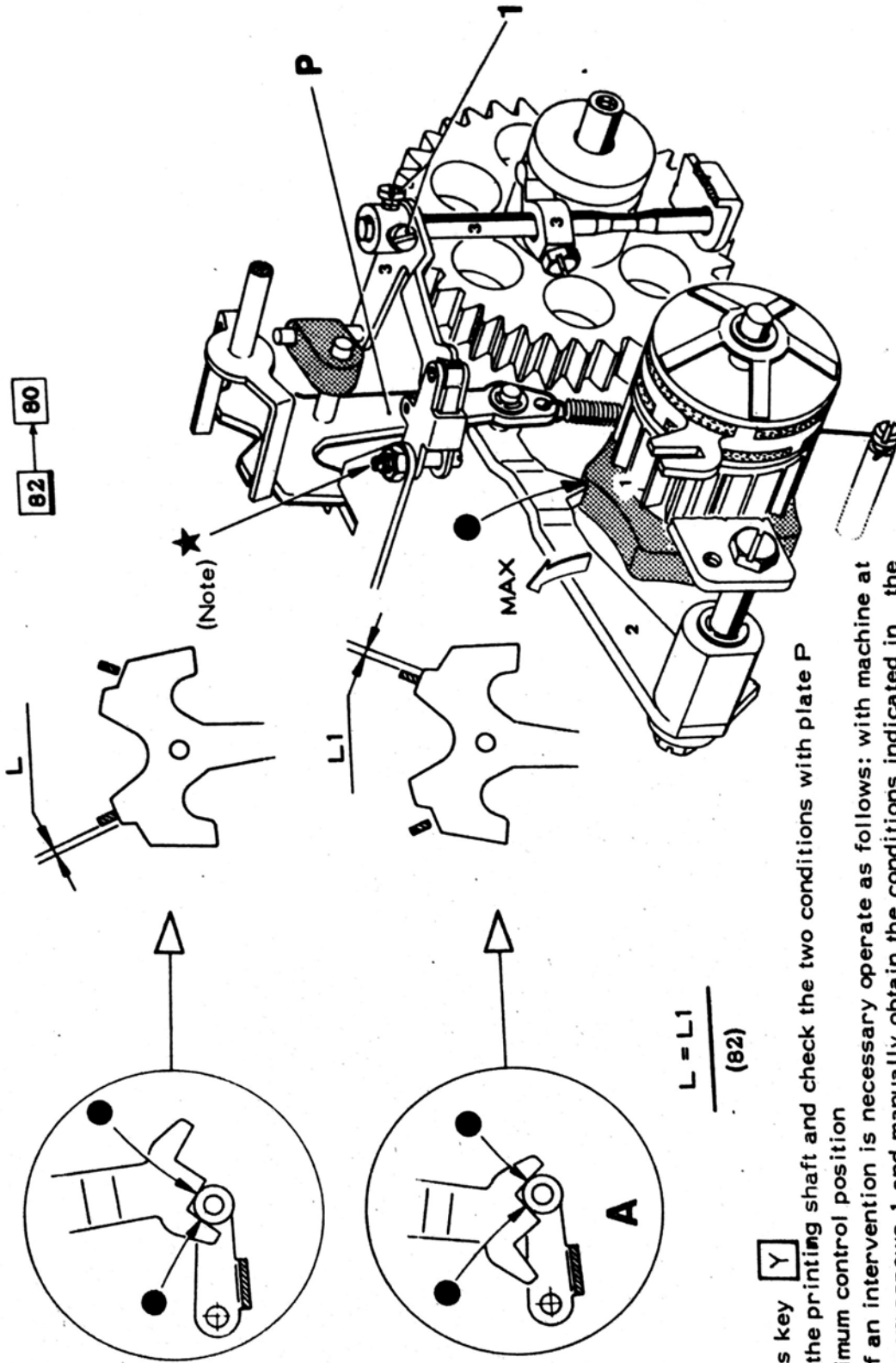


81) CHECK THE POSITION OF THE MODULATOR UNIT



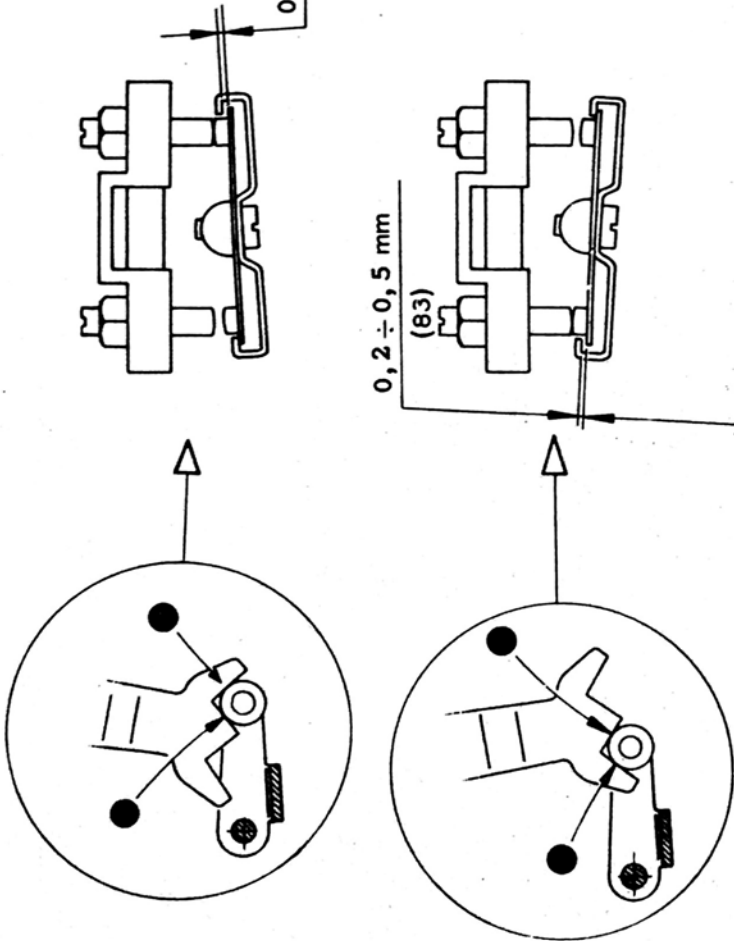
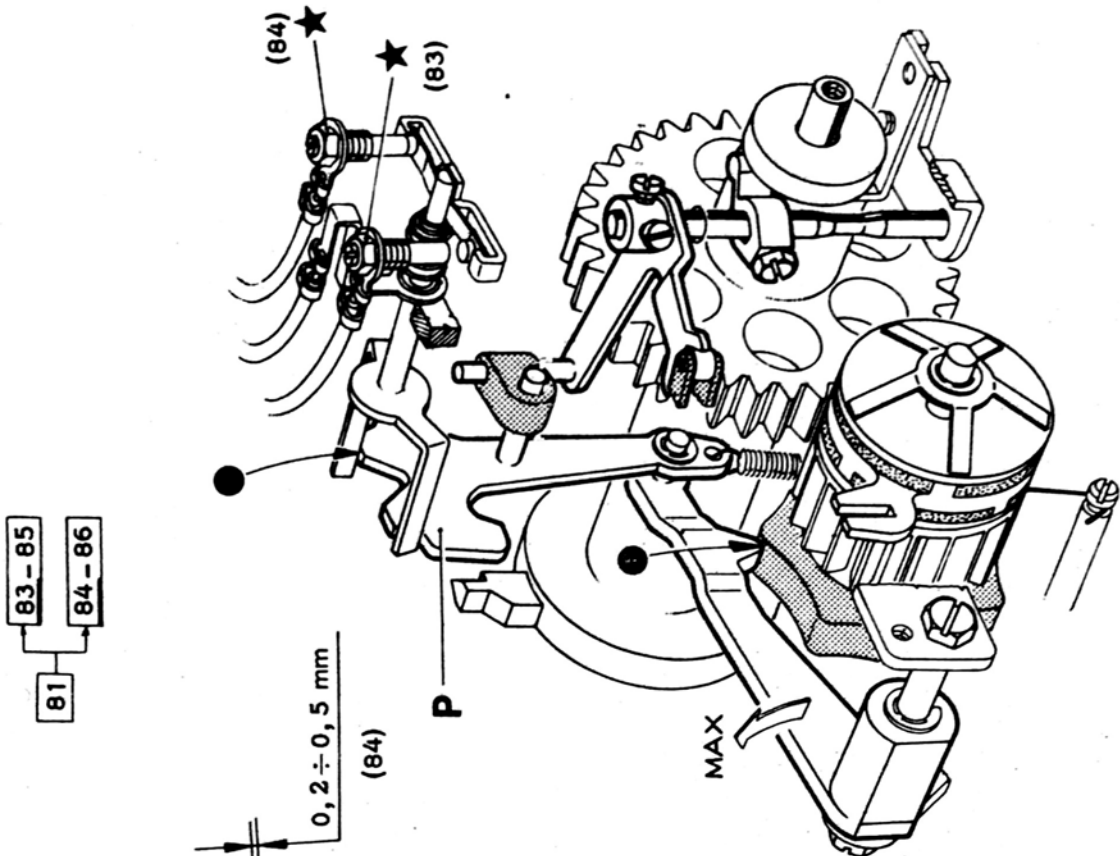
- depress key **Y**
- rotate the printing shaft and alternatively check the two conditions, with entry plate P at maximum control position

82) CHECK THE POSITION OF MODULATION ENTRY PLATE



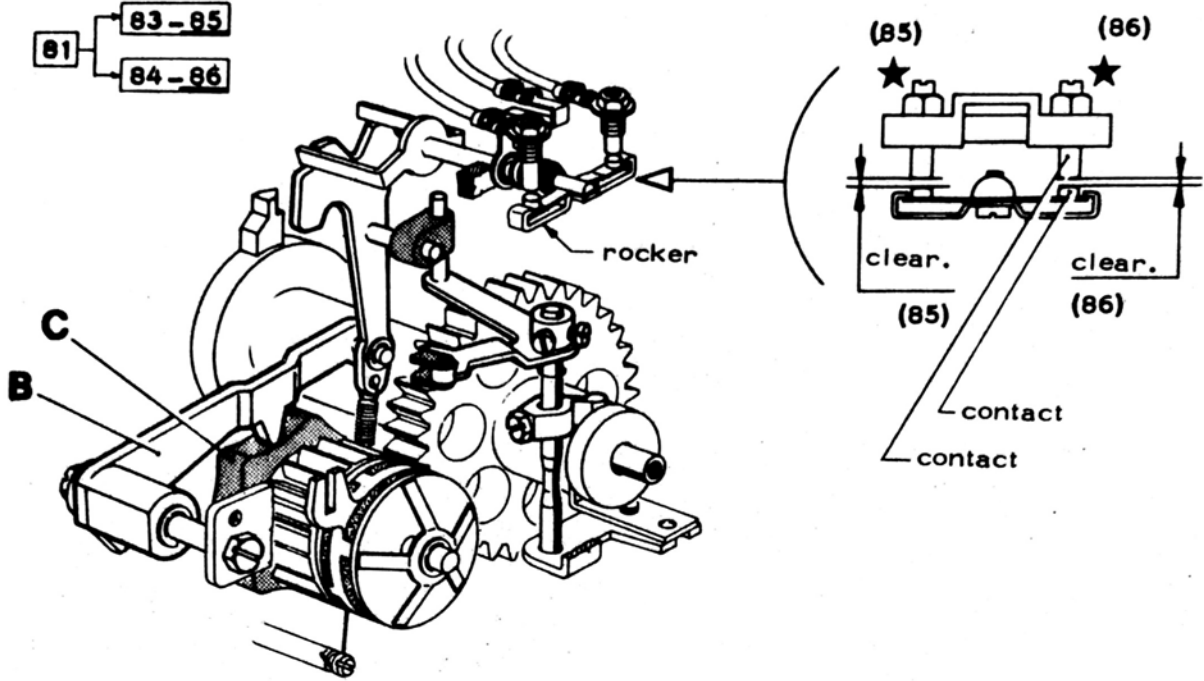
- depress key Y
- rotate the printing shaft and check the two conditions with plate P at maximum control position
- (Note):** if an intervention is necessary operate as follows: with machine at rest, loosen screws 1 and manually obtain the conditions indicated in the check, such conditions will be guaranteed by acting on the positioner.
- with the machine at rest, give the positioner the direct shown in figure A and lock screws 1.

83-84) CHECK THE MODULE OR CONTACTS



- depress key Y
- rotate the printing shaft and alternatively check the two conditions with plate P at maximum control position

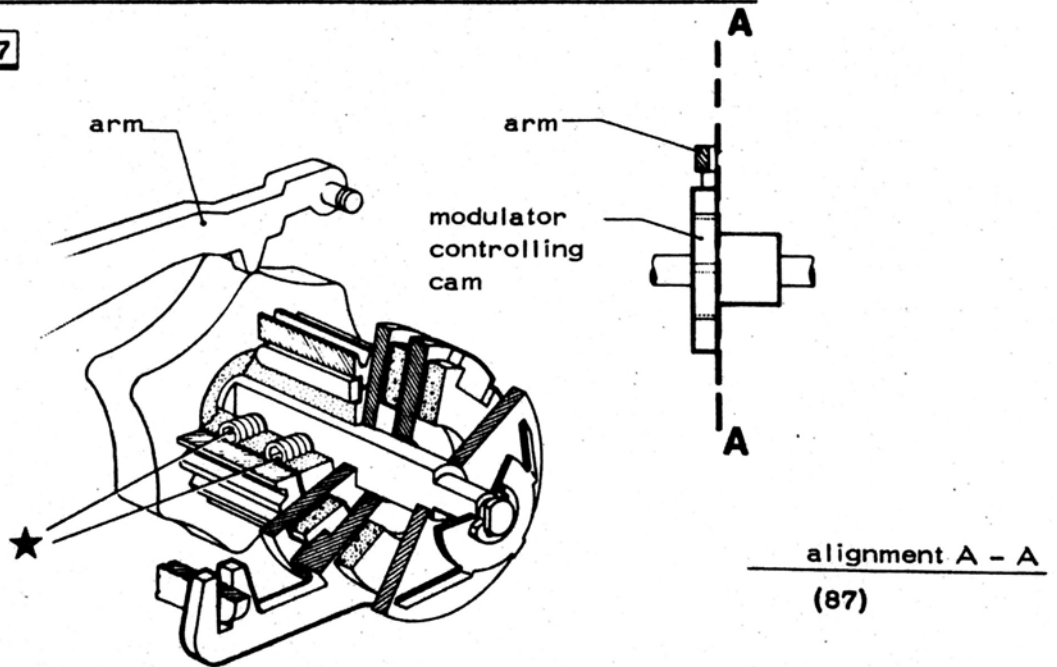
85-86) CHECK THE 7th CELL ENTRY



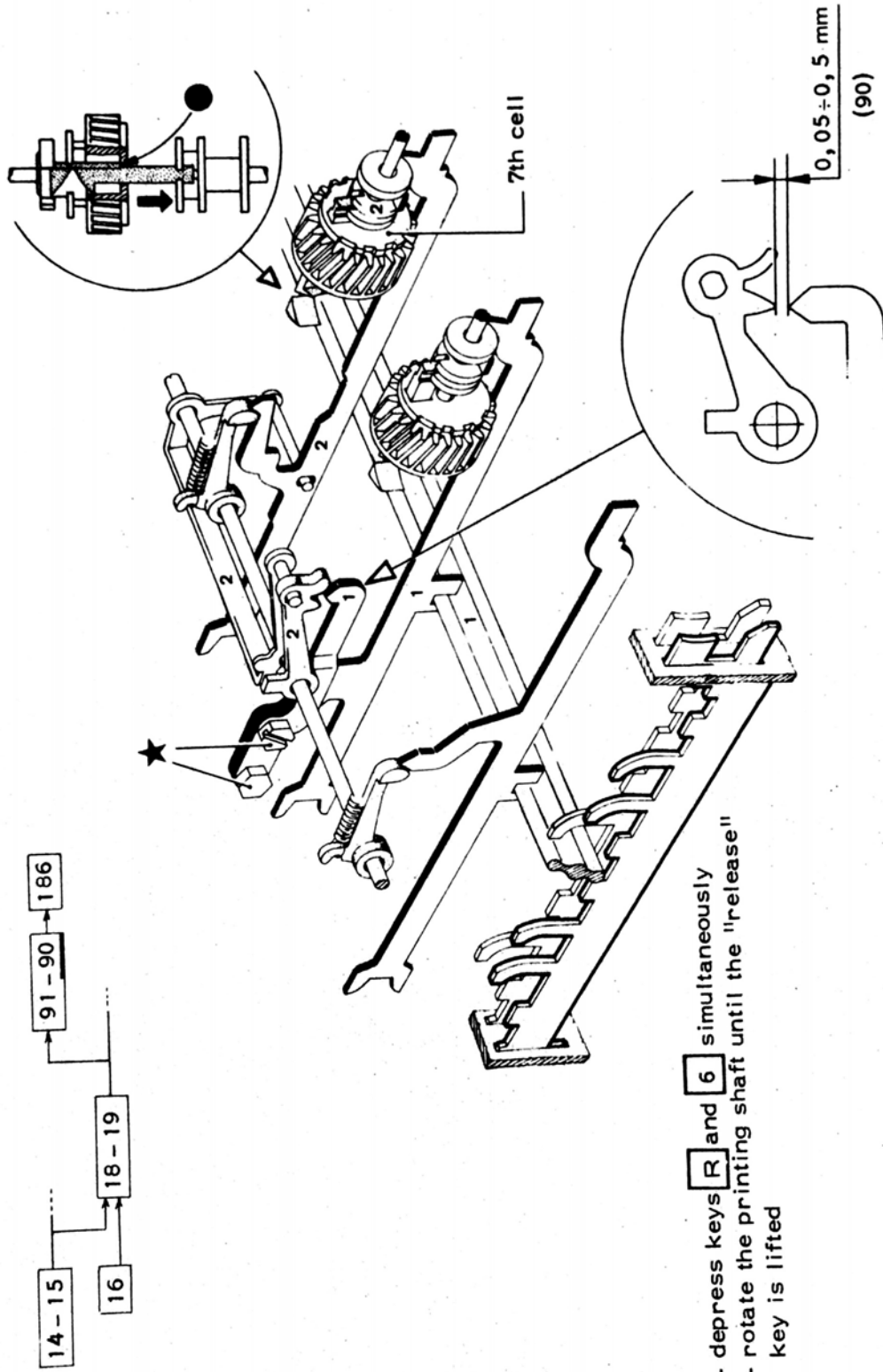
- start the serializer
- rotate the printing shaft until arm B is on an opening of cam C
- angularly move the rocker and check the existence of a position where the contacts are disjoined

87) CHECK THE FRICTION OF THE SERIALIZER SHAFT

87

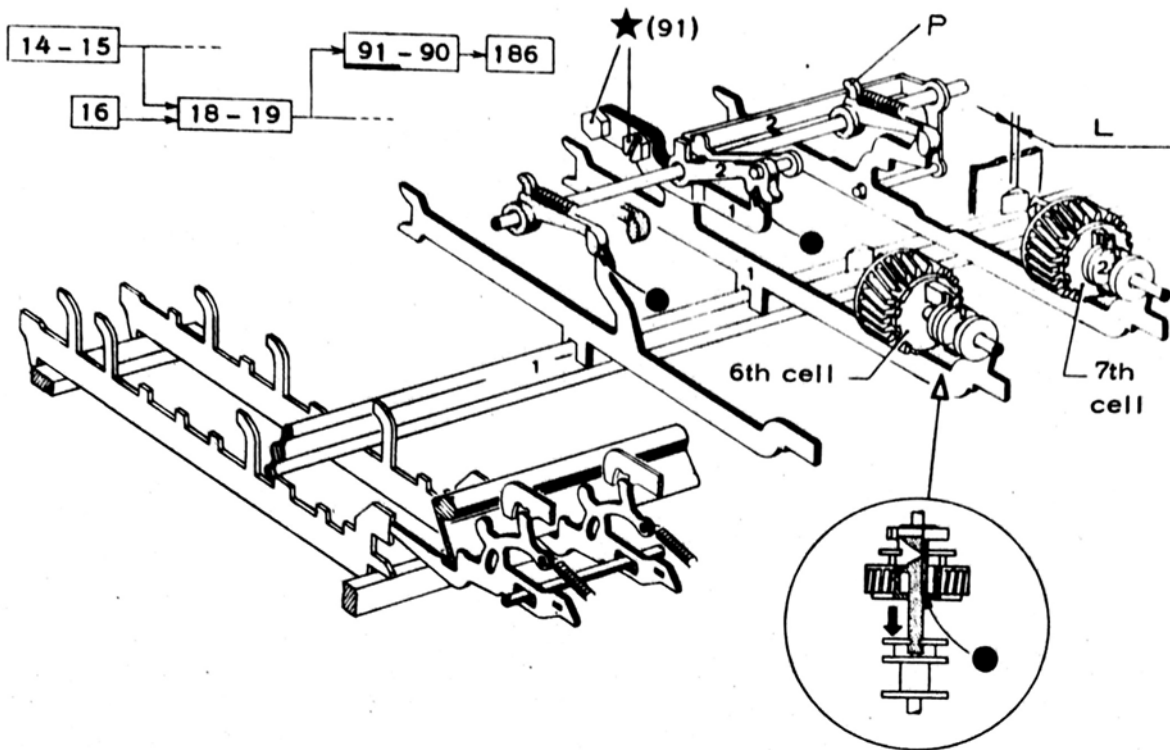


90) CHECK THE FREEDOM OF MOVEMENT OF THE 6th AND 7th CELL ENTRY SLIDER

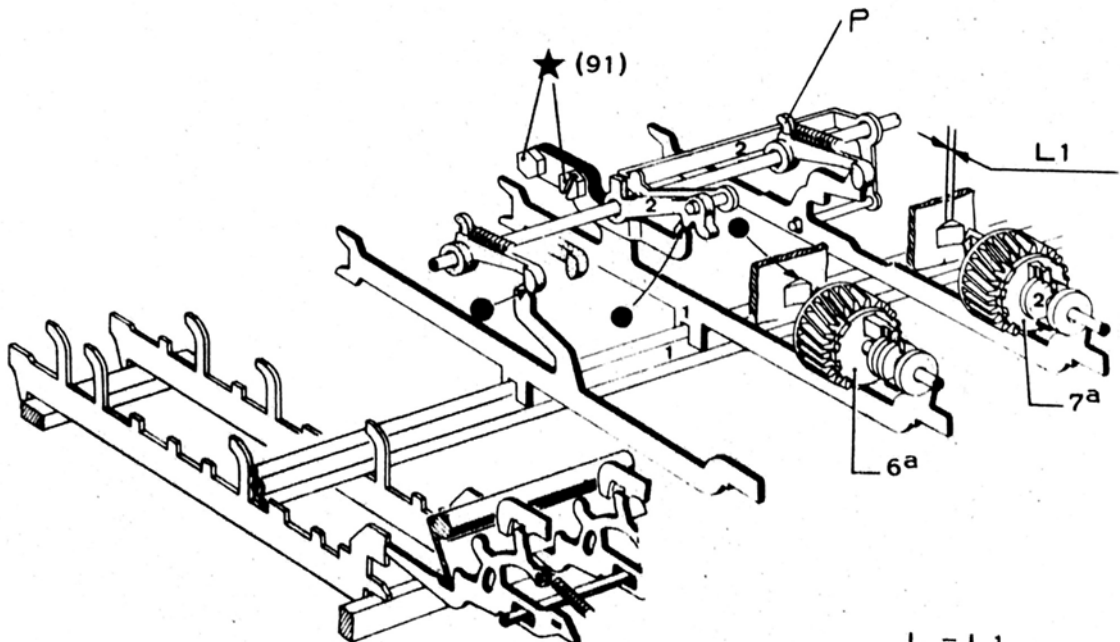


- depress keys **R** and **6** simultaneously
- rotate the printing shaft until the "release" key is lifted

91) CHECK THE 7th CELL ENTRY



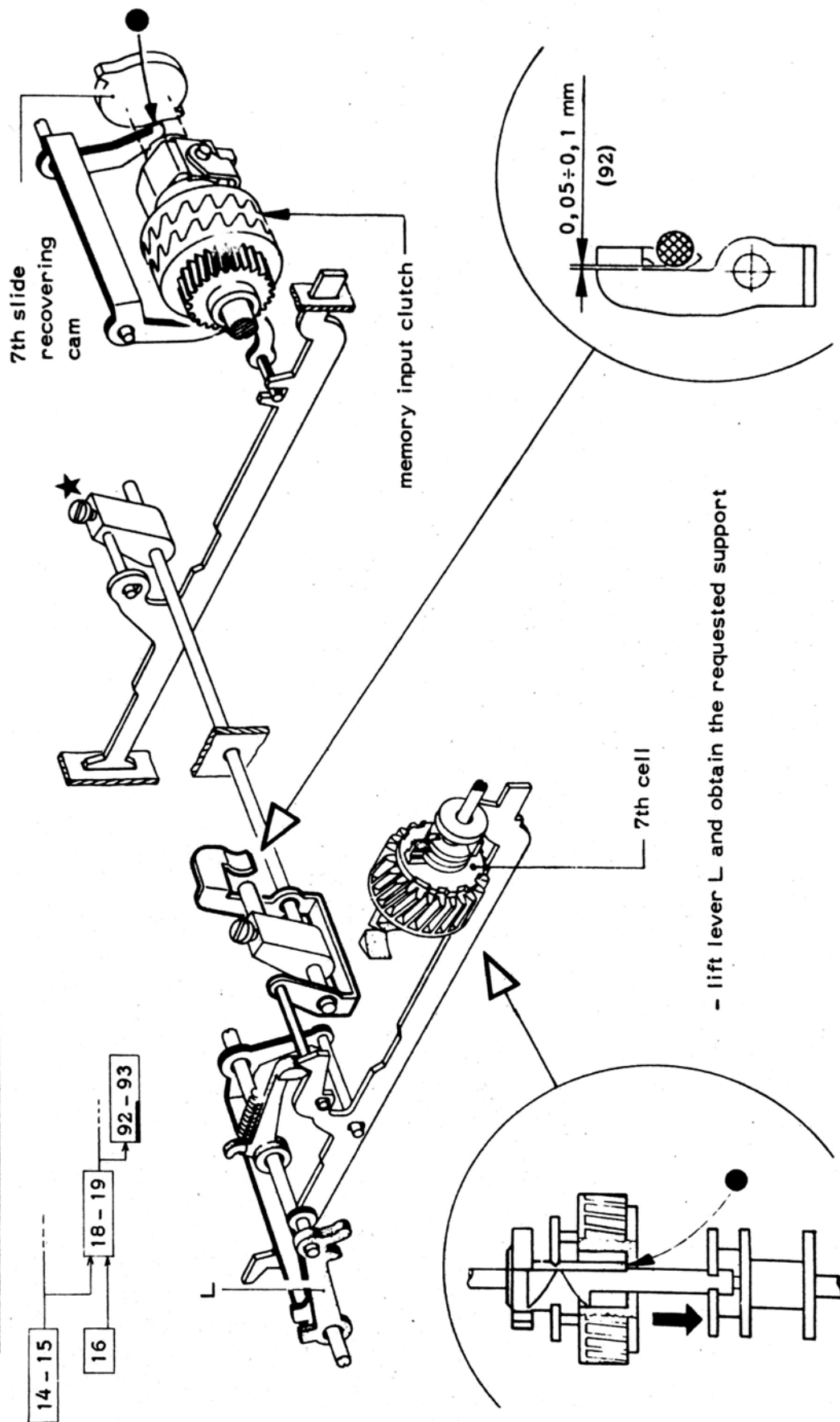
- exclude positioner P
- check the condition shown in the figure above, moving the 6th cell barrel forwards, and check the condition of the figure below, moving the 6th cell barrel backwards.



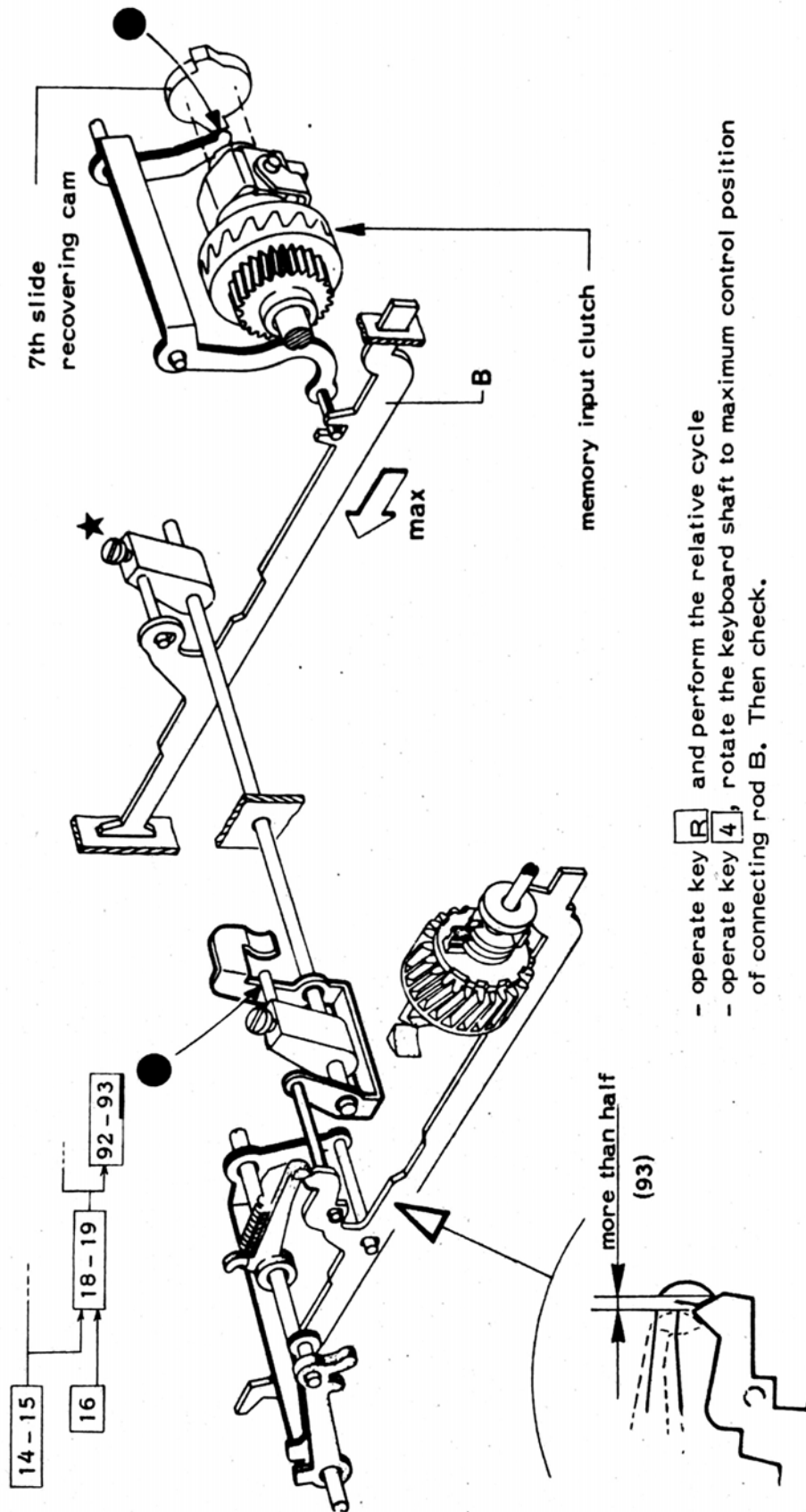
$L = L1$

(91)

92) CHECK THE REST POSITION OF THE 7th CELL SLIDE RECOVERY KINEMATIC



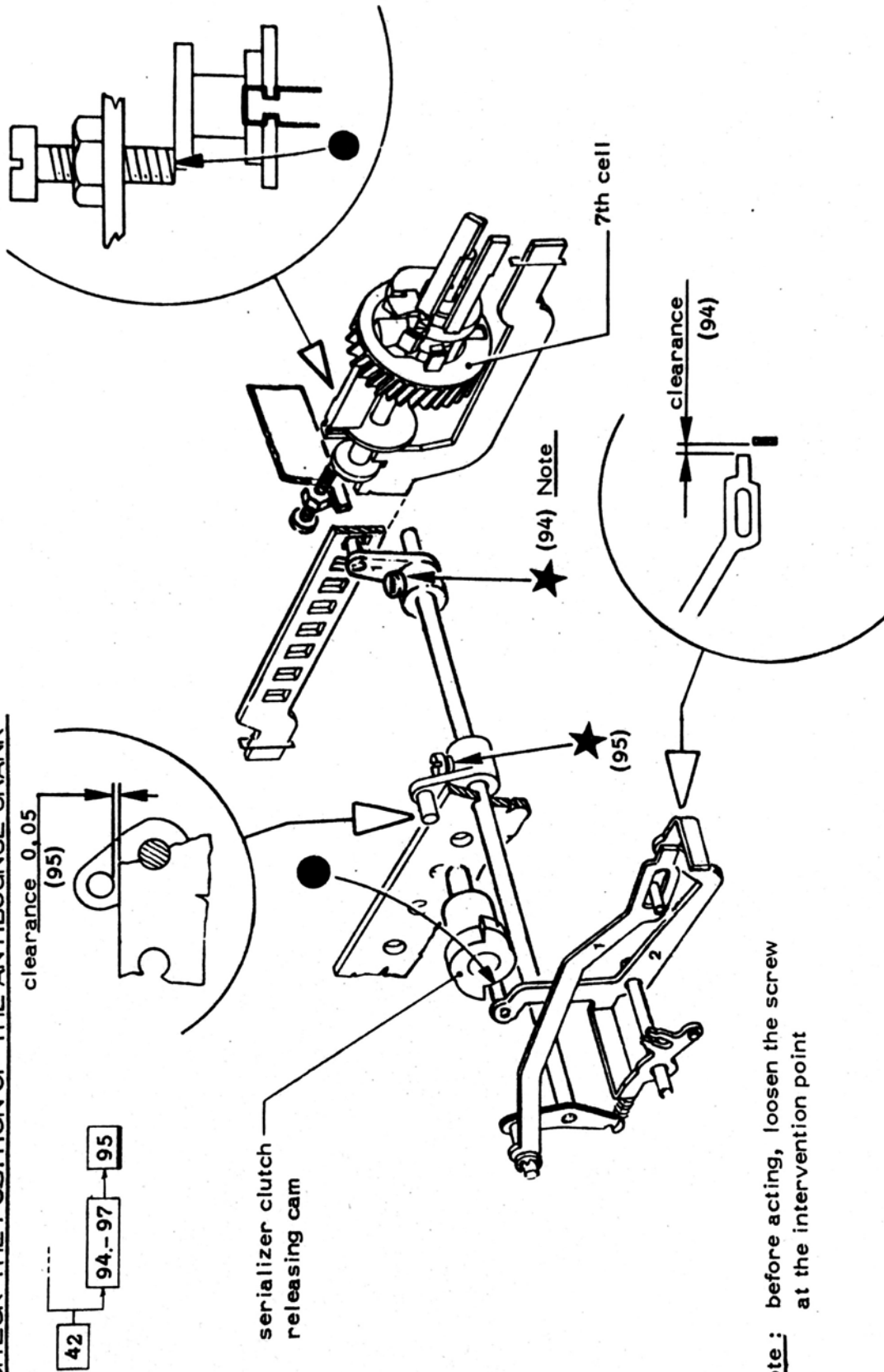
93) CHECK THE WORK POSITION OF THE 7th CELL SLIDE RECOVERY KINEMATIC



- operate key **B** and perform the relative cycle
- operate key **4**, rotate the keyboard shaft to maximum control position of connecting rod **B**. Then check.

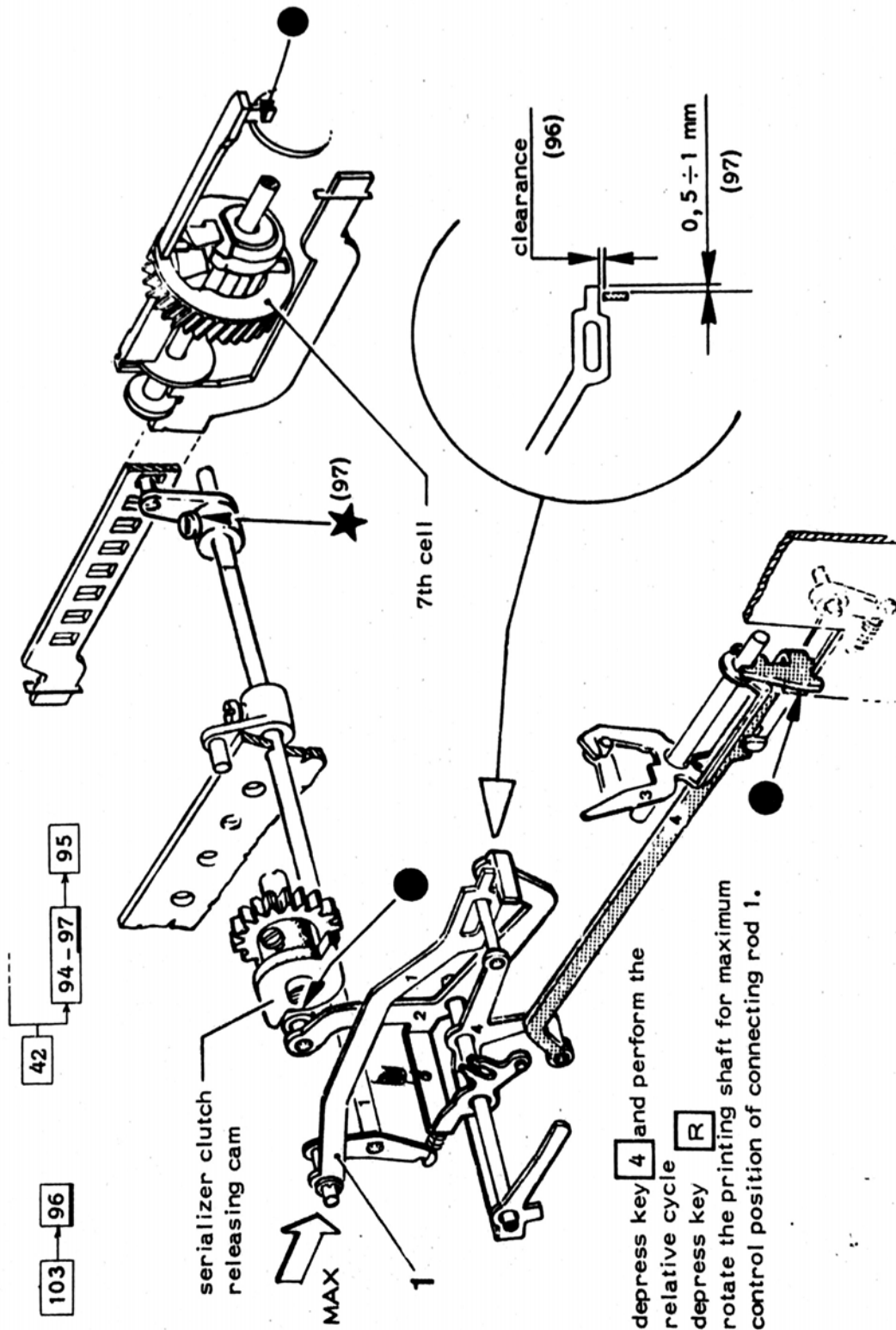
94) CHECK THE REST POSITION OF THE CONNECTING ROD FOR AUTOMATIC CYCLE ENTRY

95) CHECK THE POSITION OF THE ANTIBOUNCE CRANK



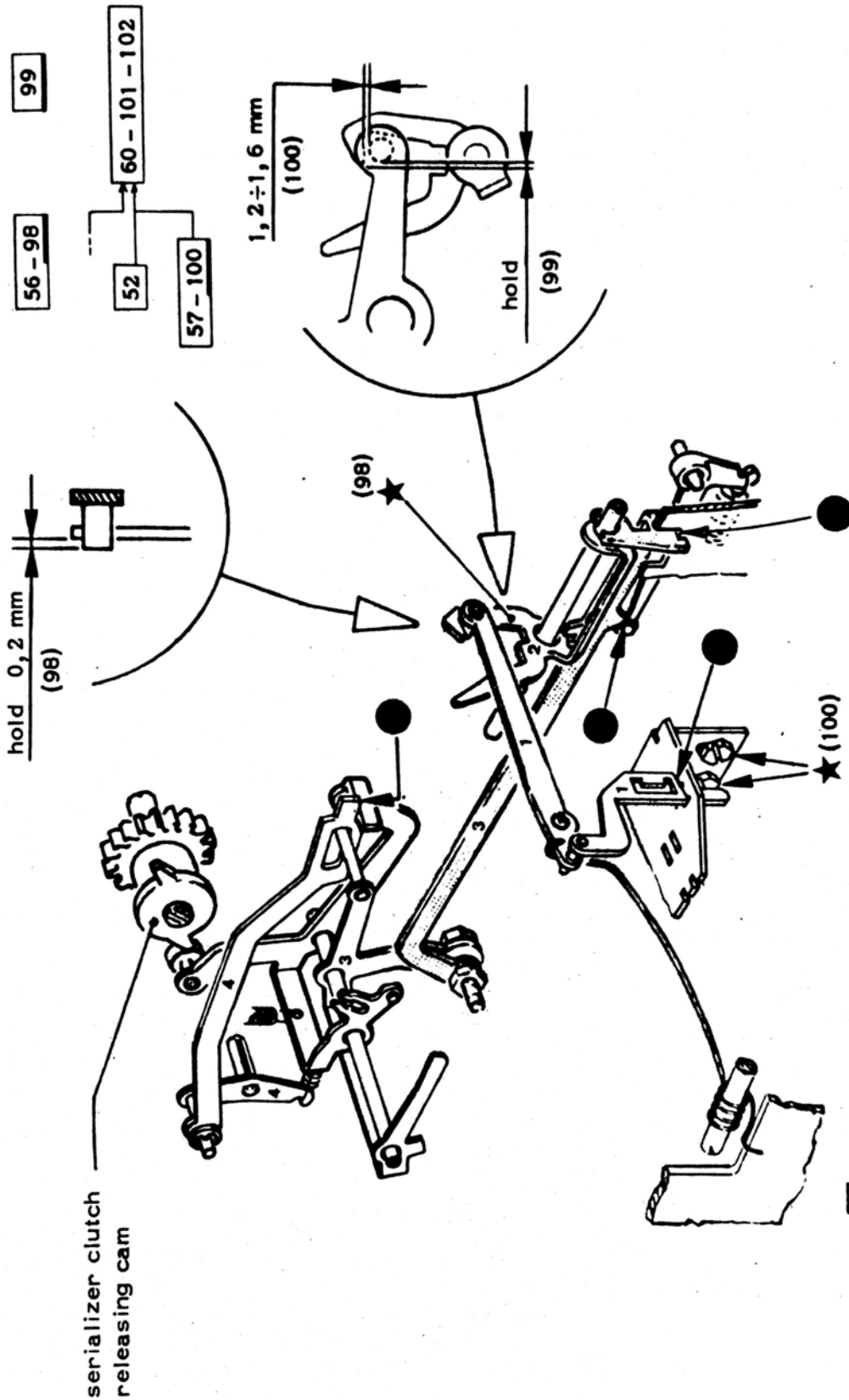
Note: before acting, loosen the screw at the intervention point

96-97) CHECK THE WORK POSITION OF THE CONNECTING ROD FOR AUTOMATIC CYCLE ENTRY



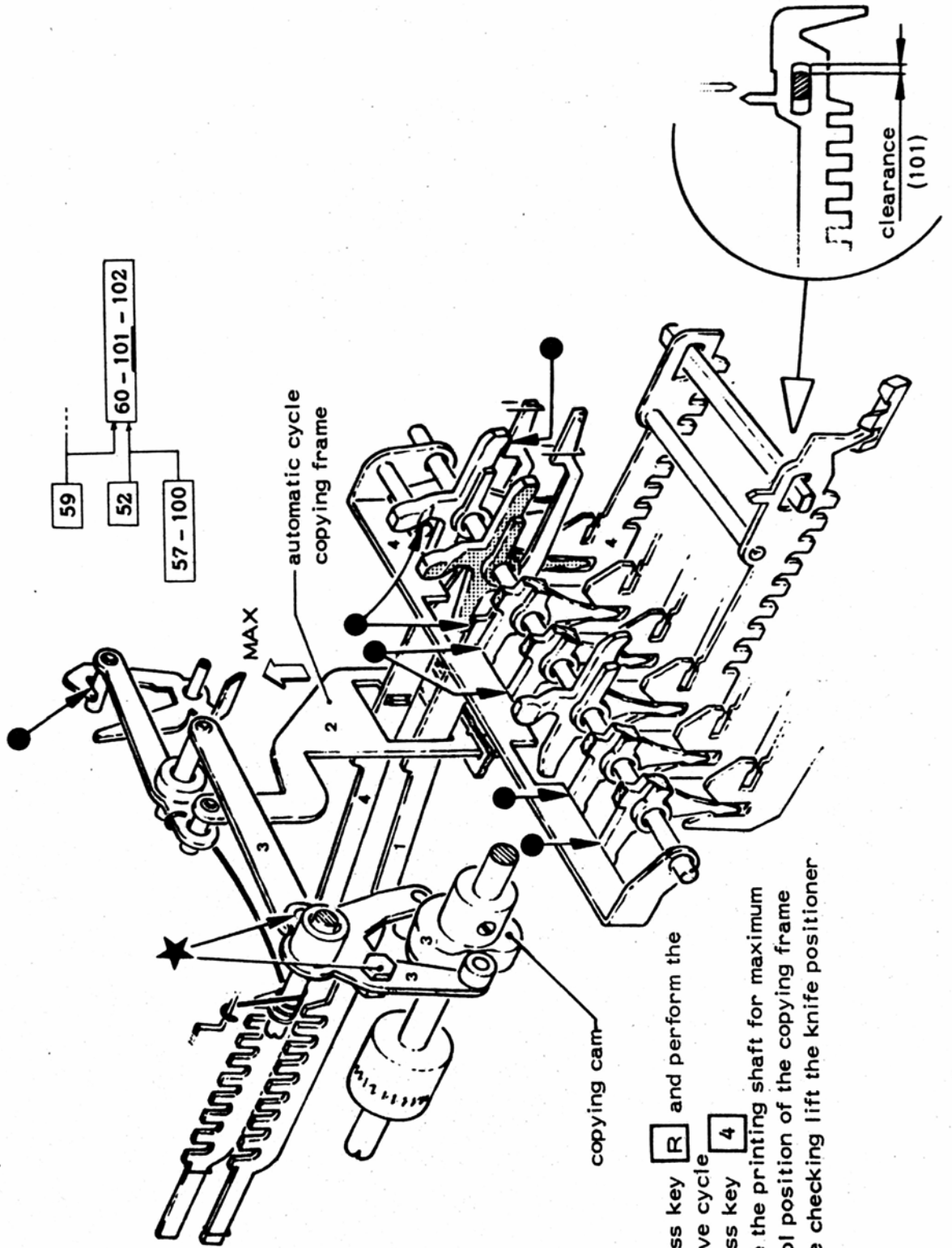
- depress key **4** and perform the relative cycle
- depress key **R**
- rotate the printing shaft for maximum control position of connecting rod 1.

98-99-100) CHECK THE POSITION OF THE AUTOMATIC CYCLE COPYING HOOK



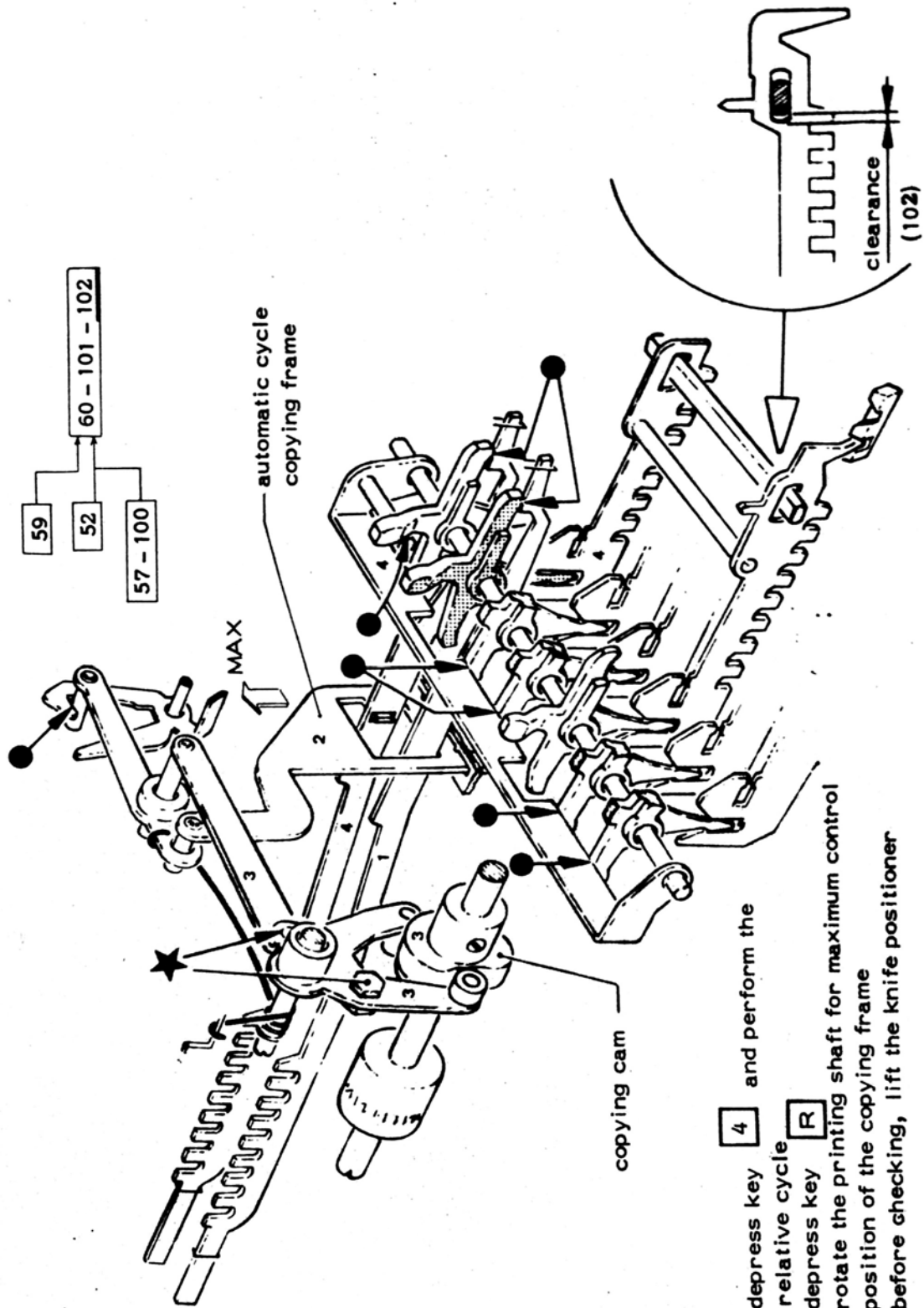
- depress key **R** and perform the relative cycle
- depress key **4**
- rotate the printing shaft for maximum control position of the "serializer clutch releasing cam"

101) CHECK THE COPYING OF THE "FIGURES" AUTOMATIC CYCLE



- depress key **R** and perform the relative cycle
- depress key **4**
- rotate the printing shaft for maximum control position of the copying frame
- before checking lift the knife positioner

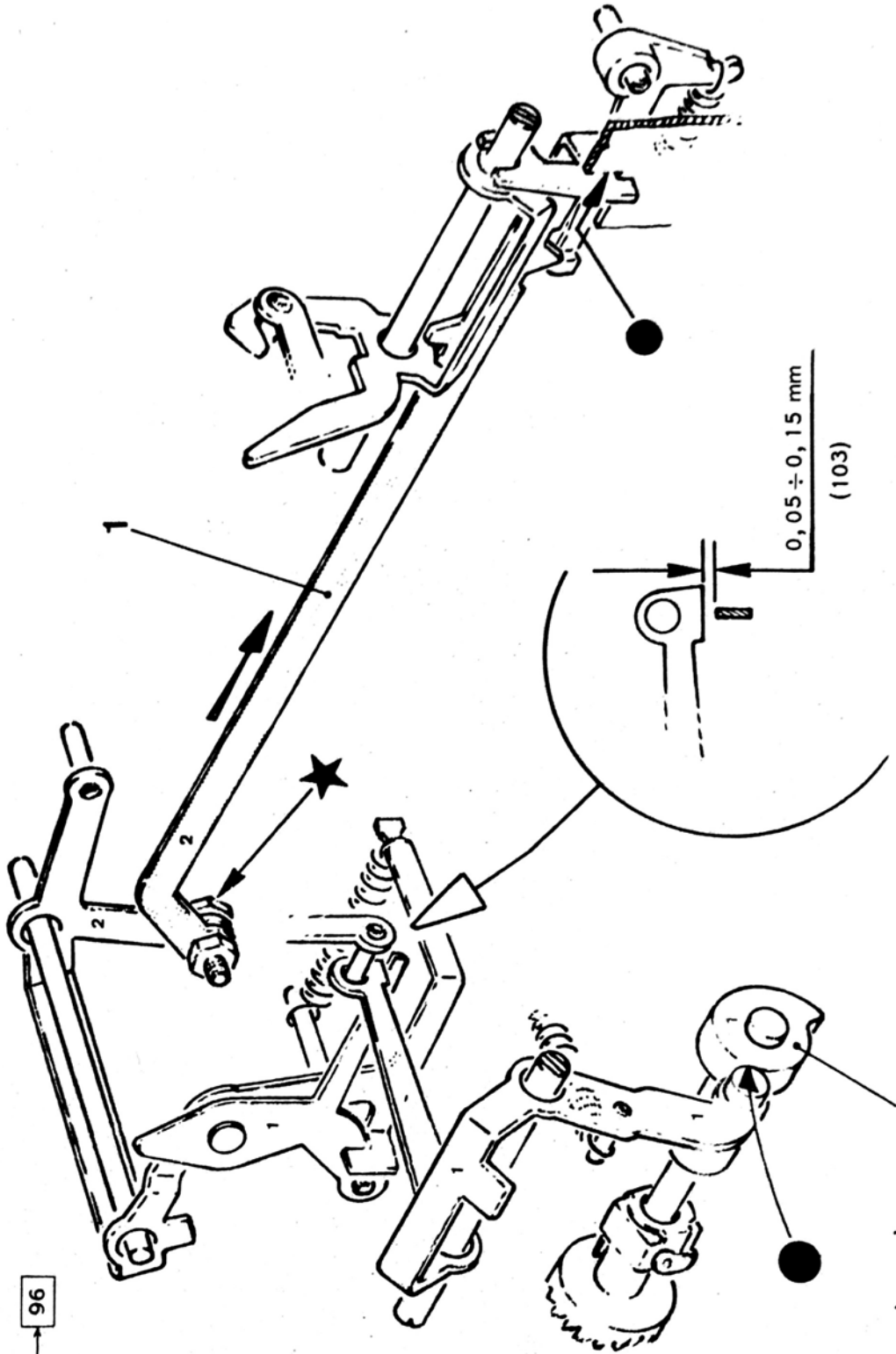
102) CHECK THE COPYING OF THE "LETTERS" AUTOMATIC CYCLE



- depress key **4** and perform the relative cycle
- depress key **R**
- rotate the printing shaft for maximum control position of the copying frame
- before checking, lift the knife positioner

103) CHECK THE COPYING HOOK RECOVERY

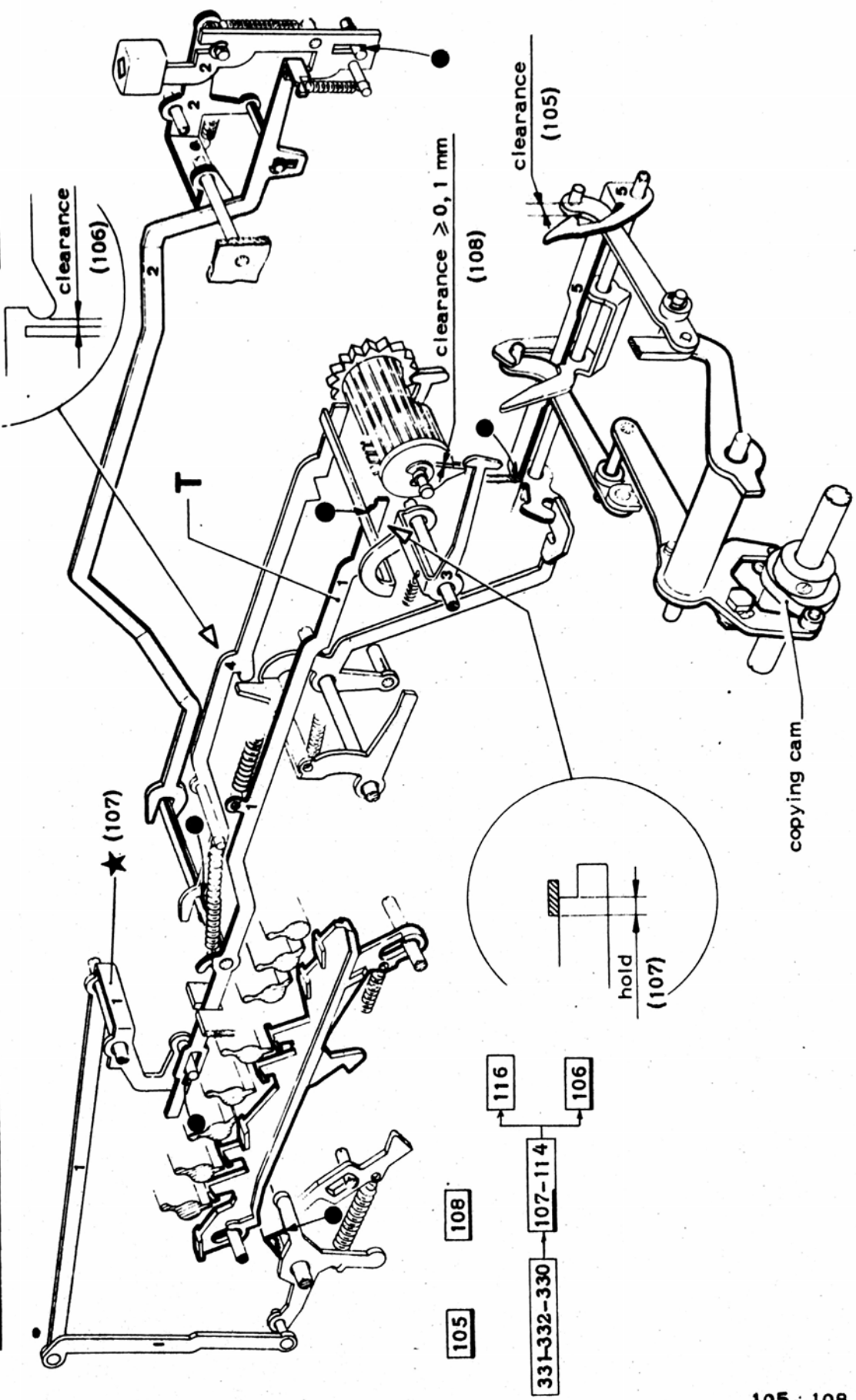
103 → 96



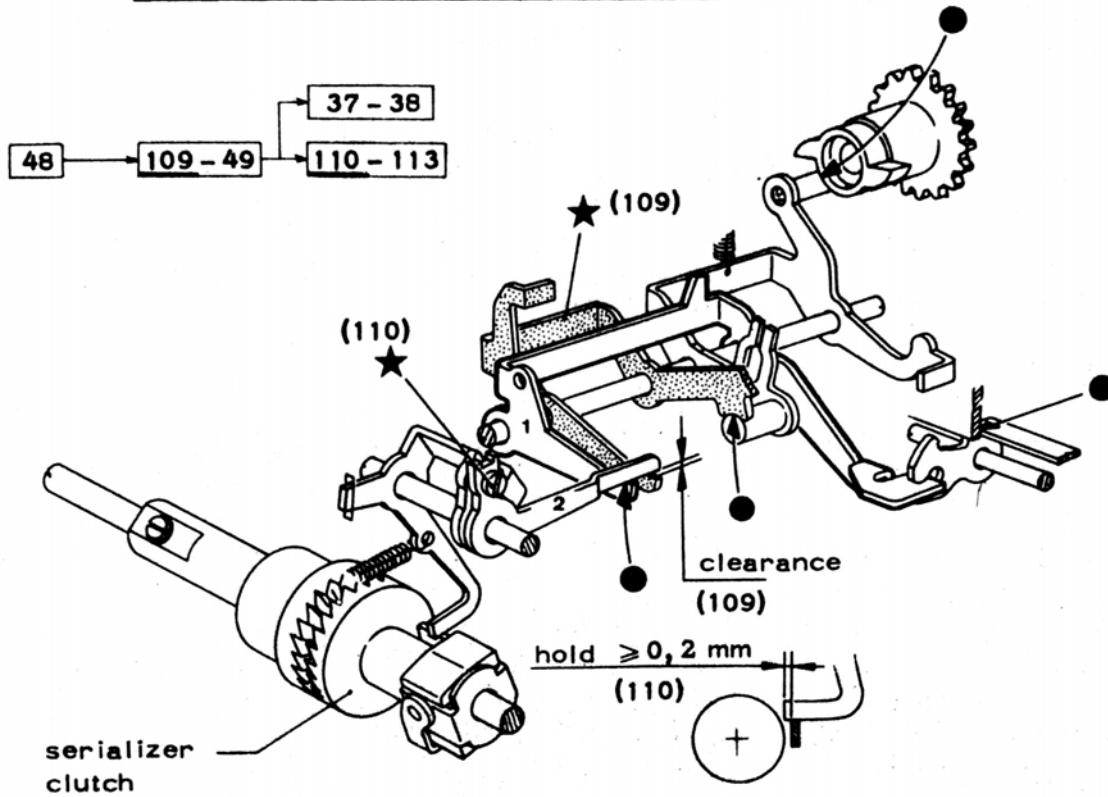
- with machine at rest manually move connecting rod 1 to obtain the proper support

normal copying restoring cam

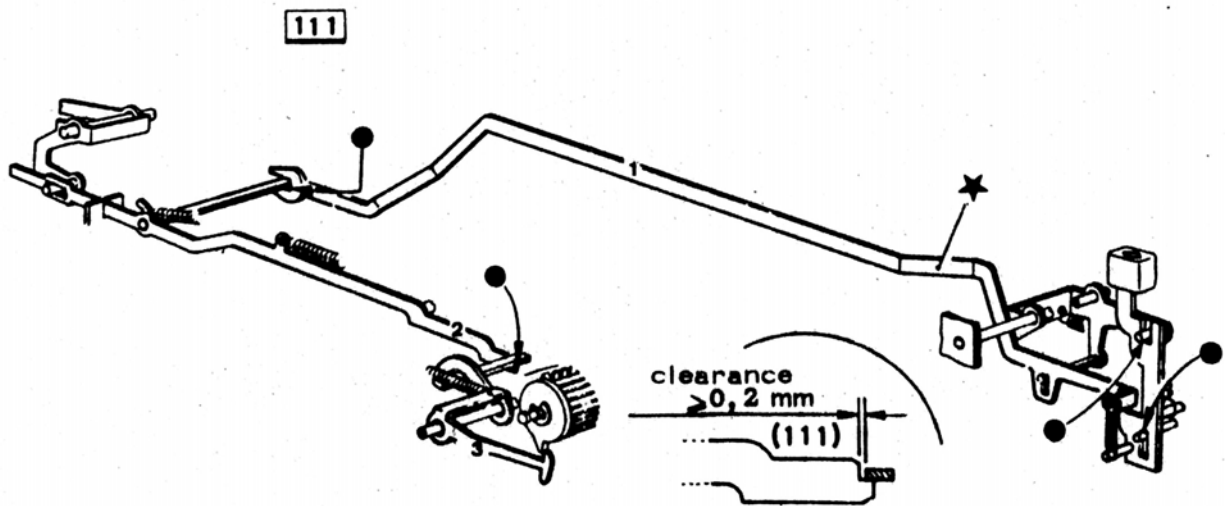
- 105) CHECK THE REST POSITION OF THE AUTOMATIC REPLY (A.R.) COPYING HOOK
- 106) CHECK THE REST POSITION OF THE SERIALIZER CLUTCH CLOSING LINK BY A. R.
- 107) CHECK THE REST POSITION OF THE ROD FOR SERIALIZER CLUTCH CLOSING MEMORIZATION
- 108) CHECK THE REST POSITION OF THE BRIDGE FOR SERIALIZER CLUTCH CLOSING MEMORIZATION



**109-110) CHECK THE REST POSITIONS OF THE KINEMATIC FOR
SERIALIZER CLUTCH RELEASE BY AUTOMATIC REPLY**



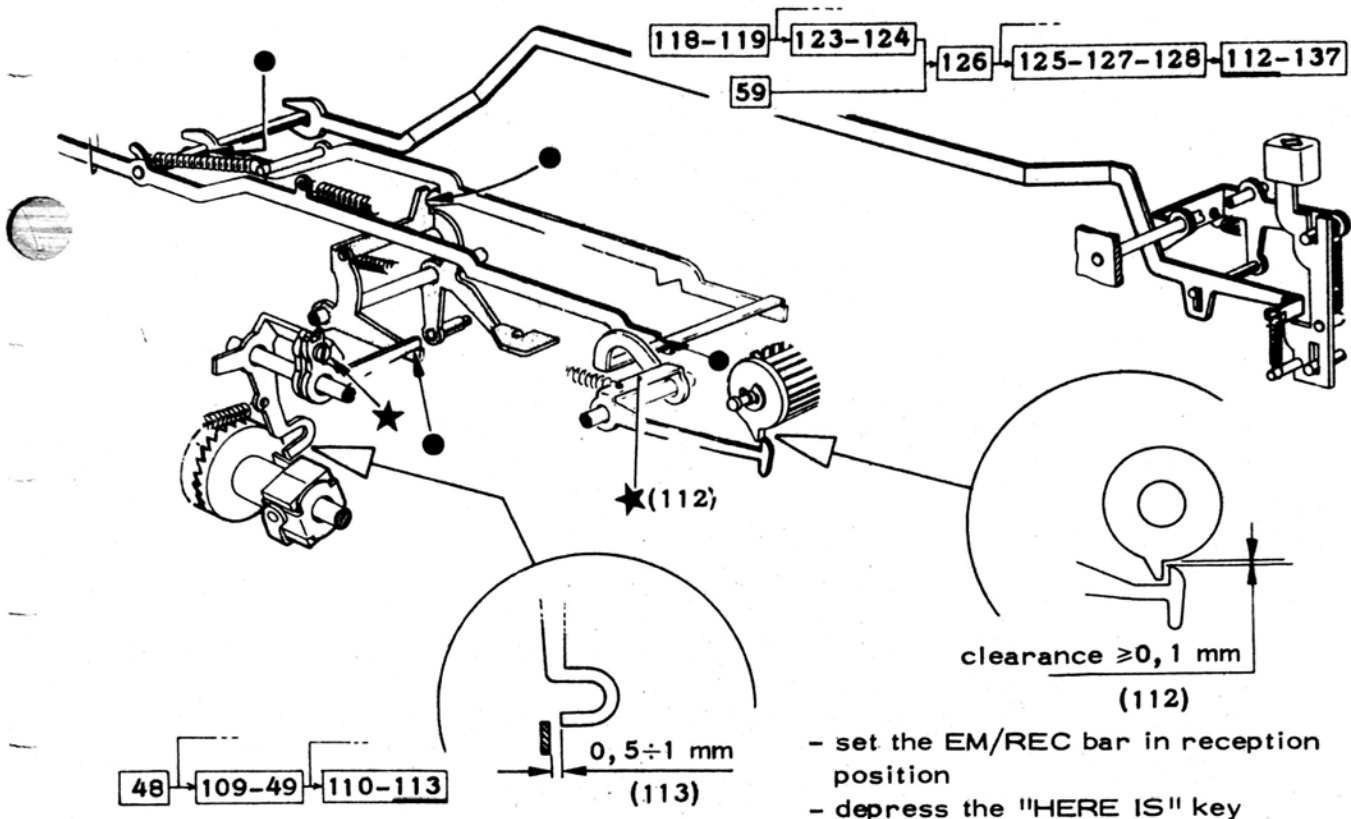
**111) CHECK THE MEMORIZATION OF THE SERIALIZER CLUTCH RELEASE
BY "AUTOMATIC REPLY"**



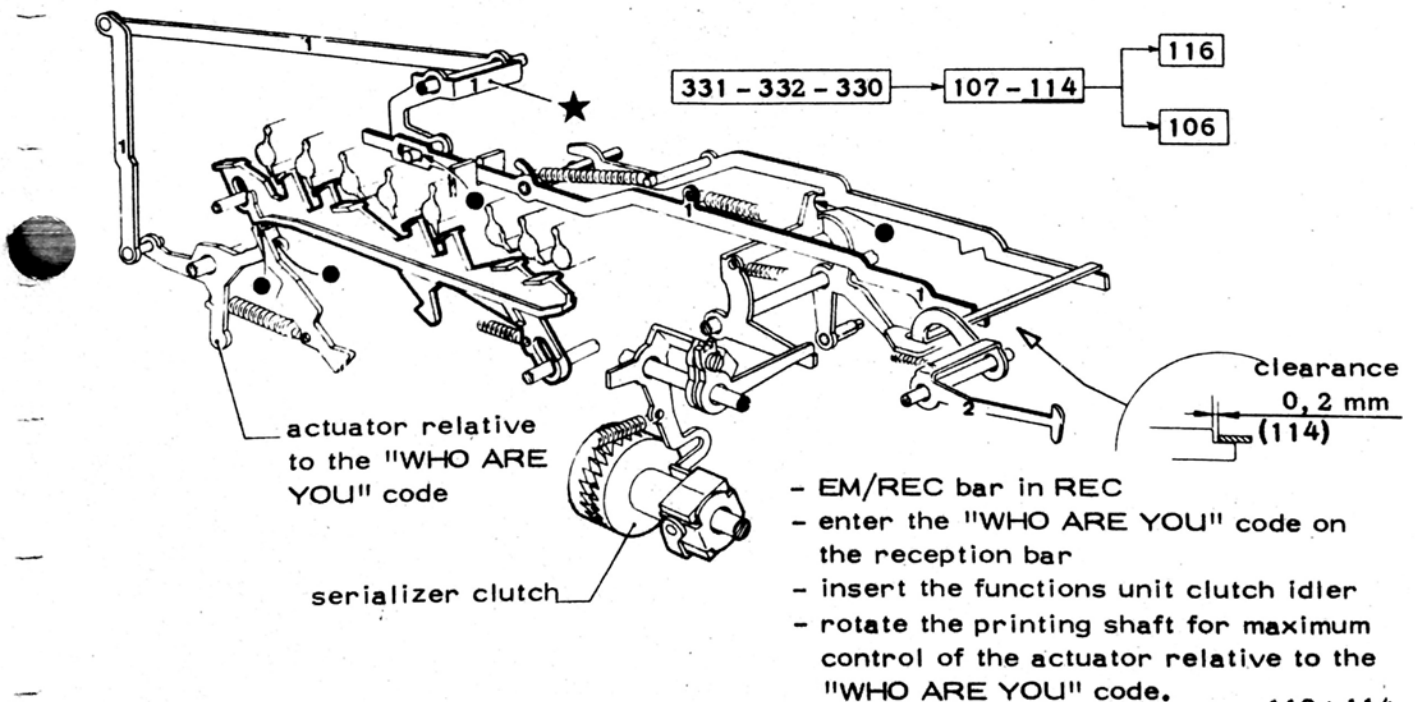
- depress the "HERE IS"  key and keep it depressed.

112) CHECK THE WORK POSITION OF THE SERIALIZER CLUTCH CLOSING MEMORIZATION BRIDGE

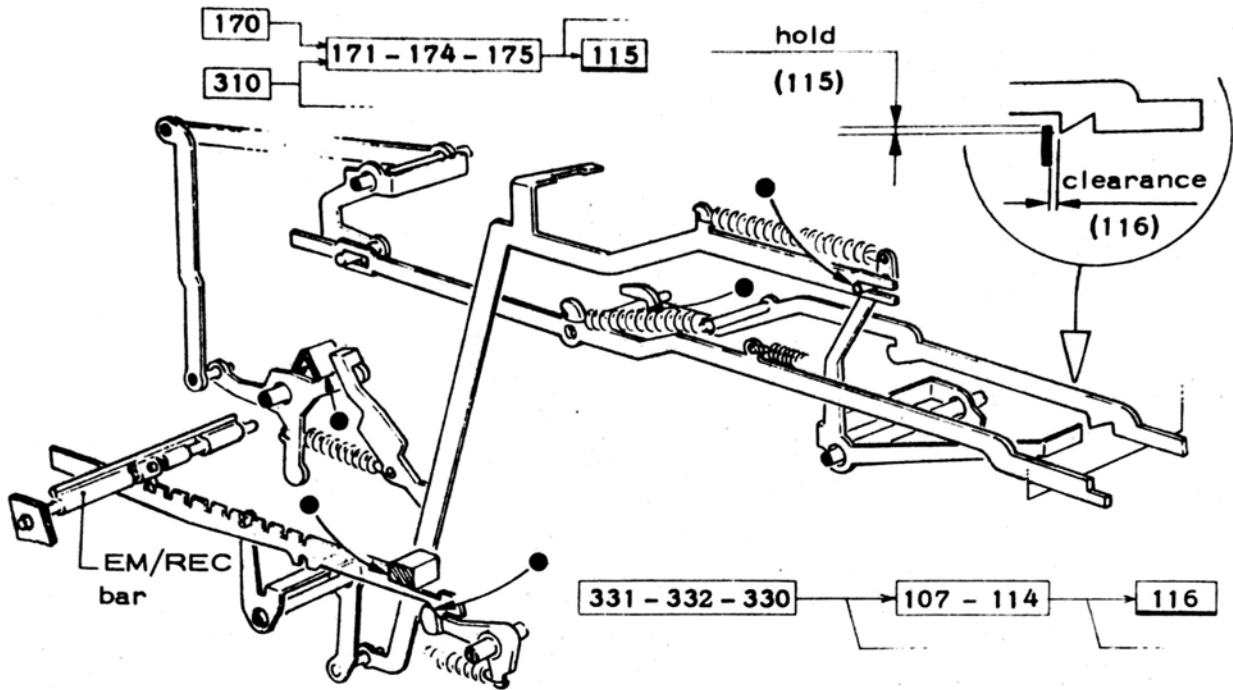
113) CHECK THE SERIALIZER CLUTCH RELEASE BY AUTOMATIC REPLY



114) CHECK THE WORK POSITION OF THE ROD FOR SERIALIZER CLUTCH CLOSING MEMORIZATION BY THE "WHO ARE YOU" CODE

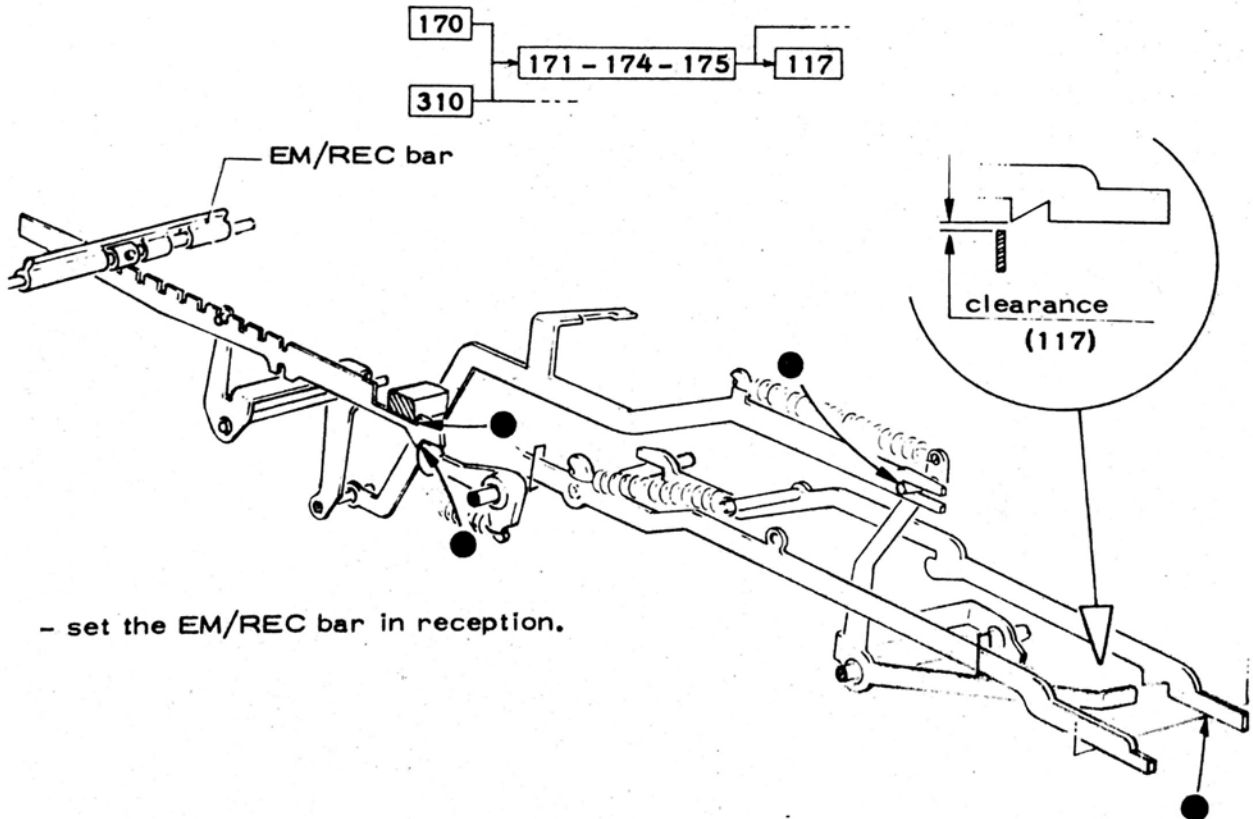


115-116) CHECK THE LOCKING OF SERIALIZER CLUTCH CLOSING



- set the EM/REC bar in emission.

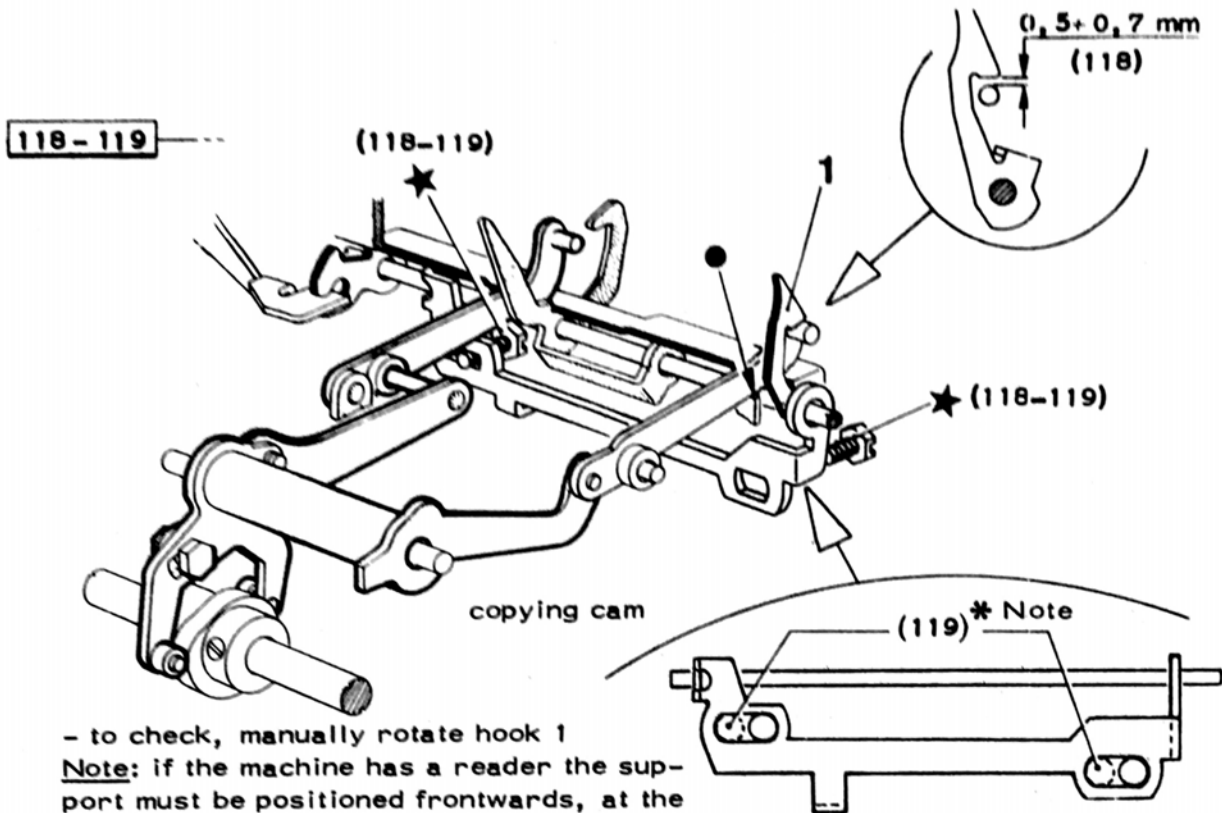
117) CHECK THE SERIALIZER CLUTCH RELEASE



- set the EM/REC bar in reception.

118) CHECK THE WORK POSITION OF THE "AUTOMATIC REPLY" COPYING HOOK

119) CHECK THE POSITION OF THE "COPYING HOOKS SUPPORT"

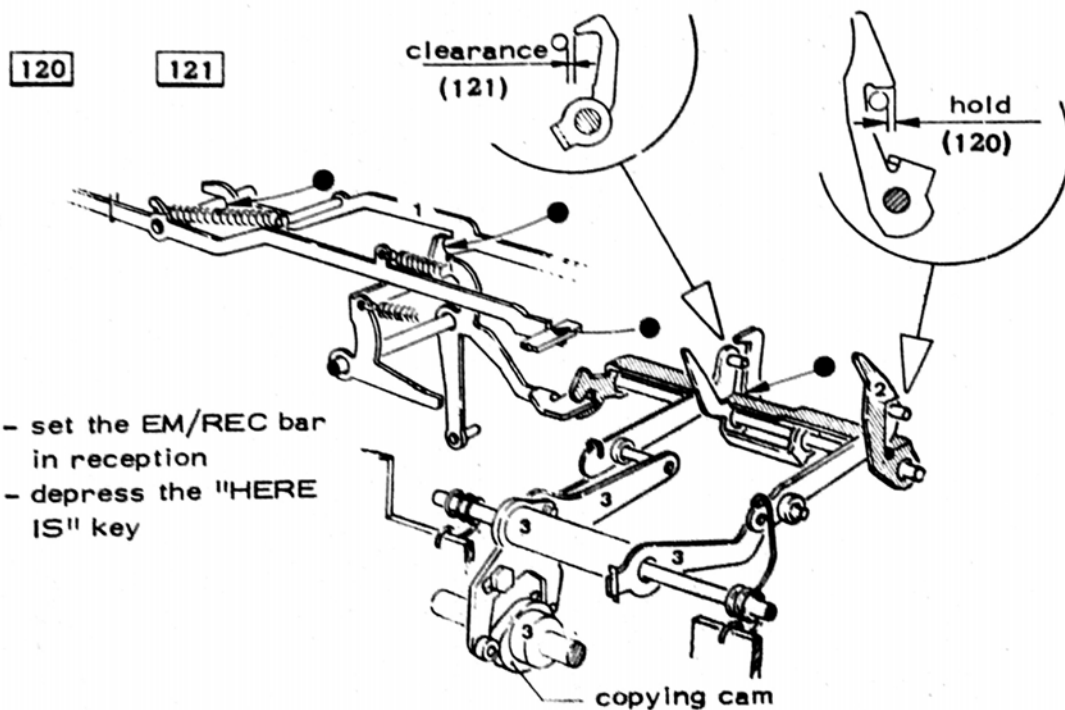


- to check, manually rotate hook 1

Note: if the machine has a reader the support must be positioned frontwards, at the bottom of the slot. If there is no reader it must be positioned at the bottom of the slot, on the opposite side.

120) CHECK THE WORK POSITION OF THE "AUTOMATIC REPLY" COPYING HOOK

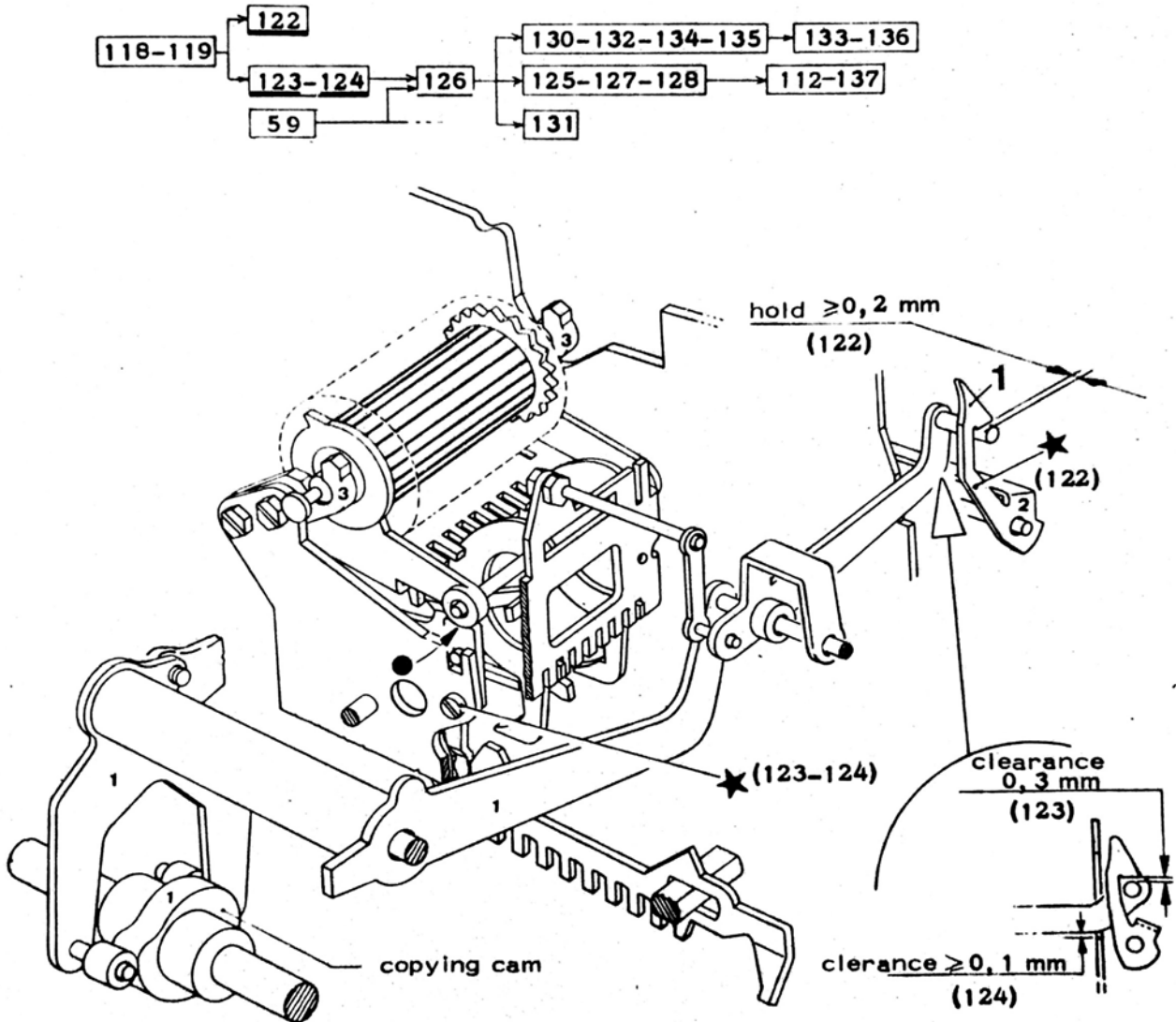
121) CHECK THE WORK POSITION OF THE "NORMAL COPYING HOOK"



- set the EM/REC bar in reception
- depress the "HERE IS" key

122-123) CHECK THE HOLD OF THE "AUTOMATIC REPLY" COPYING HOOK

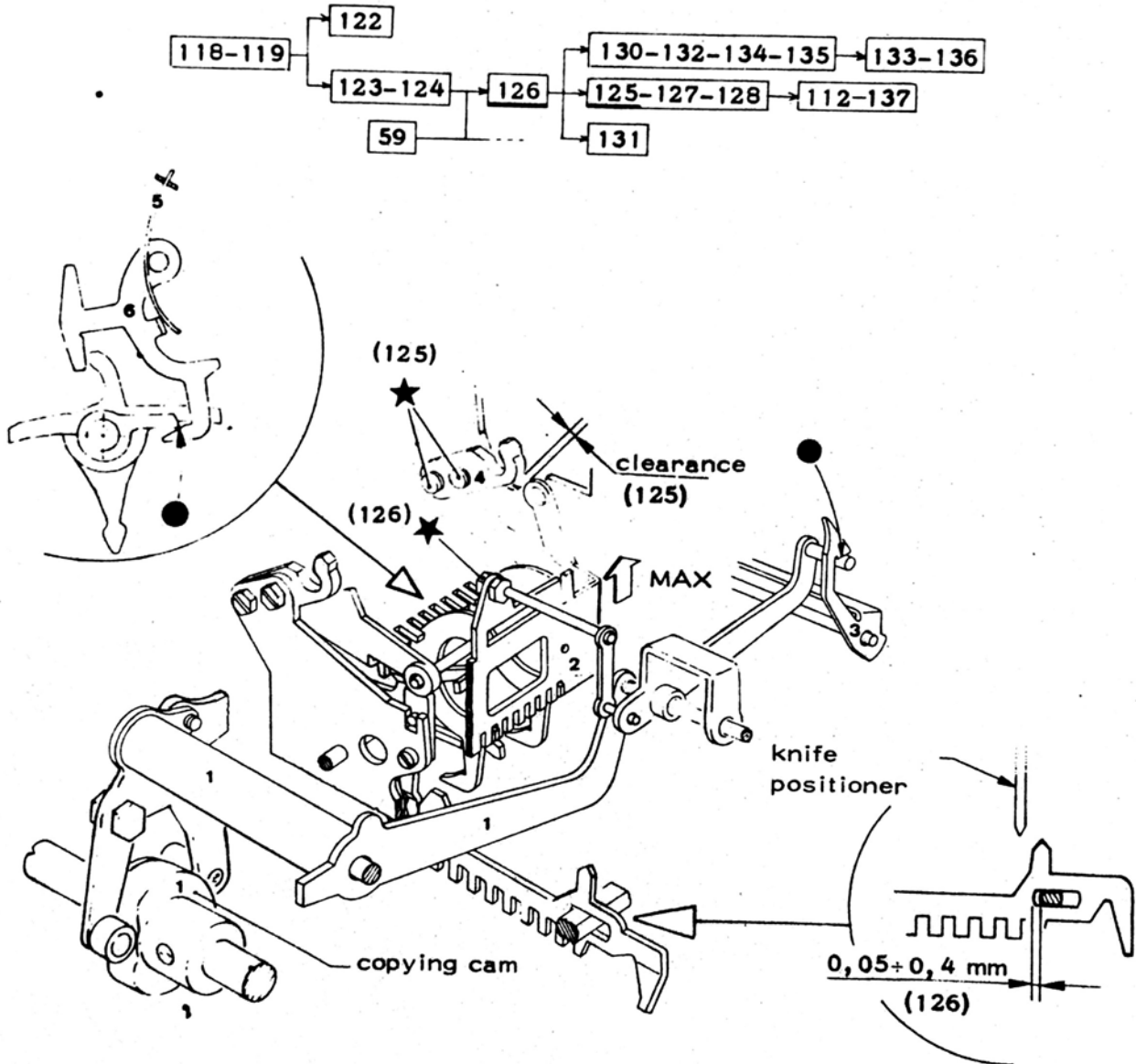
124) CHECK THE REST POSITION OF THE "AUTOMATIC REPLY" COPYING LEVER



- to perform check 122-123, manually rotate hook 1.

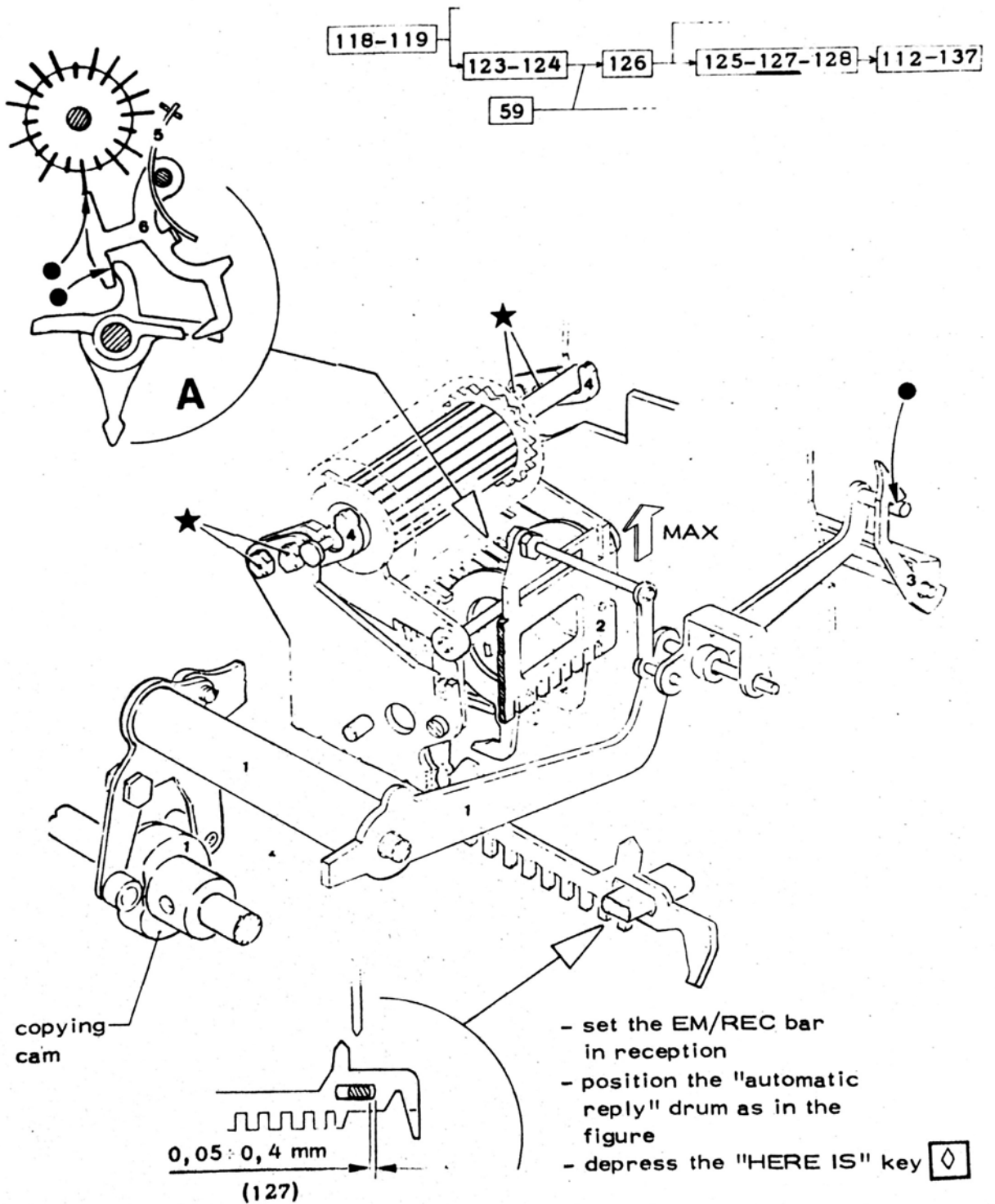
125) CHECK THE POSITION IN HEIGHT OF THE CAGE FOR THE COPYING OF THE "AUTOMATIC REPLY"

126) CHECK THE POSITION OF THE SLIDES BY "AUTOMATIC REPLY"



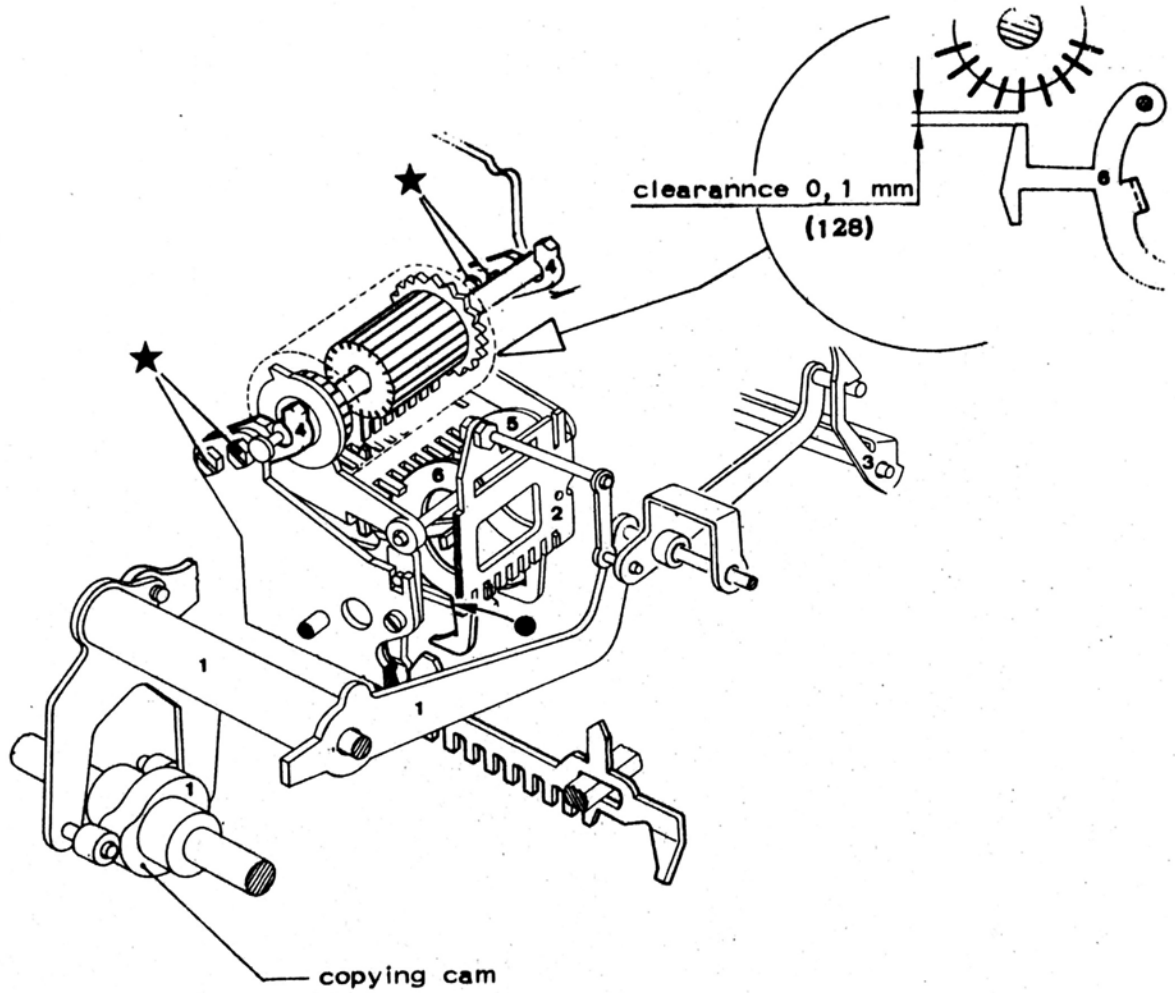
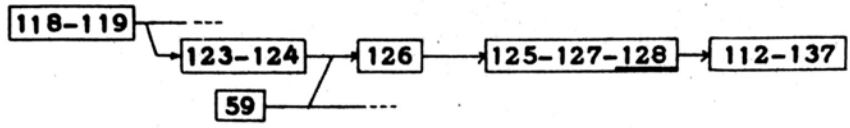
- remove the "automatic reply" drum
- get the EM/REC bar in reception
- depress the "HERE IS" key
- rotate the printing shaft for maximum control position of the copying
- exclude the knife positioner and check,

127) CHECK THE POSITION OF THE SLIDES BY "AUTOMATIC REPLY"



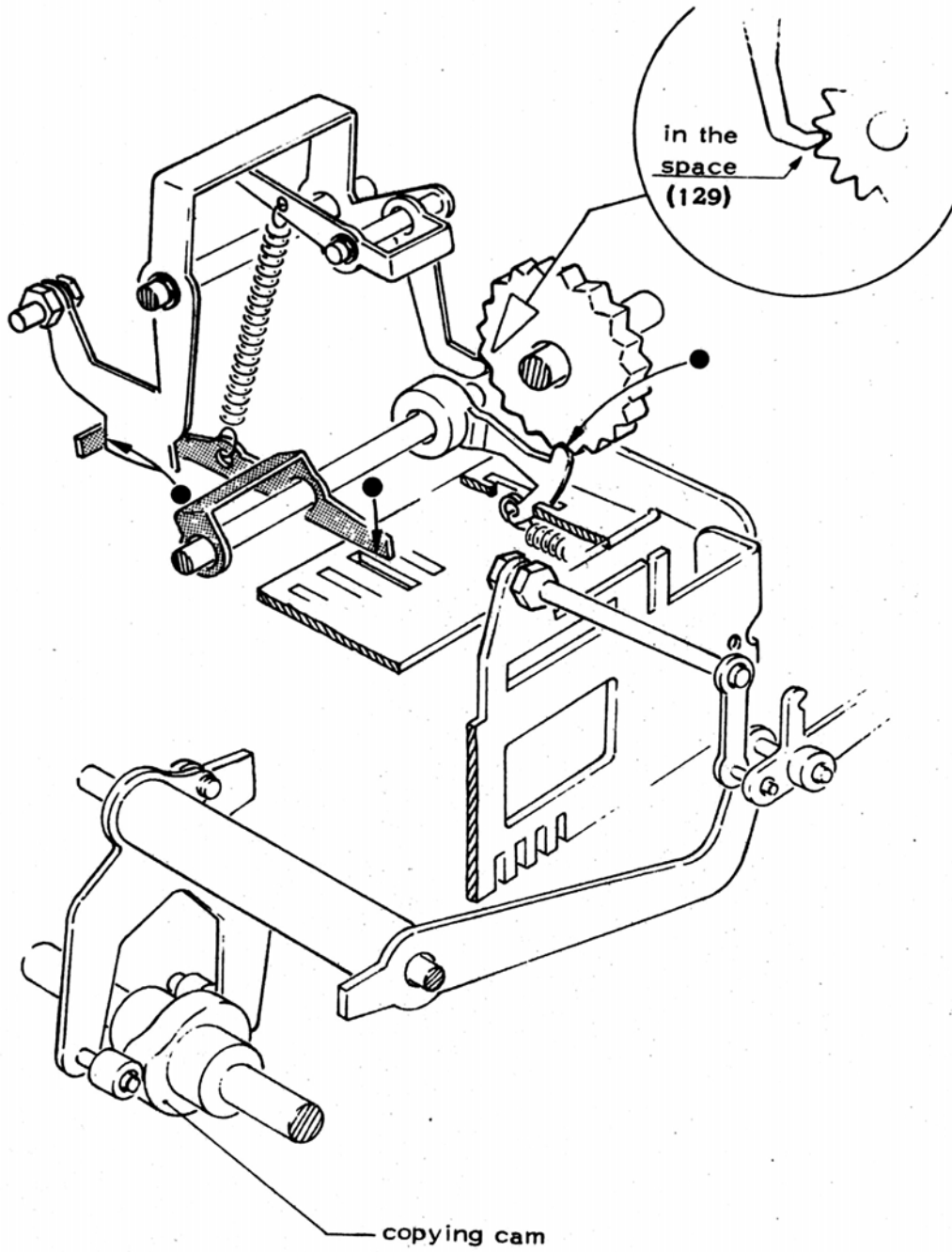
- set the EM/REC bar in reception
- position the "automatic reply" drum as in the figure
- depress the "HERE IS" key ◇
- rotate the printing shaft for maximum control position of the copying
- exclude the knife positioner and check.

**128) CHECK THE FREEDOM OF ROTATION OF THE "AUTOMATIC
REPLY " DRUM**

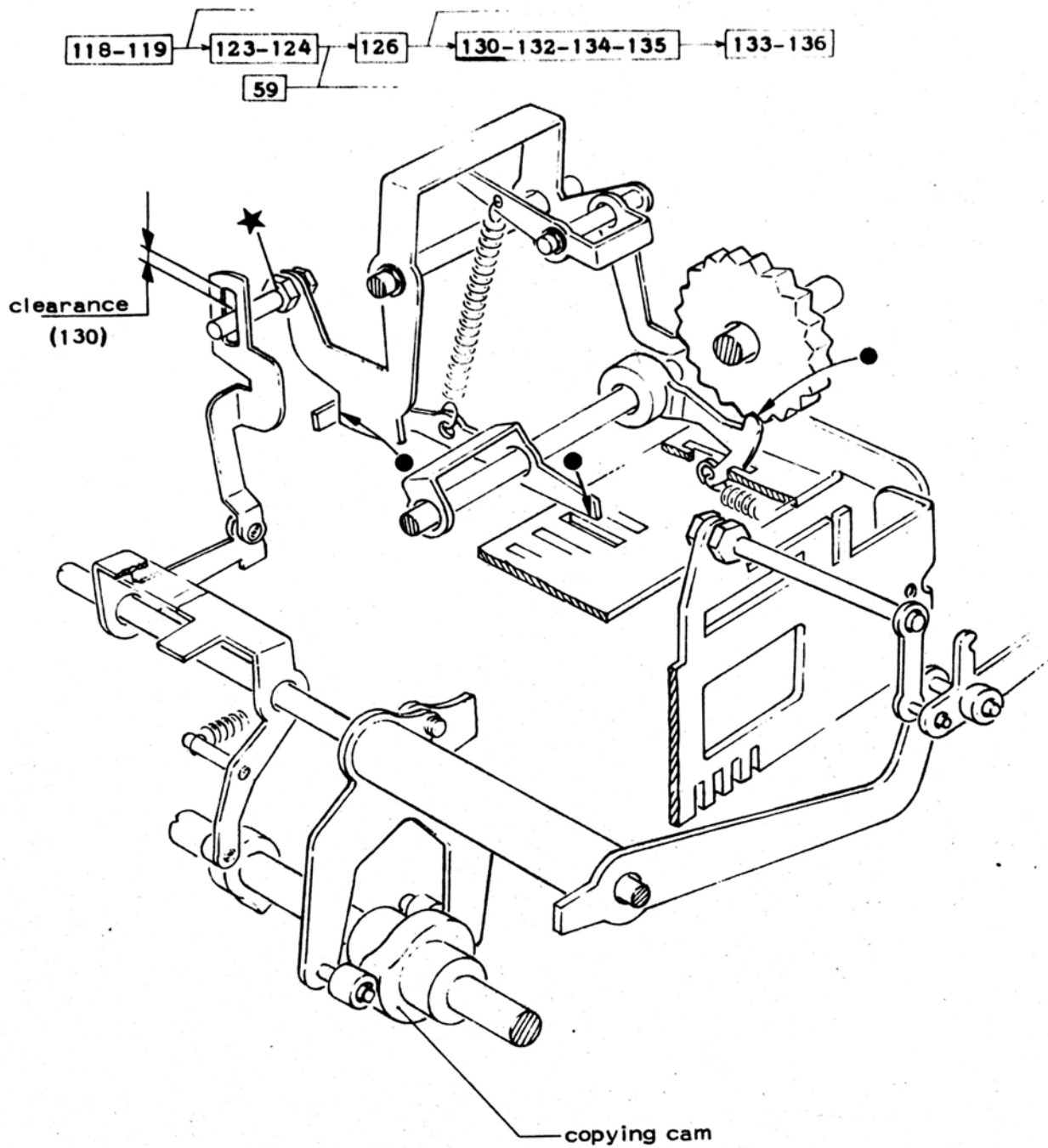


129) CHECK THE REST POSITION OF THE HOOK FOR "AUTOMATIC
REPLY" DRUM FEED

129

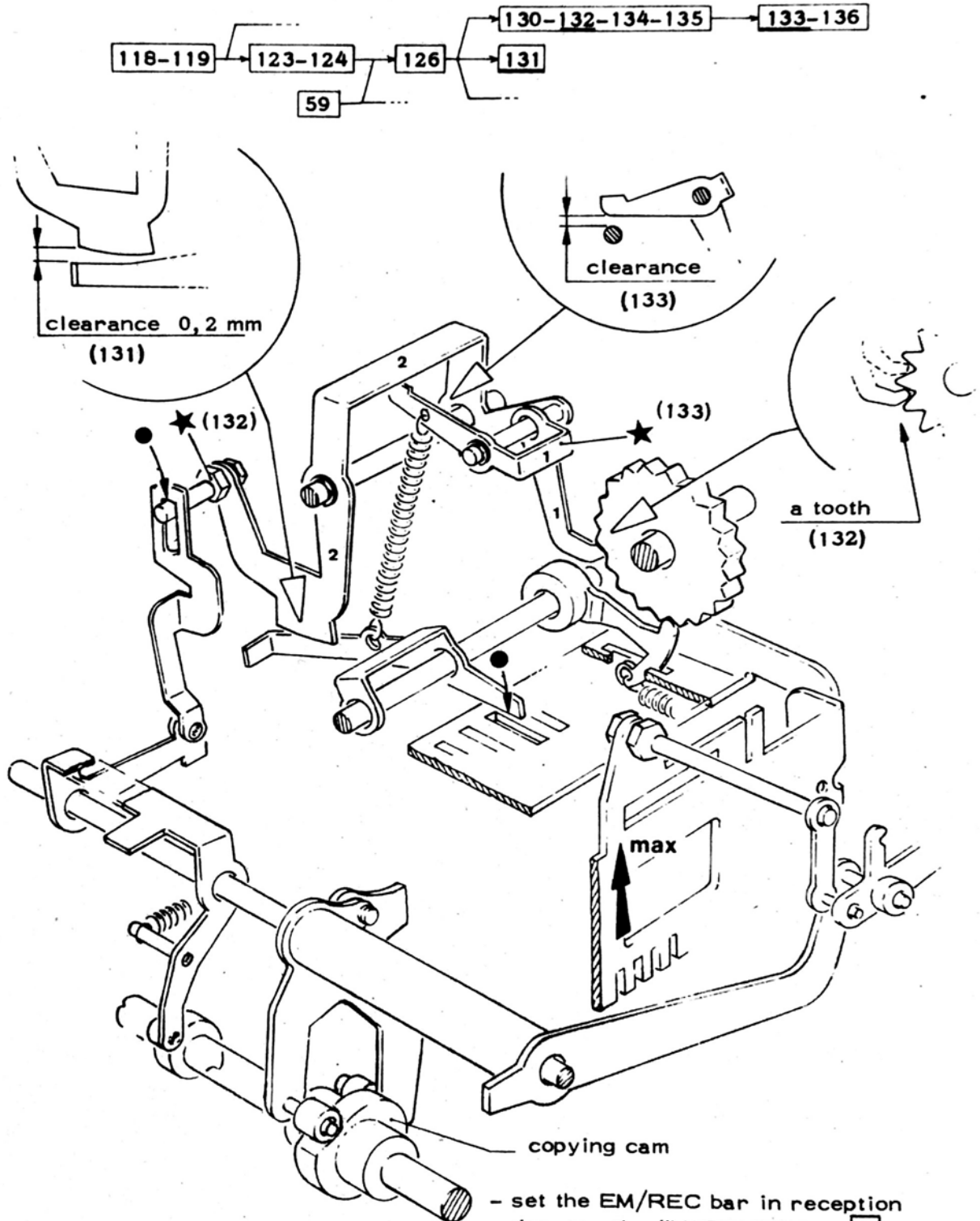


130) CHECK THE REST POSITION OF THE ROD FOR "AUTOMATIC
REPLY" DRUM FEED



131) CHECK THE RELEASE OF THE BRIDGE FOR THE "AUTOMATIC REPLY" DRUM FEED

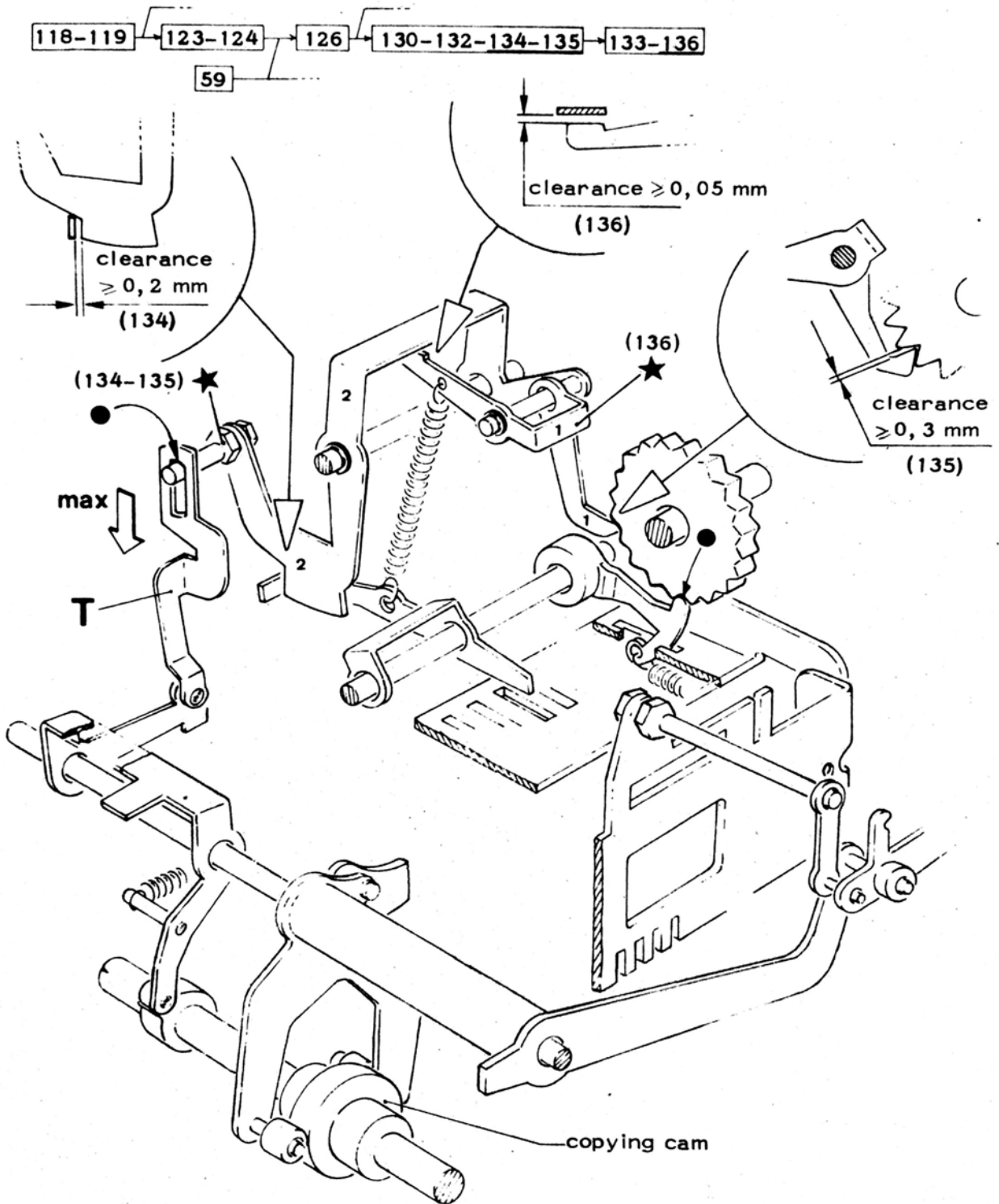
132-133) CHECK THE WORK POSITION OF THE HOOK FOR THE "AUTOMATIC REPLY" DRUM FEED



- set the EM/REC bar in reception
- depress the "HERE IS" key
- rotate the printing shaft for maximum control position of the copying.

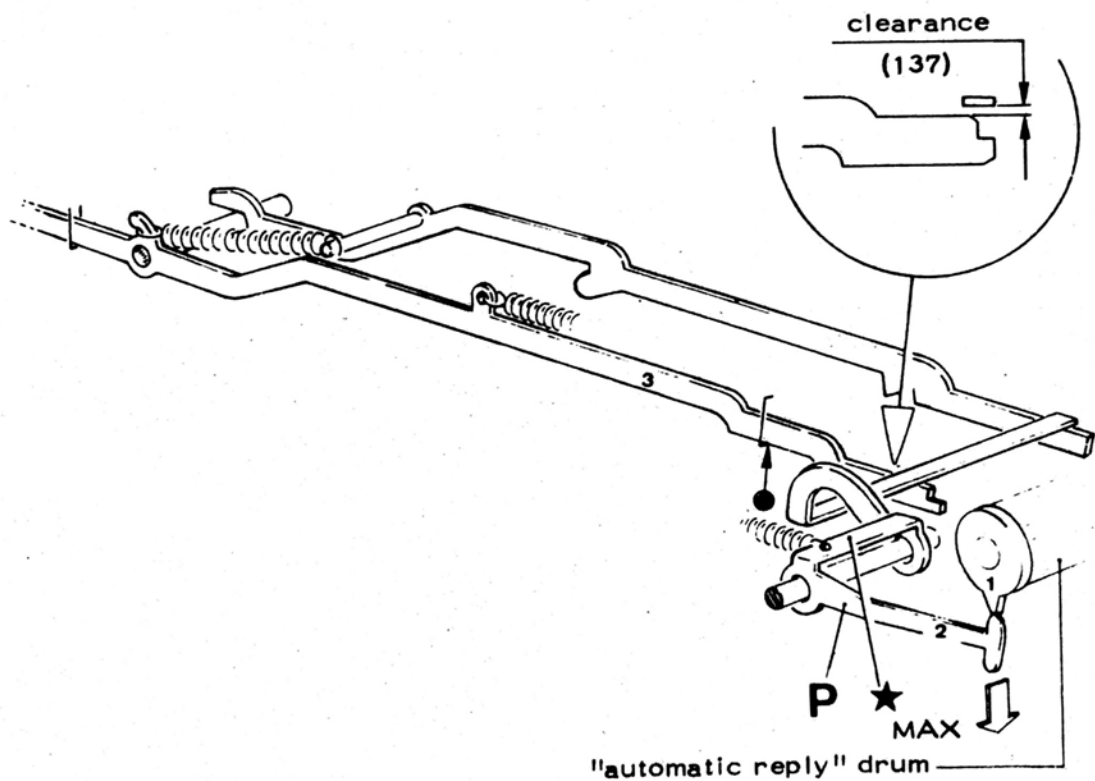
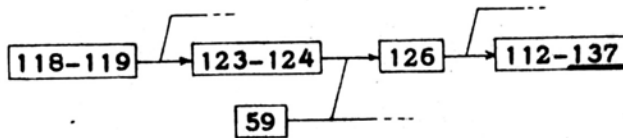
**134) CHECK THE RELOAD OF THE BRIDGE FOR "AUTOMATIC REPLY"
DRUM FEED**

**135-136) CHECK THE RELOAD OF THE HOOK FOR "AUTOMATIC REPLY"
DRUM FEED**



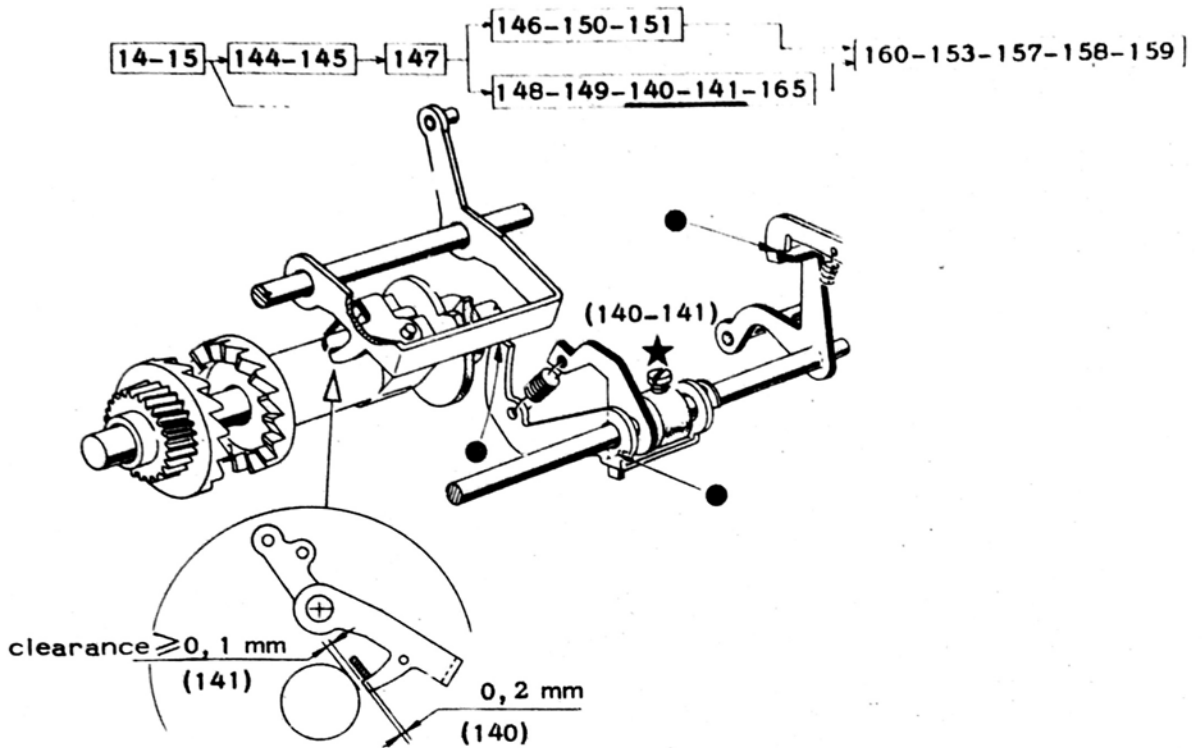
- set the EM/REC bar in reception
- depress the "HERE IS" key
- rotate the printing shaft for rod T maximum control position.

137) CHECK THE SERIALIZER CLUTCH OPENING BY THE "AUTOMATIC
REPLY" DRUM



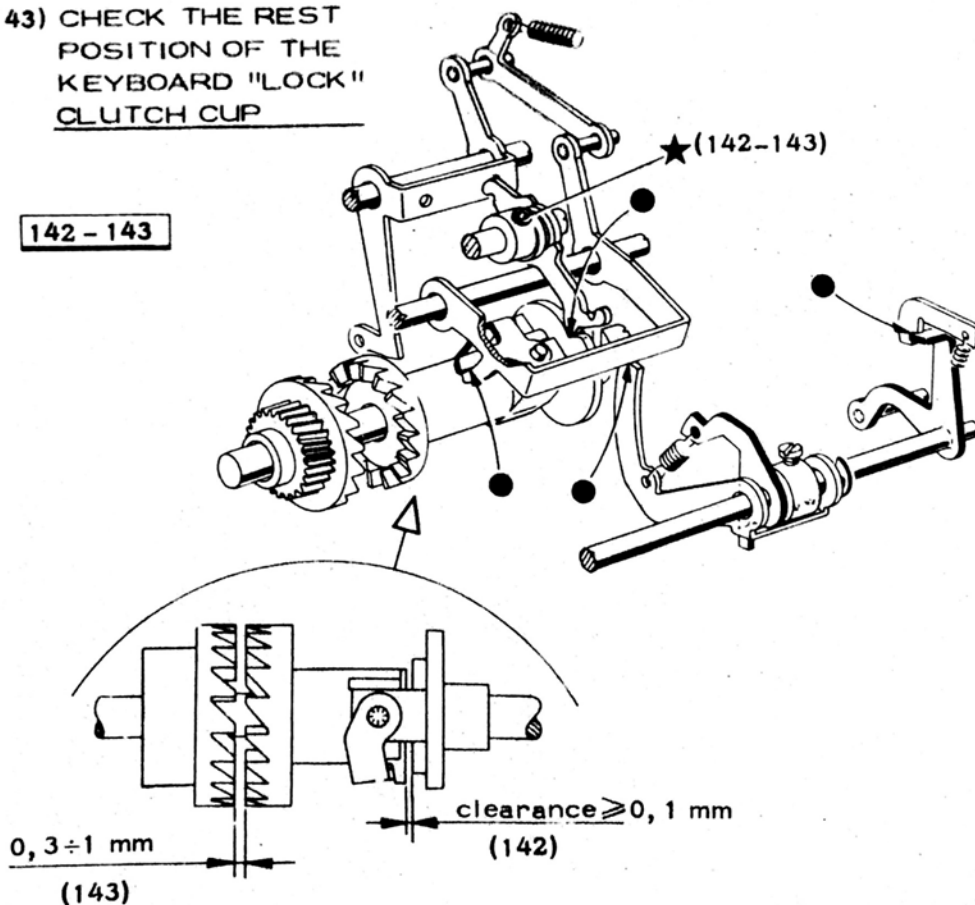
- set the EM/REC bar in reception
- depress the "HERE IS" key
- rotate the printing shaft for bridge P maximum control position.

140-141) CHECK THE POSITION OF THE "KEYBOARD LOCK CLUTCH BRIDGE"

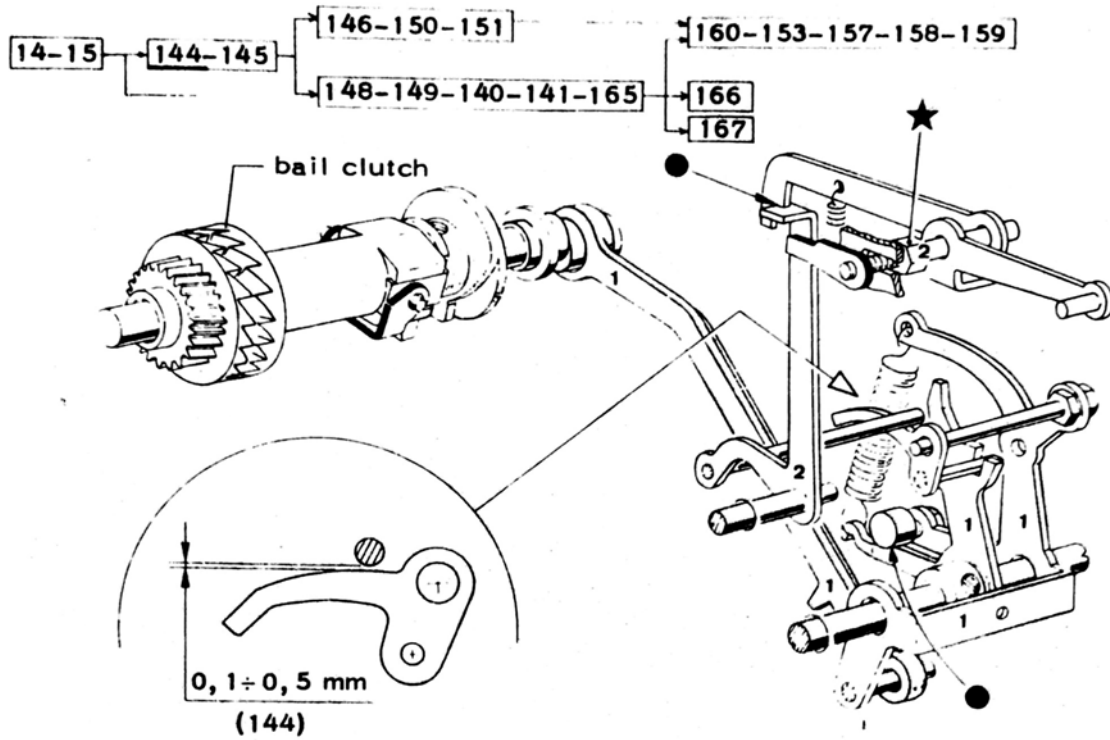


142) CHECK THE REST POSITION OF THE "KEYBOARD LOCK" CLUTCH

143) CHECK THE REST POSITION OF THE KEYBOARD "LOCK" CLUTCH CUP

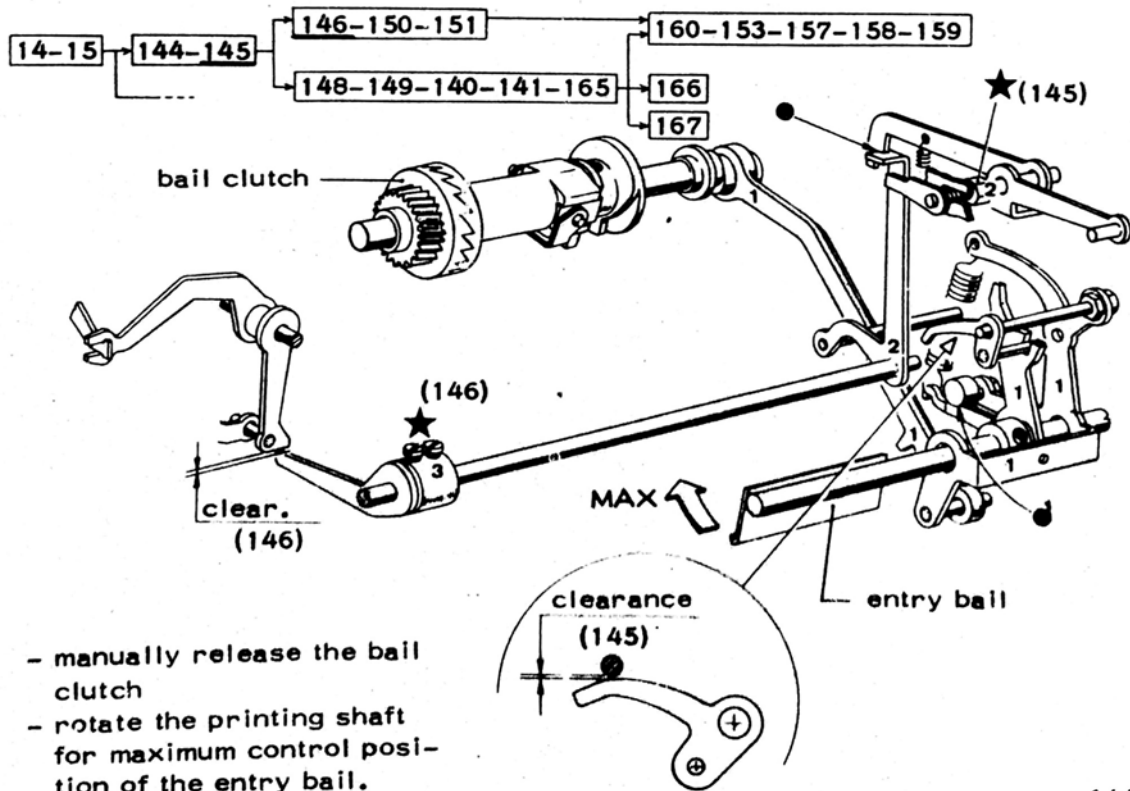


144) CHECK THE REST POSITION OF THE "LEVER WITH LOCKING SHAFT"



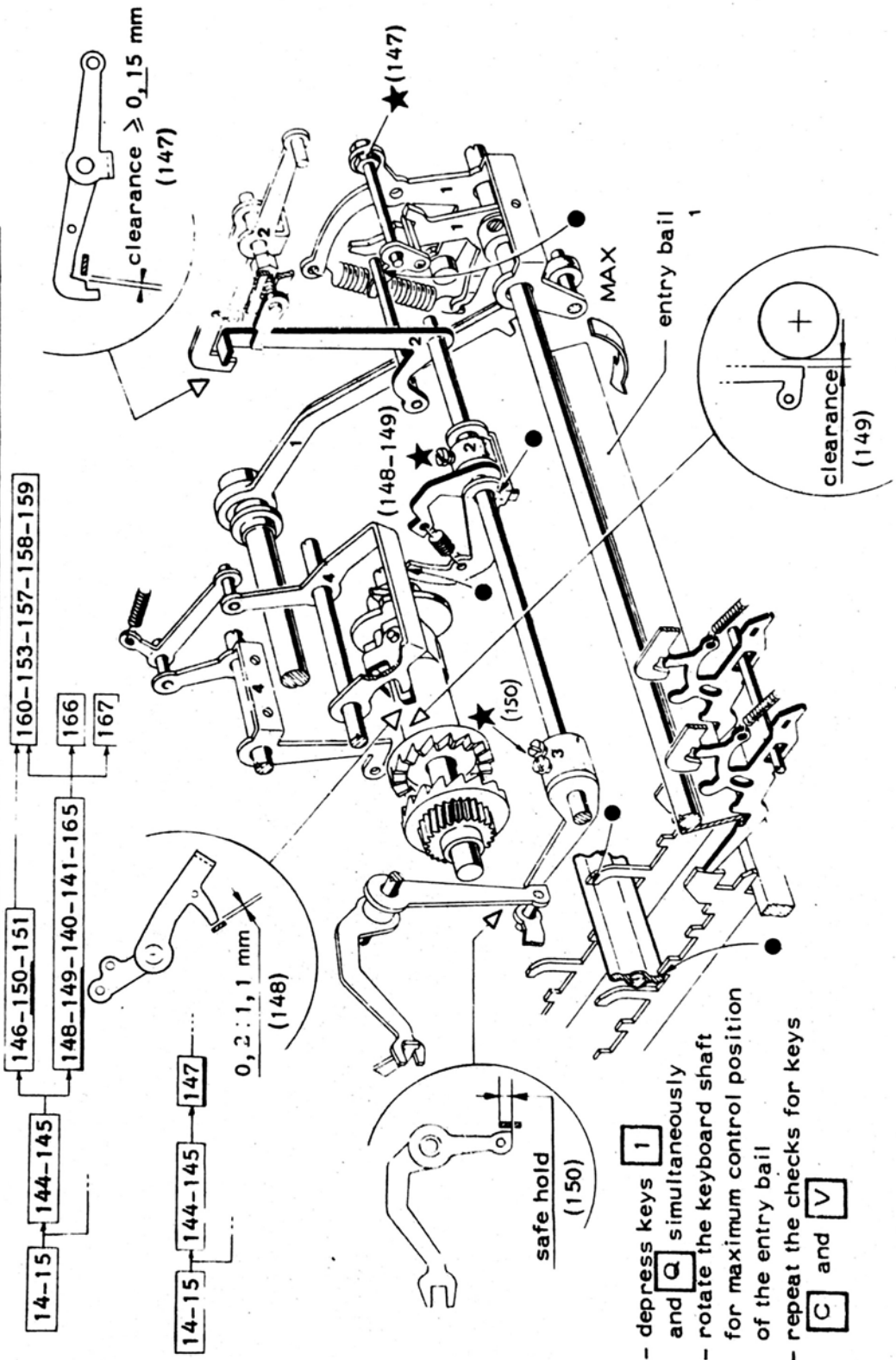
145) CHECK THE REST POSITION OF THE "LEVER WITH LOCKING SHAFT"

146) CHECK THE REST POSITION OF THE "MEMORY INPUT CLUTCH LOCK CRANK"



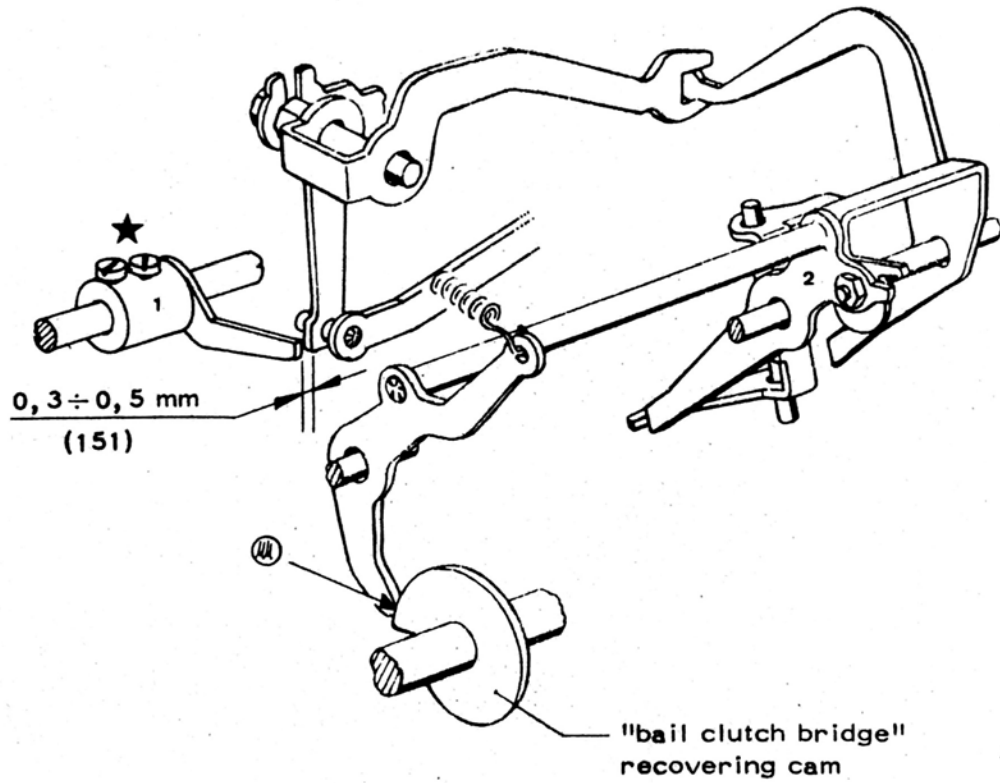
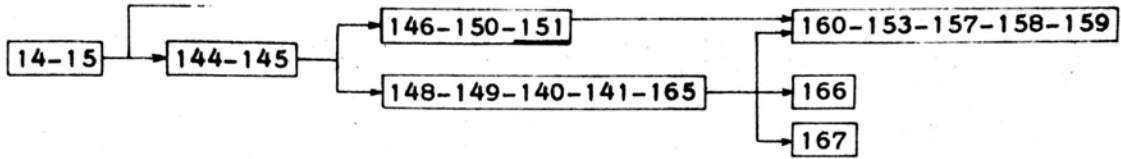
- manually release the bail clutch
- rotate the printing shaft for maximum control position of the entry bail.

- 147) CHECK THE WORK POSITION OF THE "LEVER WITH LOCKING SHAFT"
- 148-149) CHECK THE RELEASE OF THE KEYBOARD LOCK CLUTCH
- 150) CHECK THE LOCKING OF THE MEMORY INPUT CLUTCH BY "KEYBOARD LOCK"



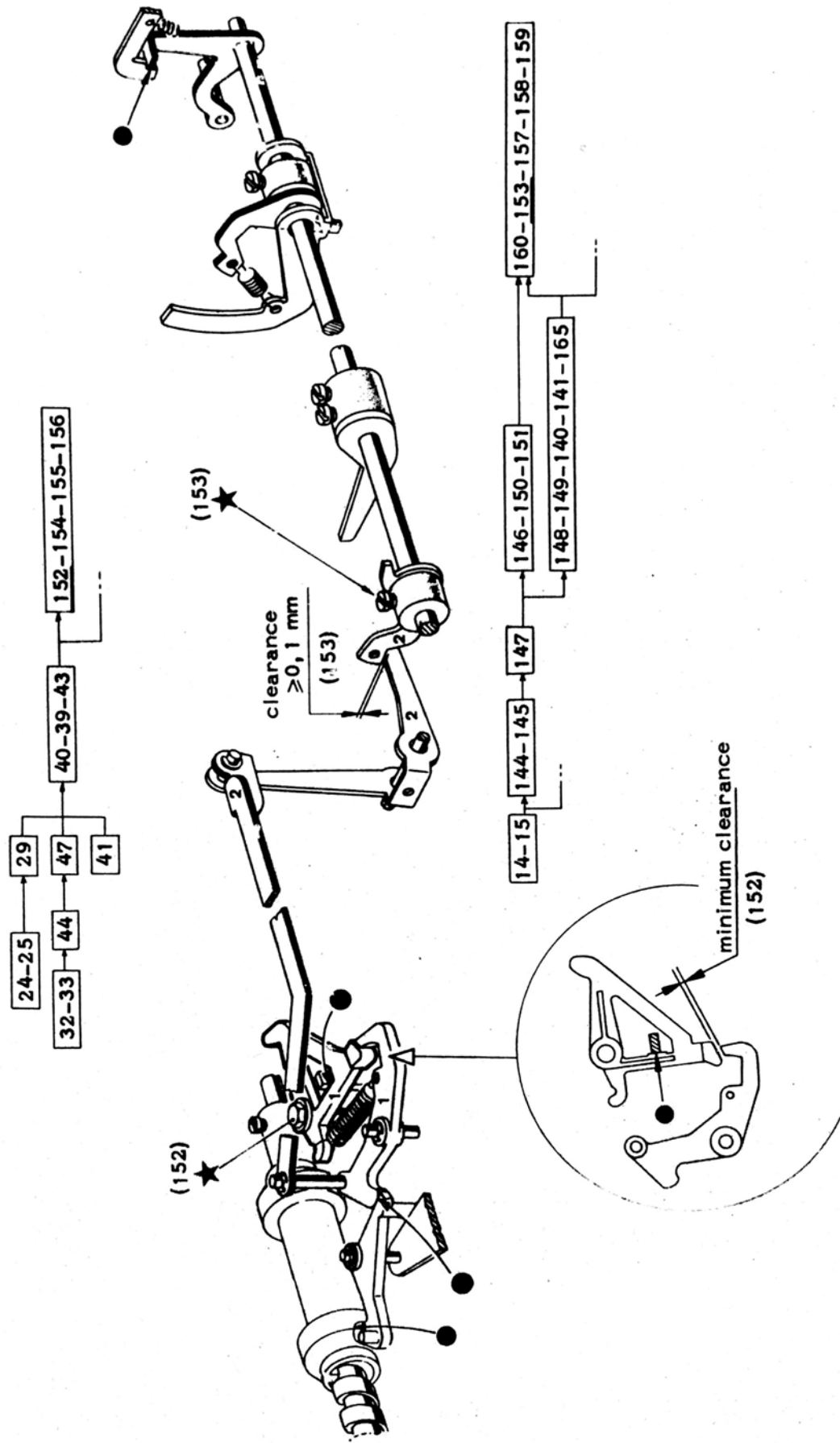
- depress keys **1** and **Q** simultaneously
- rotate the keyboard shaft for maximum control position of the entry bail
- repeat the checks for keys **C** and **V**

151) CHECK THE LOCKING OF THE "MEMORY INPUT CLUTCH" BY
"KEYBOARD LOCK"

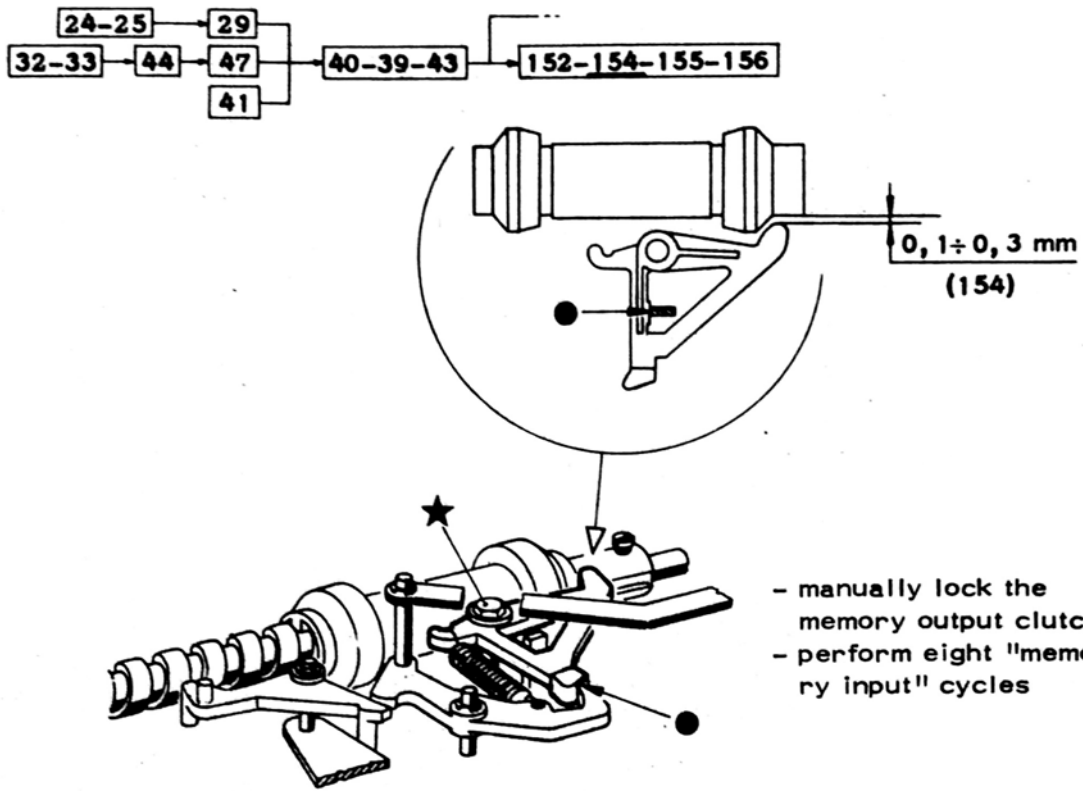


- depress two keys simultaneously and perform the relative cycle until the keyboard locks.

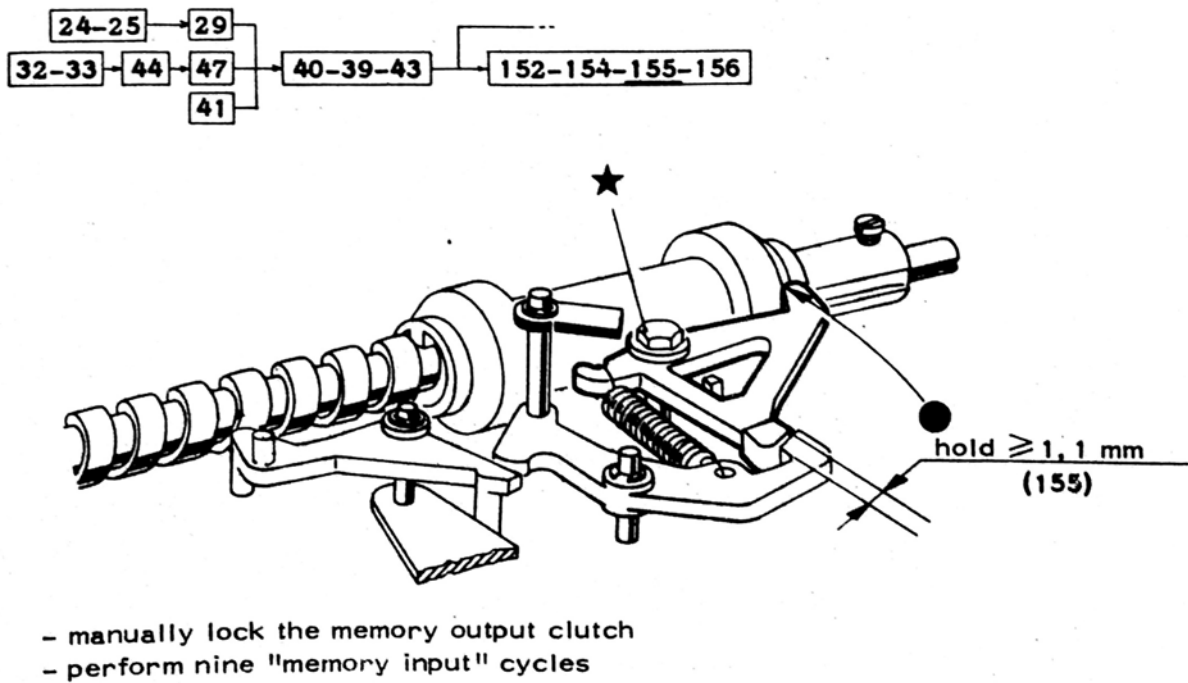
- 152) CHECK THE REST POSITION OF THE "MEMORY CODES COMMAND" LEVER
- 153) CHECK THE POSITION OF THE CRANK FOR "LOCK CLUTCH RELEASE" BY FULL MEMORY



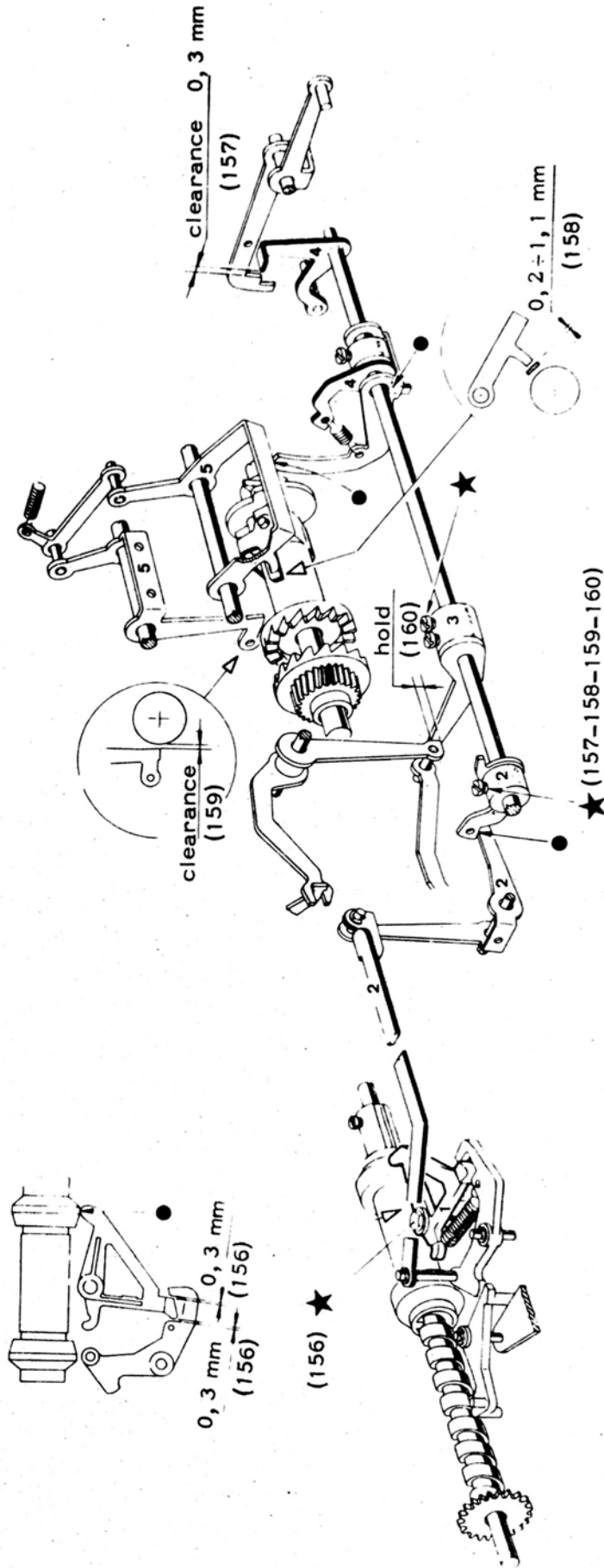
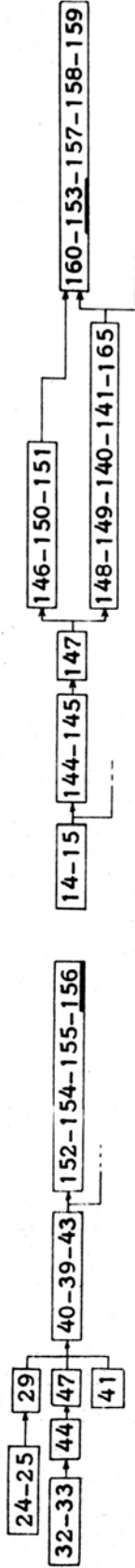
154) CHECK THE REST POSITION OF THE "MEMORY CODES CONTROL LEVER"



155) CHECK THE WORK POSITION OF THE "MEMORY CODES CONTROL LEVER"

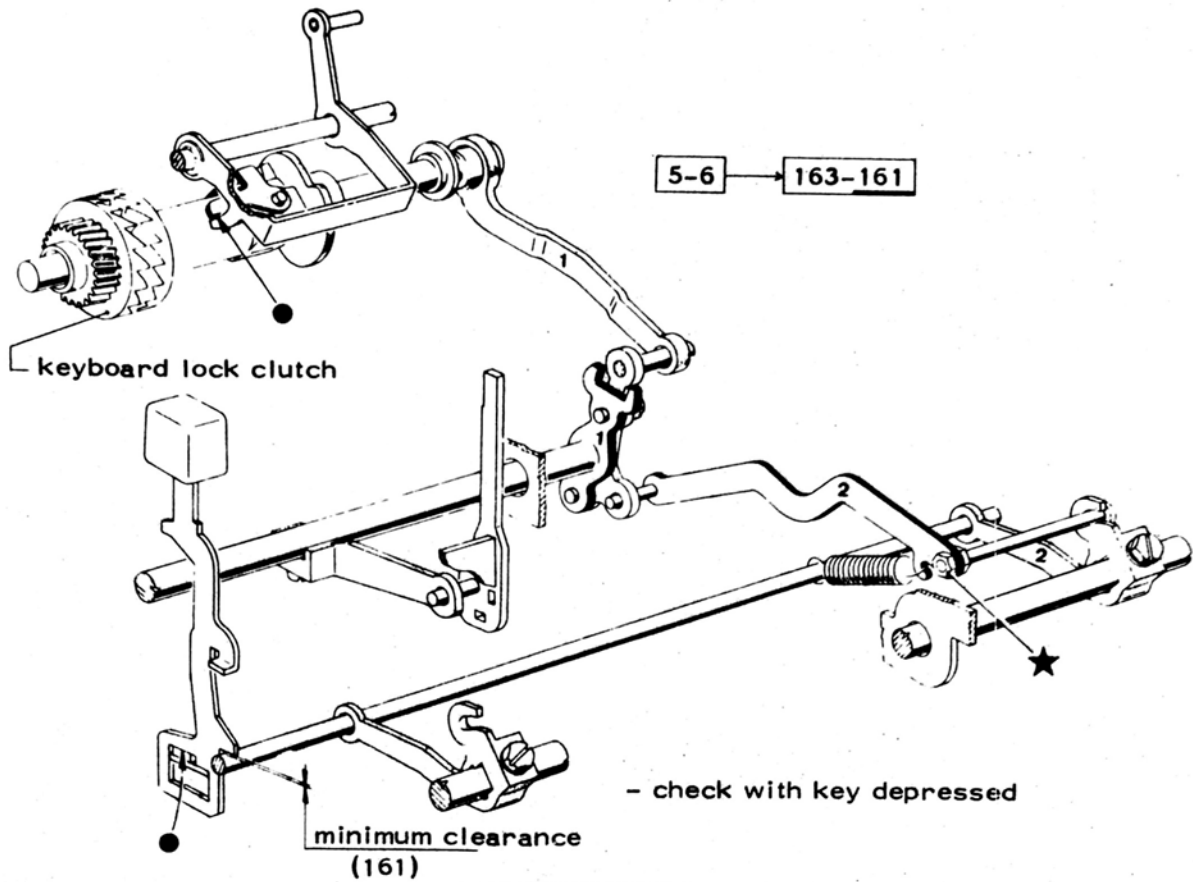


- 156) CHECK THE WORK POSITION OF THE "MEMORY CODES CONTROL LEVER"
- 157) CHECK THE WORK POSITION OF THE "LEVER WITH LOCKING SHAFT" BY "FULL MEMORY"
- 158-159) CHECK THE RELEASE OF THE KEYBOARD LOCK CLUTCH BY FULL MEMORY
- 160) CHECK THE POSITION OF THE CRANK FOR THE KEYBOARD LOCK CLUTCH RELEASE BY FULL MEMORY

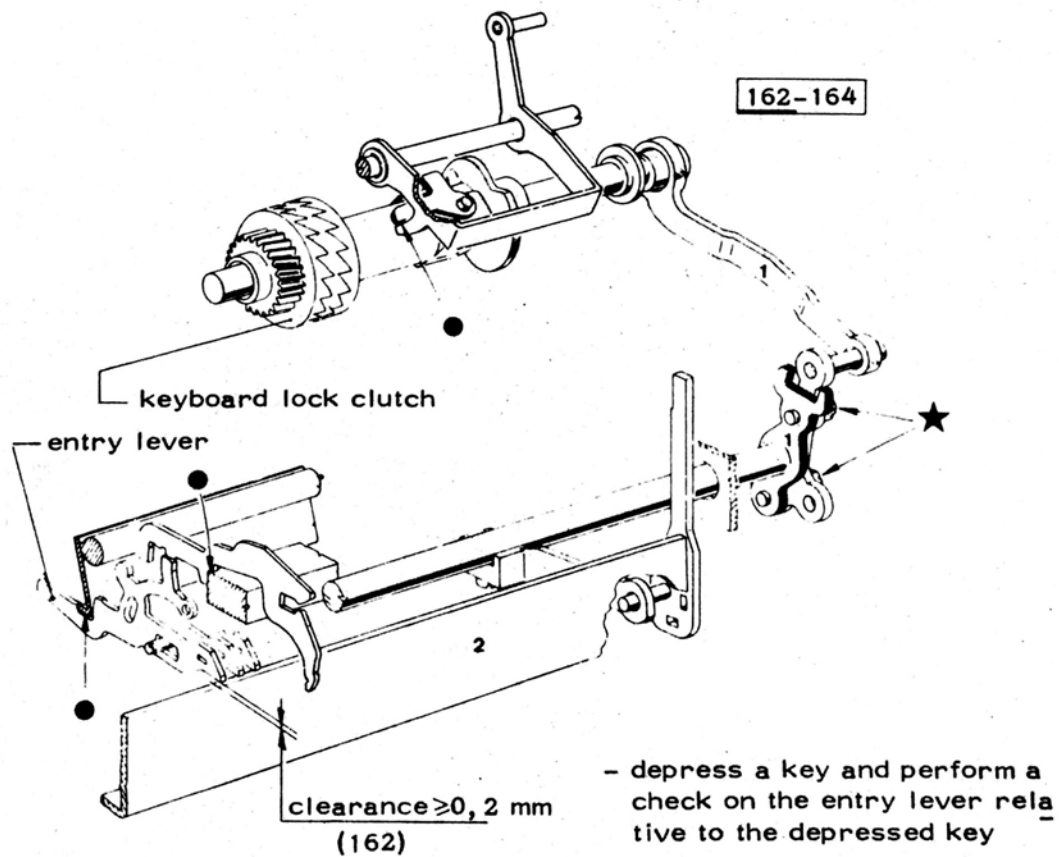


- manually lock the memory output clutch then perform 10 memory input cycles.

161) CHECK THE WORK POSITION OF THE KEYS



162) CHECK OF THE WORK POSITION OF THE ENTRY LEVER

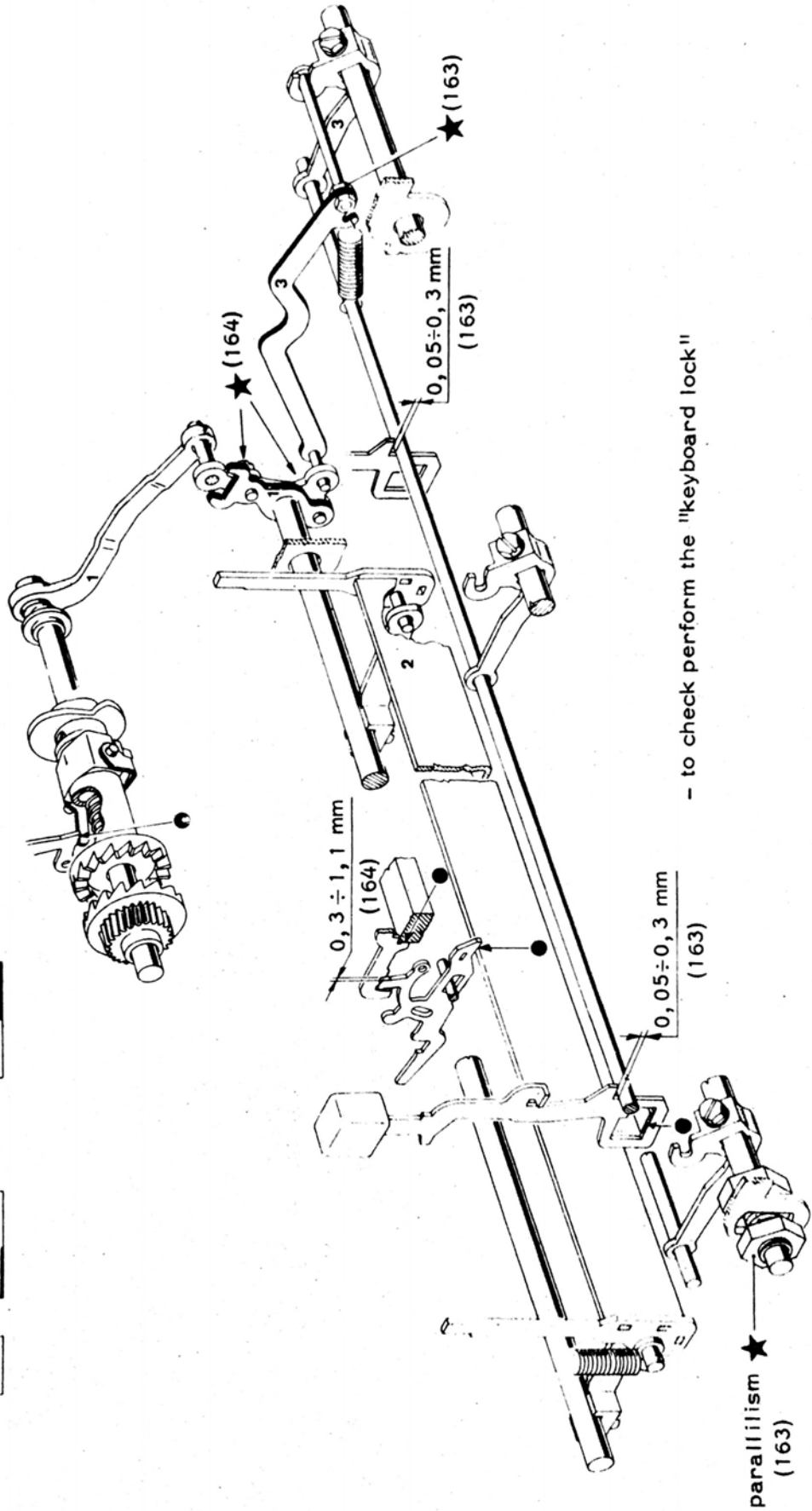


- 163) CHECK OF THE POSITION OF THE KEYS STIFFENING SHAFT
- 164) CHECK OF THE POSITION OF THE ENTRY LEVERS WITH "KEYBOARD IN LOCK"

5-6

163-161

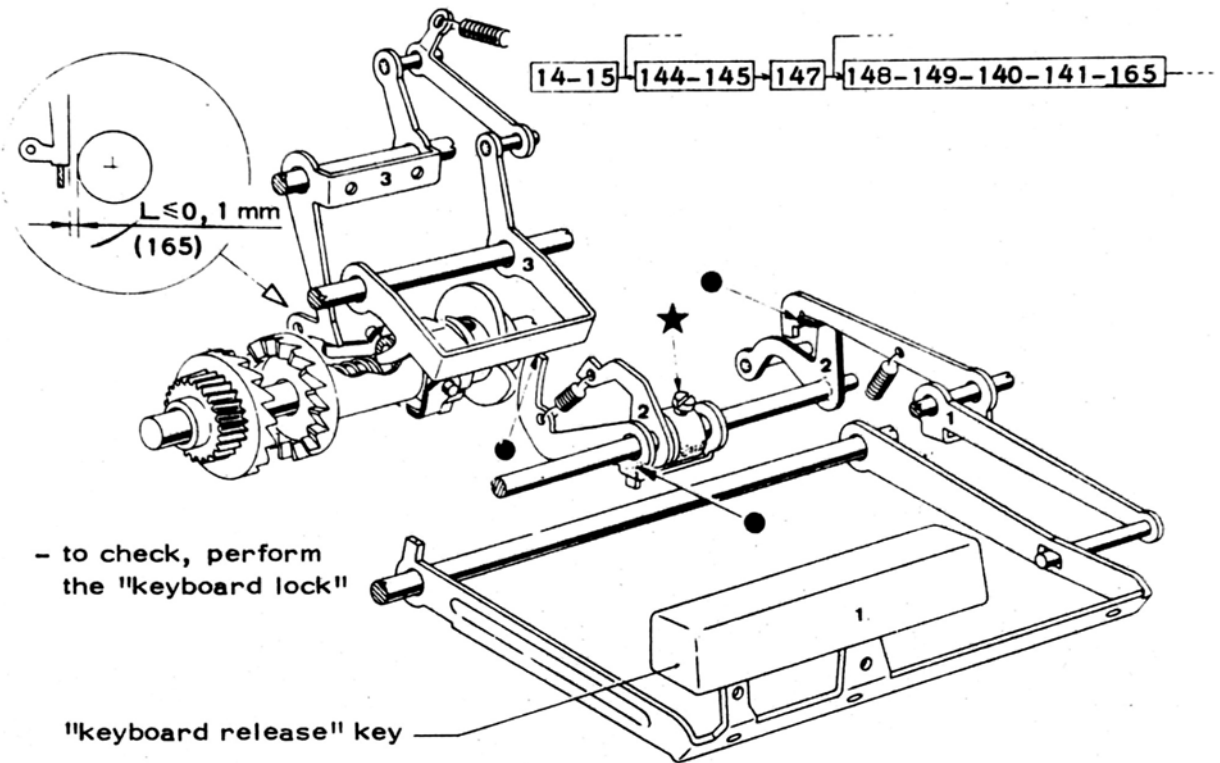
162-164



- to check perform the "keyboard lock"

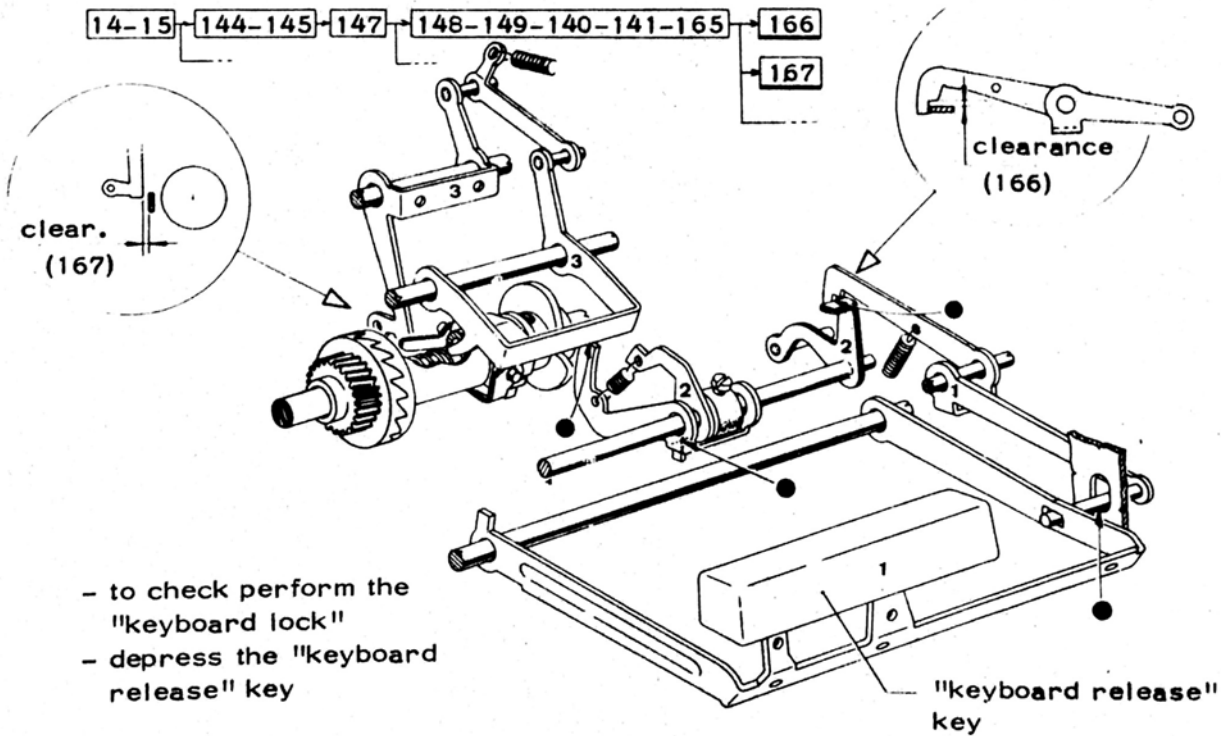
parallelism ★
(163)

165) CHECK OF THE REST POSITION OF THE "KEYBOARD RELEASE" CLUTCH RELEASING BRIDGE

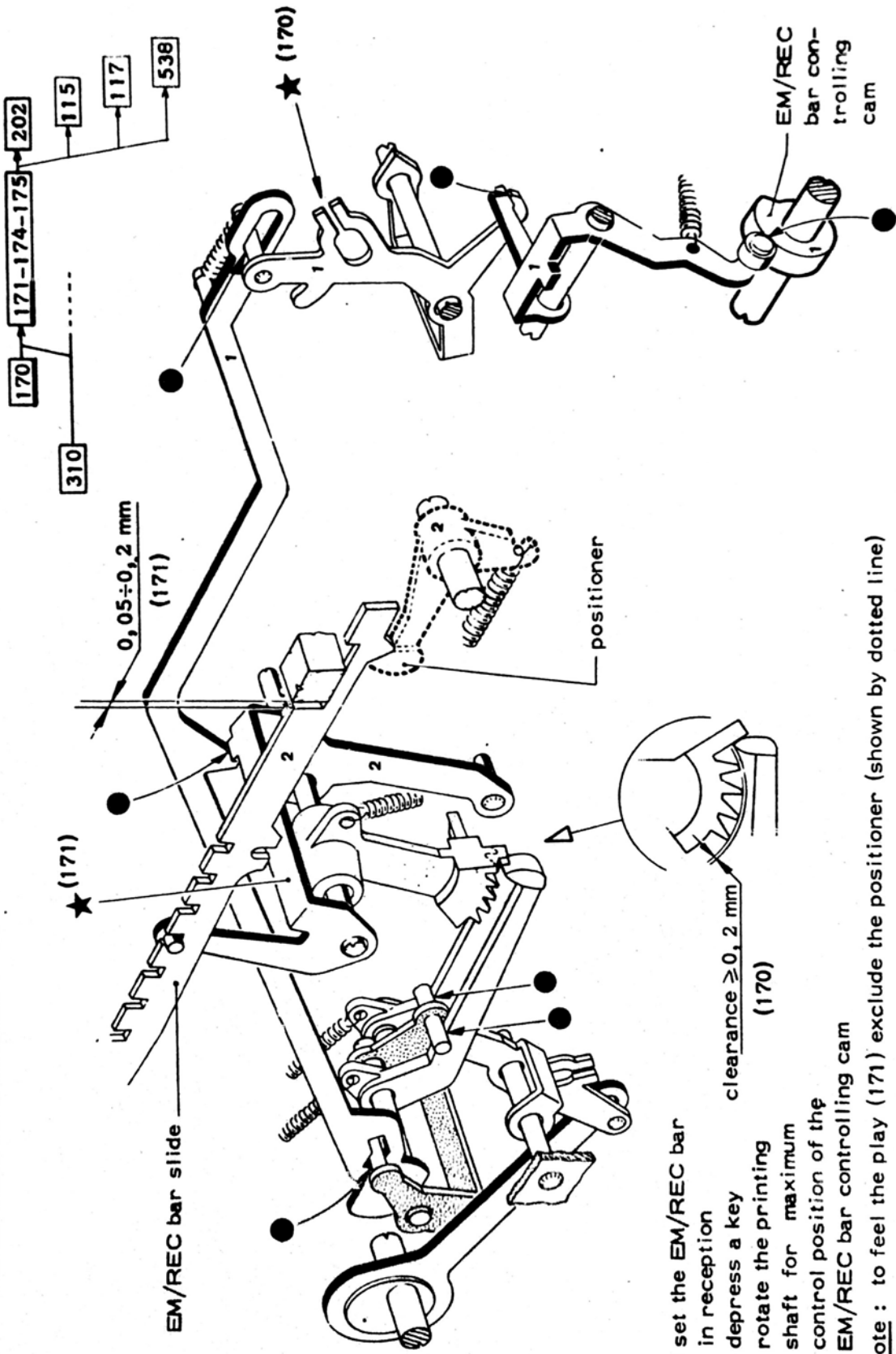


166) CHECK OF THE RELEASE OF THE "LEVER WITH LOCKING SHAFT" BY RELEASE KEY

167) CHECK OF THE CLOSING OF THE "KEYBOARD RELEASE" CLUTCH BY THE RELEASE KEY



170) CHECK THE EXCLUSION OF "DOUBLE TOOTHING SECTOR PAWL'S"
 171) CHECK THE POSITION OF THE EM/REC BAR IN EMISSION

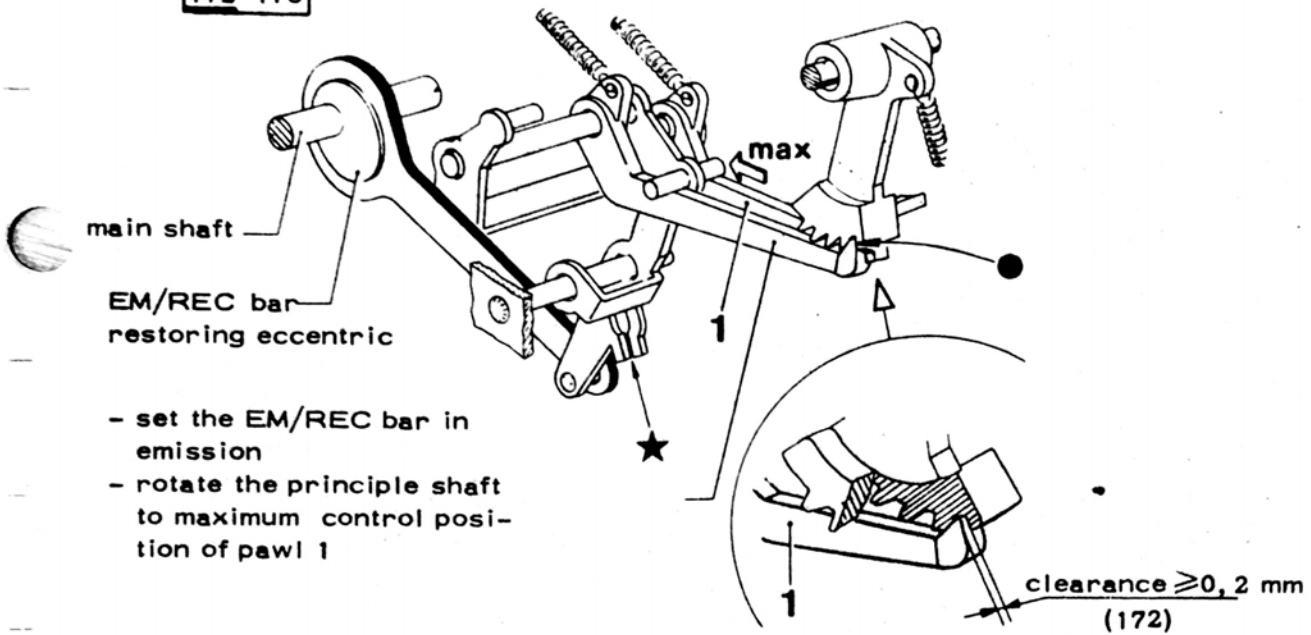


- set the EM/REC bar in reception
- depress a key
- rotate the printing shaft for maximum control position of the EM/REC bar controlling cam

Note : to feel the play (171) exclude the positioner (shown by dotted line)

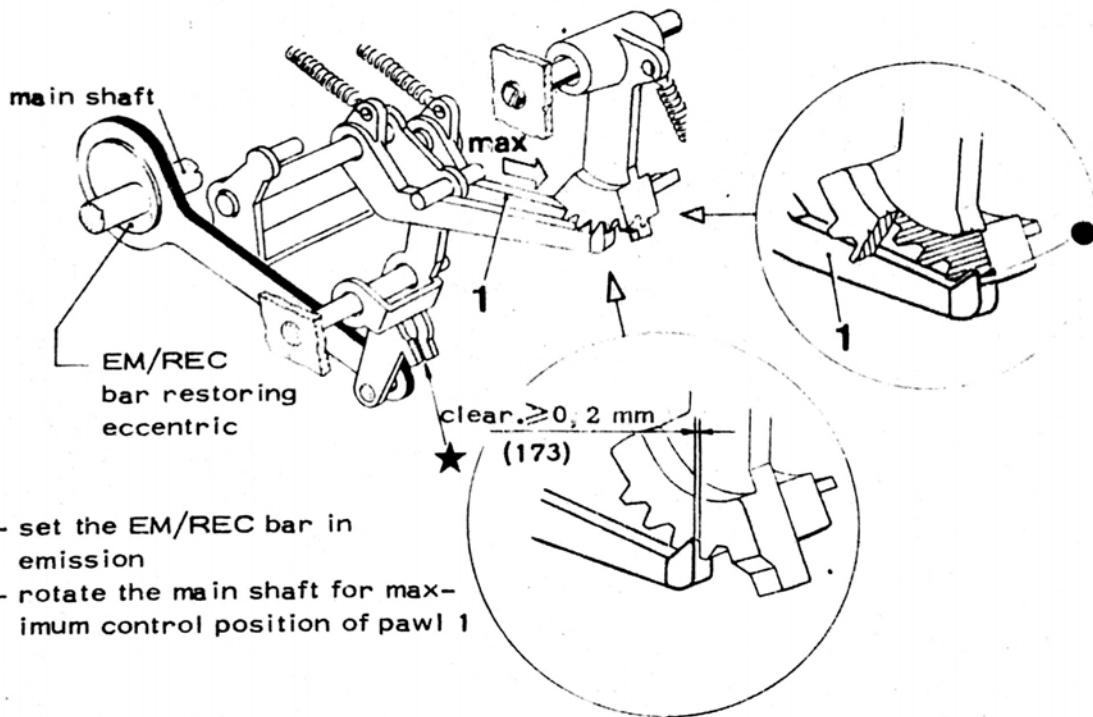
172) CHECK THE FEED OF THE "EM/REC BAR POSITIONING SECTOR"

172-173

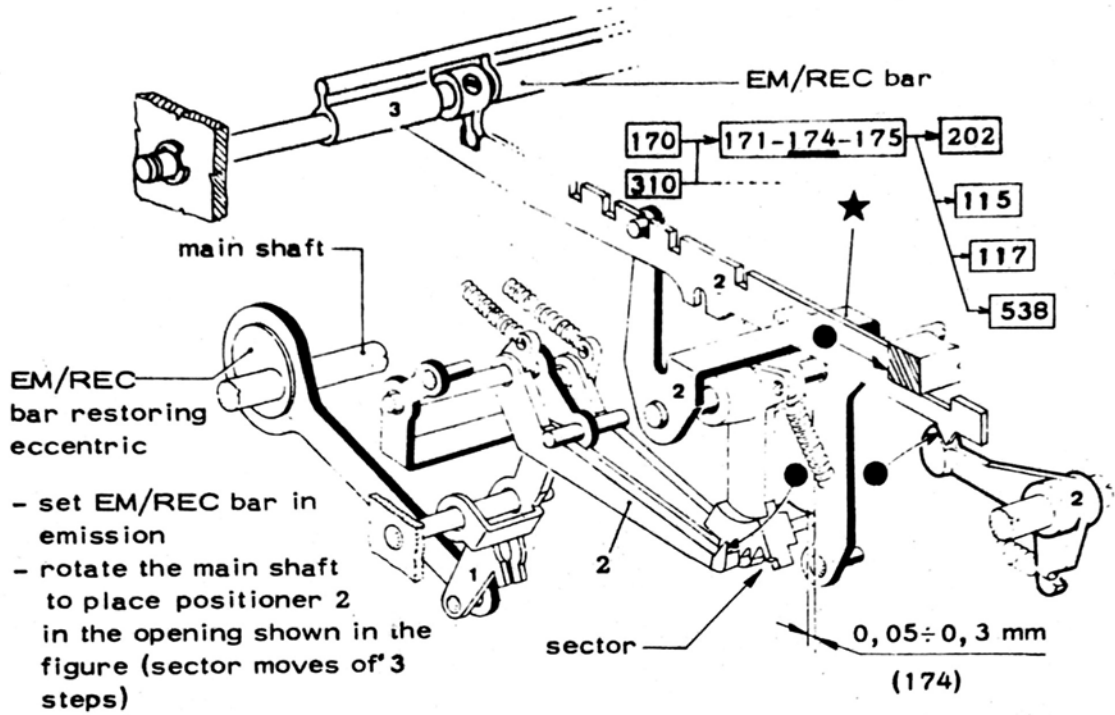


173) CHECK THE FEED OF THE "EM/REC BAR POSITIONING SECTOR"

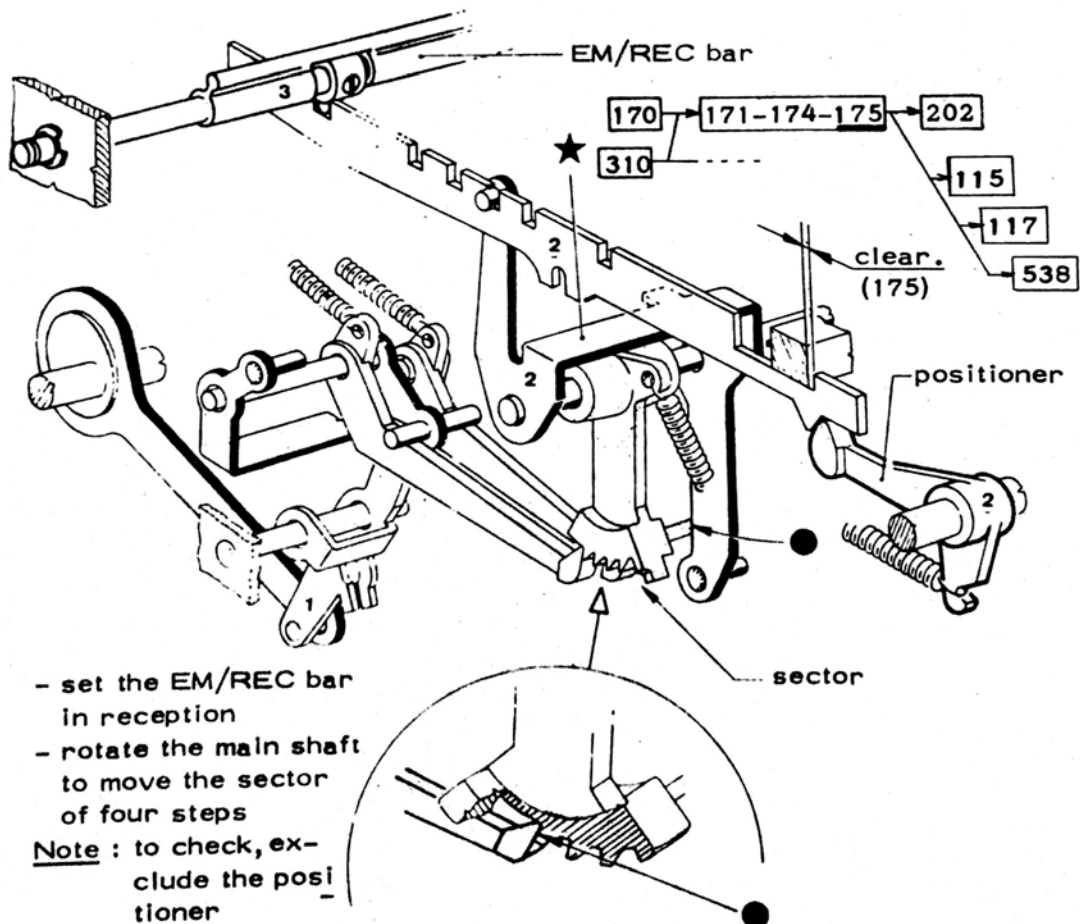
172-173



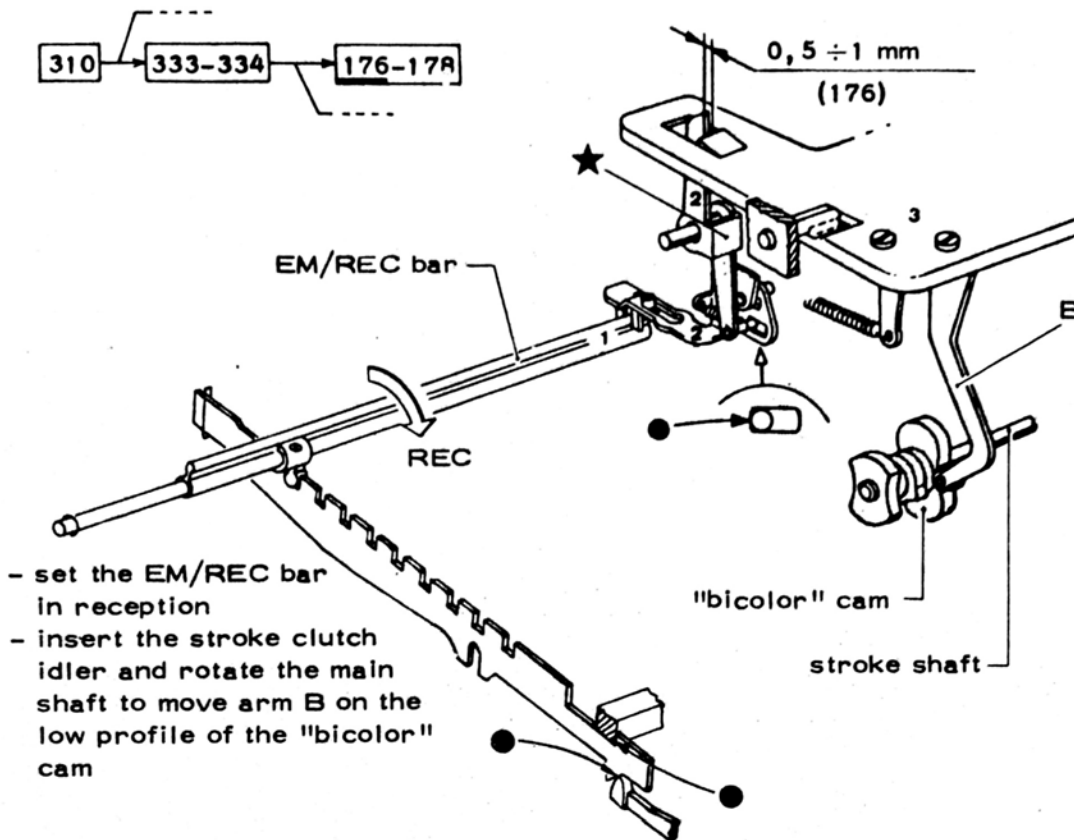
174) CHECK THE FEED, OF THE "EM/REC BAR POSITIONING SECTOR"



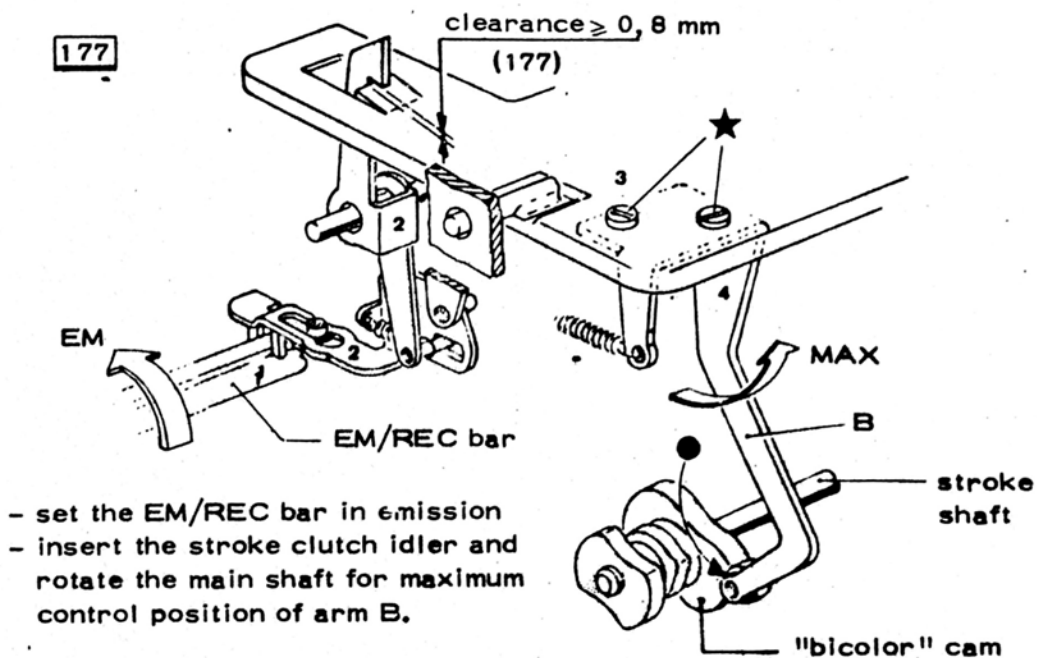
175) POSITION OF THE EM/REC BAR IN RECEPTION



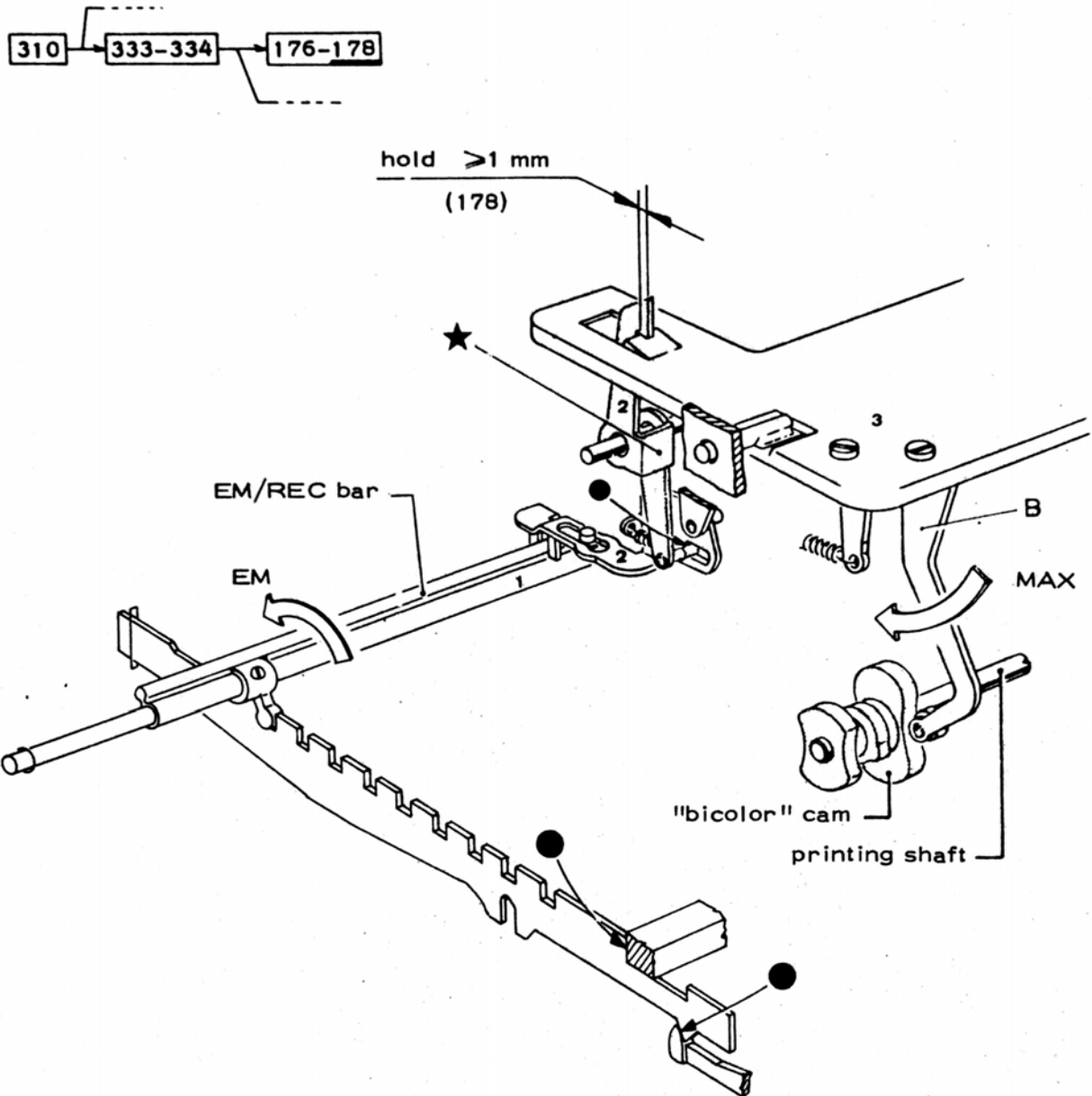
176) CHECK THE POSITION OF THE RIBBON BOARD WITH EM/REC BAR IN RECEPTION



177) CHECK THE POSITION OF THE RIBBON BOARD WITH EM/REC BAR IN EMISSION

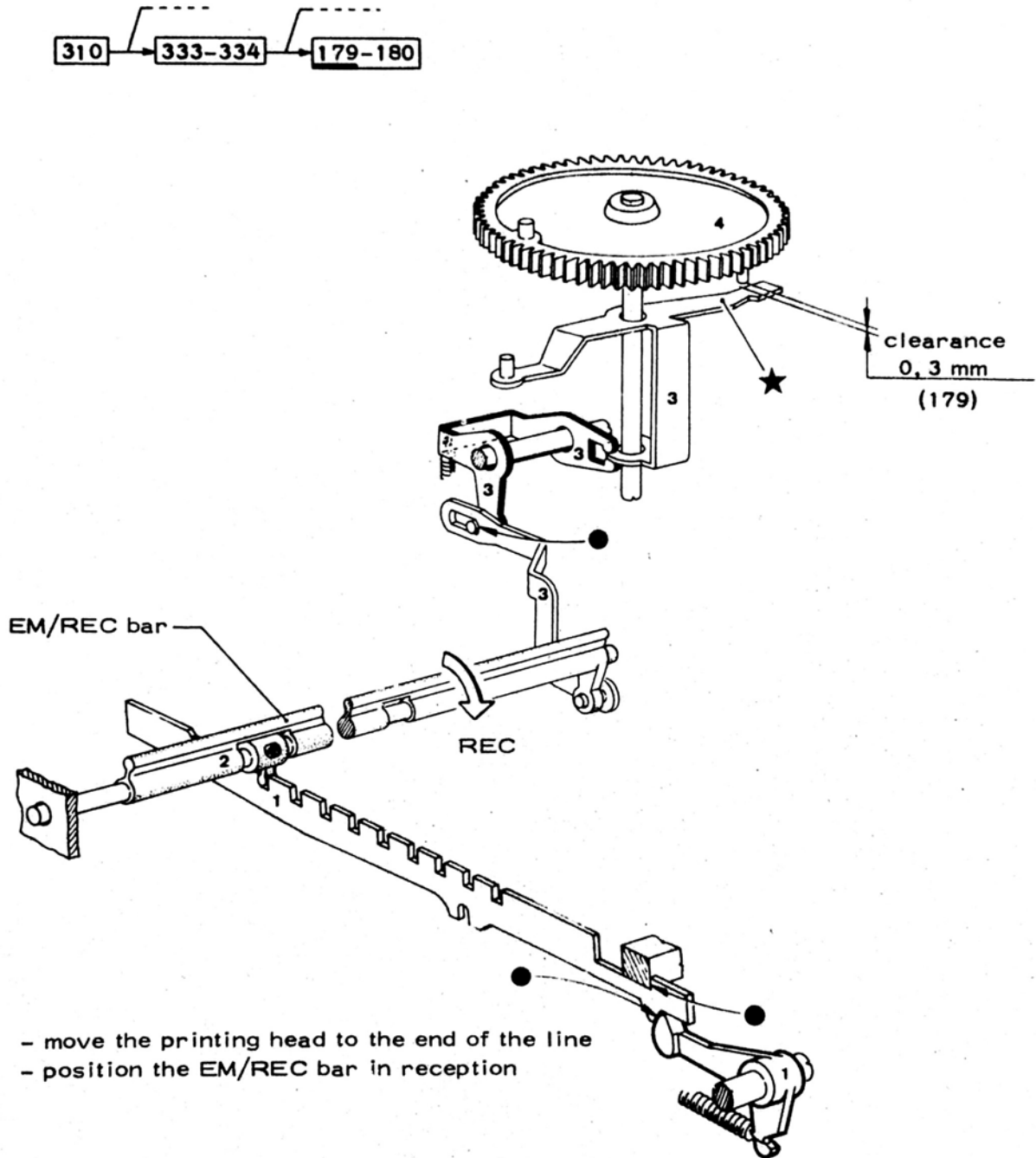


178) CHECK OF THE POSITION OF THE RIBBON BOARD WITH EM/REC BAR IN EMISSION

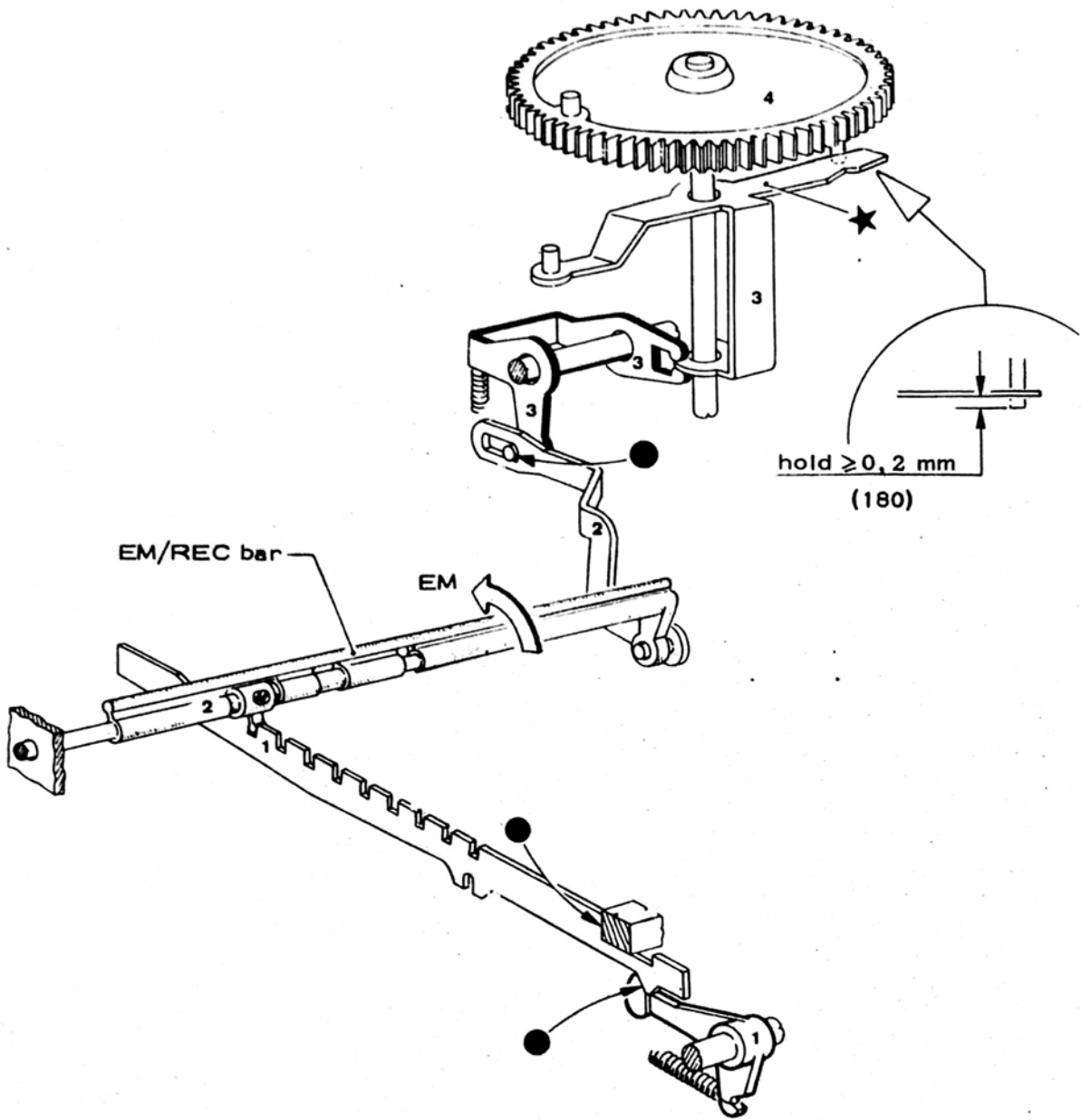
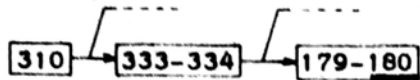


- set the EM/REC bar in emission
- insert the stroke clutch idler and rotate the main shaft for maximum control position of arm B.

179) CHECK THE EXCLUSION OF THE END OF LINE "PRINTING HEAD AND STROKE FEED"



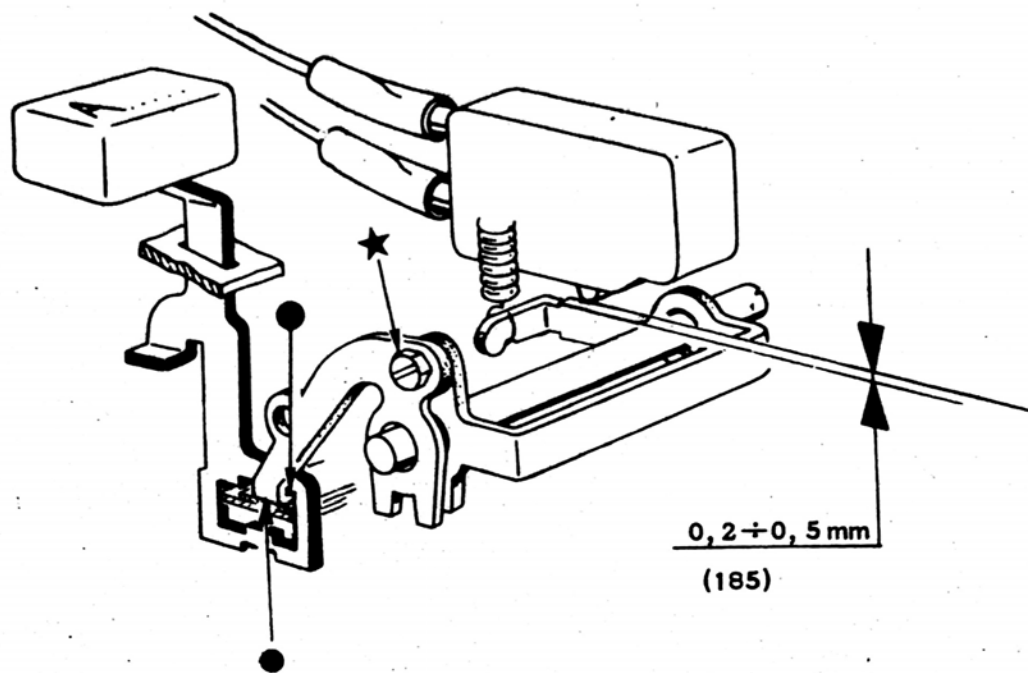
180) CHECK THE INCLUSION OF THE END OF LINE " PRINTING HEAD AND STROKE FEED"



- move the printing head to the end of the line
- position the EM/REC bar in emission.

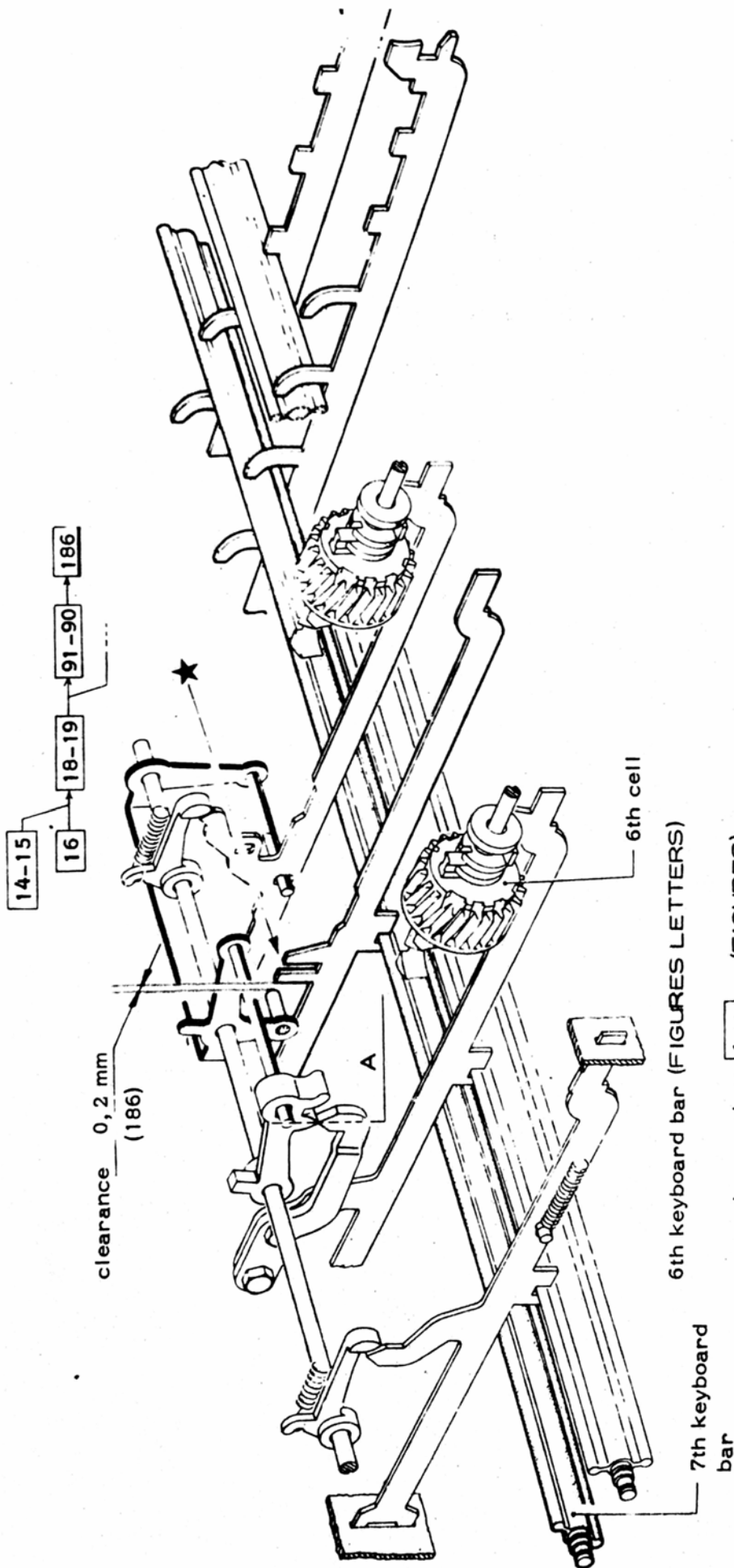
185) CHECK THE "LETTERS AND START" KEY

185



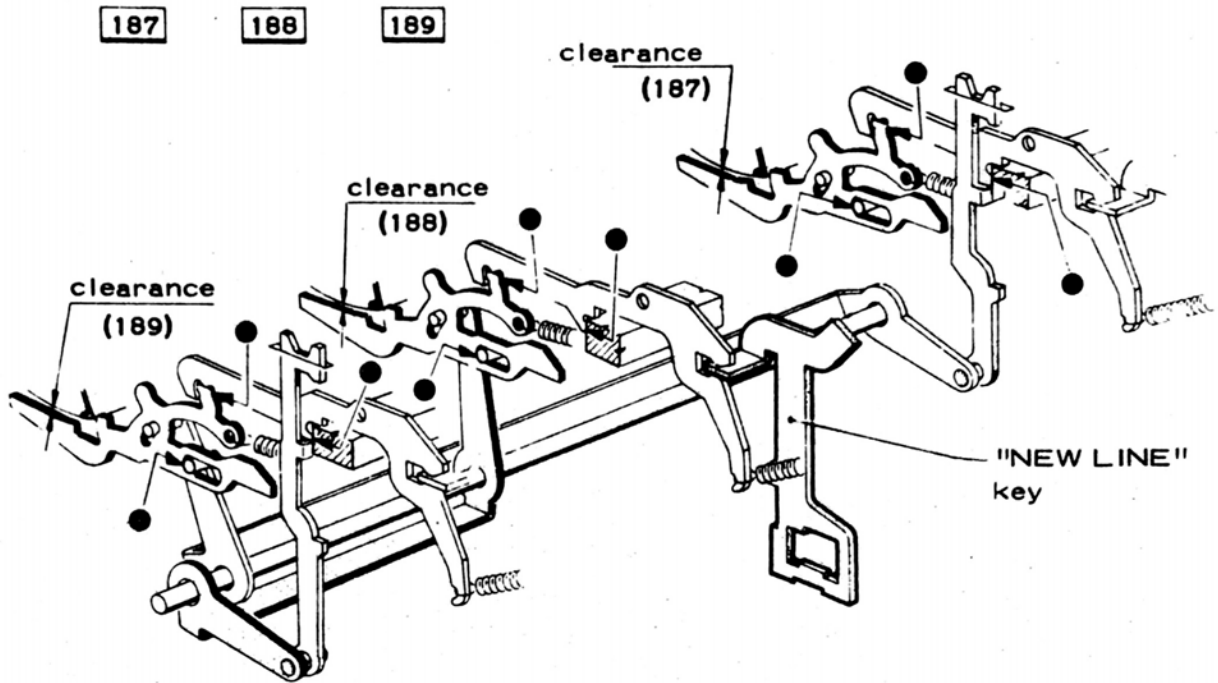
- keep the "LETTERS" key depressed.

186) CHECK THE "AUTOMATIC CYCLE" CLEARING BY "FIGURES" OR "LETTERS" KEY

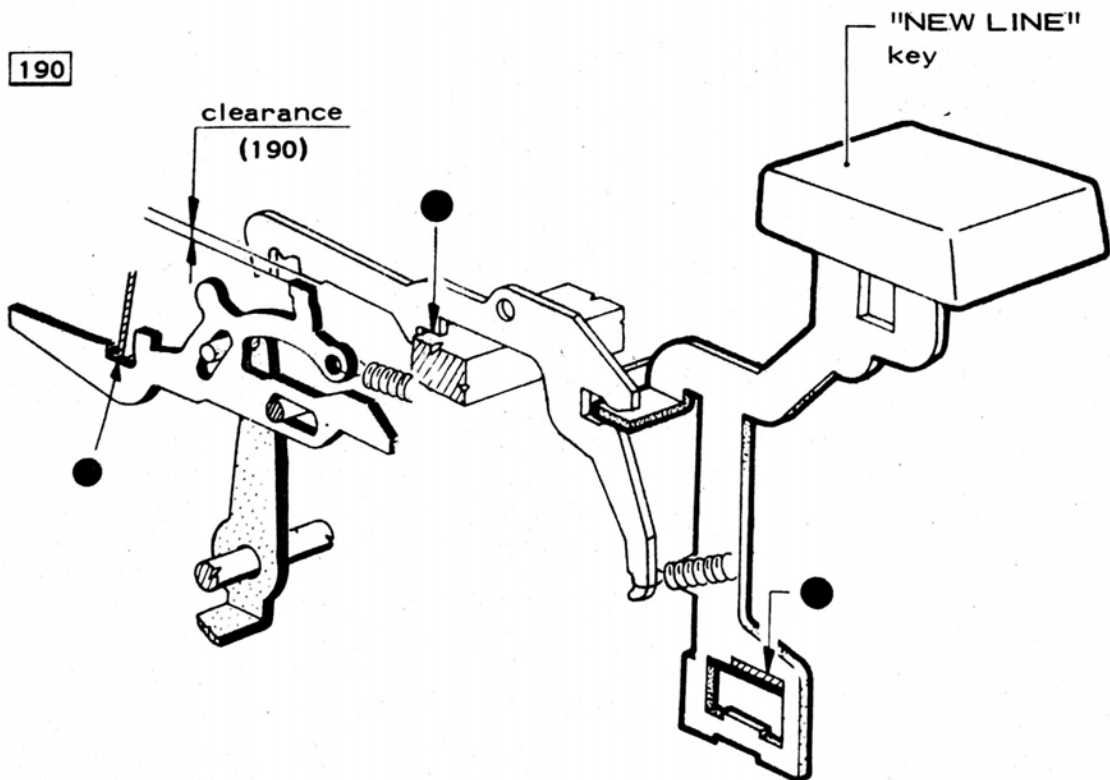


- depress key 1... (FIGURES)
- depress key A... (LETTERS)
- rotate the keyboard shaft to obtain the condition A and check
- repeat the test reversing the order of depression of the two keys.

187-188-189) CHECK THE REST POSITION OF THE "NEW LINE" KEY



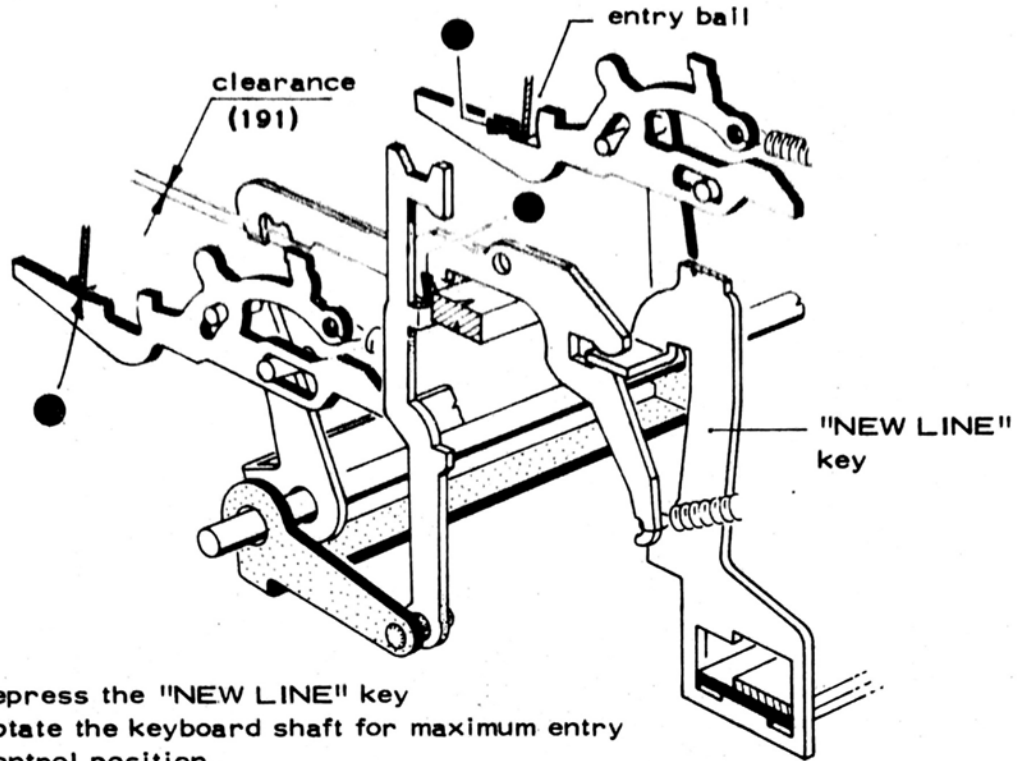
190) CHECK THE WORK POSITION OF THE "NEW LINE" KEY



- press the "NEW LINE" key.

191) CHECK THE WORK POSITION OF THE "NEW LINE" KEY

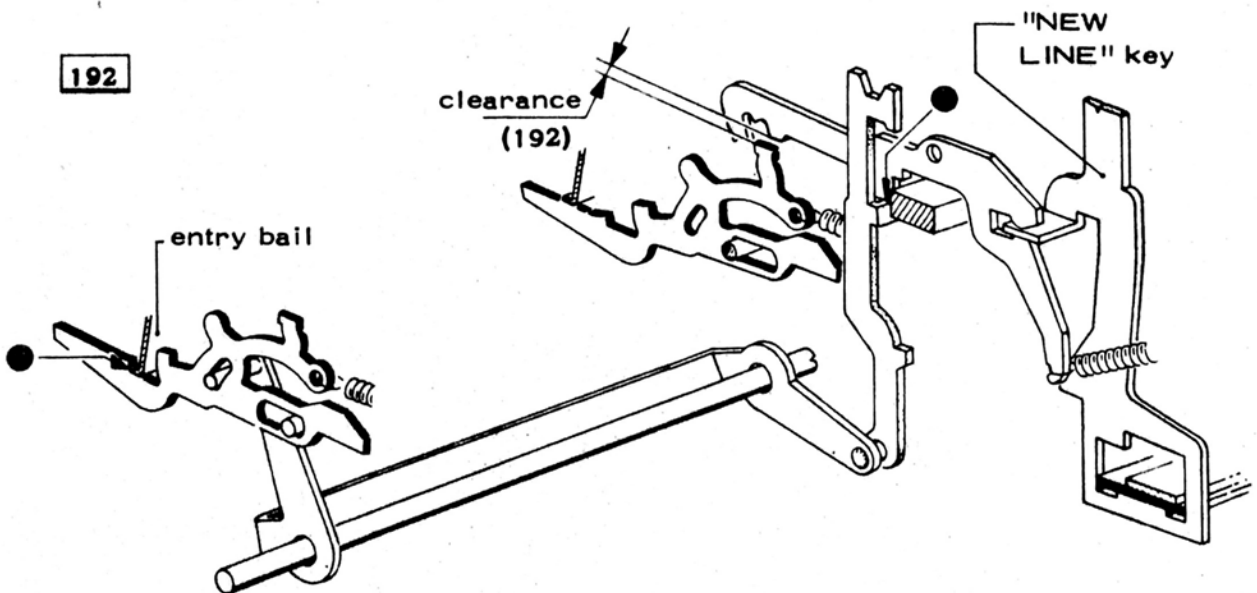
191



- depress the "NEW LINE" key
- rotate the keyboard shaft for maximum entry control position.

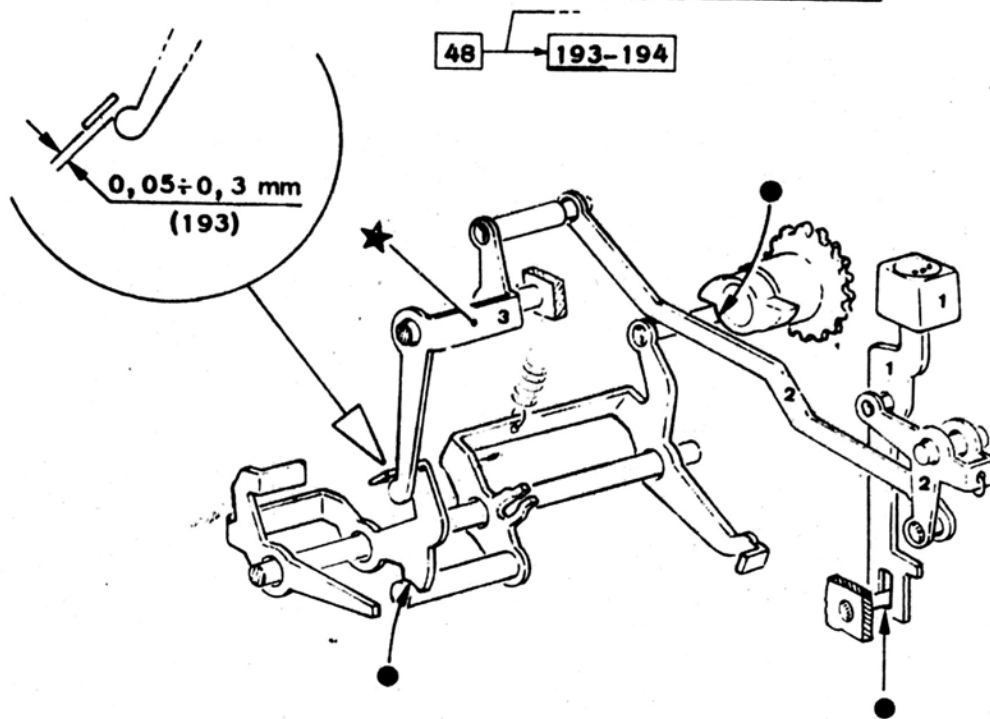
192) CHECK THE WORK POSITION OF THE "NEW LINE" KEY

192

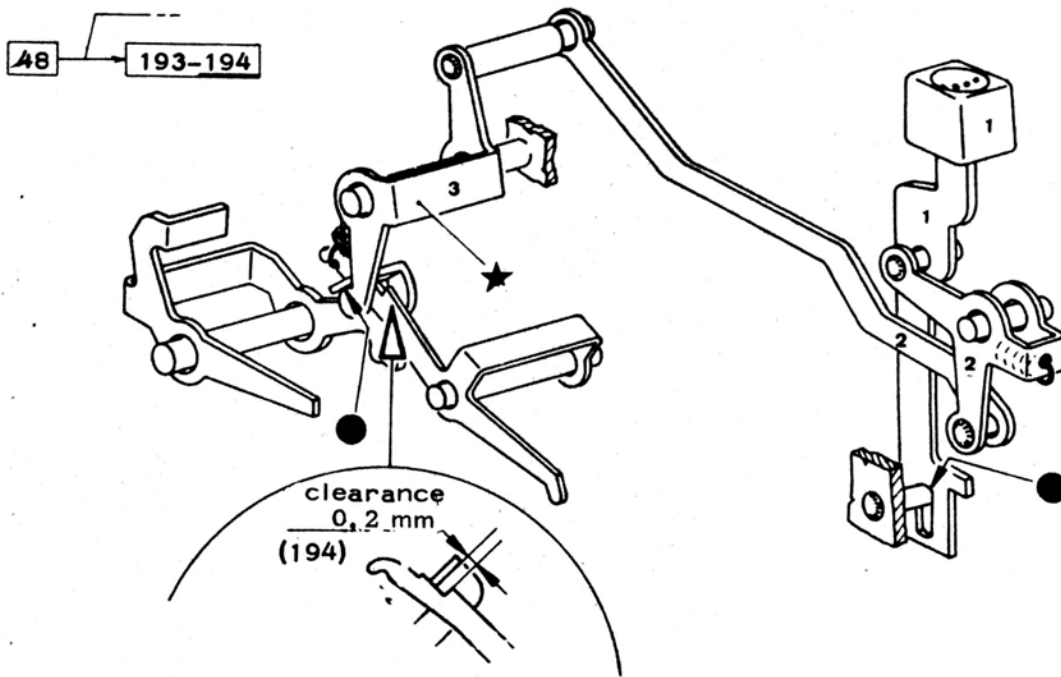


- depress the "NEW LINE" key
- rotate the keyboard shaft until link P is at maximum control position.

193) CHECK OF THE REST POSITION OF THE "REPEAT" KEY



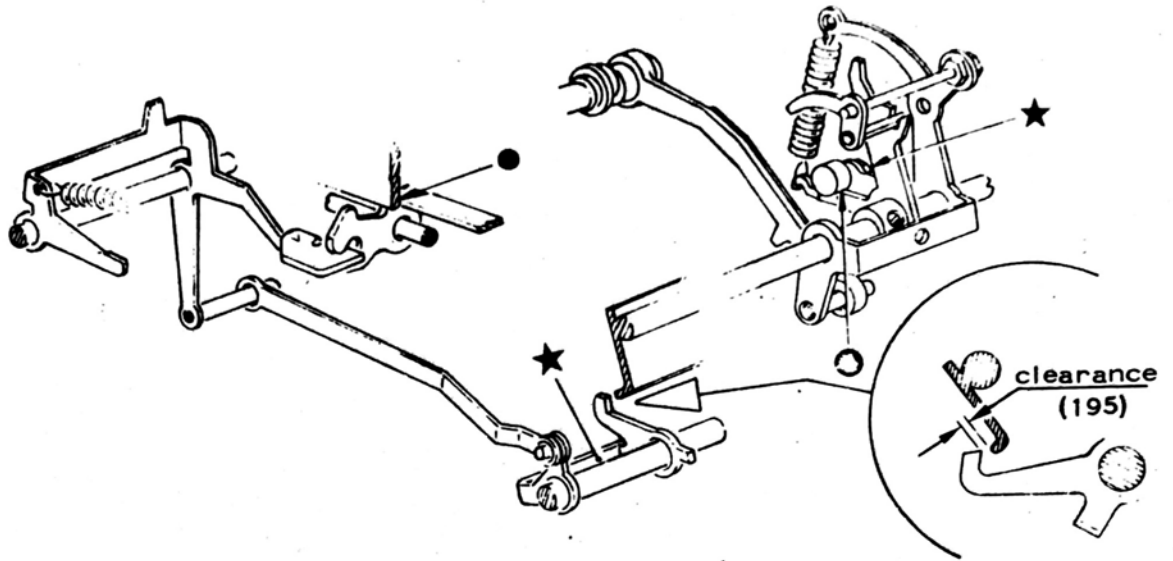
194) CHECK OF THE WORK POSITION OF THE "REPEAT" KEY



- depress the "REPEAT" key and keep it depressed.

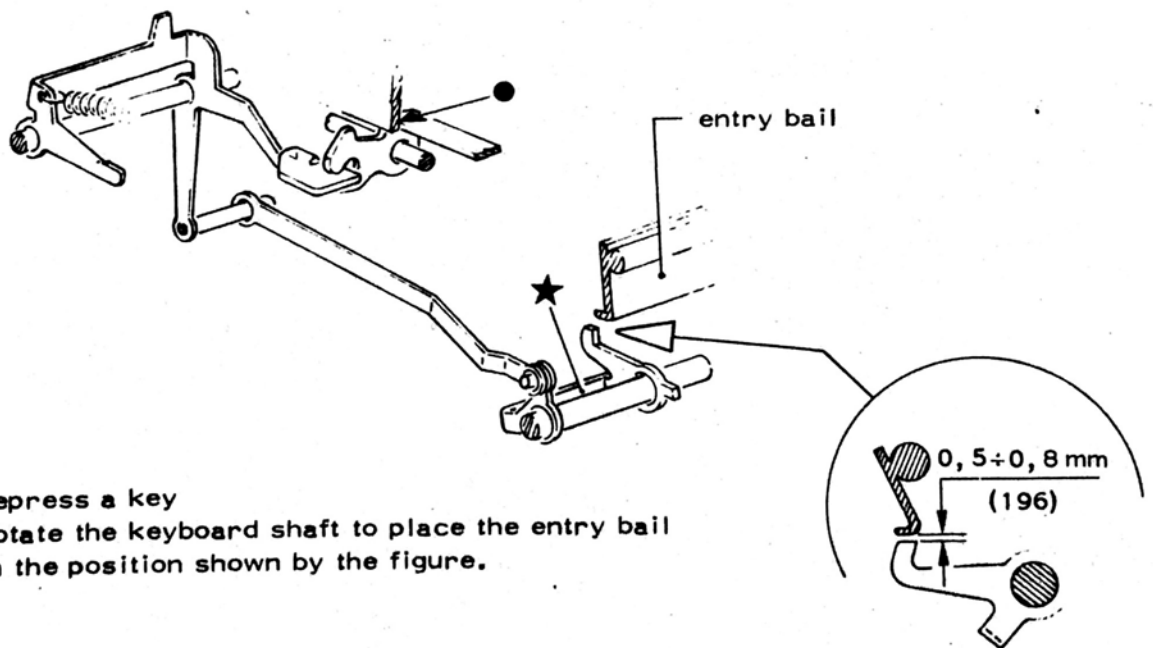
195) CHECK THE PASS-BY CLEARANCE OF THE "KEYBOARD LOCK HOOK" BY "READER" AND "AUTOMATIC REPLY"

14-15 → 195-196-197-198



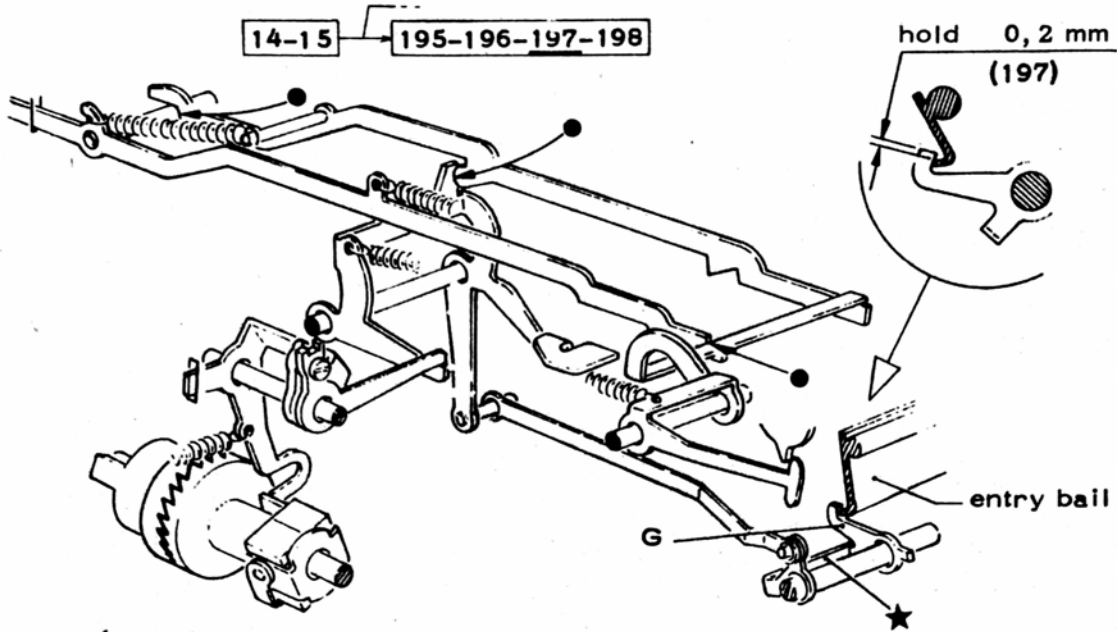
196) CHECK THE PASS-BY CLEARANCE BETWEEN THE ENTRY BAIL AND THE "KEYBOARD LOCK HOOK"

14-15 → 195-196-197-198



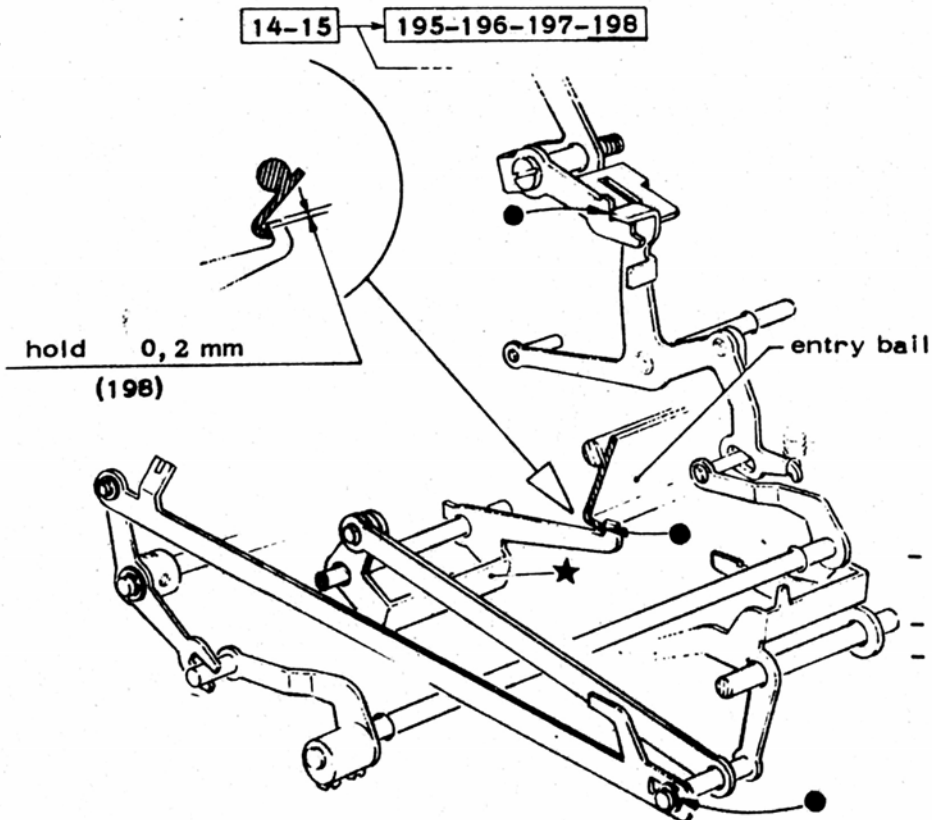
- depress a key
- rotate the keyboard shaft to place the entry bail in the position shown by the figure.

197) CHECK THE "KEYBOARD LOCK" WITH "AUTOMATIC REPLY" STARTED



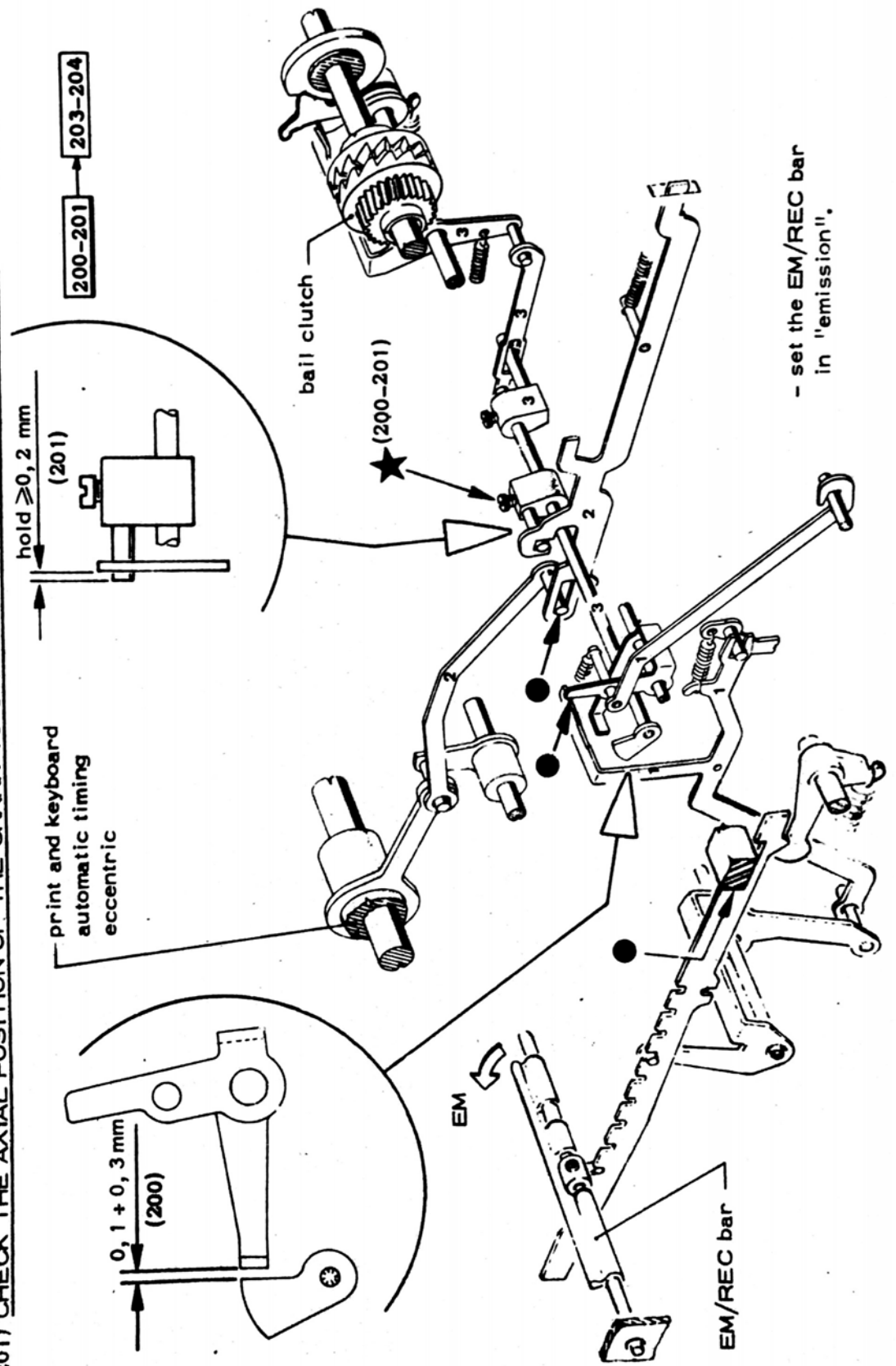
- EM/REC bar in reception
- depress the "AUTOMATIC REPLY" key
- depress a key
- rotate the main shaft until the entry ball is in contact with hook G.

198) CHECK THE "KEYBOARD LOCK" WITH READER STARTED



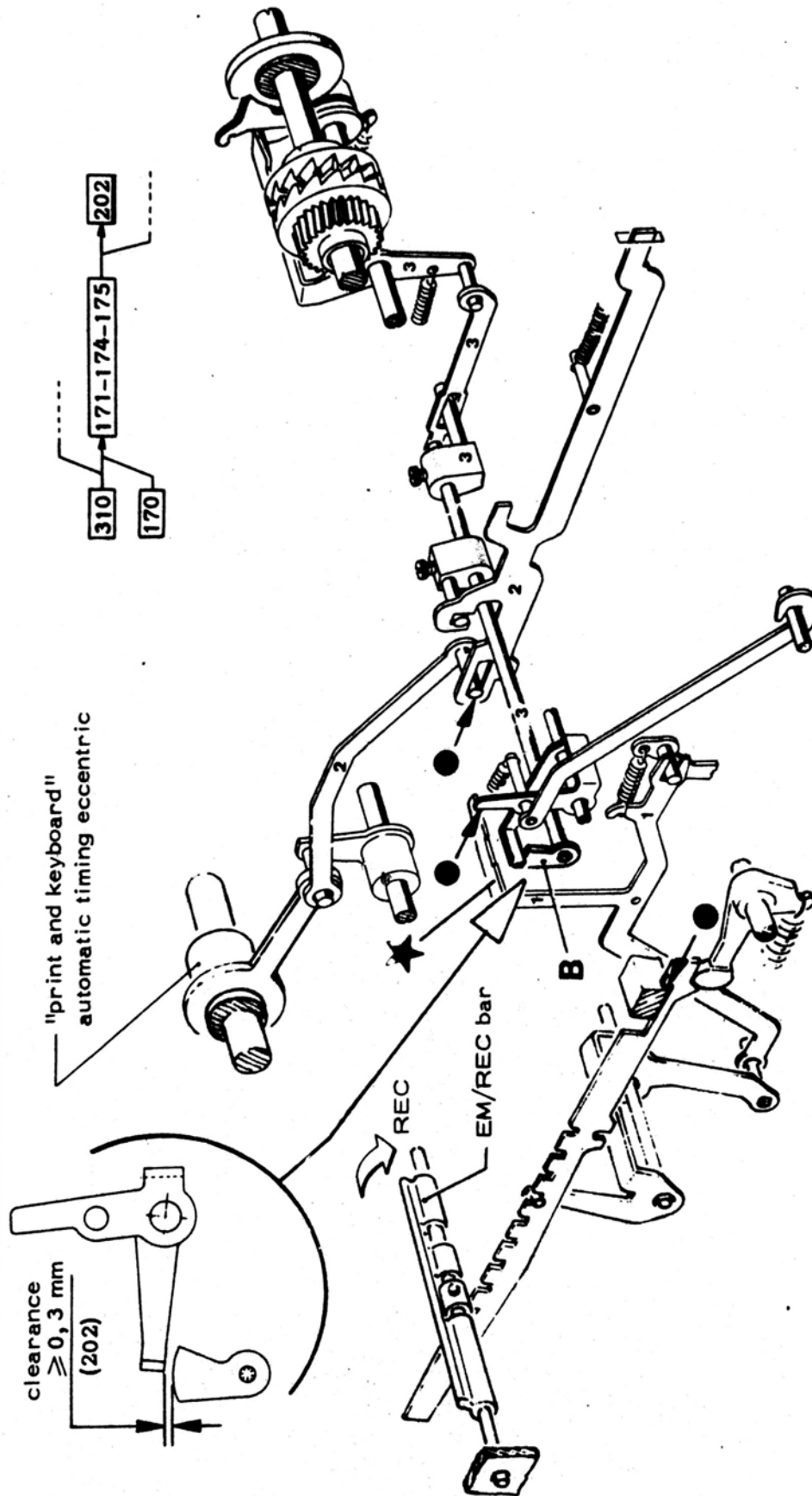
- start the "read er"
- depress a key
- rotate the main shaft until the entry ball is in contact with hook G.

- 200) CHECK THE PASS-BY CLEARANCE OF THE BRIDGE ENABLING THE AUTOMATIC TIMING BETWEEN "PRINT" AND "KEYBOARD"
- 201) CHECK THE AXIAL POSITION OF THE CRANK TO CONTROL THE "PRINT" AND "KEYBOARD" TIMING SLIDE



- set the EM/REC bar in "emission".

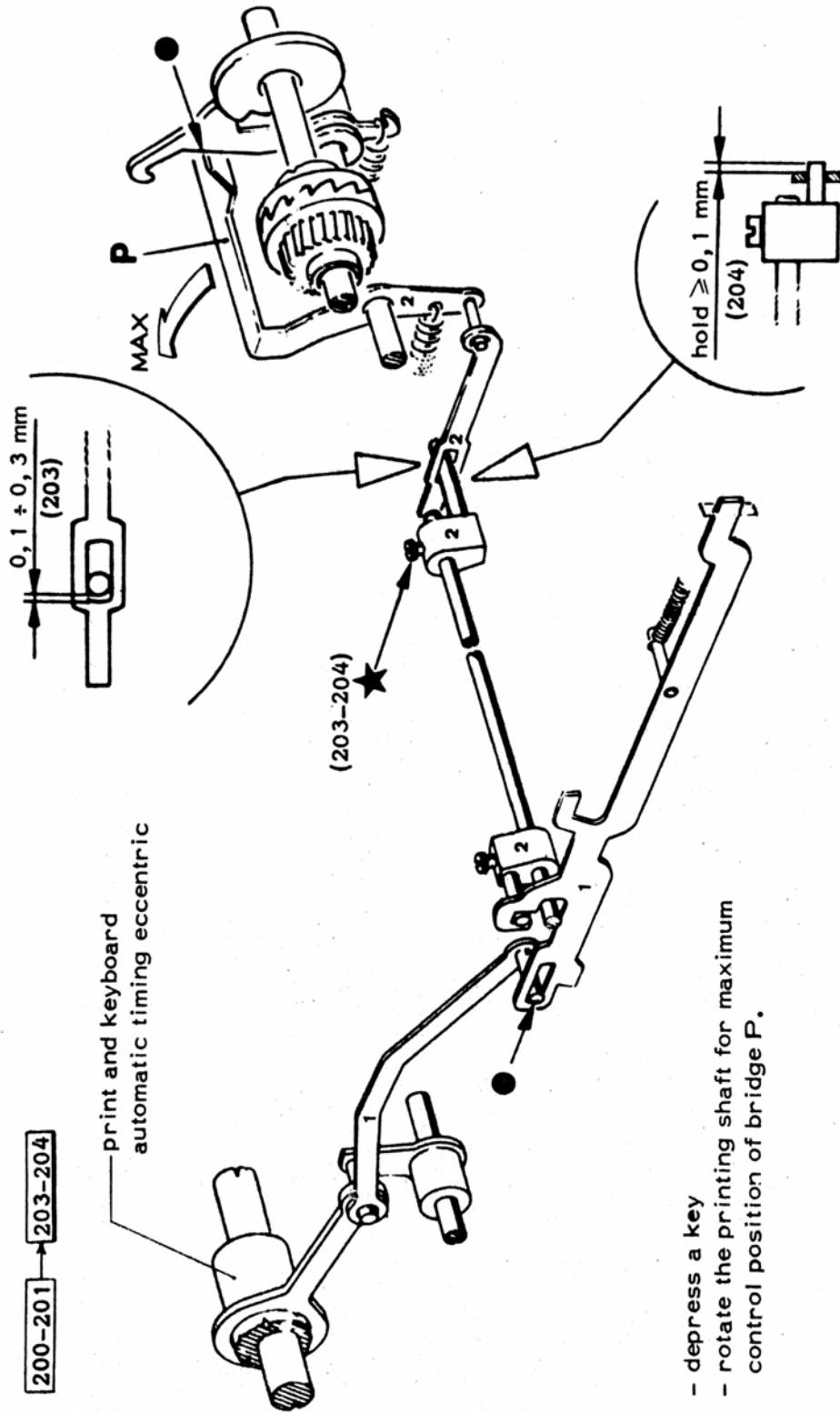
202) CHECK THE POSITION OF THE BRIDGE ENABLING THE "PRINT AND KEYBOARD" AUTOMATIC TIMING WITH EM/REC BAR IN RECEPTION



- set the EM/REC bar in reception
- insert the functions with clutch idler
- rotate the printing shaft to place crank B in the conditions shown in the figure.

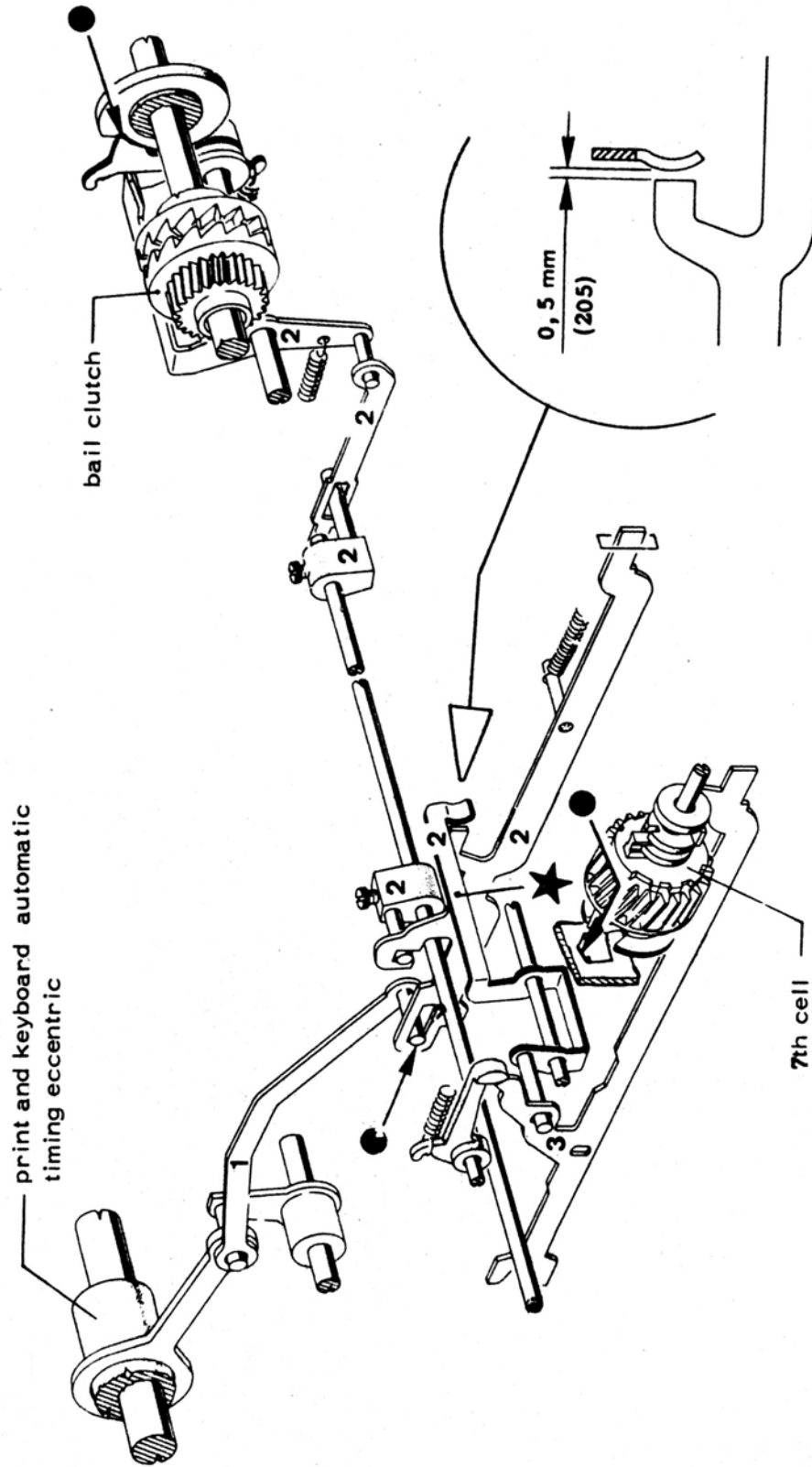
203) CHECK THE ANGULAR POSITION OF THE CRANK EXCLUDING THE AUTOMATIC TIMING BETWEEN "PRINT" AND "KEYBOARD"

204) CHECK THE AXIAL POSITION OF THE CRANK EXCLUDING THE AUTOMATIC TIMING BETWEEN "PRINT" AND "KEYBOARD"



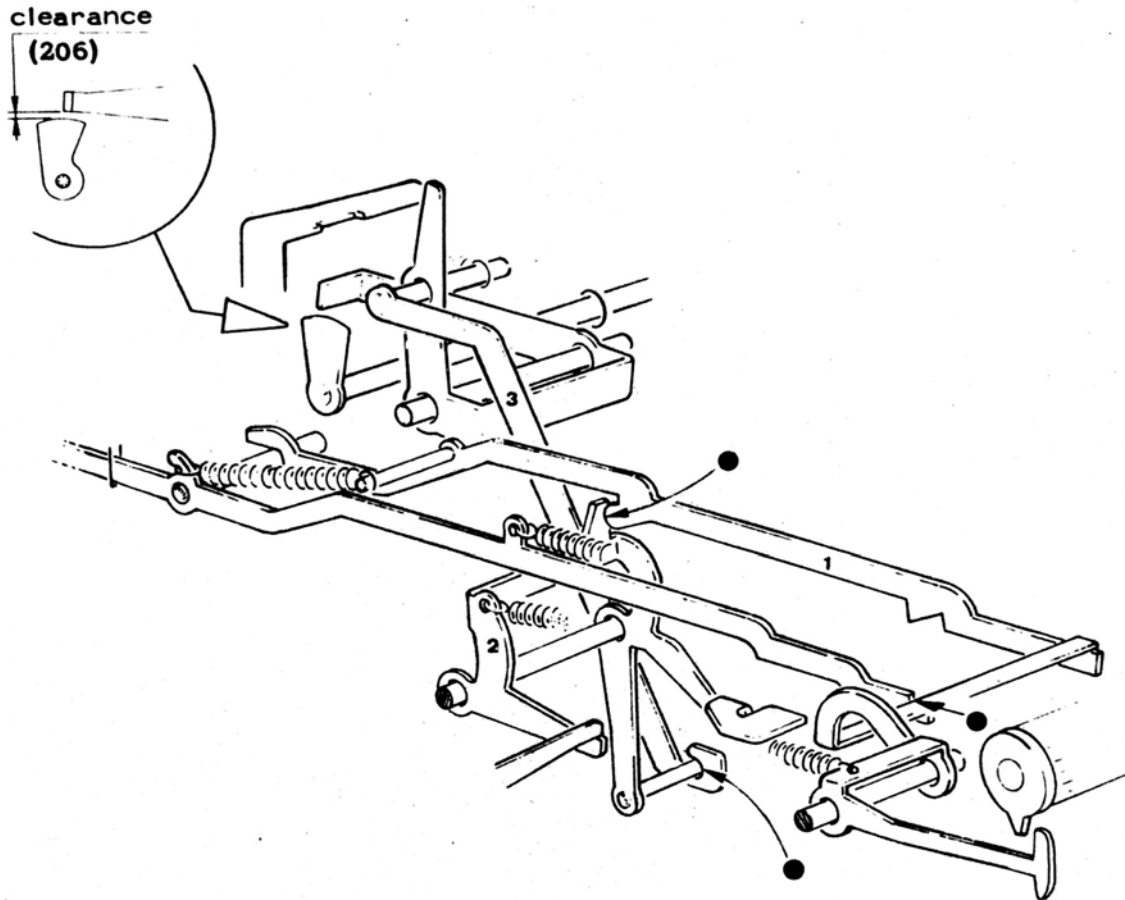
205) CHECK THE POSITION OF THE "AUTOMATIC CYCLE BRIDGE" IN THE AUTOMATIC
TIMING BETWEEN "PRINT AND KEYBOARD"

205



**206) CHECK THE POSITION OF THE BRIDGE ENABLING THE
AUTOMATIC TIMING BETWEEN "PRINT" AND "KEYBOARD"
WITH AUTOMATIC REPLY STARTED**

206

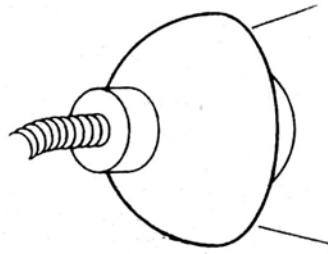


- EM/REC bar in reception
- start the automatic reply
- rotate the printing shaft to obtain the condition shown in figure.

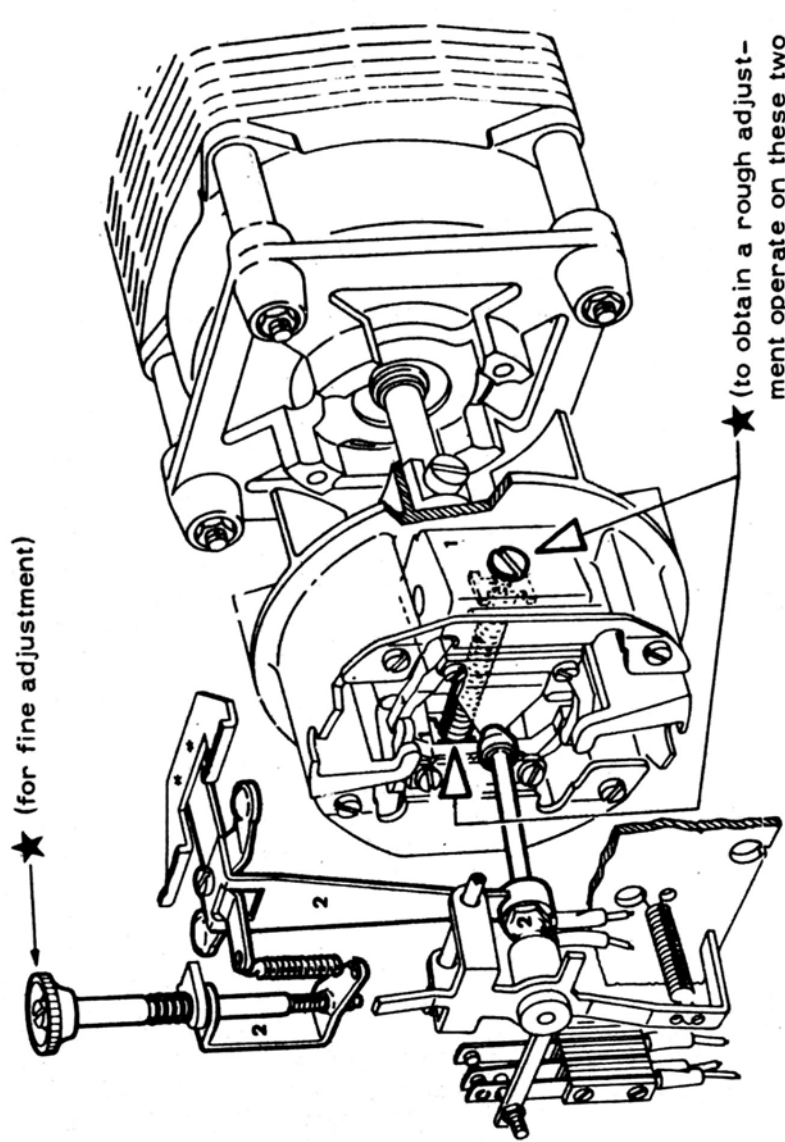
RECEPTION •

240) CHECK THE MOTOR SPEED

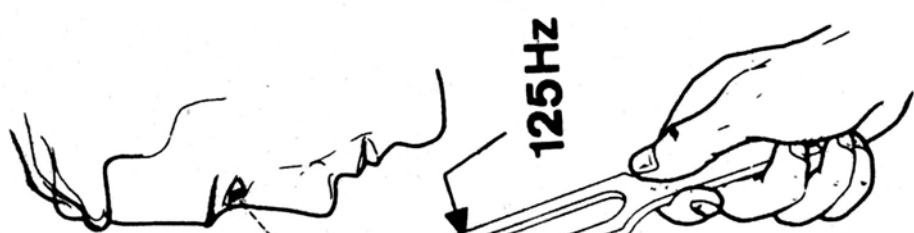
240



★ (for fine adjustment)



★ (to obtain a rough adjustment operate on these two screws when the motor is stopped. (Close them tightly then loosen them four turns)



50 baud

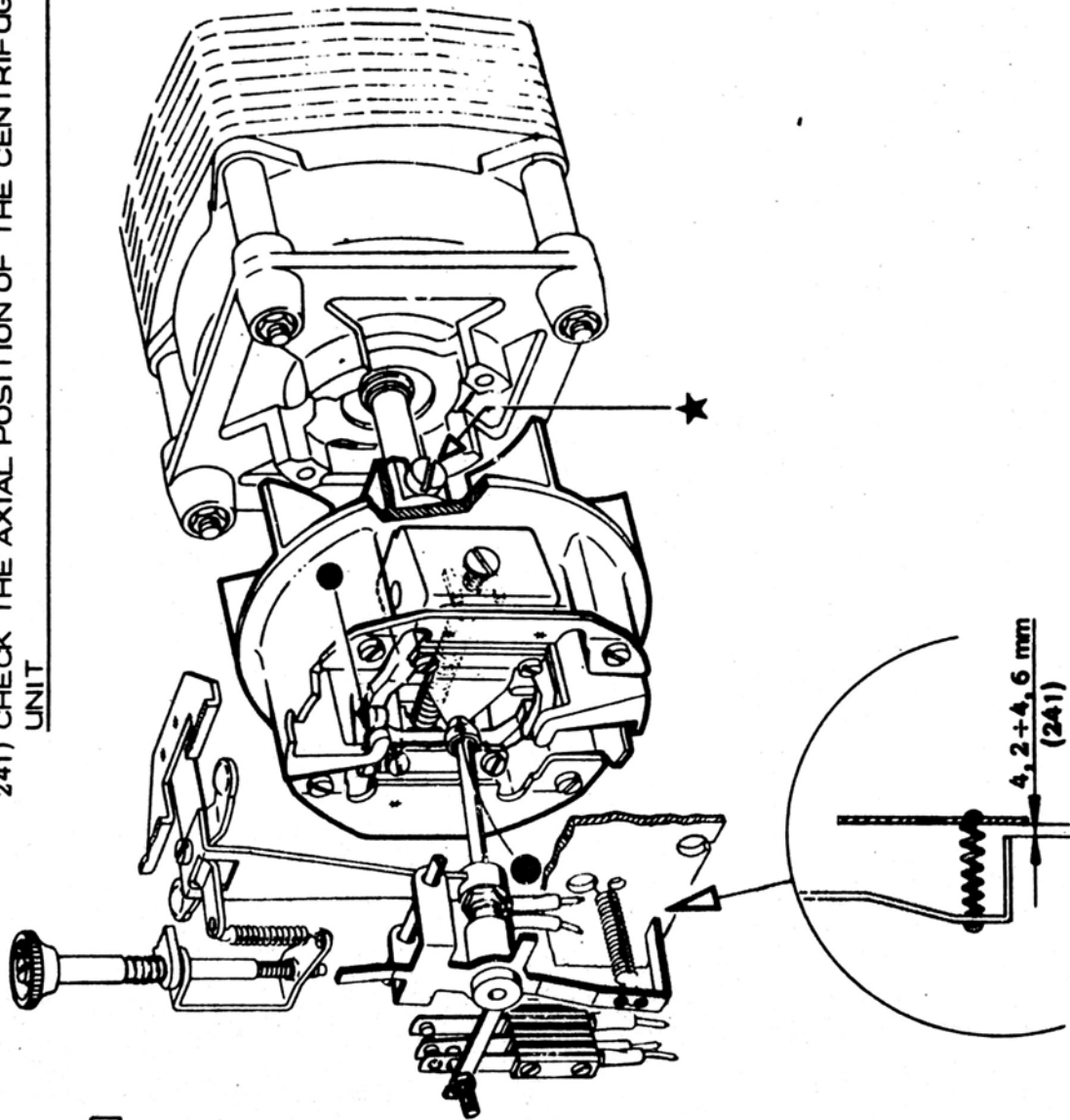
75 baud

125 Hz

check the speed
(240)

- machine started

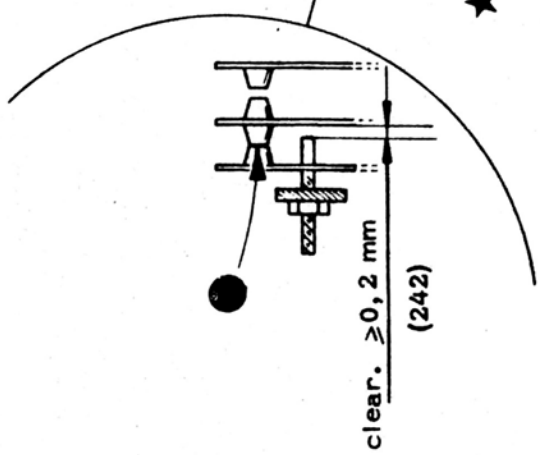
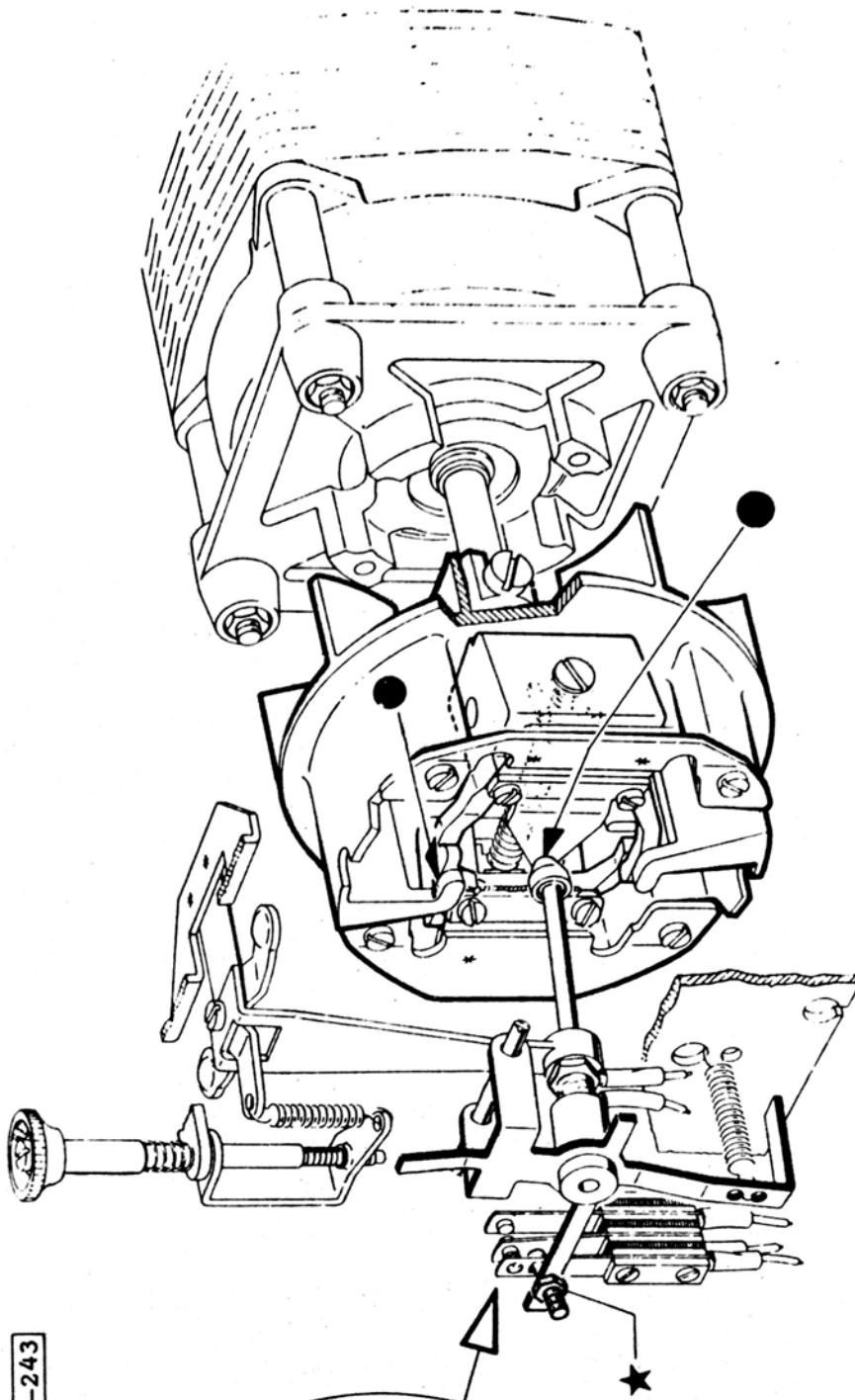
241) CHECK THE AXIAL POSITION OF THE CENTRIFUGAL WEIGHTS
UNIT



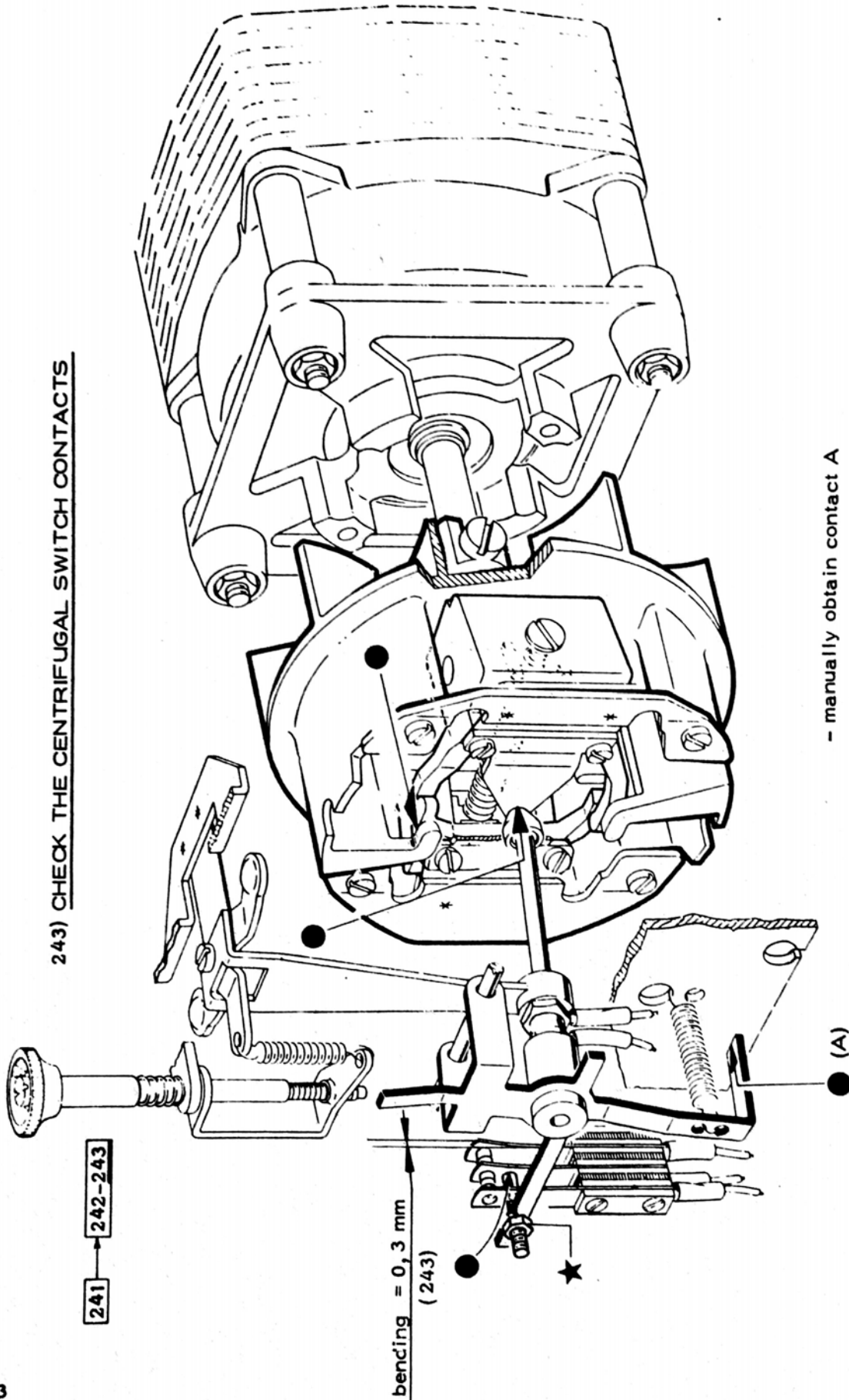
241 — 242-243

242) CHECK THE CENTRIFUGAL SWITCH CONTACTS

241 → 242-243

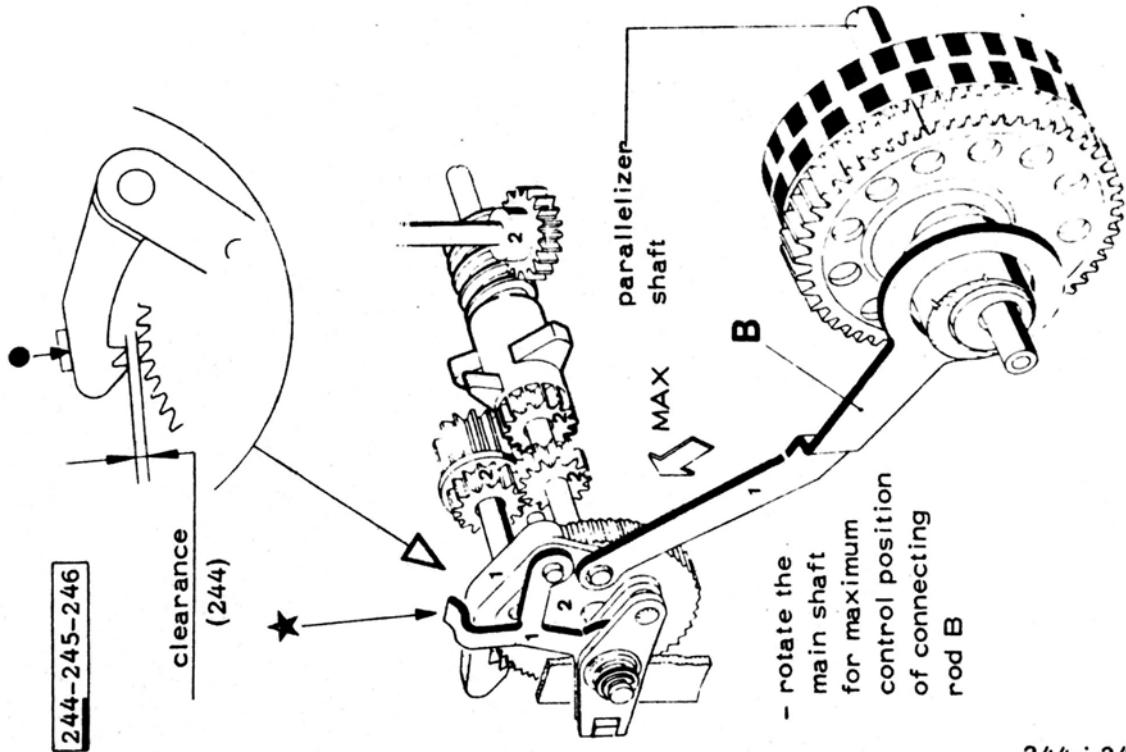


243) CHECK THE CENTRIFUGAL SWITCH CONTACTS

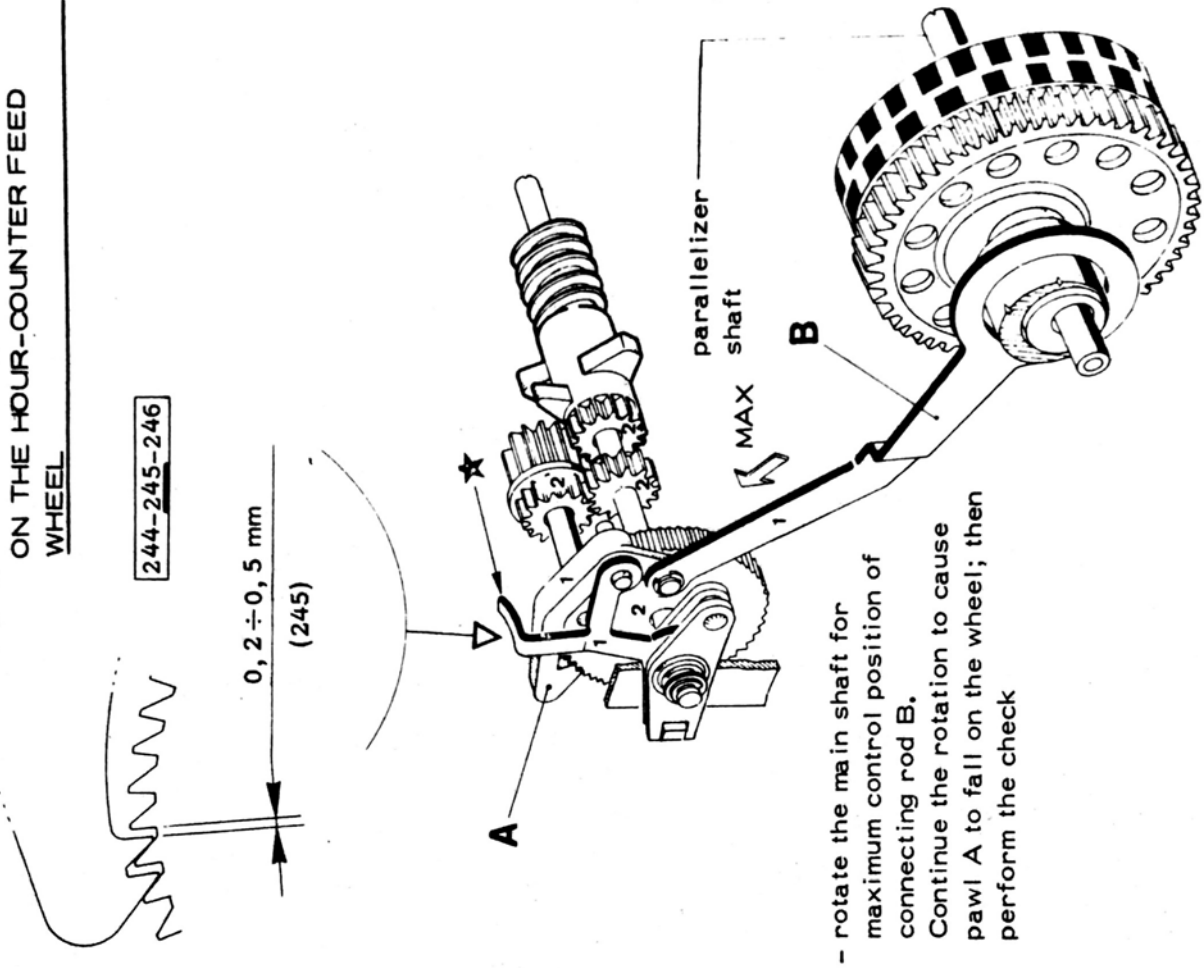


- manually obtain contact A

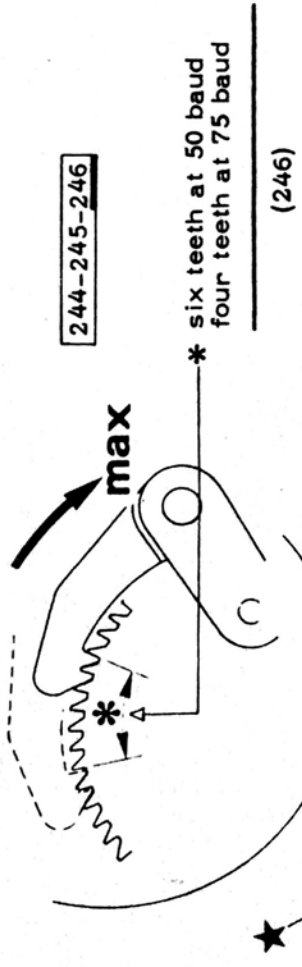
244) CHECK THE PASS-BY CLEARANCE BETWEEN WHEEL AND PAWL OF THE HOUR COUNTER



245) CHECK THE HOOKING OF THE PAWL ON THE HOUR-COUNTER FEED WHEEL



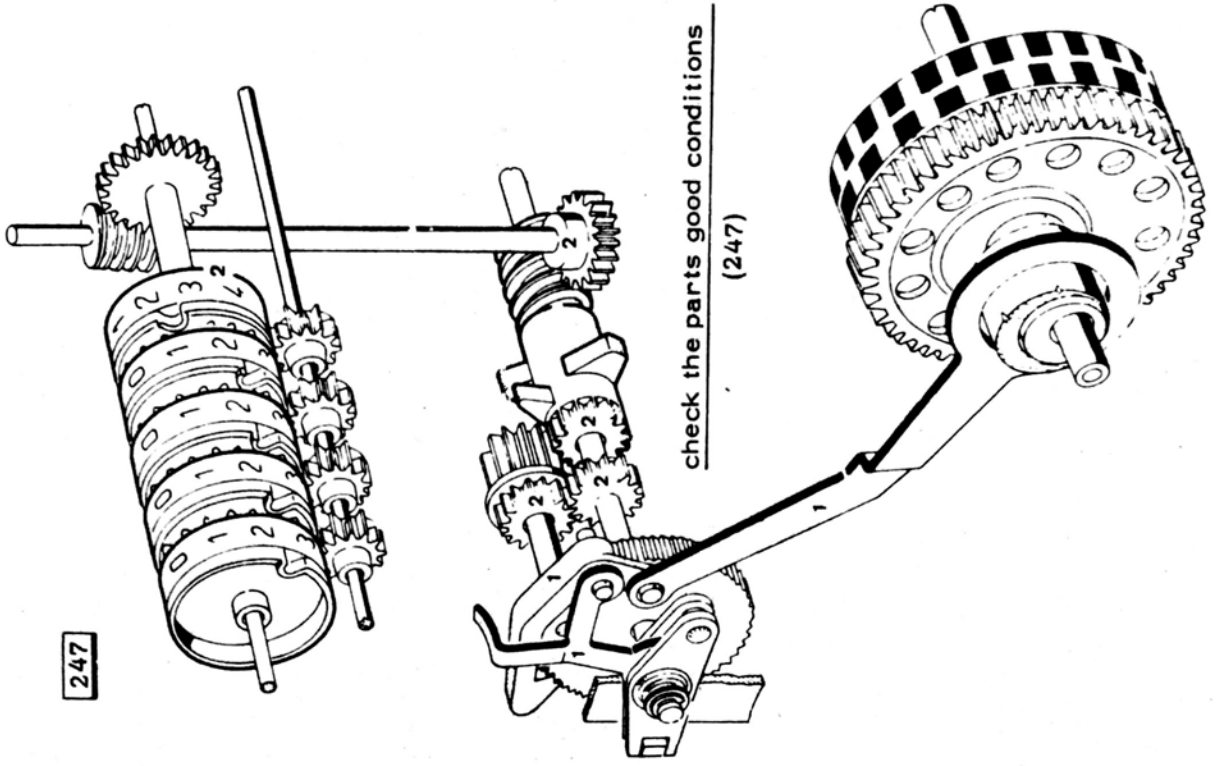
246) CHECK THE TRAVEL OF THE HOUR-COUNTER PAWL



244-245-246

246 - 247

247) CHECK THE HOUR-MARKER UNIT

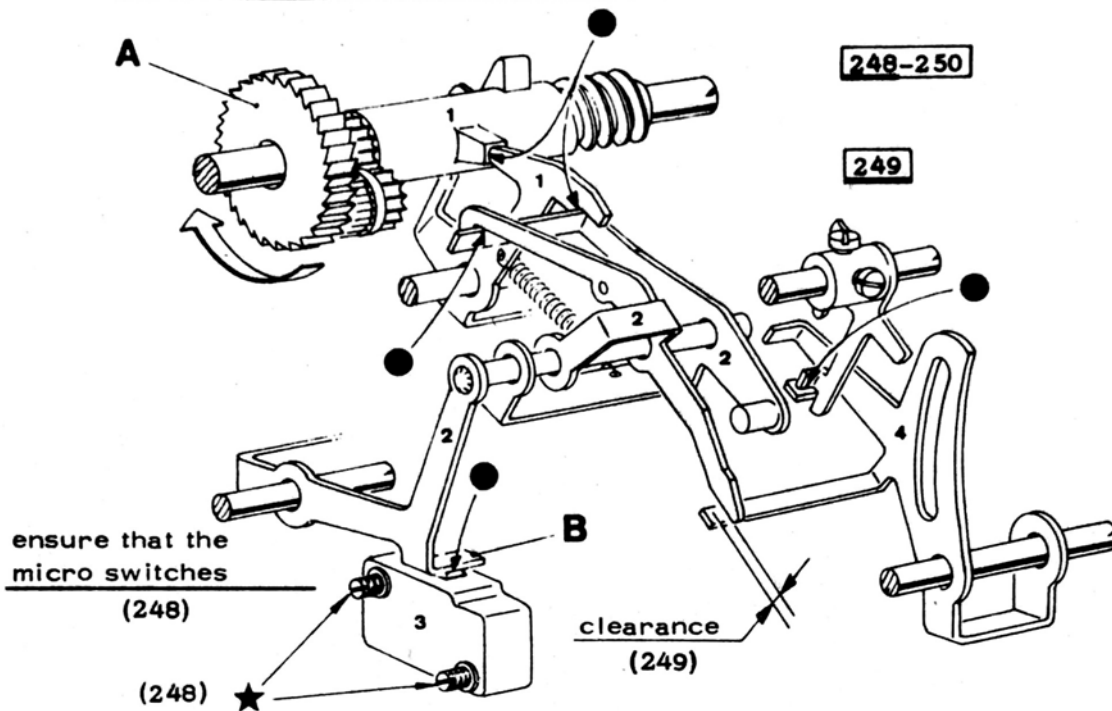


247

- rotate the main shaft until the pawl is hooked to the wheel
- check the condition during the return travel of the pawl

248) CHECK THE "OPEN" CIRCUIT POSITION OF THE "TIME SWITCH MICRO"

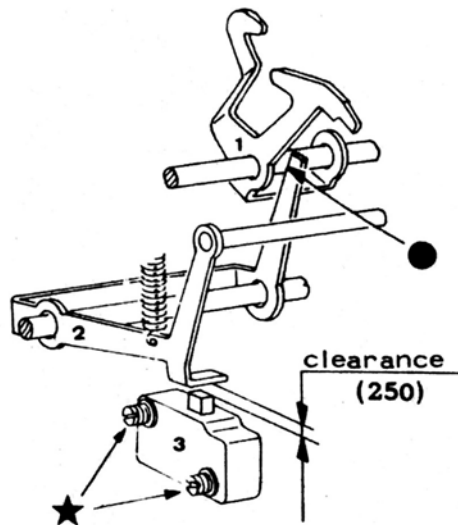
249) CHECK THE POSITION OF THE "TIME SWITCH MICRO RELEASE BRIDGE"



- rotate wheel A for a maximum downwards control of wing B

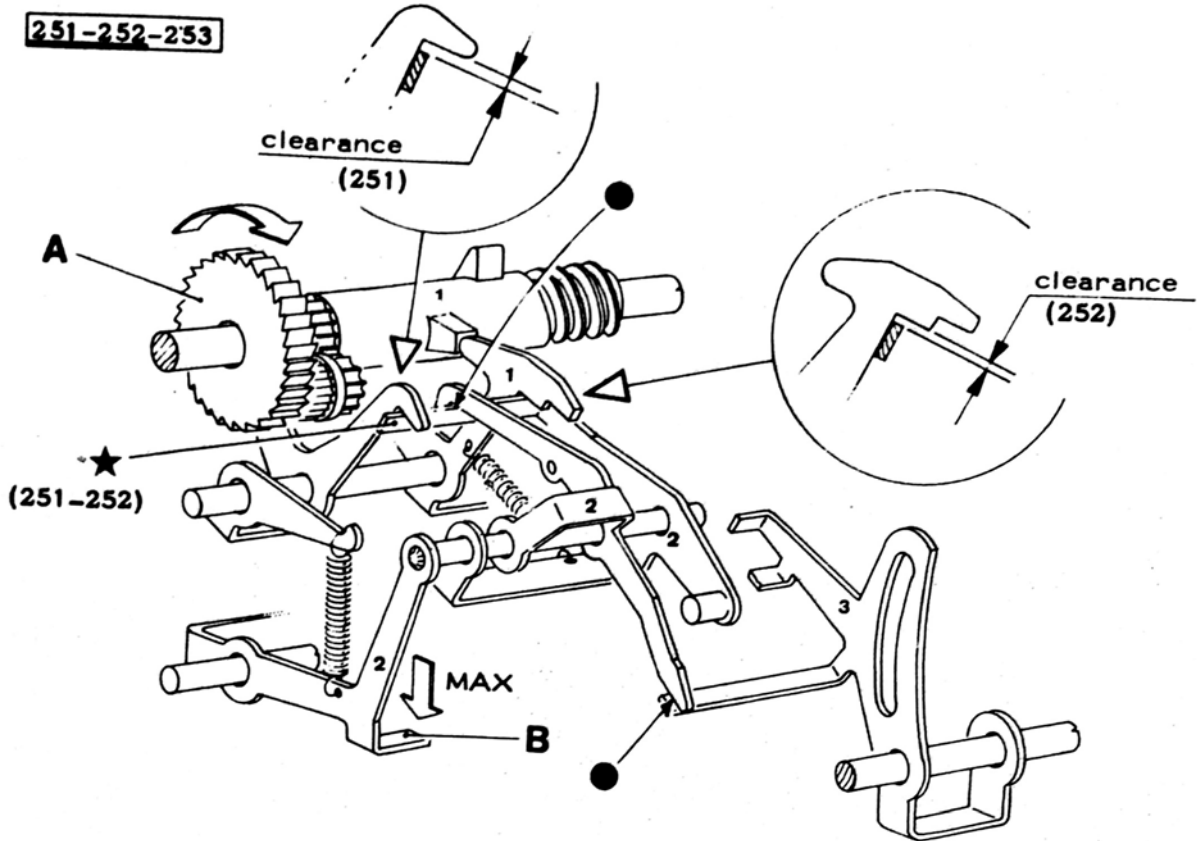
250) CHECK THE "CLOSED" CIRCUIT POSITION OF THE "TIME SWITCH MICRO"

248-250

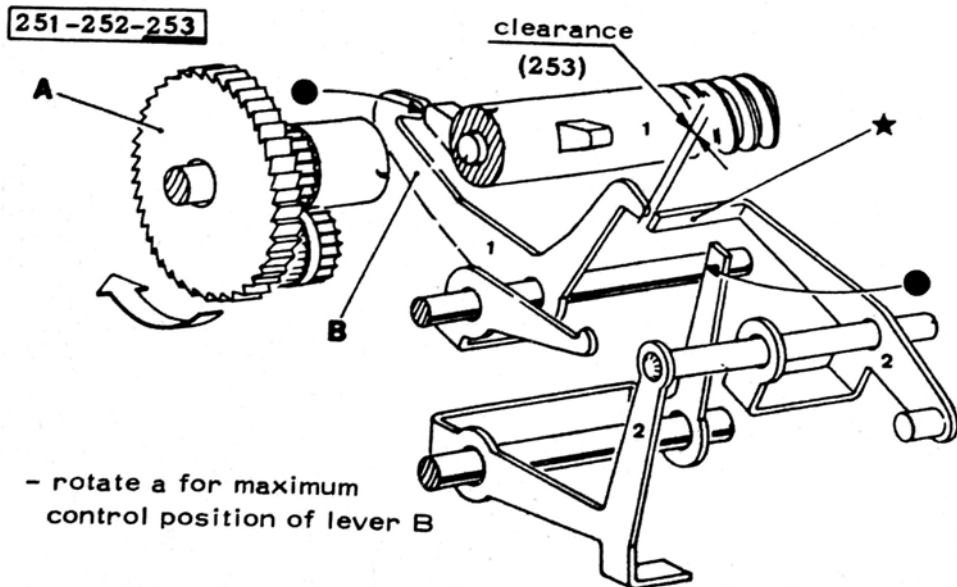


- manually release the parallelizer clutch

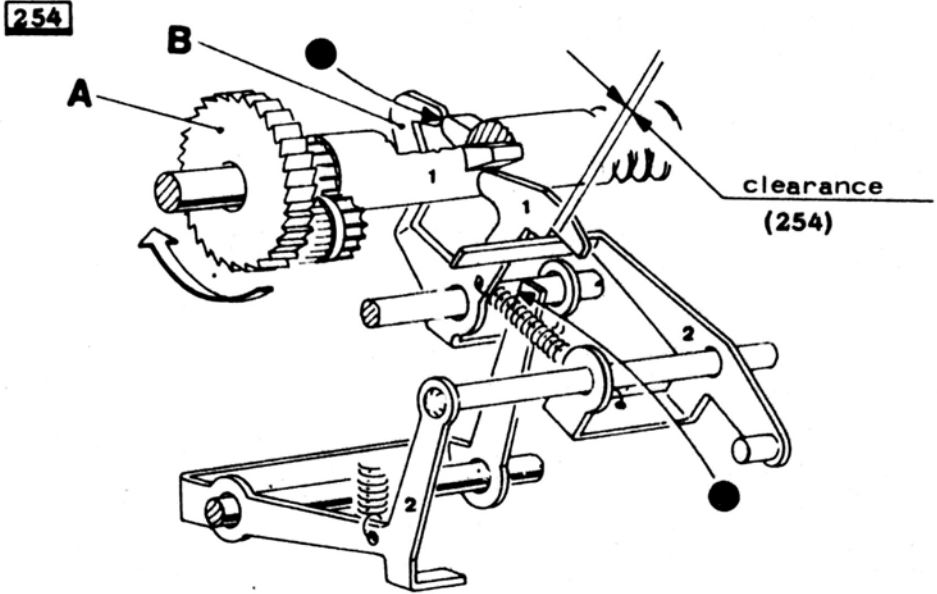
251-252) CHECK THE POSITION OF THE "TIME SWITCH MICRO RELEASE BRIDGE"



253) CHECK THE RELOADING OF THE PRESETTING LEVER

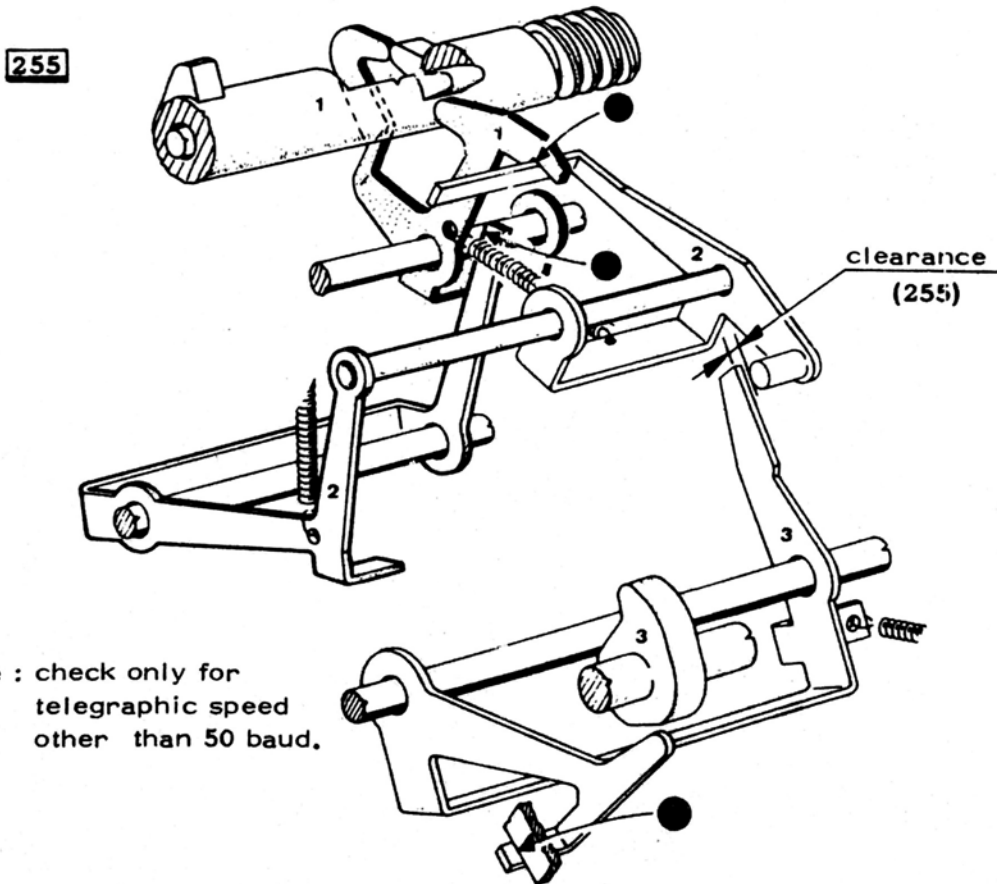


254) CHECK THE RELOAD OF THE EXCLUSION LEVER



- rotate wheel A for maximum control position of lever B

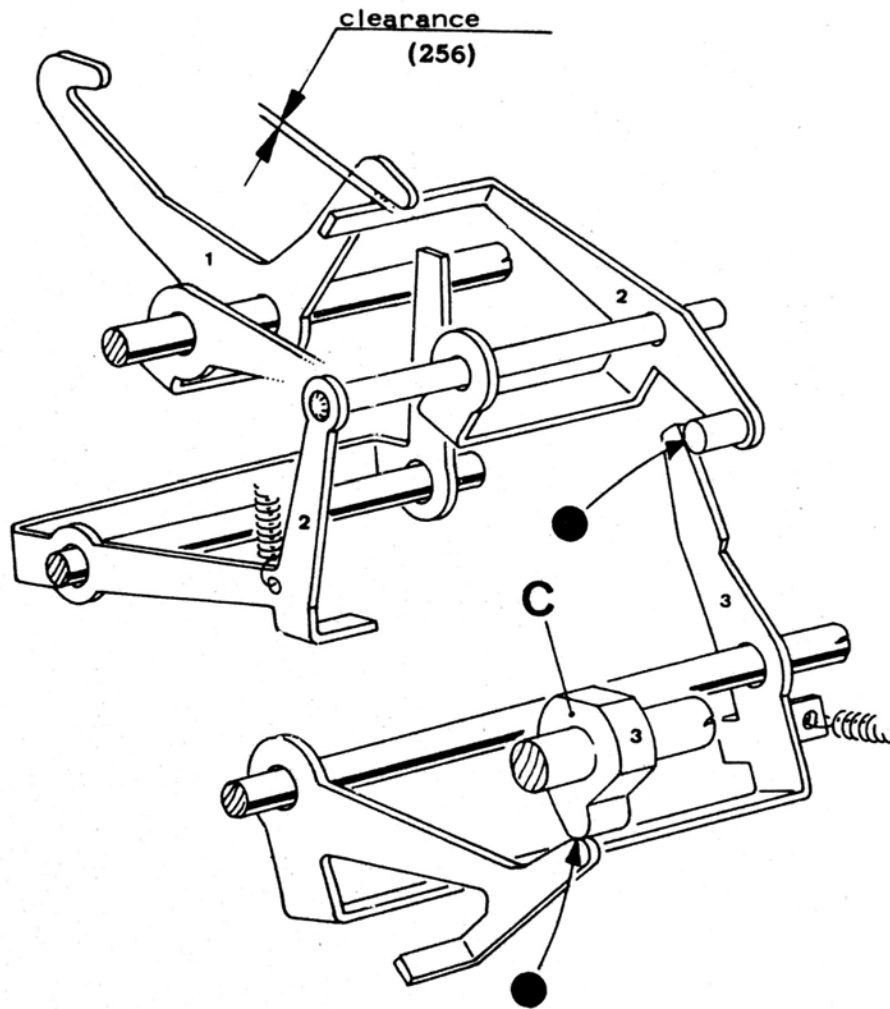
255) CHECK THE REST POSITION OF THE "CLEARING" BRIDGE



Note : check only for telegraphic speed other than 50 baud.

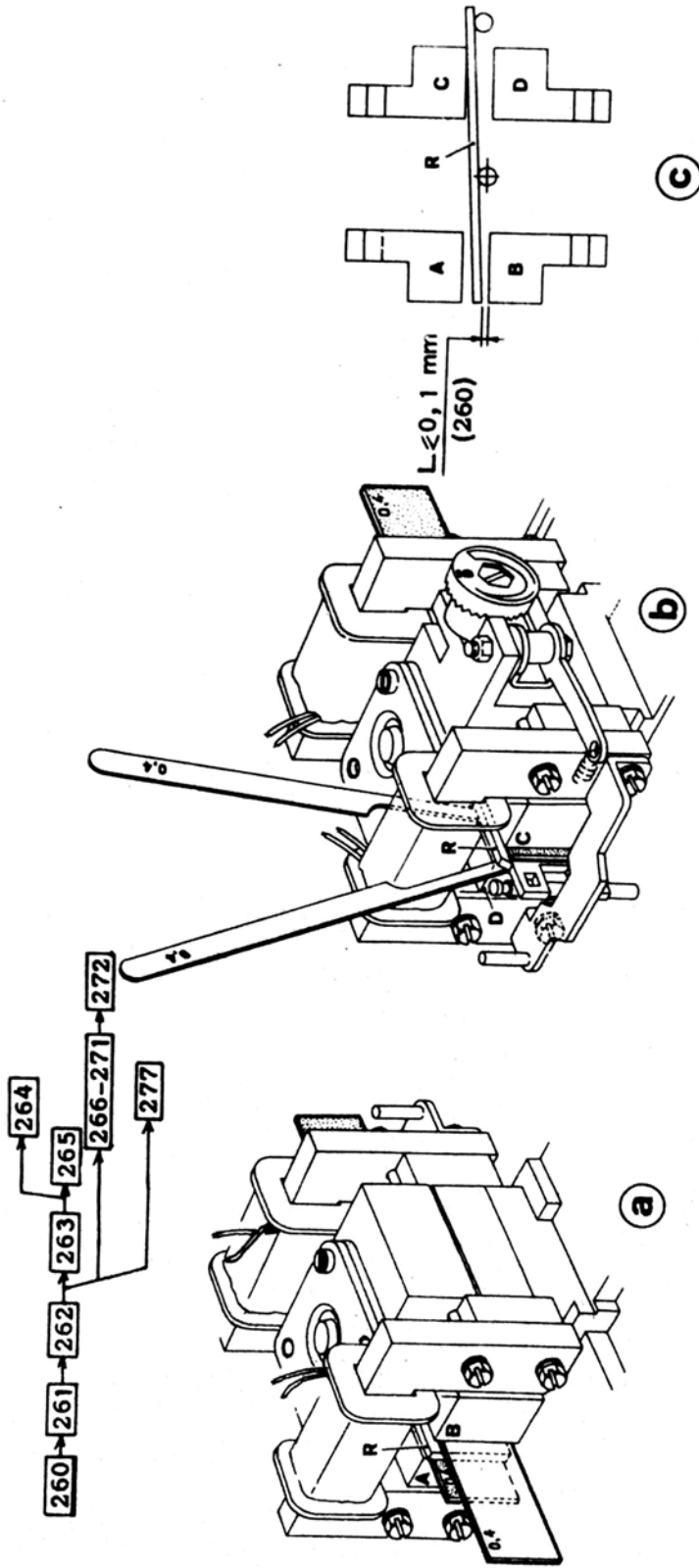
256) CHECK THE WORK POSITION OF THE CLEARING BRIDGE

256



- start a parallelizer cycle
- rotate the main shaft for cam C maximum control position

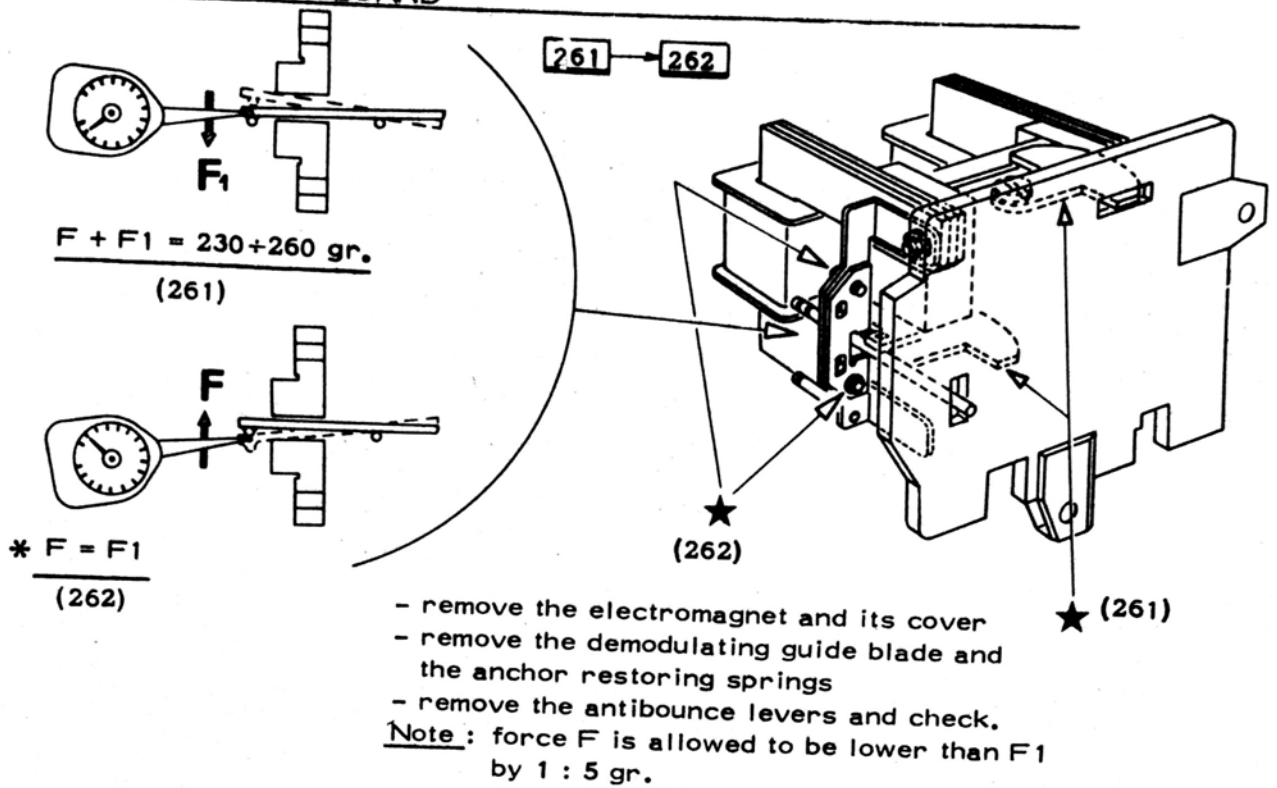
260) CHECK THE ELECTROMAGNET AIR GAPS



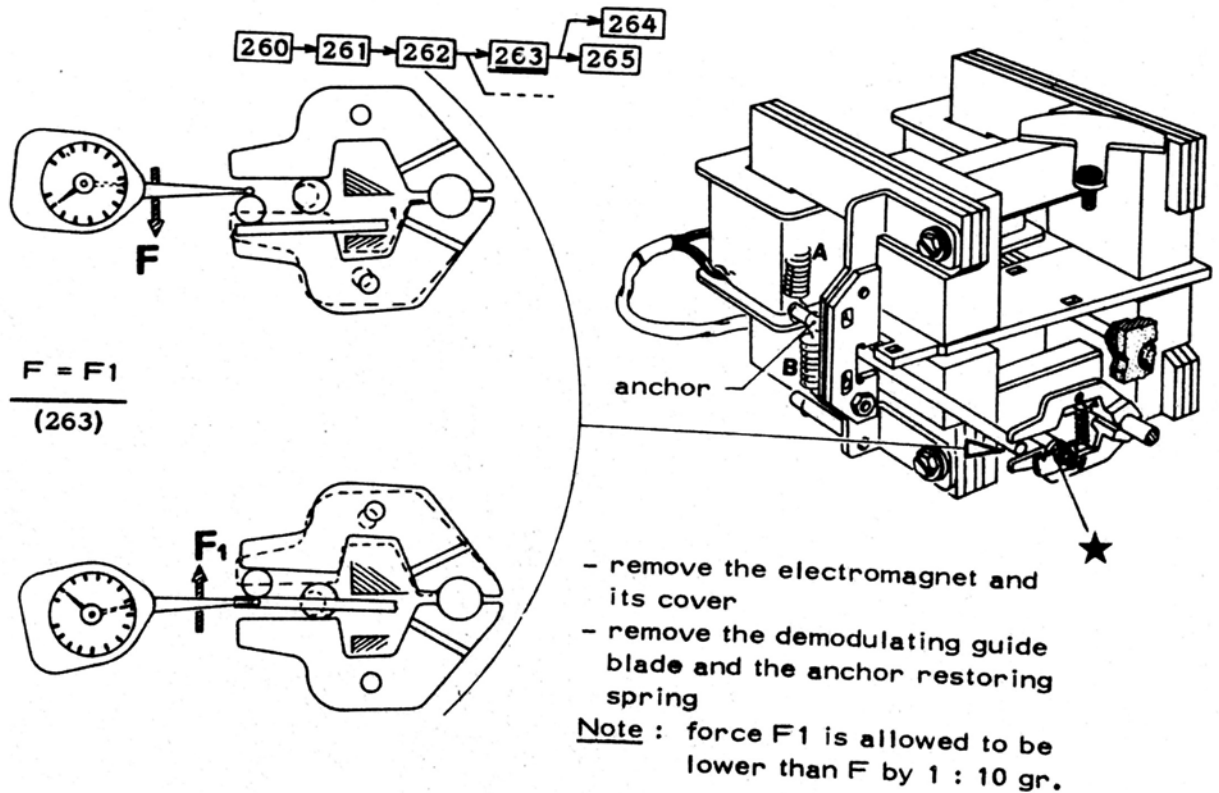
- to establish the value of the air gaps it is necessary to remove: the electromagnet and its cover - the anchor restoring springs - the magnetic flow deviation boards and the permanent magnets and the antibounce levers - the anchor stop board.

The equality of the air gaps is obtained by inserting the 4 0.4 mm feelers between anchor R and pole shoes A-B-C-D, as shown in figures a and b; fasten the pole shoes by pressing them against the feelers. Without the feelers, check that the anchor stops simultaneously on shoes B and C; if it stops on only one of these, clearance L, for not more than 0.1 mm (fig. c) is allowed between the anchor and the shoe on which the stop does not occur. The same check is made moving the anchor on shoes A and D.

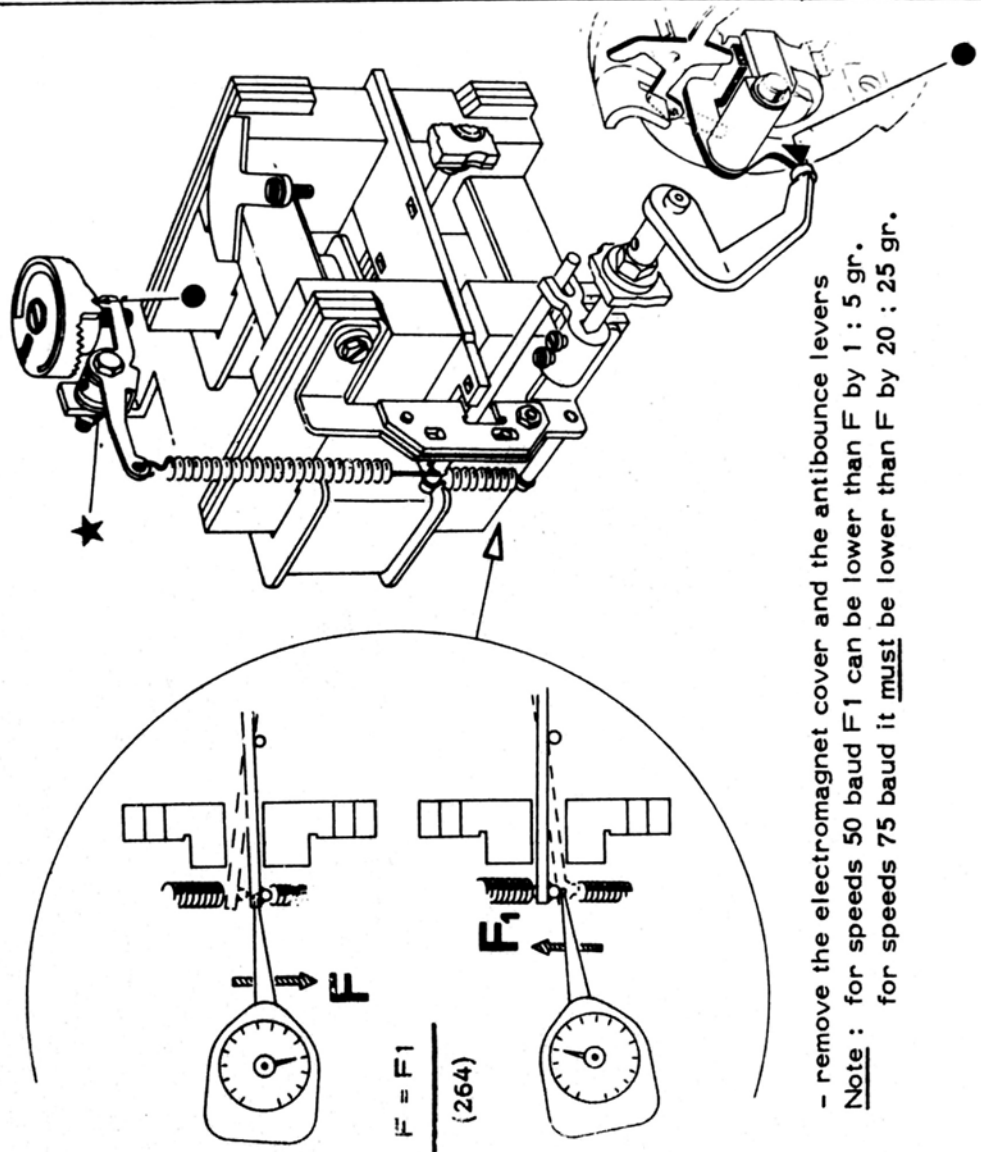
- 261) CHECK THE POSITION OF THE SHUNT
 262) CHECK THE POSITION OF THE ELECTROMAGNET ANCHOR STOPPING BOARD



263) CHECK THE ANTIBOUNCE LEVERS

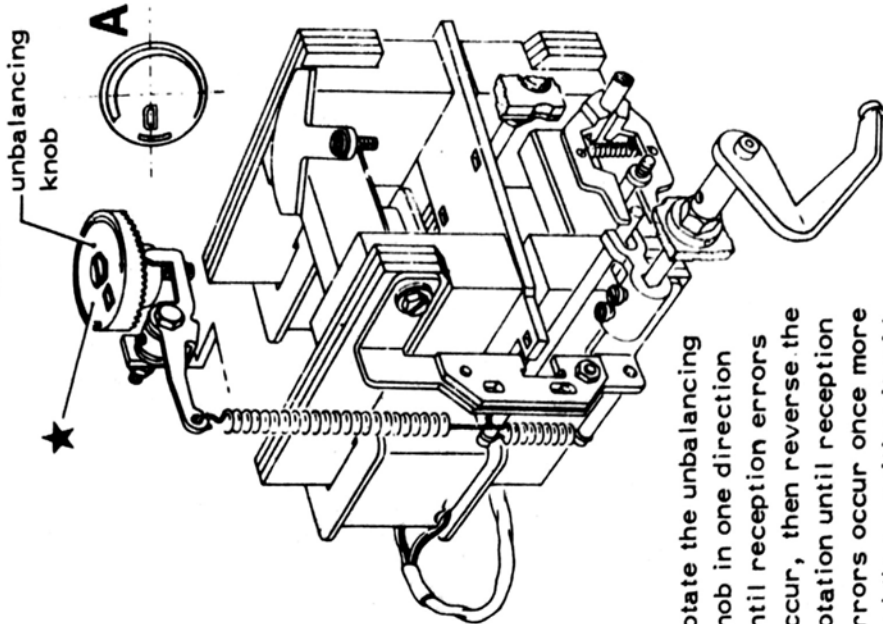


264) CHECK THE BALANCING OF THE ELECTROMAGNET (IN C.D.)



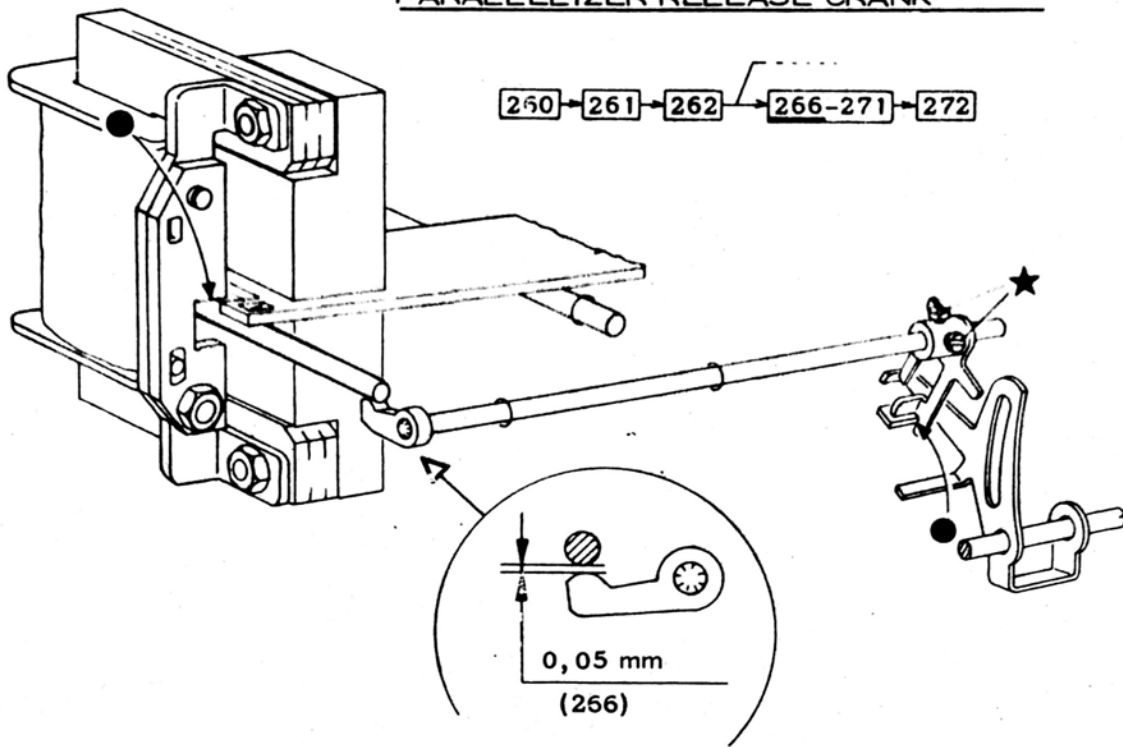
- remove the electromagnet cover and the antibounce levers
 Note : for speeds 50 baud F1 can be lower than F by 1 : 5 gr.
 for speeds 75 baud it must be lower than F by 20 : 25 gr.

265) CHECK THE UNBALANCING OF THE ELECTROMAGNET (IN S.C.)

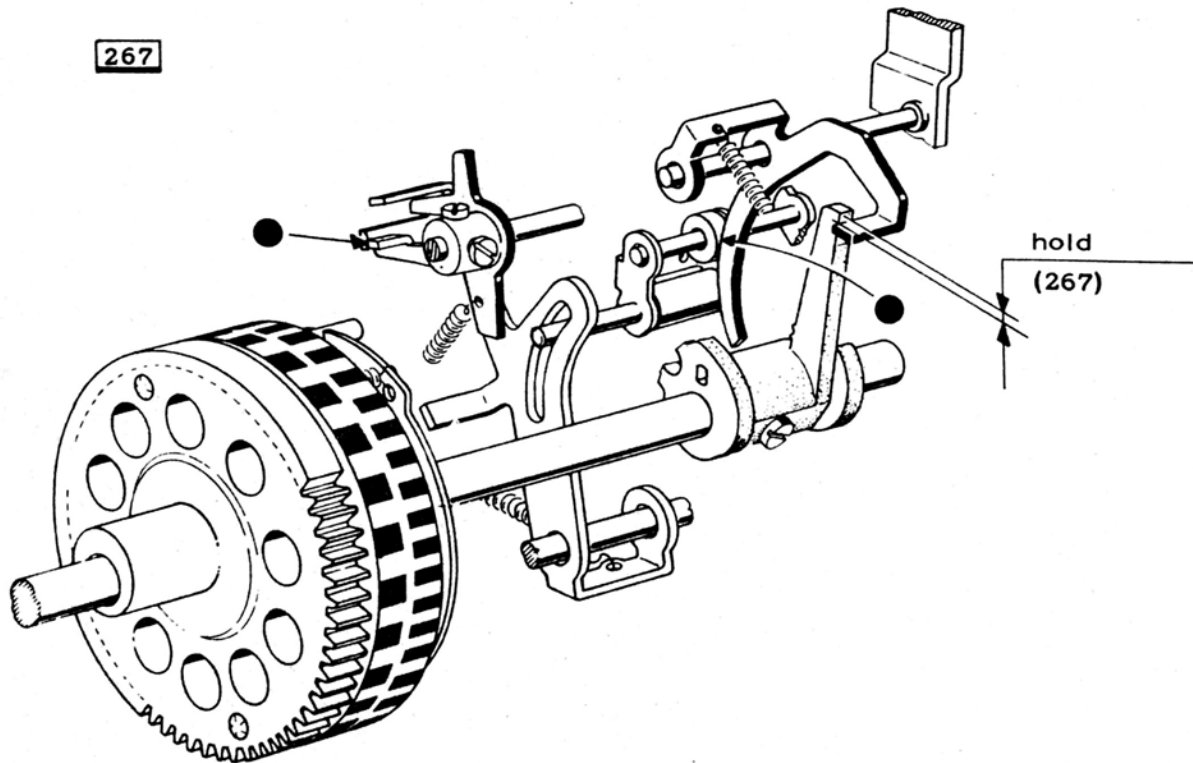


- rotate the unbalancing knob in one direction until reception errors occur, then reverse the rotation until reception errors occur once more and then position it midway between the established ranges

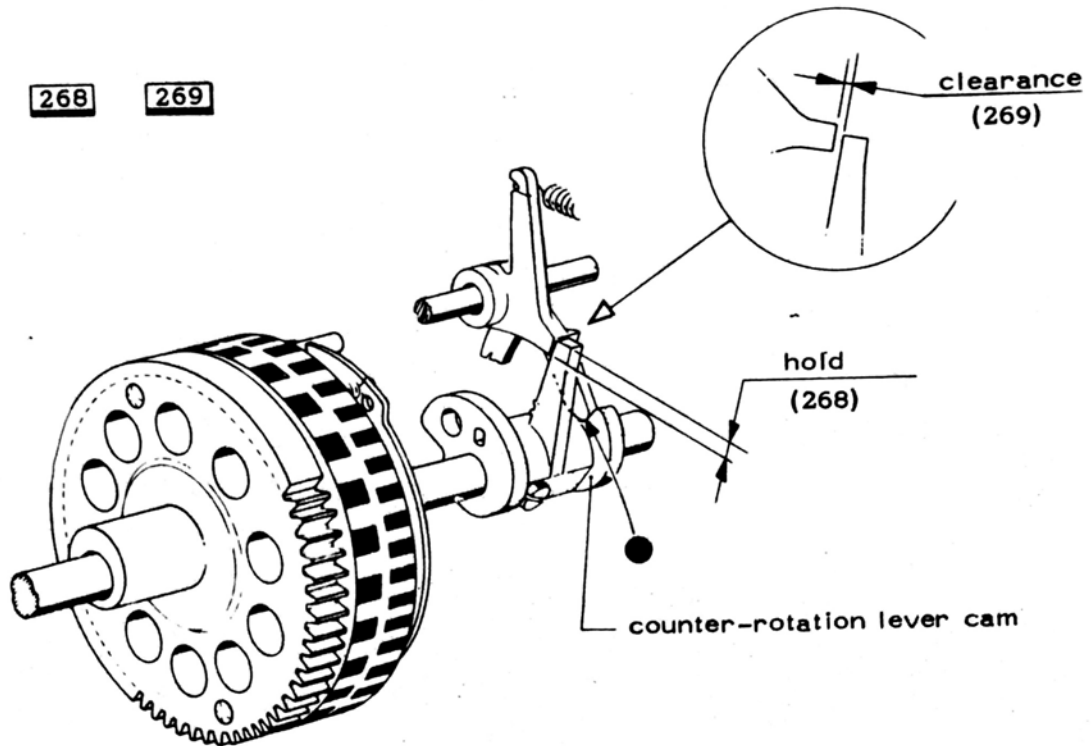
266) CHECK ON THE REST POSITION OF THE
PARALLELIZER RELEASE CRANK



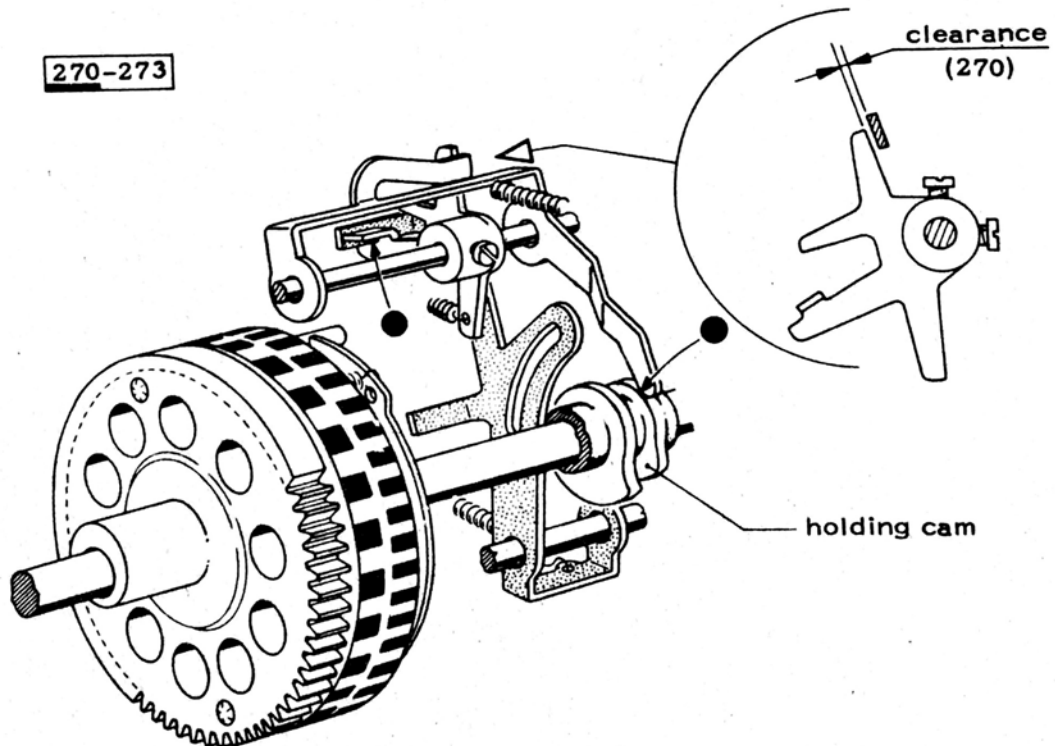
267) CHECK ON THE REST POSITION OF THE PARALLELIZER STOP
LEVER



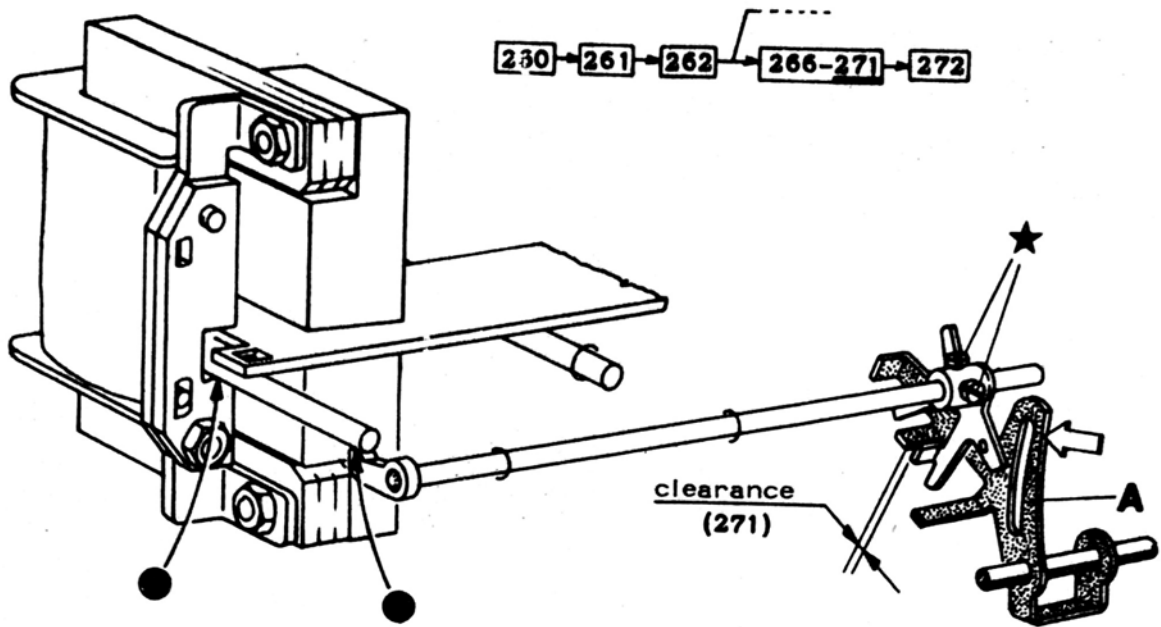
268-269) CHECK THE POSITION OF THE PARALLELIZER COUNTER
ROTATION LEVER



270) CHECK THE REST POSITION OF THE "PARALLELIZER HOLDING
BRIDGE"

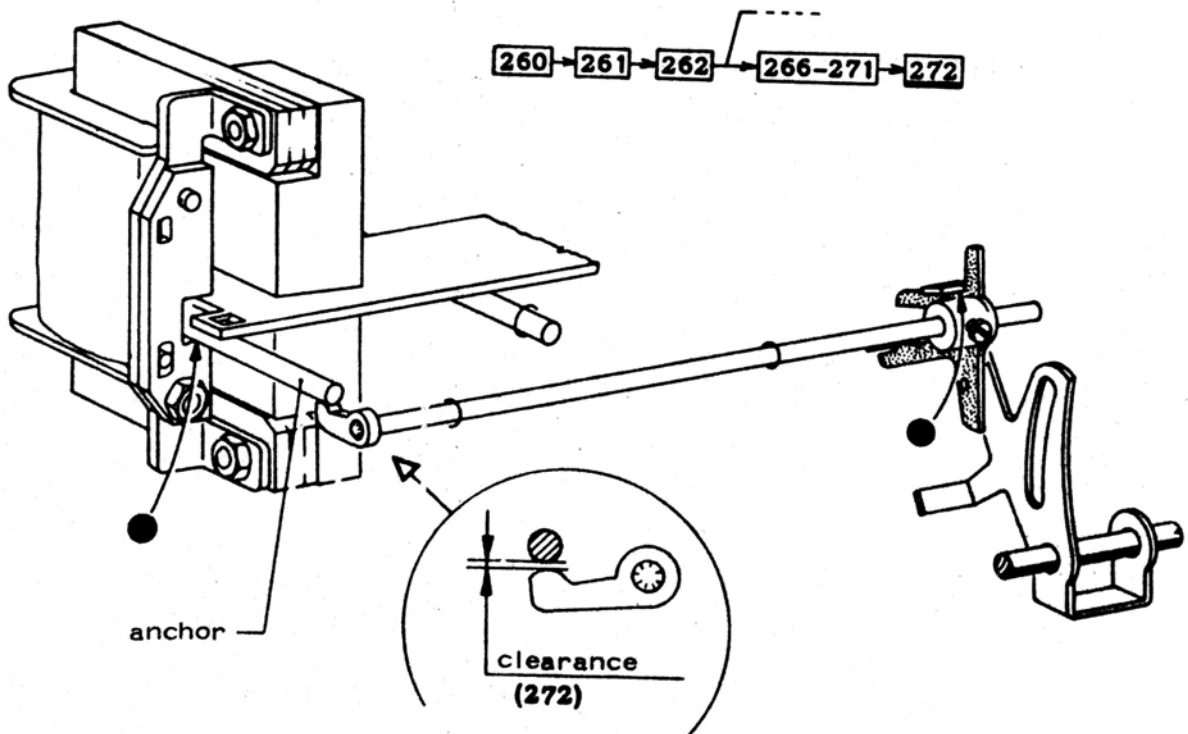


271) CHECK THE WORK POSITION OF THE PARALLELIZER
RELEASE CRANK



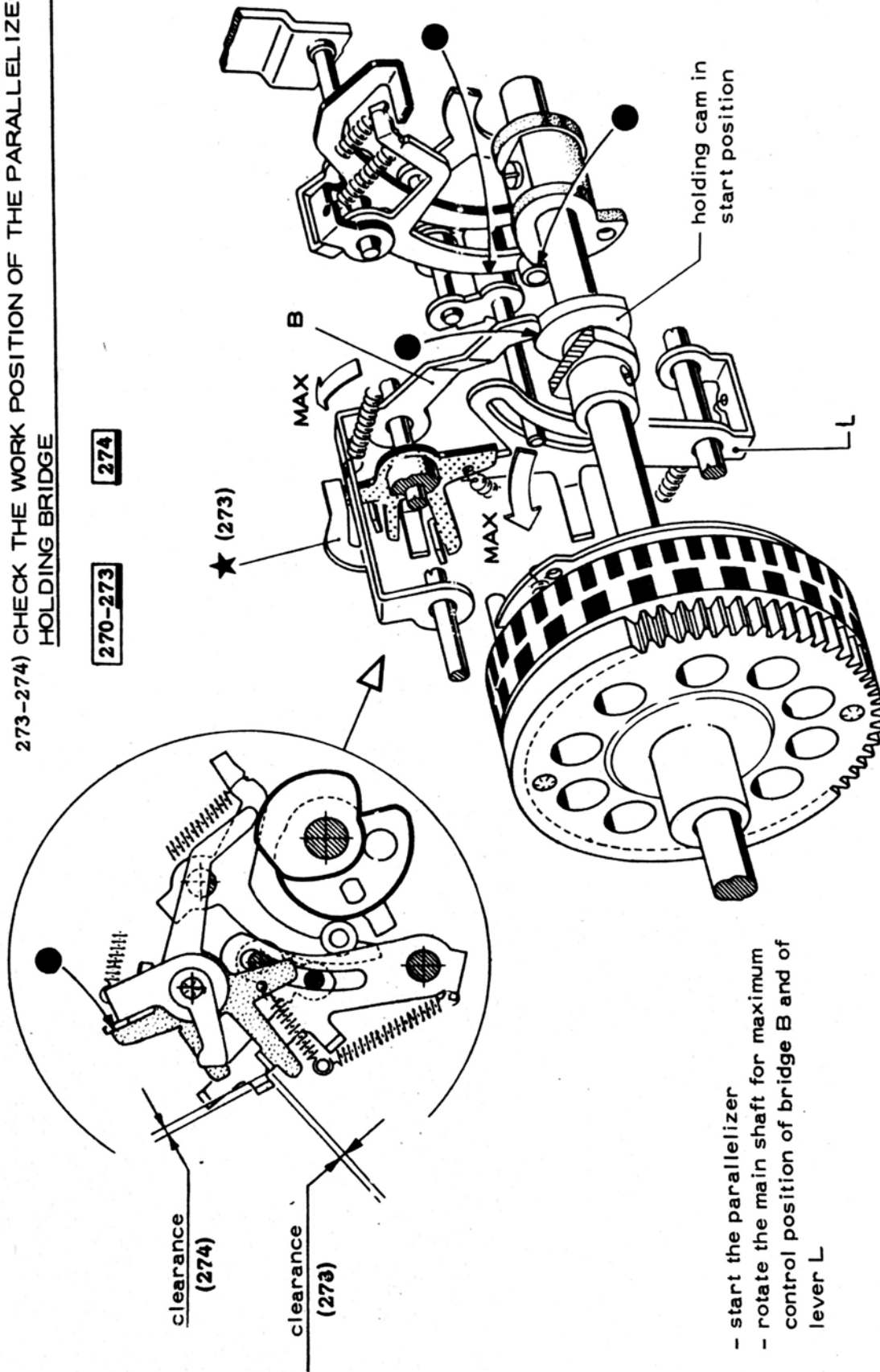
- holding lever A as shown, obtain the supports and check

272) CHECK THE POSITION OF THE RELEASE CRANK WITH
PARALLELIZER STARTED



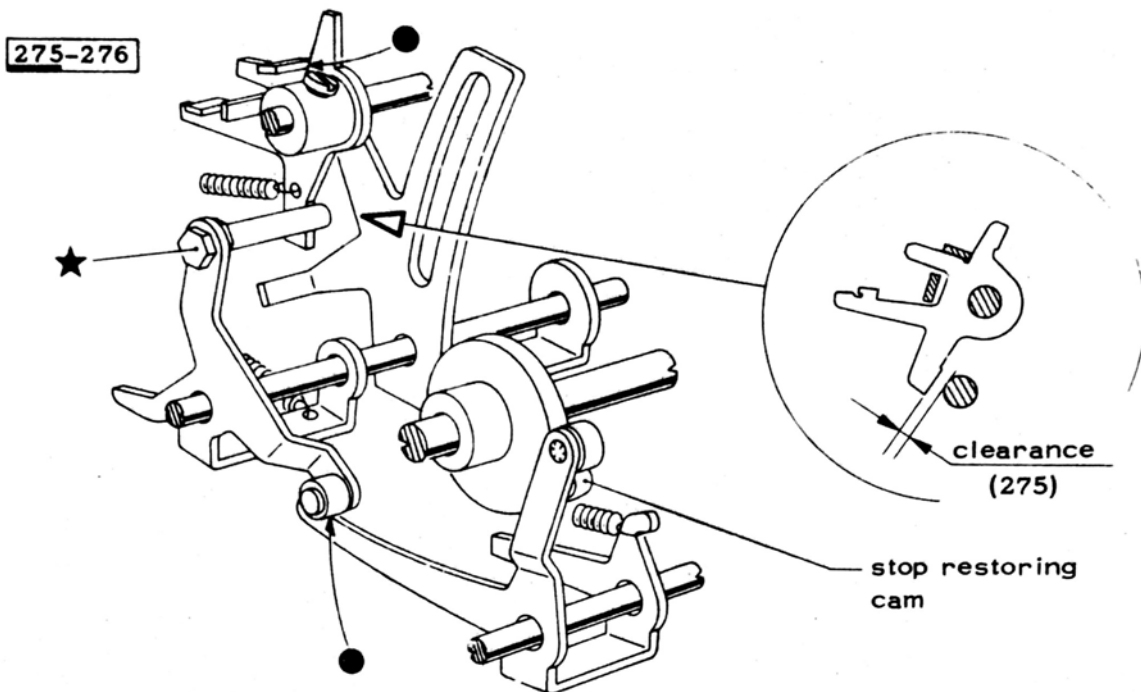
- start the parallelizer
- move the anchor on the indicate support

273-274) CHECK THE WORK POSITION OF THE PARALLELIZER
HOLDING BRIDGE



- start the parallelizer
- rotate the main shaft for maximum control position of bridge B and of lever L

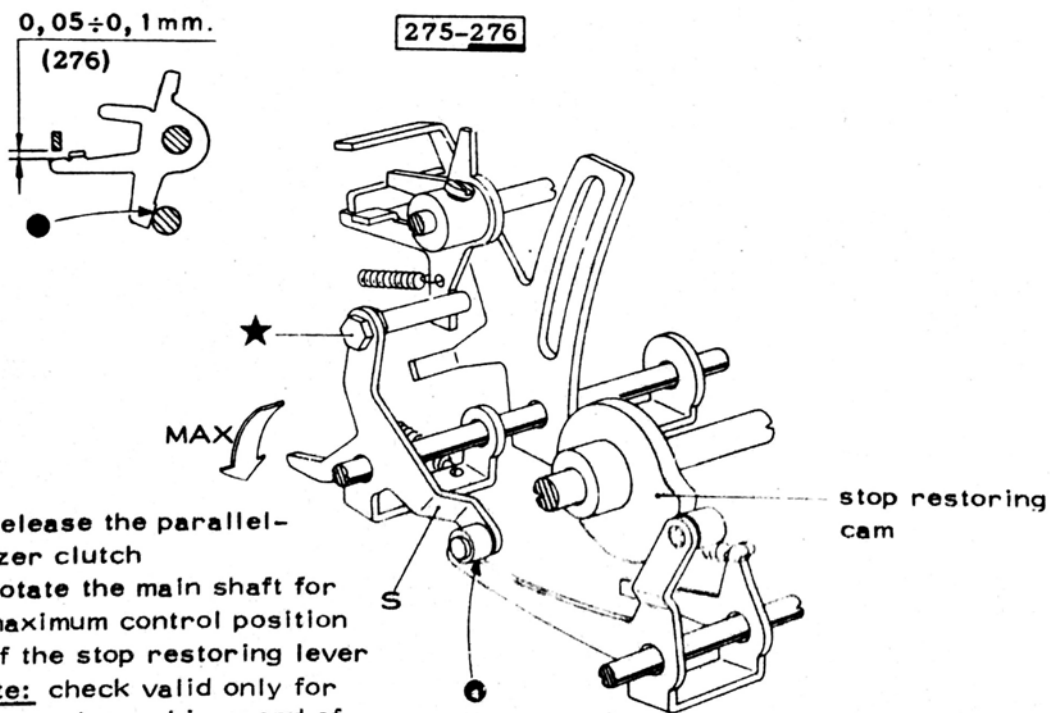
275) CHECK THE REST POSITION OF THE "STOP RESTORING LEVER"



- release the parallelizer clutch

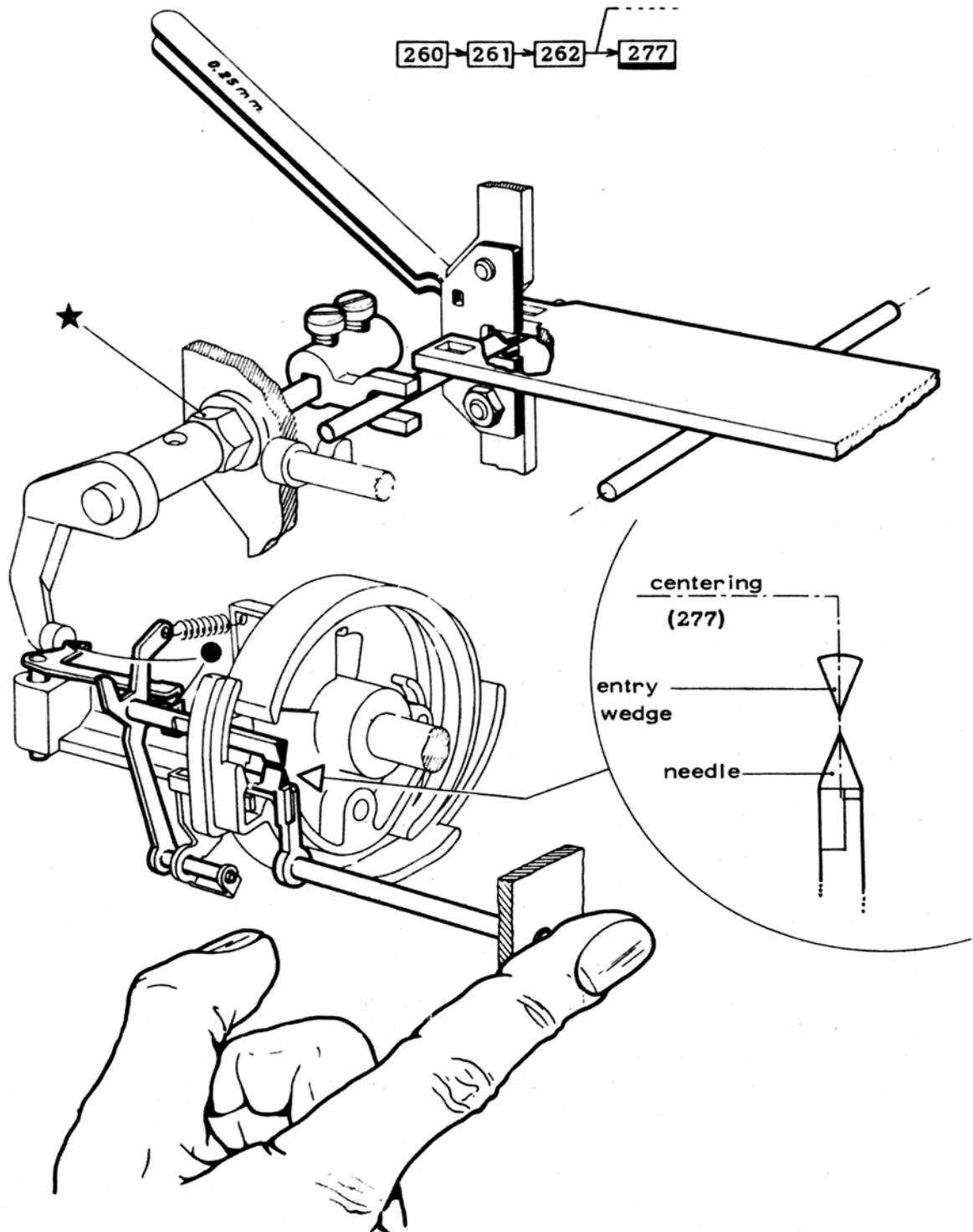
Note: check is valid only for telegraphic speeds of 75 bauds

276) CHECK THE WORK POSITION OF THE "STOP RESTORING LEVER"



- release the parallelizer clutch
 - rotate the main shaft for maximum control position of the stop restoring lever
Note: check valid only for telegraphic speed of 75 baud

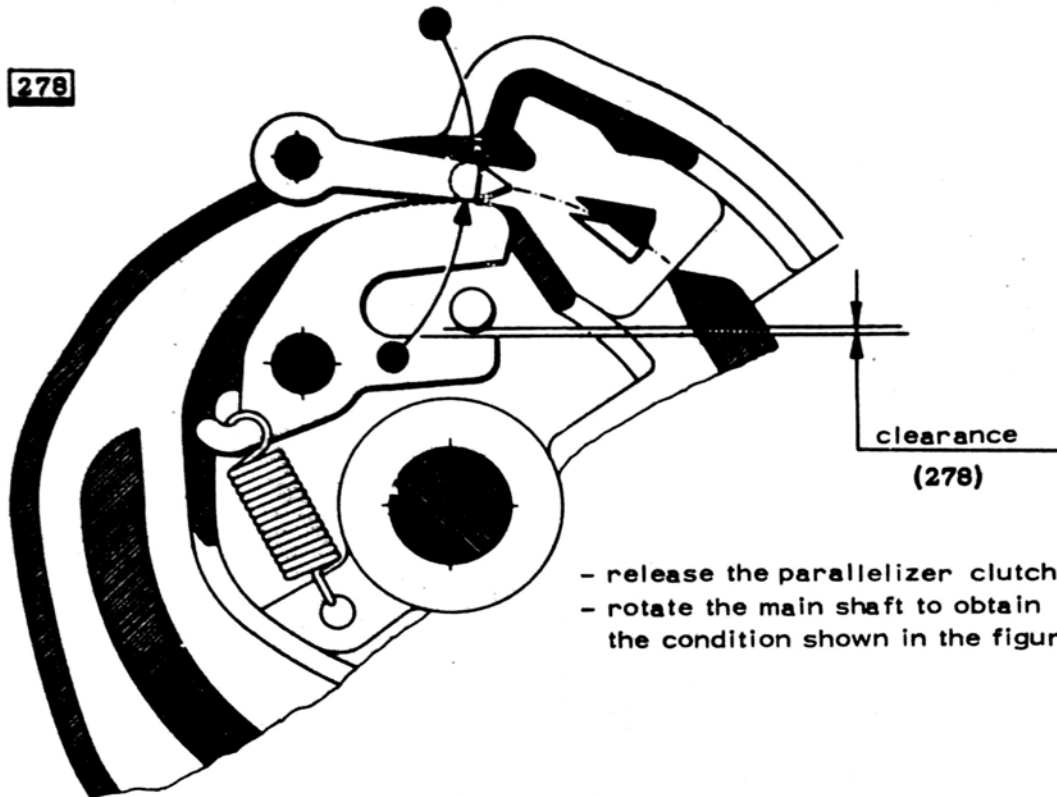
277) CHECK THE POSITION OF THE ENTRY WEDGE



- release the parallelizer clutch
- insert the feelers as shown in figure (0.25 mm)
- rub the needle shaft (to maintain the angular position given by the conveyor disc) and rotate the main shaft to place the needle in contact with the entry wedge. Check in this condition.

278) CHECK THE DAMPER BOARD

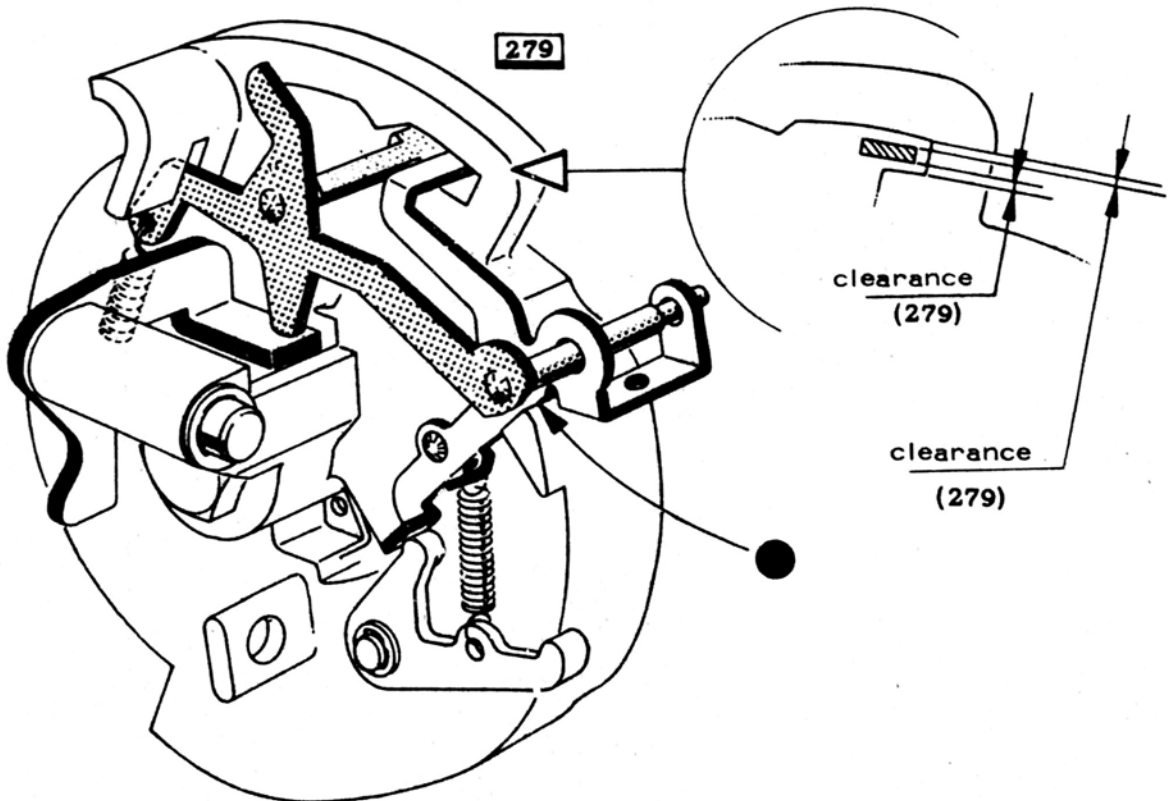
278



- release the parallelizer clutch
- rotate the main shaft to obtain the condition shown in the figure

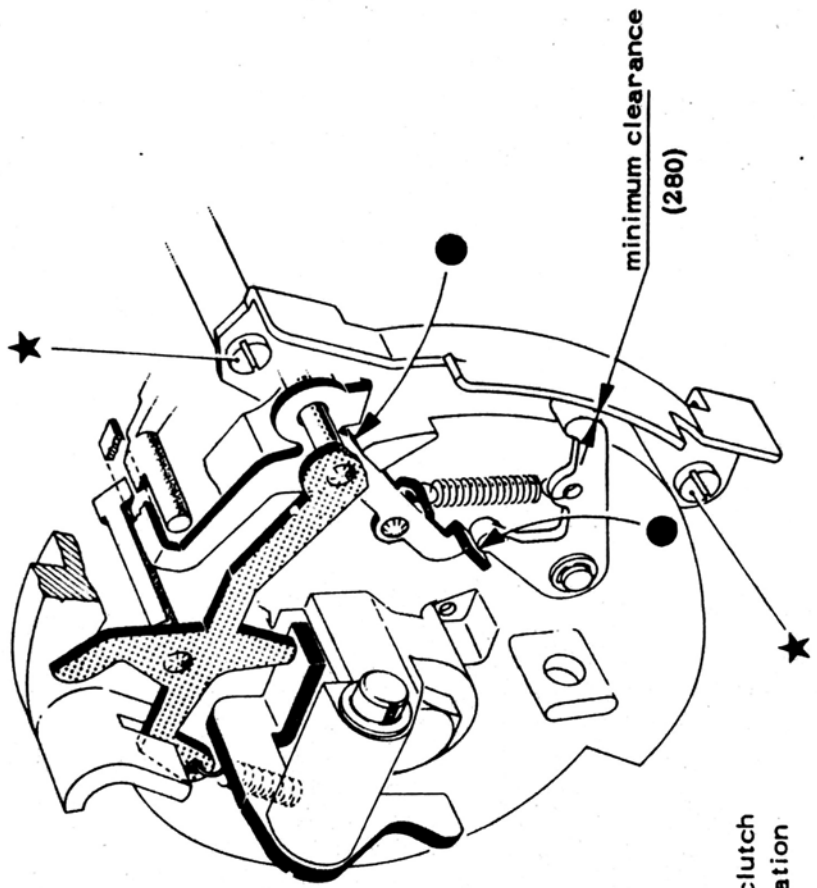
279) CHECK THE POSITION OF THE UNLOCKING MECHANISM

279



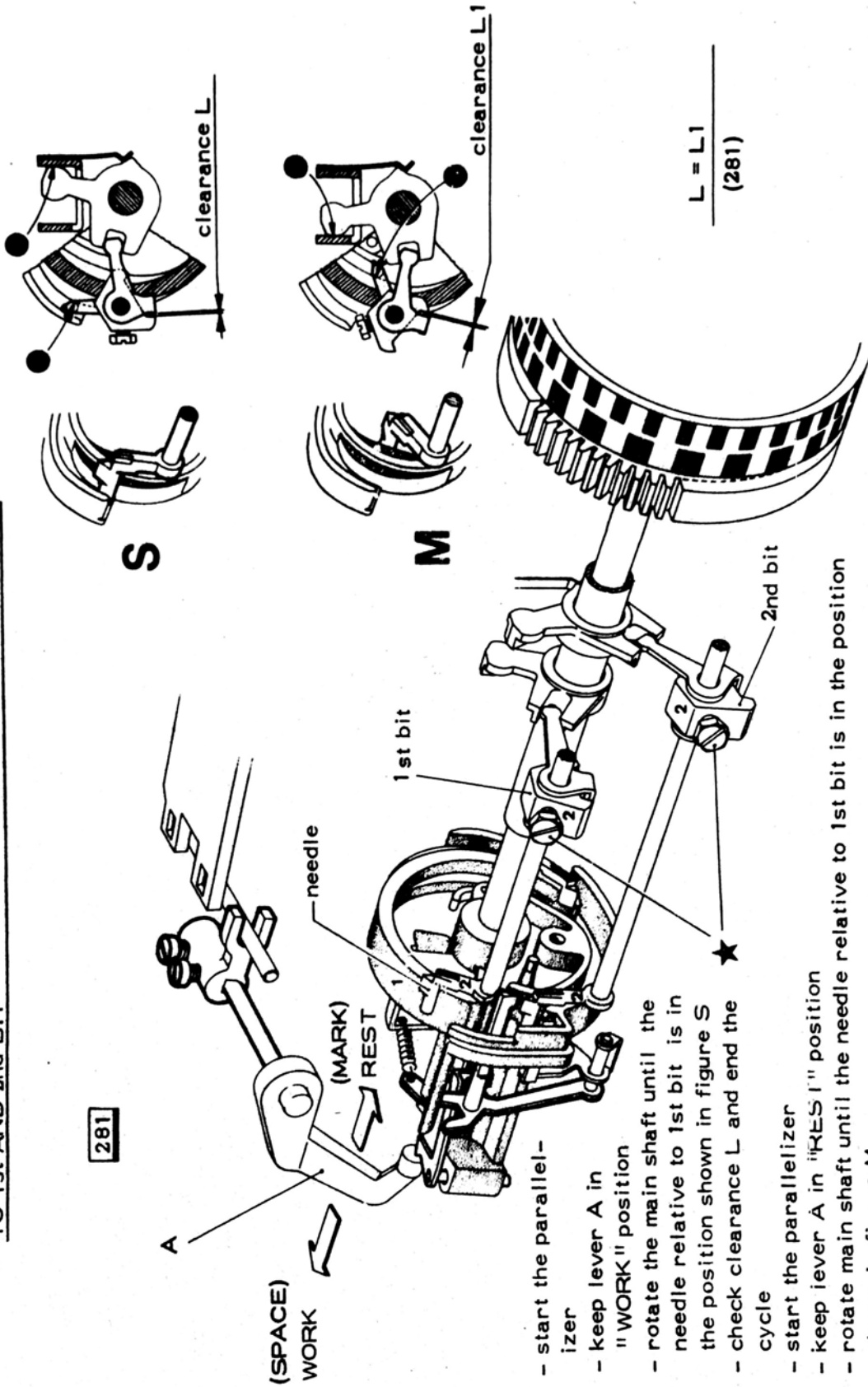
280) CHECK THE LOCKING OF THE UNLOCKING MECHANISM

280



- release the parallelizer clutch
- check the first 90° of rotation

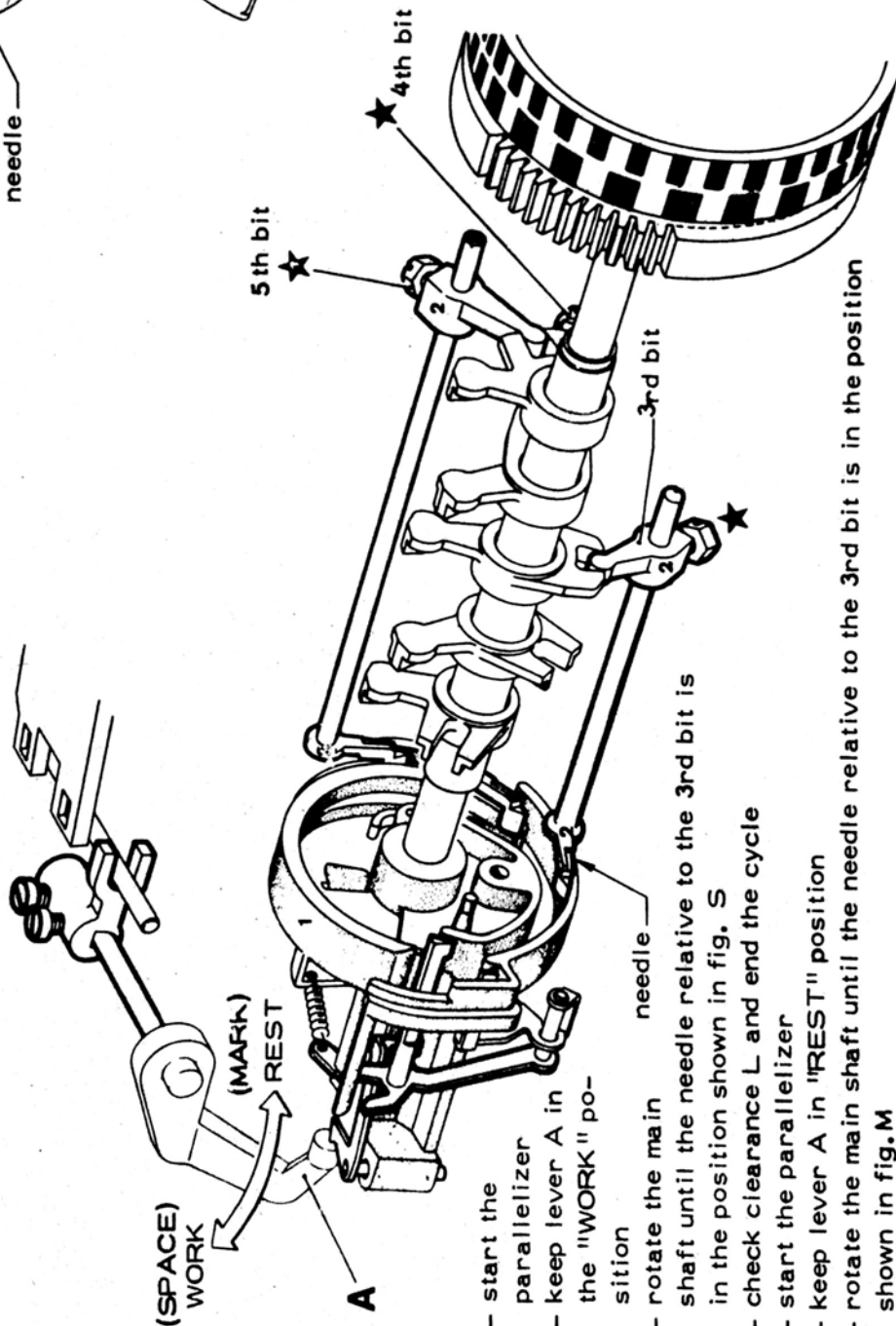
281) CHECK THE POSITION OF THE SENSED LEVERS RELATIVE TO 1st AND 2nd BIT



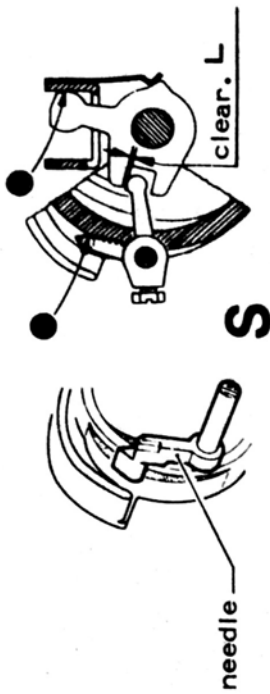
- start the parallelizer
- keep lever A in "WORK" position
- rotate the main shaft until the needle relative to 1st bit is in the position shown in figure S
- check clearance L and end the cycle
- start the parallelizer
- keep lever A in "RES I" position
- rotate main shaft until the needle relative to 1st bit is in the position shown in figure M
- check clearance L1, end the cycle and check the condition
- perform the same operations for the 2nd bit.

282) CHECK THE POSITION OF THE SENSED LEVERS RELATIVE TO 3rd, 4th AND 5th BIT

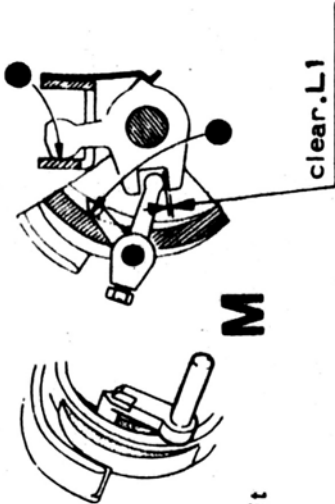
282-293



- start the parallelizer
- keep lever A in the "WORK" position
- rotate the main shaft until the needle relative to the 3rd bit is in the position shown in fig. S
- check clearance L and end the cycle
- start the parallelizer
- keep lever A in "REST" position
- rotate the main shaft until the needle relative to the 3rd bit is in the position shown in fig.M
- check the clearance L1, end the cycle and check the condition
- perform the same operations for the 4th and 5th bits.



S

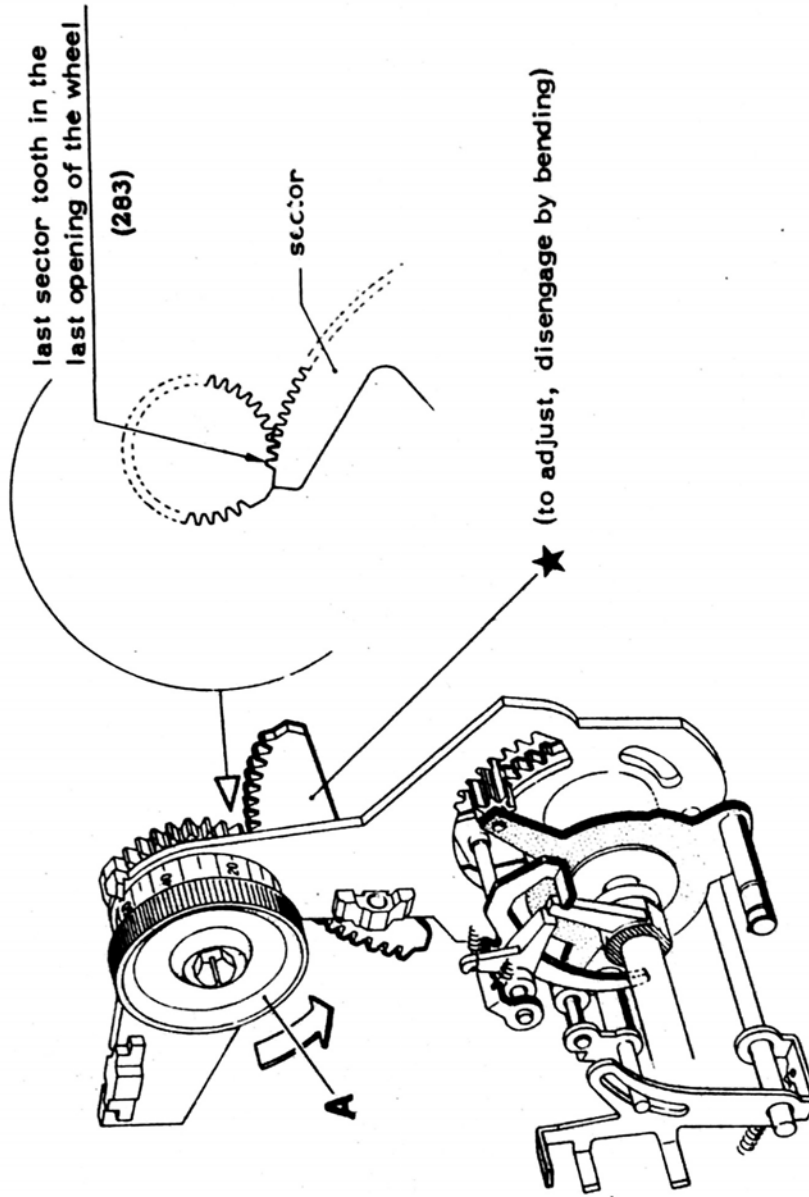


M

L = L1
(282)

283) CHECK THE POSITION OF THE TIMER

283

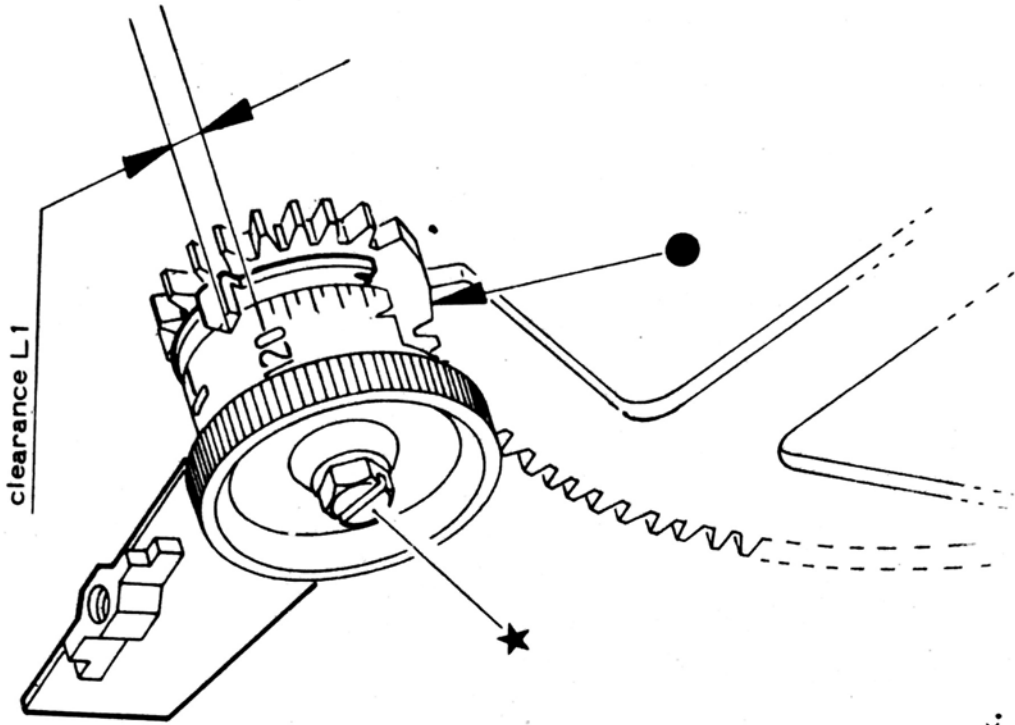
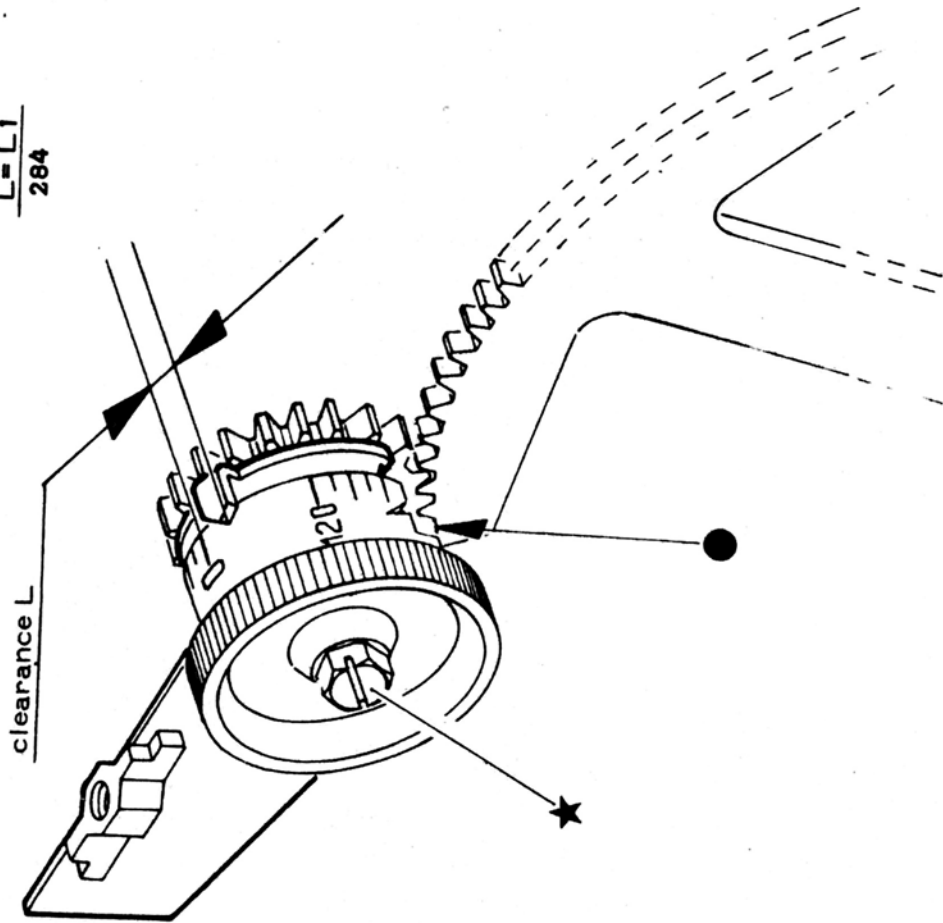


- rotate knob A as far as possible in the direction shown by the arrow and then check.
- Note: after the adjustment, place knob A in midway position of the rotation that can be performed without reception errors.

284) CHECK THE POSITION OF THE TIMER KNOB

284

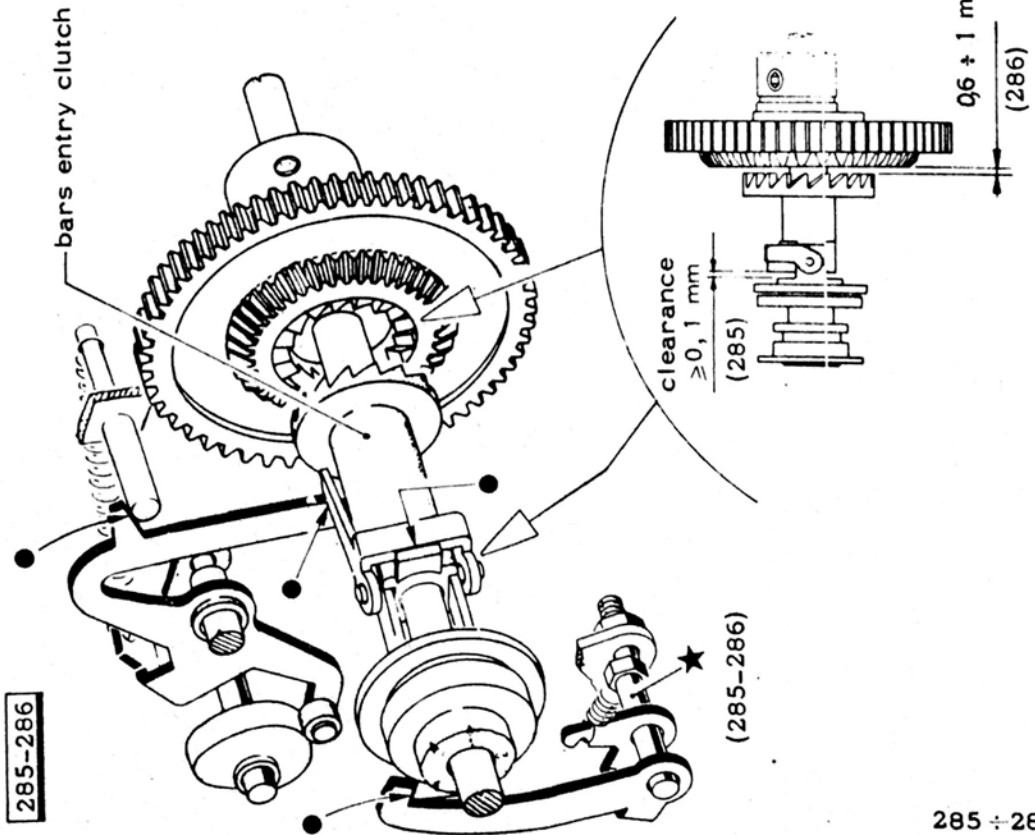
$\frac{L=L1}{284}$



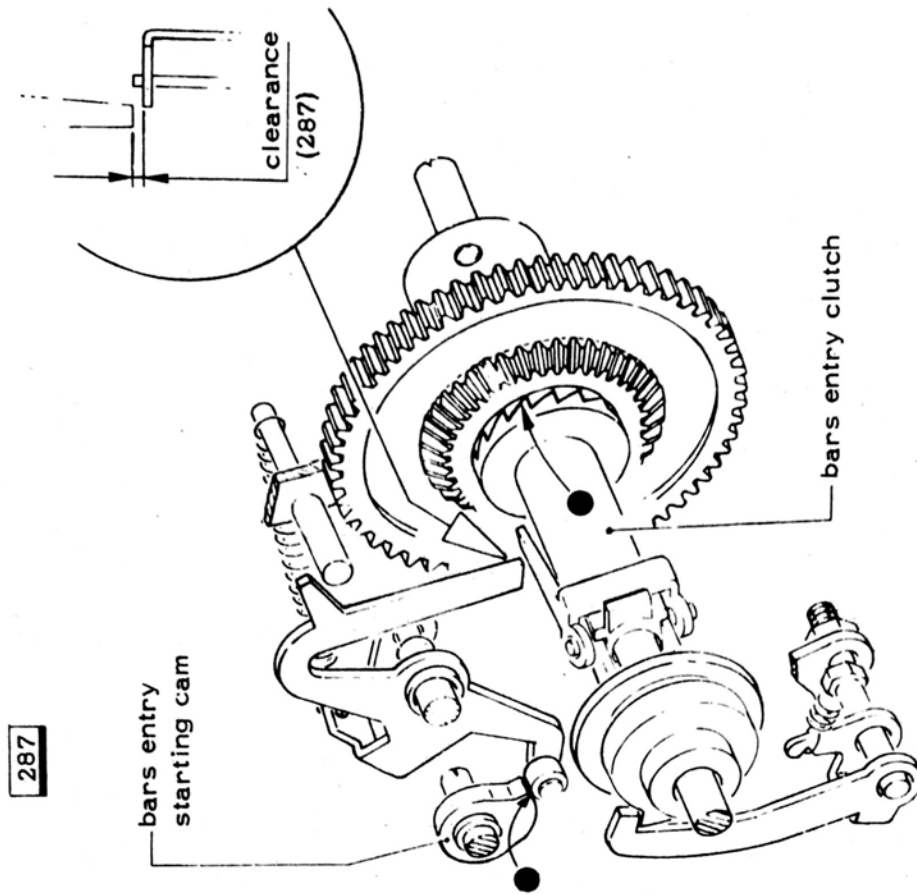
- rotate the knob first in one direction and then in the other and check.

285) CHECK THE REST POSITION OF THE BARS ENTRY CLUTCH

286) CHECK THE REST POSITION OF THE BARS ENTRY CLUTCH CUP

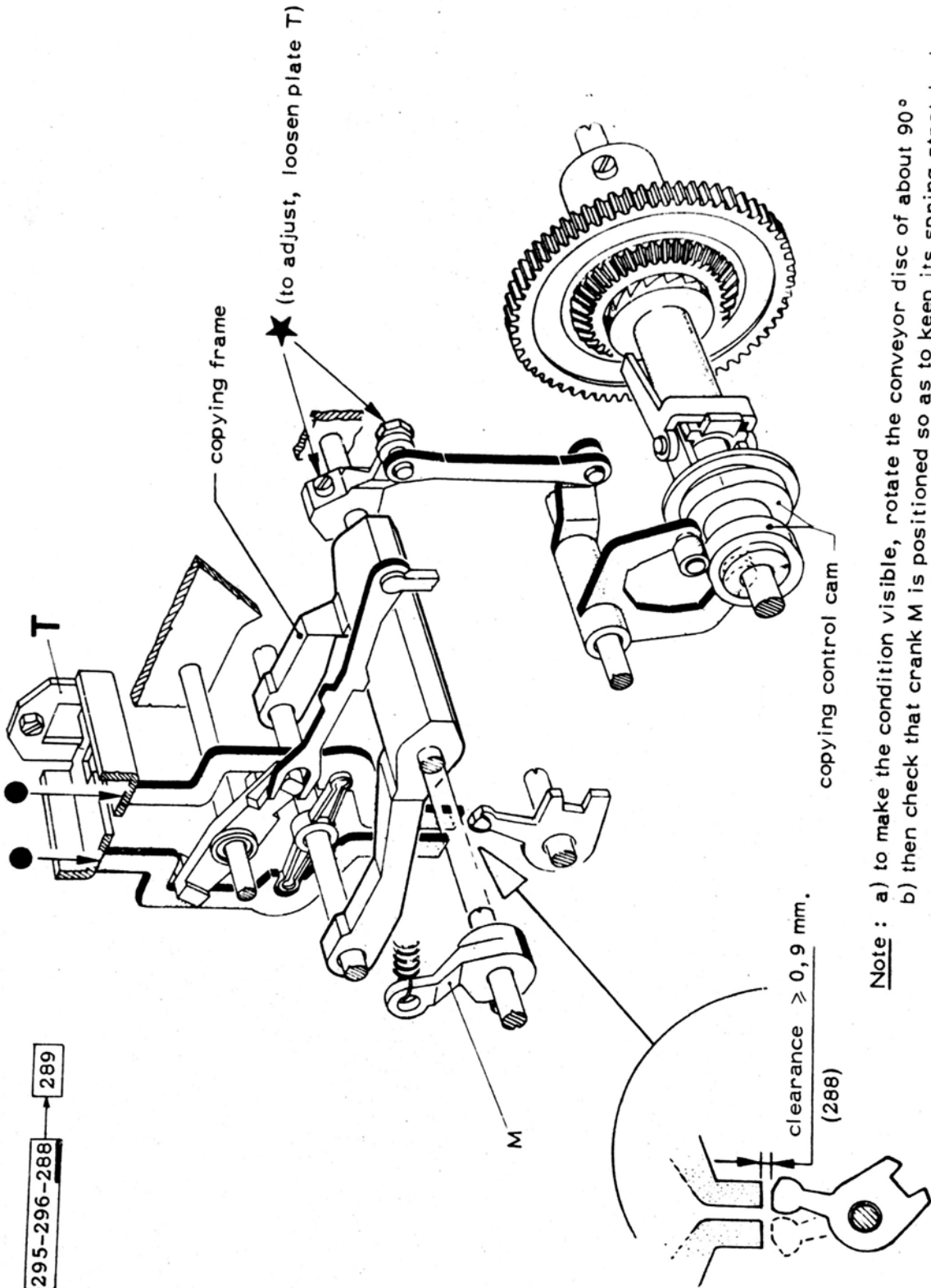


287) CHECK THE ENTRY BAR CLUTCH RELEASE



- start the parallelizer
- rotate the main shaft for maximum control position of entry starting cam.

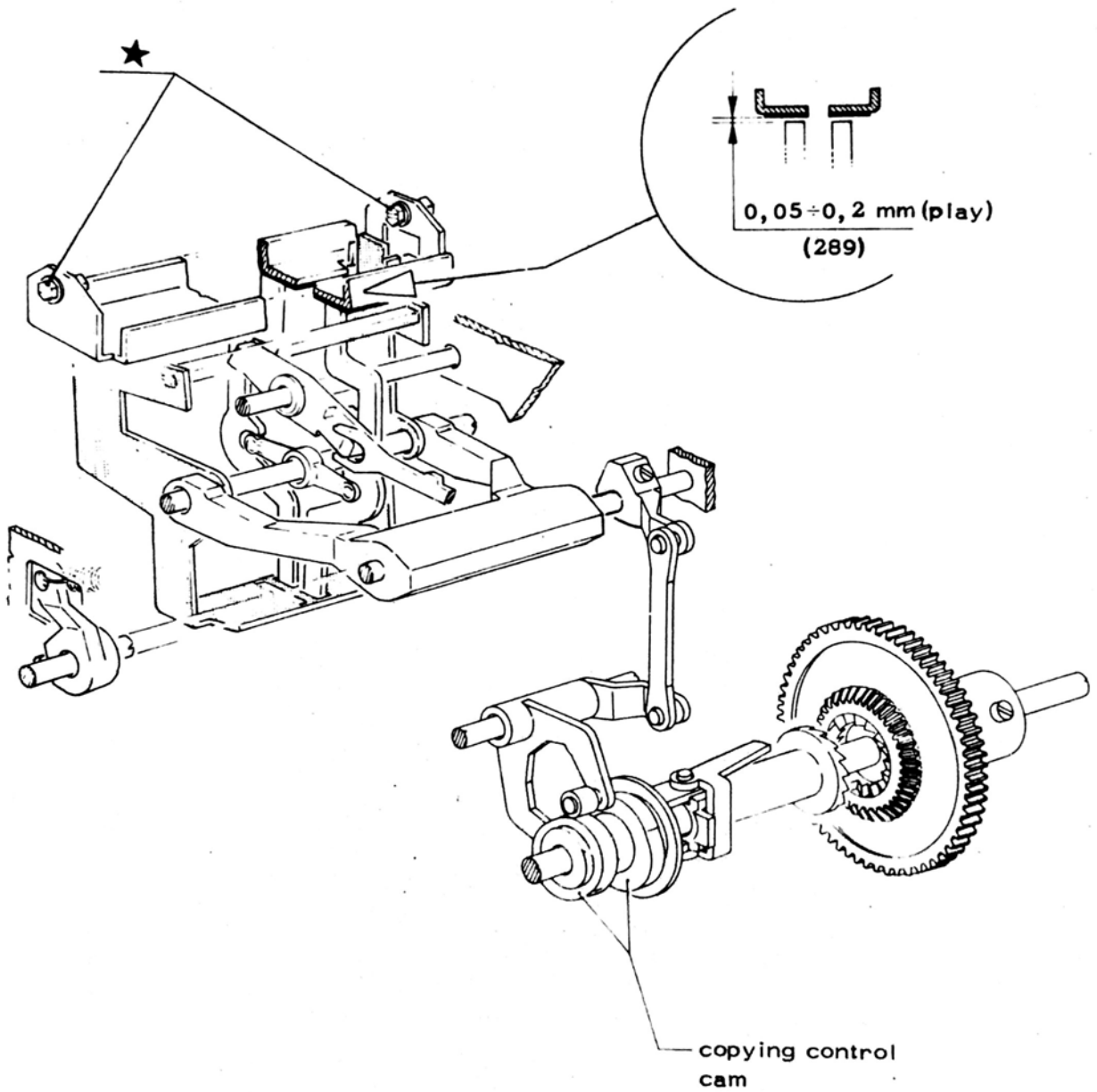
288) CHECK THE REST POSITION OF THE COPYING FRAME



Note : a) to make the condition visible, rotate the conveyor disc of about 90°
b) then check that crank M is positioned so as to keep its spring stretched

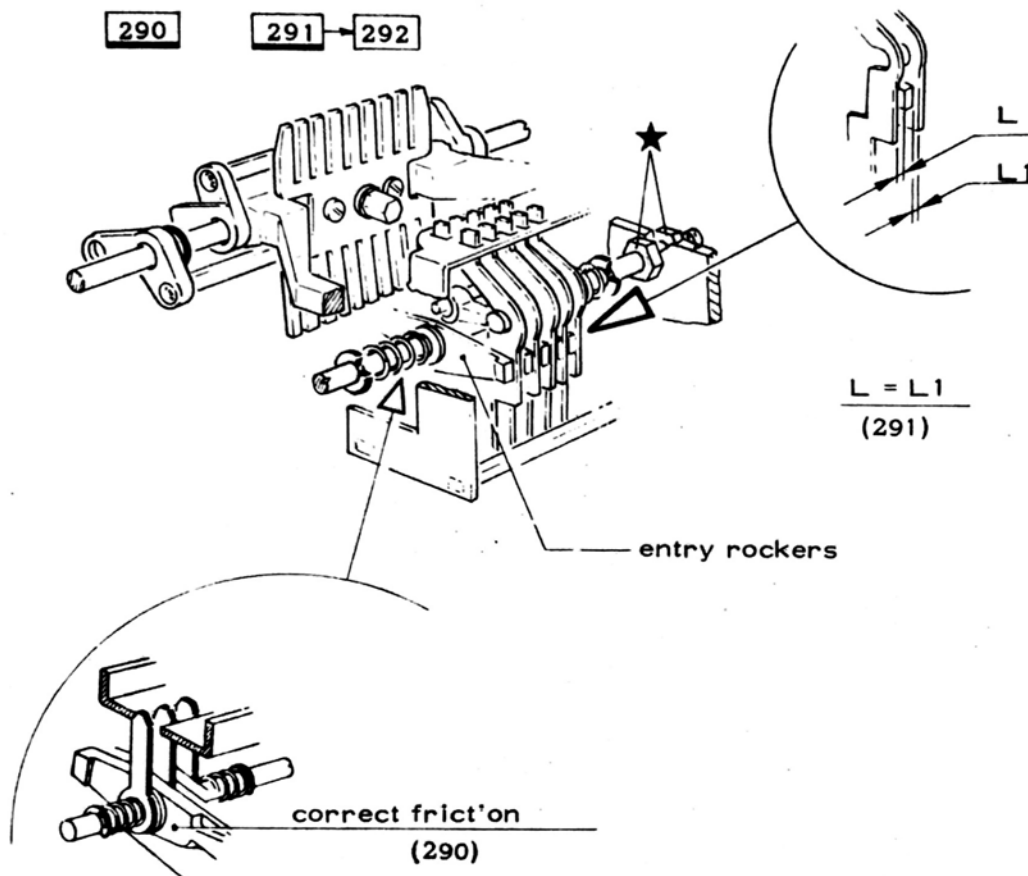
289) CHECK THE POSITION OF THE CLEARING CROSS-BAR

295-296-288 → 289

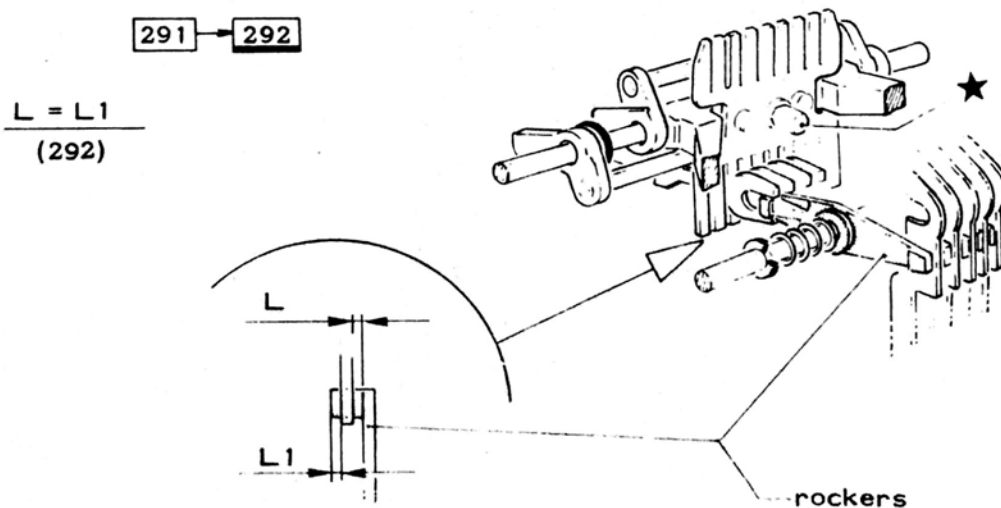


290) CHECK THE FRICTION OF THE ENTRY ROCKERS

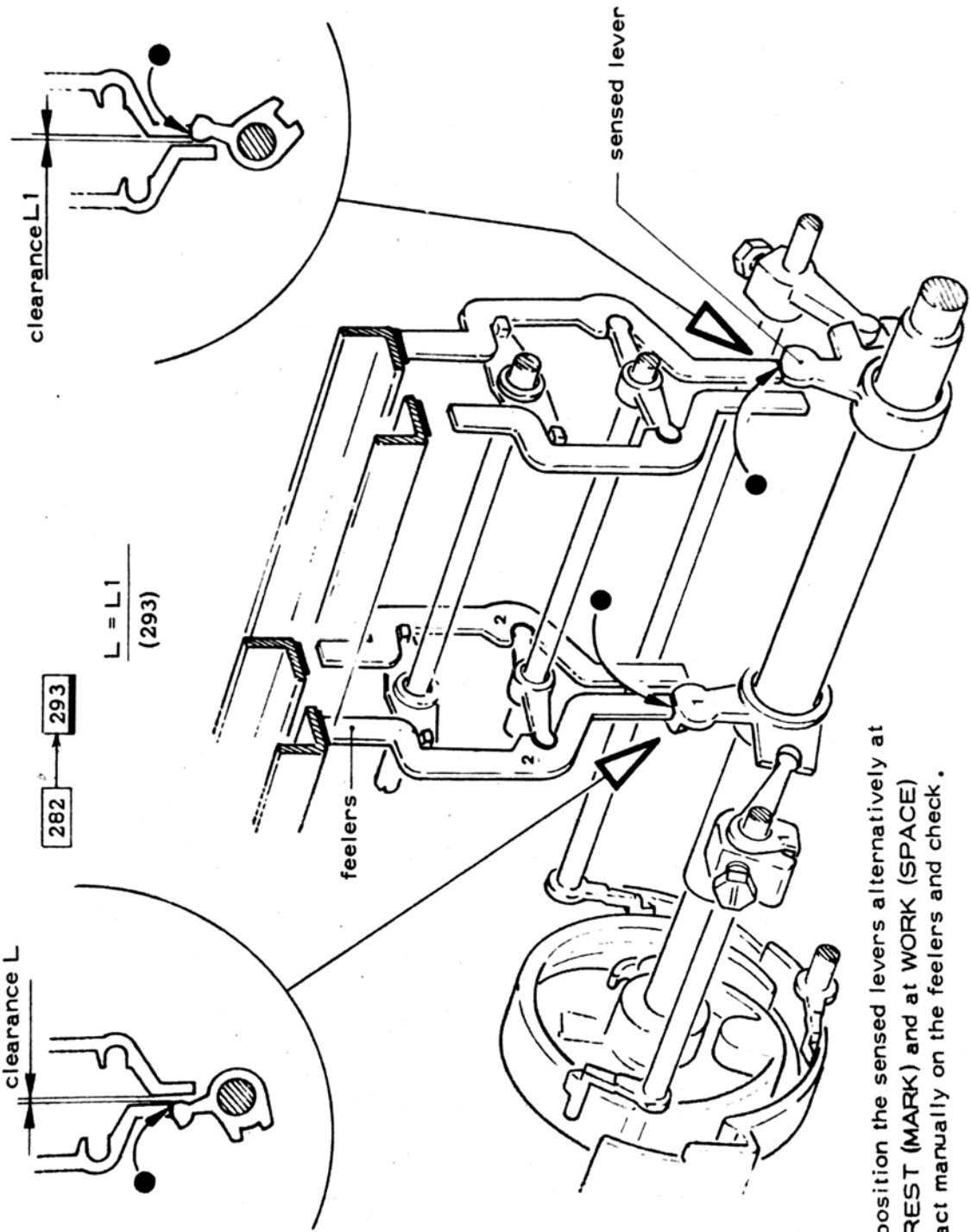
291) CHECK THE AXIAL POSITION OF THE ENTRY ROCKERS



292) CHECK ON THE POSITION OF THE ENTRY ROCKERS GUIDE COMBS



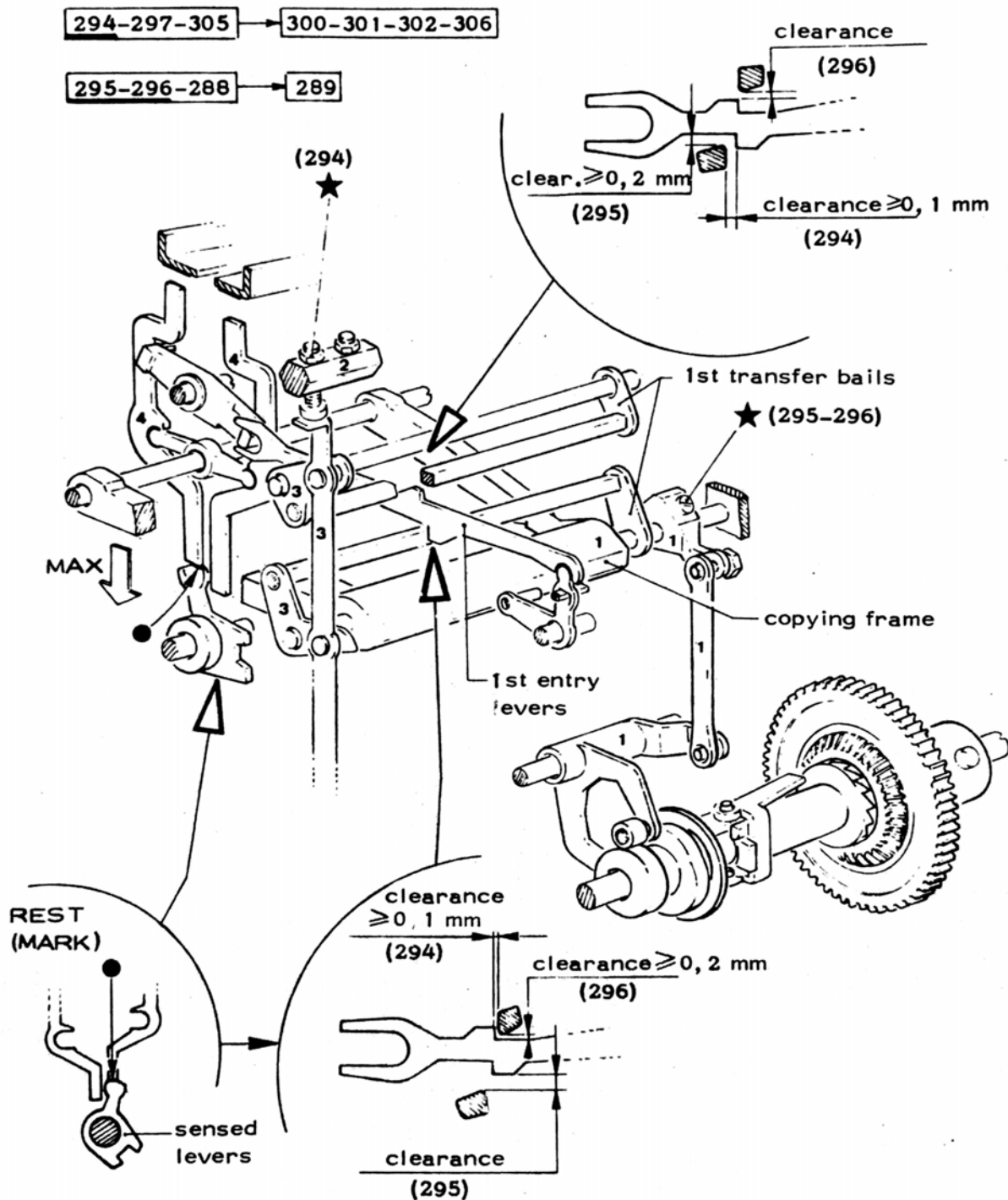
293) CHECK THE COPYING OF THE SENSED LEVERS



- position the sensed levers alternatively at REST (MARK) and at WORK (SPACE)
- act manually on the feelers and check.

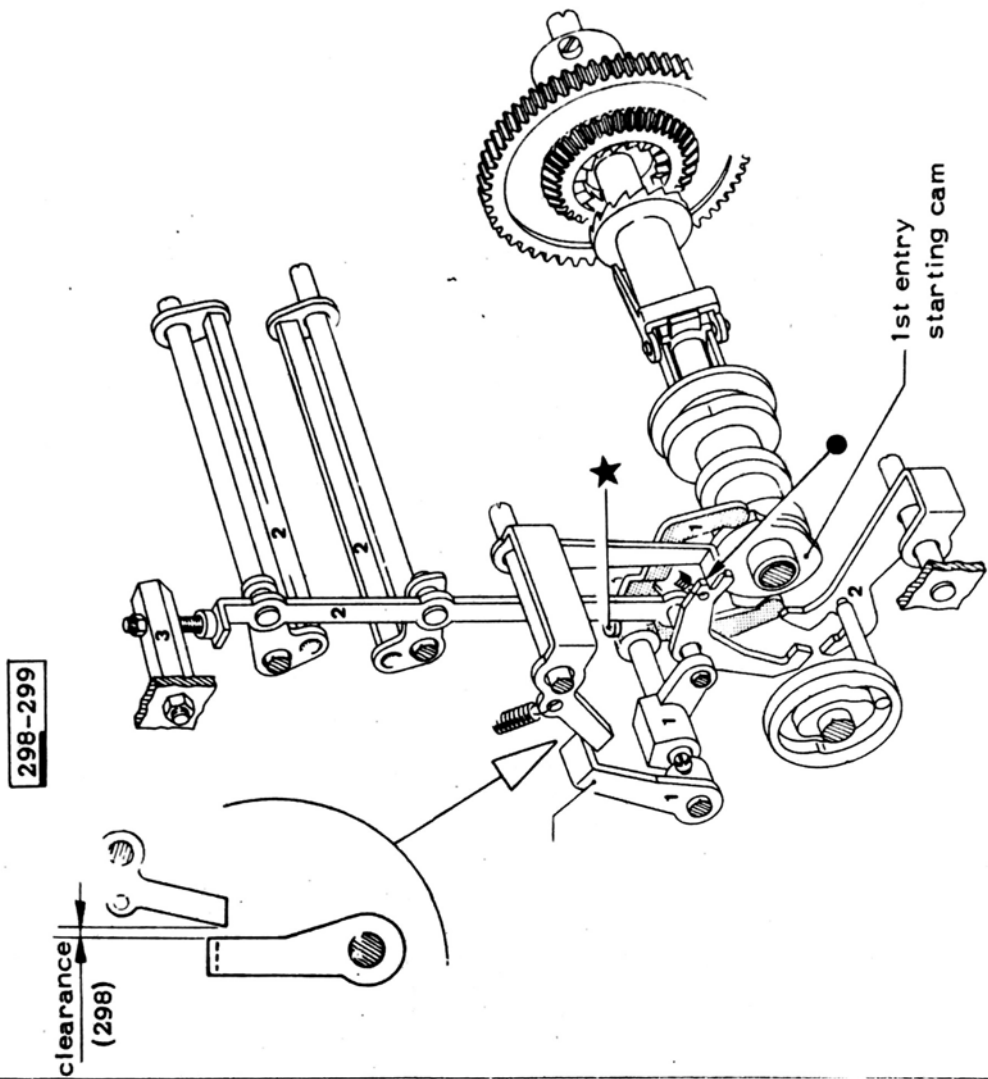
294) CHECK THE POSITION OF THE 1st TRANSFER BAIL

295-296) CHECK THE POSITION AFTER COPYING OF THE 1st ENTRY LEVERS

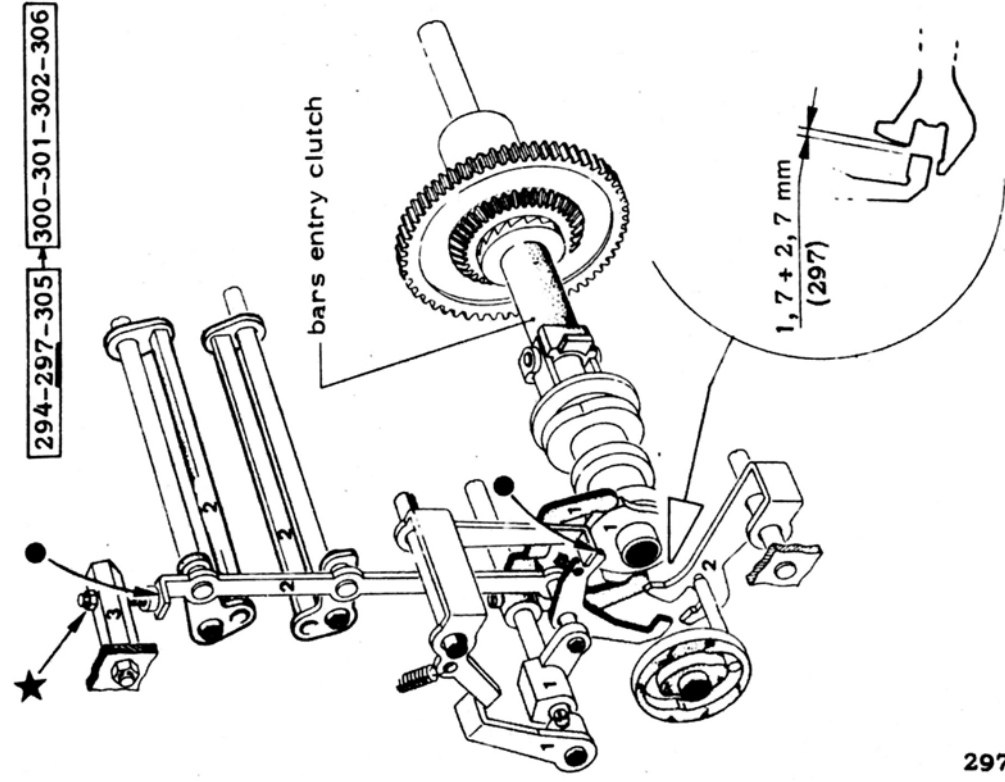


- with a parallelizer cycle enter the sensed levers, alternatively in REST (MARK) and WORK (SPACE) (code Y)
- continue the rotation of the main shaft for maximum control position of the copying frame, then check.

298) CHECK THE REST POSITION OF THE 1st TRANSFER
RELEASE CRANK

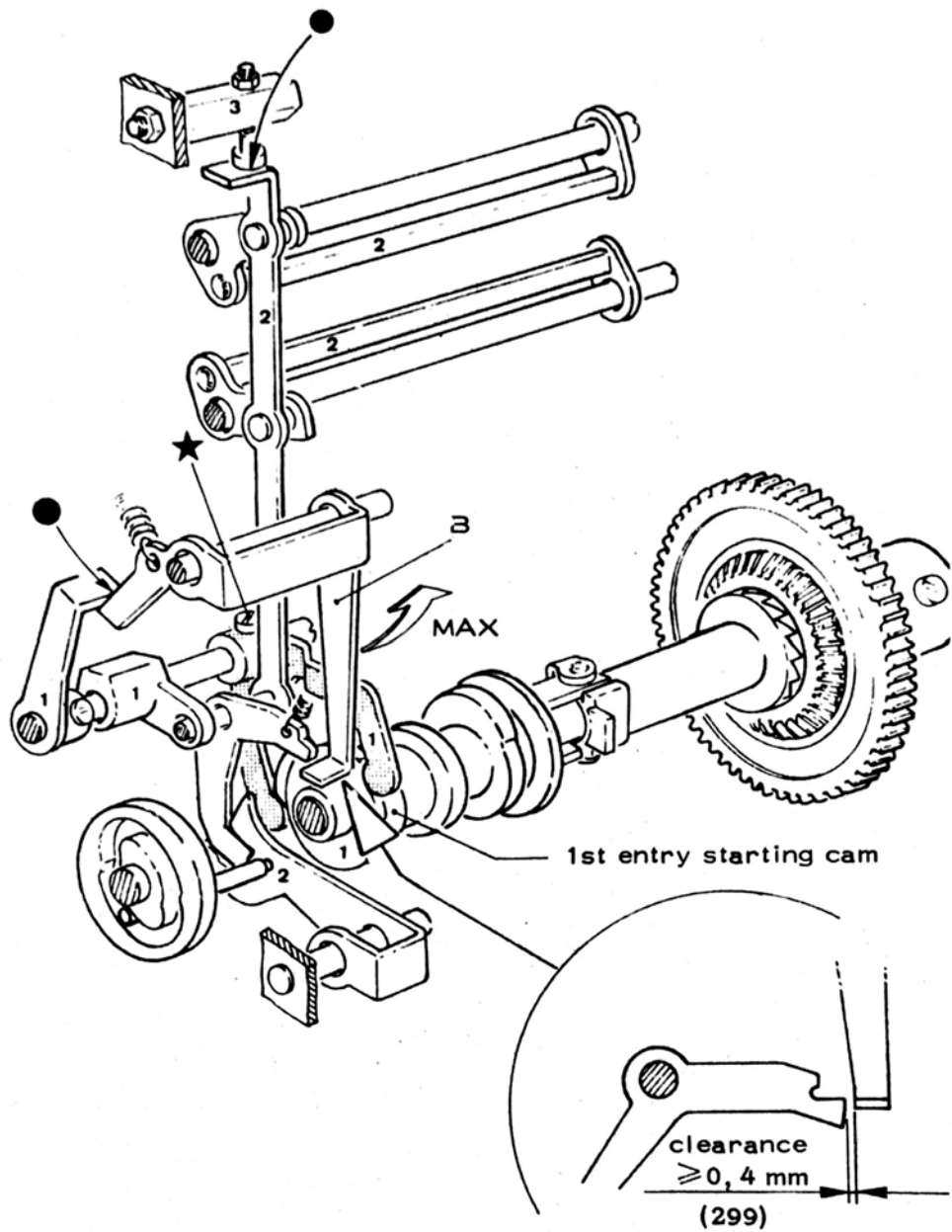


297) CHECK THE REST POSITION OF THE
1st TRANSFER HOOKING LEVER



299) CHECK THE WORK POSITION OF THE 1st TRANSFER RELEASE CRANK

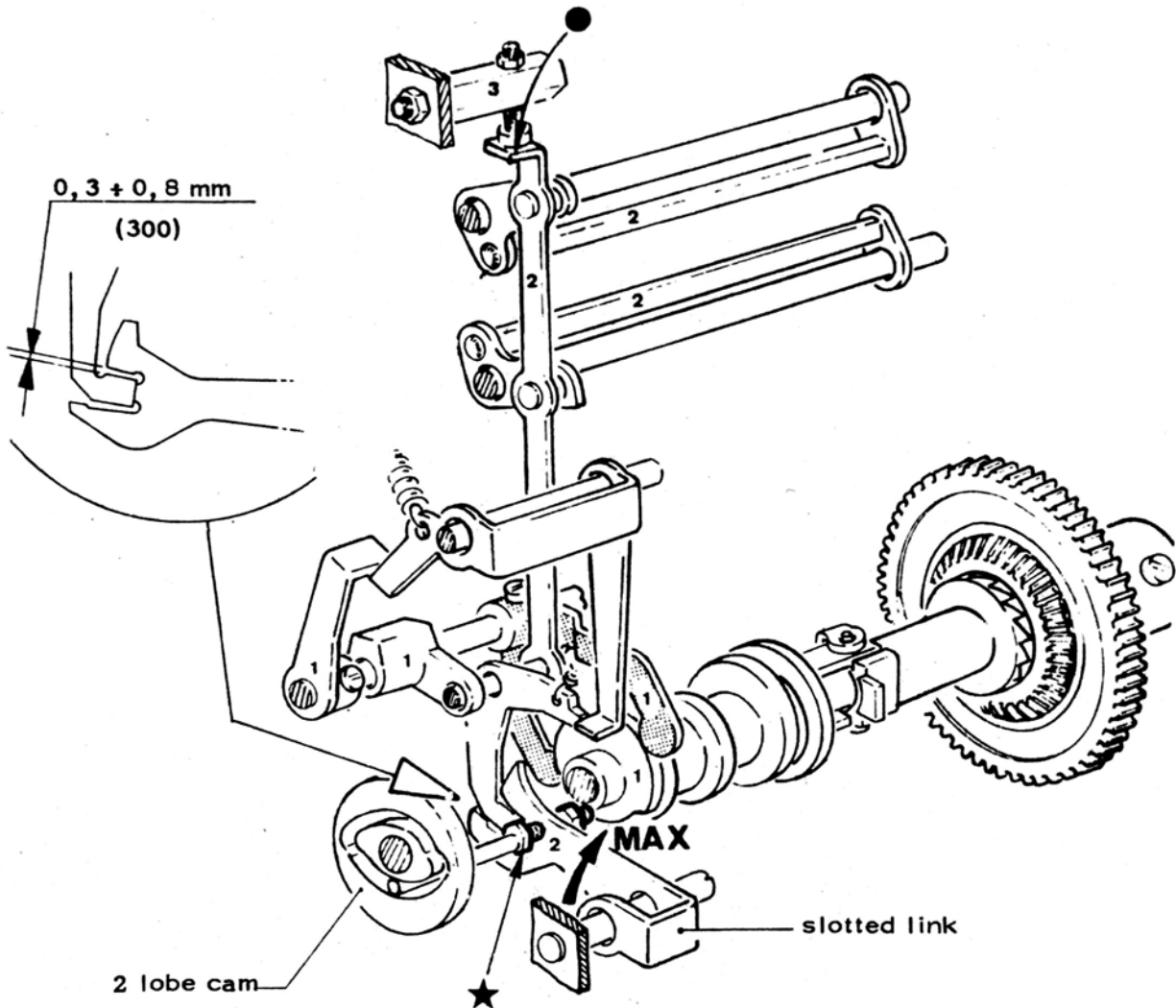
298-299



- start the parallelizer
- rotate the main shaft for maximum control position of arm B

300) CHECK THE POSITION OF THE 1st TRANSFER SLOTTED LINK

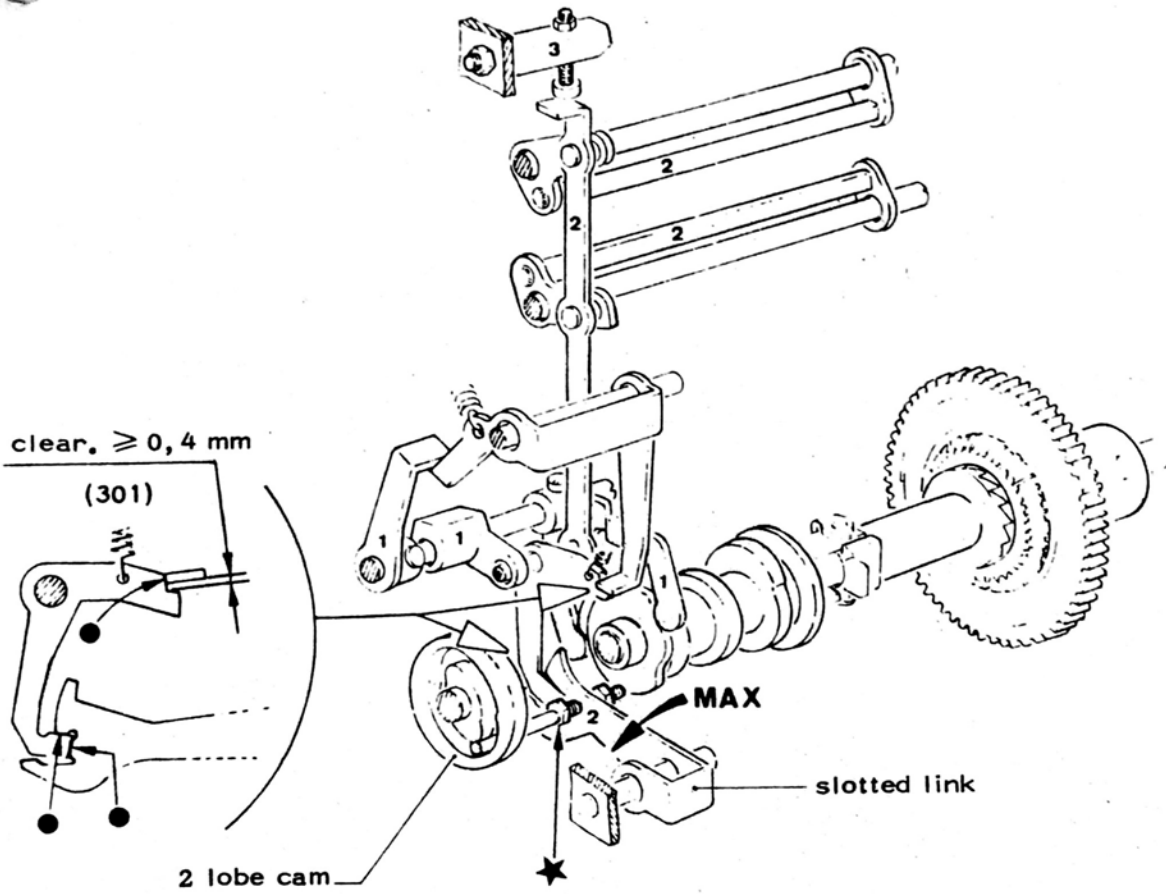
294-297-305 → 300-301-302-306



- start the parallelizer
- rotate the main shaft for maximum control position of the slotted link.

301) CHECK THE RELOAD OF THE 1st TRANSFER RELEASE BRIDGE

294-297-305 → 300-301-302-306

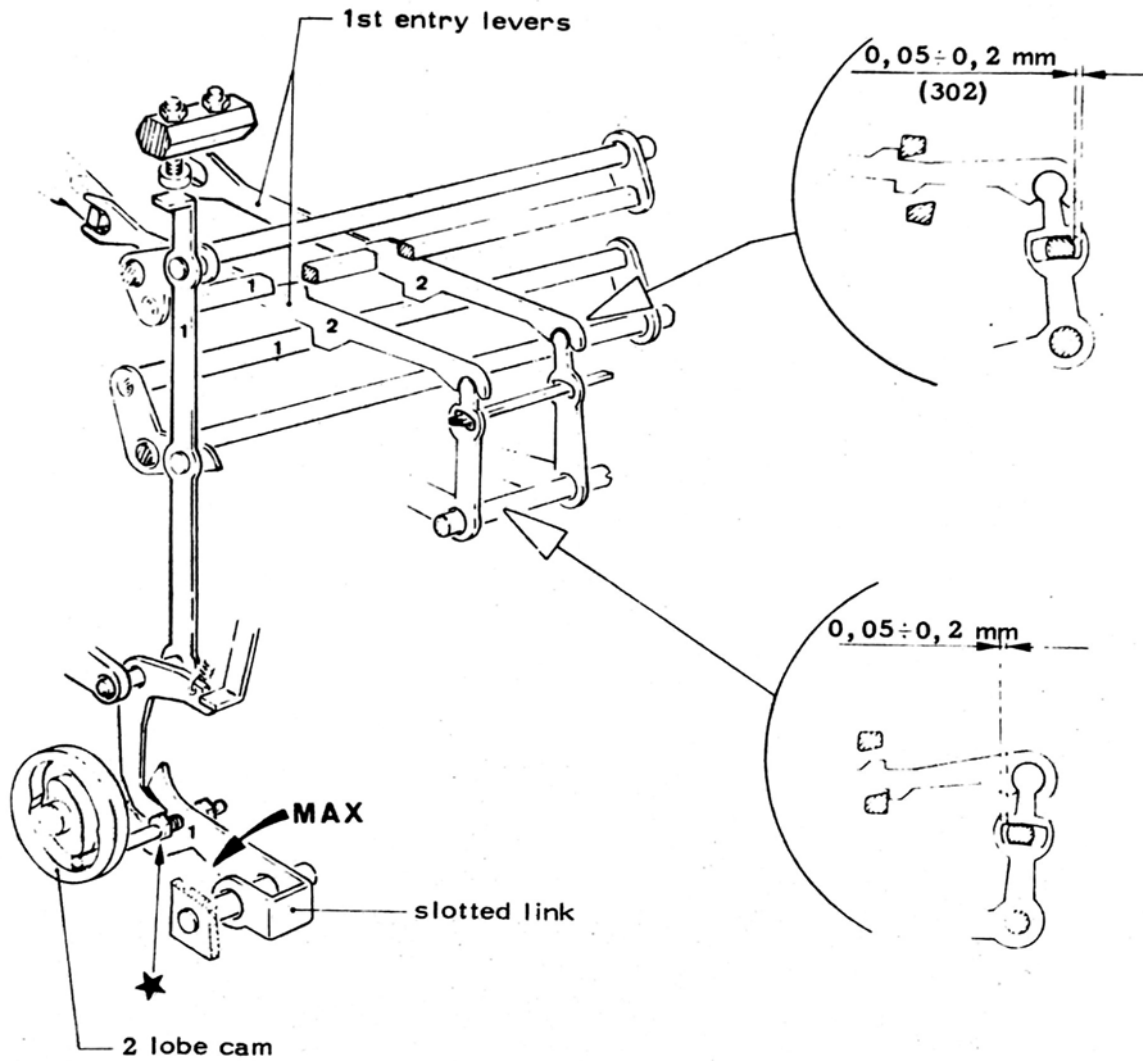


- start the parallelizer
- rotate the main shaft for maximum control position of the slotted link.

**302) CHECK THE QUANTITY OF COMMAND OF THE 1st ENTRY
SLOTTED LINK**

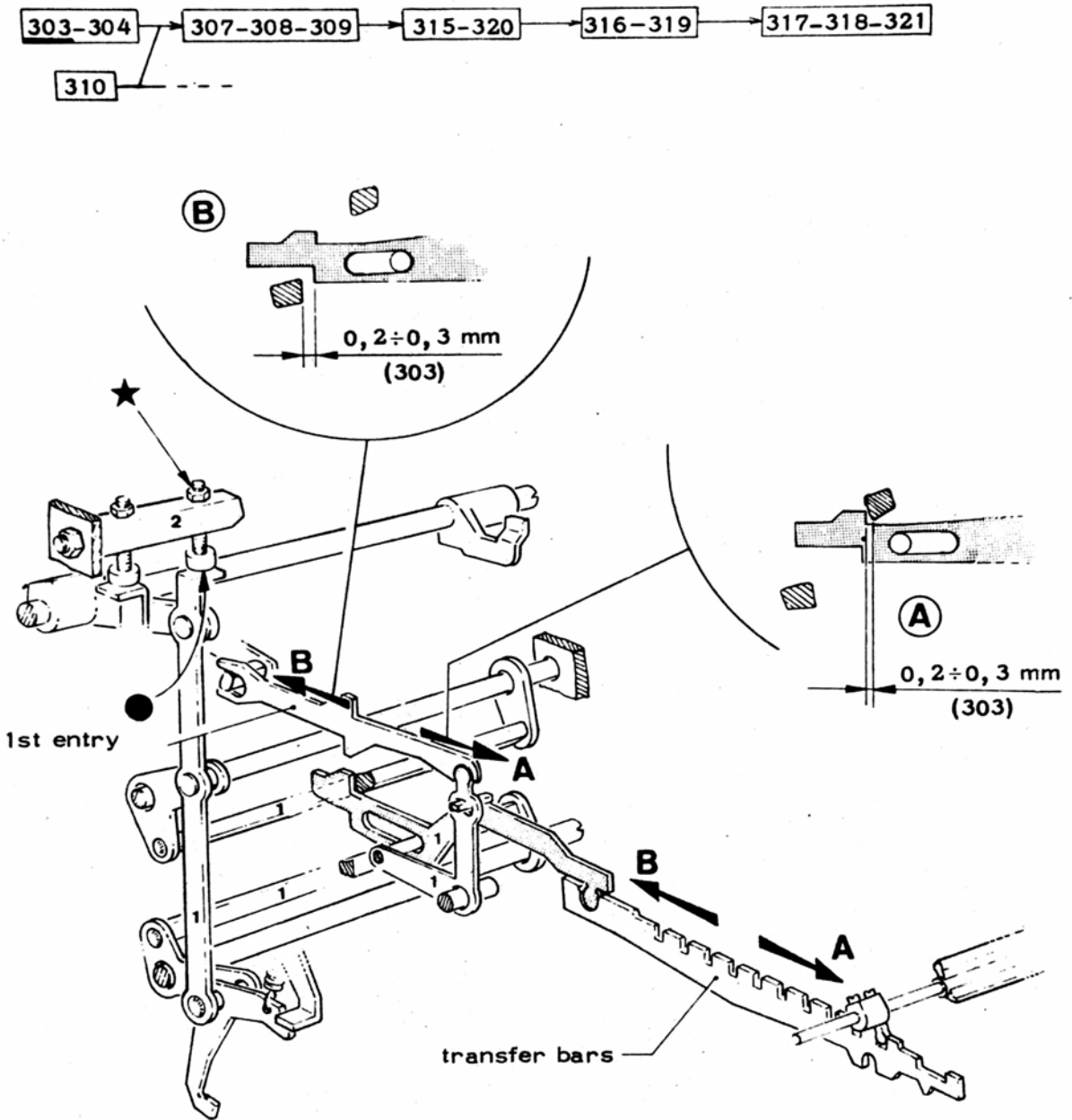
294-297-305

300-301-302-306



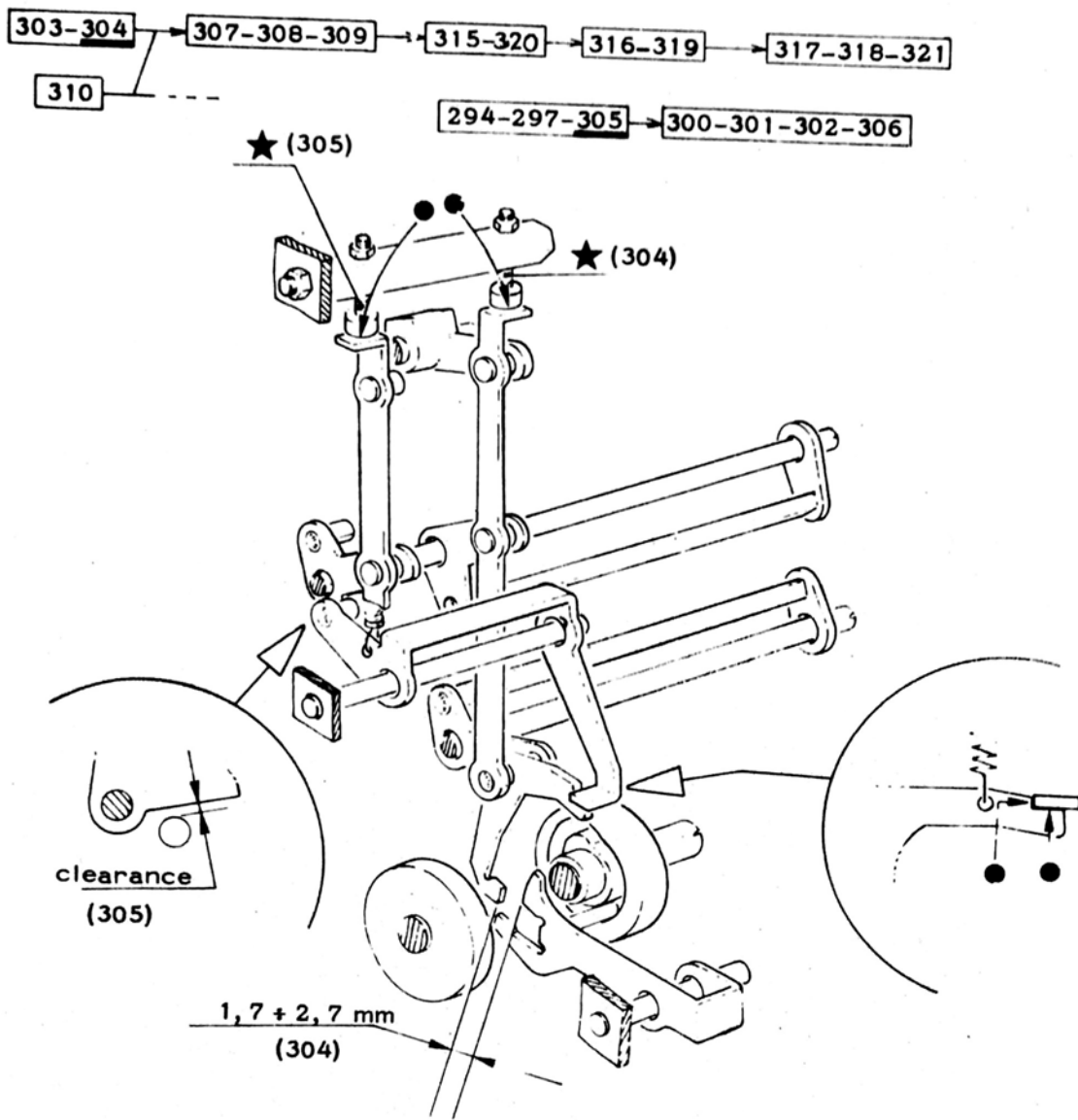
- position the 1st entry levers alternatively at REST and at WORK
- manually release the 1st entry clutch
- rotate the main shaft for maximum control position of the slotted link

303) CHECK THE POSITION OF THE 2nd ENTRY BAILS



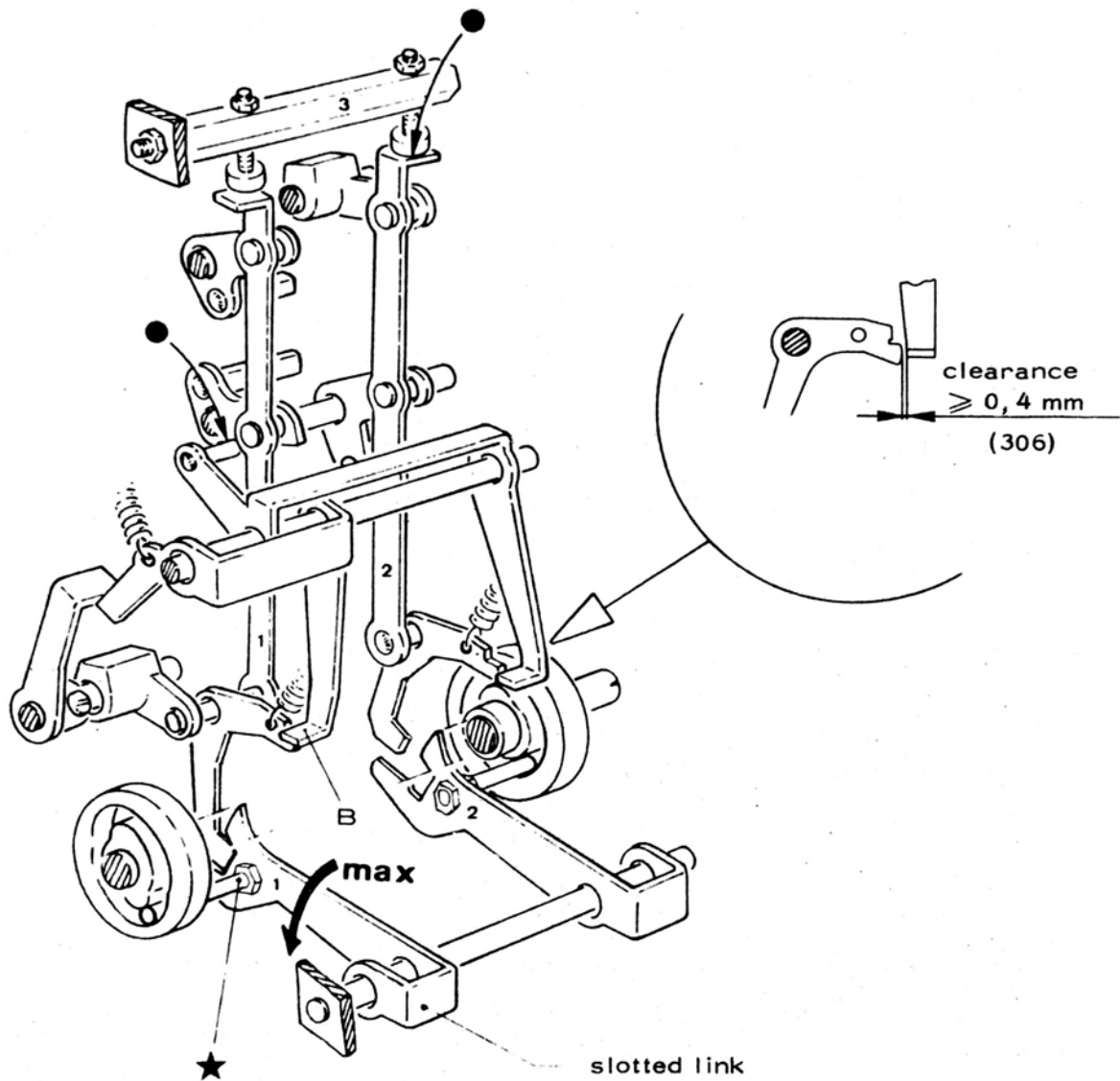
- to check condition A, manually move the transfer bars and the 1st entry levers in the direction of arrows A.

- 304) CHECK THE REST POSITION OF THE 2nd TRANSFER HOOKING
LEVER
- 305) CHECK THE REST POSITION OF THE 2nd TRANSFER RELEASE
BRIDGE



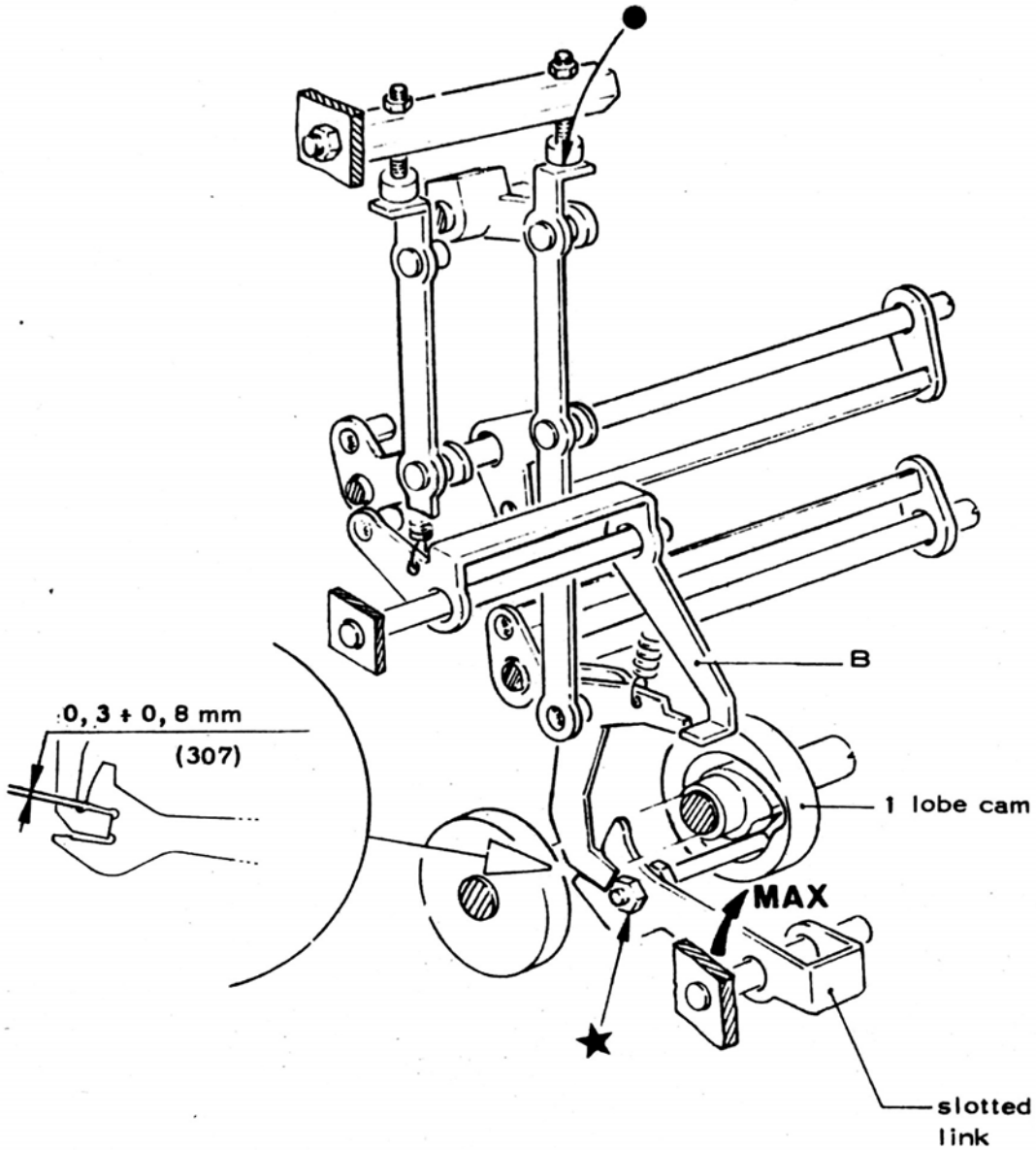
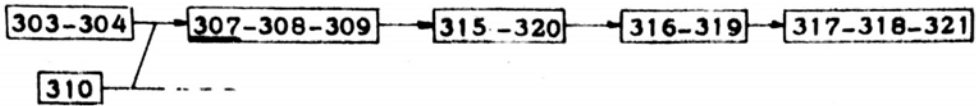
306) CHECK THE WORK POSITION OF THE 2nd TRANSFER RELEASE BRIDGE

294-297-305 → 300-301-302-306



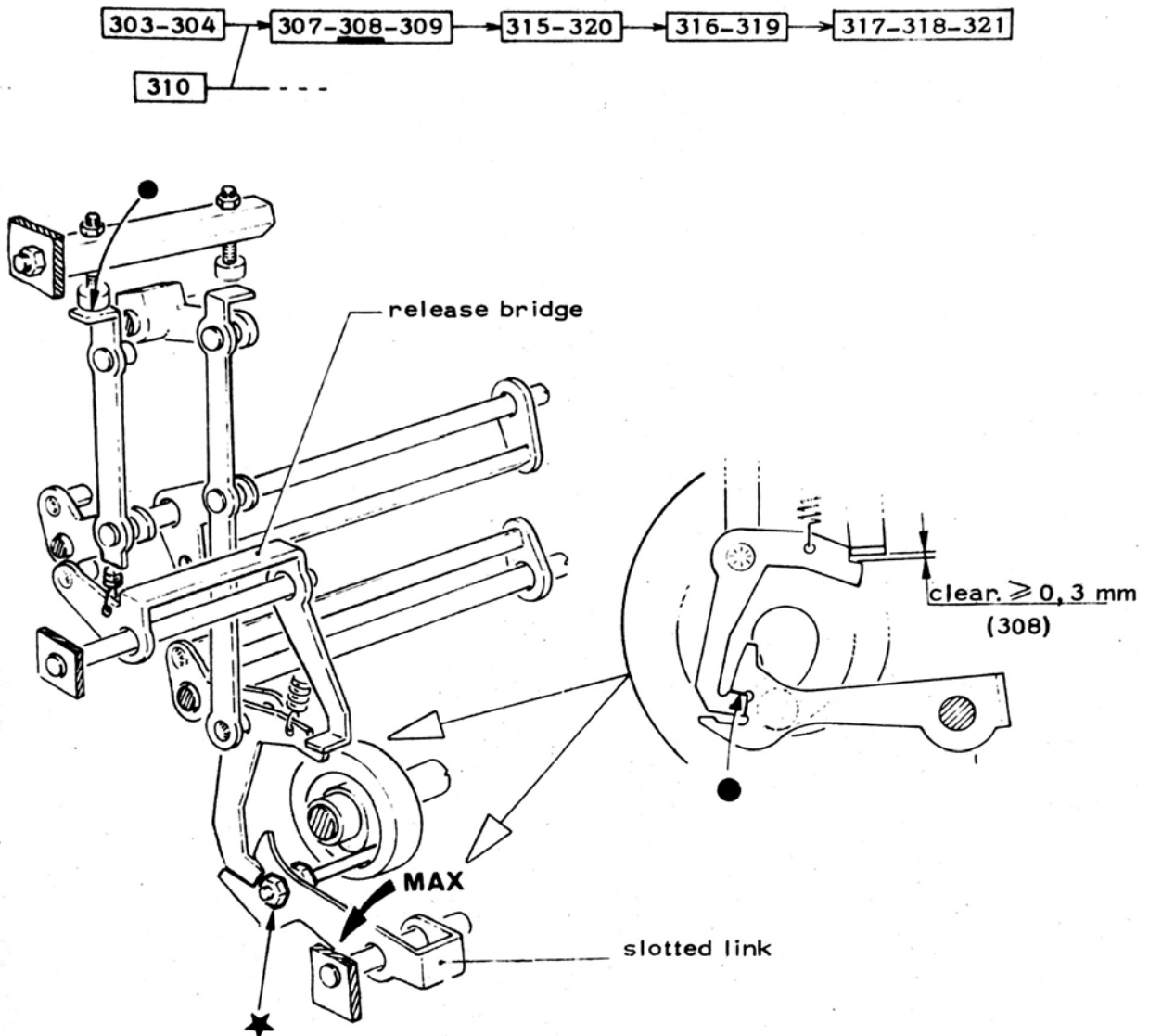
- release the 1st transfer acting on arm B
- rotate the main shaft for maximum control position of the 1st transfer slotted link.

307) CHECK THE POSITION OF THE 2nd TRANSFER SLOTTED LINK



- rotate the main shaft for maximum control position of the slotted link
- release the 2nd transfer acting on arm B.

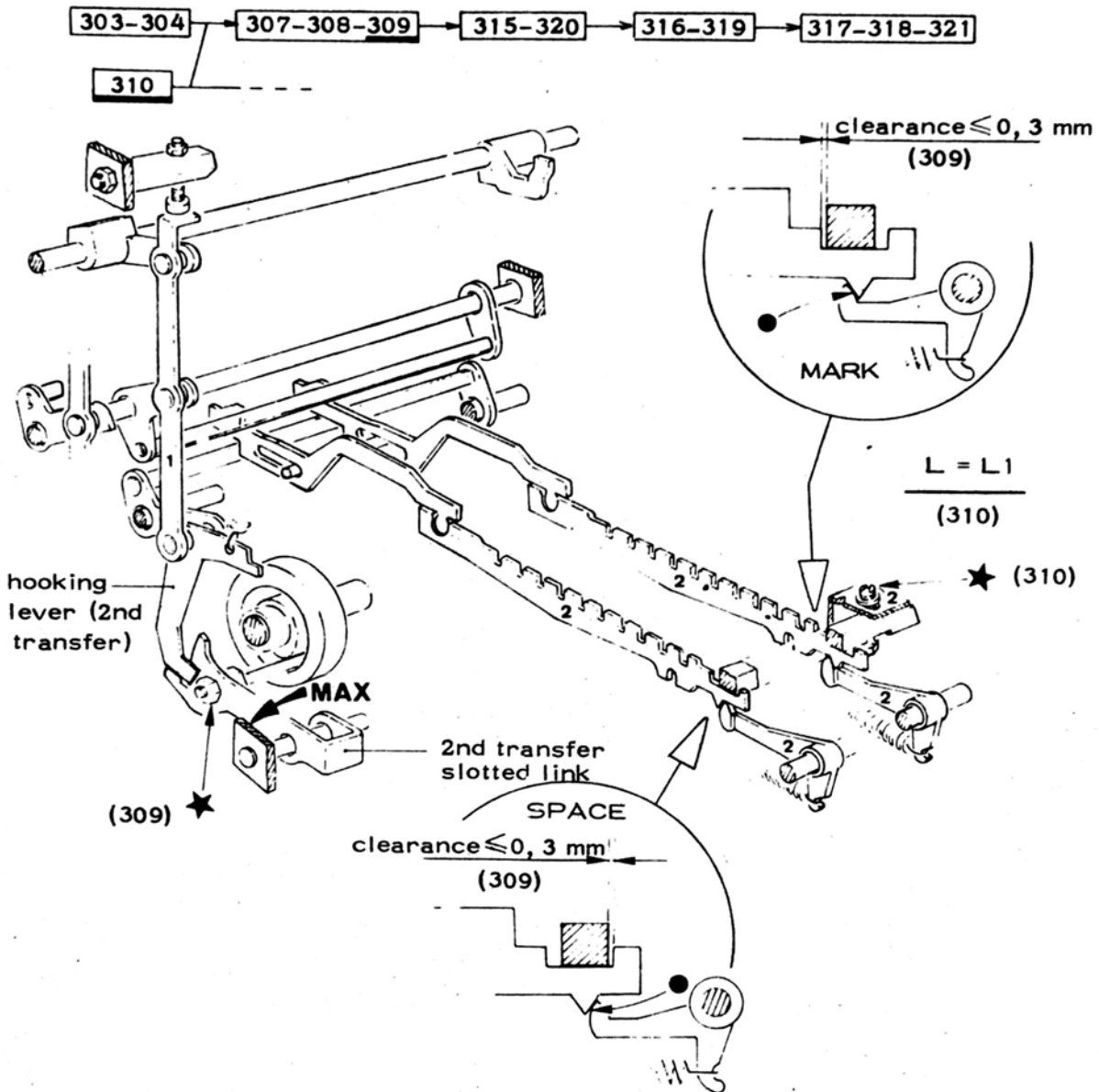
308) CHECK OF THE RELOAD OF THE 2nd TRANSFER RELEASE BRIDGE



- release the release brige
- rotate the main shaft for maximum control position of the slotted link

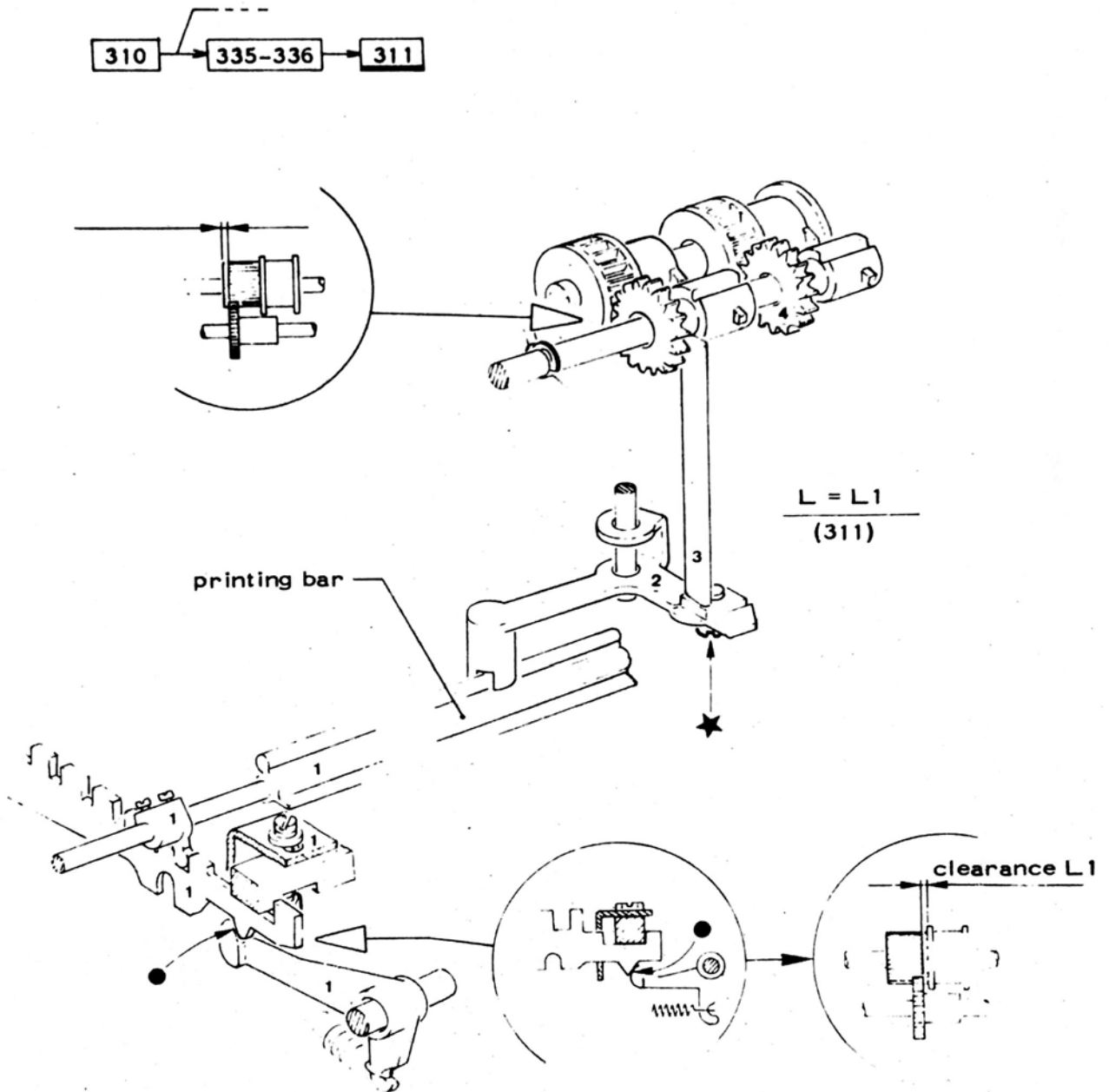
309) CHECK THE QUANTITY OF CONTROL OF THE 2nd ENTRY
SLOTTED LINK

310) CHECK THE POSITION OF THE TRANSFER BARS



- position the 1st entry levers alternatively in REST (MARK) and WORK (SPACE)
- release 1st transfer
- rotate main shaft for maximum command position of the 2nd transfer slotted link and check excluding the positioner.

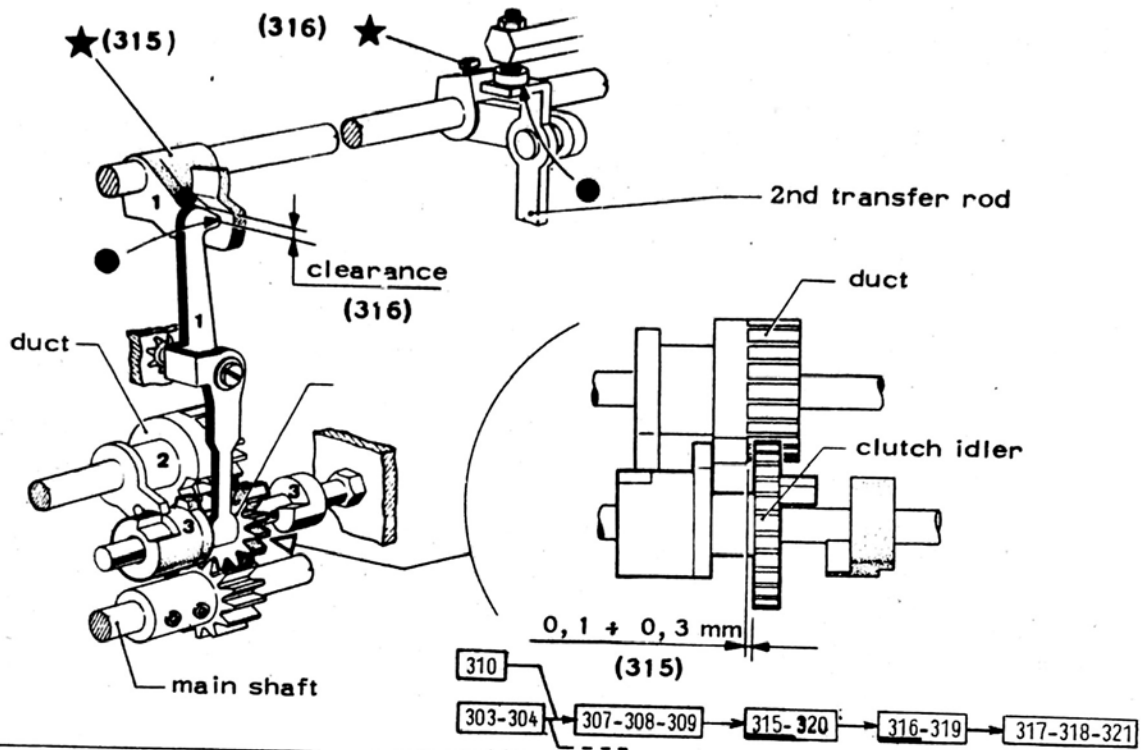
**311) CHECK THE AXIAL POSITION OF THE "WHEEL" AND "CHARACTER"
SELECTION CLUTCH IDLERS OF THE PRINTING HEAD**



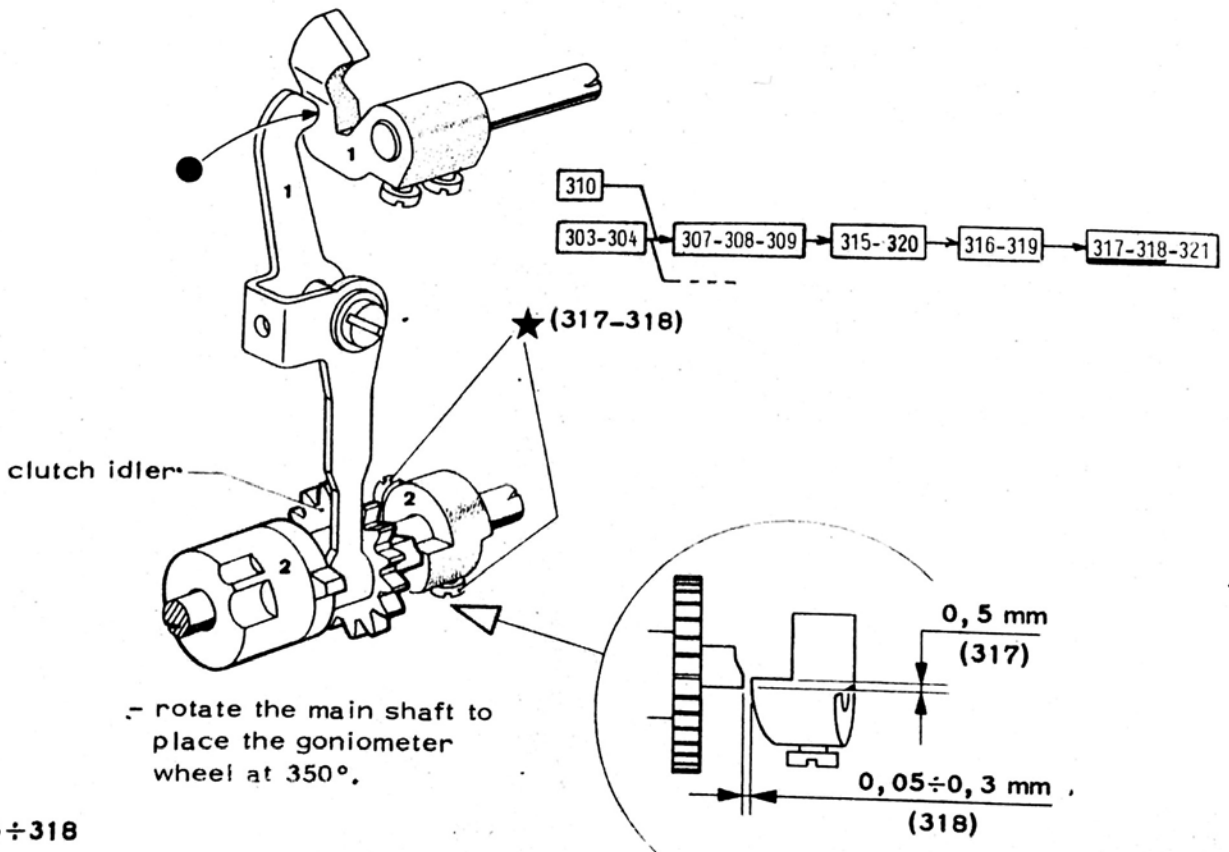
- to check manually move the printing bars.

315) CHECK THE REST POSITION OF THE "CYCLIC SERVICE" AND "FUNCTIONS" CLUTCH IDLER

316) CHECK THE REST POSITION OF THE "CYCLIC SERVICES" AND "FUNCTIONS" START CRANK



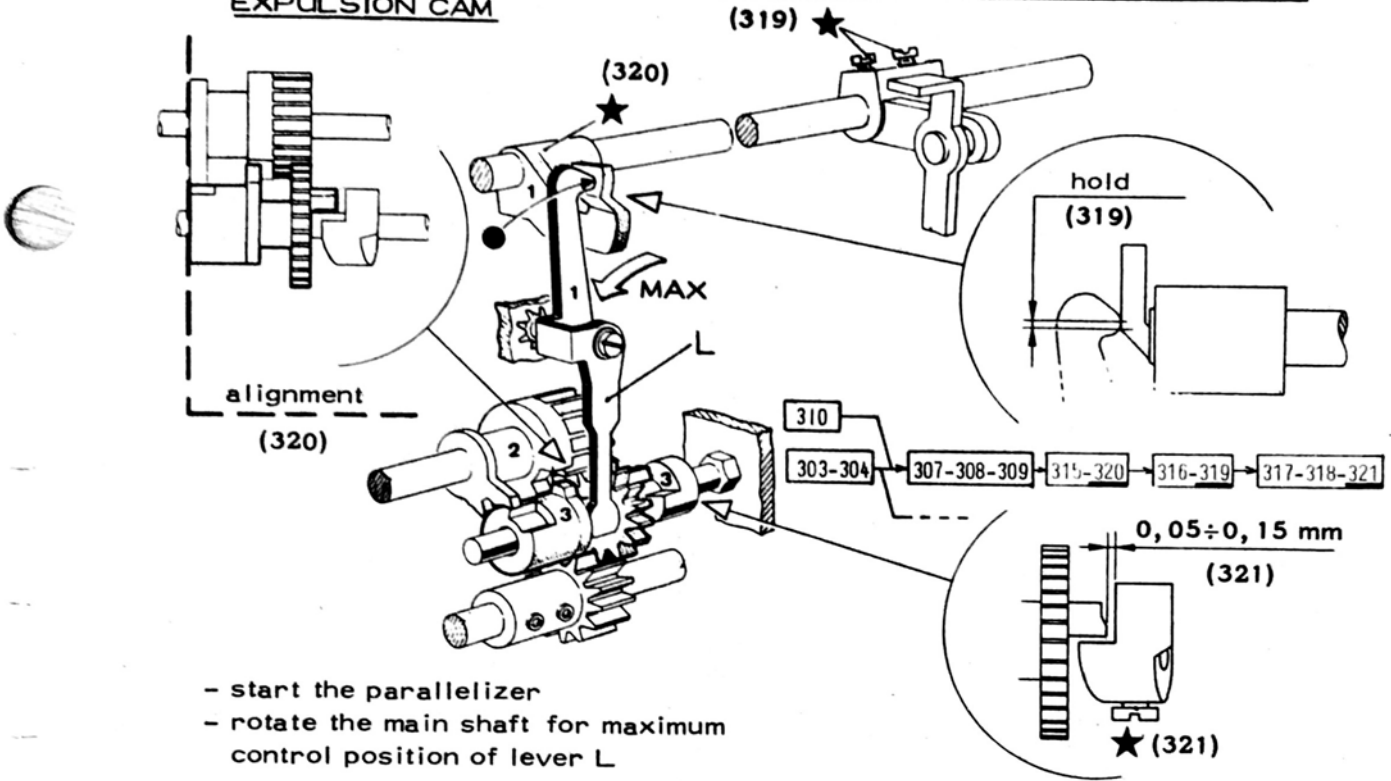
317-318) CHECK THE POSITION OF THE "CYCLIC SERVICES" AND "FUNCTIONS" EXPULSION CAM



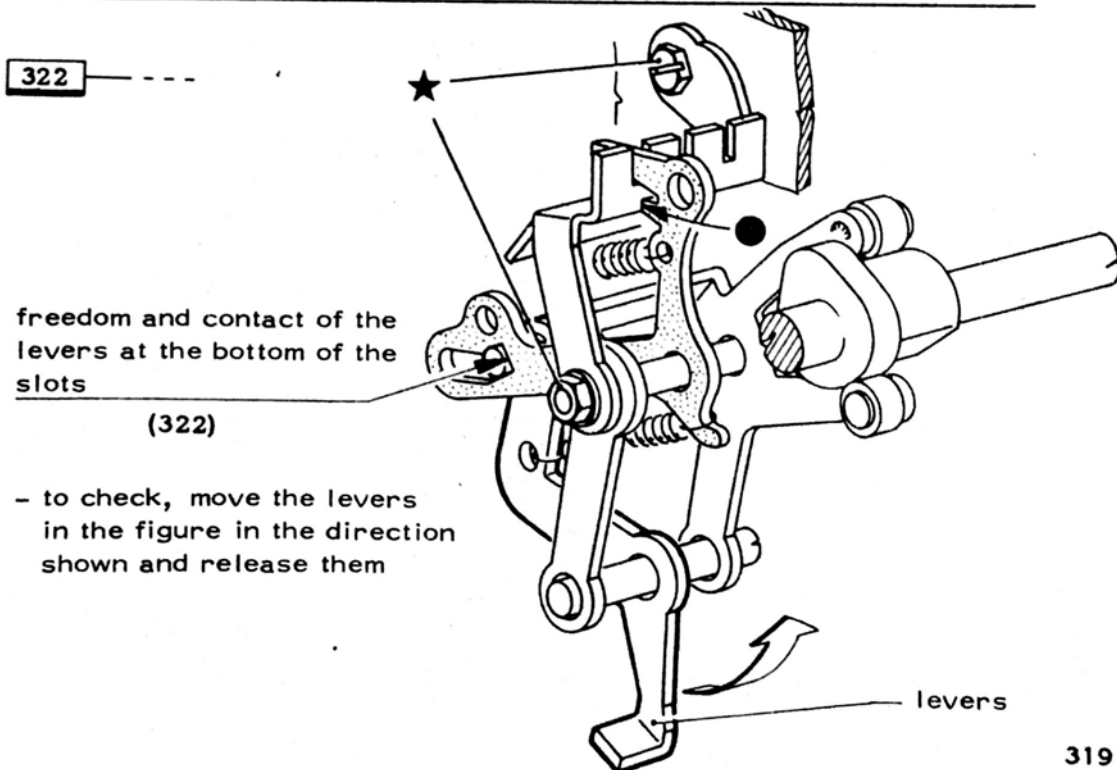
319) CHECK THE WORK POSITION OF THE "CYCLIC SERVICES AND FUNCTIONS" START CRANK

320) CHECK THE WORK POSITION OF THE "CYCLIC SERVICES AND FUNCTIONS" CLUTCH IDLER

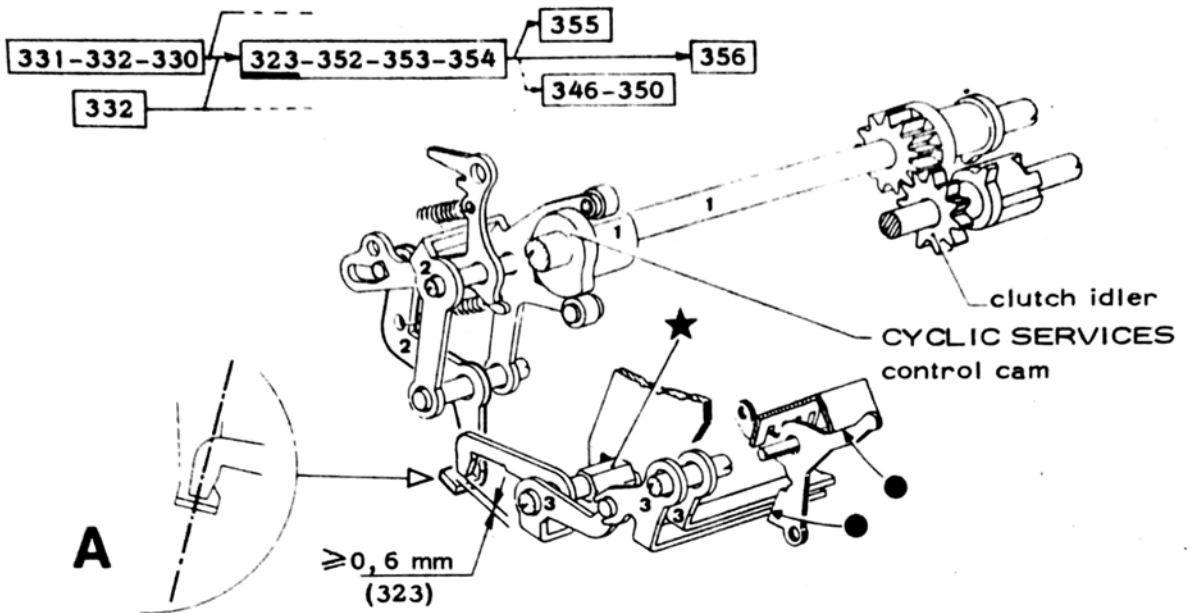
321) CHECK THE POSITION OF THE "CYCLIC SERVICES AND FUNCTIONS" EXPULSION CAM



322) CHECK THE REST POSITION OF THE ACTUATION LEVERS OF THE CYCLIC SERVICES

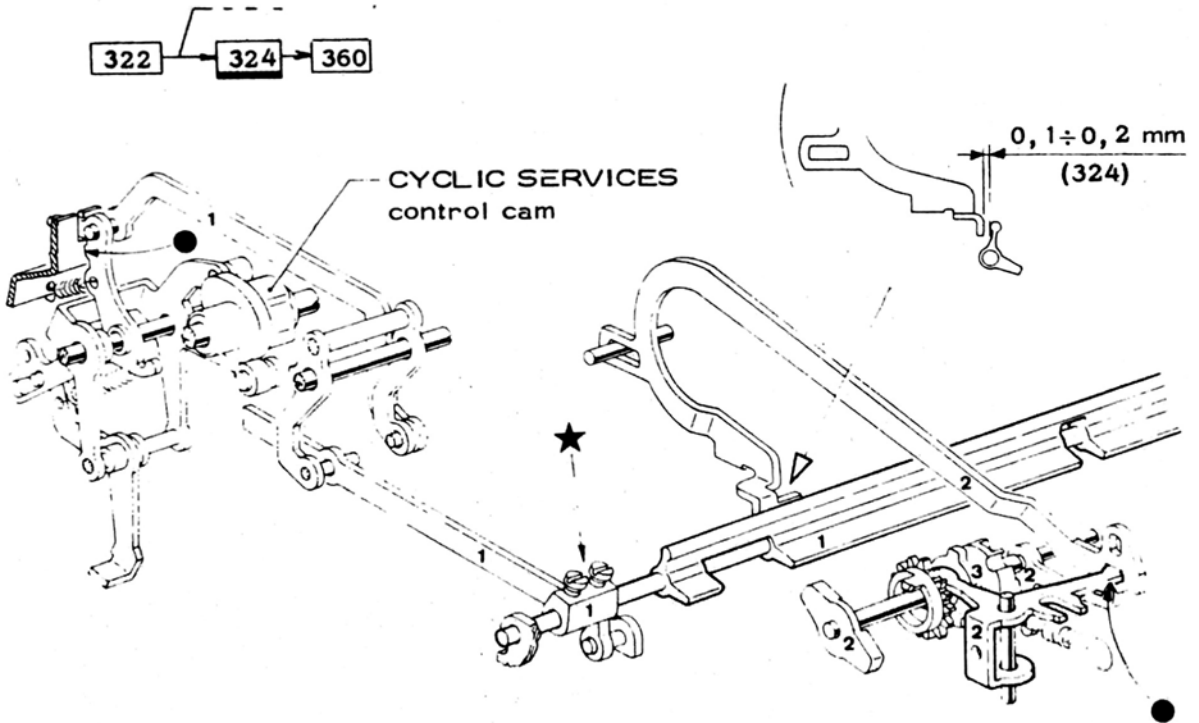


323) CHECK THE REST POSITION OF THE CYCLIC SERVICES CLEARING HOOKS

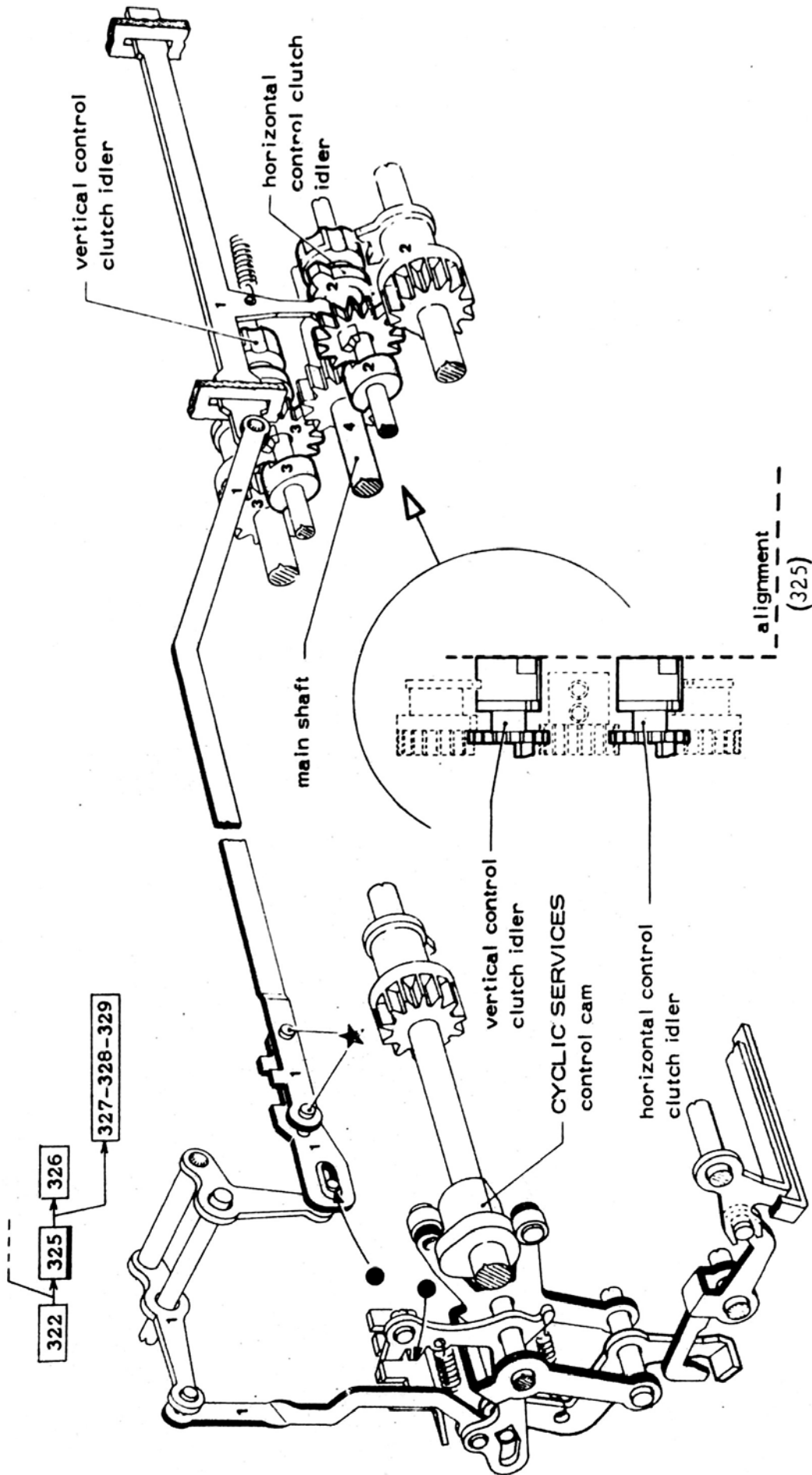


- enter on the printing bars a code that doesn't foresee suppressions
- insert the "FUNCTIONS AND CYCLIC SERVICES" clutch idler
- rotate the main shaft to reach the position shown in fig. A.

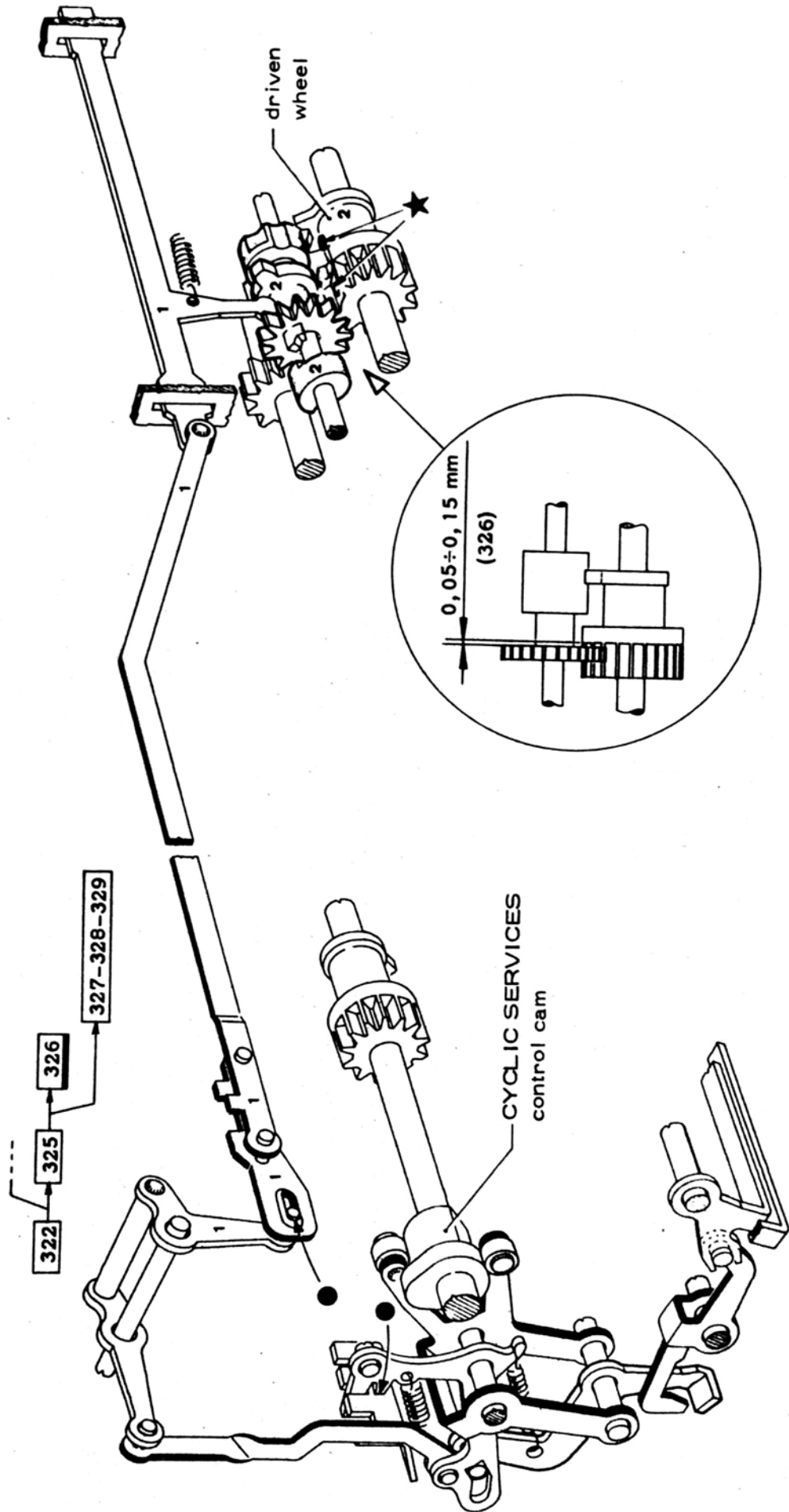
324) CHECK THE POSITION OF THE STROKE BAR



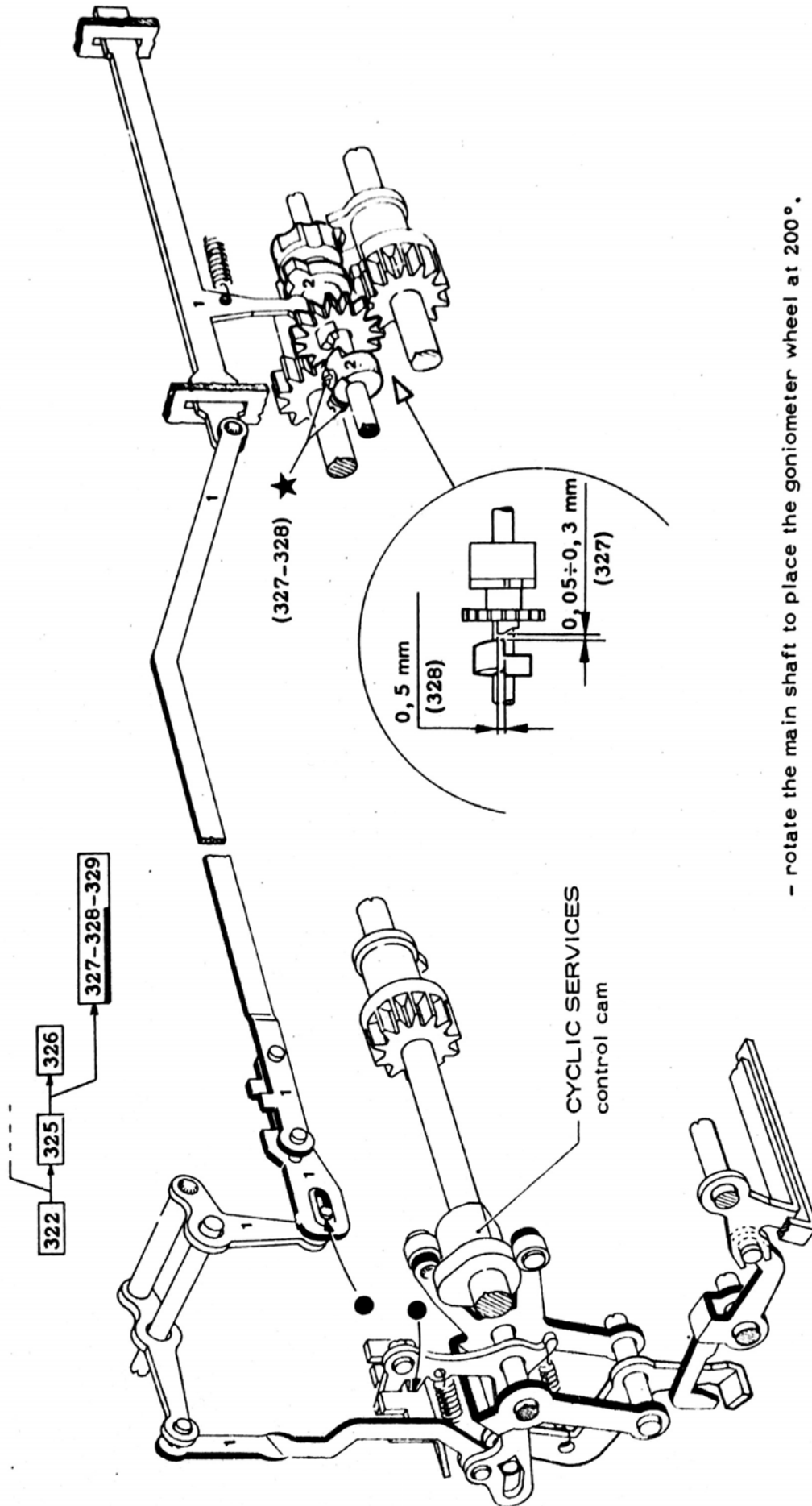
325) CHECK ON THE REST POSITION OF THE HORIZONTAL CONTROL CLUTCH IDLER



326) CHECK THE DRIVEN WHEEL POSITION OF THE HORIZONTAL CONTROL

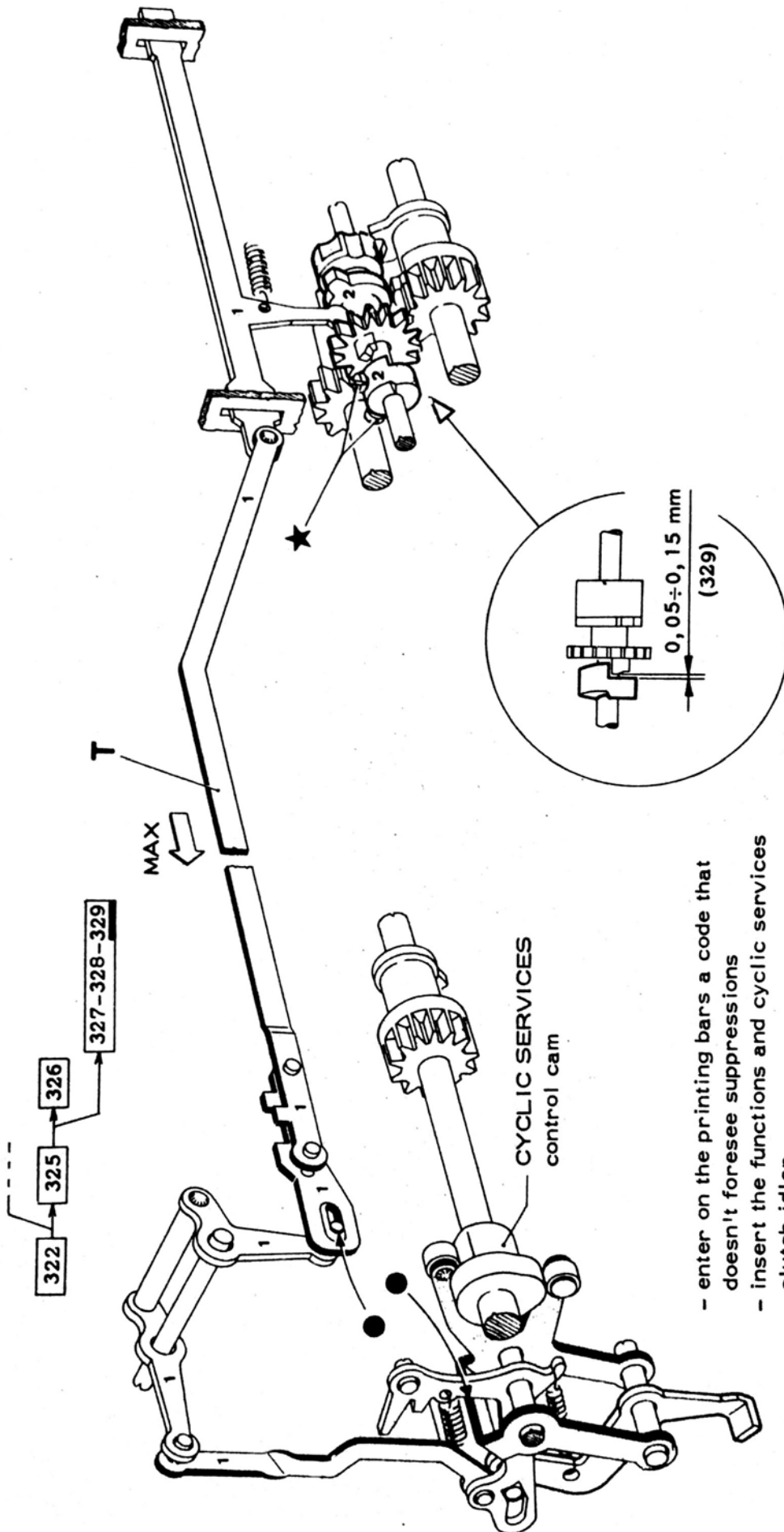


327-328) CHECK THE POSITION OF THE EXPULSION CAM FOR HORIZONTAL CONTROL



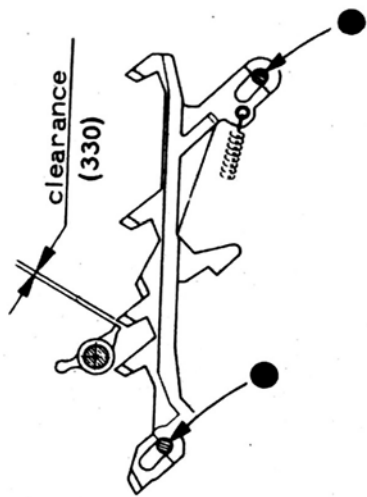
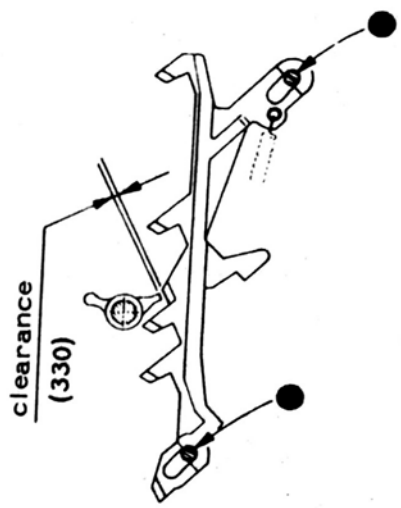
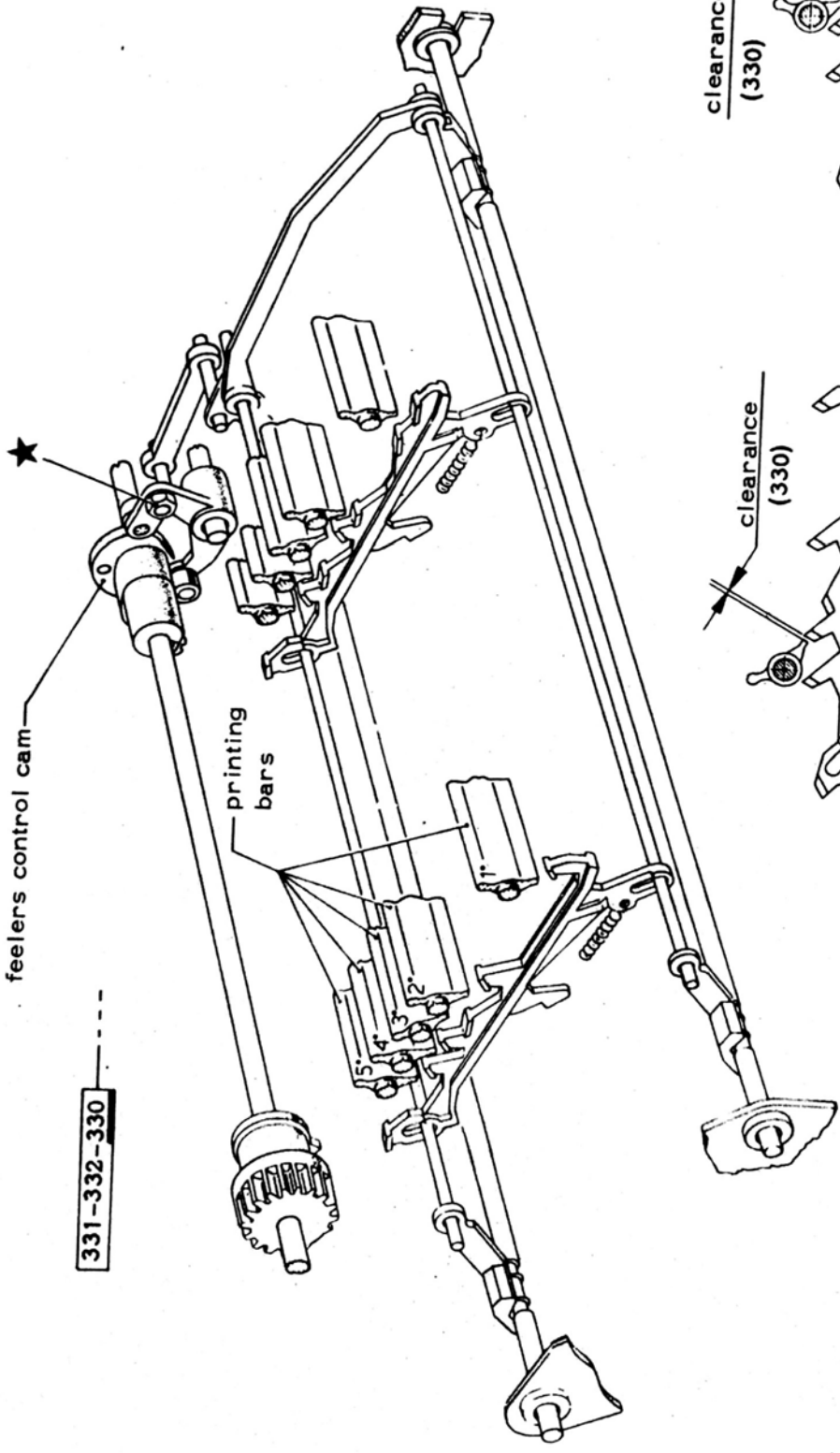
- rotate the main shaft to place the goniometer wheel at 200°.

329) CHECK THE POSITION OF THE EXPULSION CAM FOR HORIZONTAL CONTROL



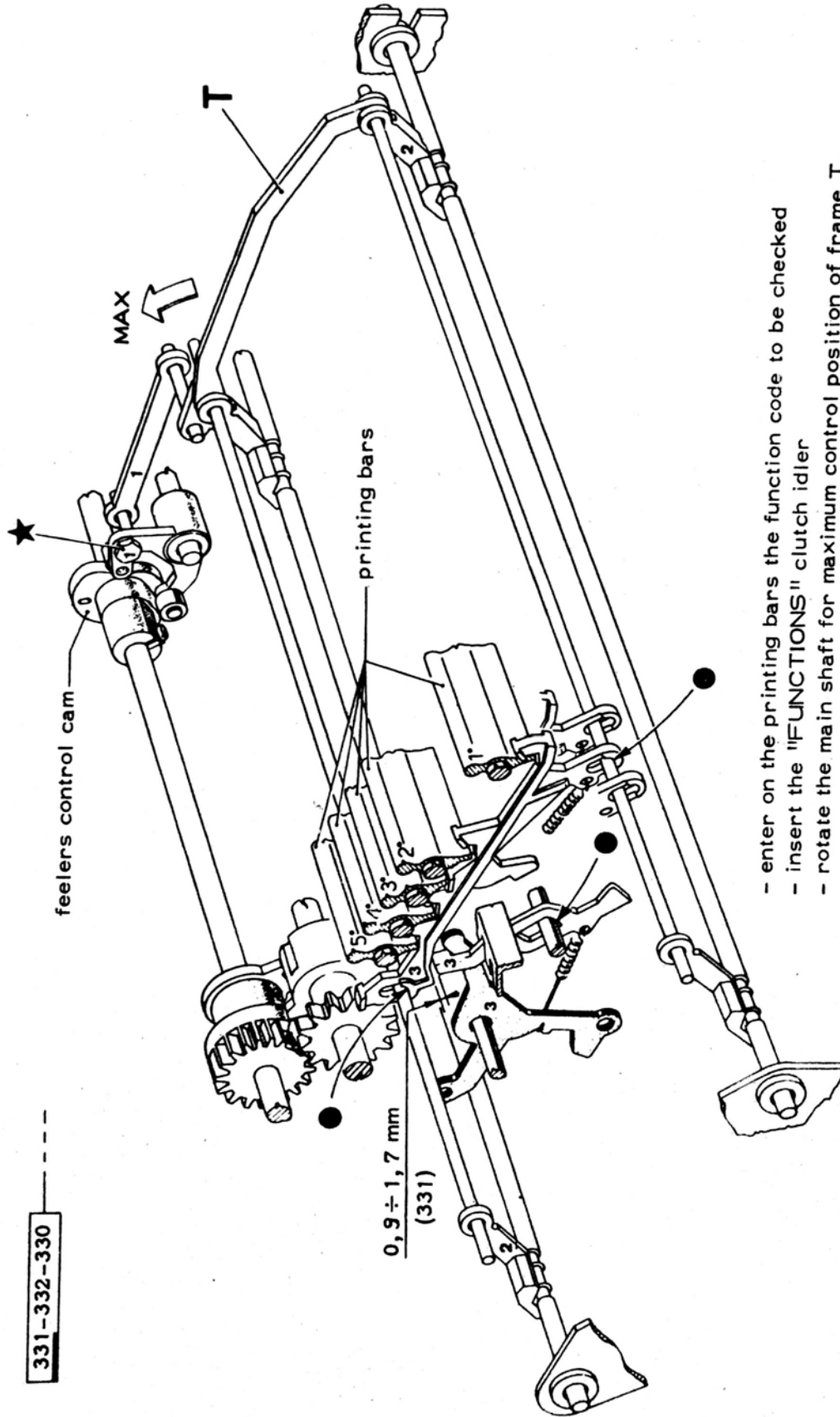
- enter on the printing bars a code that doesn't foresee suppressions
- insert the functions and cyclic services clutch idler
- rotate the main shaft for maximum control position of rod T.

330) CHECK THE REST POSITION OF THE FEELERS CONTROL FRAME



331) CHECK THE WORK POSITION OF THE FEELERS CONTROL FRAME

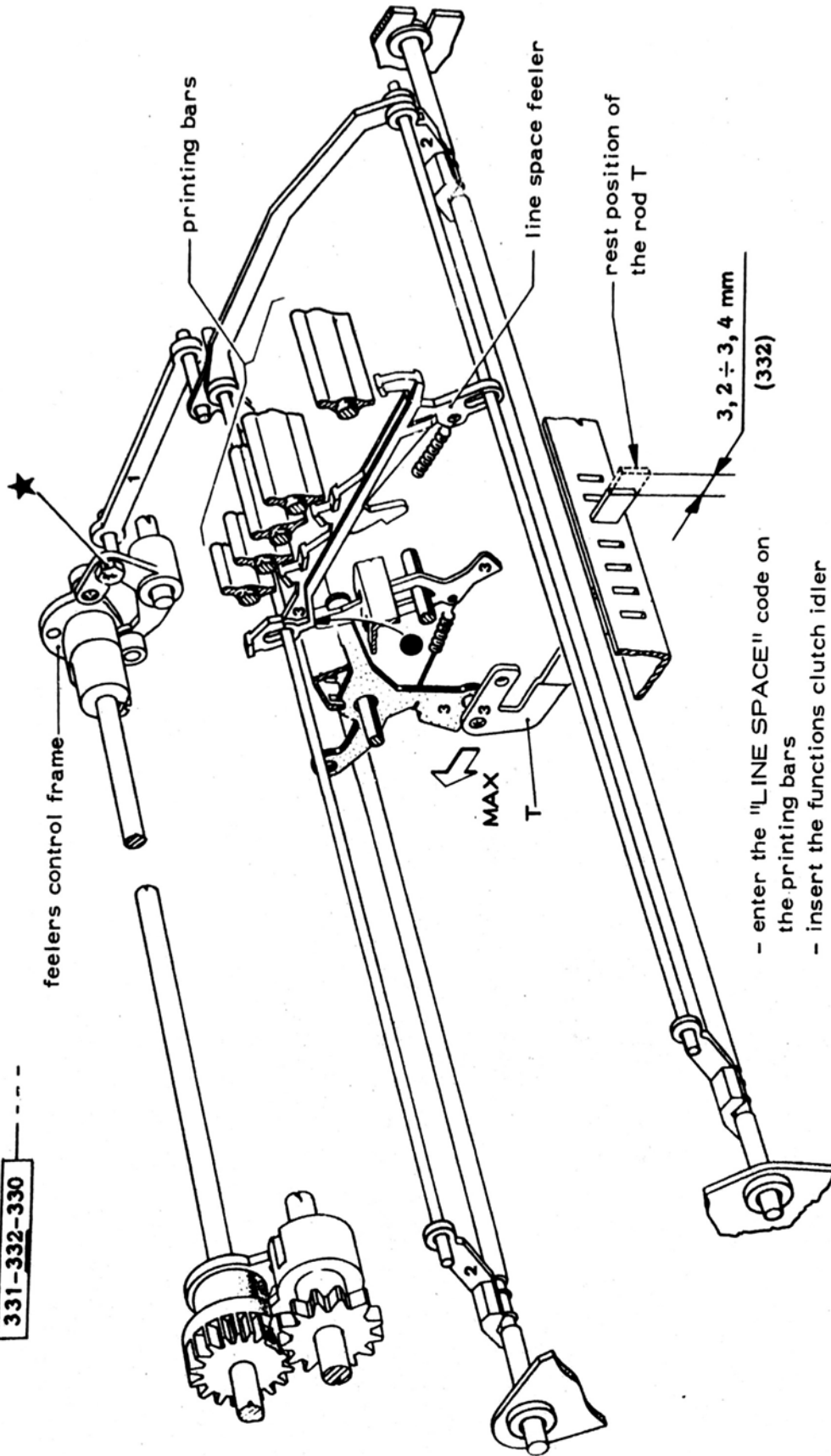
331-332-330



- enter on the printing bars the function code to be checked
- insert the "FUNCTIONS" clutch idler
- rotate the main shaft for maximum control position of frame T.

332) CHECK THE QUANTITY OF CONTROL ON THE FEELERS CONTROL FRAME

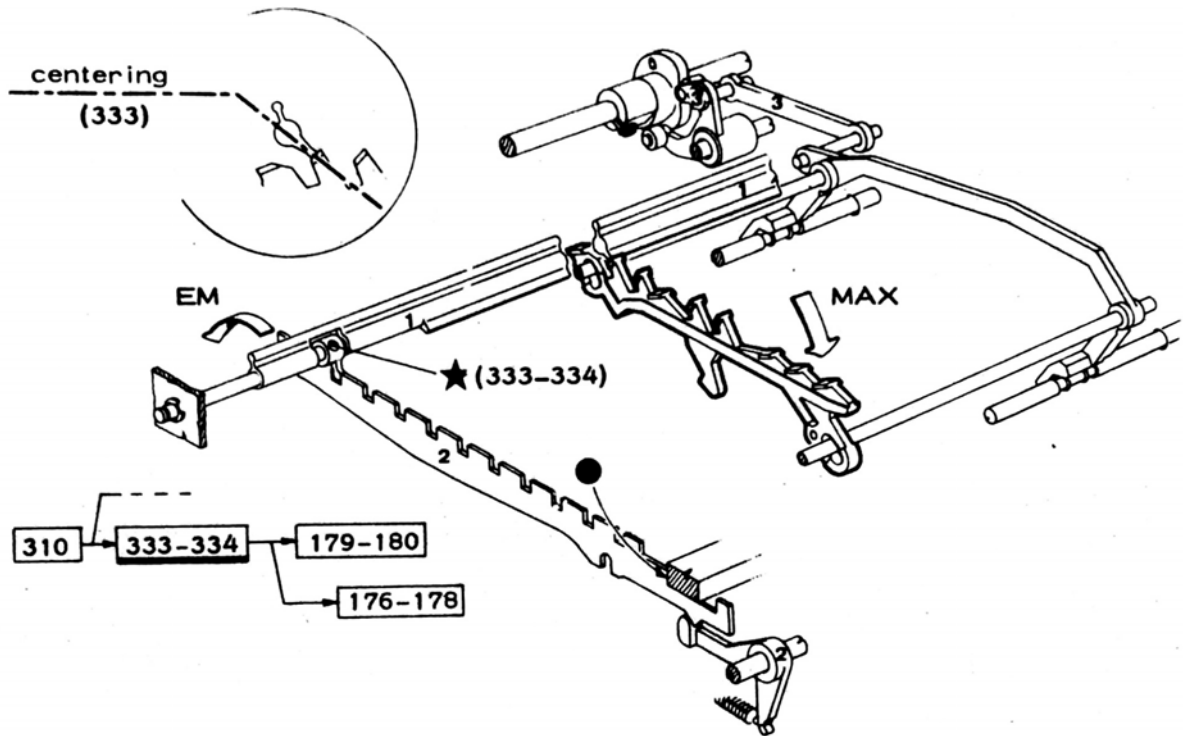
331-332-330



- enter the "LINE SPACE" code on the printing bars
- insert the functions clutch idler
- rotate the main shaft for maximum control position of rod T.

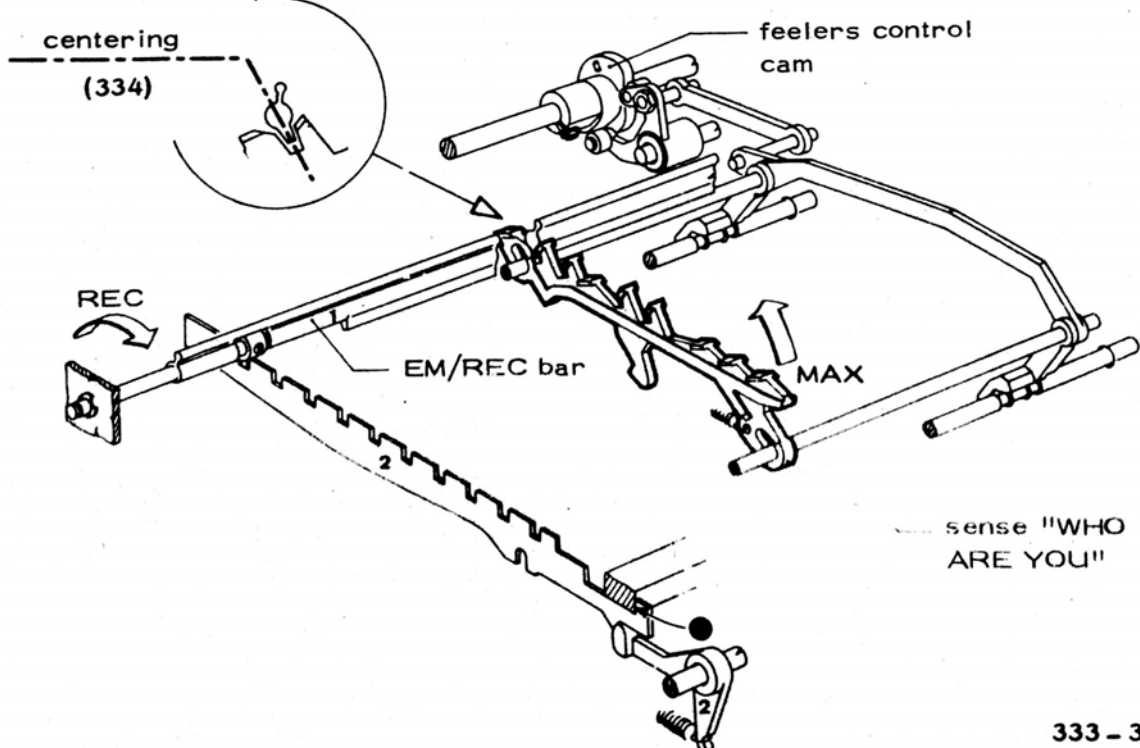
Note: if there is no line space rod, perform the check on one of the figures or letters rods, entering the relative code.

333-334) CHECK THE POSITION OF THE "EM/REC BAR

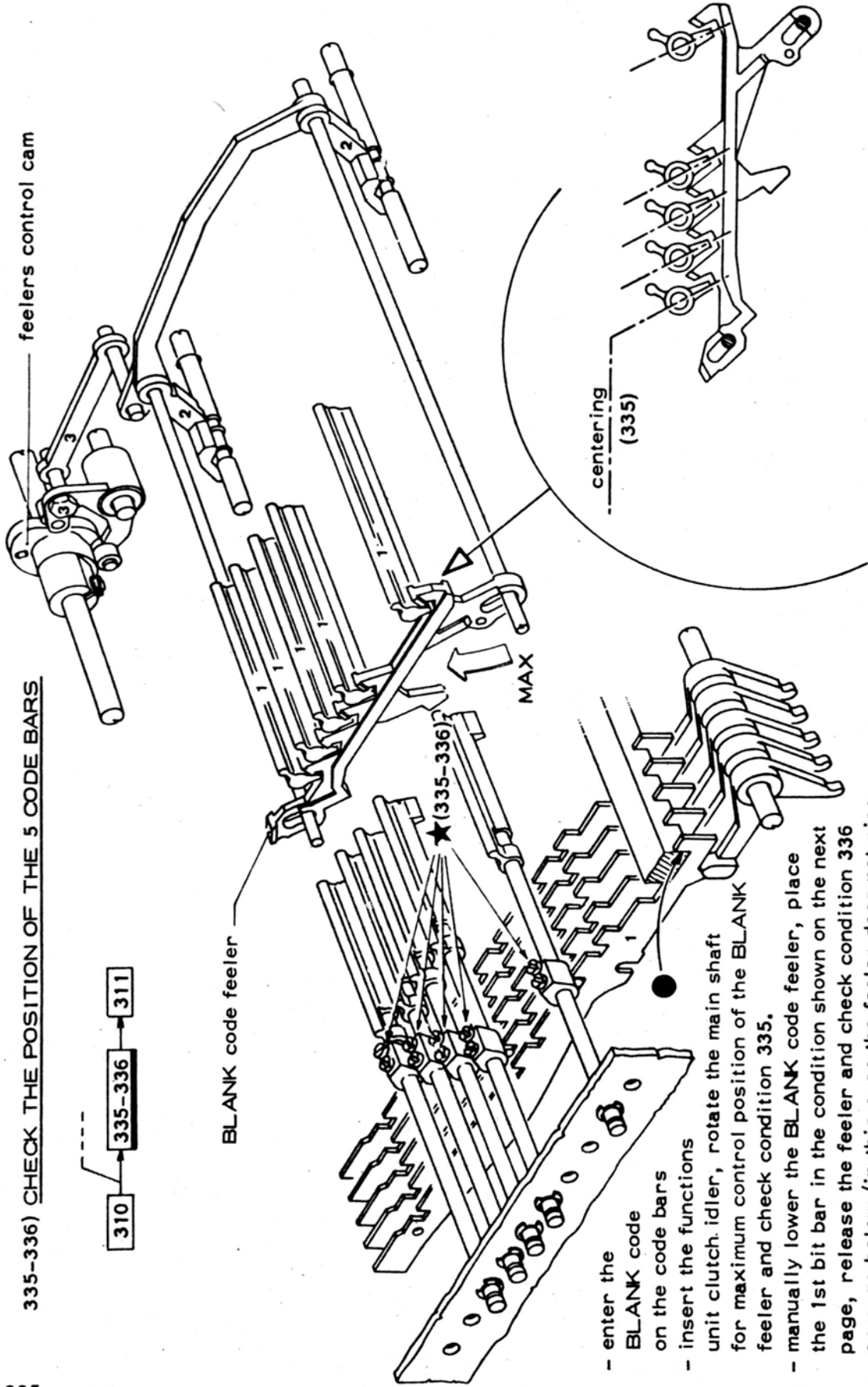


- enter the "WHO ARE YOU" code on the code bar; LTR/FGR bar in FGR
- set the EM/REC bar in REC (fig. below)
- insert the functions clutch idler and rotate the main shaft for maximum control position of the feeler and check condition 334
- manually lower the "WHO ARE YOU" code feeler (fig. above) set the EM/REC bar in EM and check condition 333 (in this case the released feeler does not rise again).

Note: check the conditions referring to the "WHO ARE YOU" feeler found in the 2nd position of the functions unit.



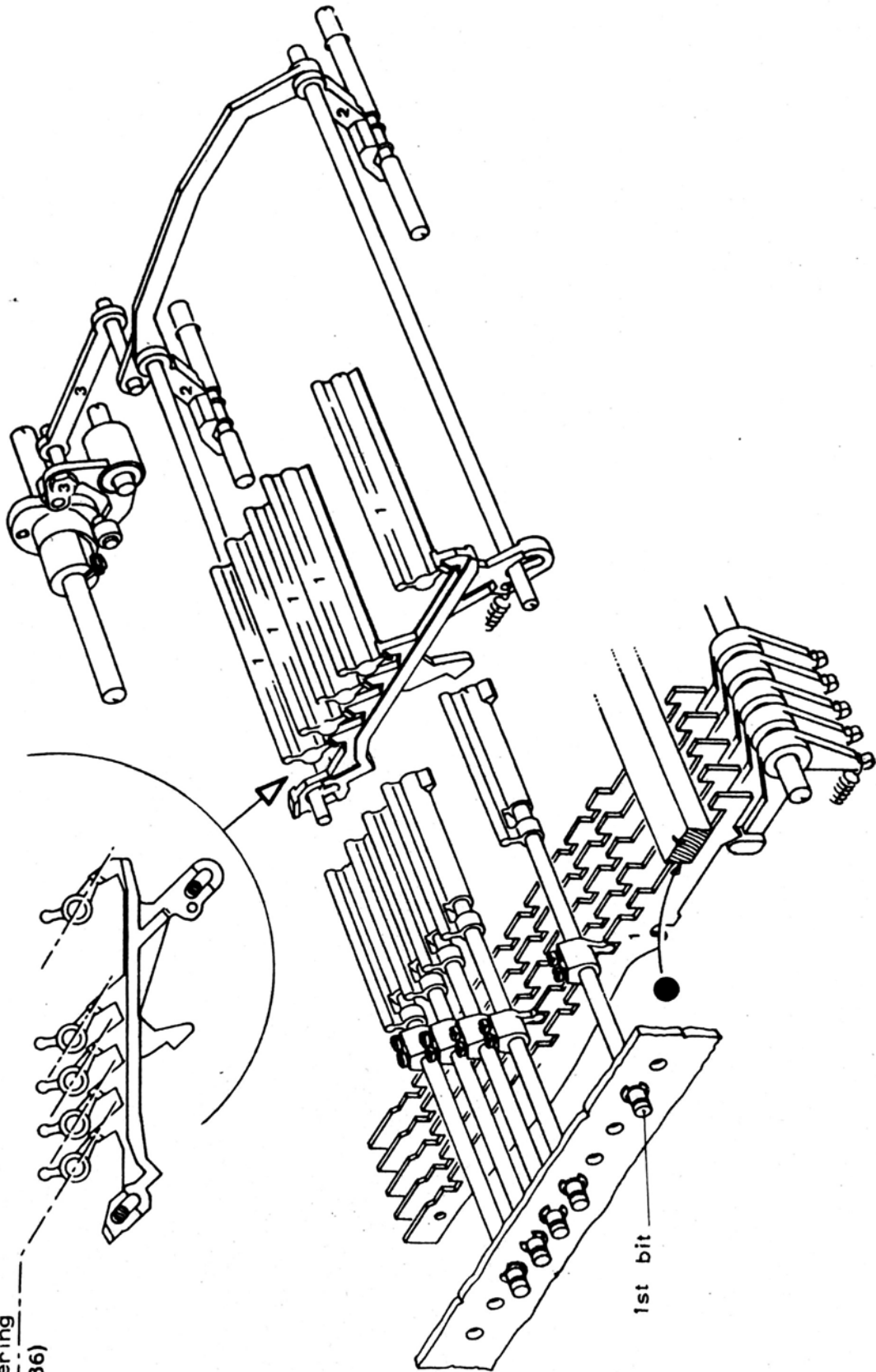
335-336) CHECK THE POSITION OF THE 5 CODE BARS



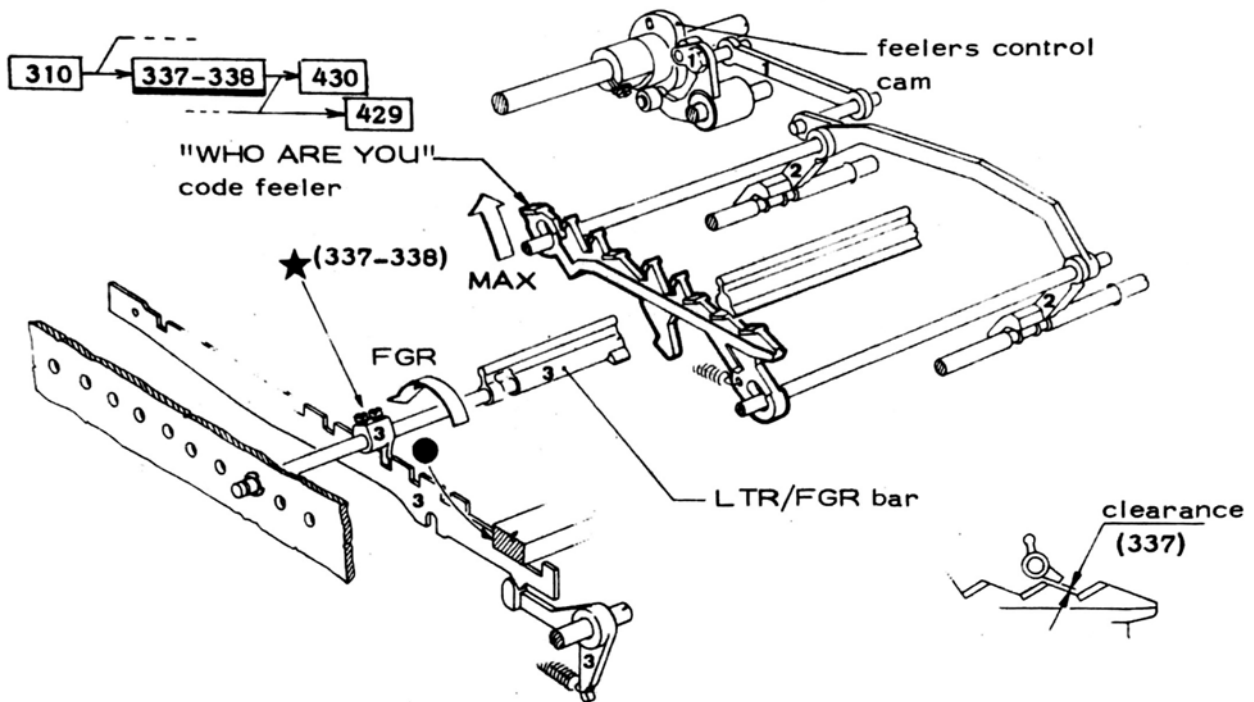
- enter the BLANK code on the code bars
- insert the functions unit clutch idler, rotate the main shaft for maximum control position of the BLANK feeler and check condition 335.
- manually lower the BLANK code feeler, place the 1st bit bar in the condition shown on the next page, release the feeler and check condition 336 on page below (in this case the feeler does not rise again) perform check also for the other code bars.

(see previous page)

centering
(336)

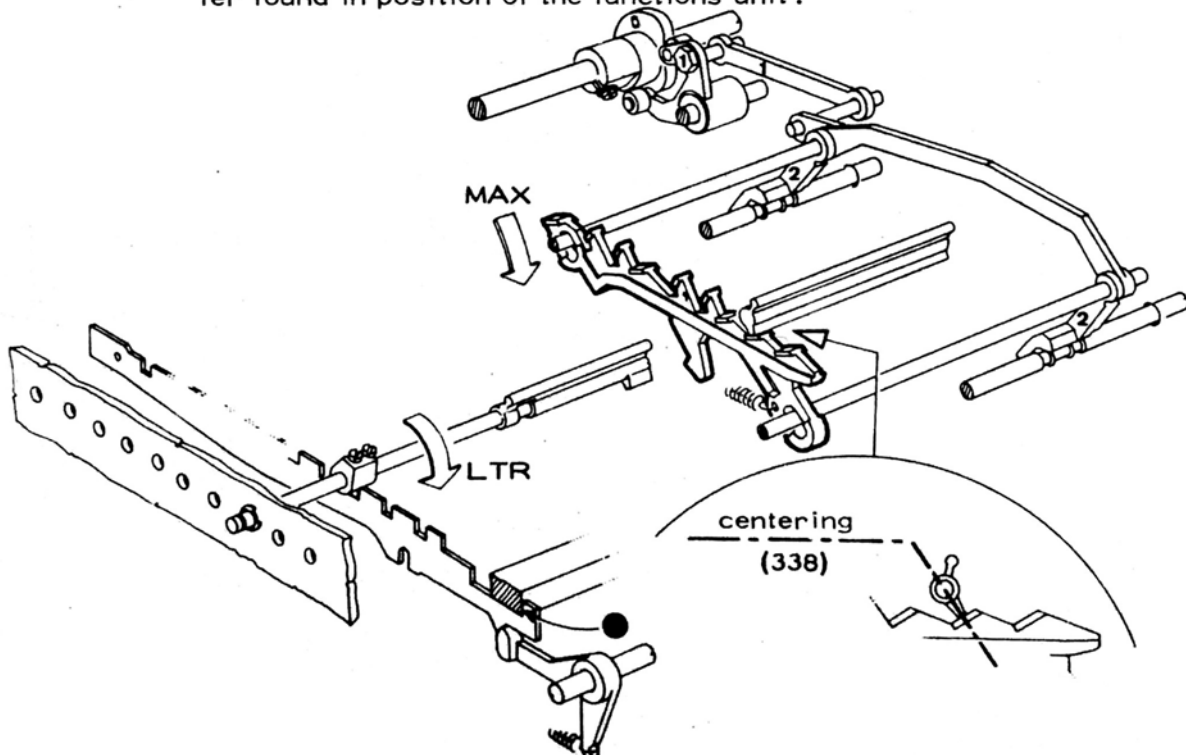


337-338) THE CENTERING OF THE FIGURE/LETTER BAR (FGR/LTR)

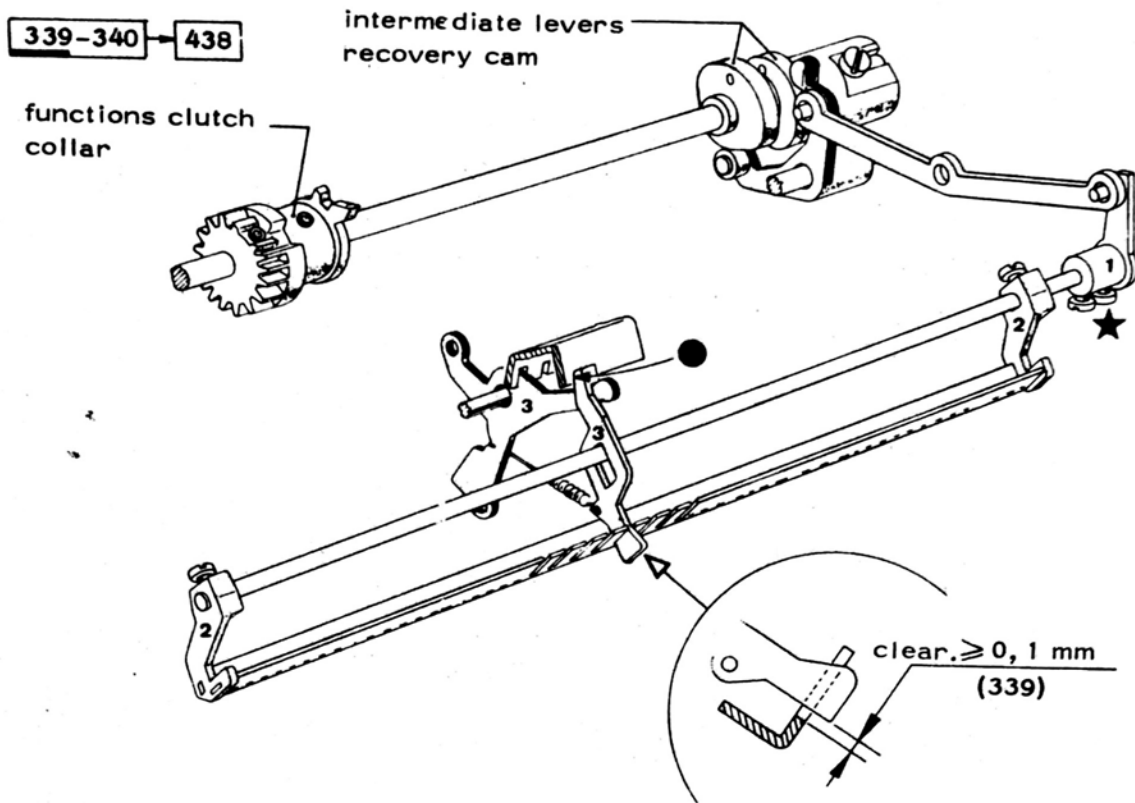


- enter the "WHO ARE YOU" code on the code bars
- set the FGR/LTR in FGR
- insert the functions unit clutch idler, rotate the main shaft for maximum control position of the "WHO ARE YOU" feeler and check condition 337 (fig. above) (in this case the feeler can rise)
- lower the feeler, set the LTR/FGR bar in LTR, release the feeler and check condition 338 (fig. below) (in this case the actuator can not rise).

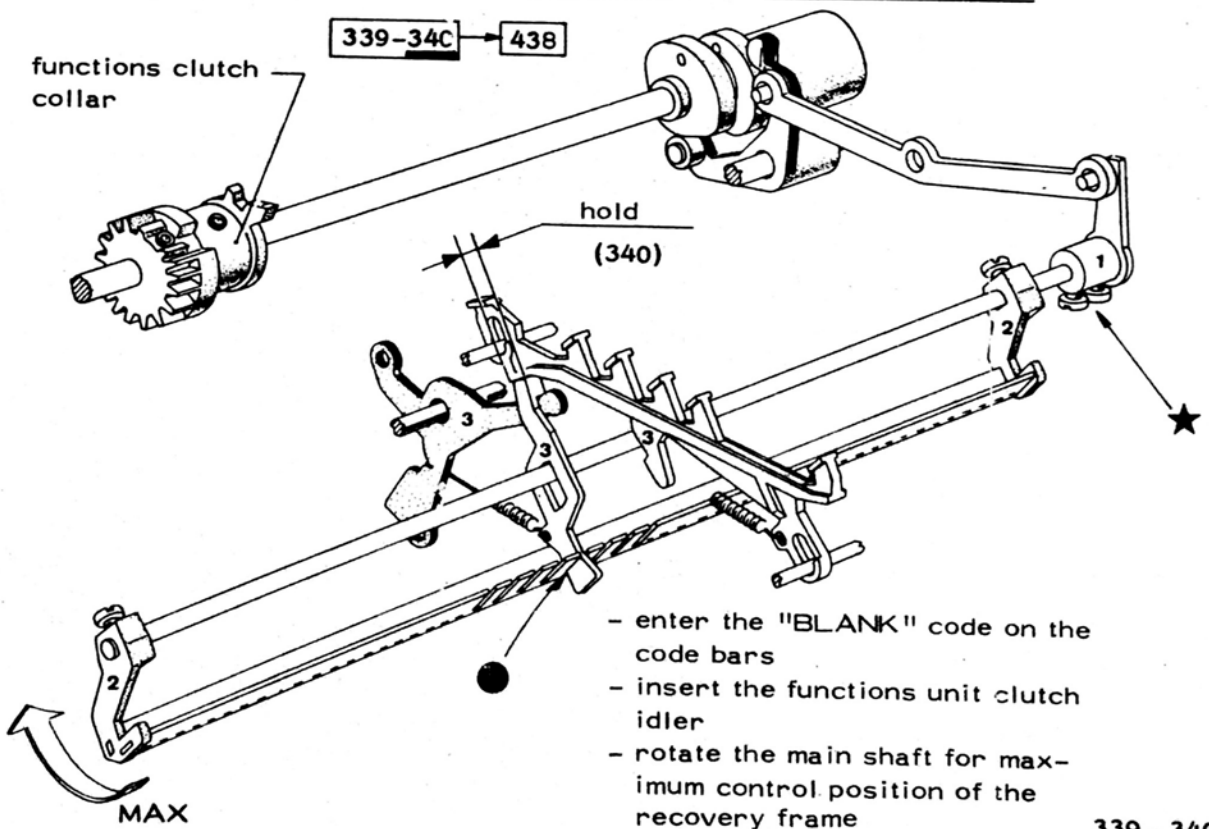
Note: check the conditions making reference to the "WHO ARE YOU" feeler found in position of the functions unit.



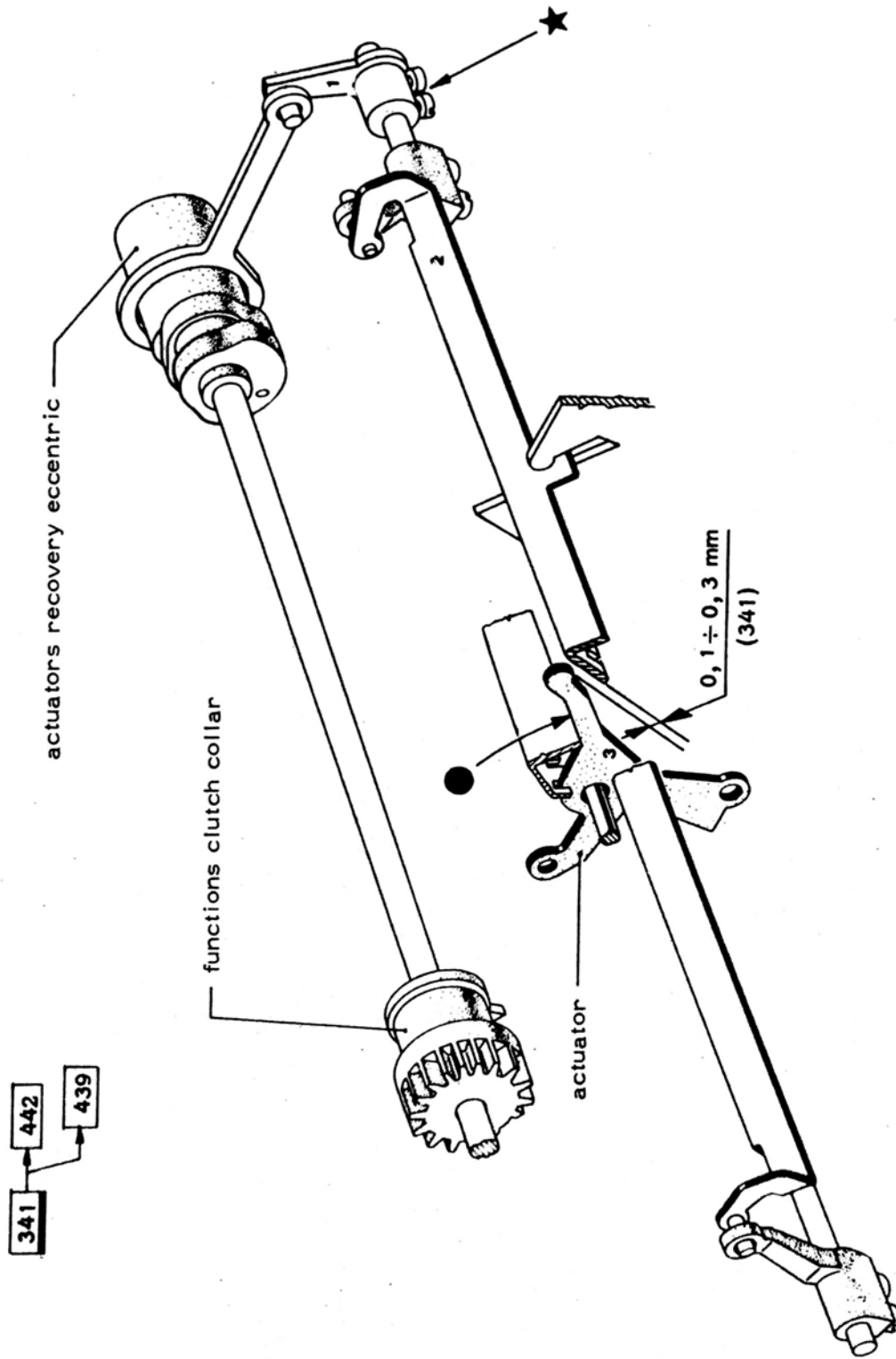
339) CHECK THE REST POSITION OF THE INTERMEDIATE LEVERS
RECOVERY FRAME



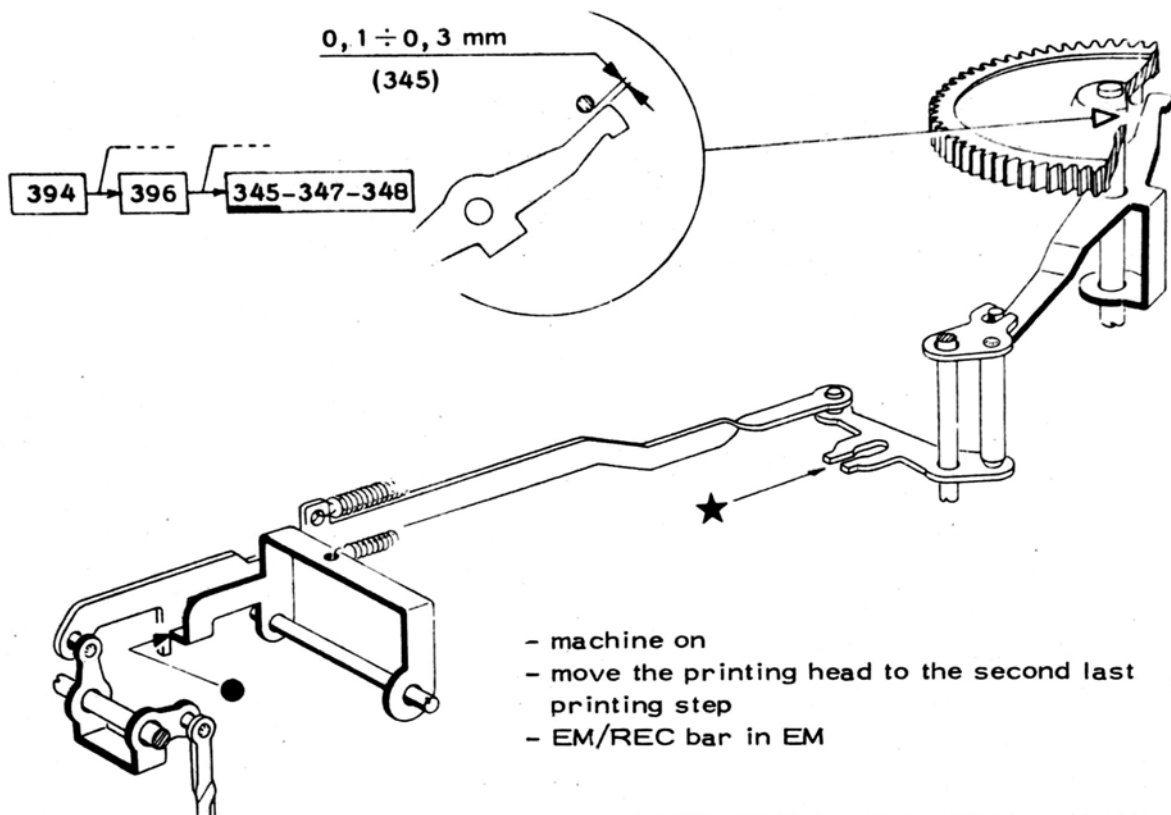
340) CHECK THE WORK POSITION OF THE INTERMEDIATE LEVERS
RECOVERY FRAME



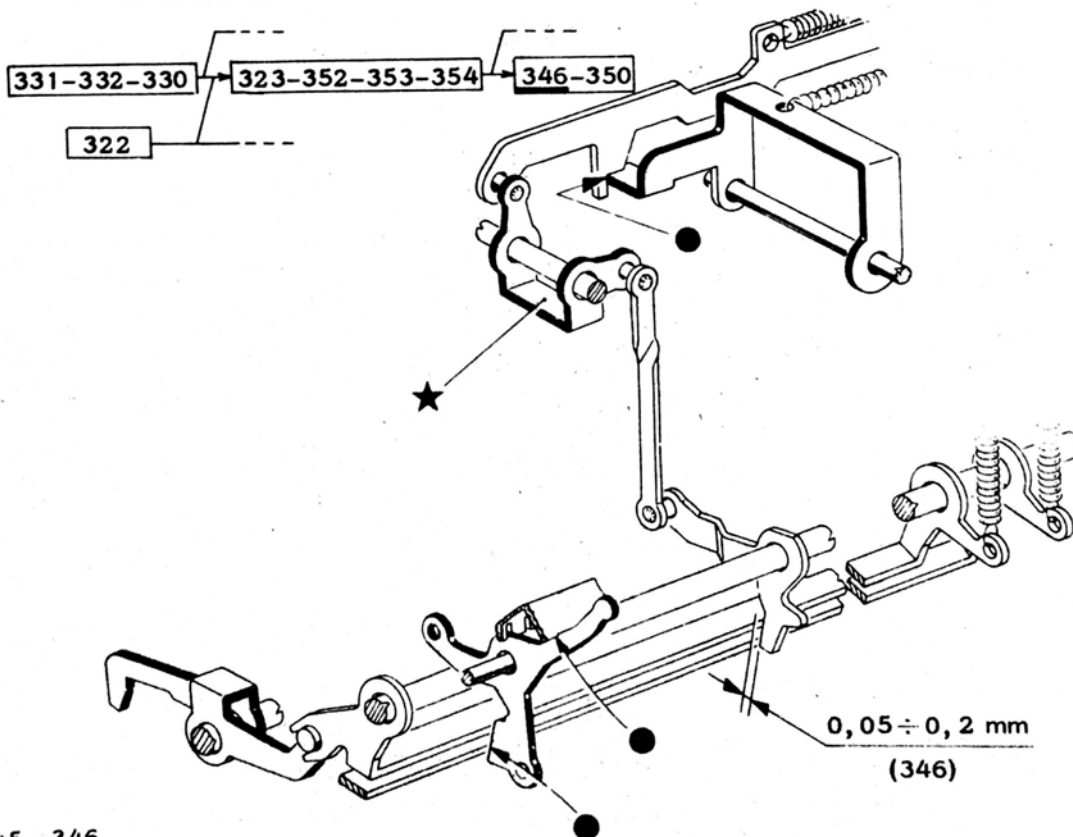
341) CHECK THE POSITION OF THE ACTUATORS RECOVERY FRAME



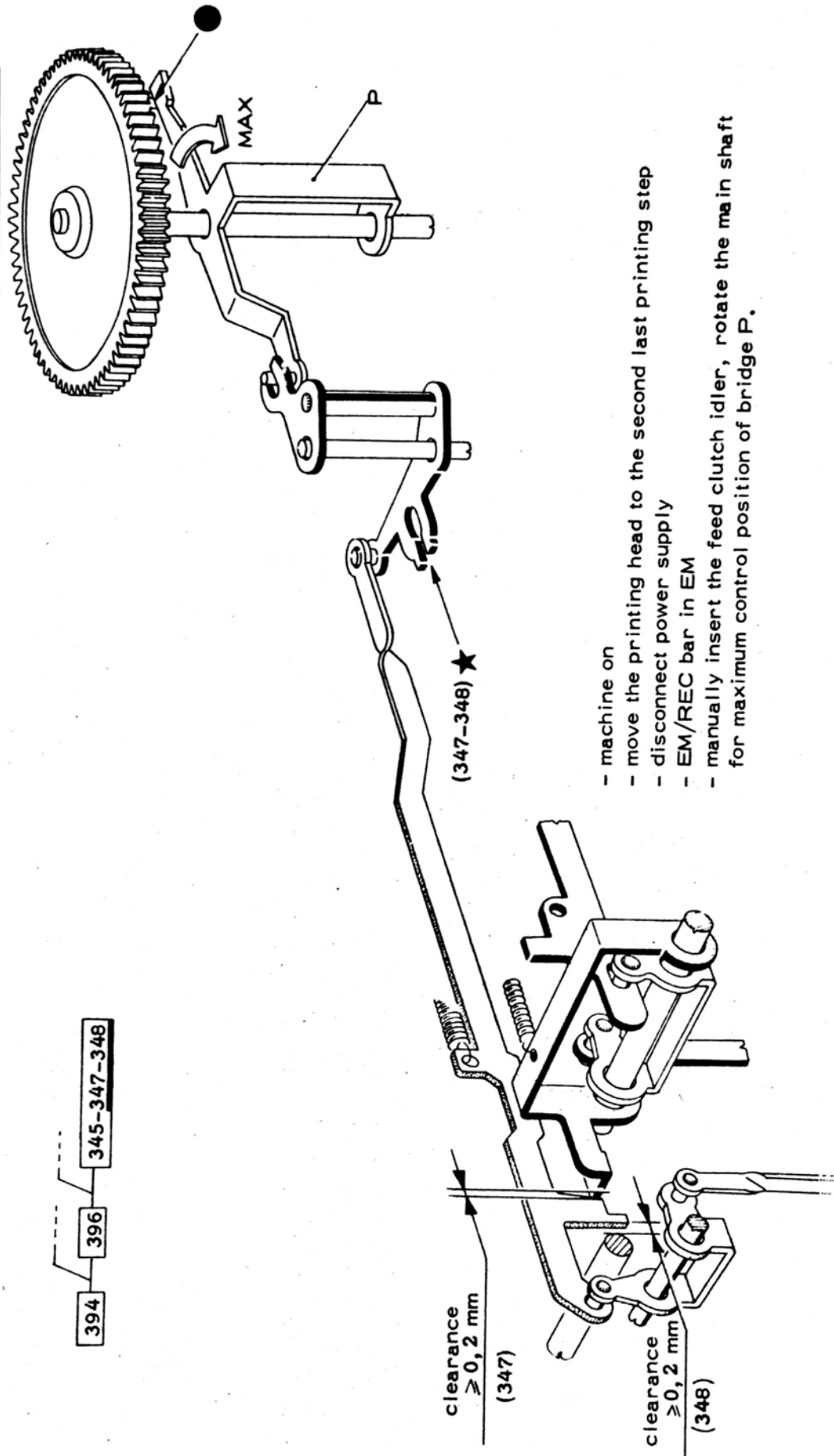
345) CHECK THE ANGULAR POSITION OF THE BRIDGE FOR END OF THE LINE "FEED AND STROKE" CLEARING



346) CHECK THE REST POSITION OF THE LEVER FOR END OF LINE "FEED AND STROKE" CLEARING



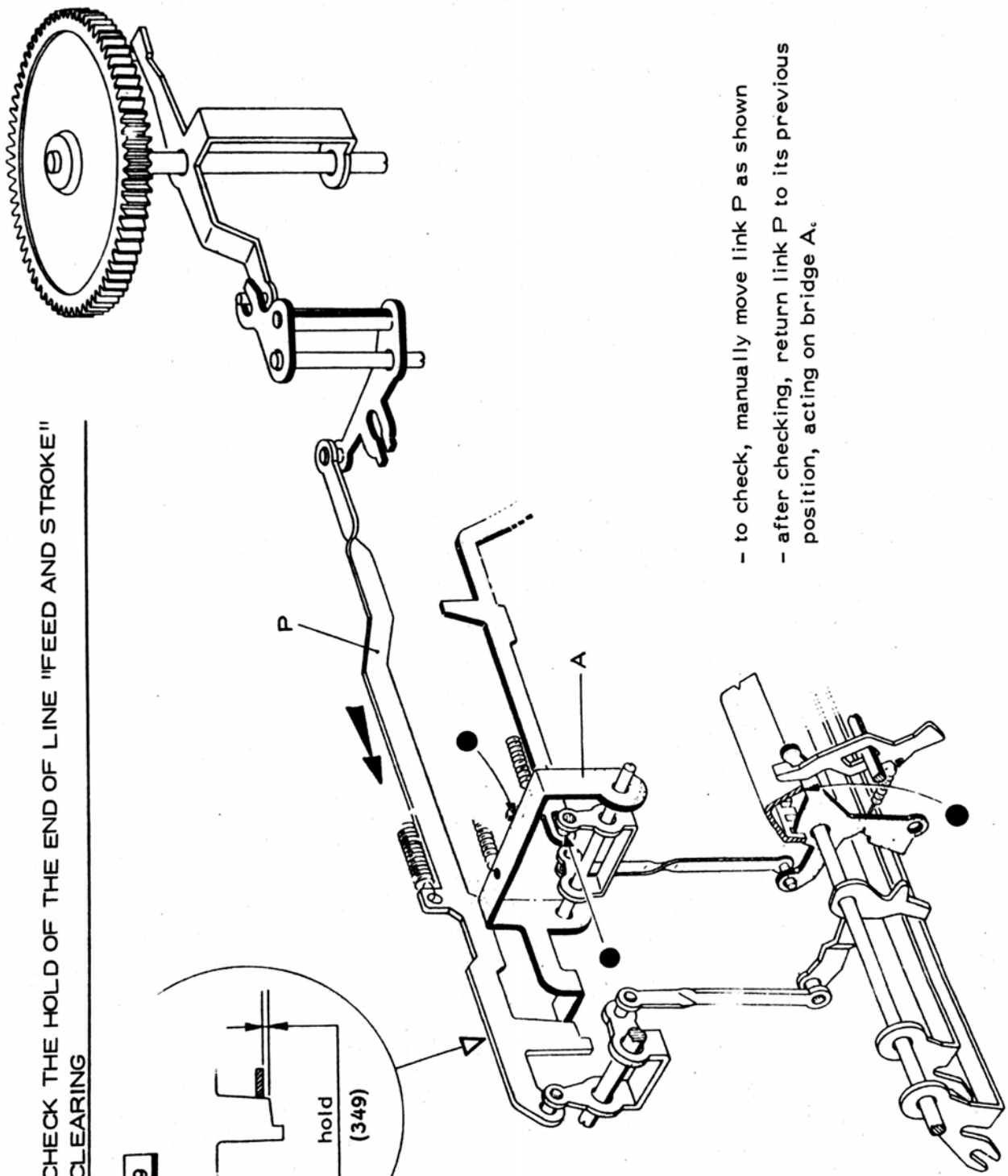
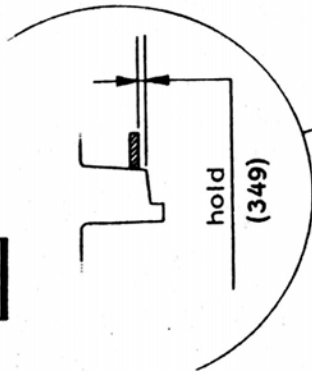
347-348) CHECK THE WORK POSITION OF THE LINK CONTROLLING THE END OF LINE "FEED AND STROKE"
CLEARING LEVER



- machine on
- move the printing head to the second last printing step
- disconnect power supply
- EM/REC bar in EM
- manually insert the feed clutch idler, rotate the main shaft for maximum control position of bridge P.

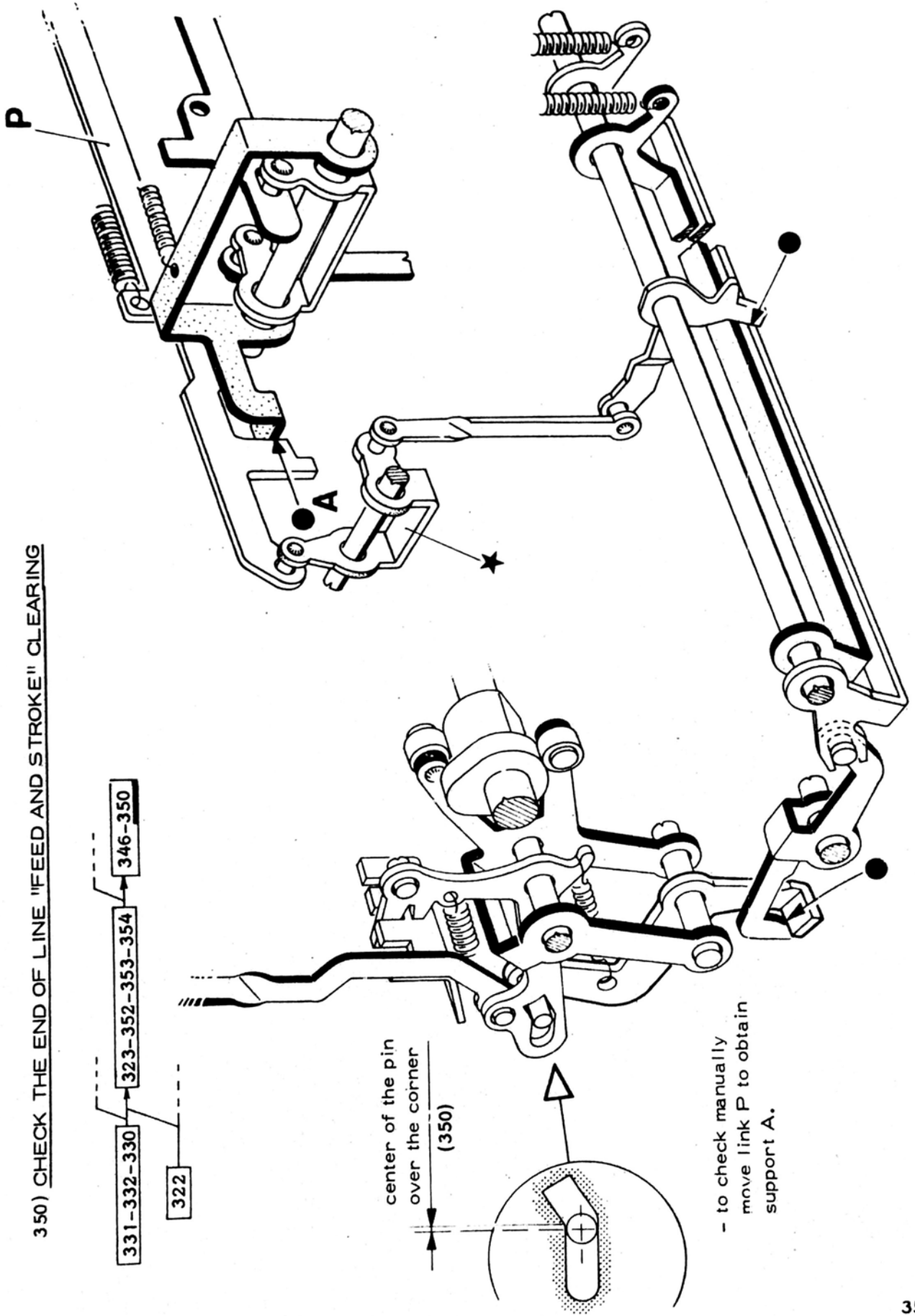
349) CHECK THE HOLD OF THE END OF LINE "FEED AND STROKE"
CLEARING

349



- to check, manually move link P as shown
- after checking, return link P to its previous position, acting on bridge A.

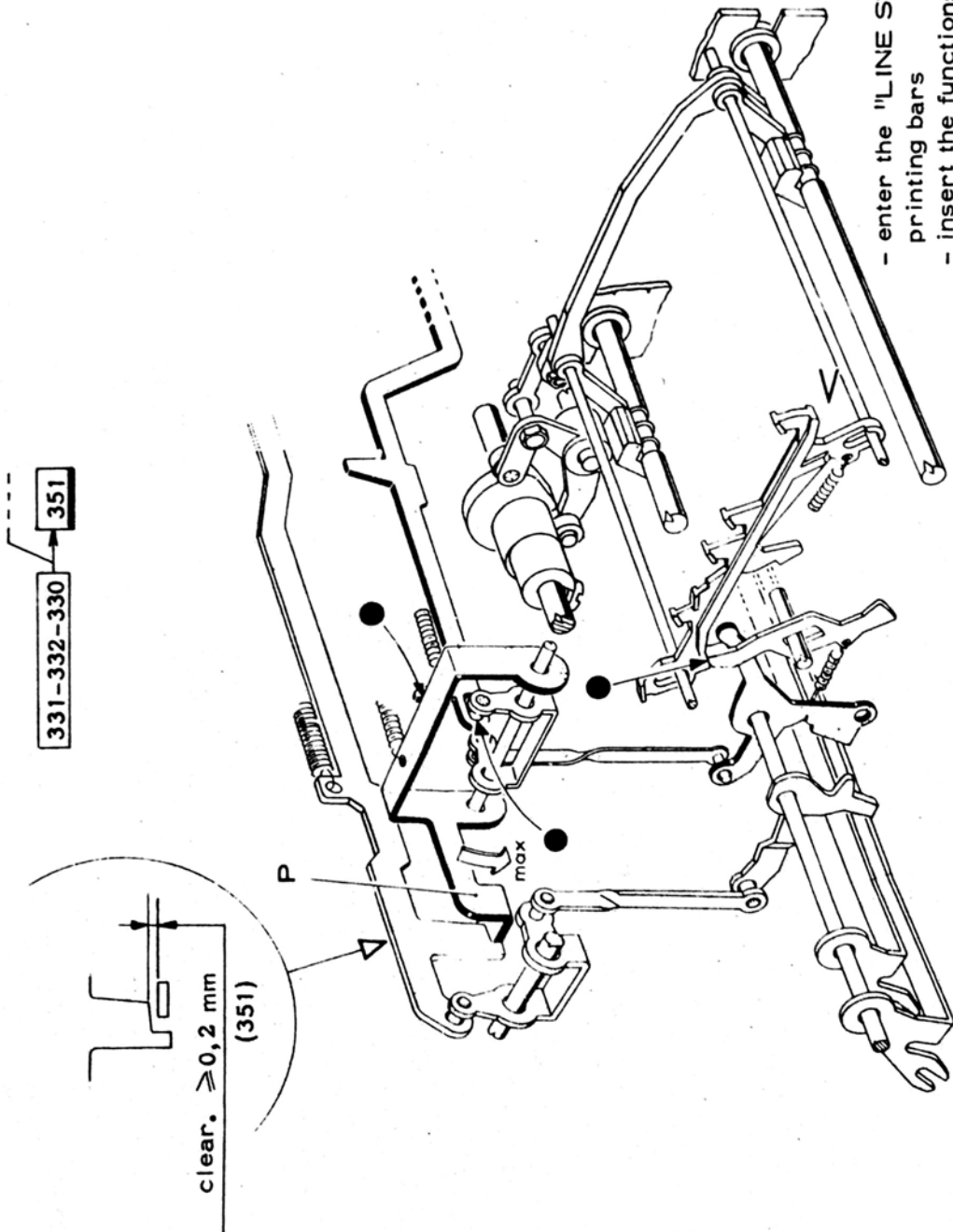
350) CHECK THE END OF LINE "FEED AND STROKE" CLEARING



center of the pin
over the corner
(350)

- to check manually
move link P to obtain
support A.

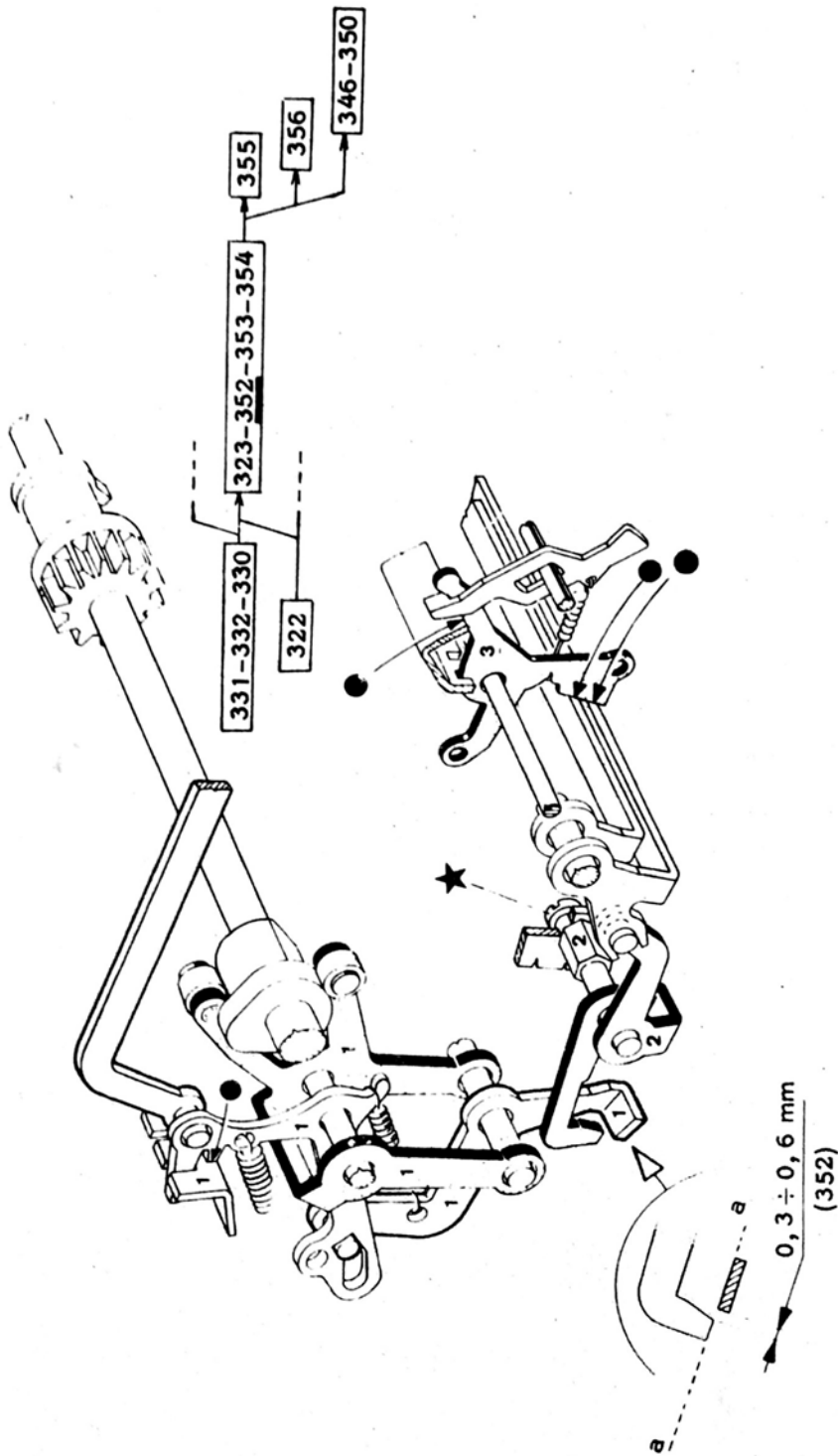
351) CHECK THE RELEASE OF THE HOLD OF THE END OF LINE "FEED AND STROKE" CLEARING



- enter the "LINE SPACE" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of bridge P.

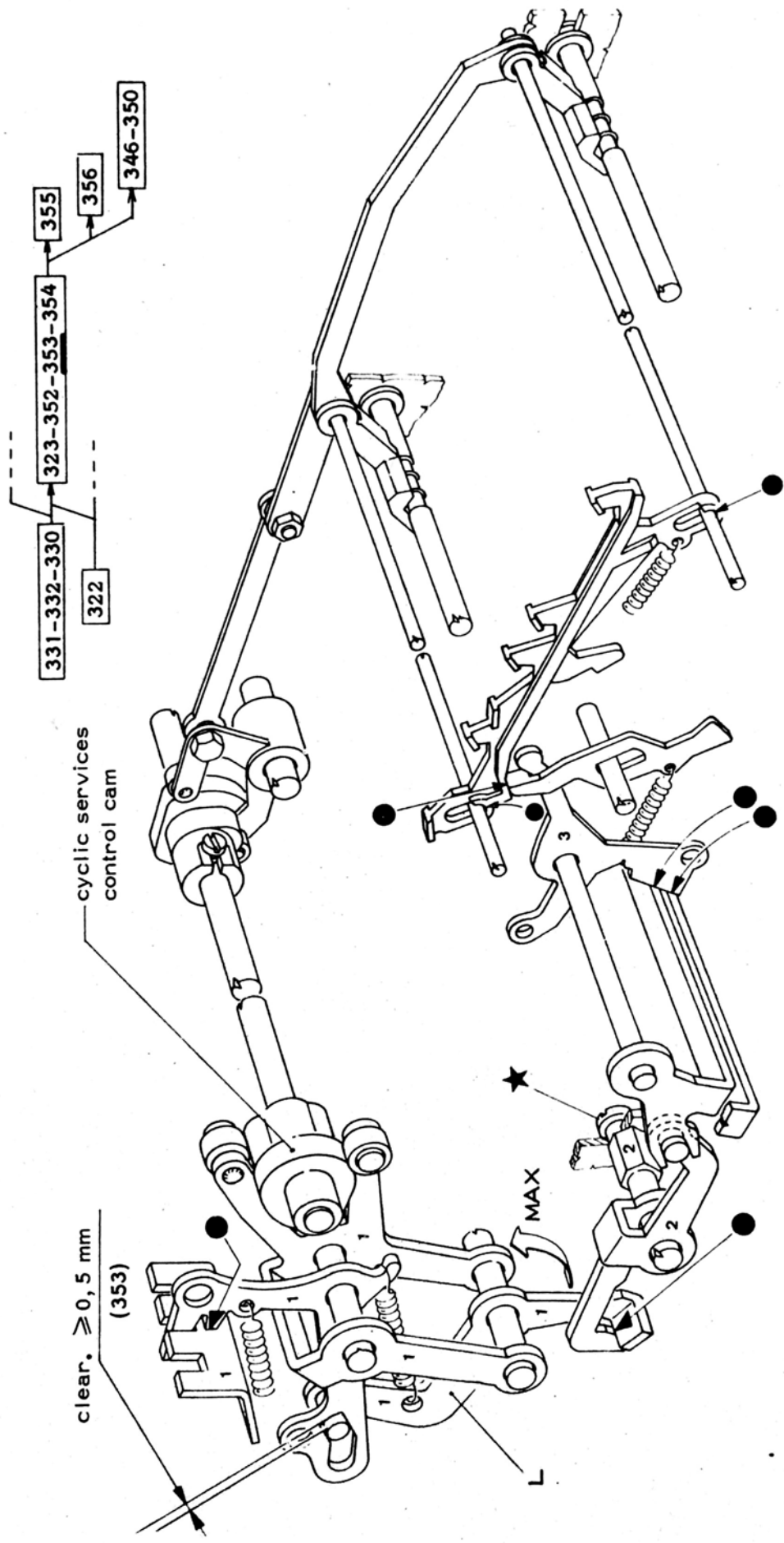


352) CHECK THE POSITION OF THE "STROKE AND FEED" CLEARING HOOKS



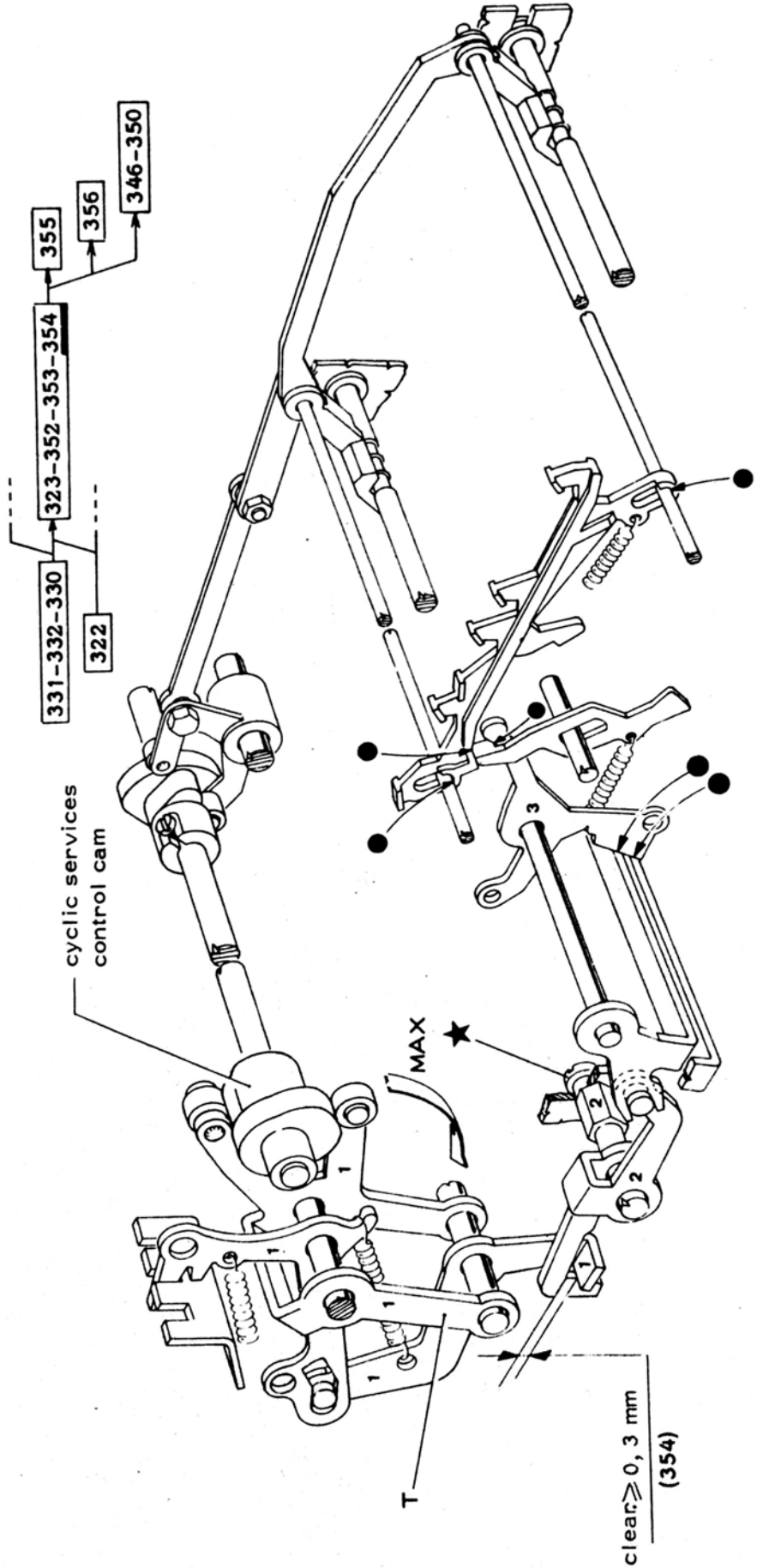
- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft to reach the alignment (a-a) shown in the figure and check.

353) CHECK THE POSITION OF THE INTERMEDIATE LEVERS FOR STROKE AND FEED CLEARING



- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of levers L.

354) CHECK THE WORK POSITION OF THE "STROKE AND FEED" CLEARING HOOKS



- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of frame T.

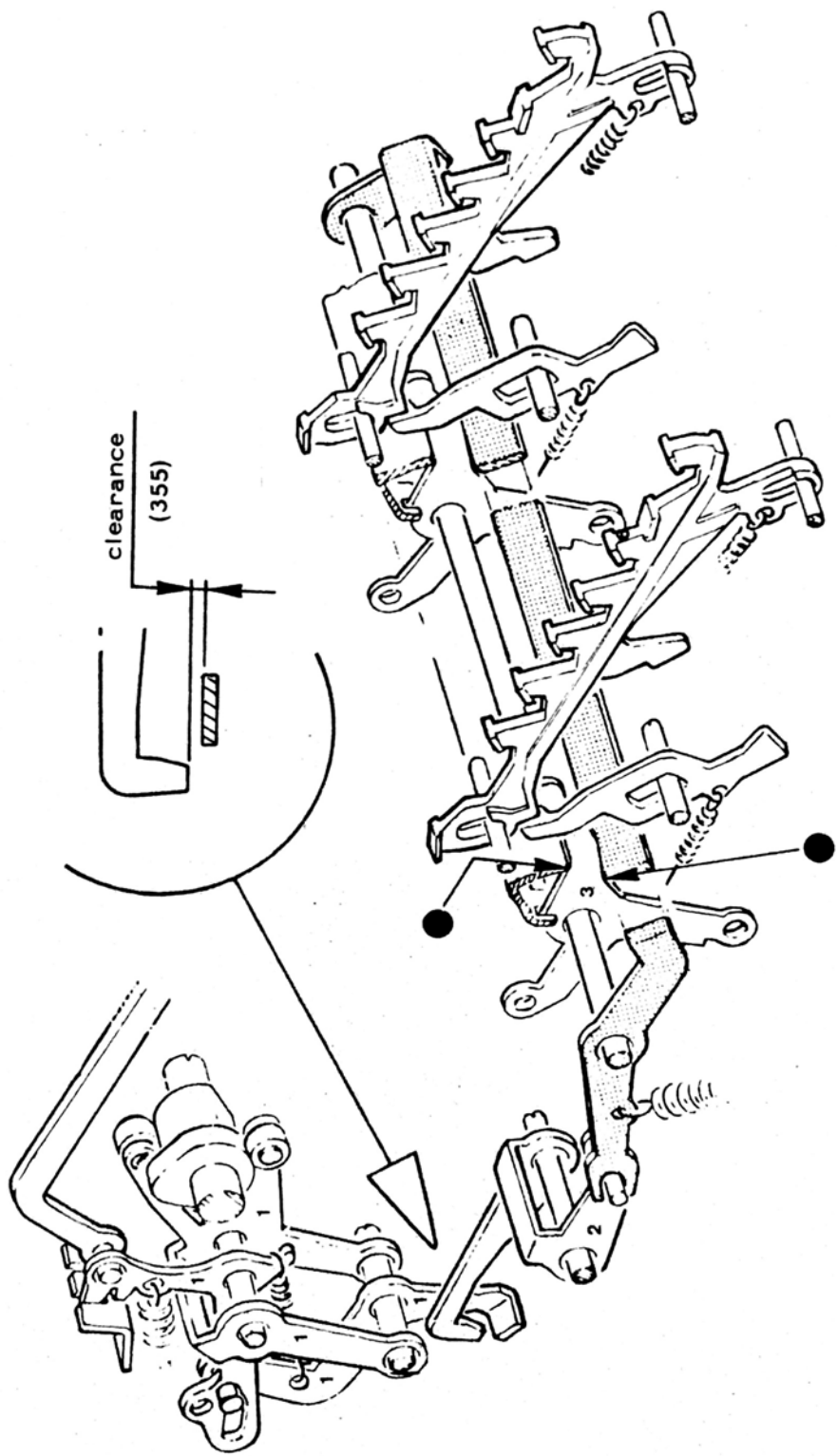
355) CHECK THE REST POSITION OF THE PUNCHING CLEARING HOOKS

331-332-330

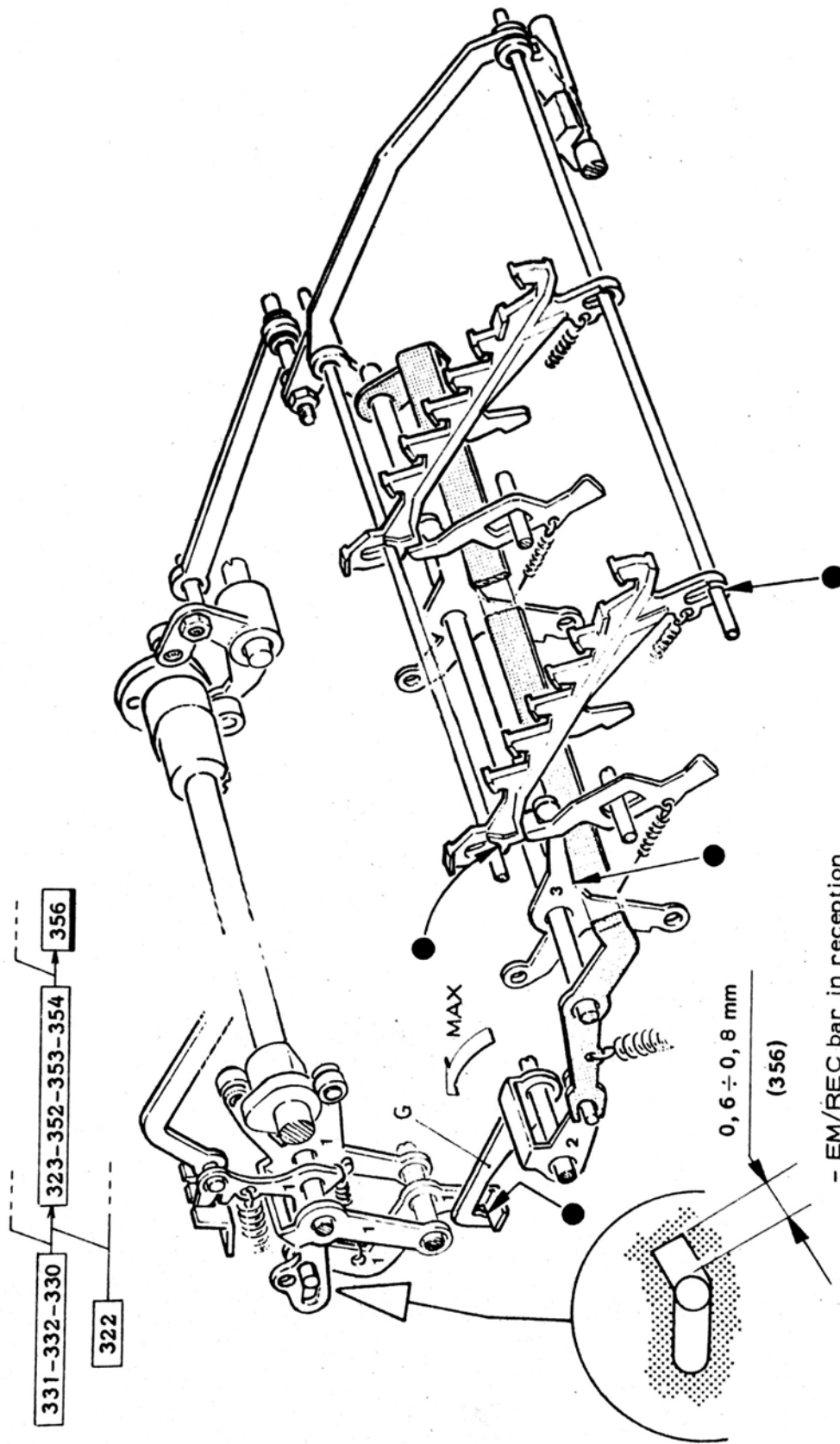
323-352-353-354

355

322

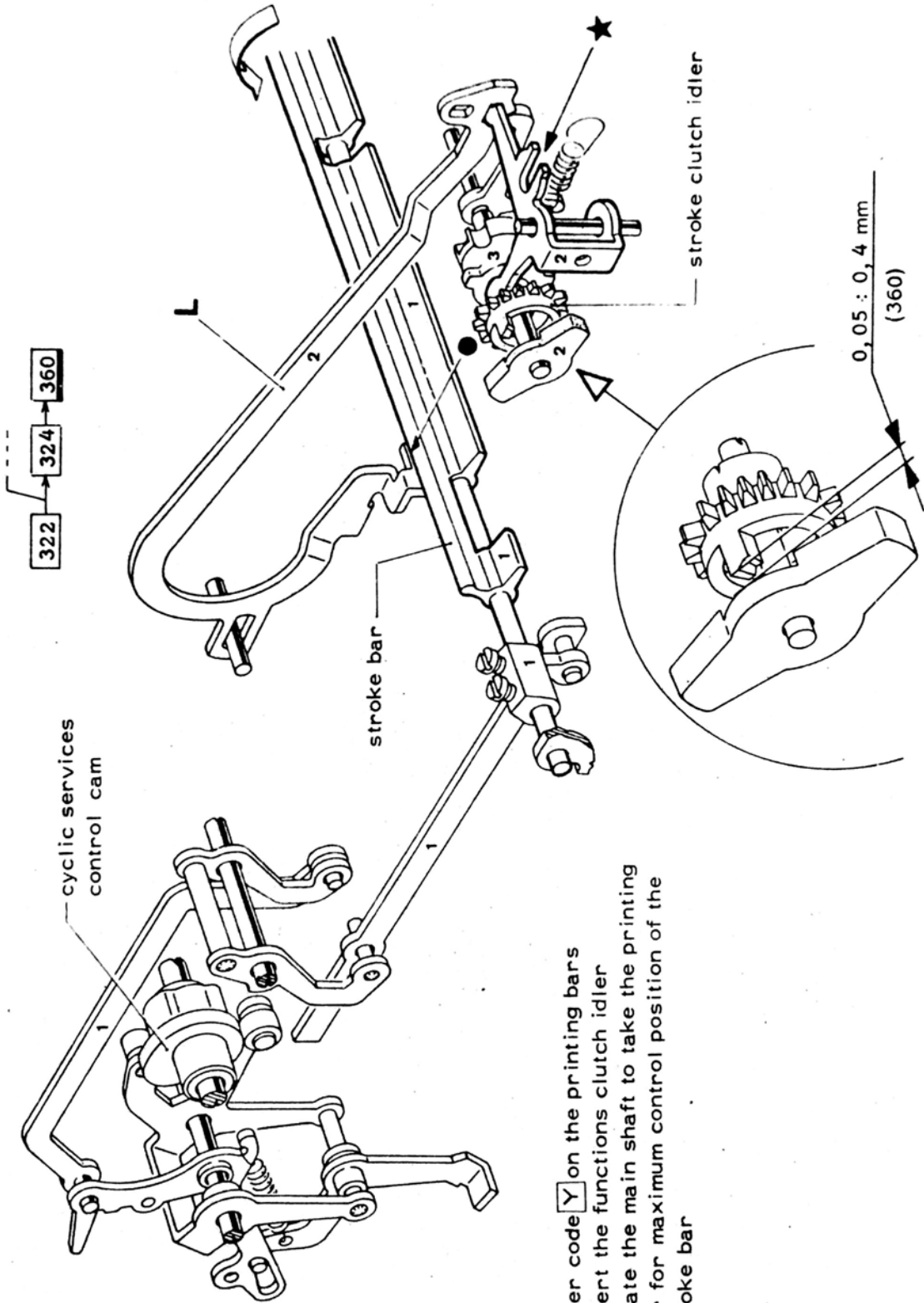


356) CHECK THE WORK POSITION OF THE PUNCHING CLEARING HOOKS



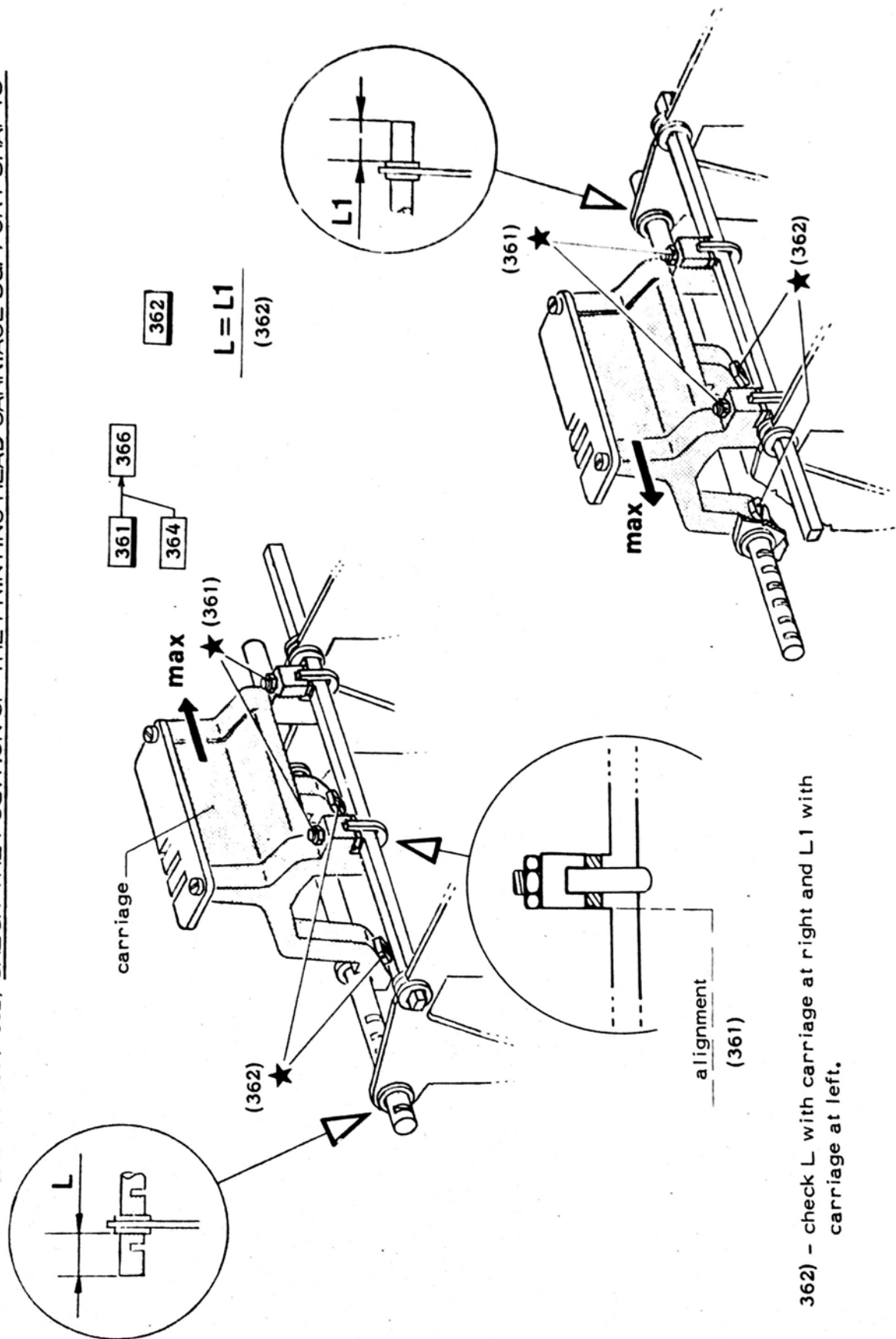
- EM/REC bar in reception
- FGR/LTR in figures
- enter the "WHO ARE YOU" code on the printing bars
- insert the functions clutch idler
- rotate the main shaft for maximum control position of hook G.

360) CHECK ON THE AXIAL POSITION OF THE STROKE CLUTCH IDLER



- enter code **Y** on the printing bars
- insert the functions clutch idler
- rotate the main shaft to take the printing bar for maximum control position of the stroke bar

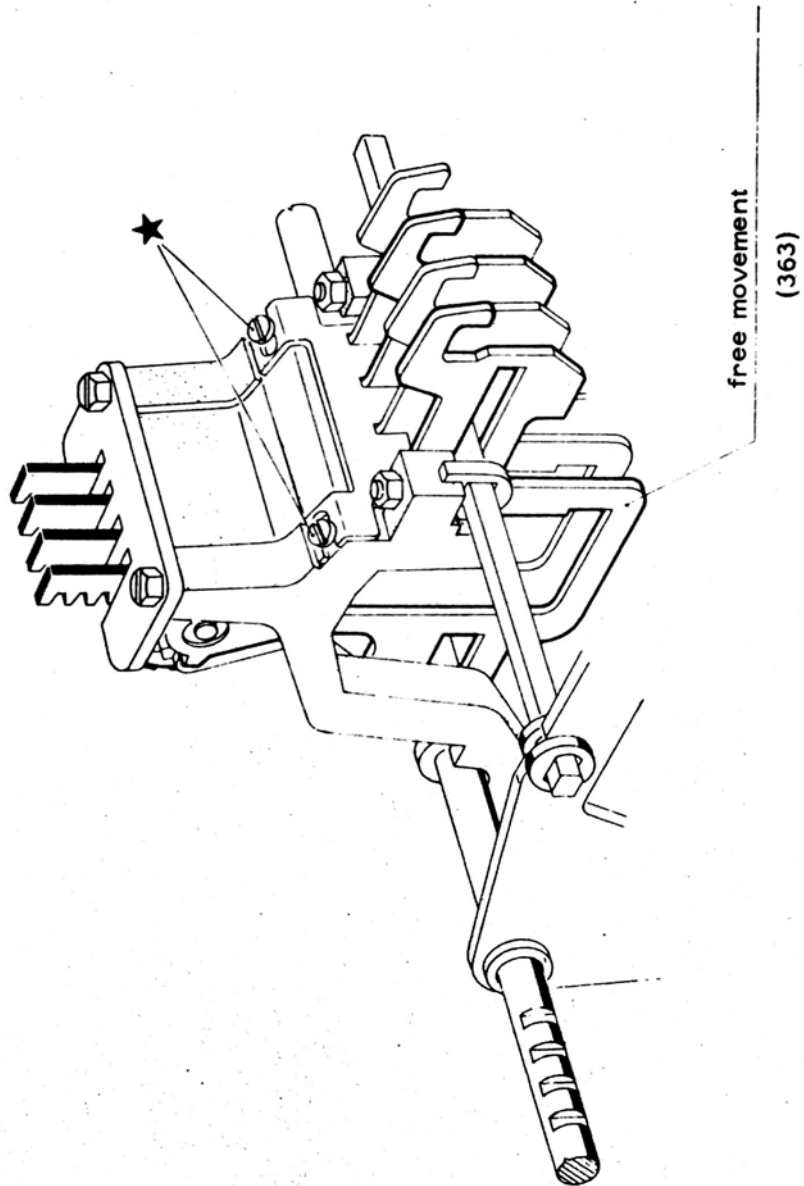
361-362) CHECK THE POSITION OF THE PRINTING HEAD CARRIAGE SUPPORT SHAFTS



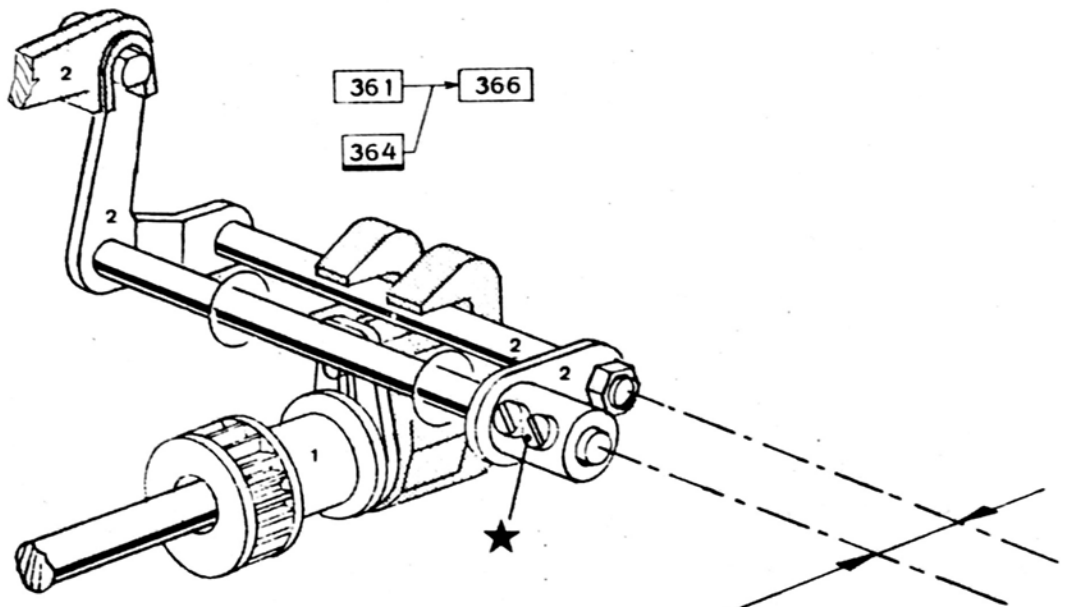
362) - check L with carriage at right and L1 with carriage at left.

363) CHECK THE FREEDOM OF MOVEMENT OF THE PRINTING SLIDERS

363



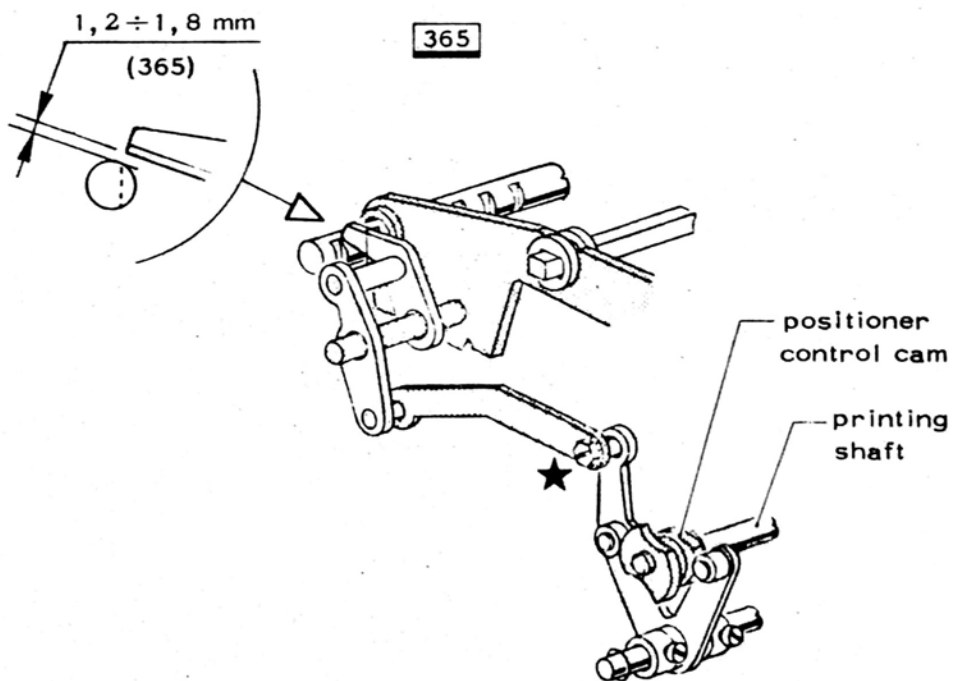
364) CHECK THE PARALLELISM OF THE FRAME FOR THE AXIAL MOVEMENT OF THE PRINTING HEAD



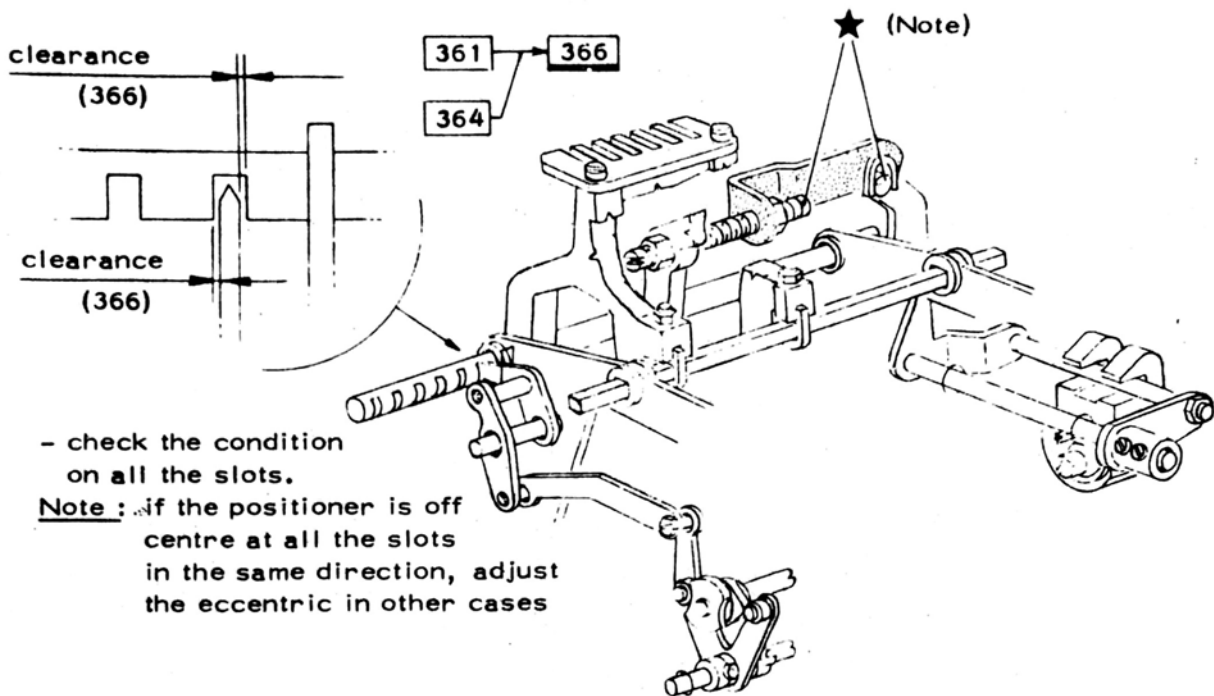
parallelism between the two shafts

(364)

365) CHECK THE REST POSITION OF THE WHEEL SELECTION POSITIONER

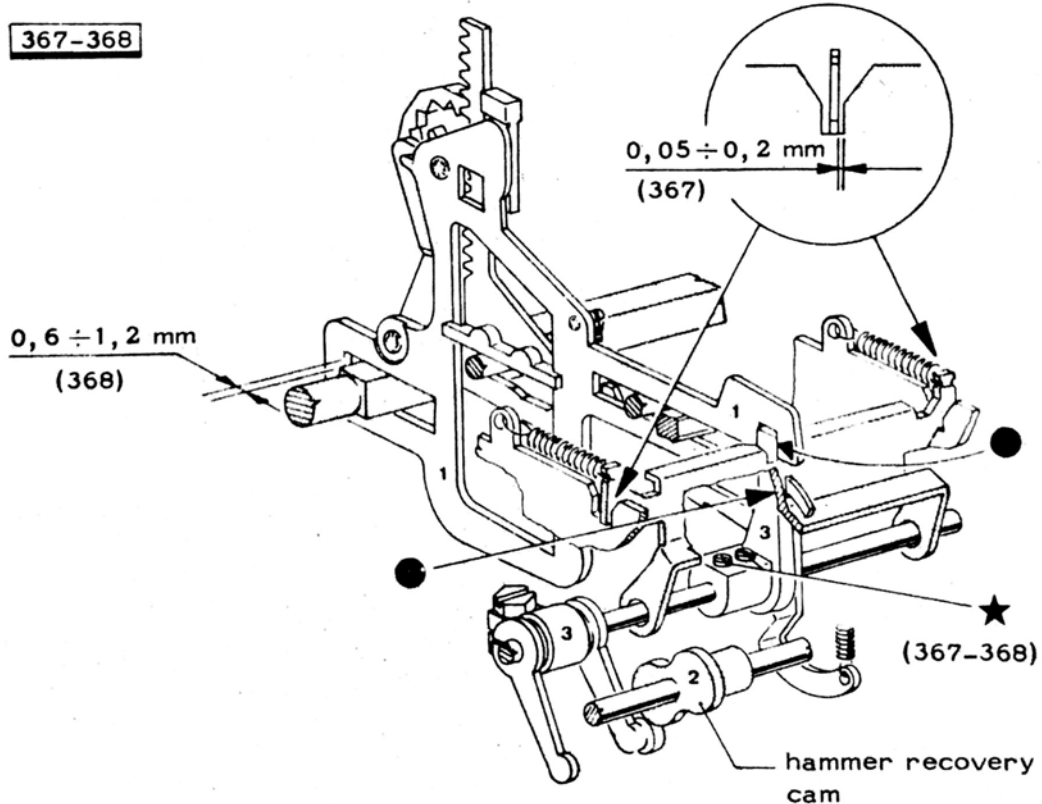


366) CHECK THE AXIAL POSITIONING OF THE PRINTING CARRIAGE

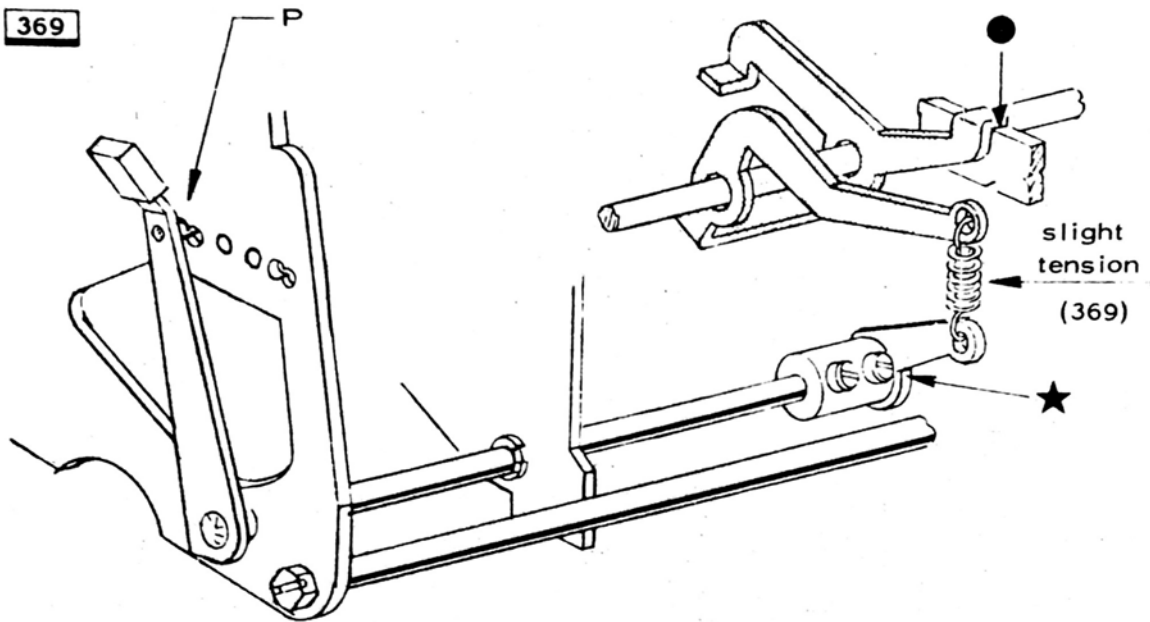


367) CHECK THE REST POSITION OF THE PRINTING SLIDERS POSITIONING FRAME

368) CHECK THE REST POSITION OF THE PRINTING SLIDERS

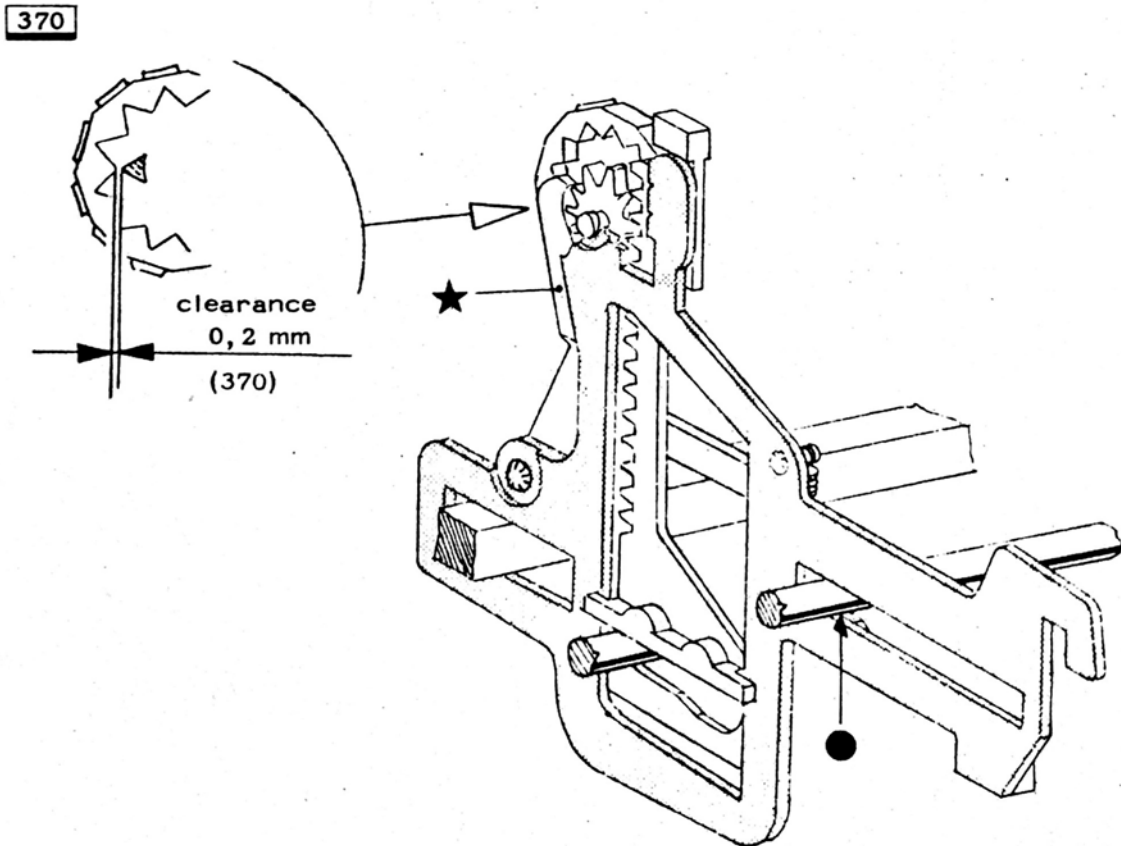


369) CHECK THE IMPRESSION CONTROL

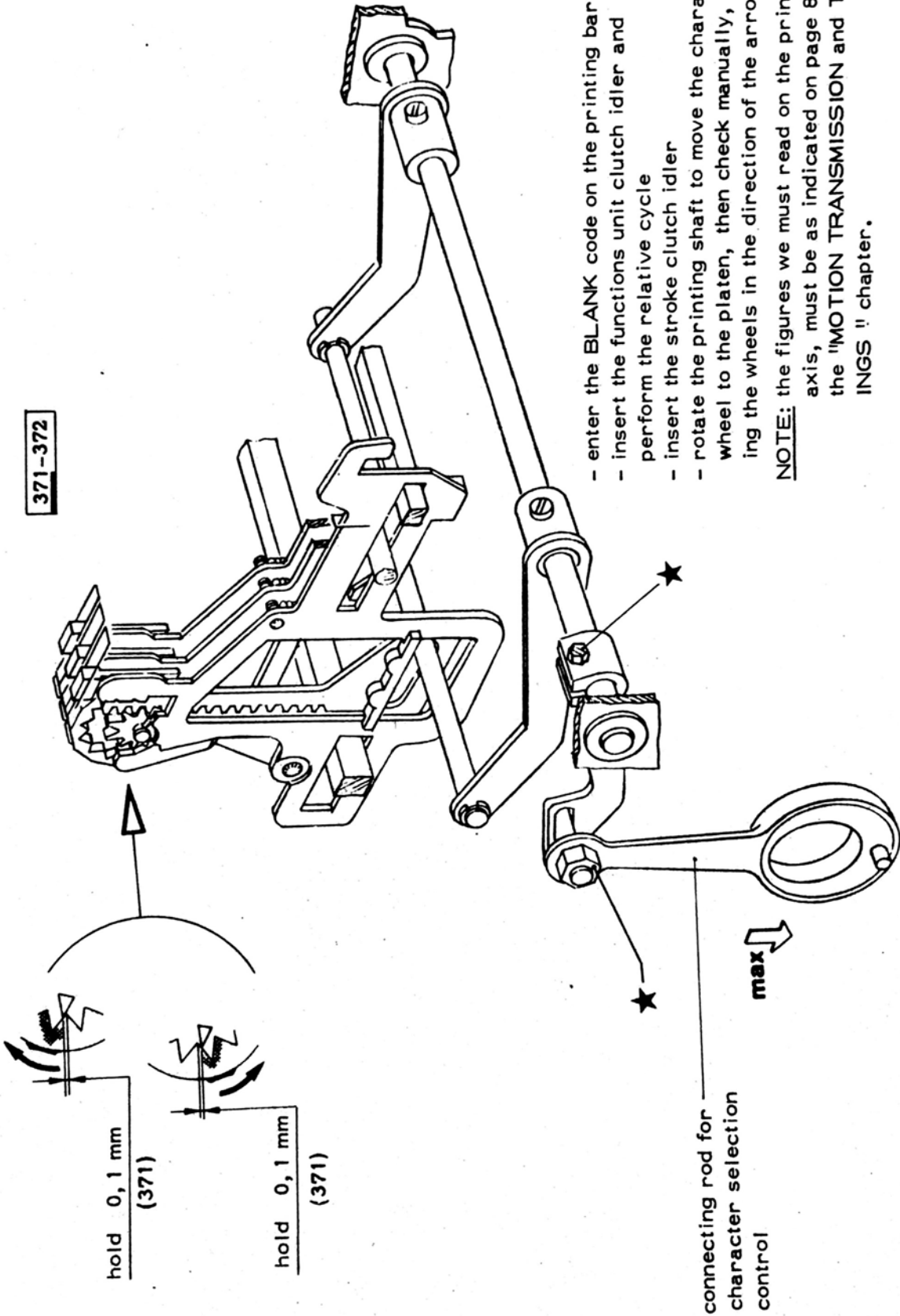


- pin P is inserted as shown in the figure

370) CHECK THE REST POSITION OF THE CHARACTER WHEEL POSITIONER



371) CHECK THE POSITION OF THE CHARACTER WHEEL DURING PRINTING



372) CHECK THE POSITION OF THE CHARACTER
WHEEL DURING PRINTING

Note: on the printing axis, in depending
of the printing group size, we must
read the following figures:

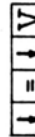
371-372



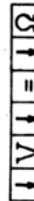
for P 506 and P 610



for P 513



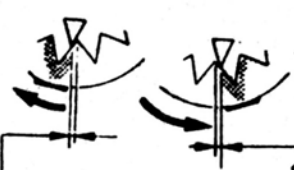
for all the other print
ing groups with 4 wheels



" " " " 6 wheels

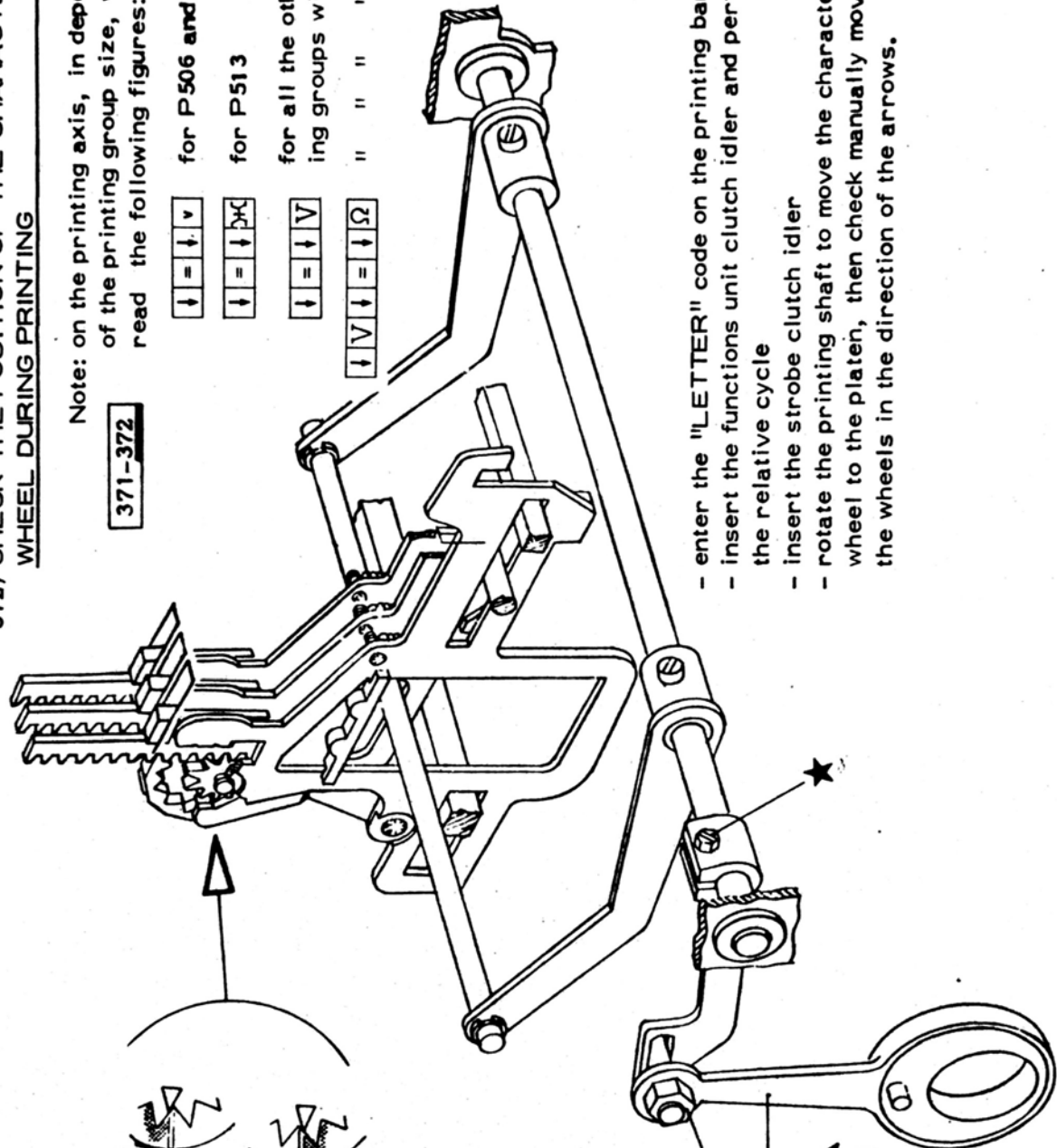
hold $\geq 0,1$ mm

(372)



hold $\geq 0,1$ mm

(372)

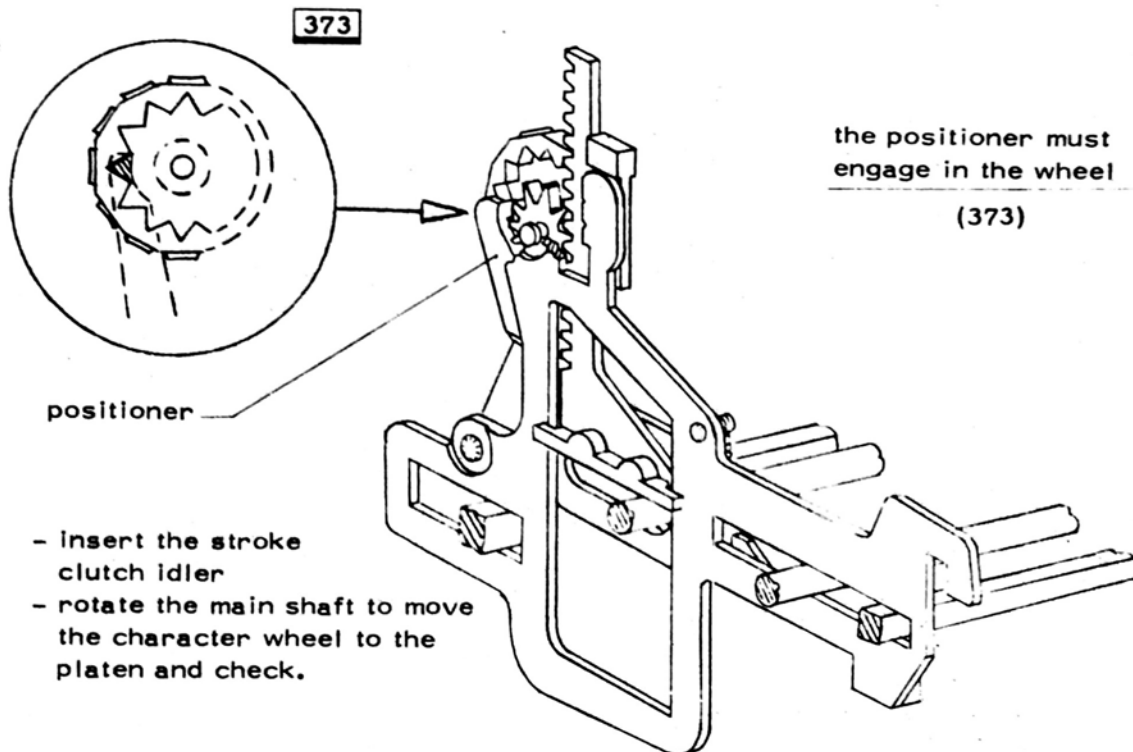


- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler and perform the relative cycle
- insert the strobe clutch idler
- rotate the printing shaft to move the character wheel to the platen, then check manually moving the wheels in the direction of the arrows.

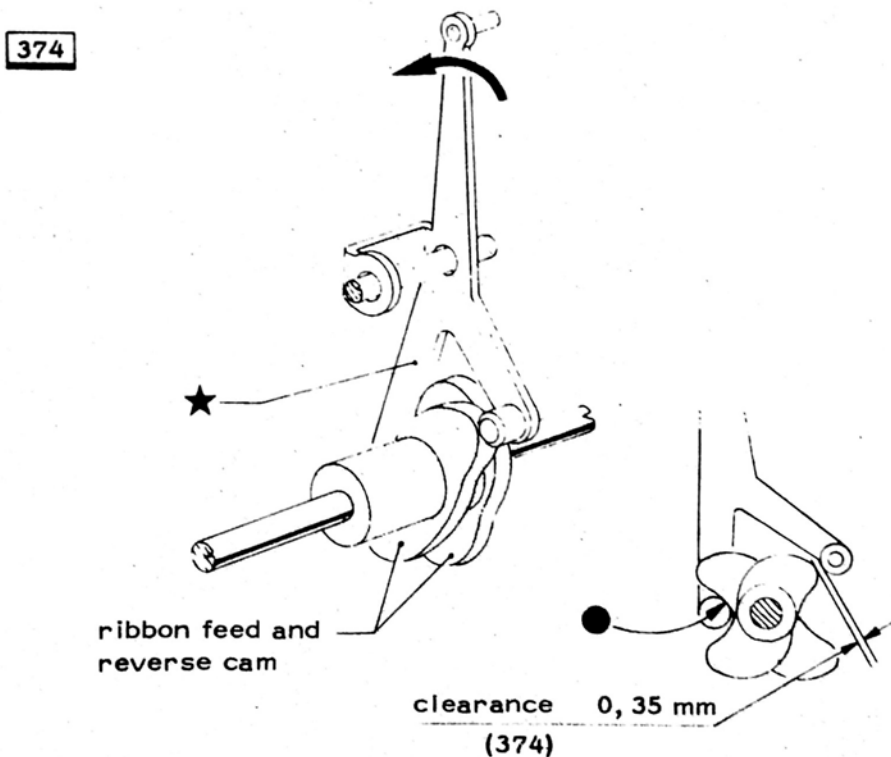
connecting rod for
characters selection
control



373) CHECK THE POSITION OF THE CHARACTER WHEEL DURING PRINTING

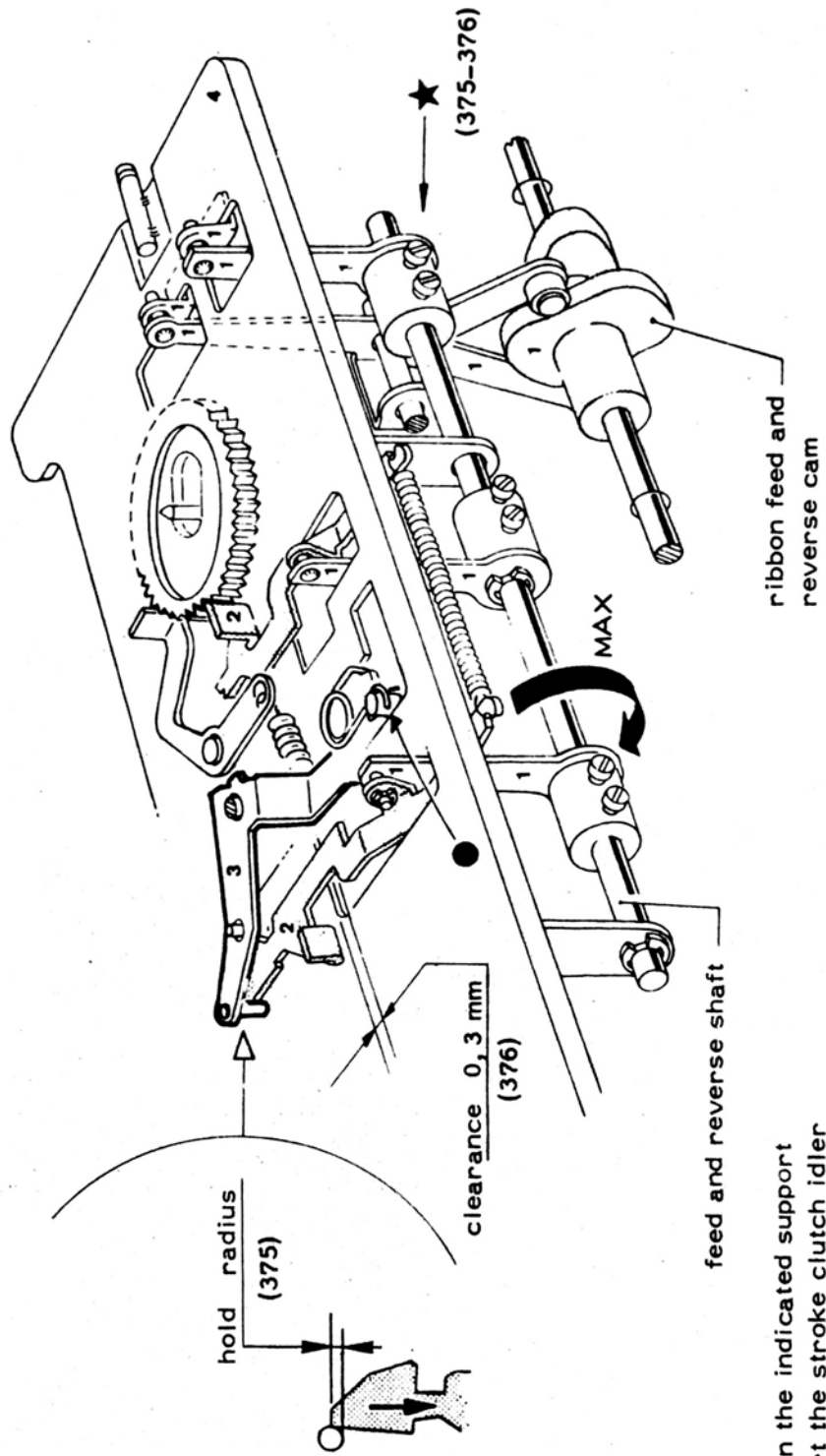


374) CHECK ON THE PLAY OF THE RIBBON FEED CONTROL BRIDGE



375-376) CHECK THE POSITION OF THE CRANK FOR RIBBON AND REVERSE SHAFT CONTROL

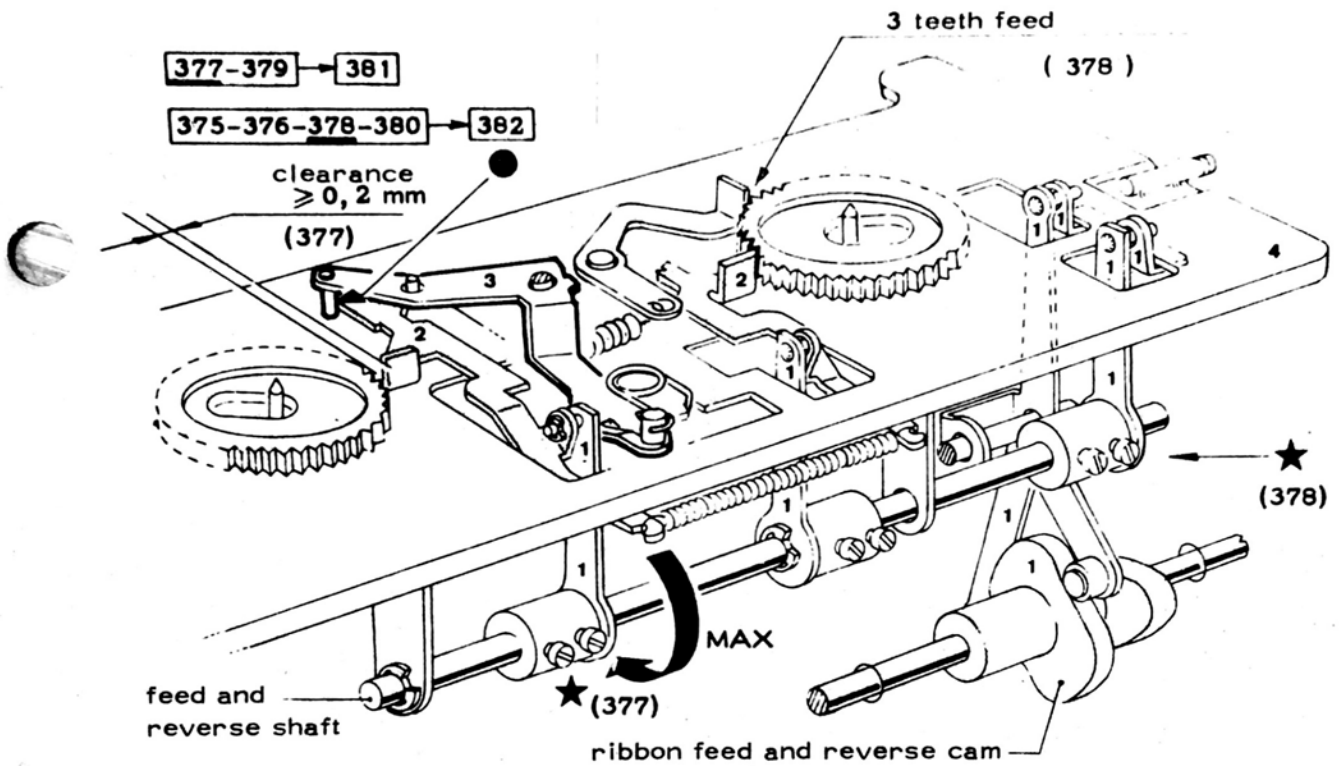
375-376-378-380 → 382



- obtain the indicated support
- insert the stroke clutch idler
- rotate the printing shaft for ribbon feed and reverse shaft maximum control position.

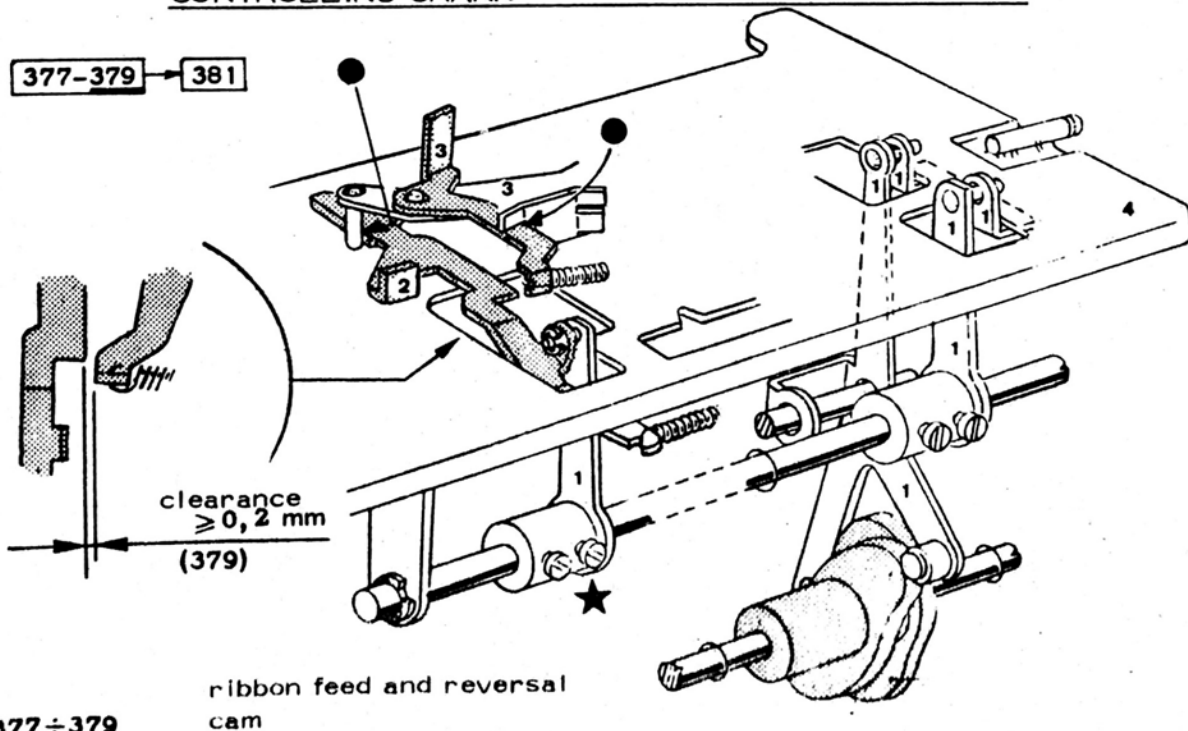
377) CHECK THE AXIAL POSITION OF THE FEED PAWL CONTROLLING CRANK

378) CHECK THE FEED CONTROL QUANTITY



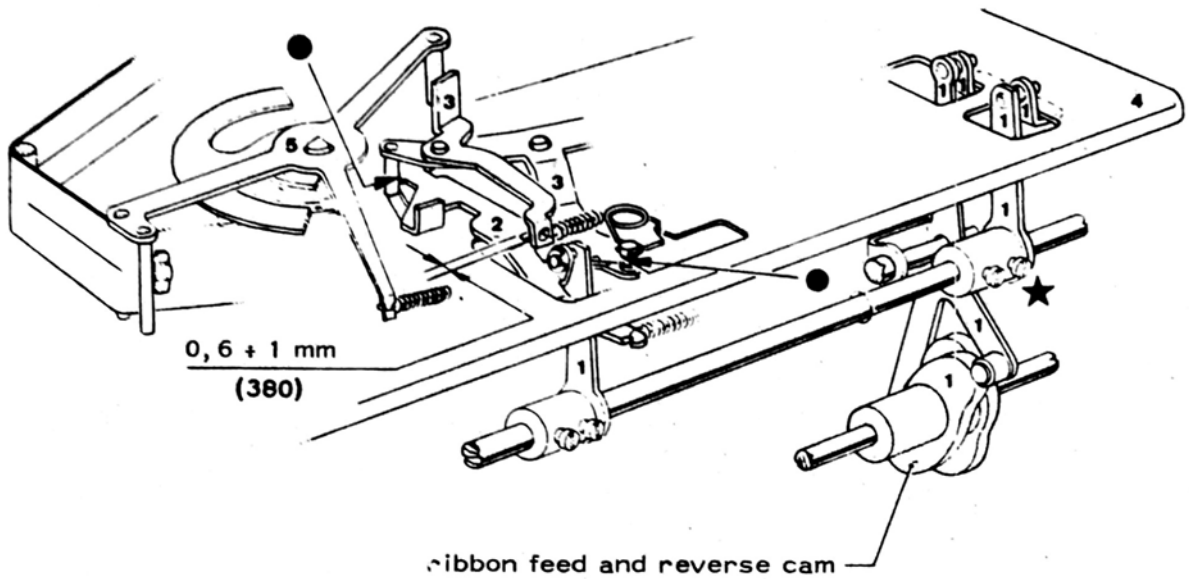
- insert the stroke clutch idler
- rotate the printing shaft for maximum control position of the feed and reverse shaft.

379) CHECK THE AXIAL POSITION OF THE REVERSE PAWL CONTROLLING CRANK



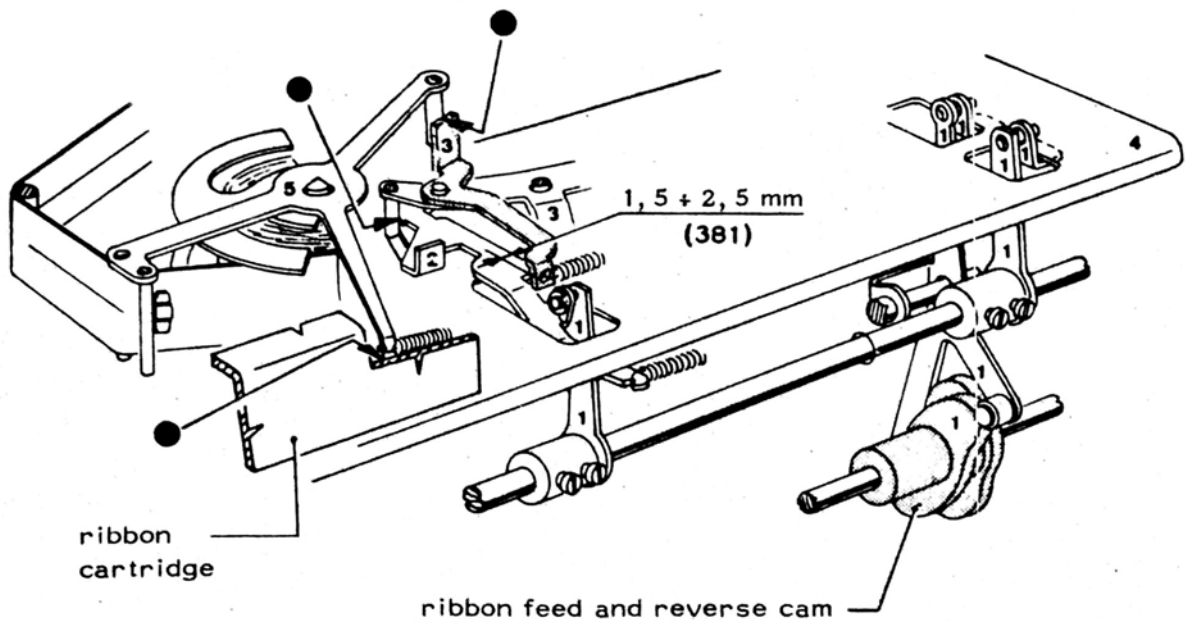
380) CHECK THE POSITION OF THE RIBBON REVERSE AND FEED CONTROLLING CRANK

375-376-378-380 → **382**



381) CHECK THE RIBBON REVERSE

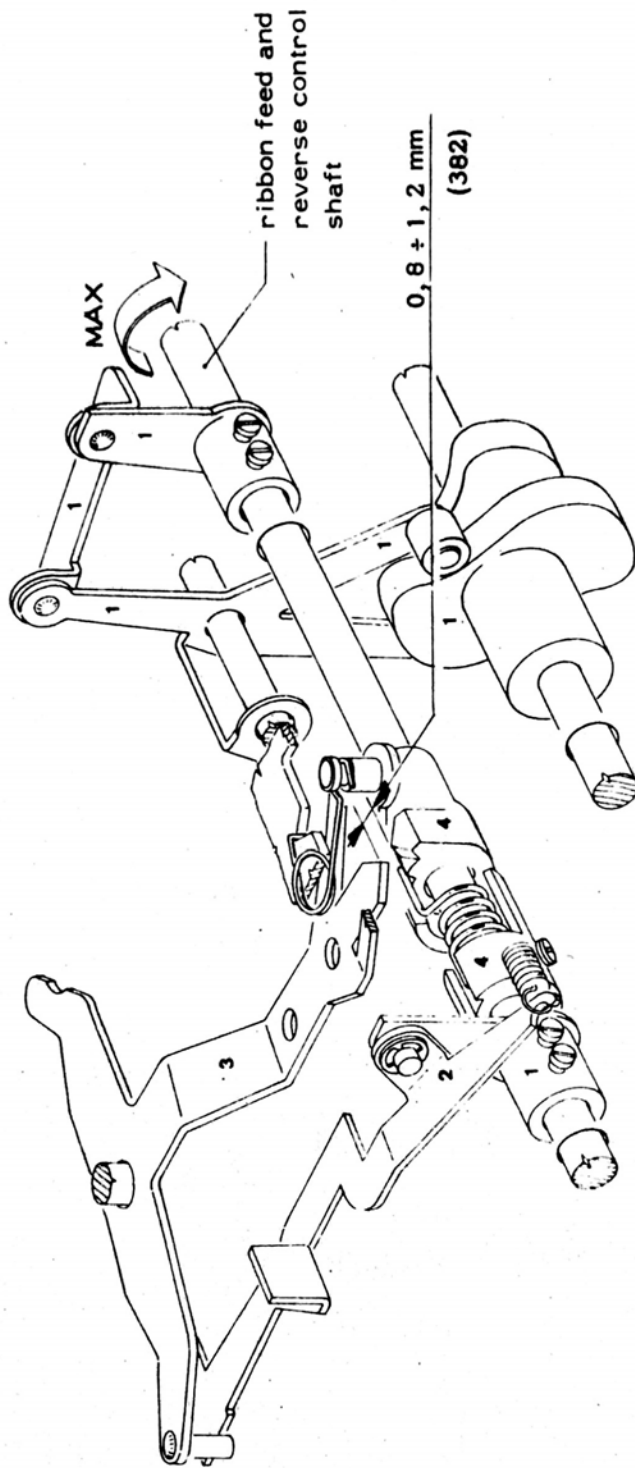
377-379 → **381**



- perform the conditions shown in the figure and check.

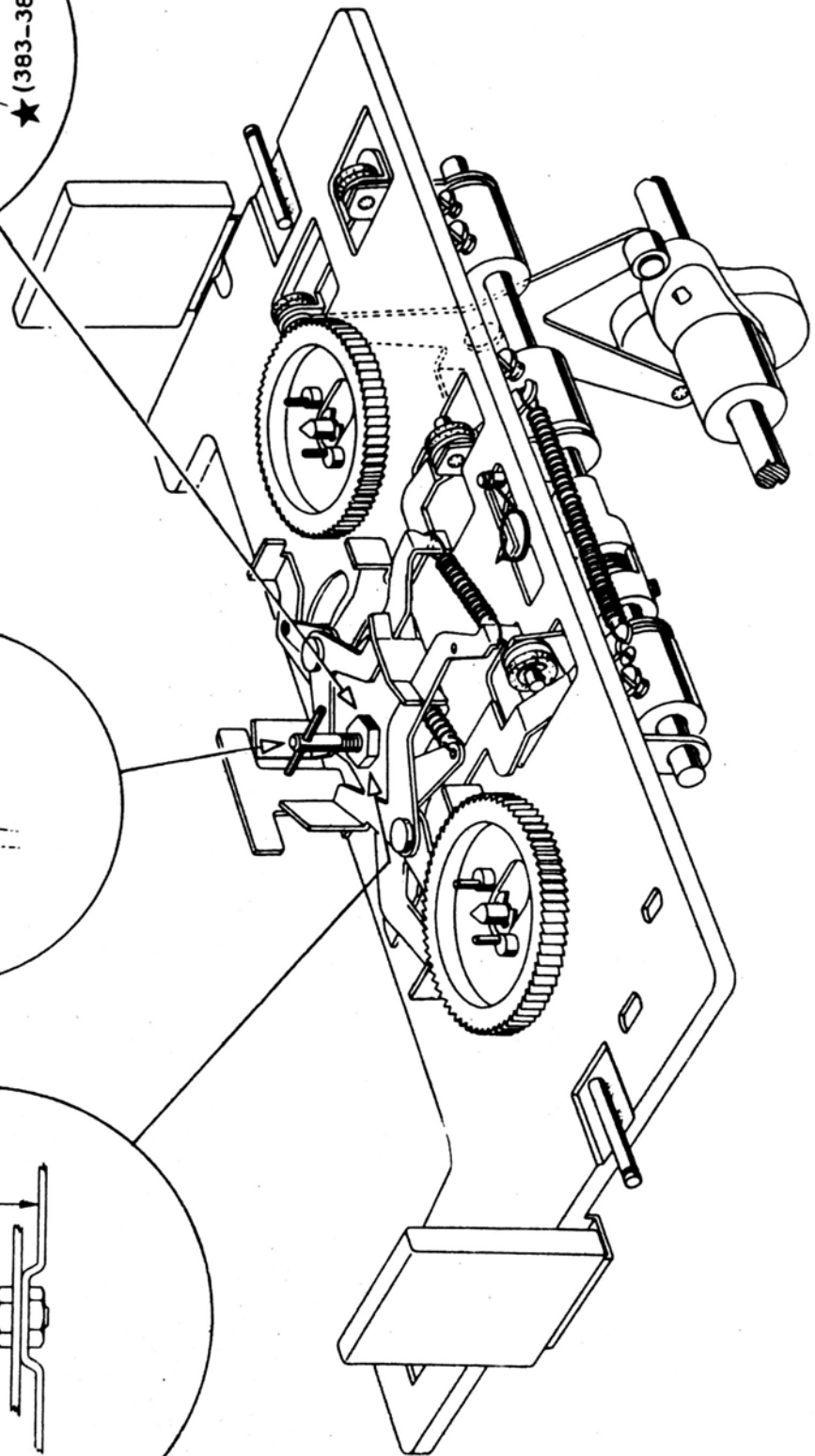
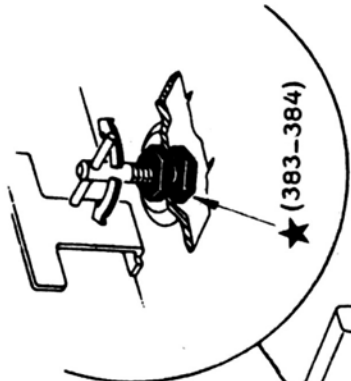
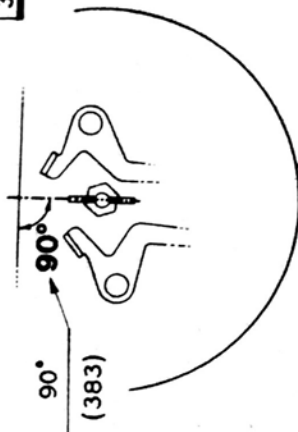
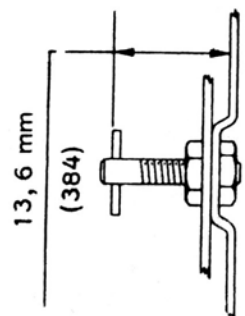
382) CHECK THE PRESETTING FOR RIBBON REVERSE

375-376-378-380 → 382



- insert the stroke clutch idler
- rotate the printing shaft for maximum control position of the ribbon feed and reverse control shaft.

- 383) CHECK THE ANGULAR POSITION OF THE RIBBON CARTRIDGE HOLDING KEY
 384) CHECK THE POSITION IN HEIGHT OF THE RIBBON CARTRIDGE HOLDING KEY

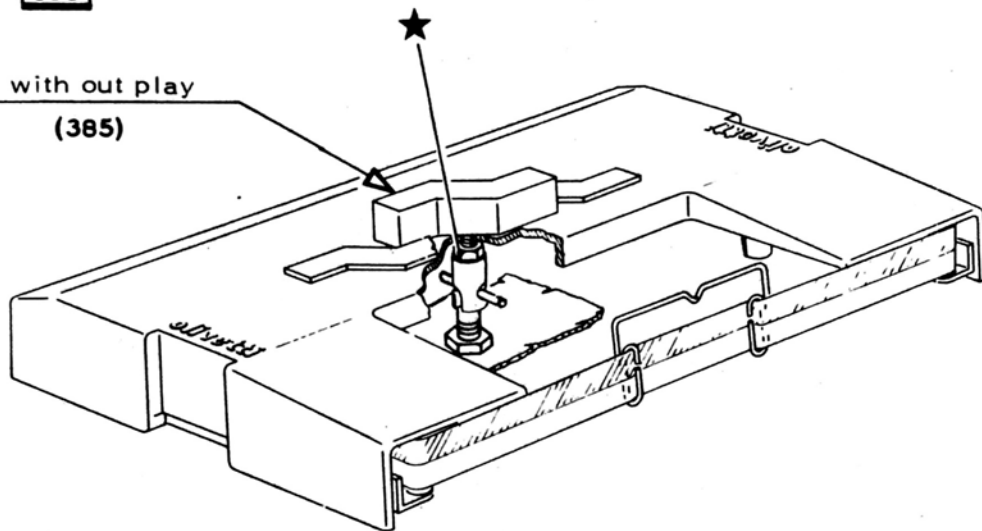


385) CHECK THE PLAY OF THE RIBBON CARTRIDGE

383-384 → 385

hooking with out play

(385)

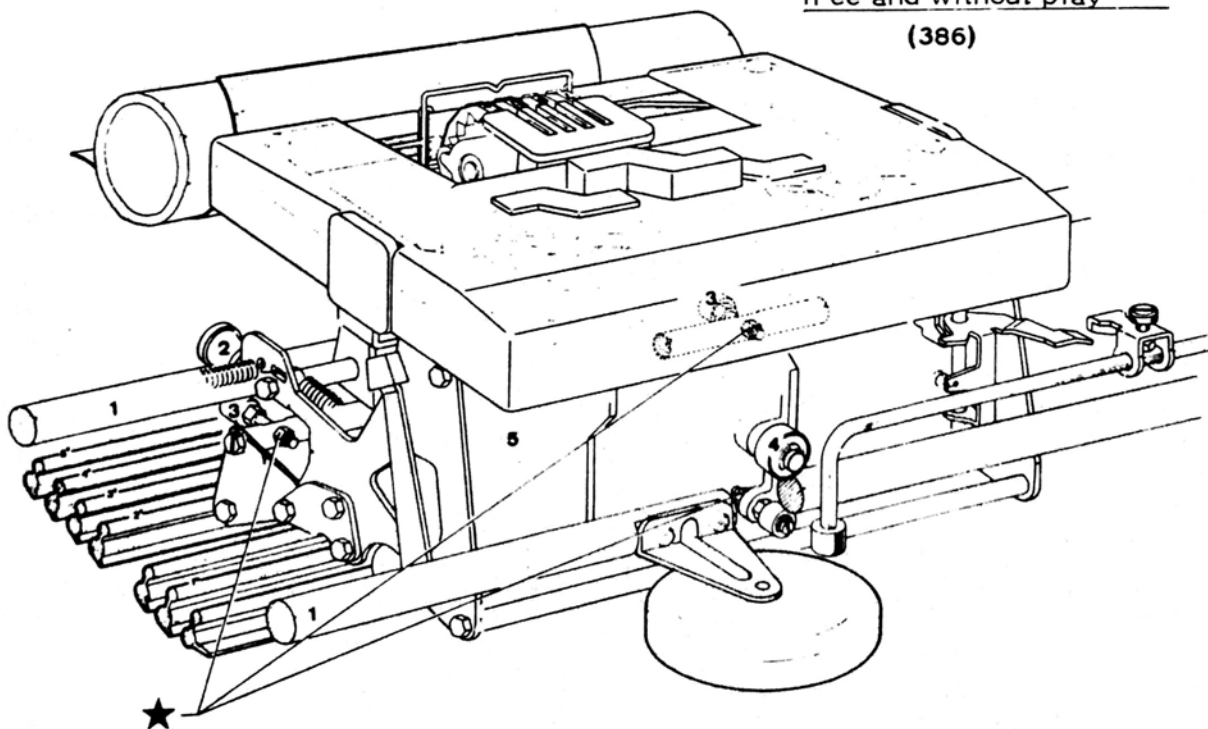


386) CHECK THE FREE MOVEMENT OF THE PRINTING HEAD

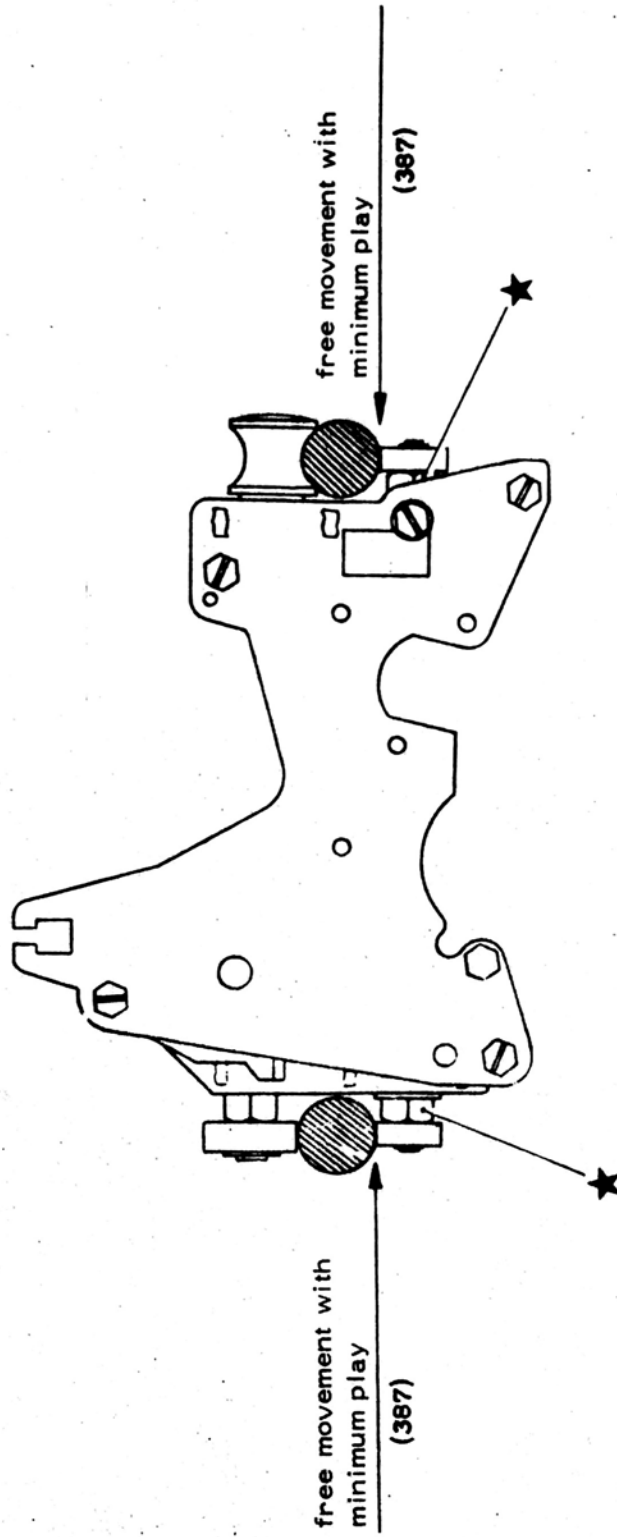
386

printing head movement
free and without play

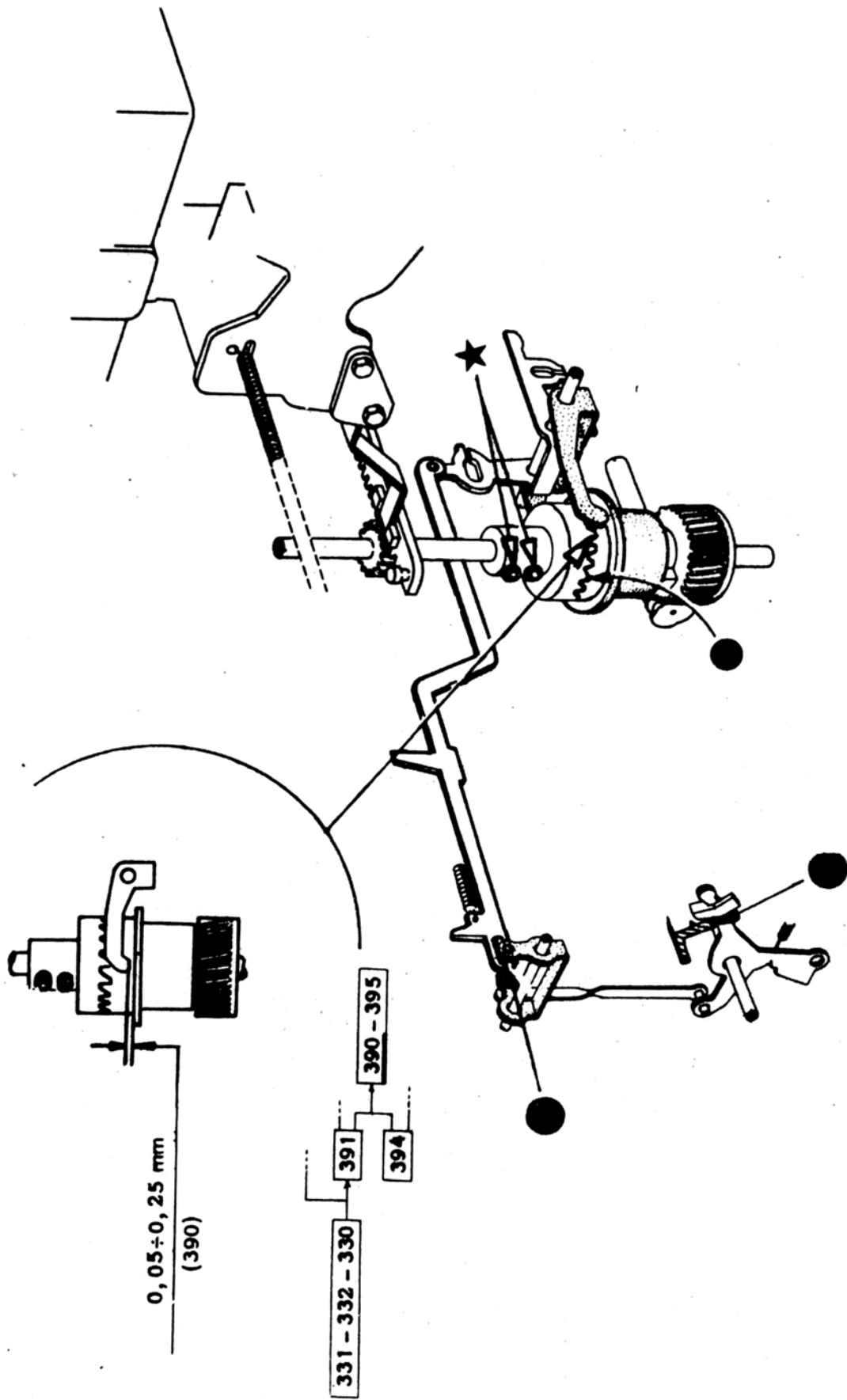
(386)



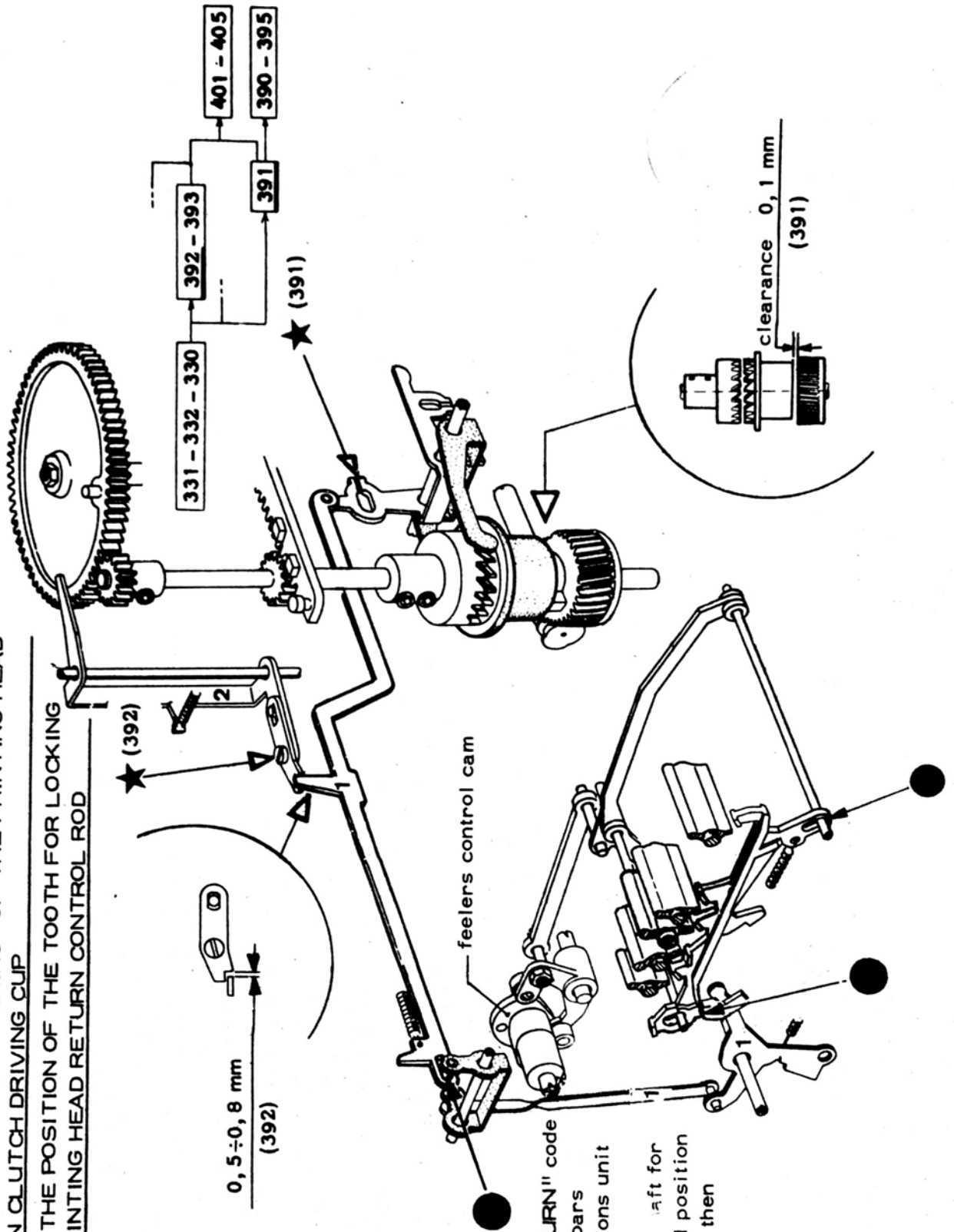
387) CHECK OF THE PLAY BETWEEN PRINTING HEAD AND GUIDING SHAFT



390) CHECK THE AXIAL REST POSITION OF THE CUPS OF PRINTING HEAD FEED AND RETURN CLUTCH

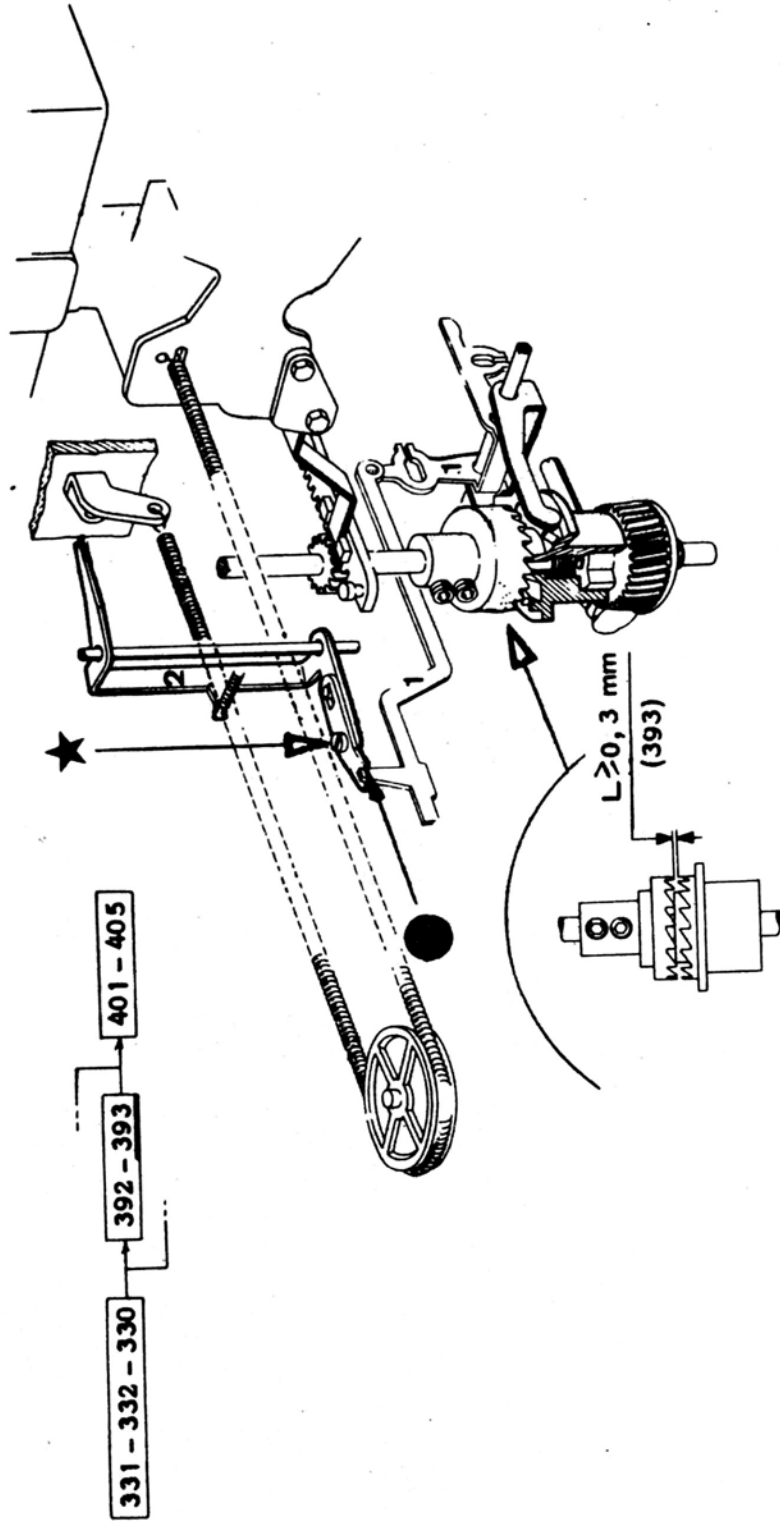


- 391) CHECK THE "MAXIMUM OPENING" OF THE PRINTING HEAD RETURN CLUTCH DRIVING CUP
- 392) CHECK THE POSITION OF THE TOOTH FOR LOCKING THE PRINTING HEAD RETURN CONTROL ROD



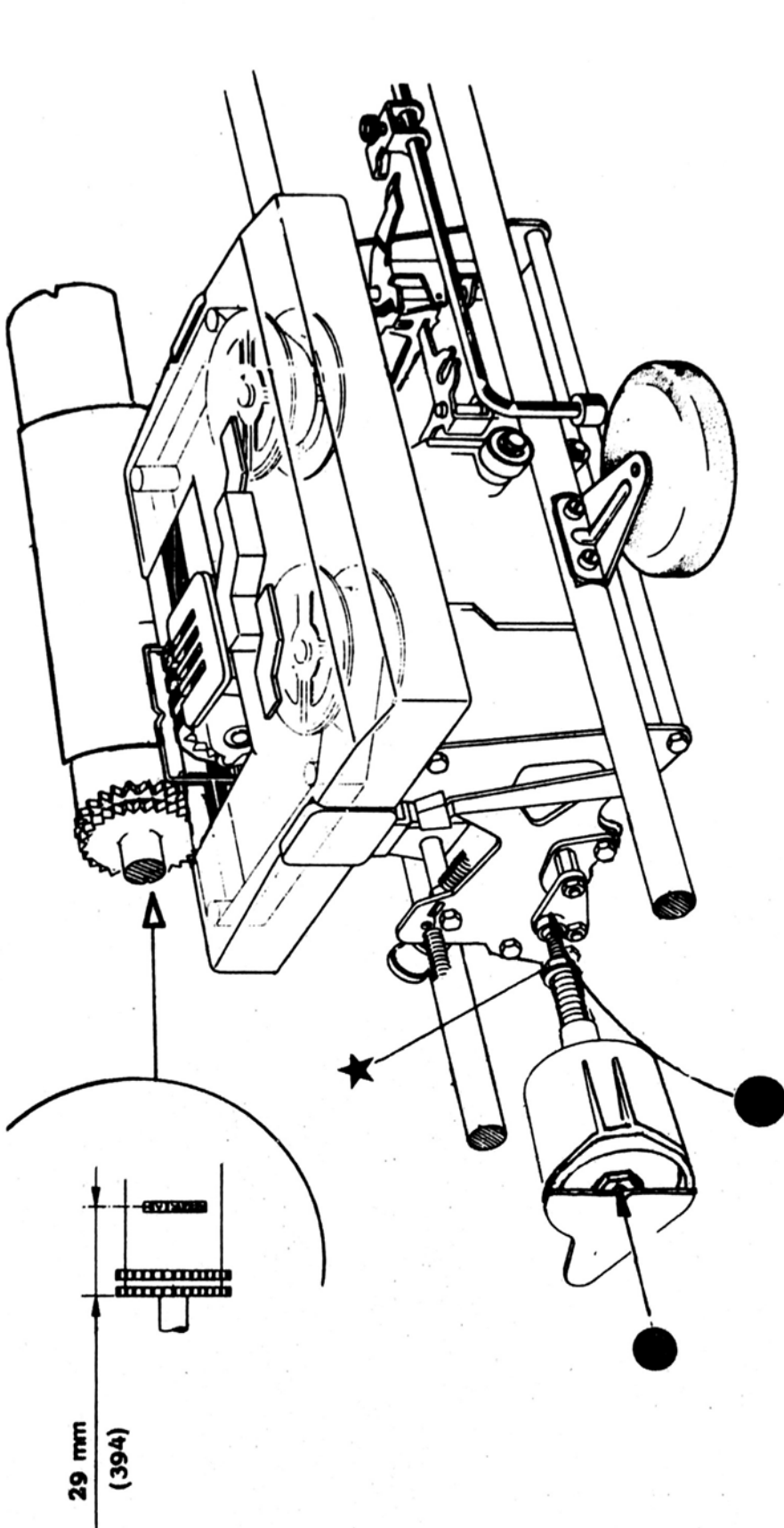
- enter the "RETURN" code on the printing bars
- insert the functions unit clutch idler
- rotate the mechanism to the maximum control position of the actuator, then check.

393) CHECK THE WORK POSITION OF THE PRINTING HEAD RETURN CLUTCH CUPS



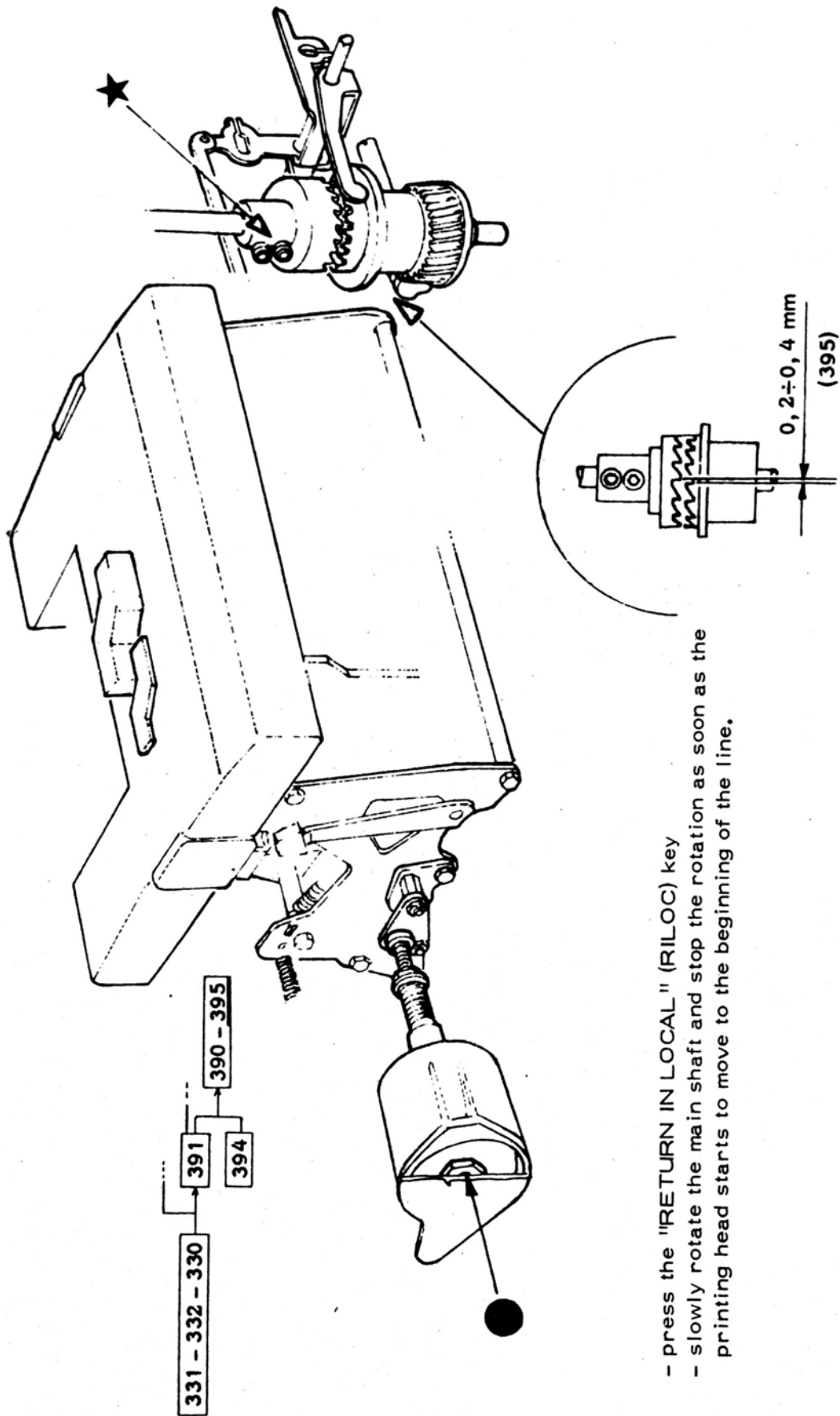
- enter the "RETURN" code on the printing bars
- insert the functions unit clutch idler
- prevent the printing head from moving to the beginning of the line rotate the main shaft until the wanted contact is obtained.

394) CHECK THE POSITION OF THE PRINTING HEAD AT THE BEGINNING OF THE LINE



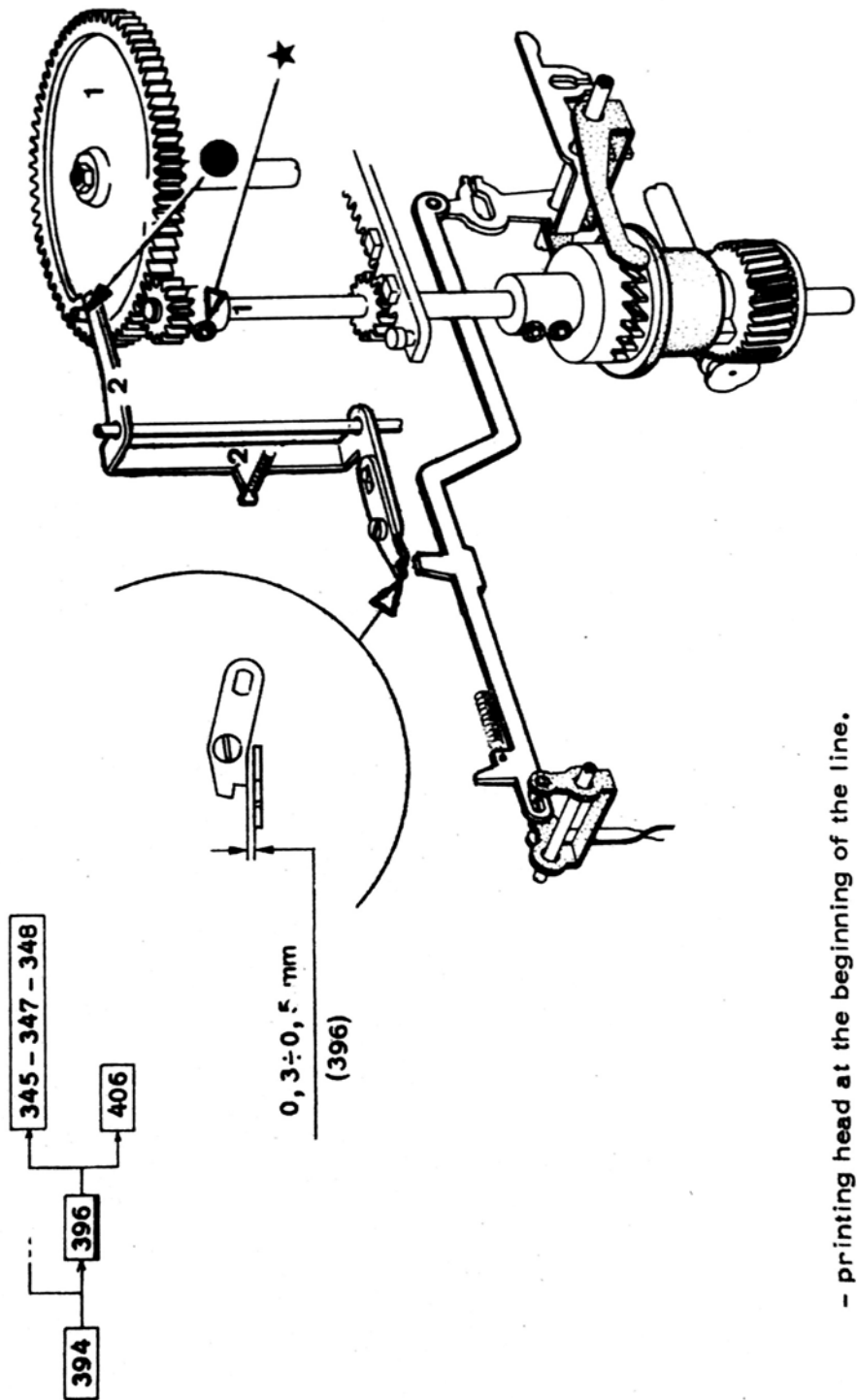
- printing head at beginning of line
- place the wheel against the platen and check.

395) CHECK THE ANGULAR POSITION OF THE DRIVING CUP



- press the "RETURN IN LOCAL" (RILOC) key
- slowly rotate the main shaft and stop the rotation as soon as the printing head starts to move to the beginning of the line.

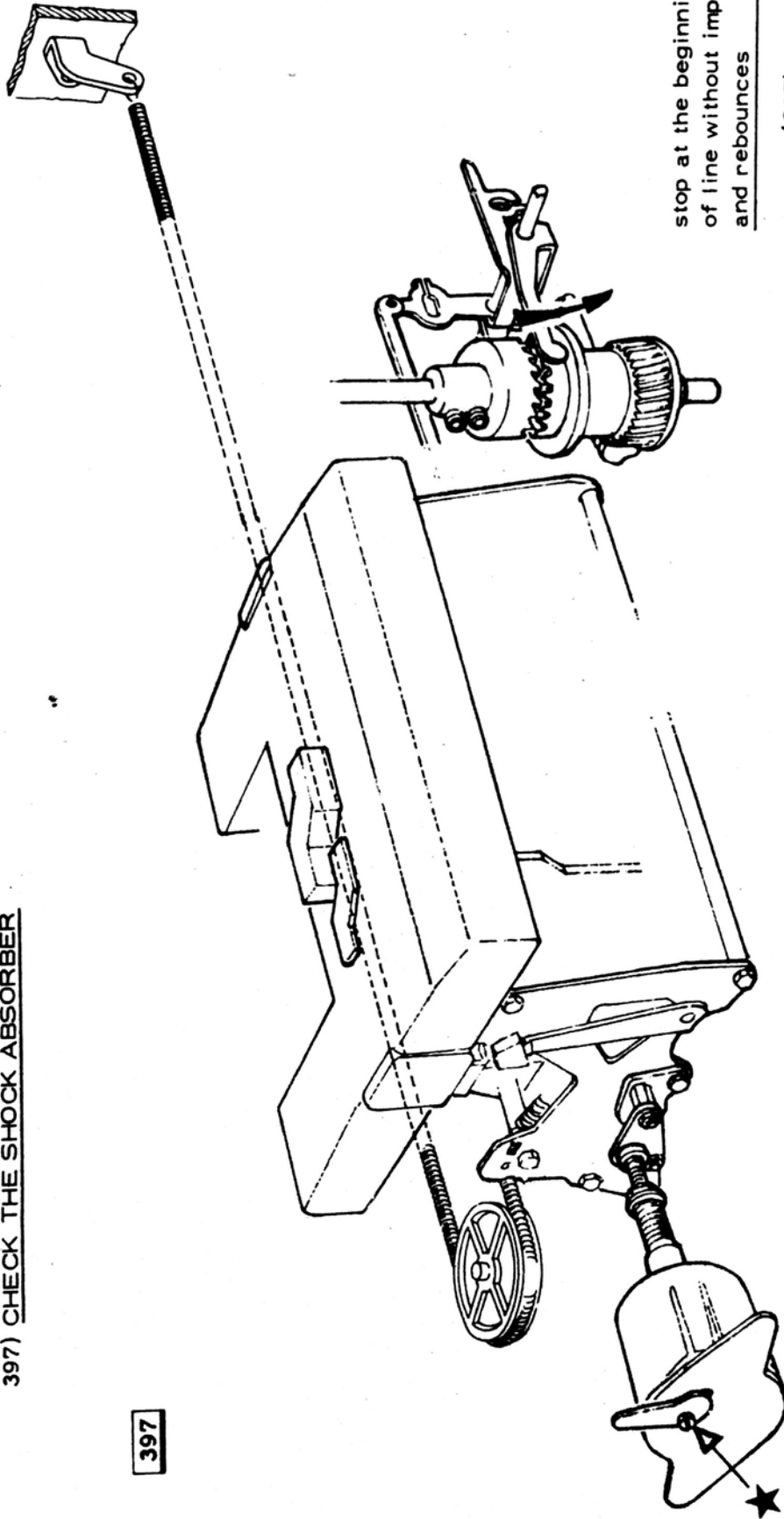
396) CHECK THE RELEASE OF THE TOOTH TO LOCK THE PRINTING HEAD RETURN CONTROL ROD



- printing head at the beginning of the line.

397) CHECK THE SHOCK ABSORBER

397



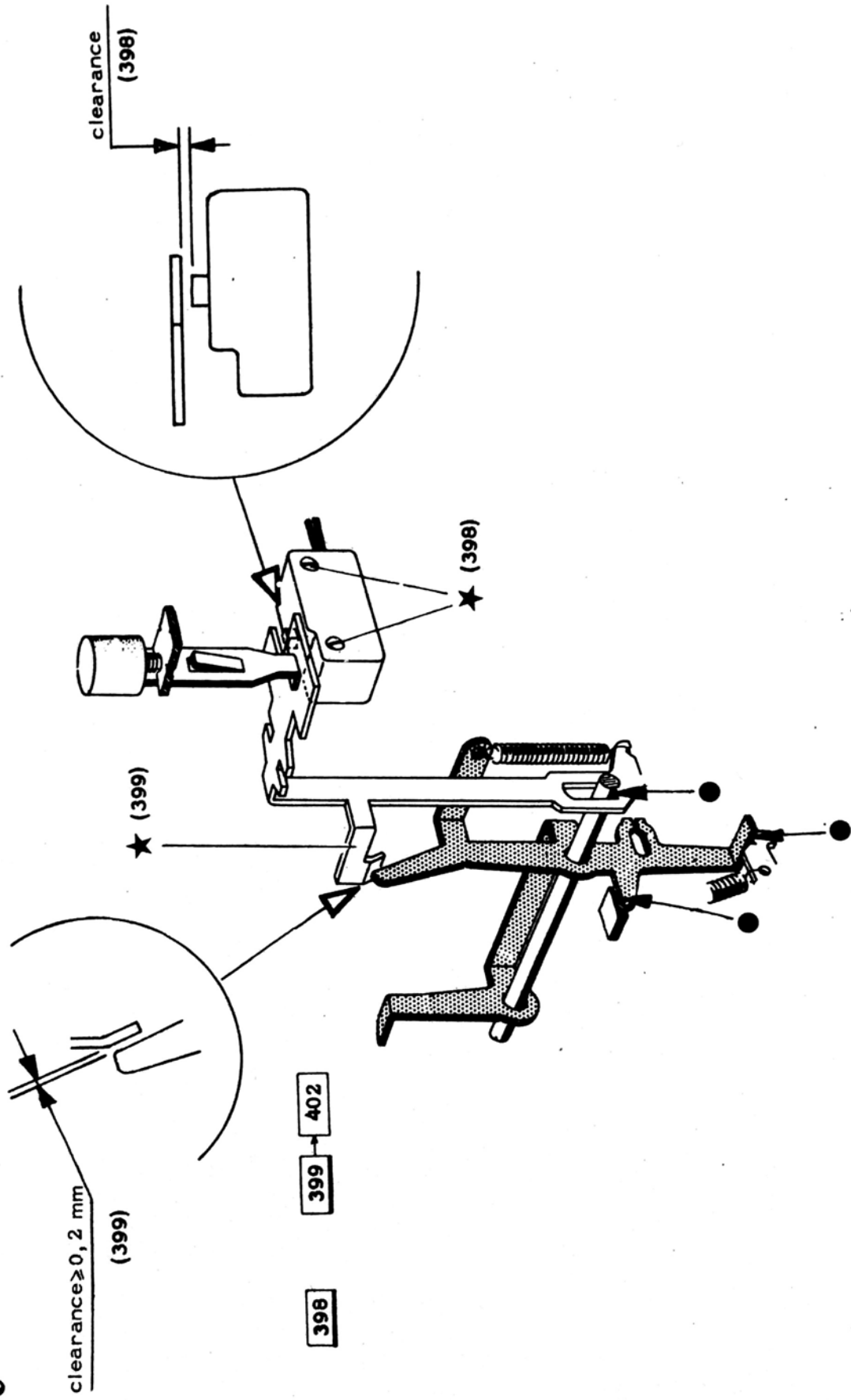
stop at the beginning
of line without impact
and rebounces

(397)

- manually the printing head to the beginning of line
- depress the "RETURN IN LOCAL "(RILOC) key
- rotate the printing shaft to move the printing head to the beginning of the line.

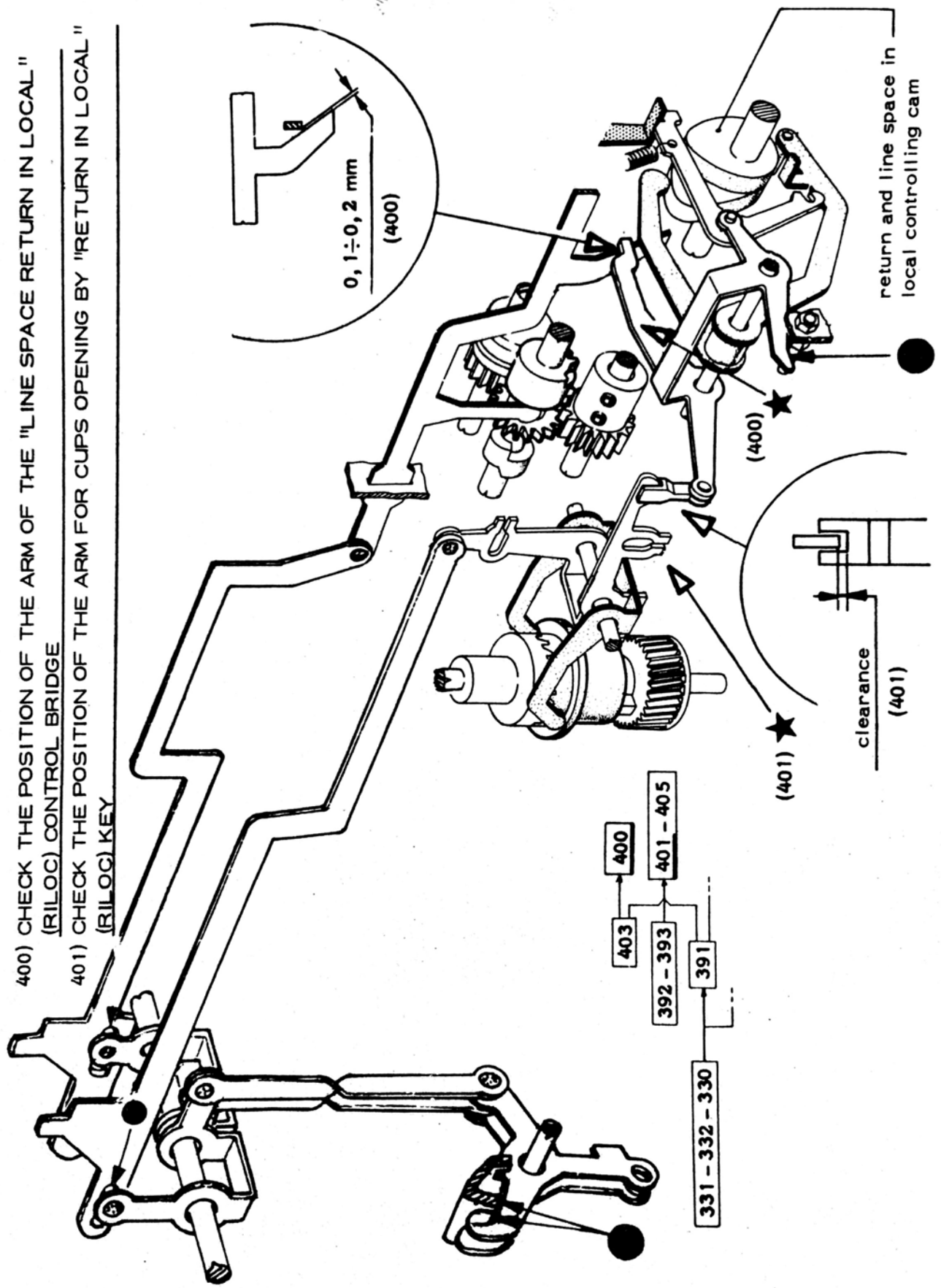
398) CHECK THE POSITIONING OF THE "RETURN IN LOCAL" (RILOC) KEY MICROSWITCH

399) CHECK THE REST POSITION OF THE "RETURN IN LOCAL" (RILOC) KEY



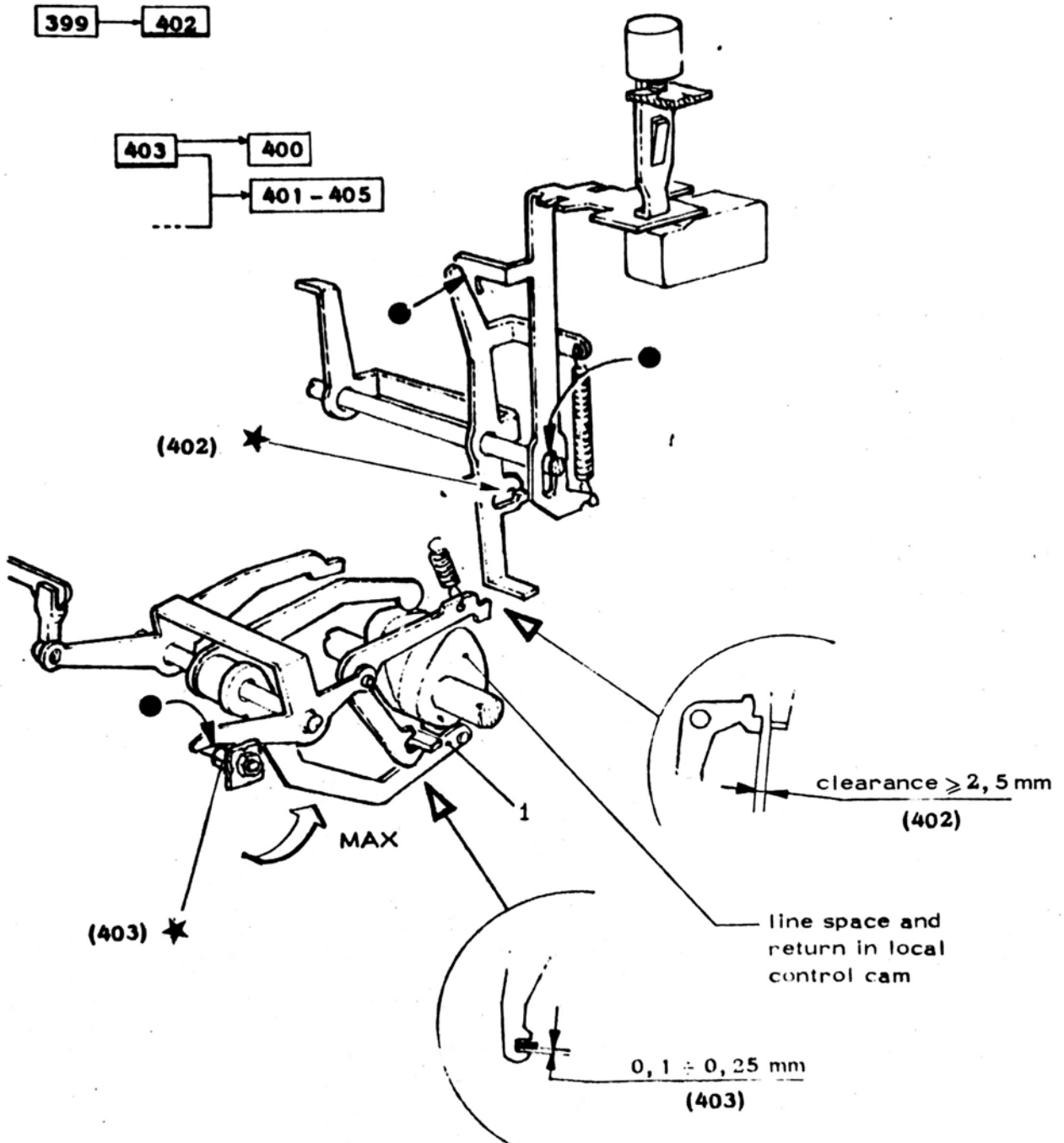
400) CHECK THE POSITION OF THE ARM OF THE "LINE SPACE RETURN IN LOCAL"
 (RILOC) CONTROL BRIDGE

401) CHECK THE POSITION OF THE ARM FOR CUPS OPENING BY "RETURN IN LOCAL"
 (RILOC) KEY



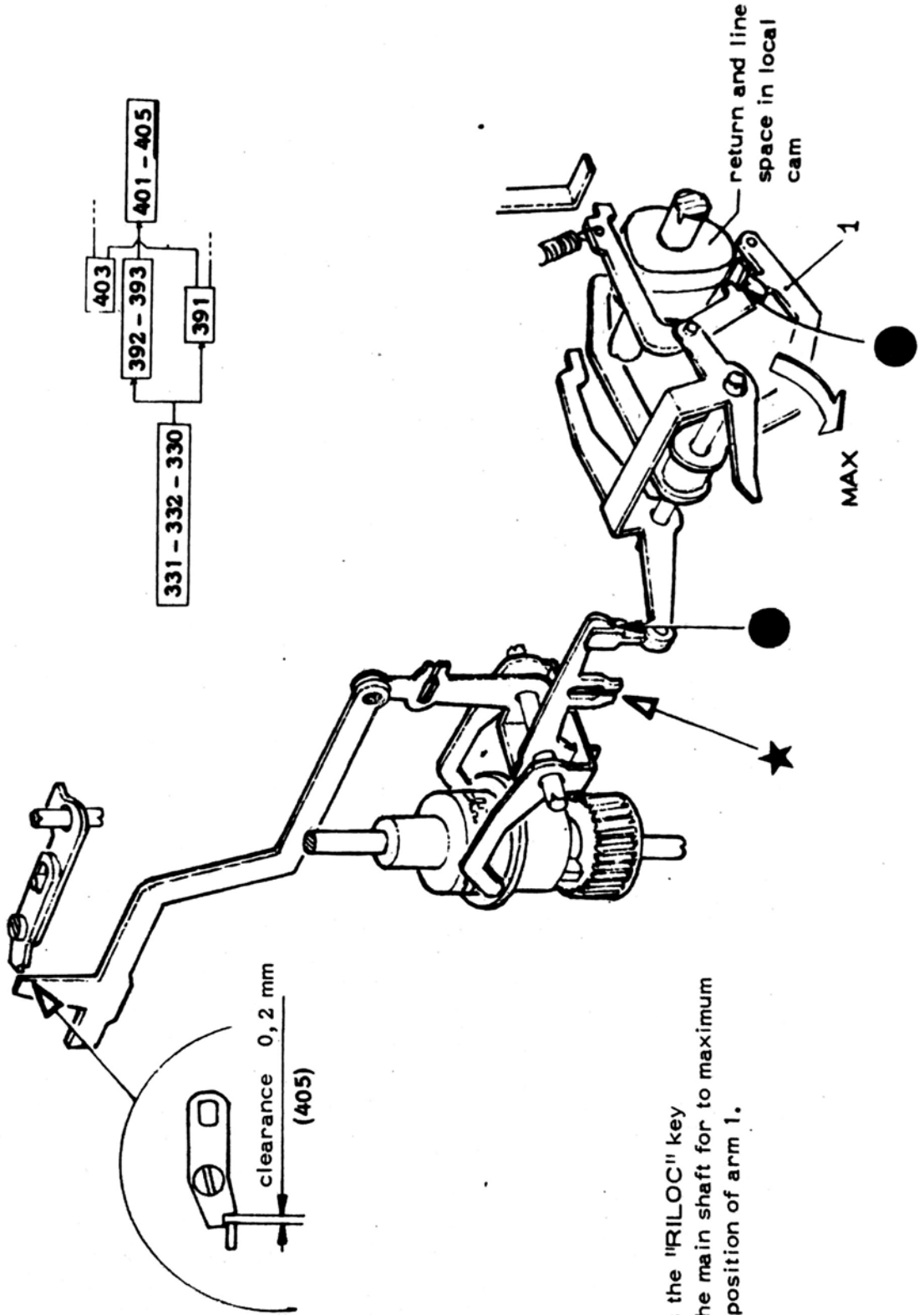
402) CHECK THE WORK POSITION OF THE "RETURN IN LOCAL"
(RILOC) KEY

403) CHECK THE POSITION OF THE BRIDGE FOR "RETURN AND
LINE SPACE" IN LOCAL CONTROL



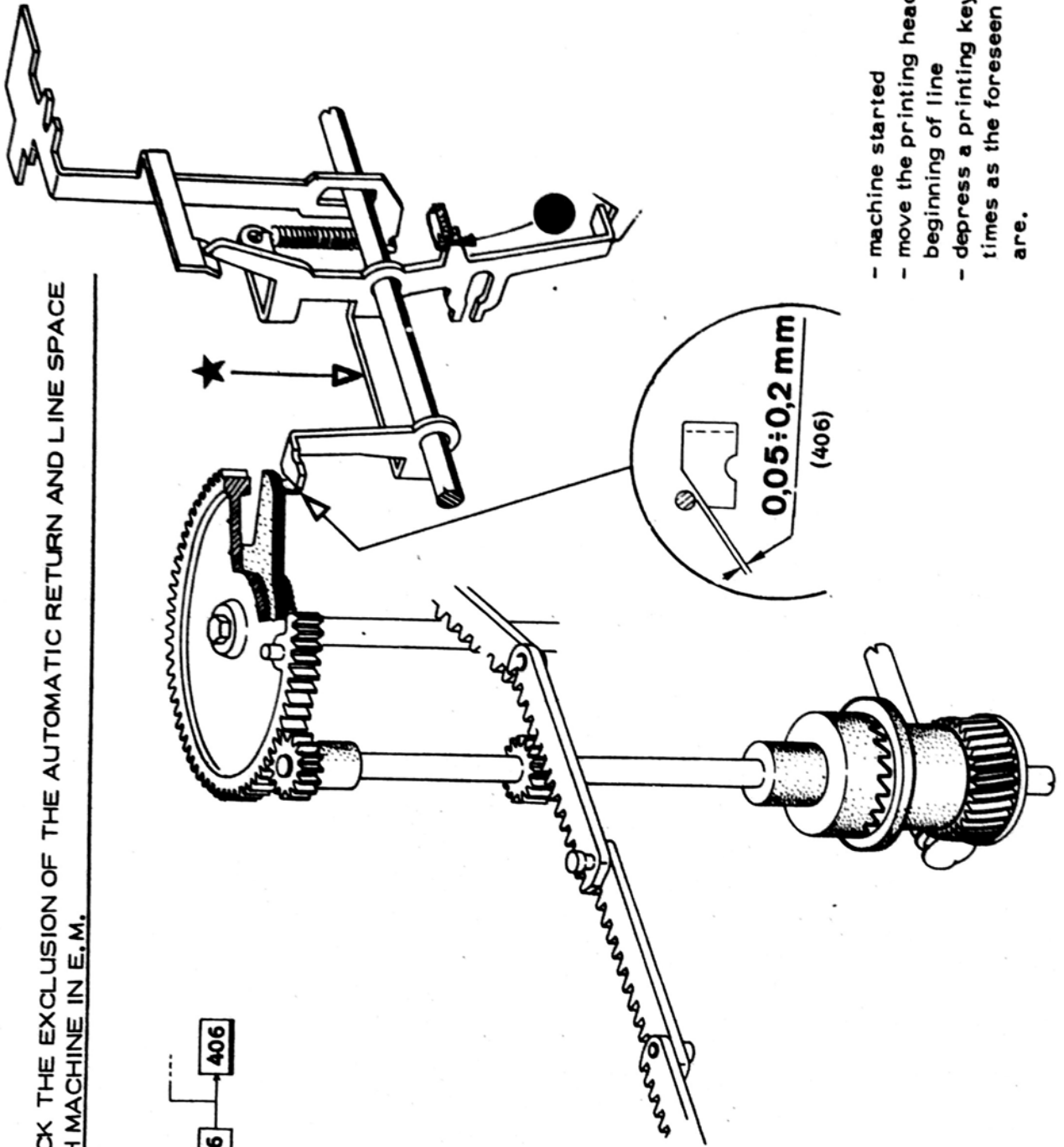
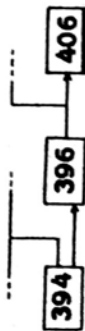
- rotate the main shaft for maximum control position of arm 1
- depress the "RETURN IN LOCAL" key and check

405) CHECK THE POSITION OF THE PRINTING HEAD RETURN CONTROL ROD BY "RETURN IN LOCAL" KEY (RILOC)



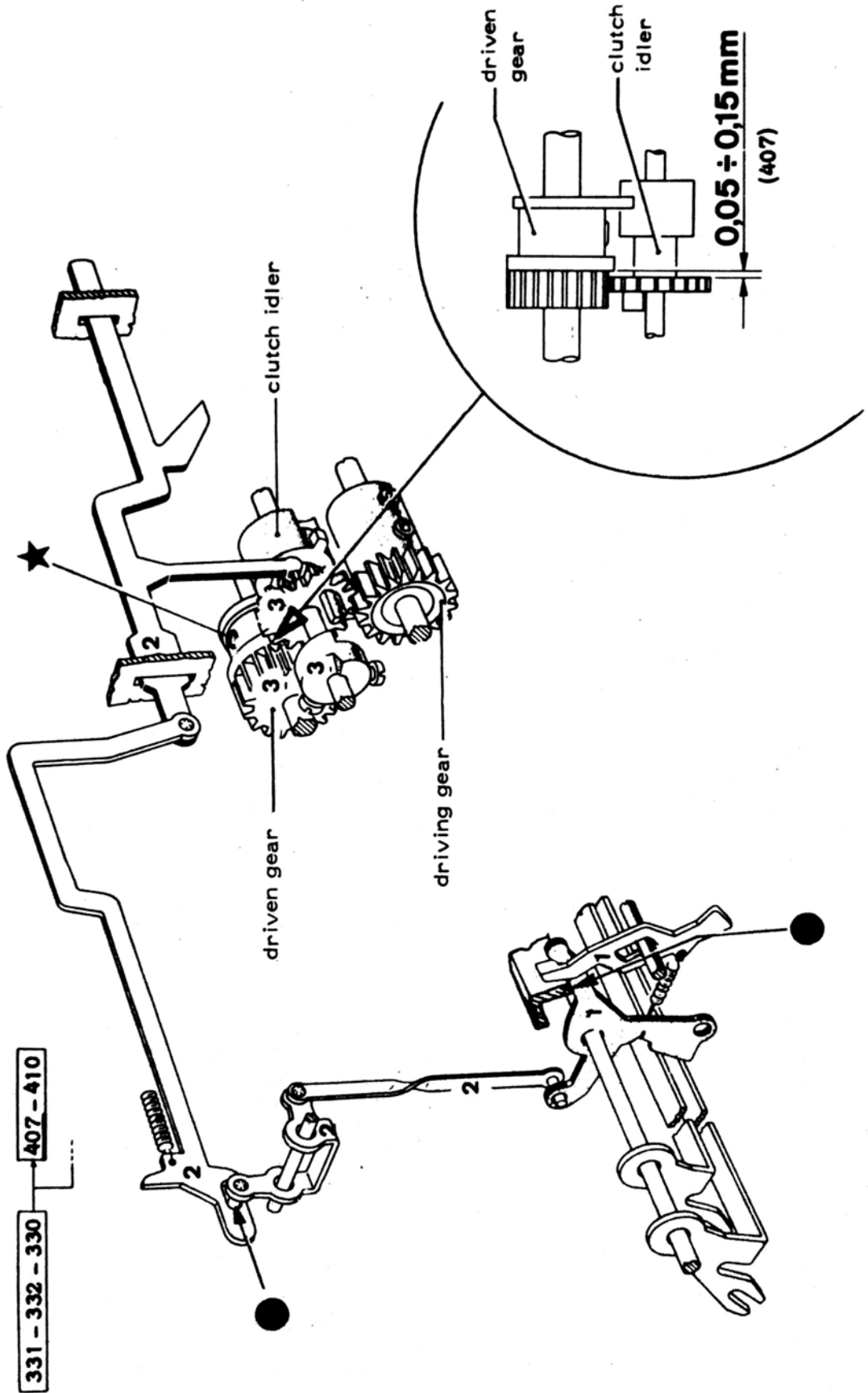
- depress the "RILOC" key
- rotate the main shaft for to maximum control position of arm 1.

406) CHECK THE EXCLUSION OF THE AUTOMATIC RETURN AND LINE SPACE WITH MACHINE IN E.M.

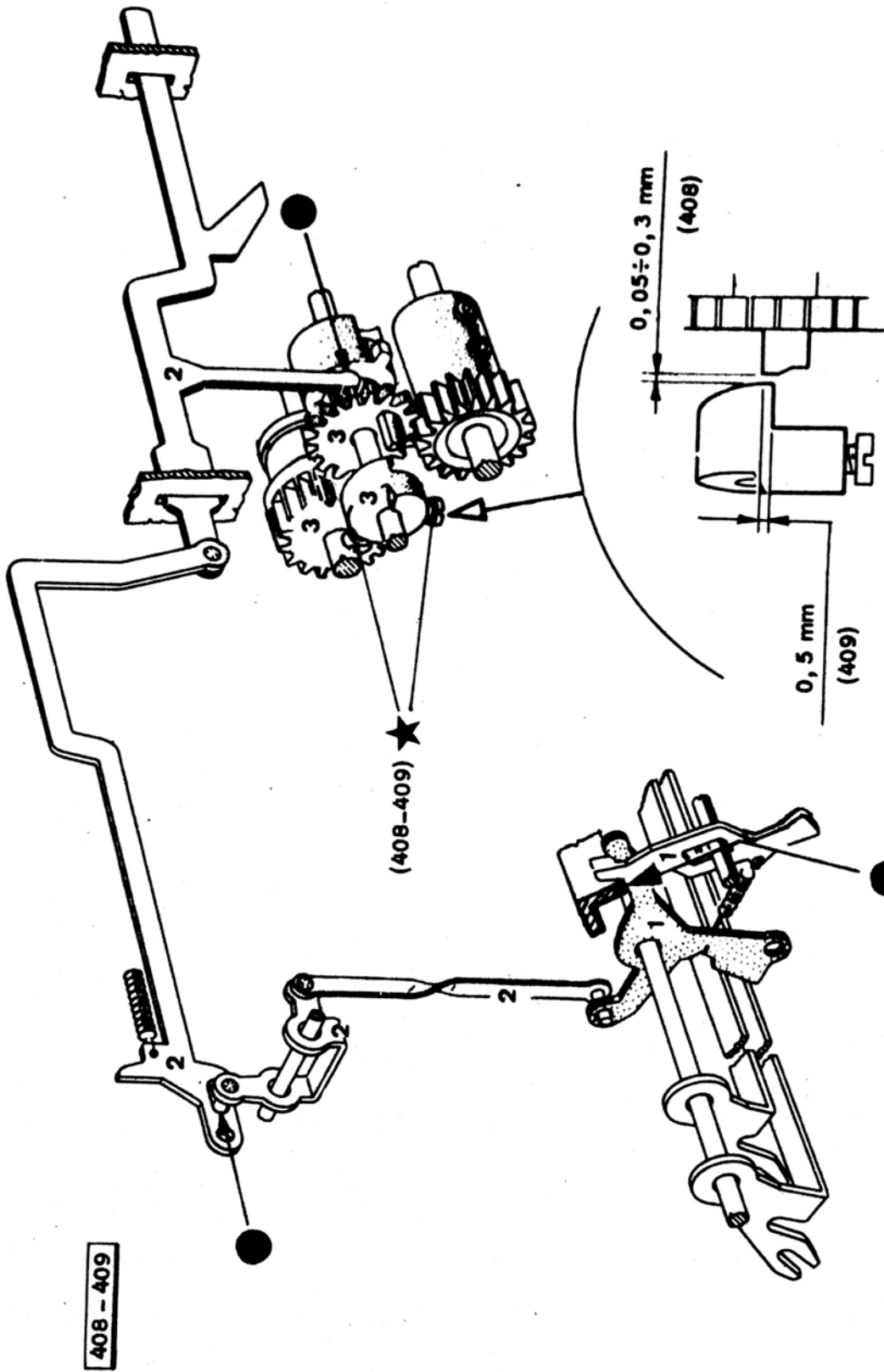


- machine started
- move the printing head to the beginning of line
- depress a printing key as many times as the foreseen strokes are.

407) CHECK THE AXIAL POSITION OF THE VERTICAL CONTROL DRIVEN

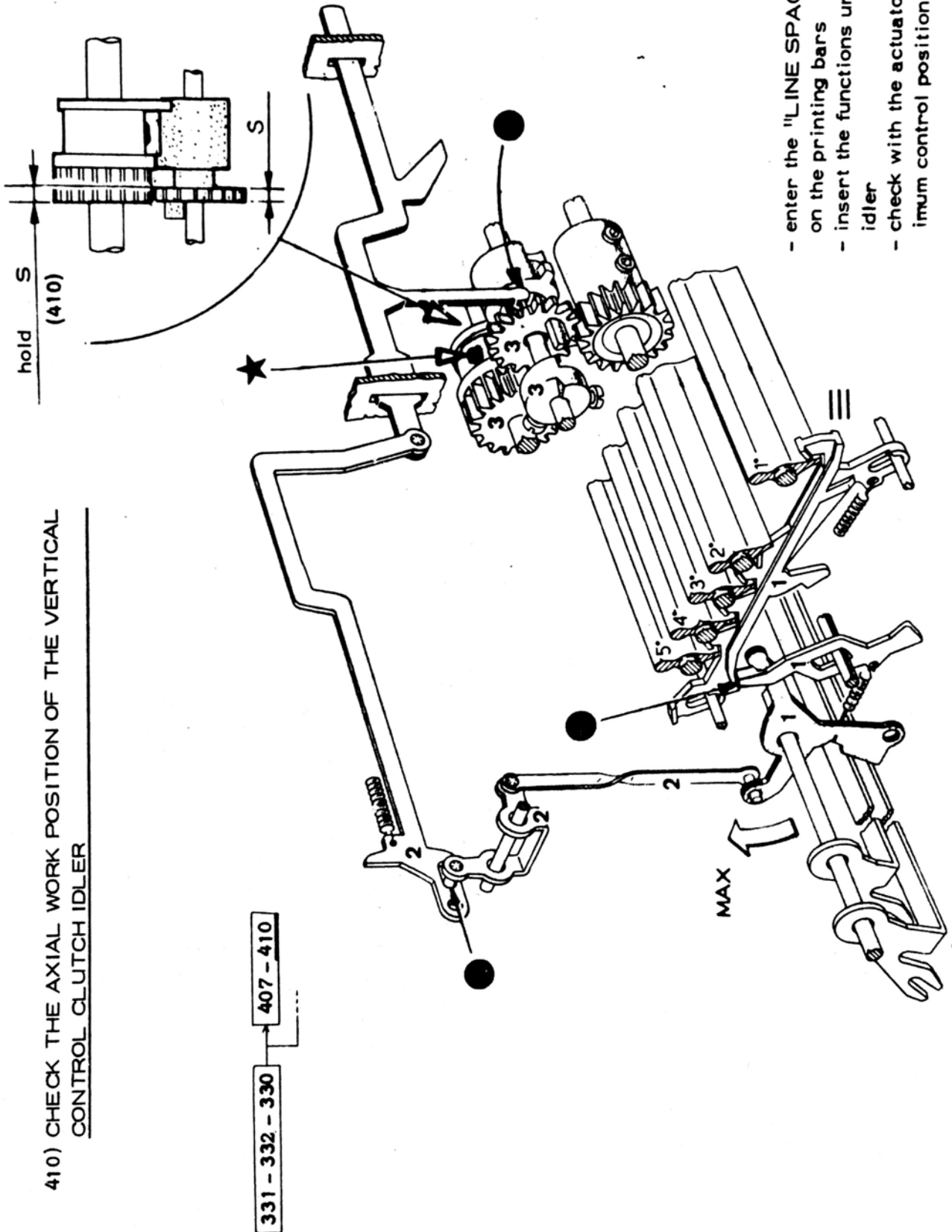


408-409) CHECK THE POSITION OF THE VERTICAL CONTROL EXPULSION CAM



- check with goniometer wheel at 180°.

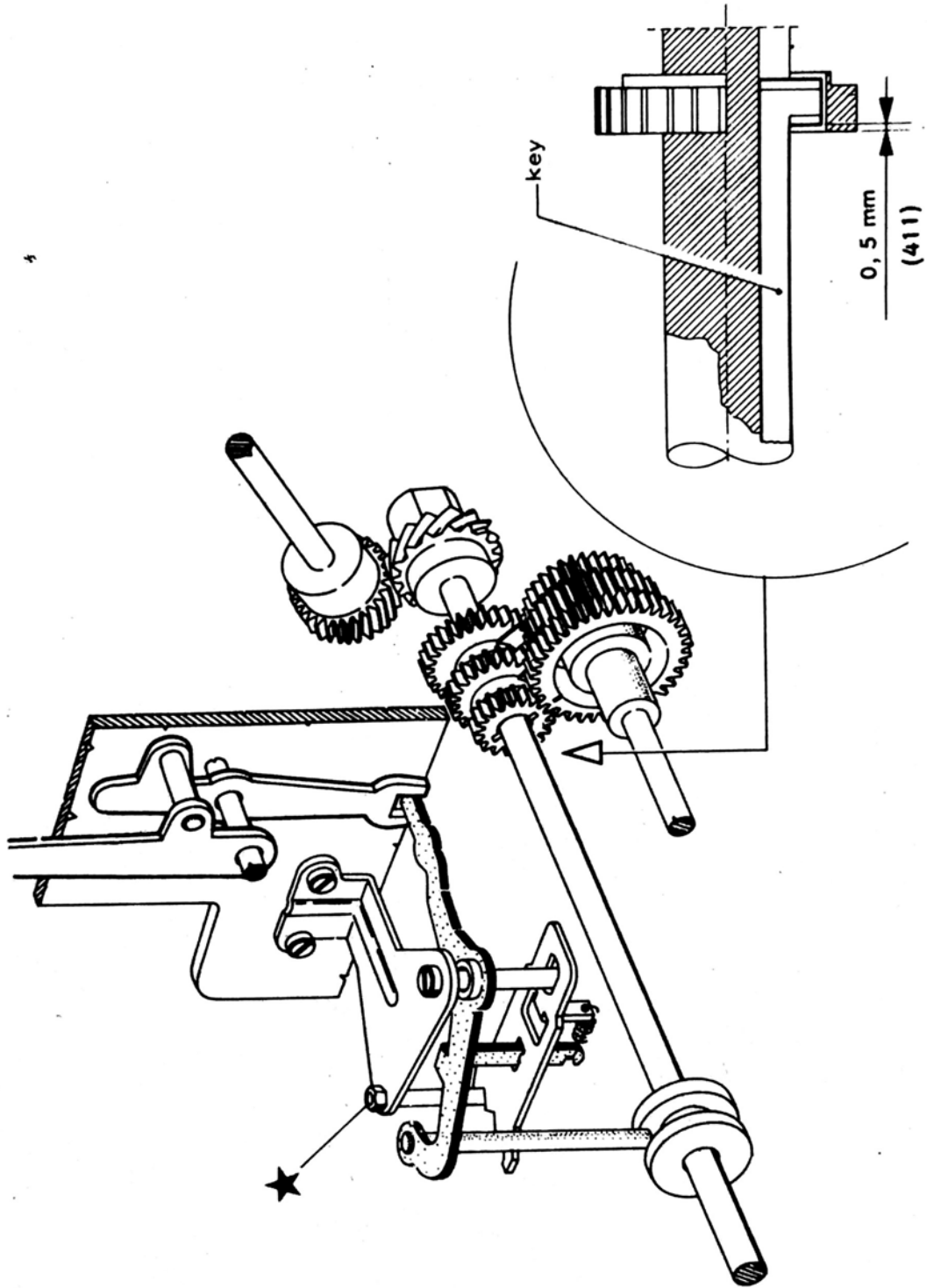
410) CHECK THE AXIAL WORK POSITION OF THE VERTICAL CONTROL CLUTCH IDLER



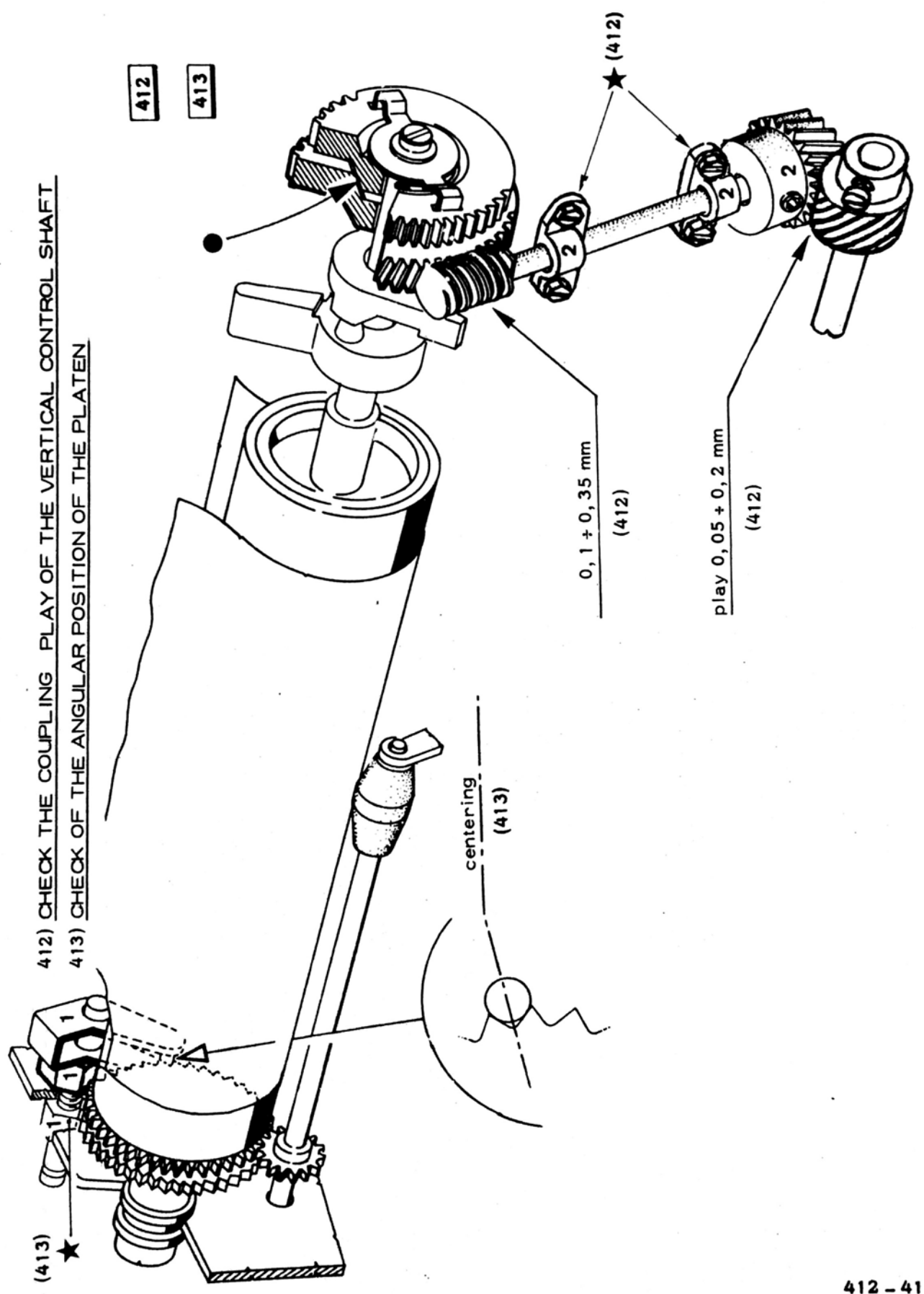
- enter the "LINE SPACE" code on the printing bars
- insert the functions unit clutch idler
- check with the actuator at maximum position.

411) CHECK THE POSITION OF THE LINE SPACE CHANGE KEY

411

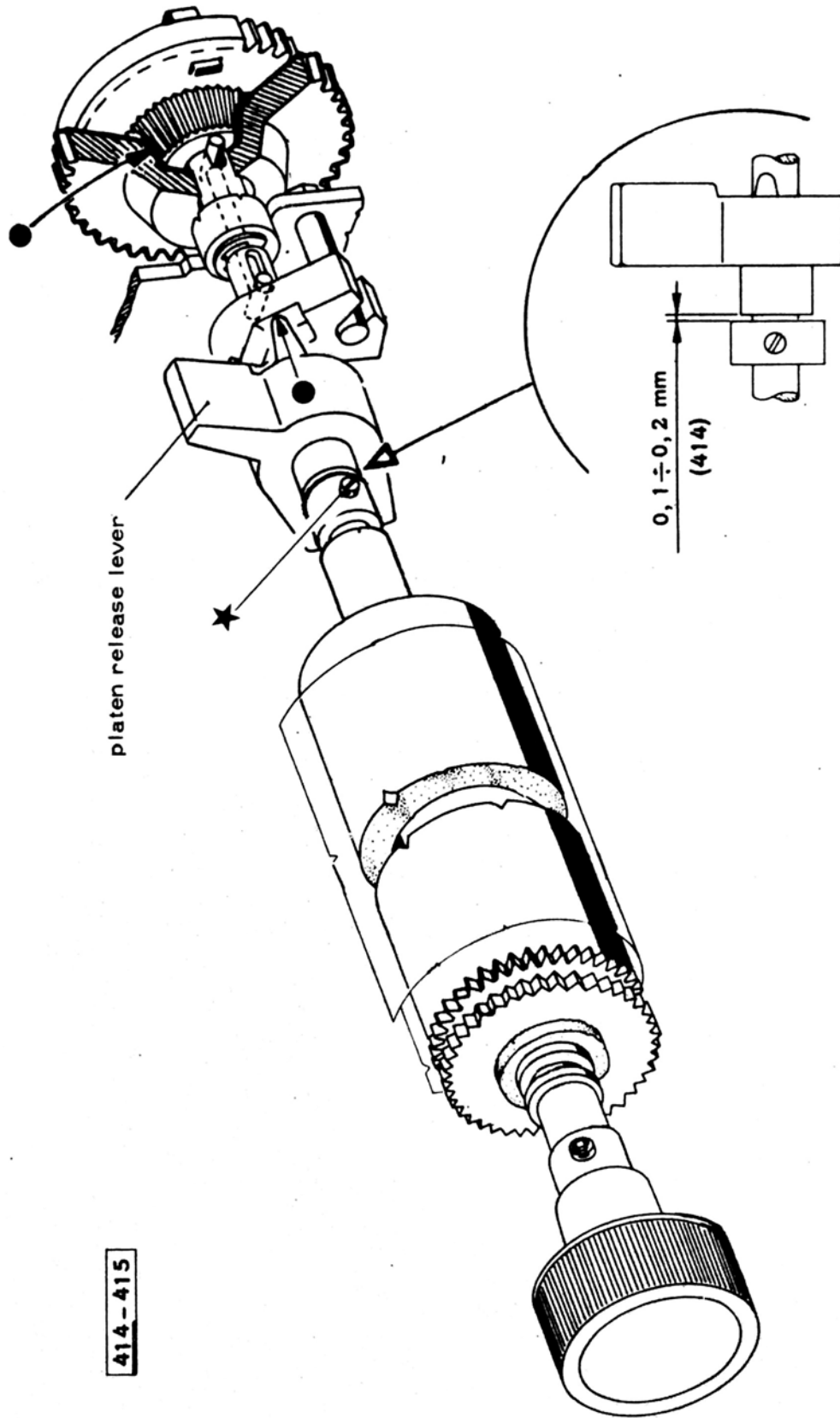


412) CHECK THE COUPLING PLAY OF THE VERTICAL CONTROL SHAFT
 413) CHECK OF THE ANGULAR POSITION OF THE PLATEN



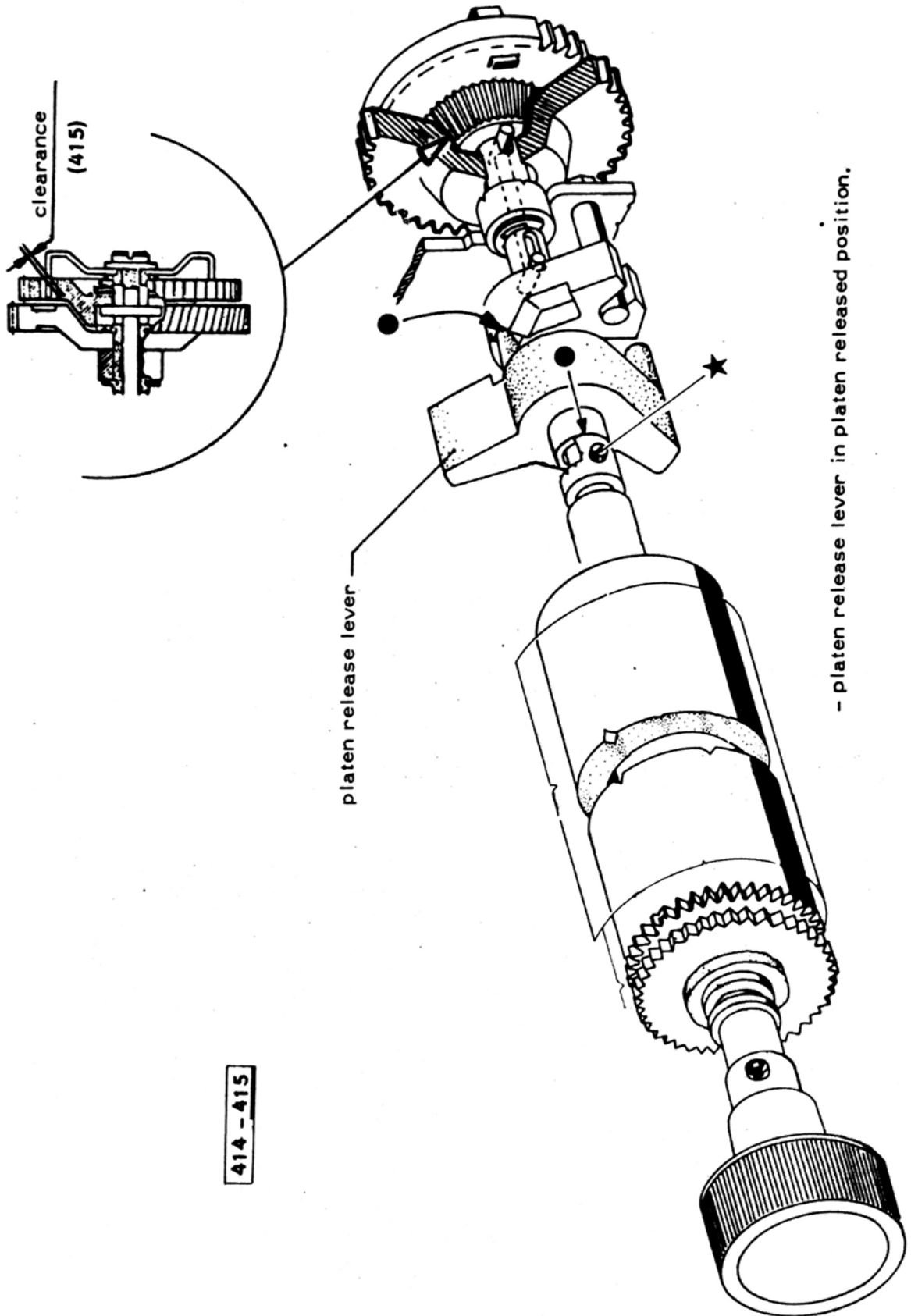
414) CHECK ON THE AXIAL PLAY OF THE PLATEN RELEASE LEVER

414 - 415



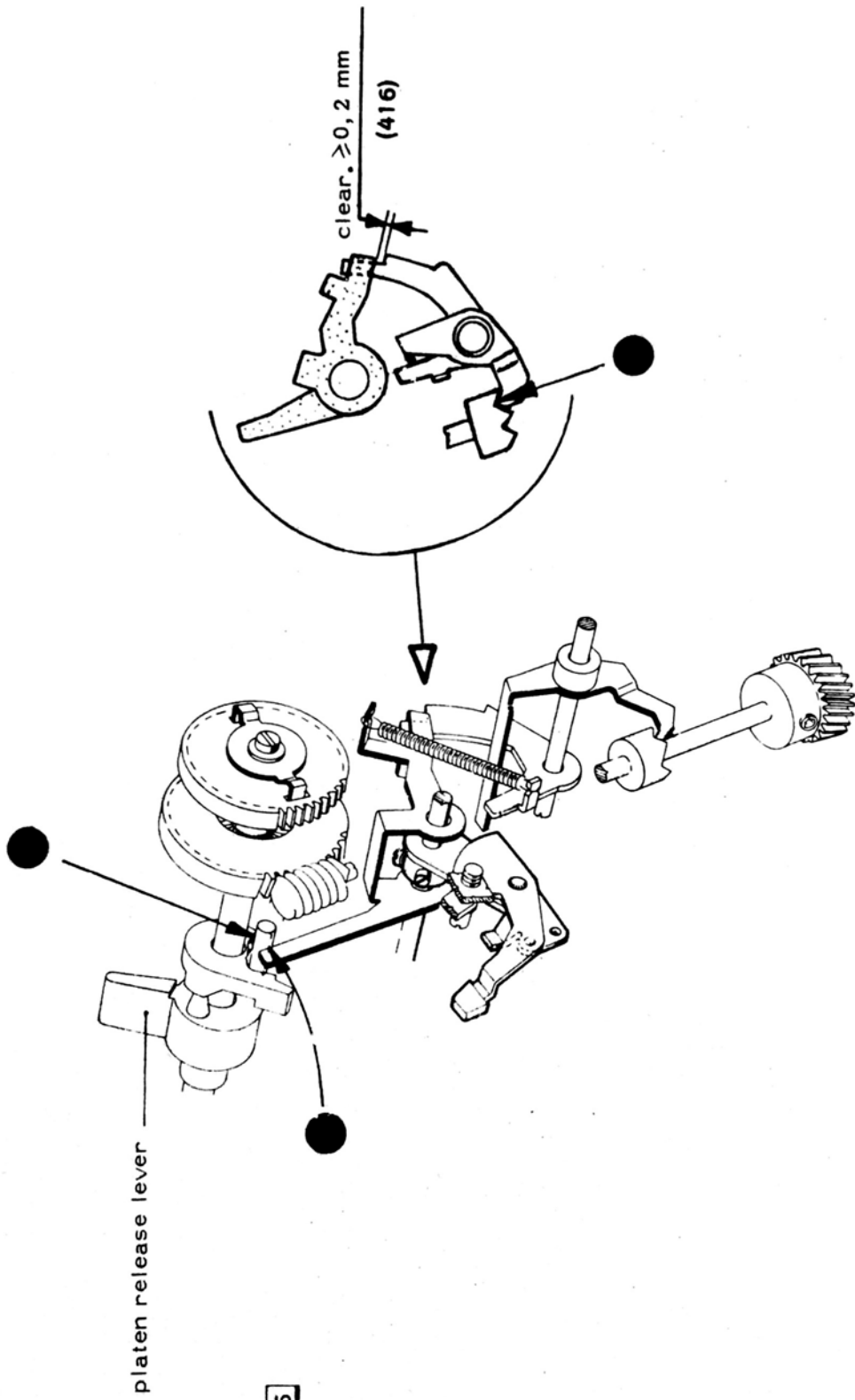
415) CHECK THE PLATEN RELEASE

414 - 415



- platen release lever in platen released position.

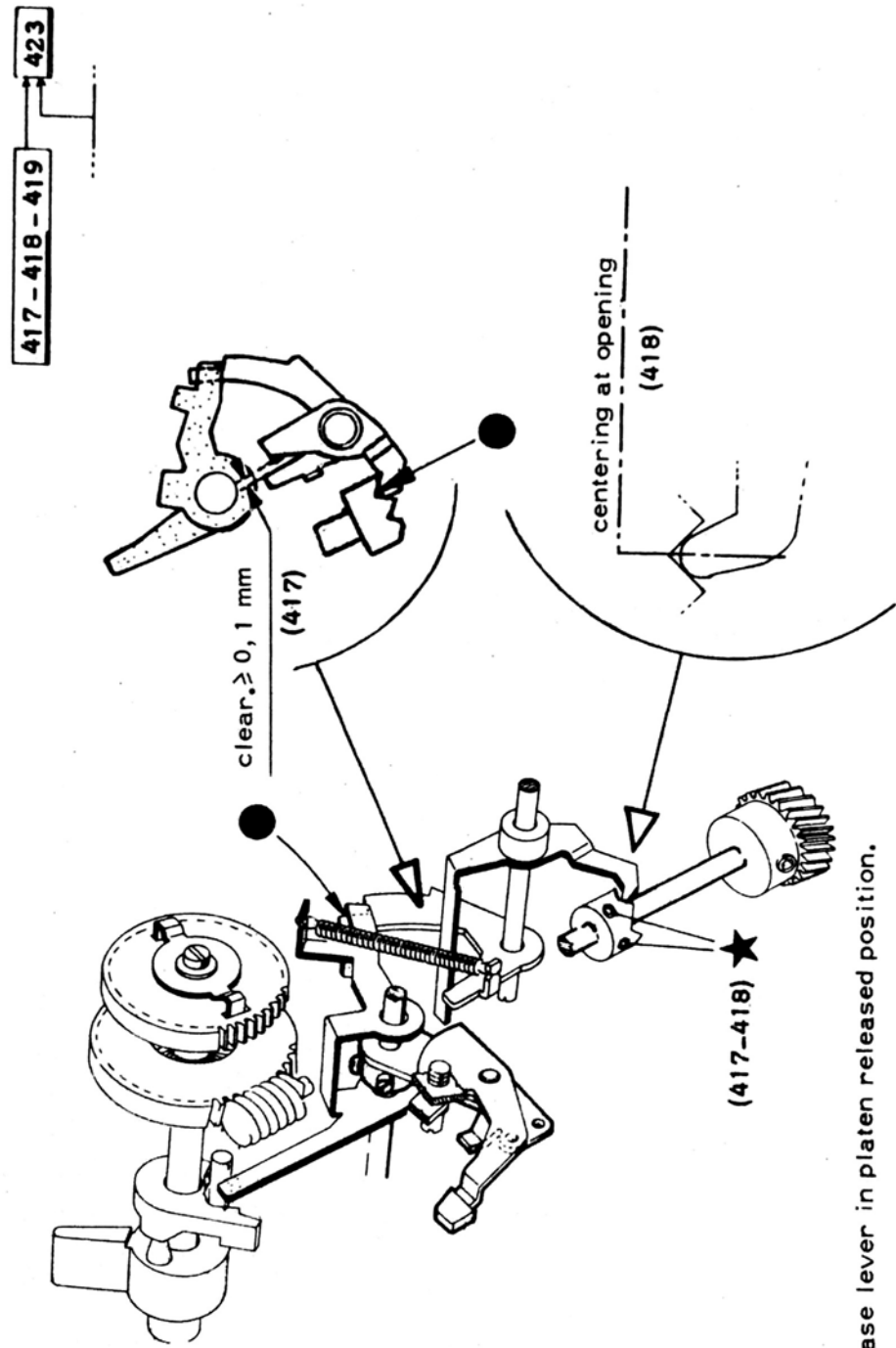
416) CHECK THE RELEASE OF THE "PLATEN RELEASE LEVER" RELOADING CRANK



416

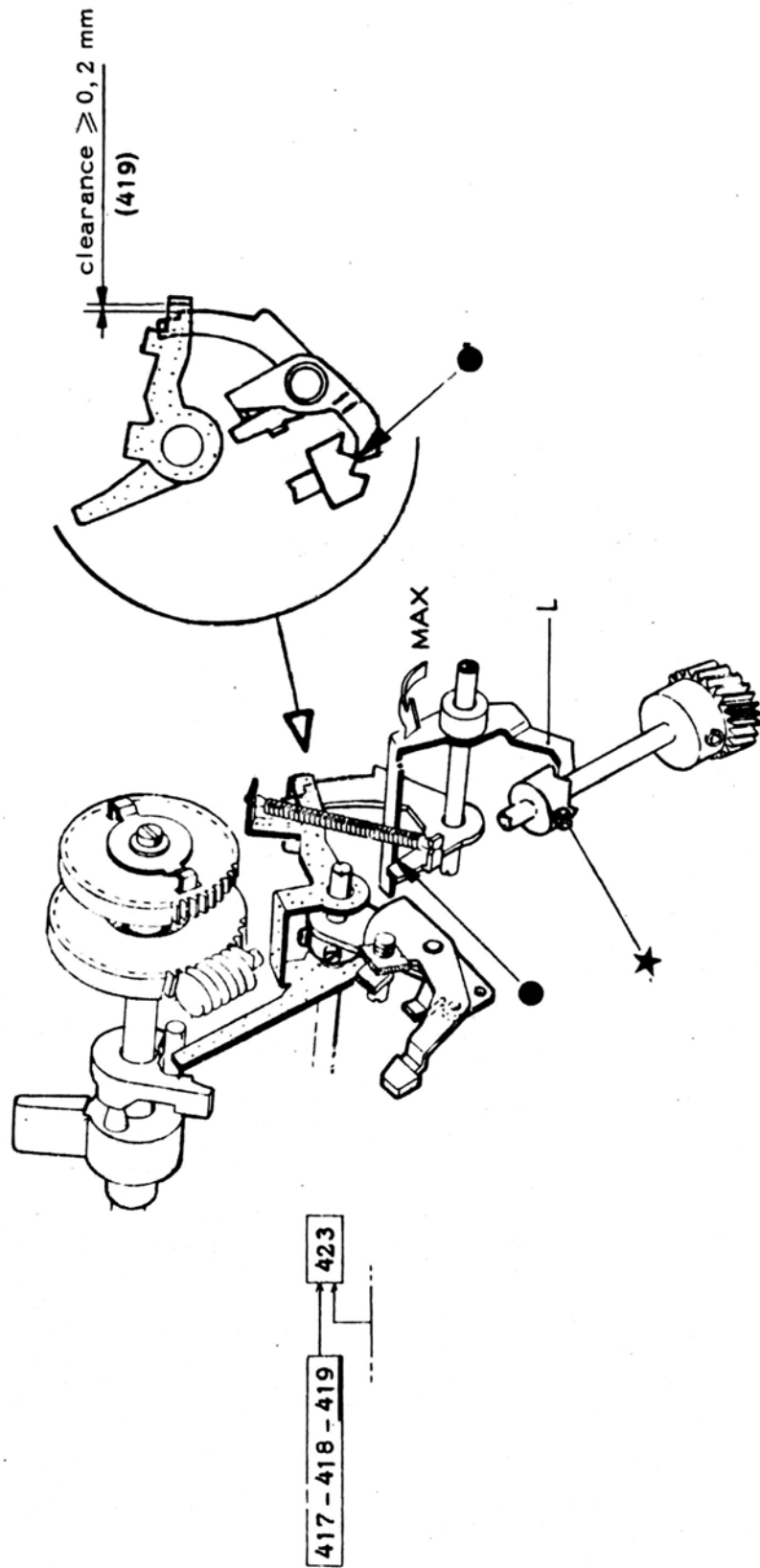
- platen release lever in platen released position.

- 417) CHECK THE AXIAL POSITION OF THE CAM FOR "PLATEN RELEASE LEVER" RELOAD
- 418) CHECK THE ANGULAR POSITION OF THE CAM FOR "PLATEN RELEASE LEVER" RELOAD



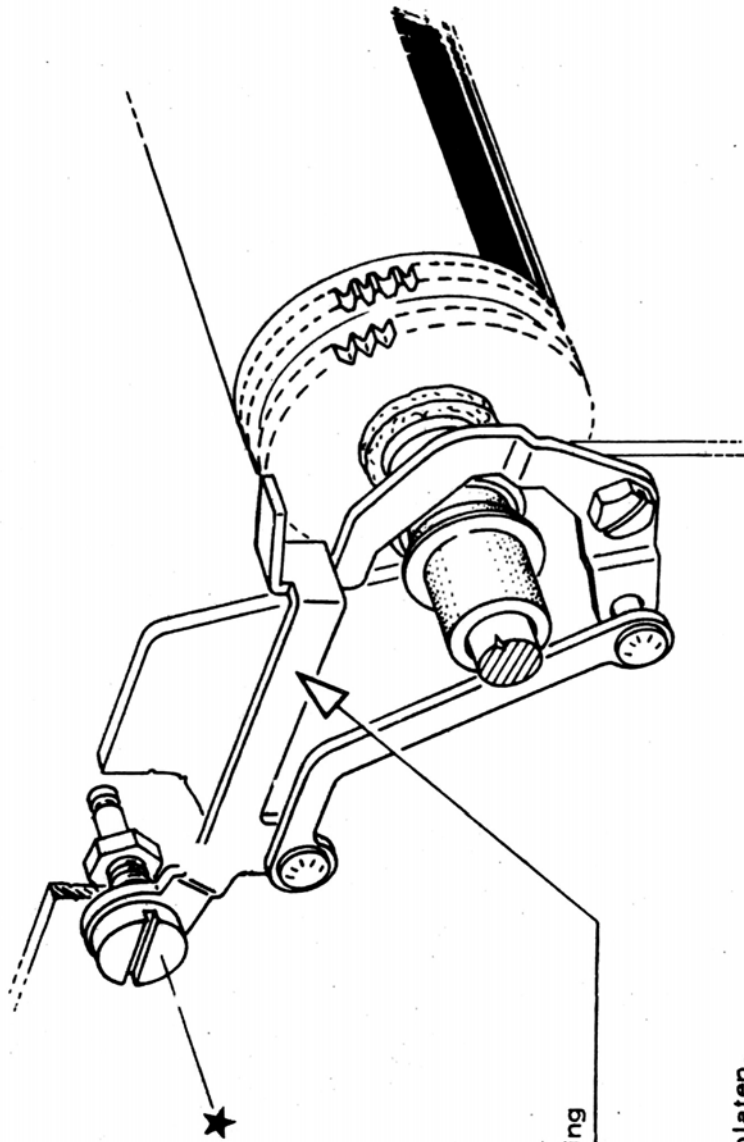
- platen release lever in platen released position.

419) CHECK THE QUANTITY OF CONTROL OF "PLATEN RELEASE LEVER" RELOADING CAM



- platen release lever in platen released position
- depress the "RETURN IN LOCAL" (RILOC) key
- rotate the main shaft for maximum control of lever L.

420) CHECK THE PLATEN LOCKING LEVERS

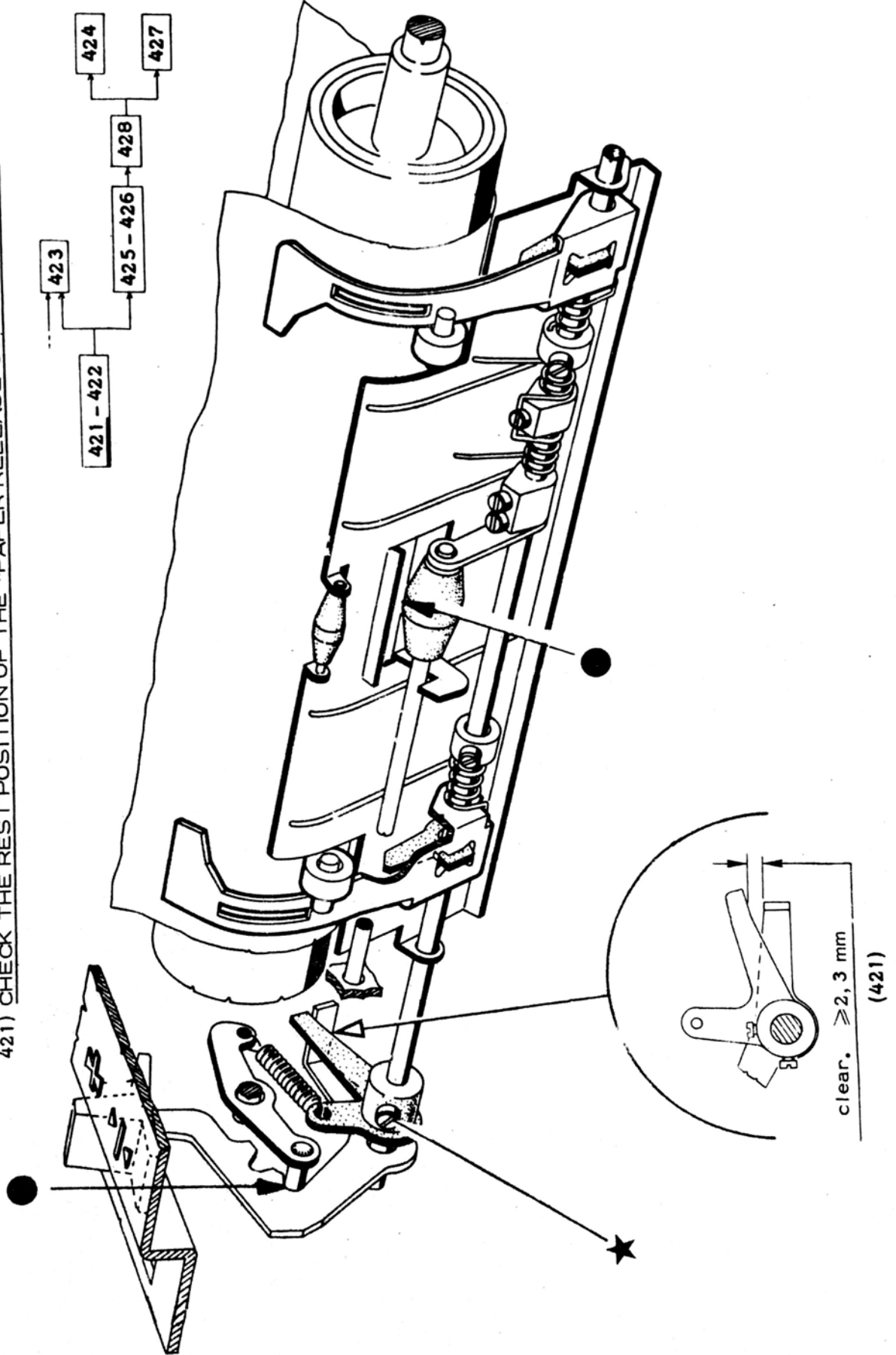


420

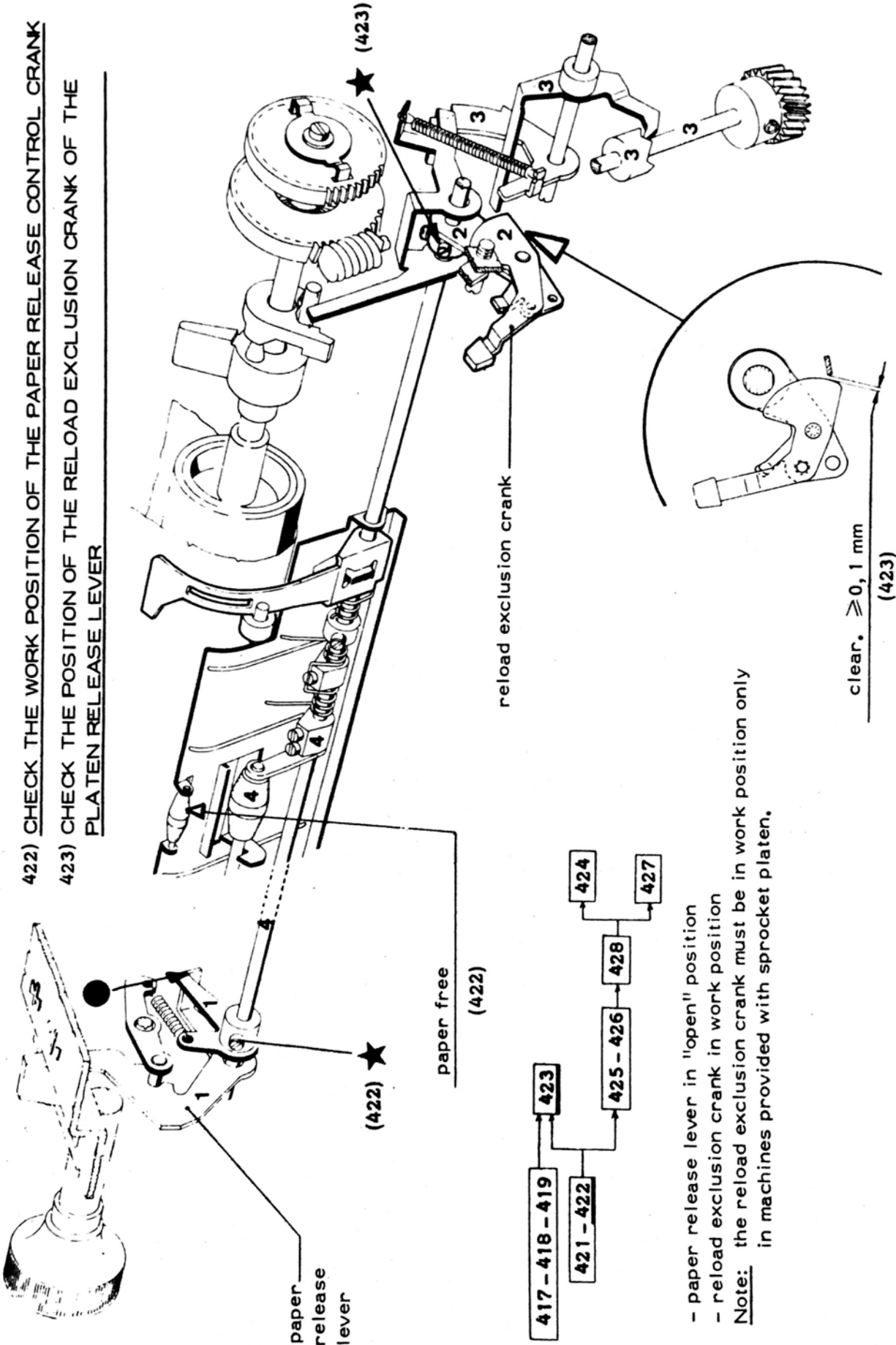
slightly tight closing
(420)

- check both sides of the platen.

421) CHECK THE REST POSITION OF THE "PAPER RELEASE CONTROL CRANK"

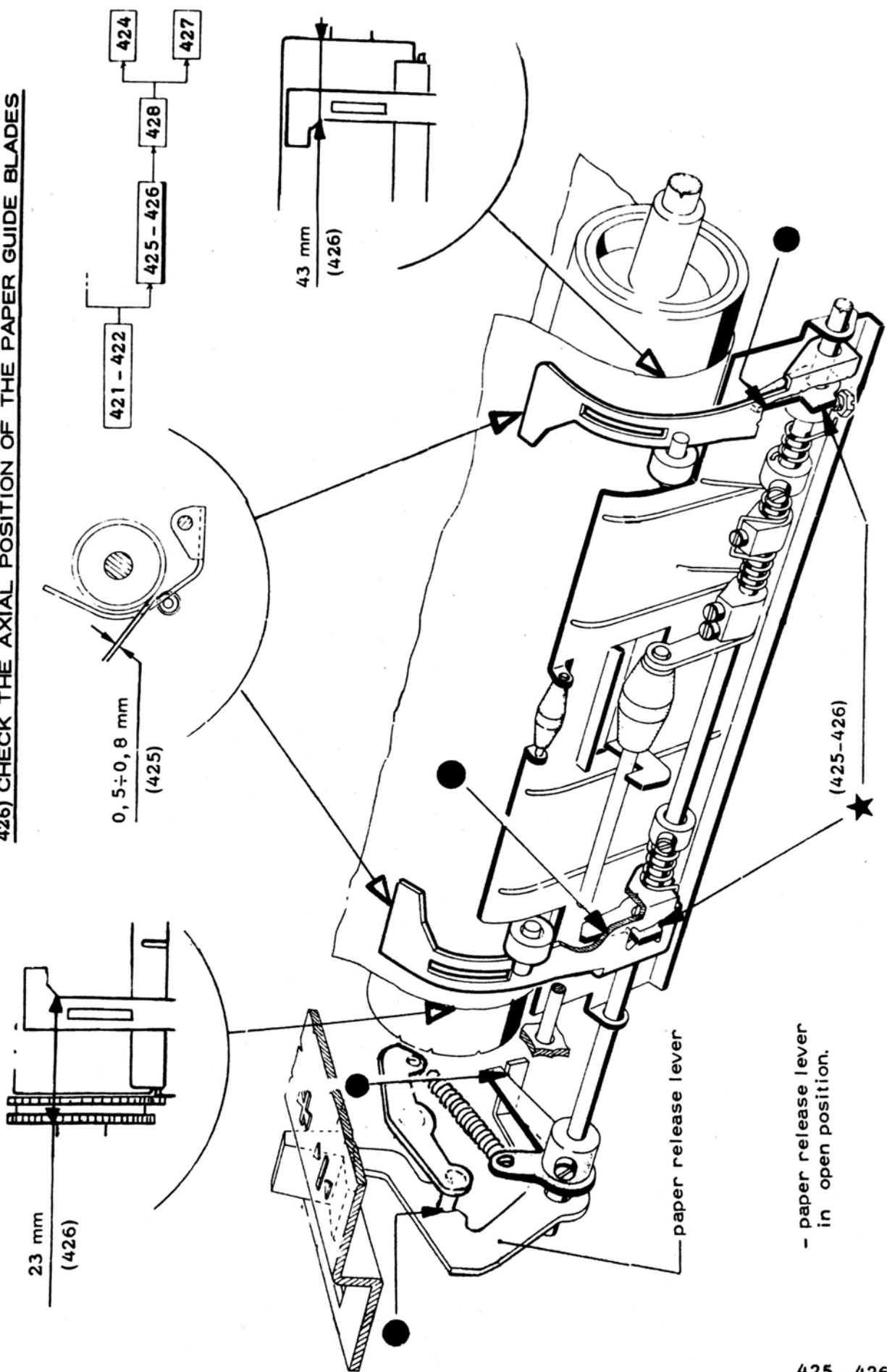


- 422) CHECK THE WORK POSITION OF THE PAPER RELEASE CONTROL CRANK
- 423) CHECK THE POSITION OF THE RELOAD EXCLUSION CRANK OF THE PLATEN RELEASE LEVER

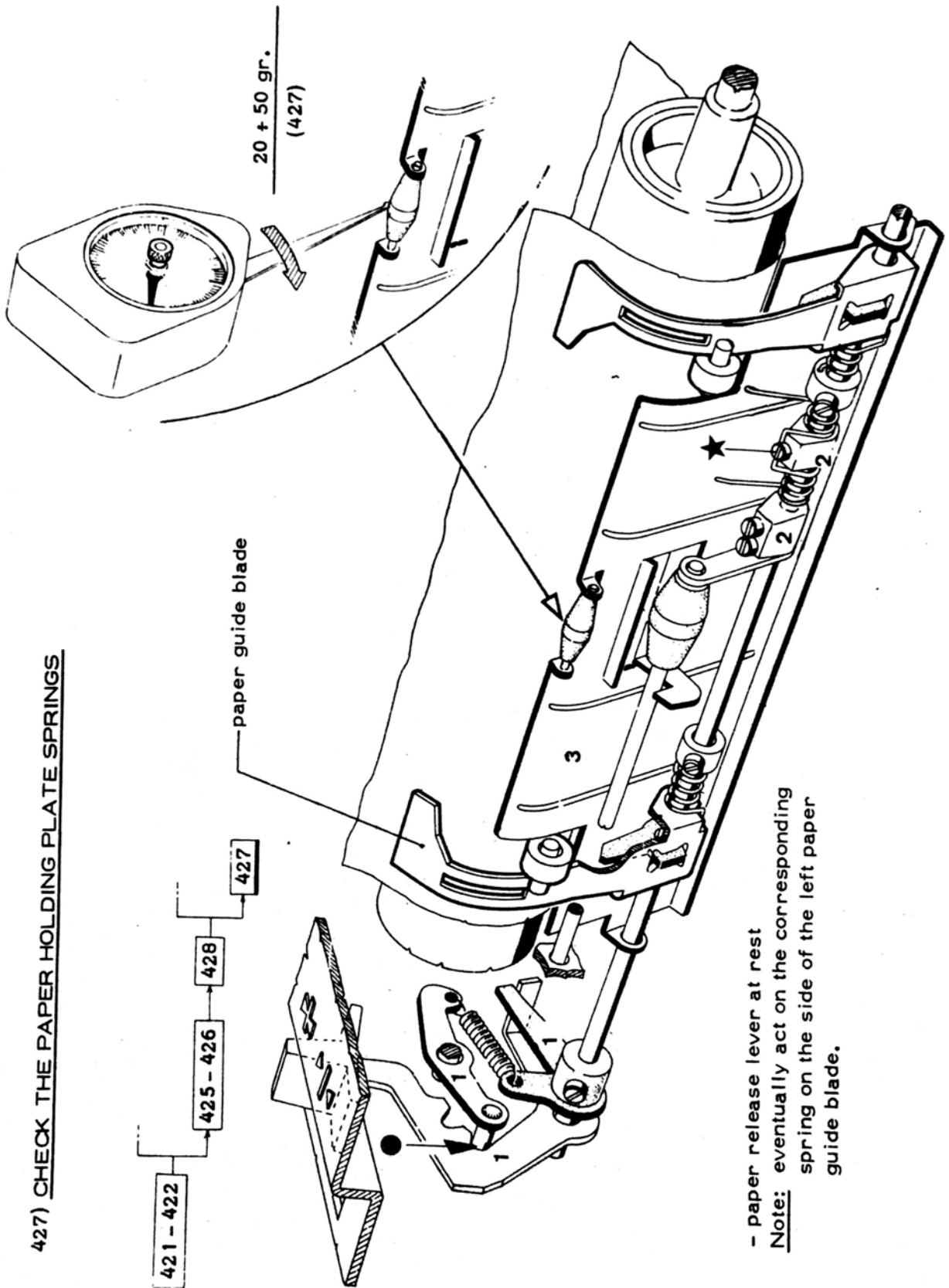


425) CHECK THE ANGULAR POSITION OF THE PAPER GUIDE BLADES

426) CHECK THE AXIAL POSITION OF THE PAPER GUIDE BLADES

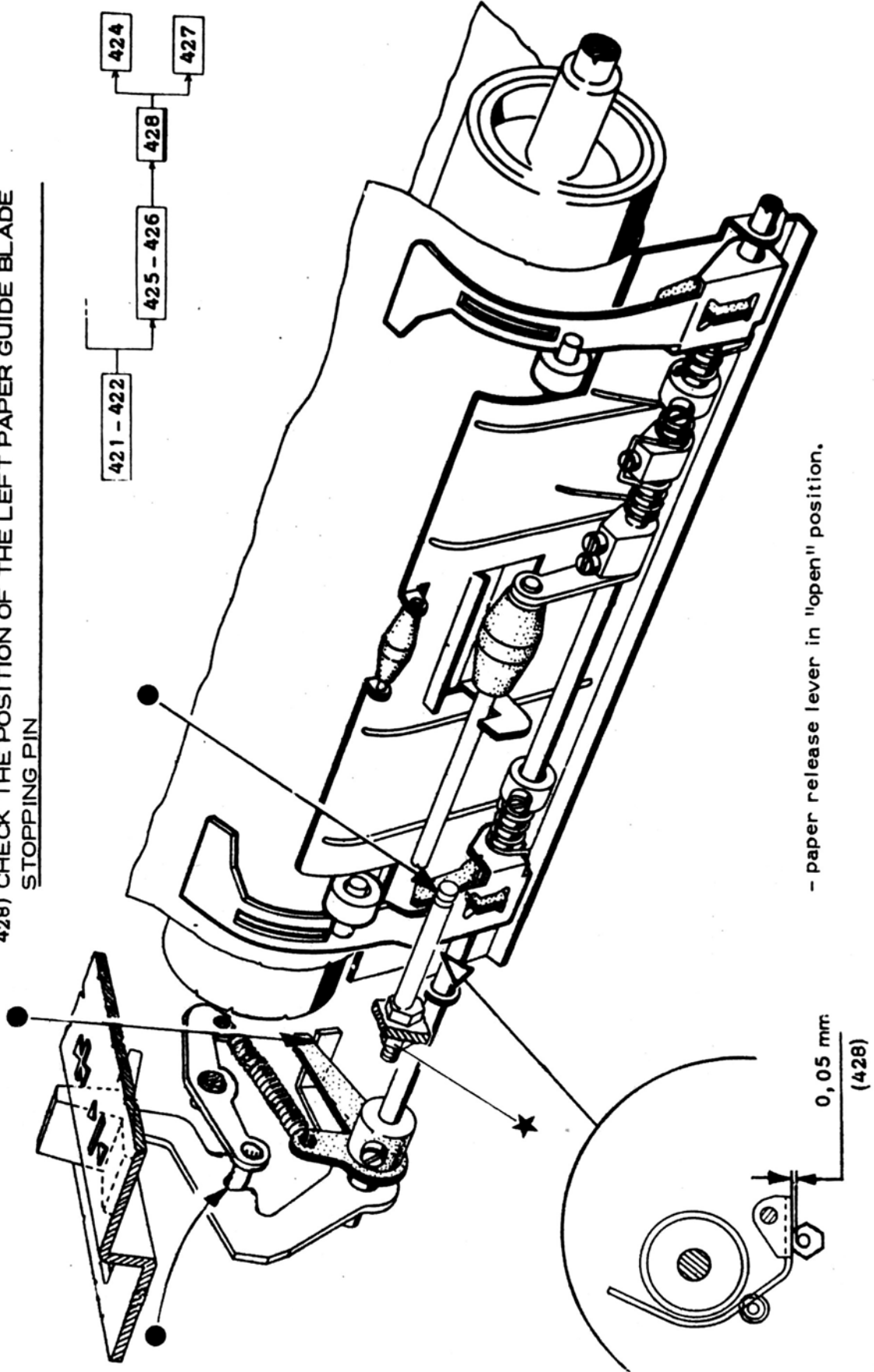


427) CHECK THE PAPER HOLDING PLATE SPRINGS



- paper release lever at rest
Note: eventually act on the corresponding spring on the side of the left paper guide blade.

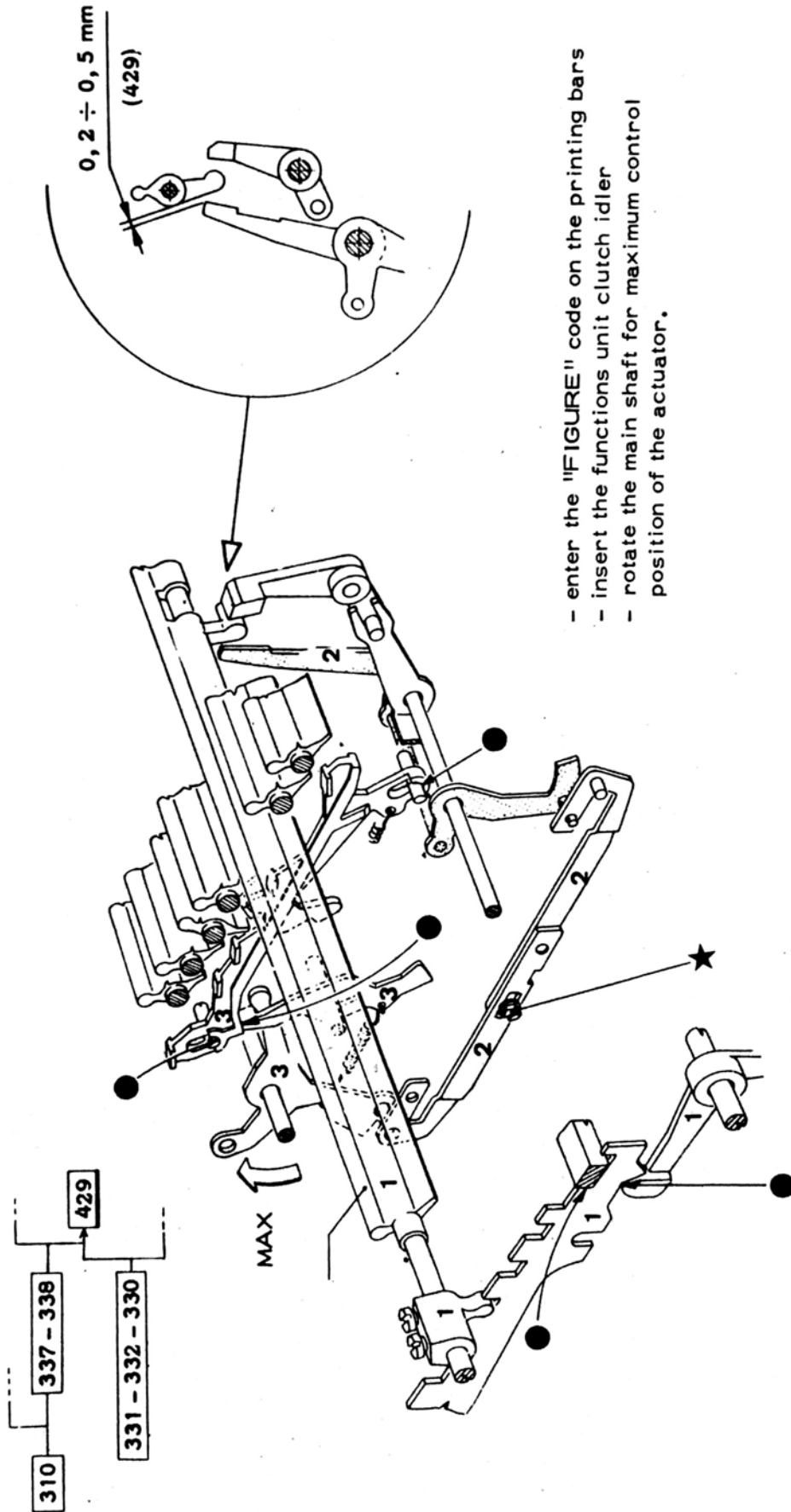
428) CHECK THE POSITION OF THE LEFT PAPER GUIDE BLADE
STOPPING PIN



- paper release lever in "open" position.

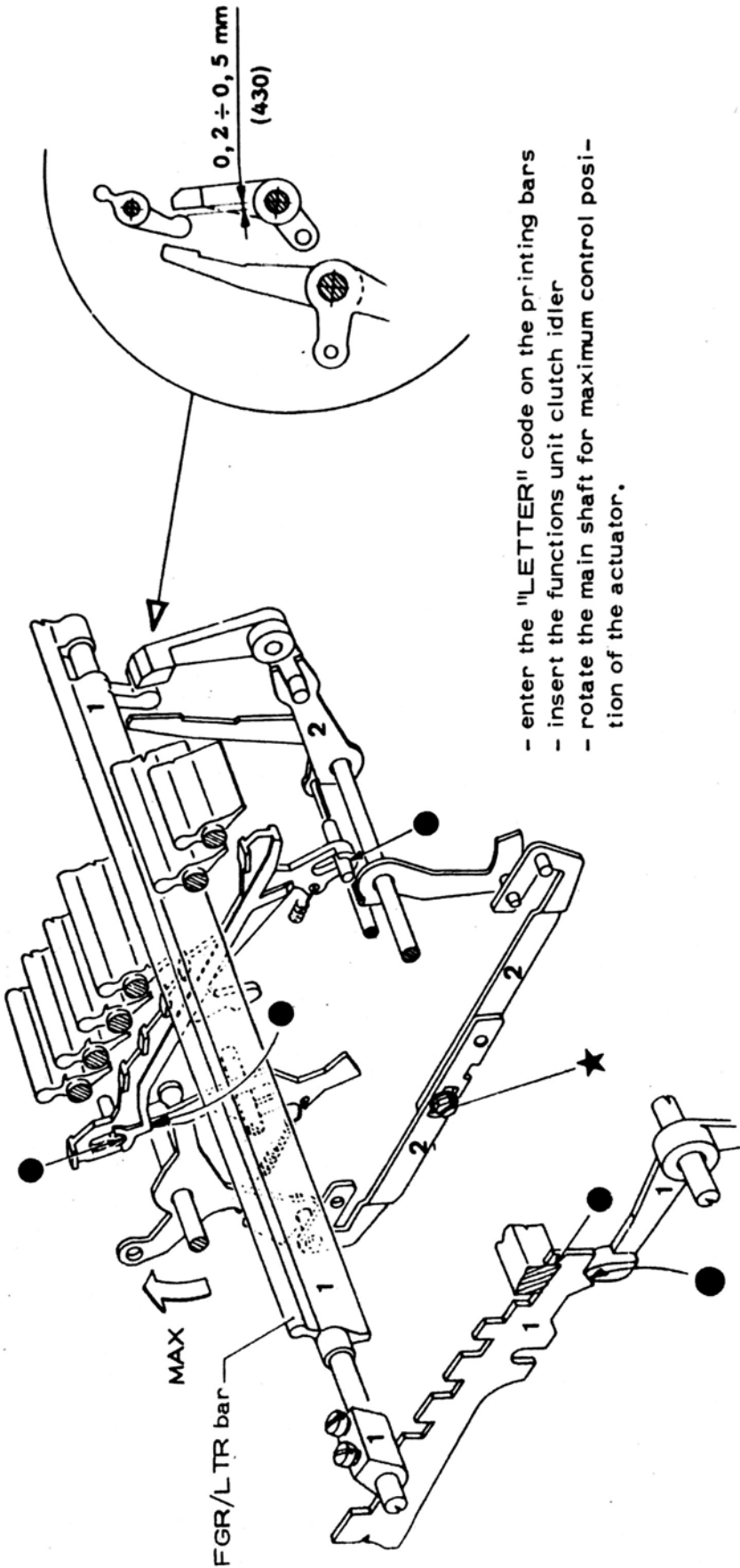
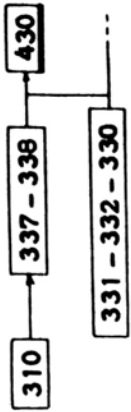
0,05 mm
(428)

429) CHECK THE POSITION OF THE LTR/FGR BAR IN FGR



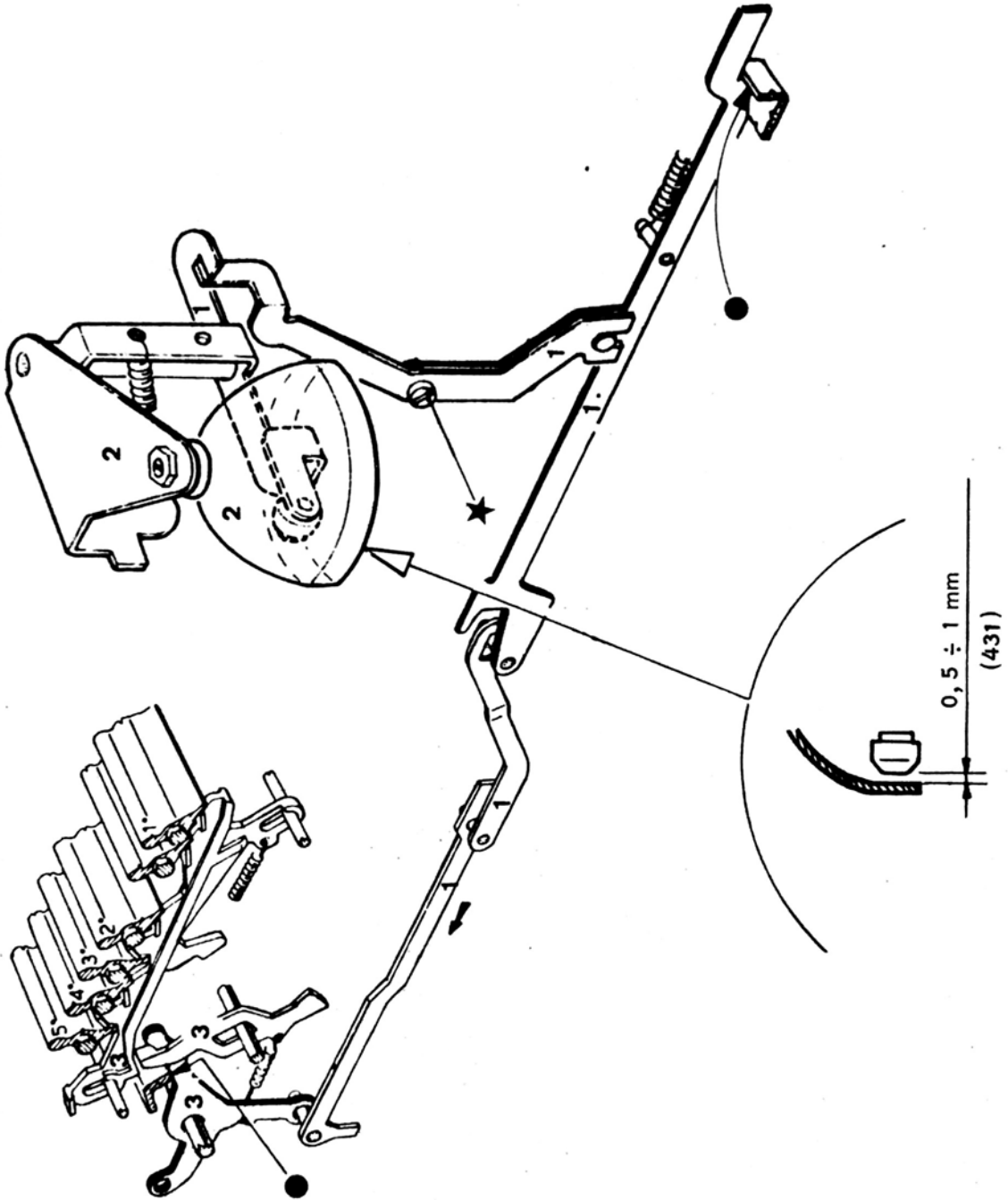
- enter the "FIGURE" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of the actuator.

430) CHECK THE POSITION OF THE L/TR/FGR IN L/TR



- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of the actuator.

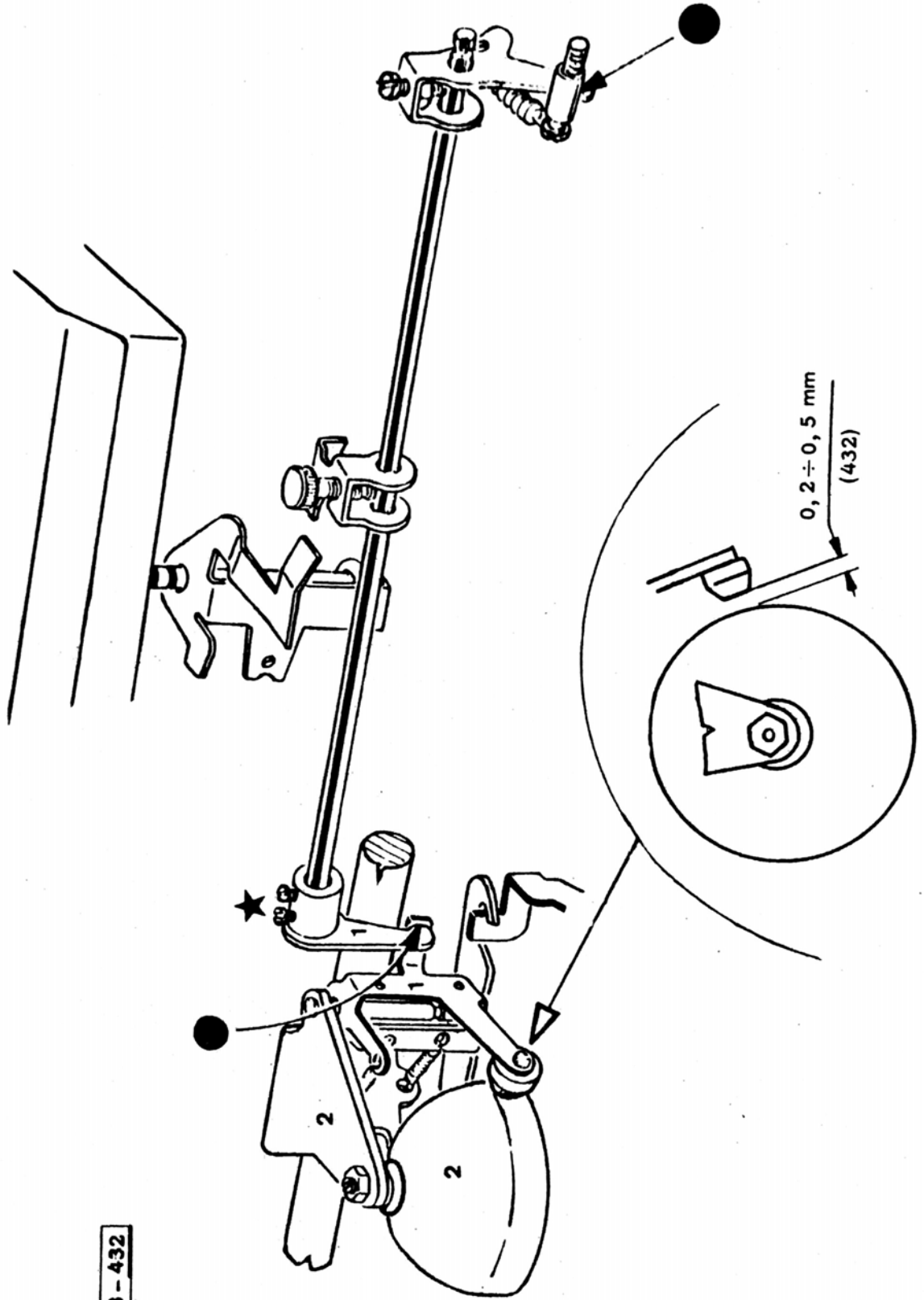
431) CHECK THE REST POSITION OF THE BELL CLAPPER, BY RECEPTION COMMAND



431

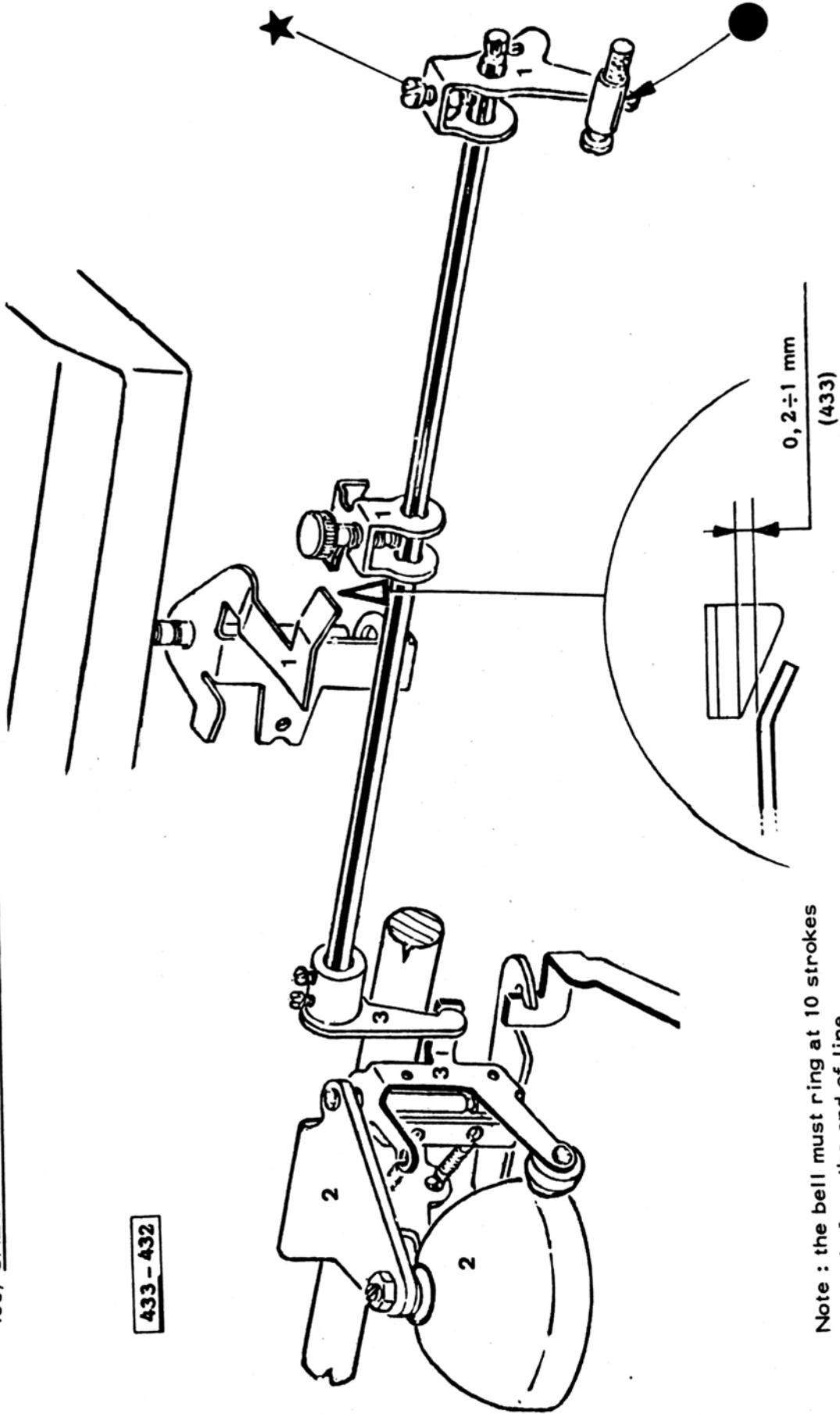
432) CHECK THE REST POSITION OF THE BELL CLAPPER FOR "END OF LINE NEAR" SIGNAL

433 - 432



433) CHECK THE COMMAND TO OPERATE THE BELL FOR "END OF LINE NEAR" SIGNAL

433 - 432



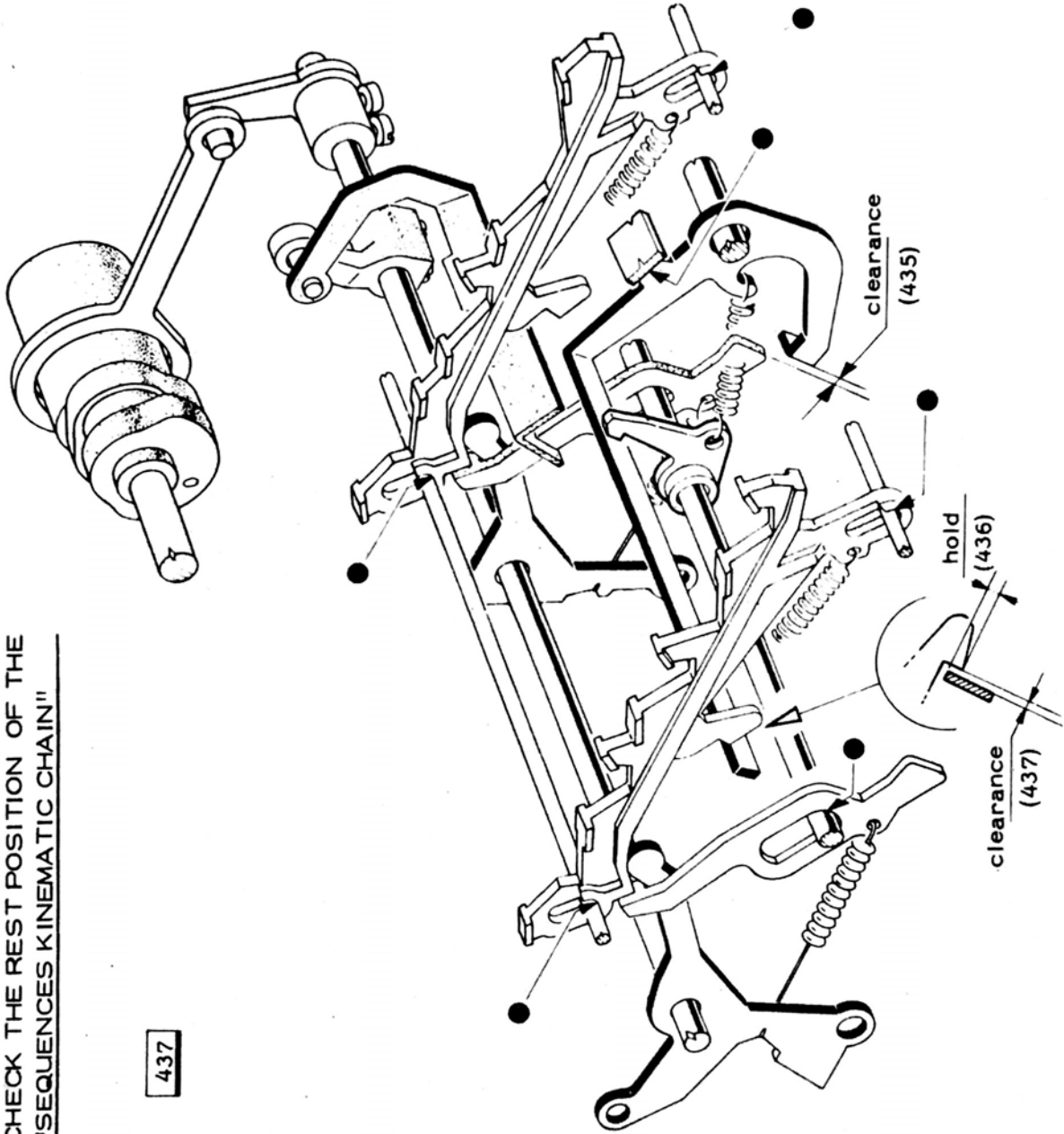
Note : the bell must ring at 10 strokes before the end of line.

435-436-437) CHECK THE REST POSITION OF THE
"SEQUENCES KINEMATIC CHAIN"

435

436

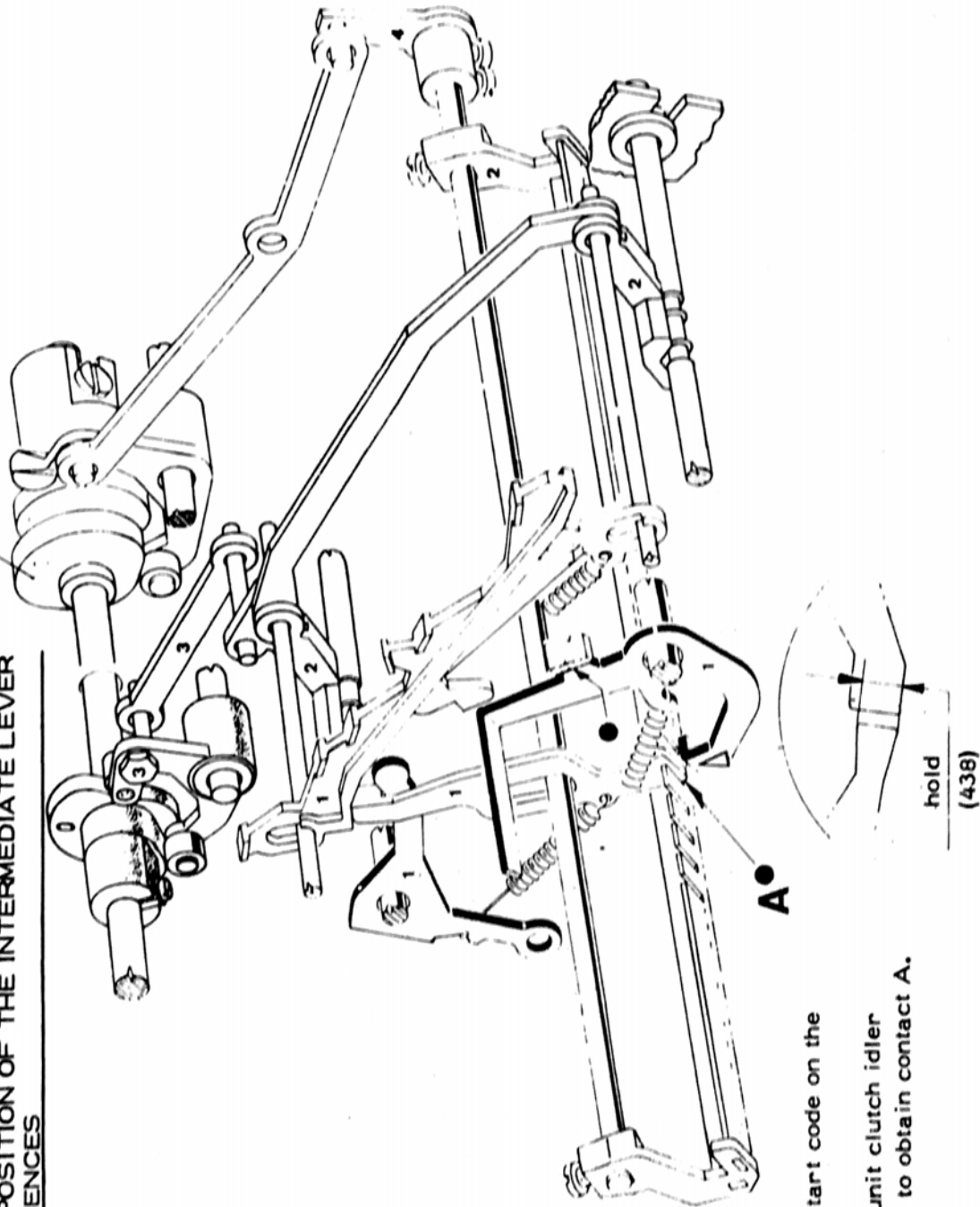
437



intermediate levers recovery controlling cam

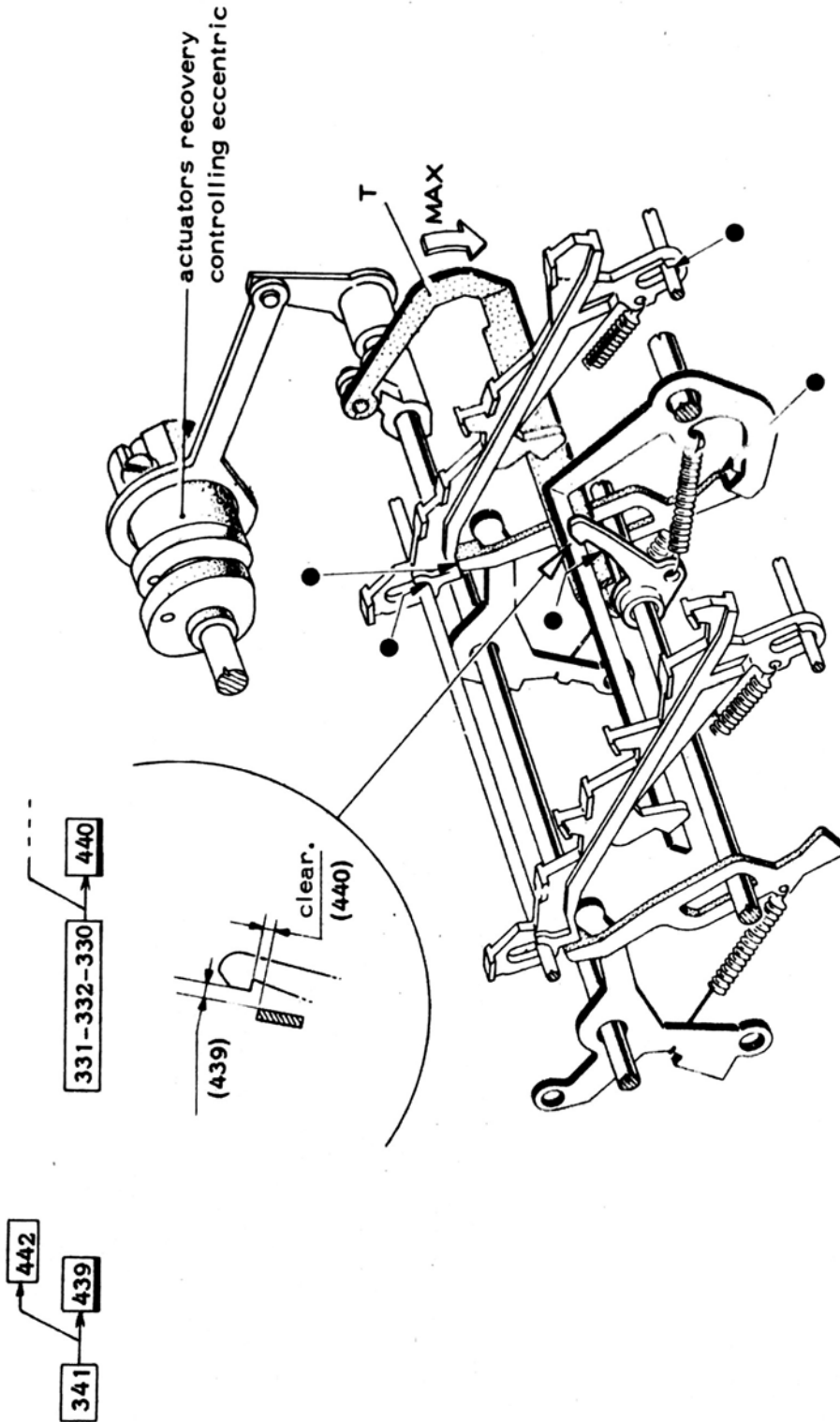
**438) CHECK THE POSITION OF THE INTERMEDIATE LEVER
IN THE SEQUENCES**

339-340 → 438



- enter the sequence start code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft to obtain contact A.

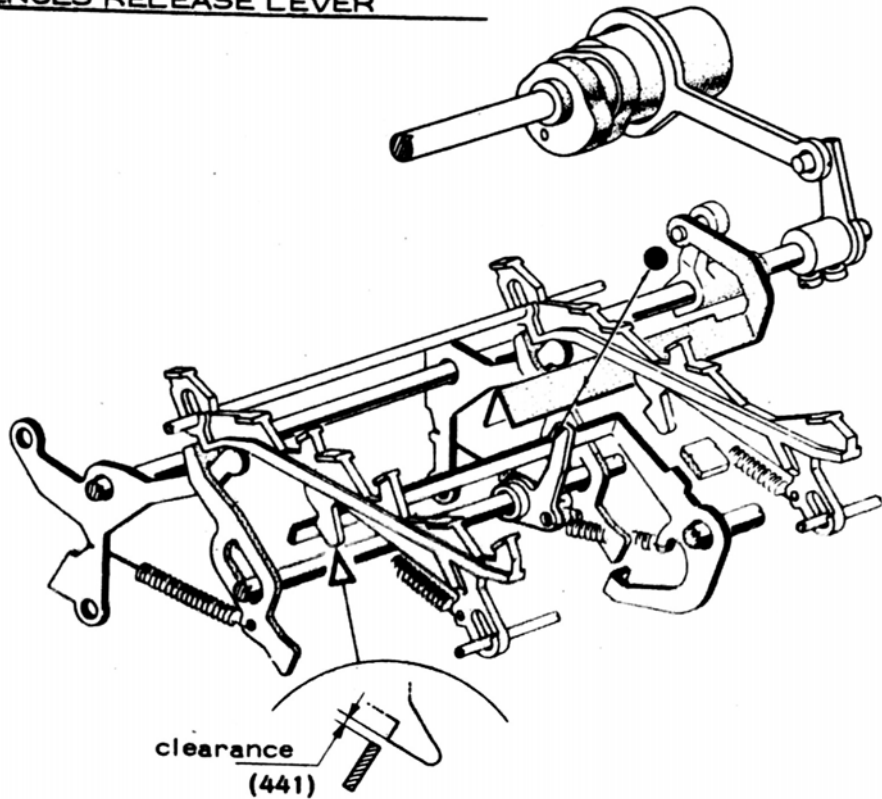
439-440) CHECK THE POSITION OF THE NARROW SEQUENCES MEMORIZATION HOOK



- enter the sequence start code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of frame T.

441) CHECK THE WORK POSITION OF THE SEQUENCES RELEASE LEVER

441



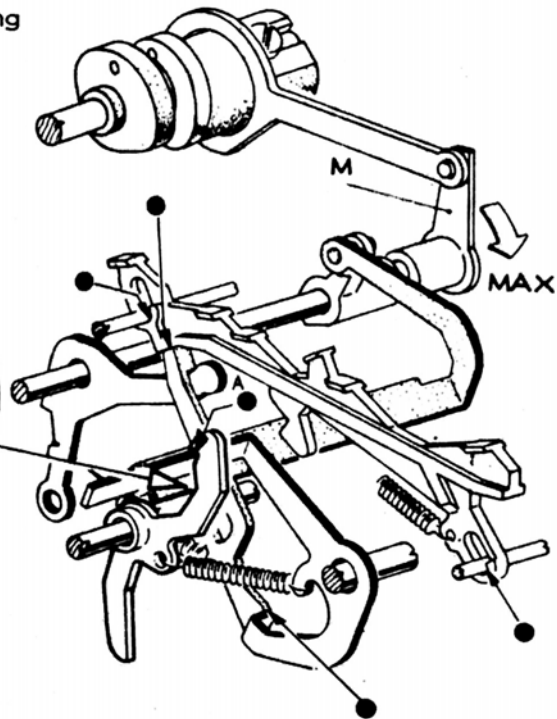
- to check manually obtain the contact.

442) CHECK THE POSITION OF THE WIDE SEQUENCES MEMORIZATION HOOK

actuators recovery controlling eccentric

341 → **442** → **439**

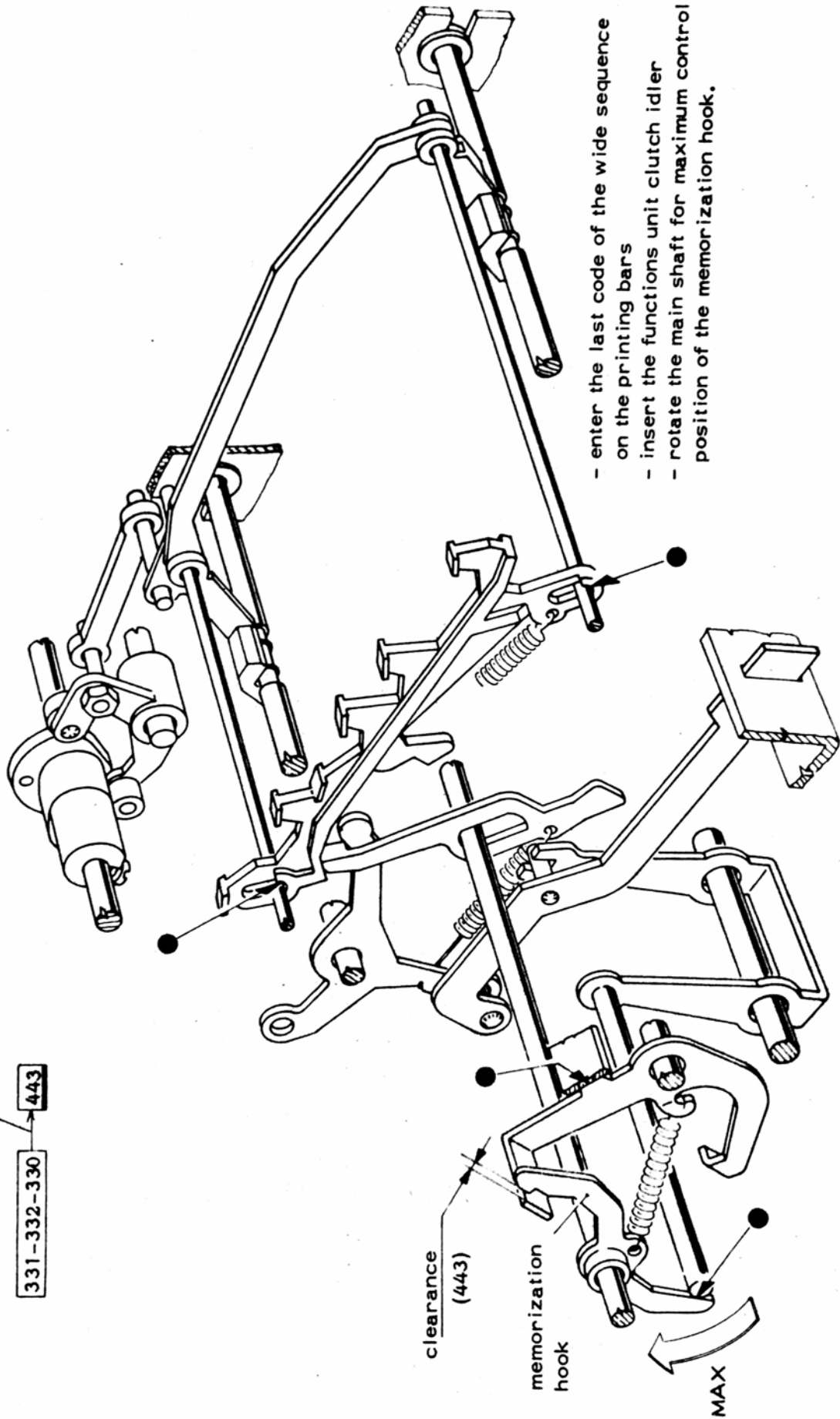
clearance
(442)



- manually obtain contact A
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of the crank M.

443) CHECK THE RELEASE OF THE WIDE SEQUENCES MEMORIZATION HOOK

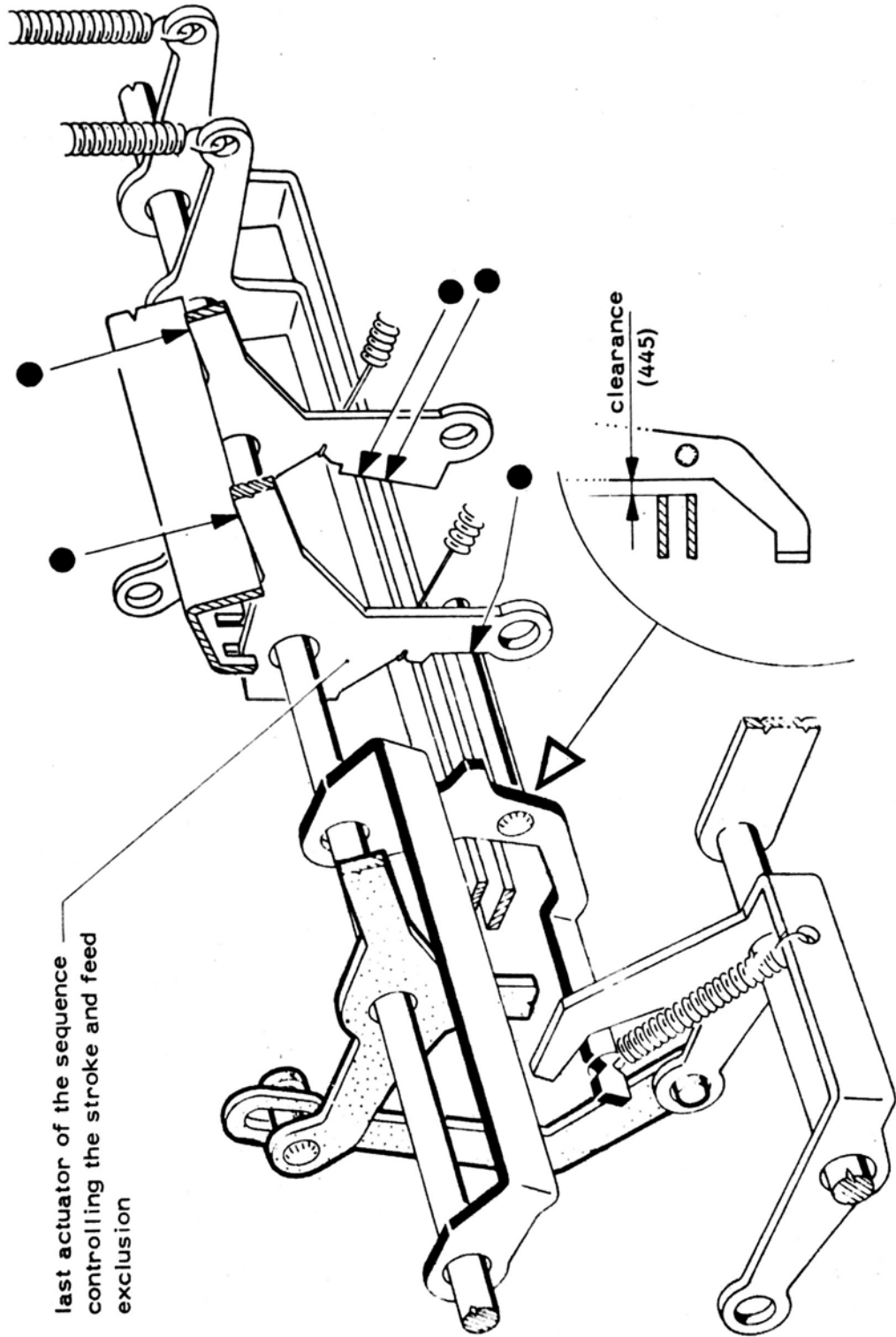
331-332-330
443



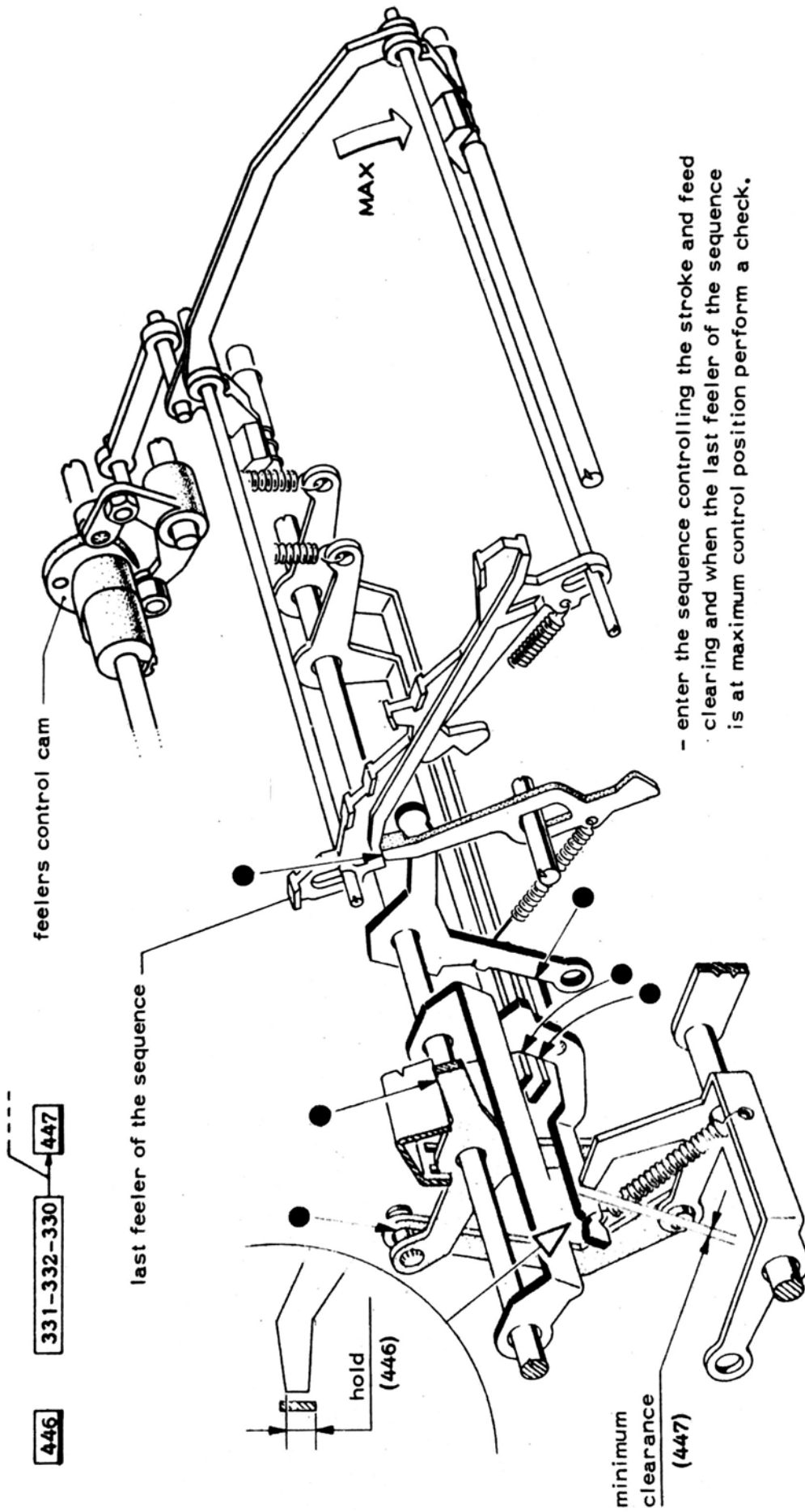
445) CHECK THE REST POSITION OF THE BRIDGE FOR STROKE AND FEED EXCLUSION

445

last actuator of the sequence
controlling the stroke and feed
exclusion

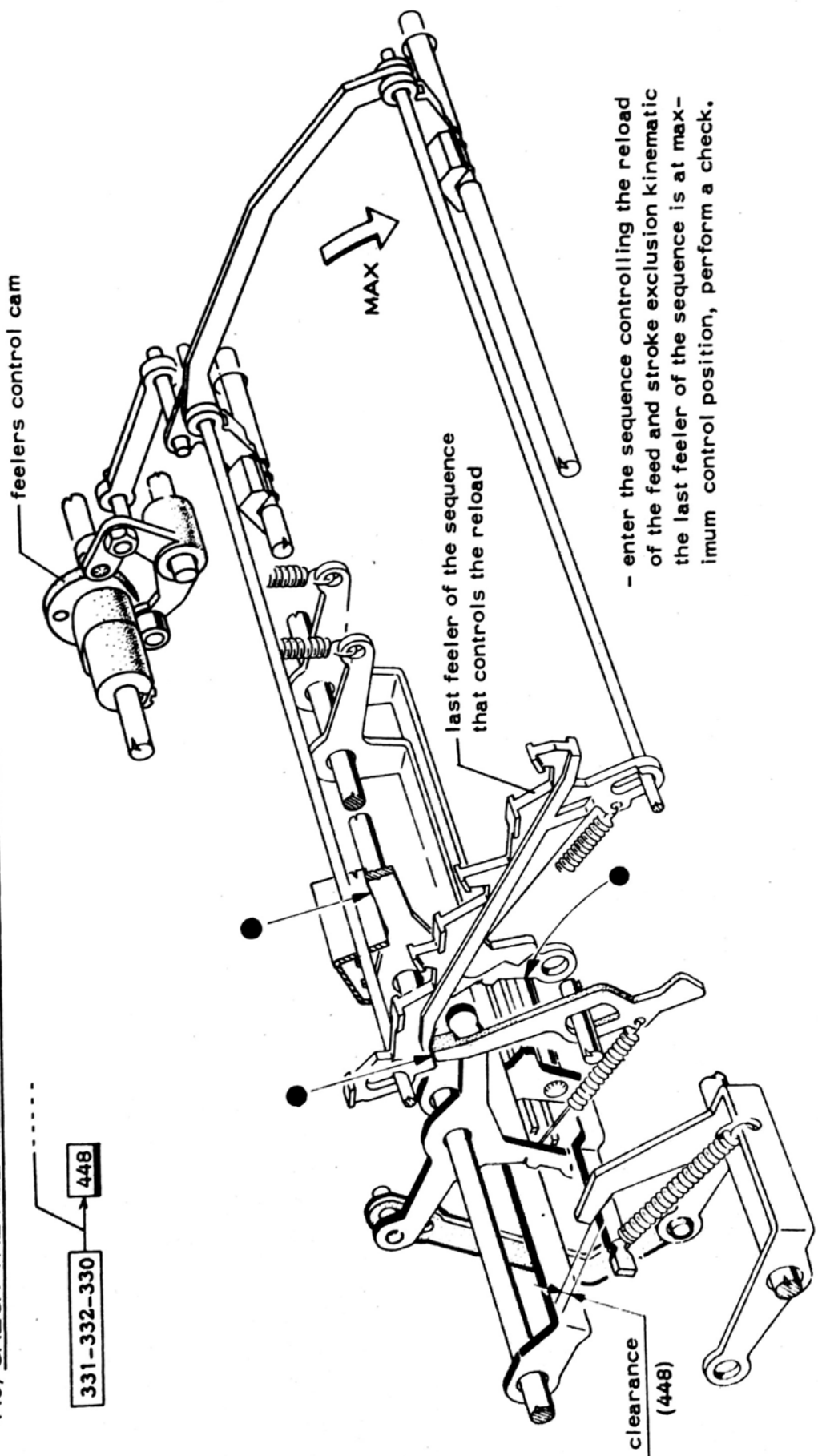


446-447) CHECK THE WORK POSITION OF THE FEED EXCLUSION KINEMATIC



- enter the sequence controlling the stroke and feed clearing and when the last feeler of the sequence is at maximum control position perform a check.

448) CHECK THE RELOAD OF THE FEED AND STROKE EXCLUSION KINEMATIC

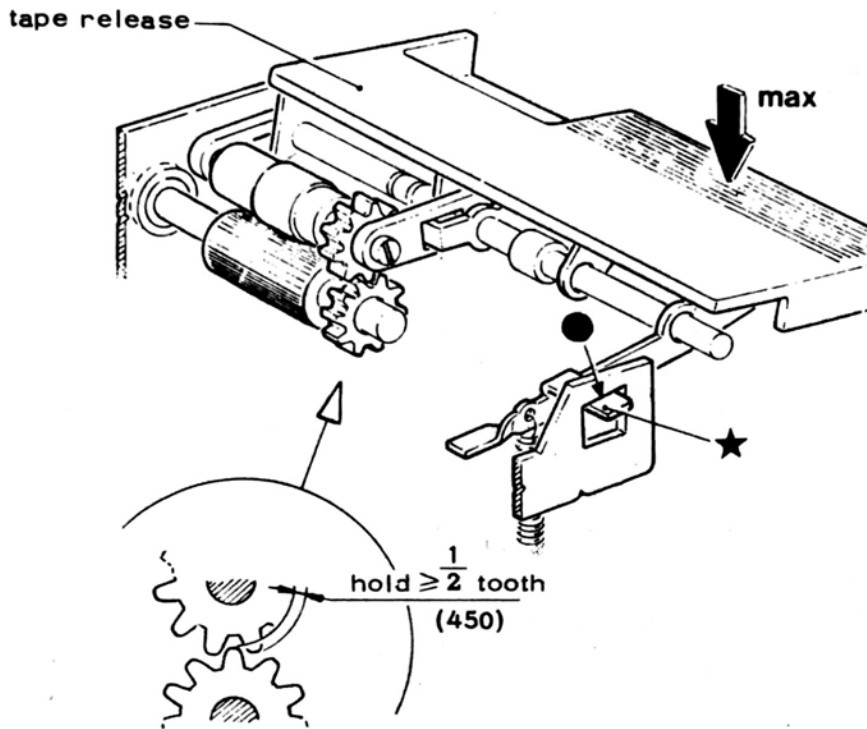


- enter the sequence controlling the reload of the feed and stroke exclusion kinematic the last feeler of the sequence is at maximum control position, perform a check.

TAPE PUNCH.

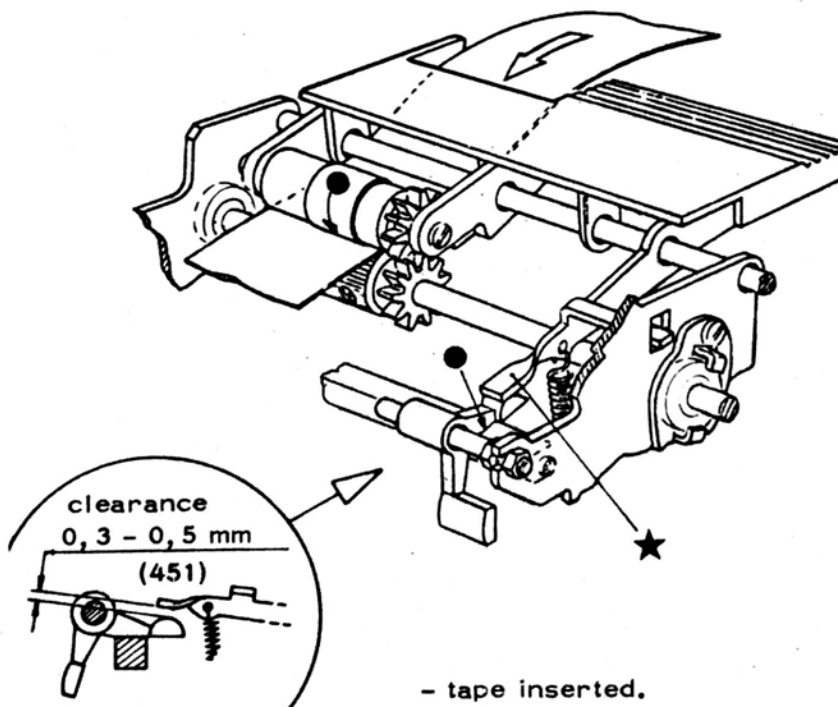
450) CHECK THE WORK POSITION OF THE TAPE
RELEASE FRAME

450 → 451-452

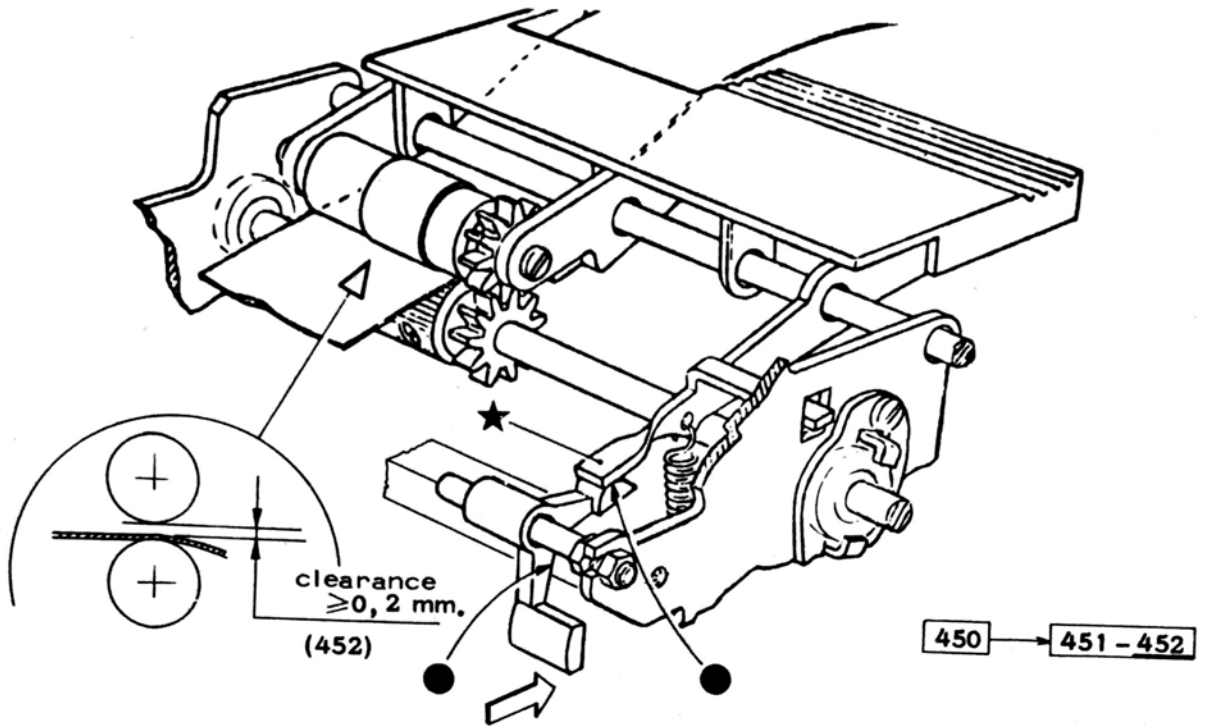


451) CHECK THE REST POSITION OF THE TAPE
RELEASE KEY

450 → 451-452

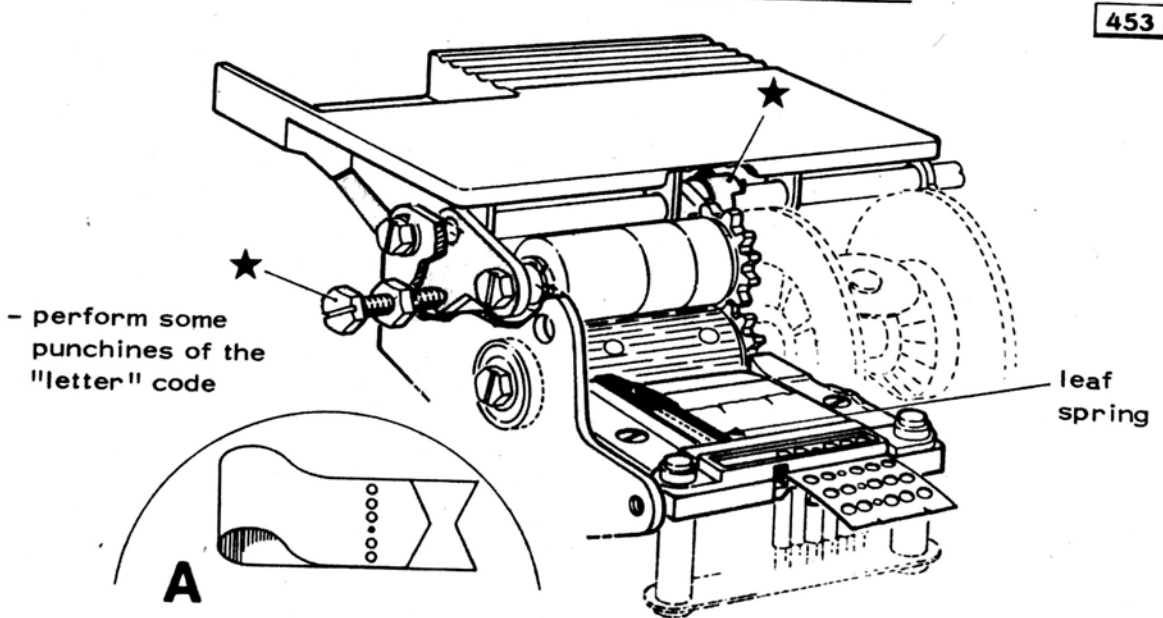


452) CHECK THE WORK POSITION OF THE TAPE RELEASE KEY



- tape inserted.

453) CHECK THE POSITION OF THE TAPE GUIDE FRAME



- perform some punchines of the "letter" code

perpendicular punching with respect to the edges of the tape
(see Note)

(453)

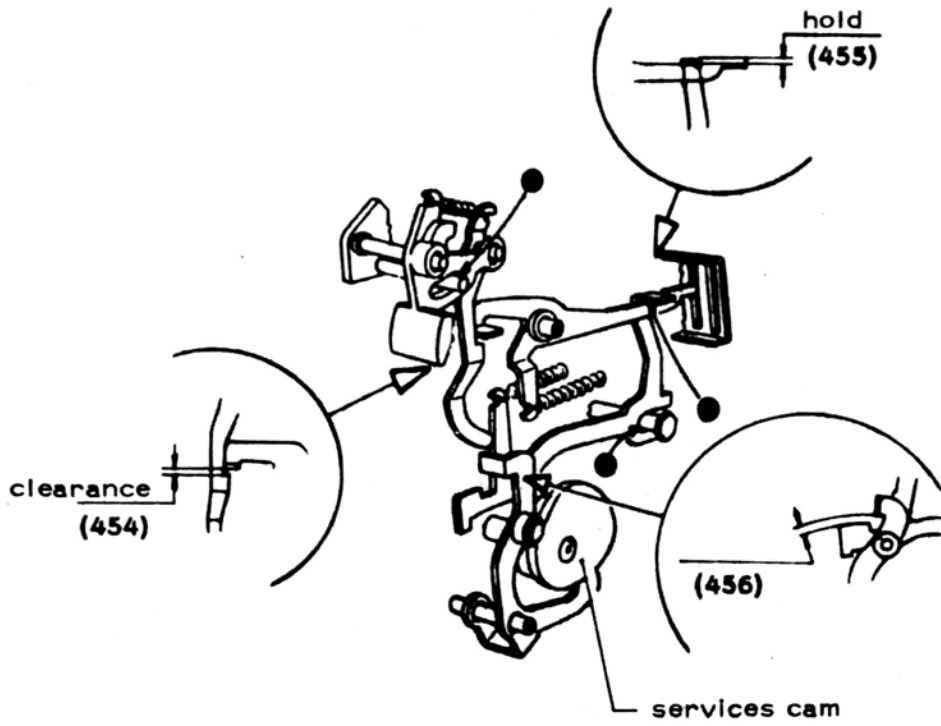
Note: the perpendicularity of the punching can be checked with the special card, or by folding the tape and superposing the punchings (see fig. A): the perpendicularity is correct if the holes coincide.

454-455-456) CHECK THE REST POSITION OF THE
"BACK-SPACE" KINEMATIC

454

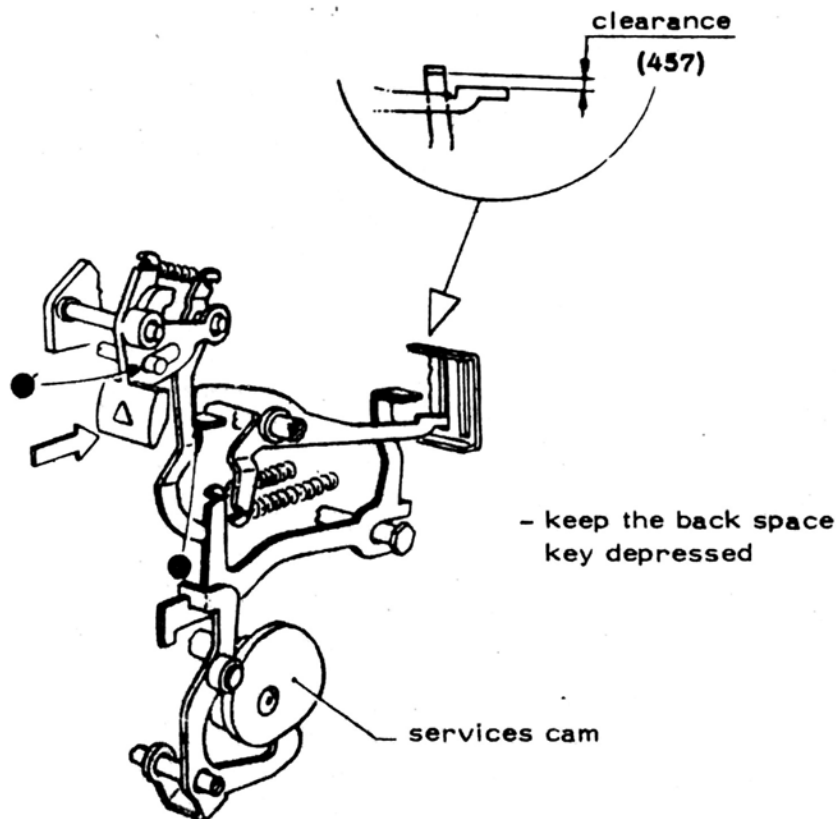
456

454

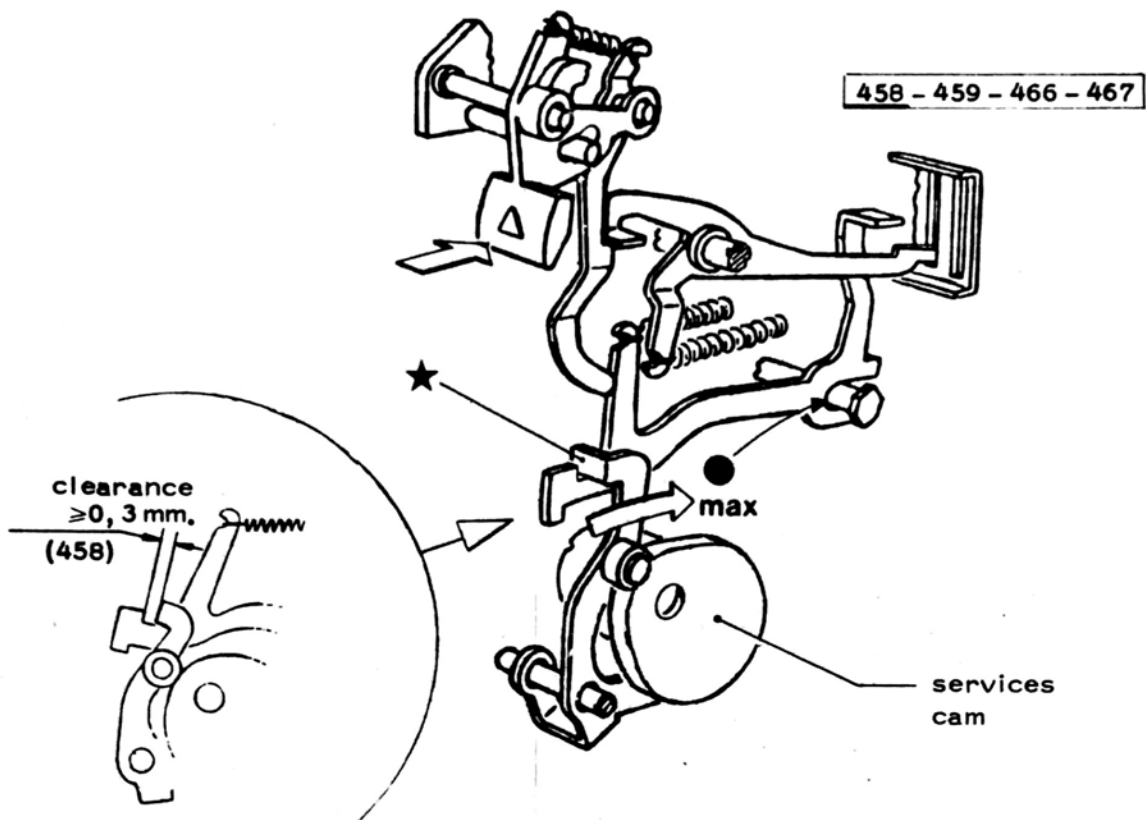


457) CHECK THE WORK POSITION OF THE "BACK-SPACE"
KINEMATIC

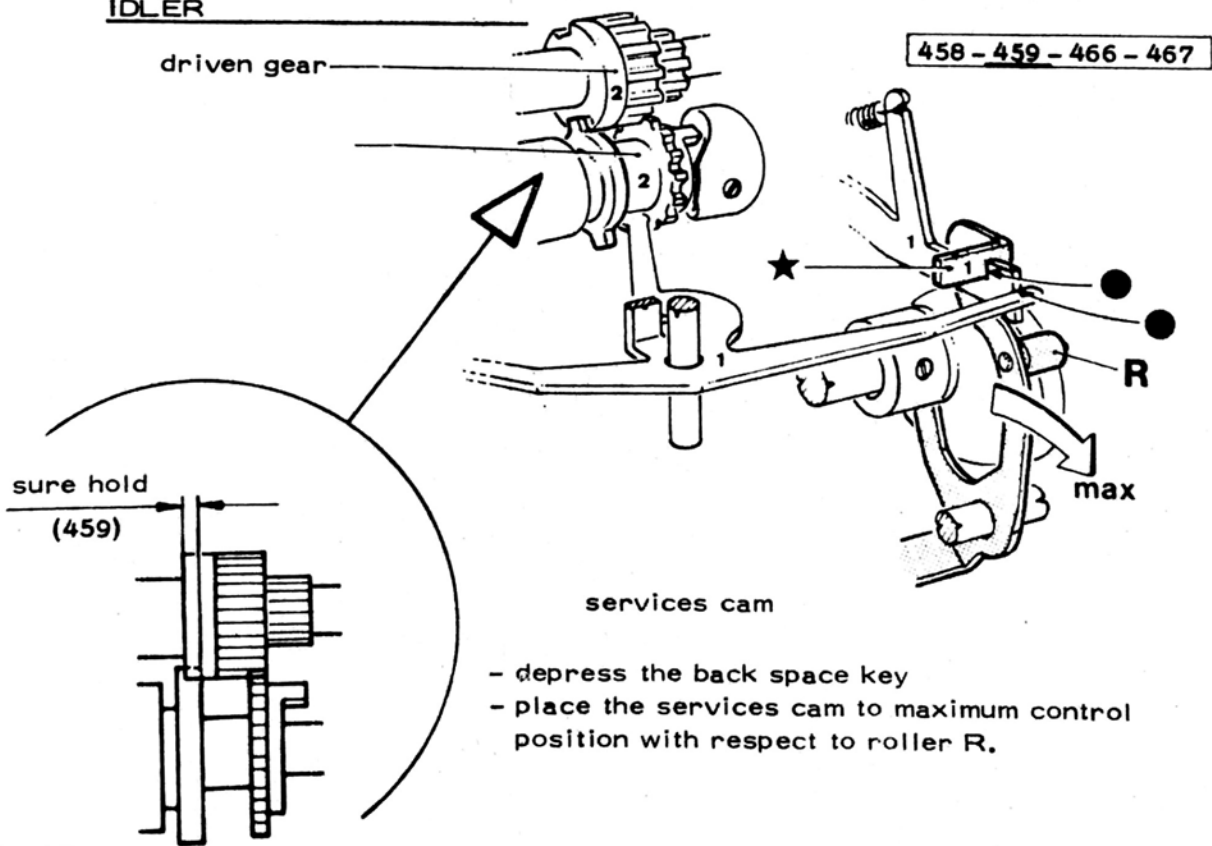
457



458) CHECK THE WORK POSITION OF THE "BACK-SPACE" KINEMATIC

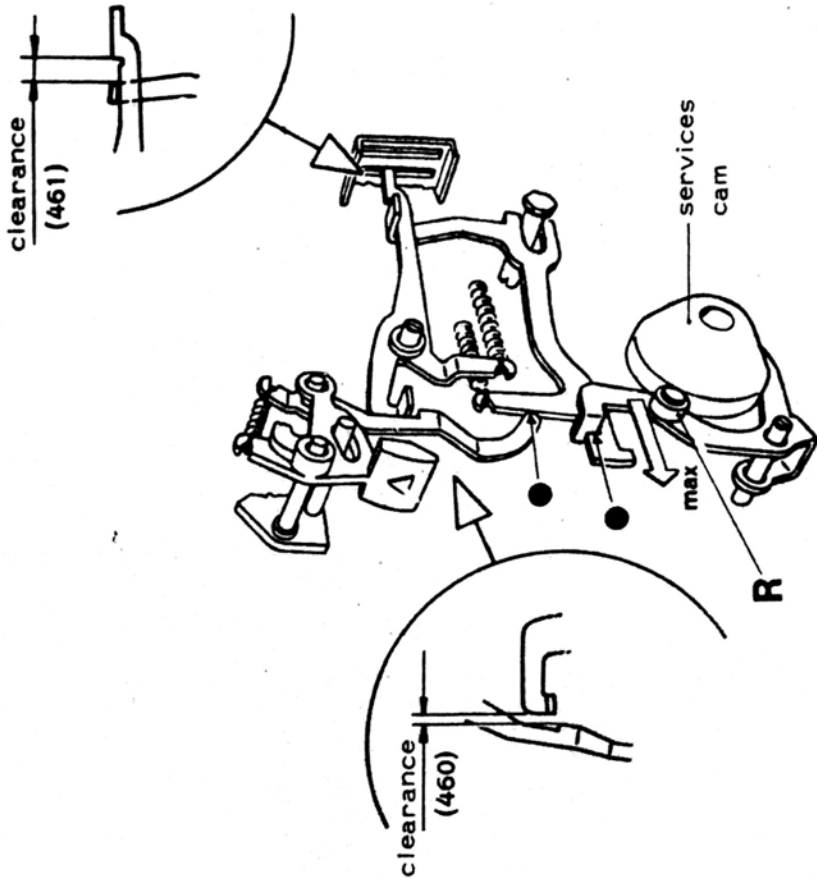


459) CHECK THE WORK POSITION OF THE "BACK-SPACE" CLUTCH IDLER



460-461) CHECK THE RELOAD OF THE BACK SPACE
KINEMATIC

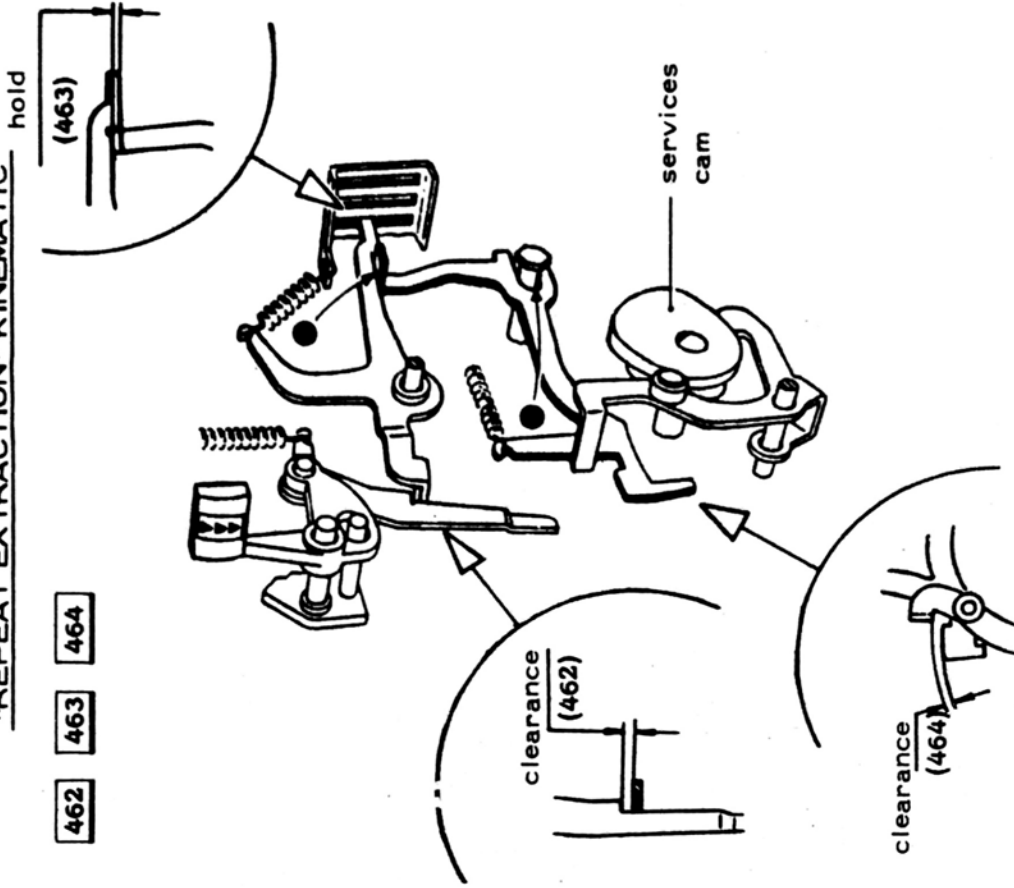
460 461



- depress the back space key
- move the services cam to maximum control position with respect to roller R.

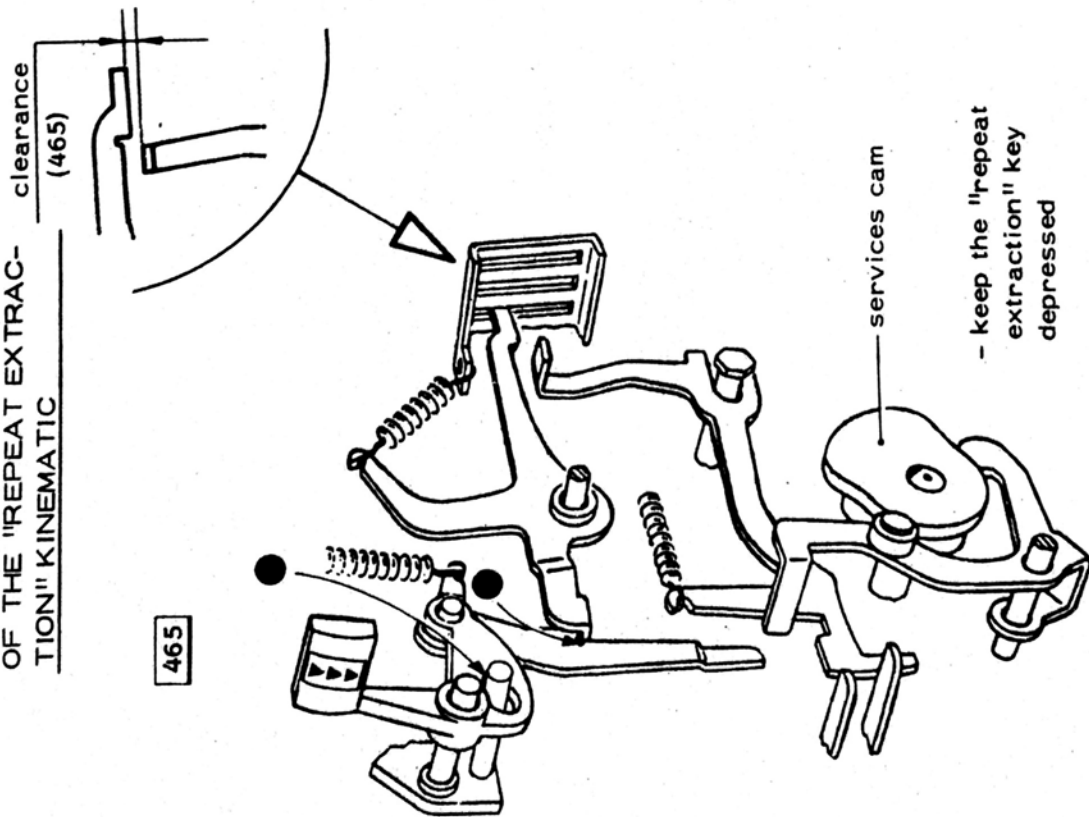
462-463-464) CHECK THE REST POSITION OF THE
"REPEAT EXTRACTION" KINEMATIC

462 463 464



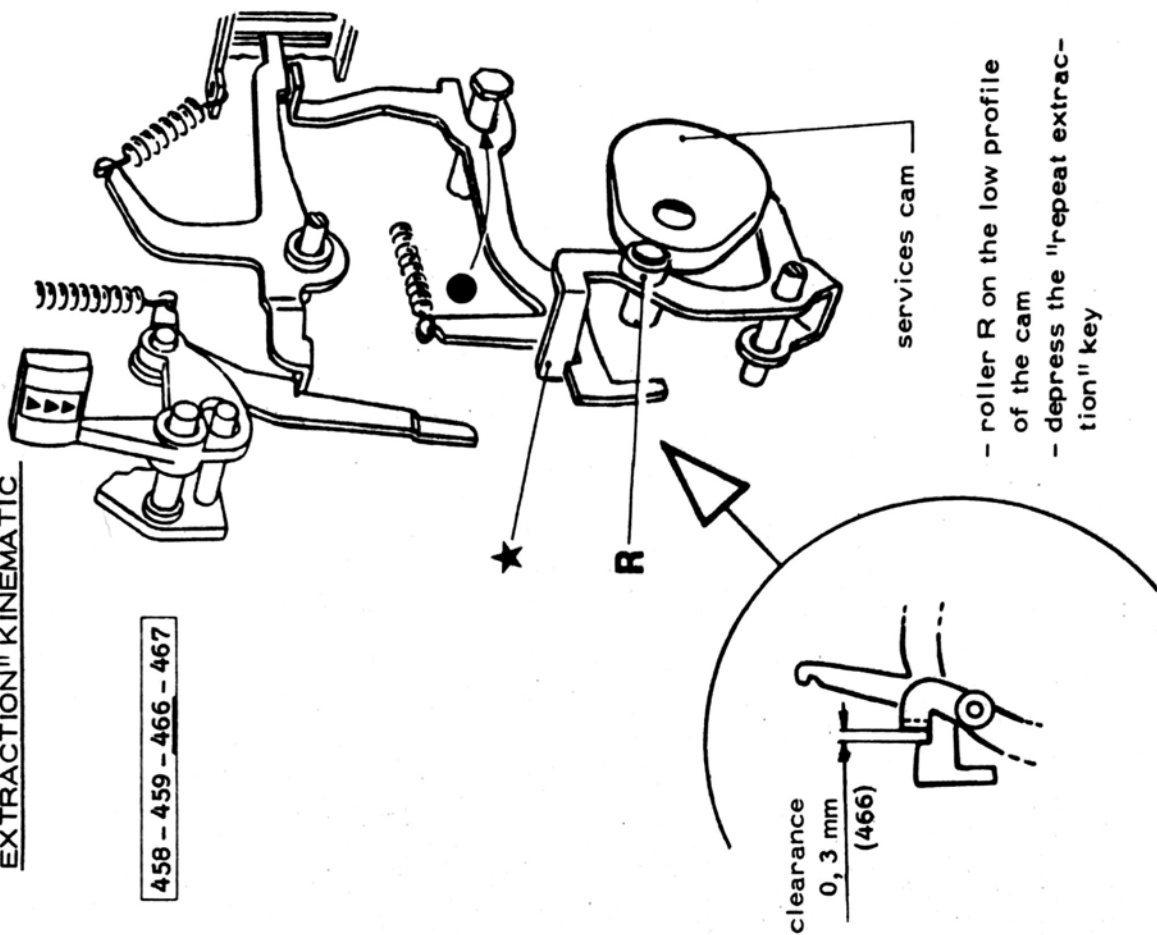
465) CHECK THE WORK POSITION OF THE "REPEAT EXTRACTION" KINEMATIC

465

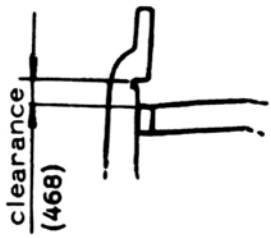


466) CHECK THE WORK POSITION OF THE "REPEAT EXTRACTION" KINEMATIC

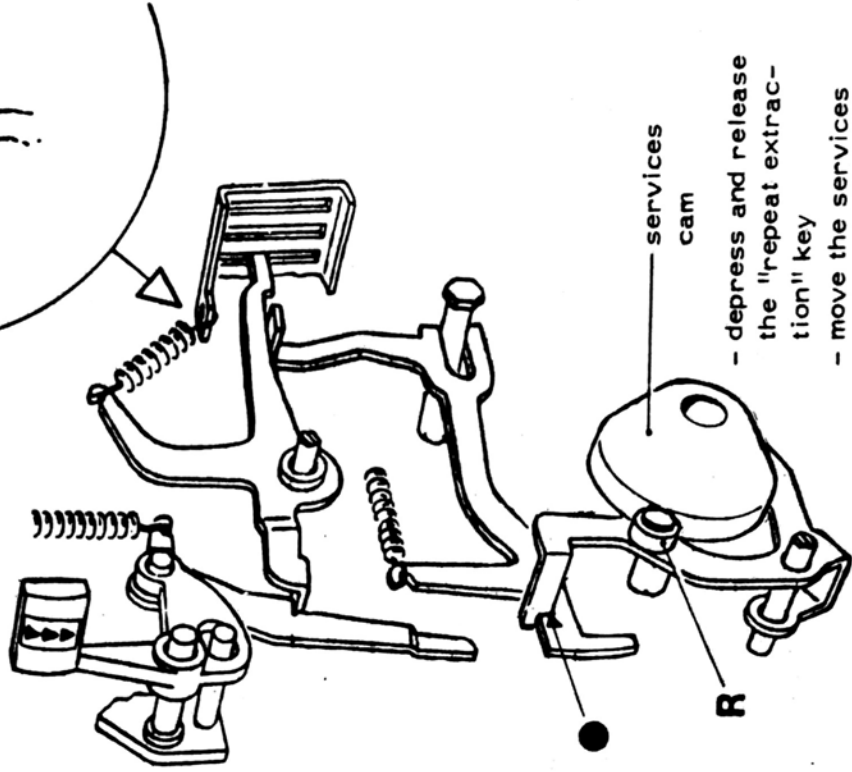
458 - 459 - 466 - 467



468) CHECK THE RELOAD OF THE "REPEAT EXTRACTION" KINEMATIC



468

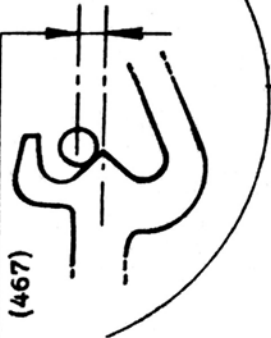


- depress and release the "repeat extraction" key
- move the services cam to maximum control position with respect to roller R.

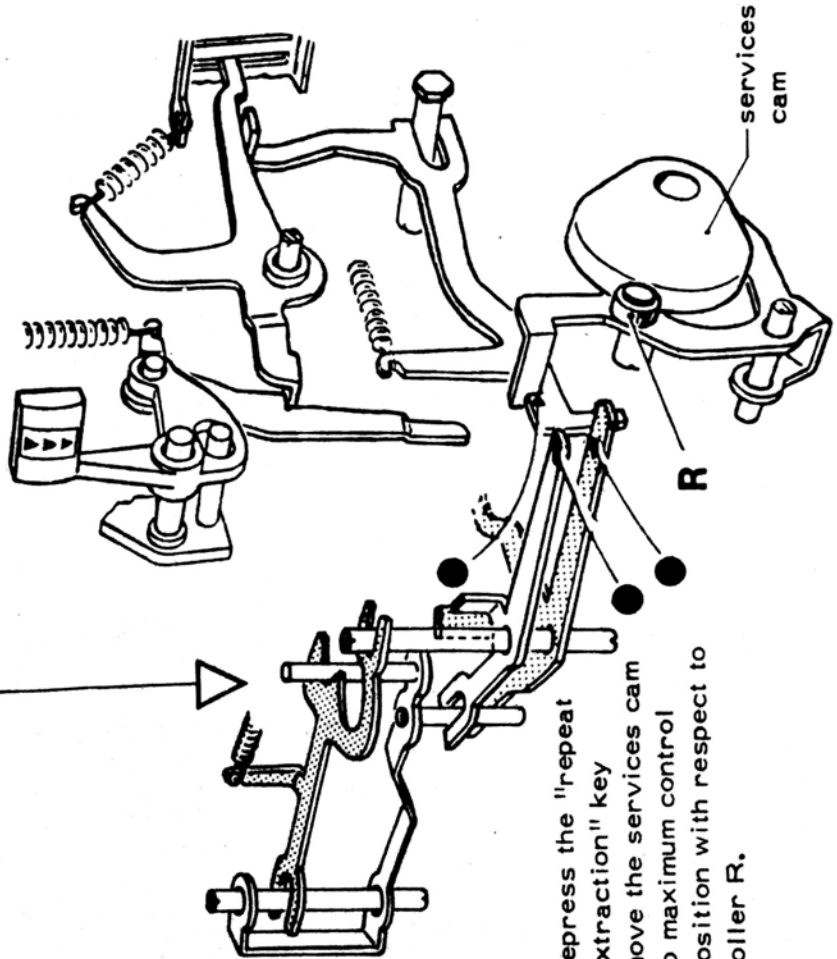
467) CHECK THE QUANTITY OF CONTROL FOR THE MOVEMENT OF THE "REPEAT EXTRACTION" CLUTCH IDLERS

controlled over mid-position

(467)

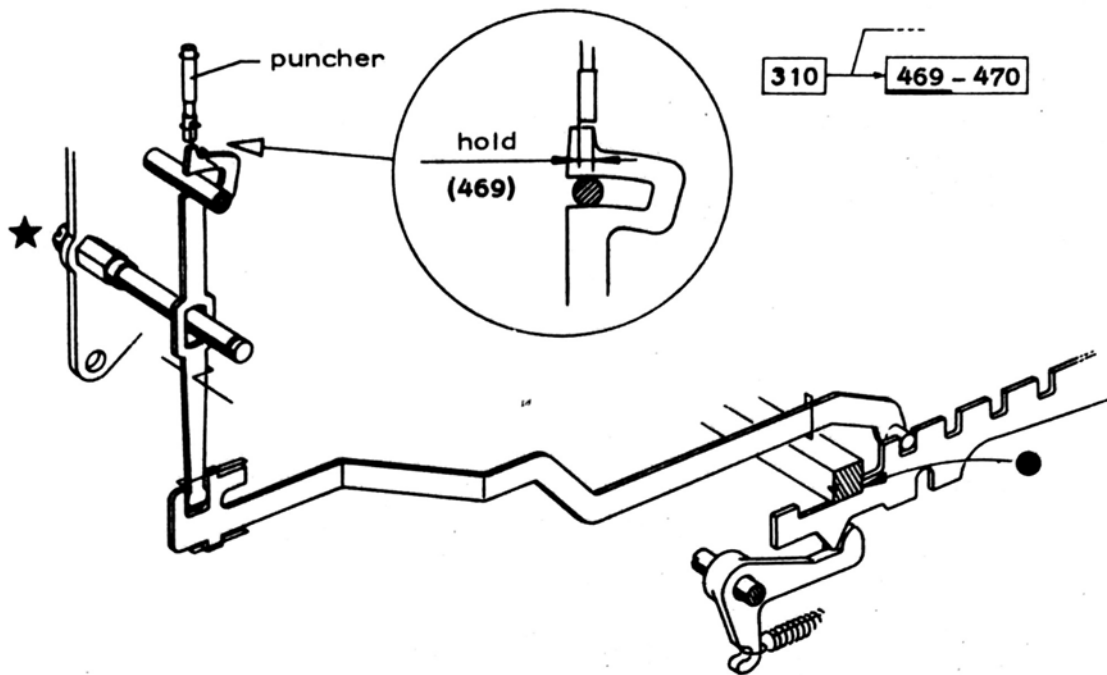


458 - 459 - 466 - 467



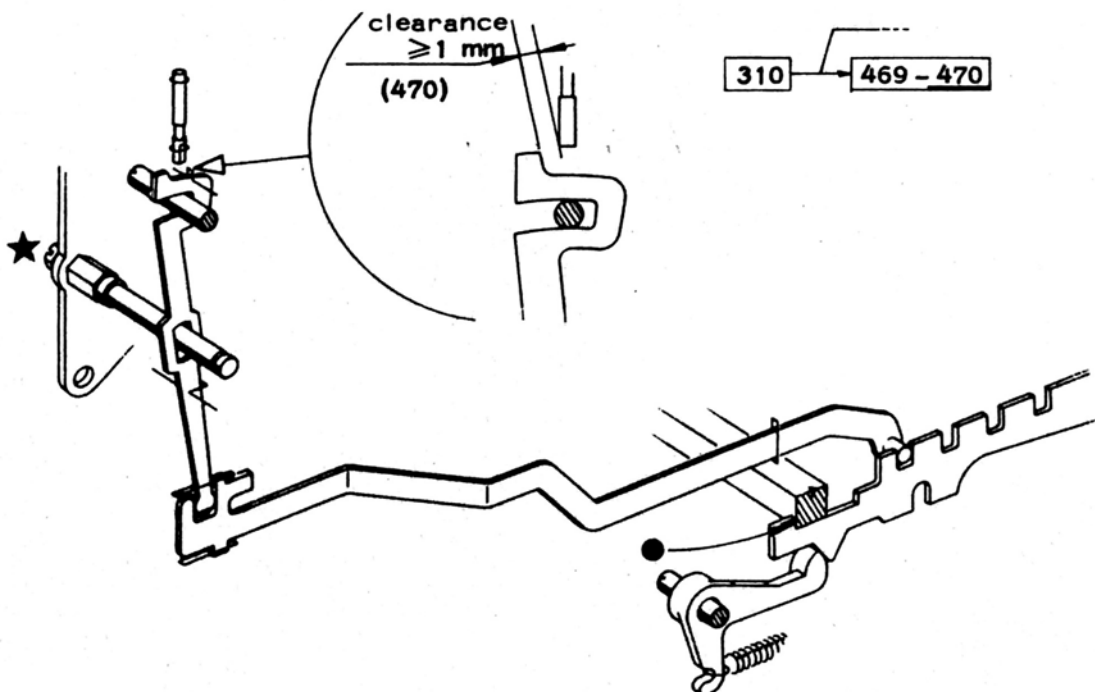
- depress the "repeat extraction" key
- move the services cam to maximum control position with respect to roller R.

469) CHECK THE REST (MARK) POSITION OF THE PUNCHING LINKS



- manually obtain the contact (code bars in Mark).

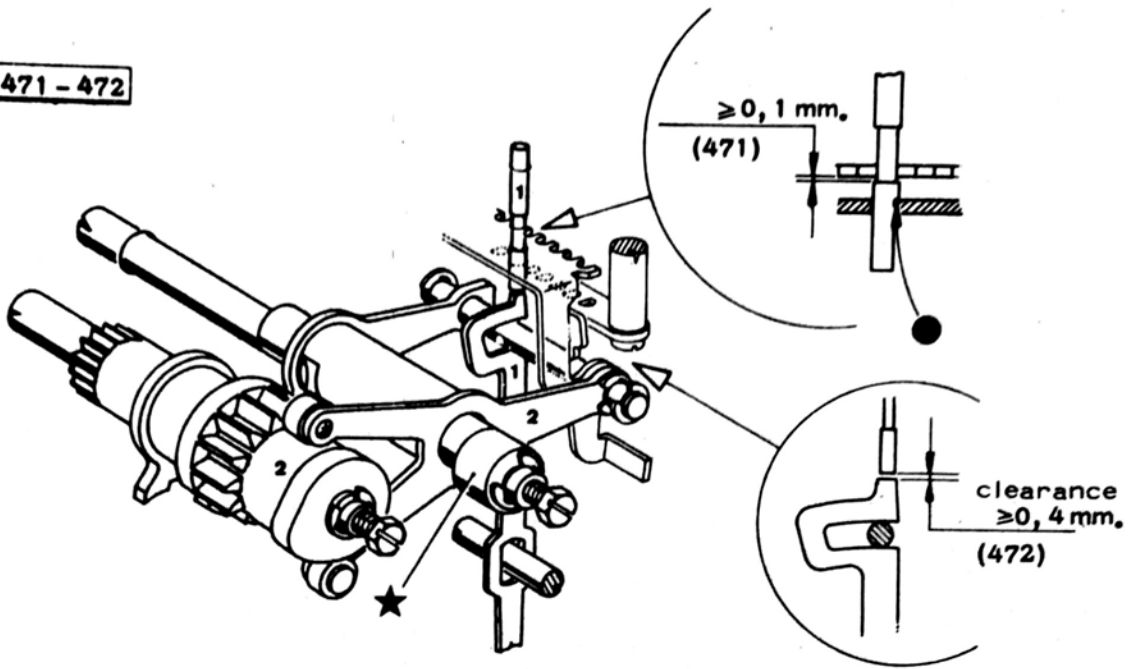
470) CHECK THE WORK POSITION (SPACE) OF THE PUNCHING LINKS



- manually obtain the contact (code bars in Space).

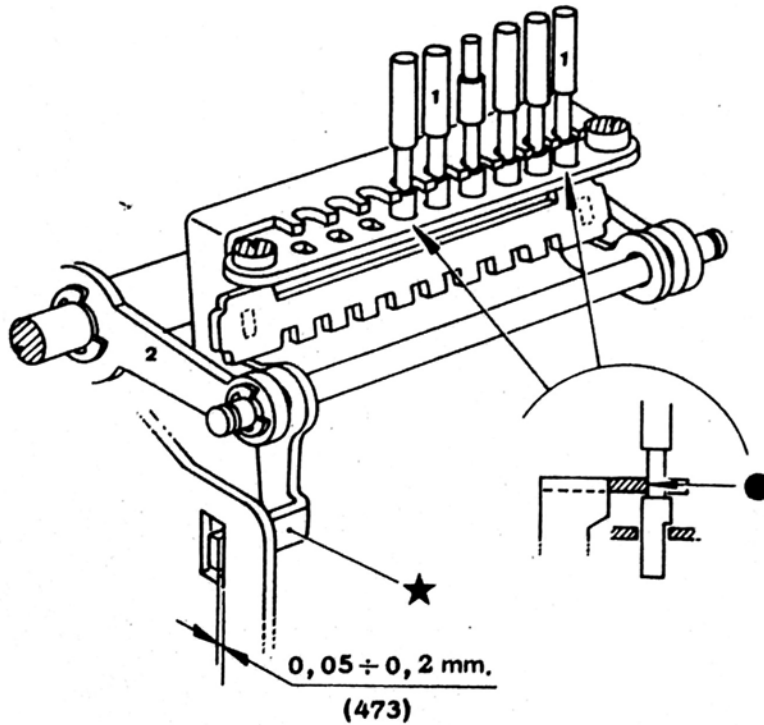
471-472) CHECK THE REST POSITION OF THE PUNCHING COMMAND FRAME

471 - 472



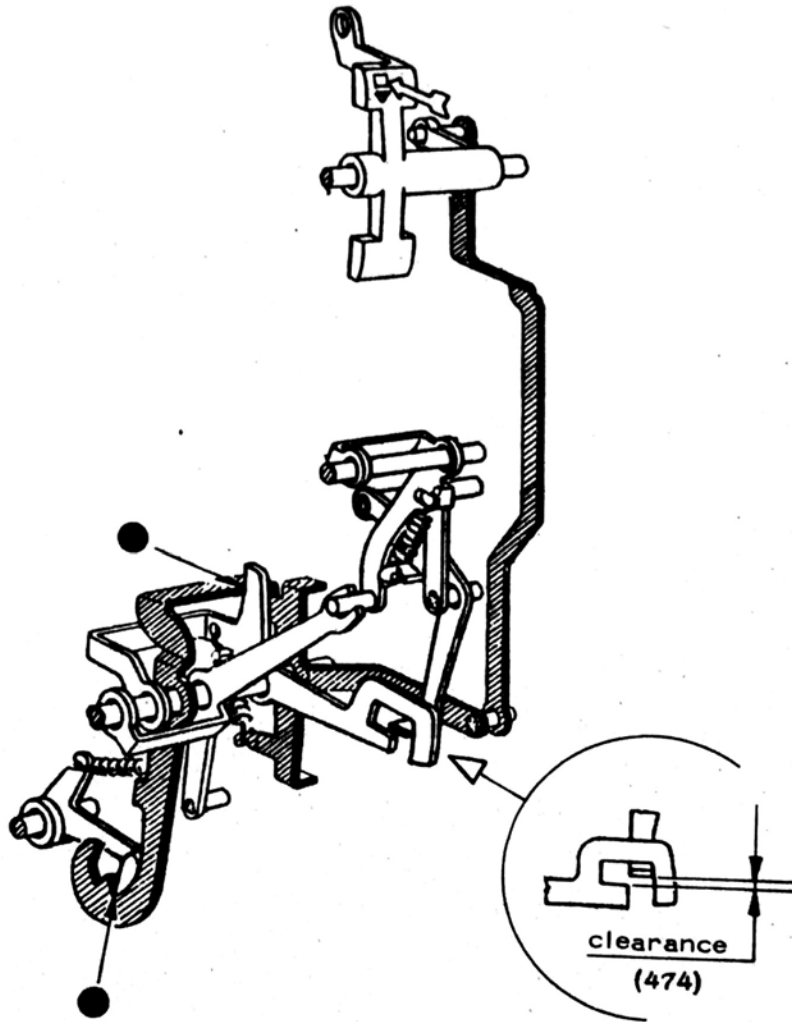
473) CHECK THE POSITION OF THE PUNCHES GUIDE COMBS

473



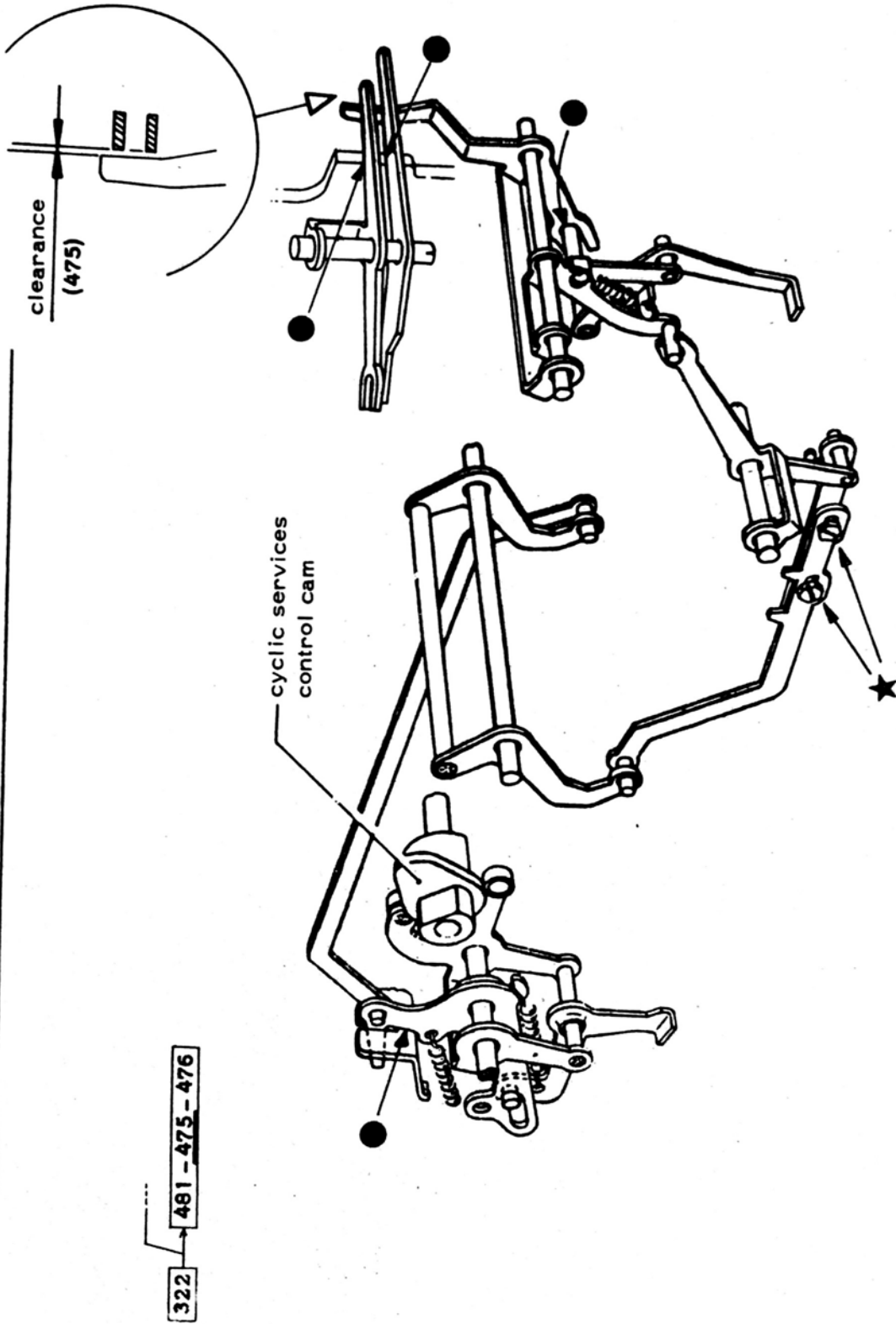
474) CHECK THE POSITION OF THE "TAPE PUNCH INCLUSION"
KINEMATIC

474

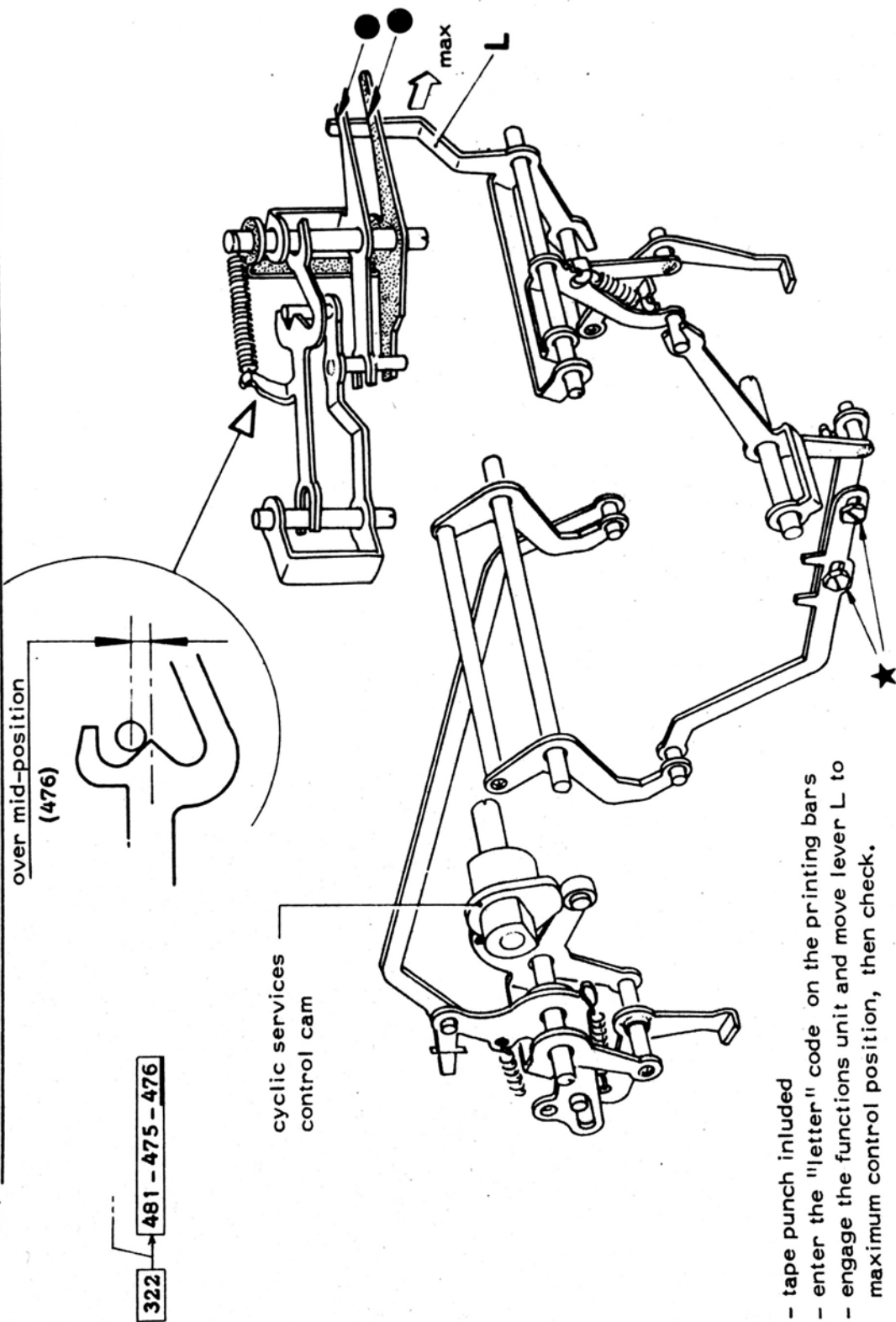


- depress "tape punch inclusion" key.

475) CHECK THE REST POSITION OF THE PUNCHING COMMAND KINEMATIC
BY CYCLIC SERVICES



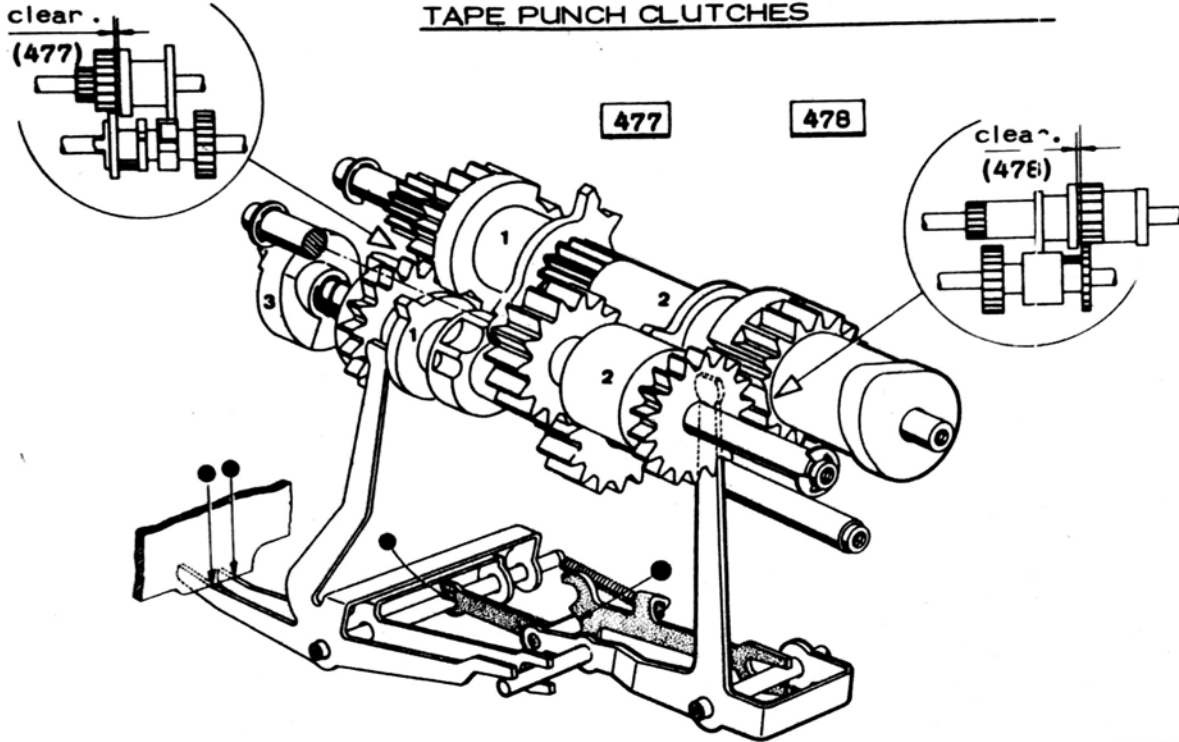
476) CHECK THE WORK POSITION OF THE PUNCHING COMMAND KINEMATIC BY CYCLIC SERVICES.



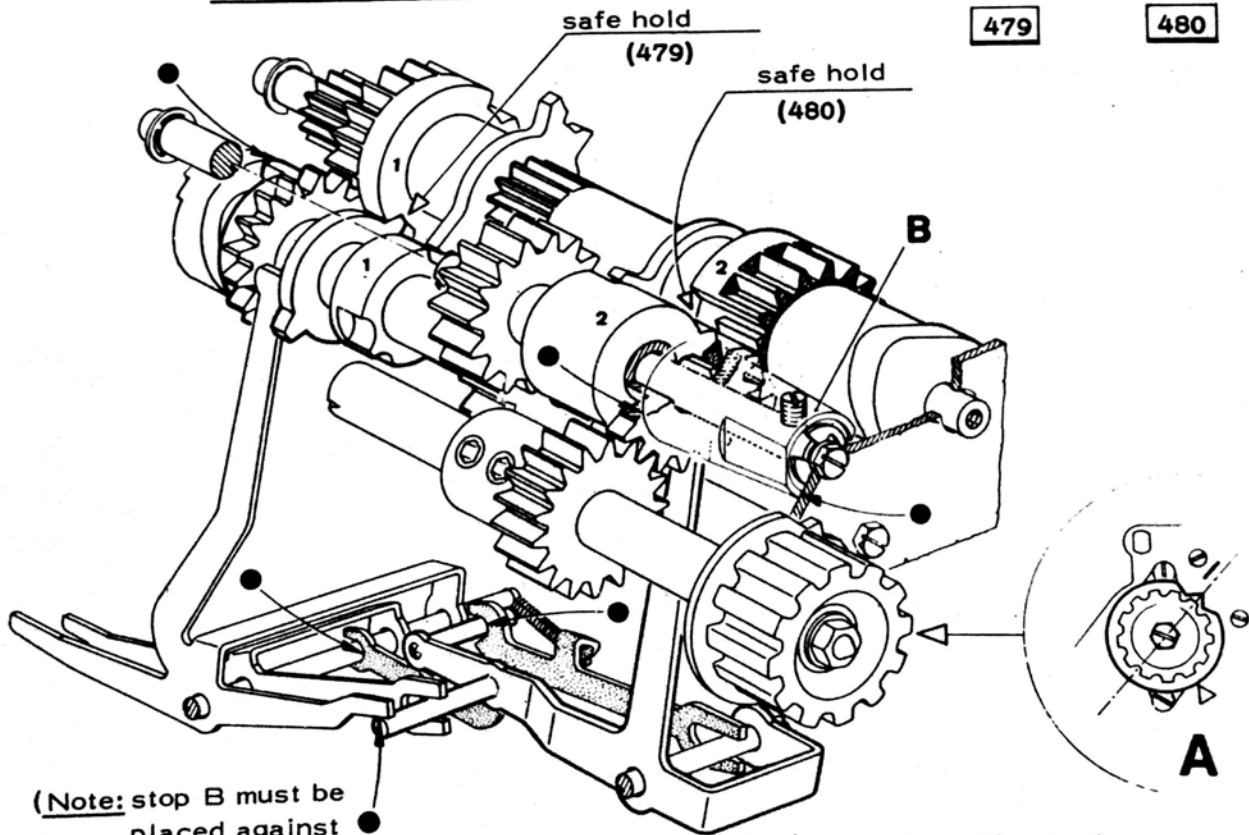
- tape punch included
- enter the "letter" code on the printing bars
- engage the functions unit and move lever L to maximum control position, then check.

322 → 481 - 475 - 476

477-478) CHECK ON THE REST POSITION OF THE:
TAP PUNCH CLUTCHES

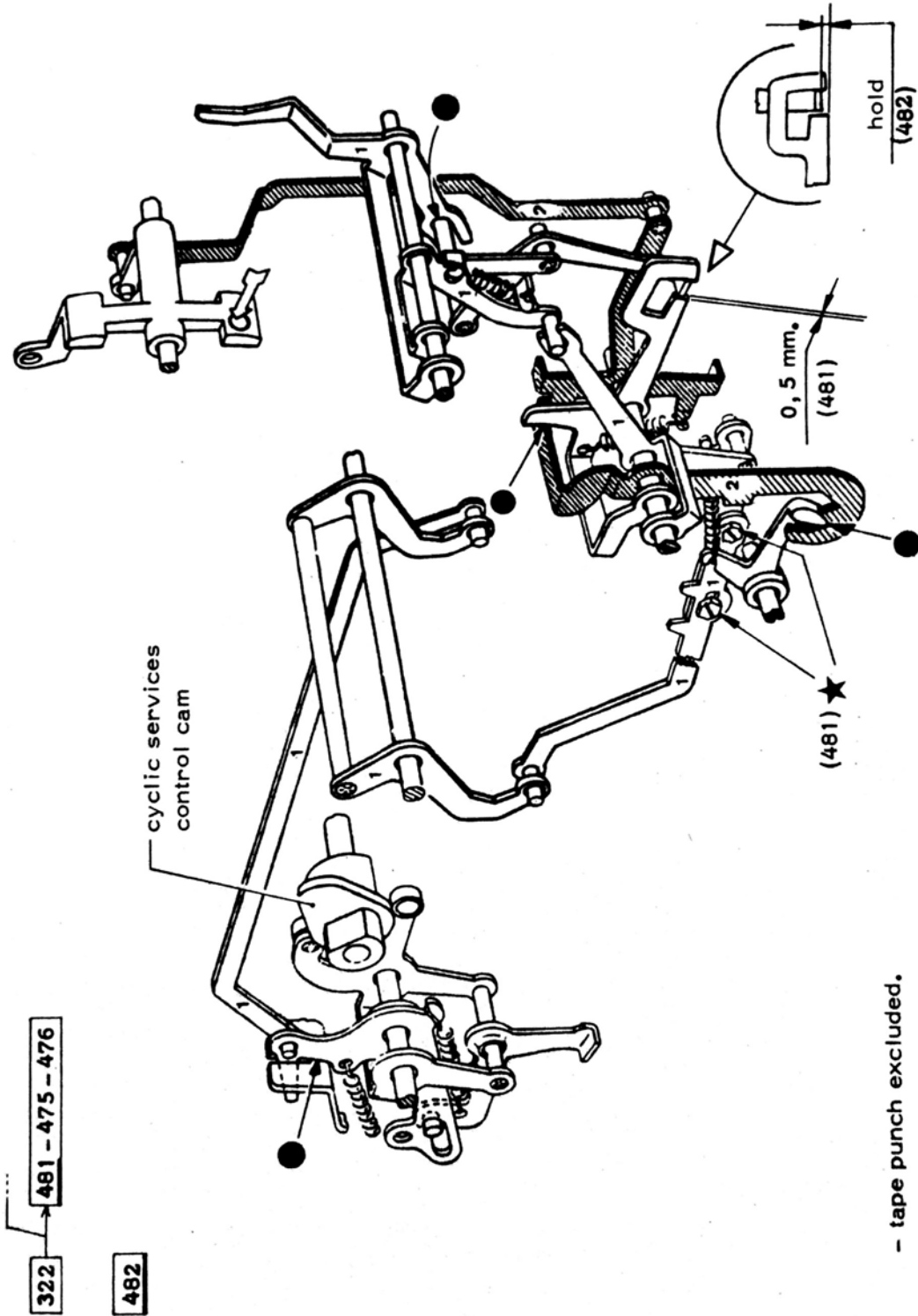


479-480) CHECK ON THE WORK POSITION OF THE TAPE PUNCH
CLUTCHES



(Note: stop B must be placed against the side; eventually act on the relative screw) move the pulley to the position shown in fig. A so as to enable the insertion of the clutch idler.

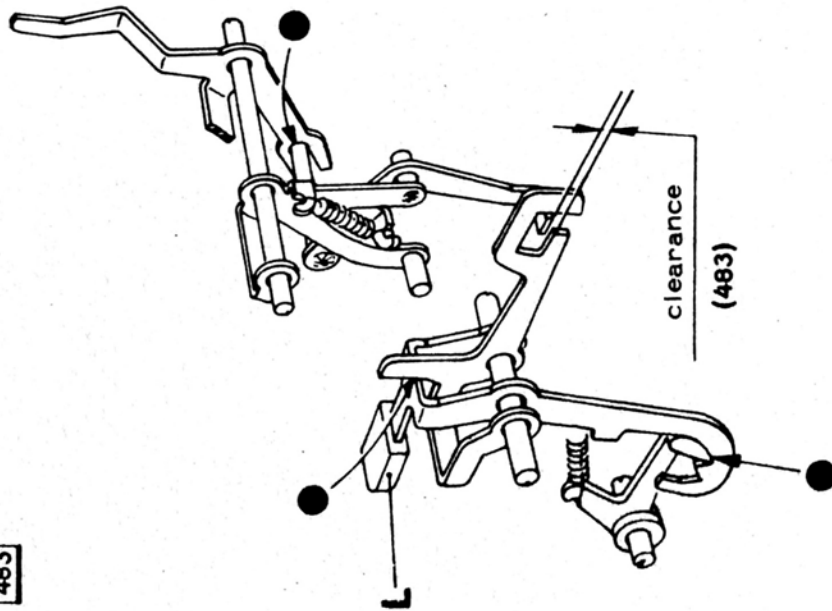
481 - 482) CHECK THE POSITION OF THE "TAPE PUNCH EXCLUSION MECHANISM



- tape punch excluded.

483) CHECK THE POSITION OF THE PUNCHING
REPEAT INCLUSION KINEMATIC

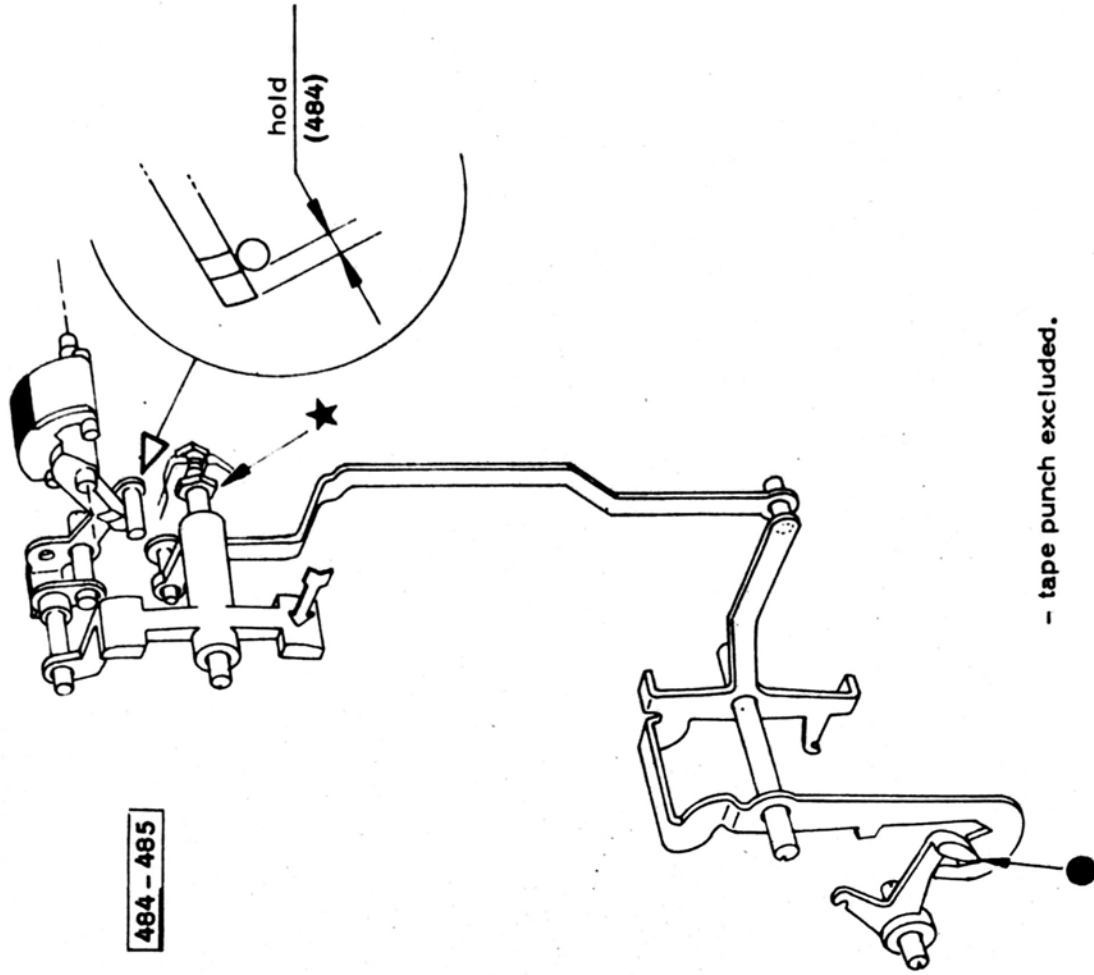
483



- place lever L in the condition shown.
 (Note) - if to perform the check lever L has been moved, at the end of the check place it the initial position.

484) CHECK THE POSITION OF THE "INCLUSION-EXCLUSION"
SIGNALER WITH TAPE PUNCH EXCLUDED

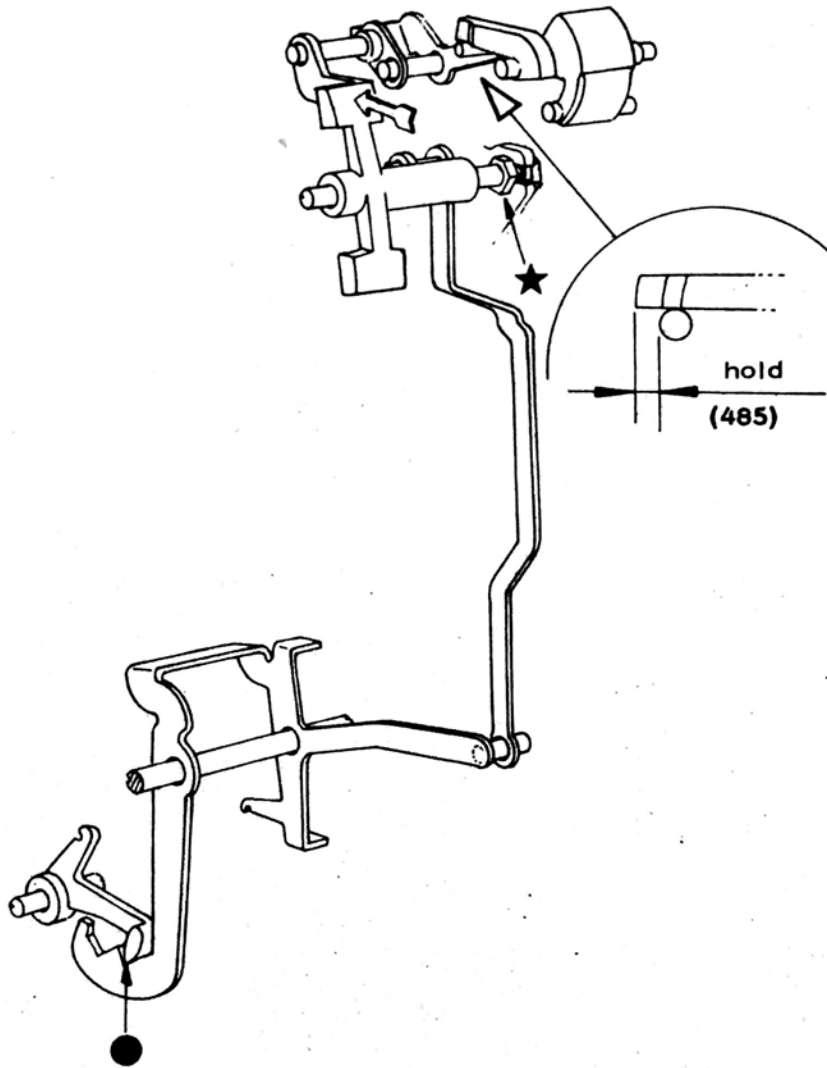
484 - 485



- tape punch excluded.

**485) CHECK THE POSITION OF THE "INCLUSION-EXCLUSION"
SIGNALER WITH TAPE PUNCH INCLUDED**

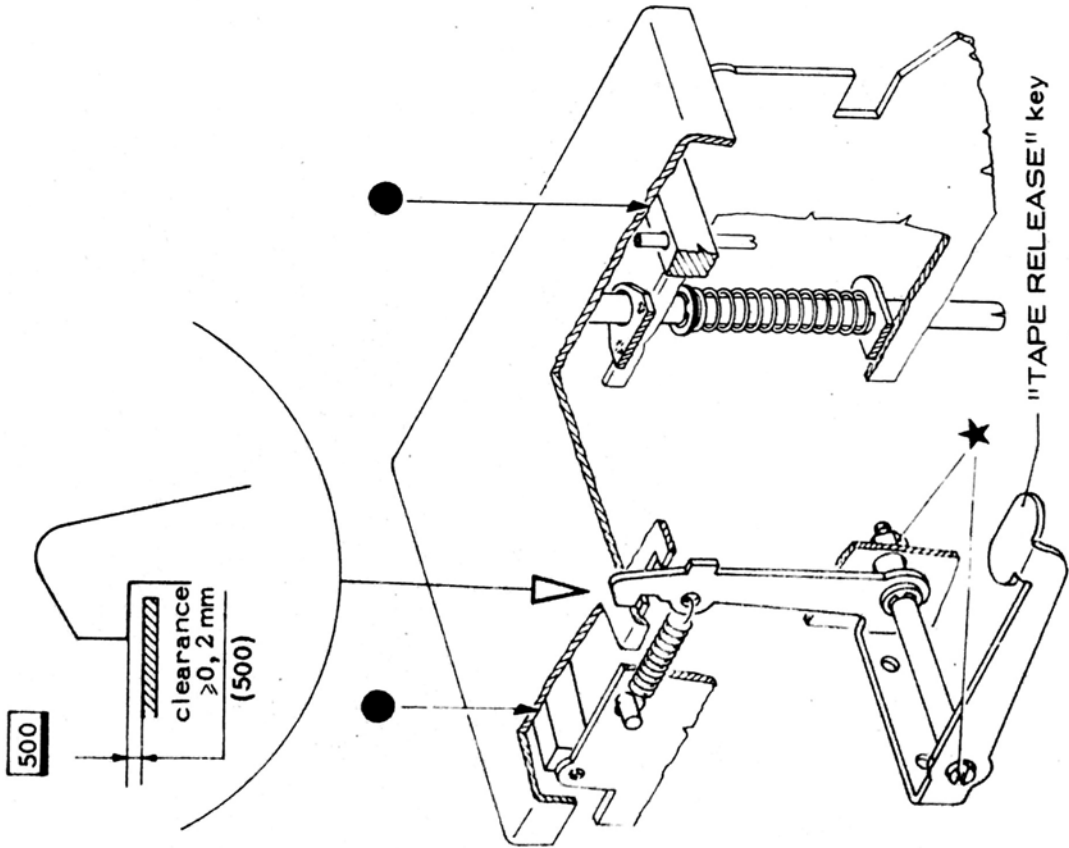
484 - 485



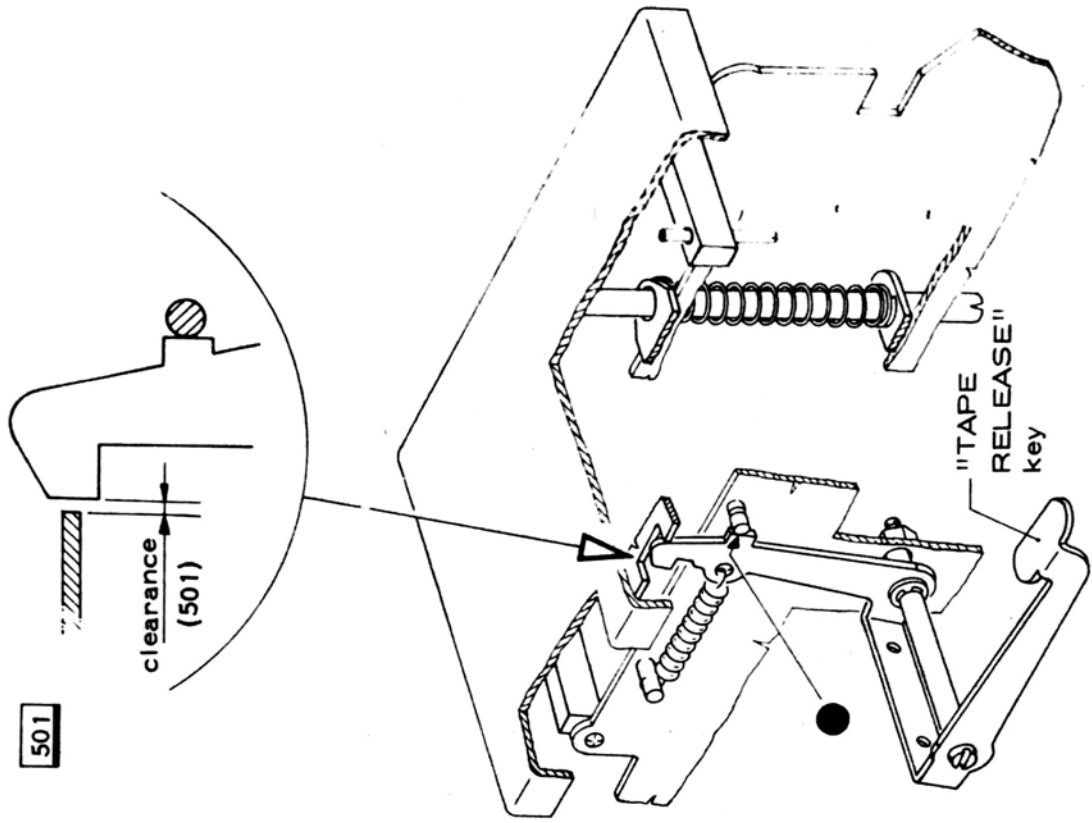
- tape punch included.

READER •

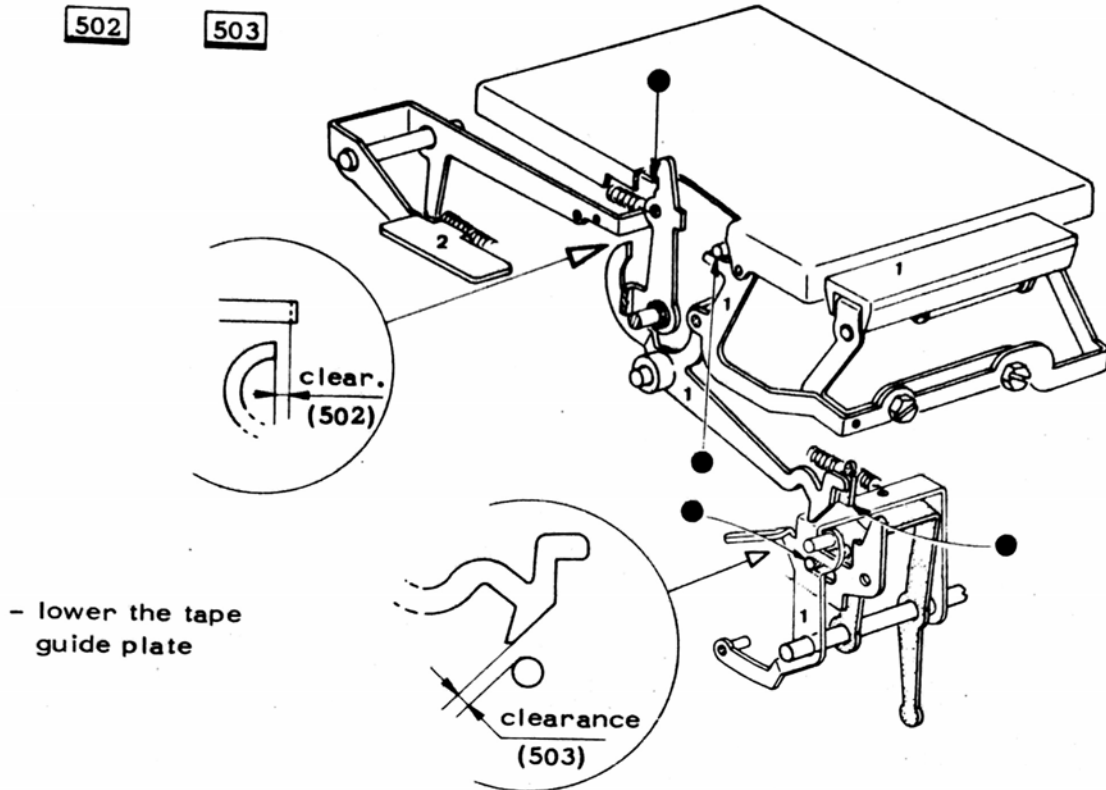
500) CHECK THE HOOKING OF THE "TAPE RELEASE" KEY



501) CHECK THE RELEASE OF THE TAPE GUIDE PLATE

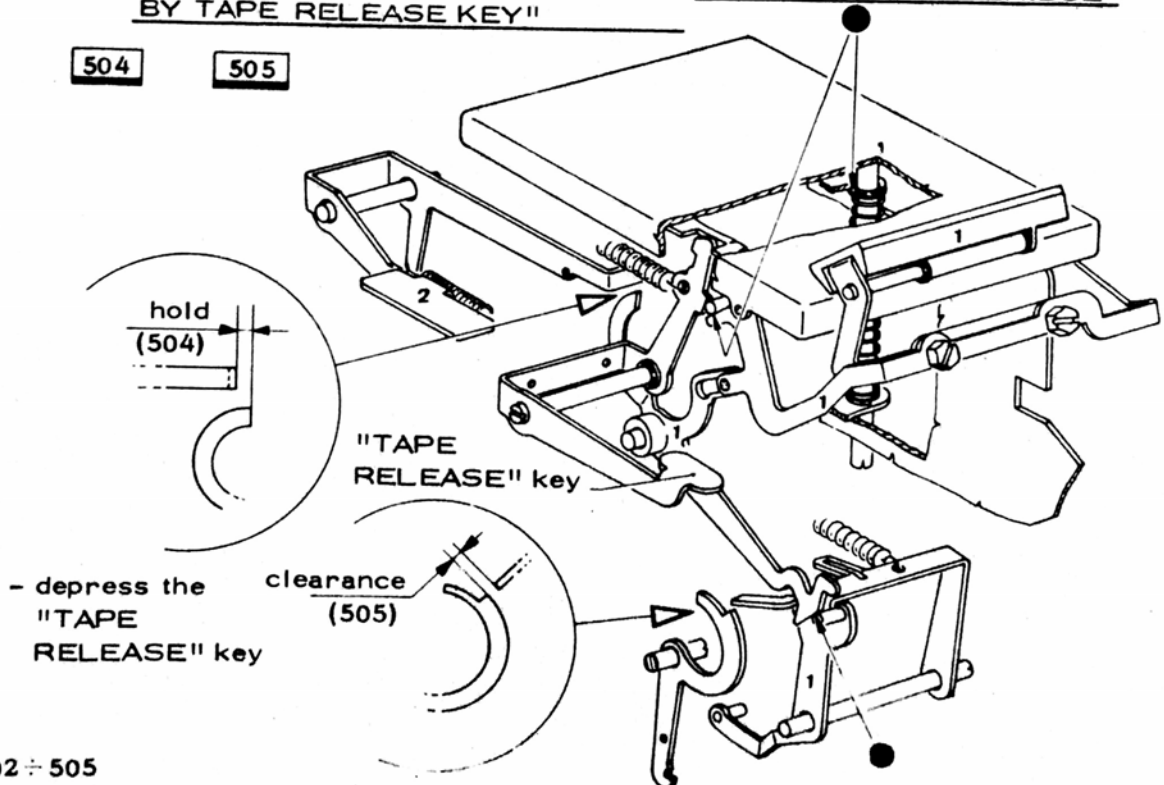


502-503) CHECK ON THE REST POSITION OF THE "READER START" KEY CONTROLLING LEVER

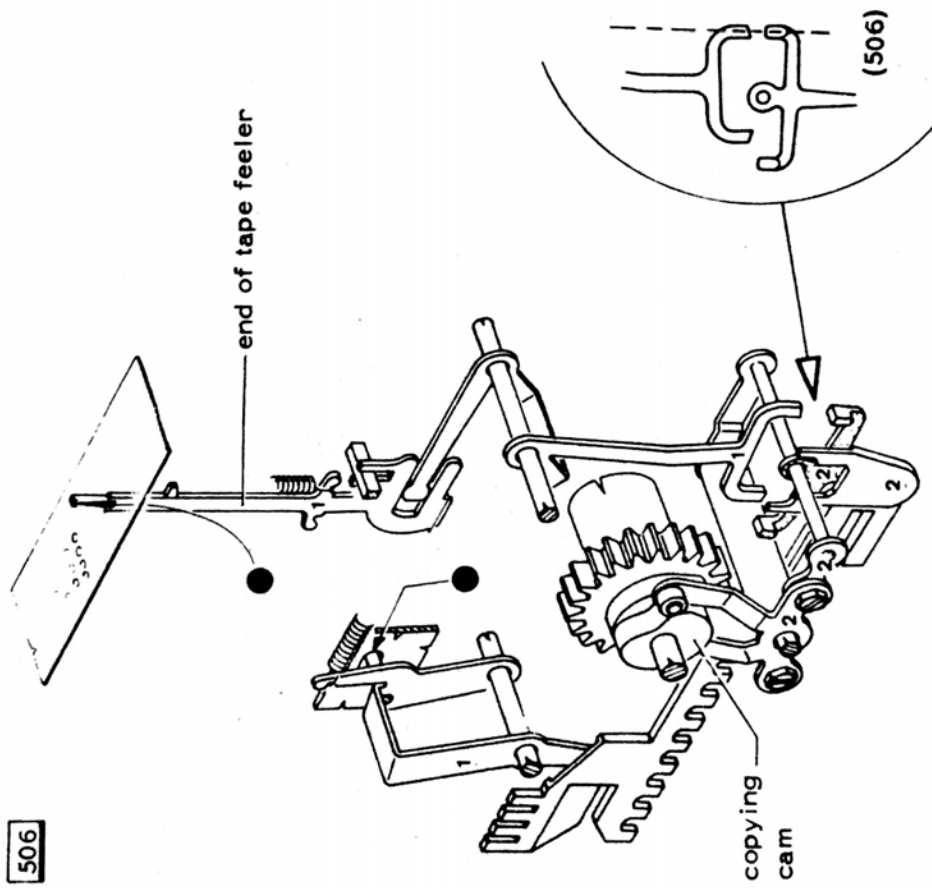


504) CHECK THE WORK POSITION OF THE "READER START" KEY CONTROLLING LEVER

505) CHECK THE WORK POSITION OF THE "READER STOP BRIDGE BY TAPE RELEASE KEY"

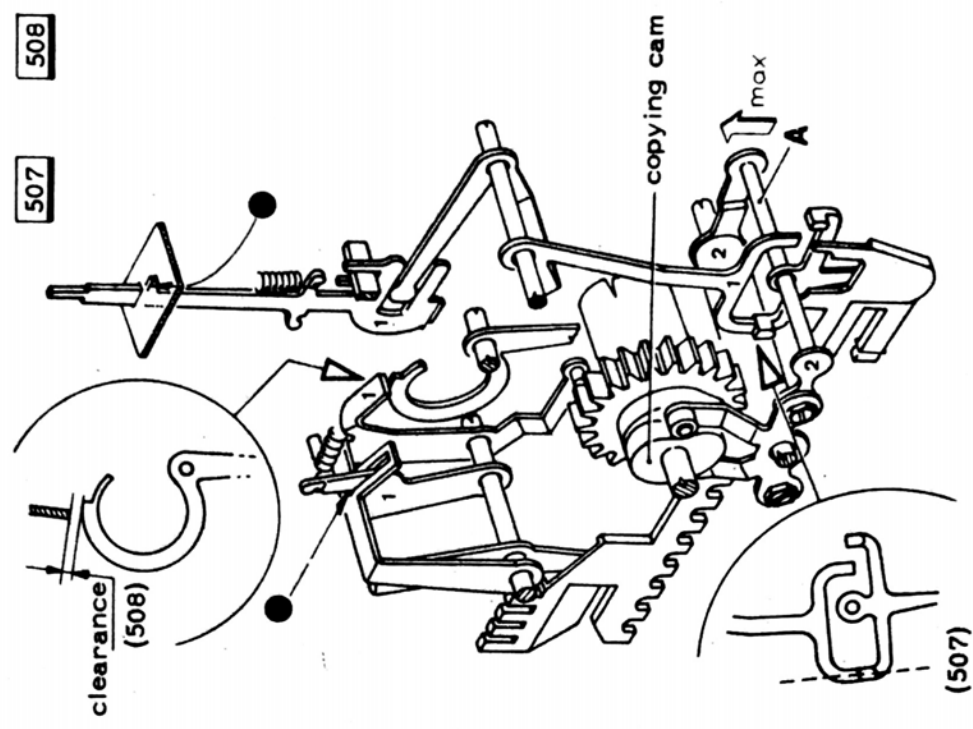


506) CHECK THE POSITION FOR END OF TAPE SIGNALLING WITH TAPE INSERTED



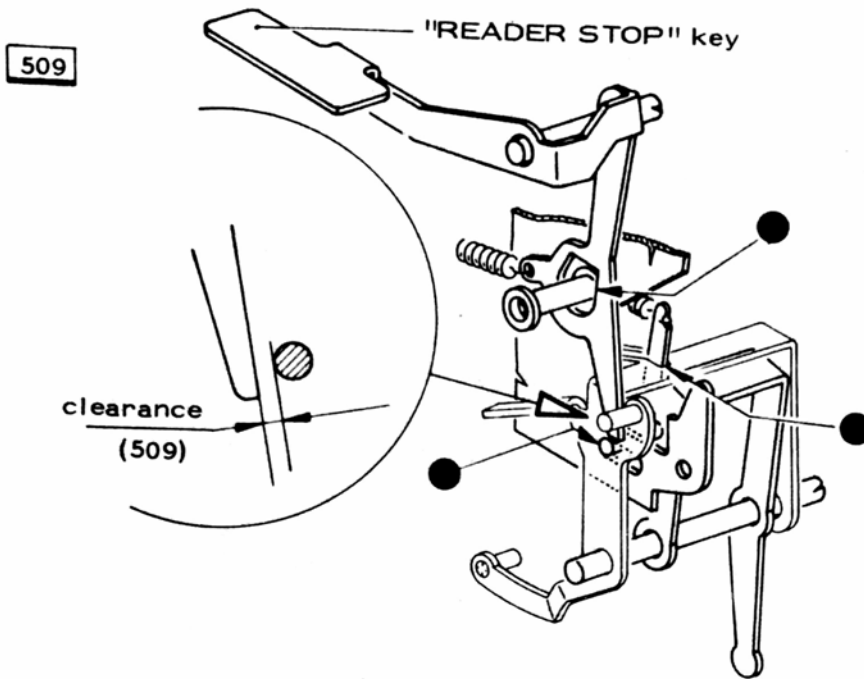
- insert the tape.

507-508) CHECK THE POSITION OF THE KINEMATIC FOR END OF TAPE SIGNALLING WITH TAPE INSERTED

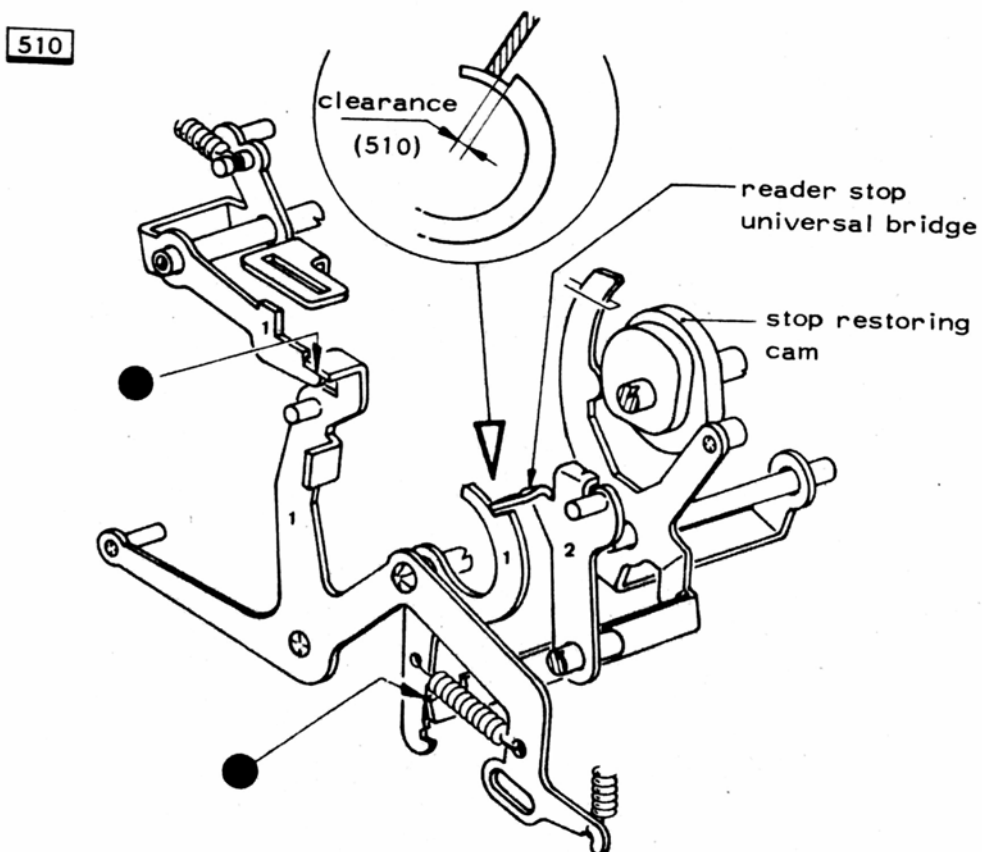


- remove the tape
- start the reader
- move frame A to maximum control position.

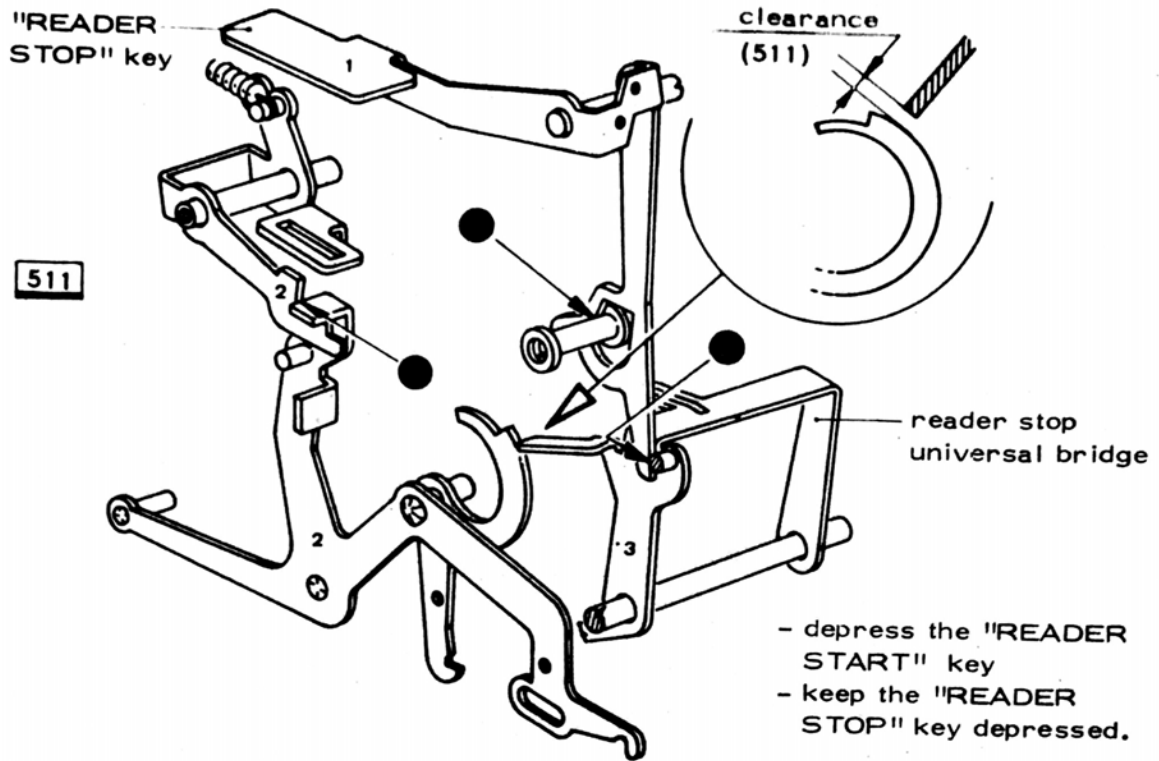
509) CHECK THE REST POSITION OF THE "READER STOP" KEY



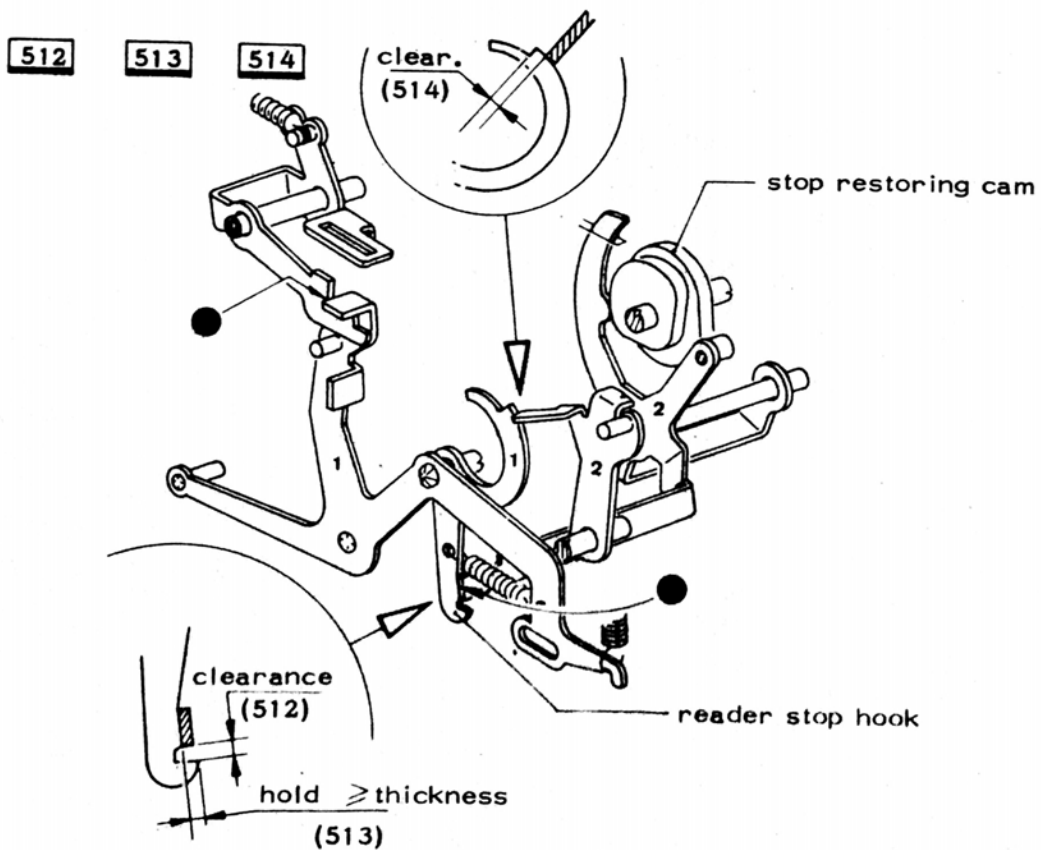
510) CHECK THE REST POSITION OF THE "READER STOP UNIVERSAL BRIDGE"



511) CHECK THE WORK POSITION OF THE "READER STOP UNIVERSAL BRIDGE" BY "READER STOP" KEY

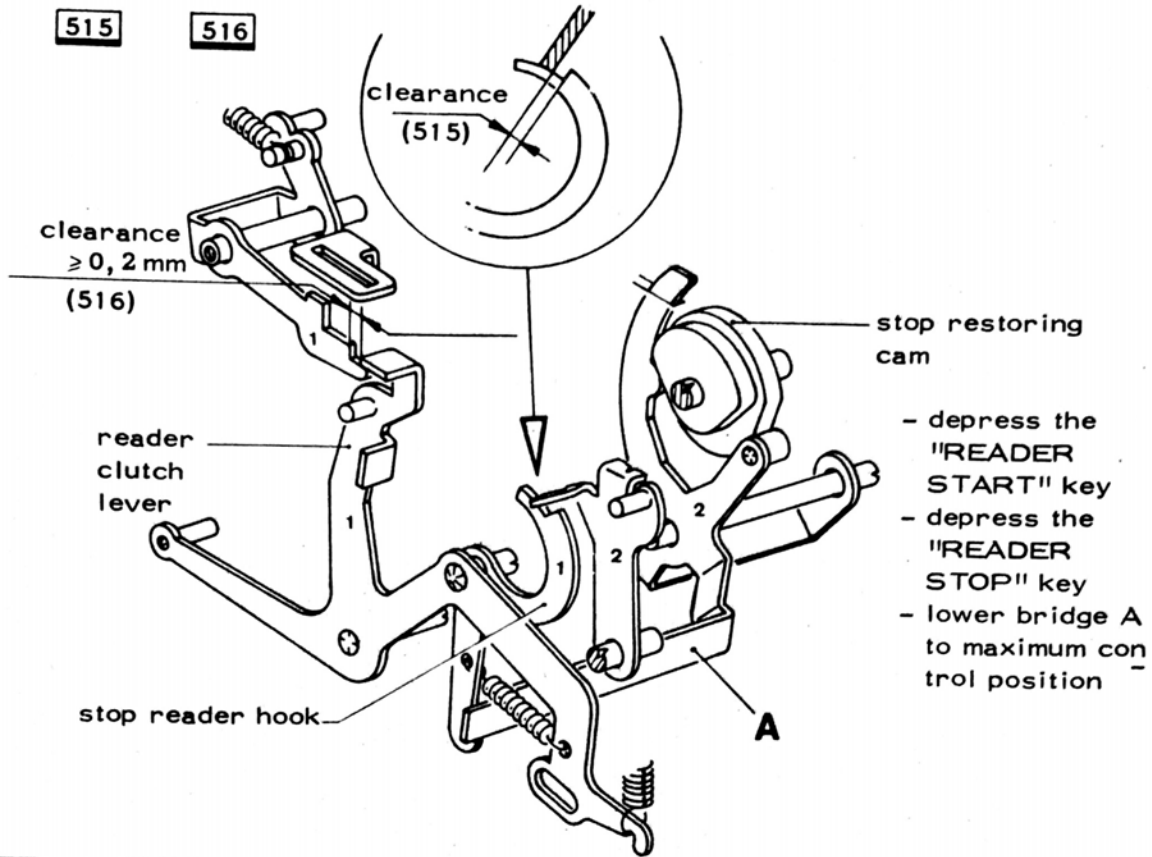


512-513-514) CHECK THE WORK POSITION OF THE READER STOP HOOK

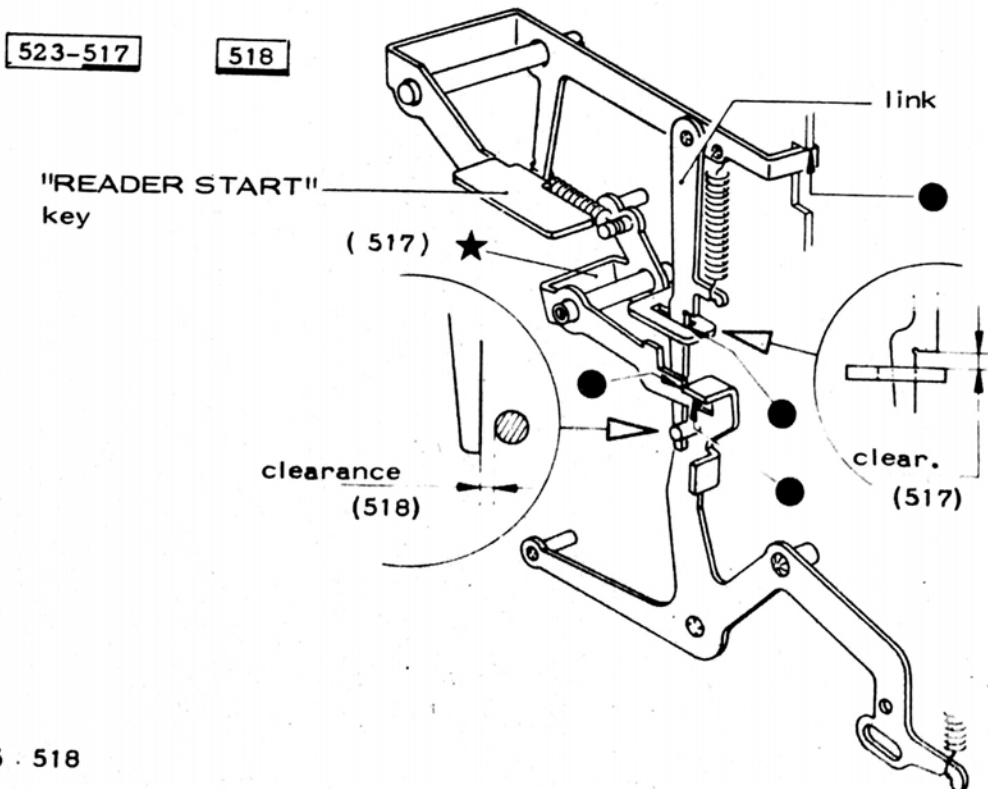


515) CHECK THE RELOAD OF THE READER STOP HOOK

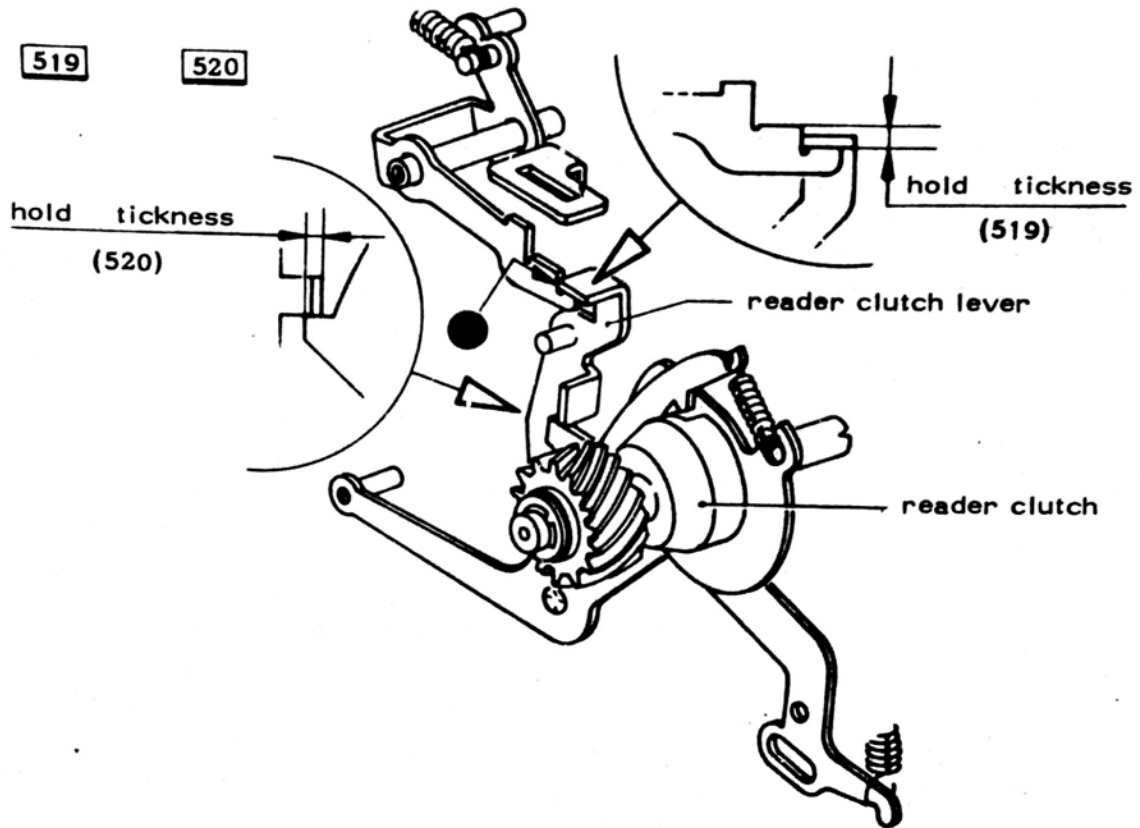
516) CHECK THE RELOAD OF THE "READER CLUTCH LEVER"



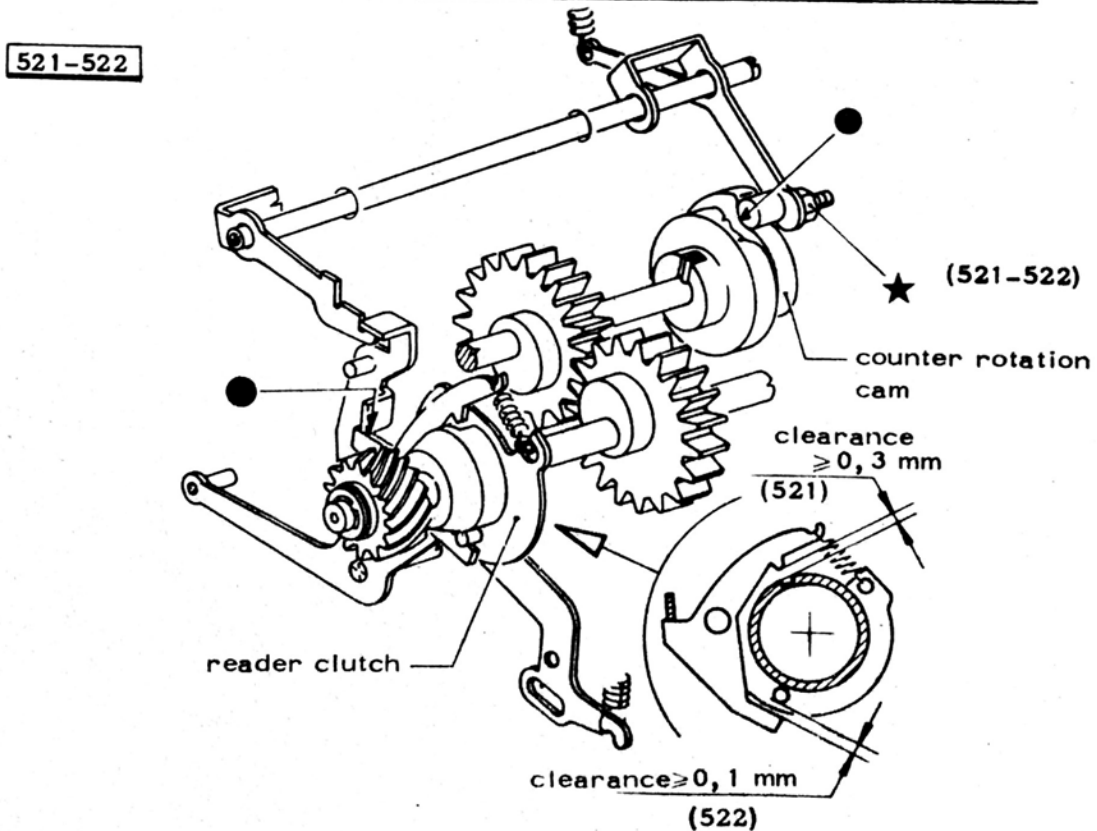
517-518) CHECK THE REST POSITION OF THE LINK FOR "READER CLUTCH LEVER" RELEASE



519-520) CHECK THE REST POSITION OF THE "READER CLUTCH LEVER"

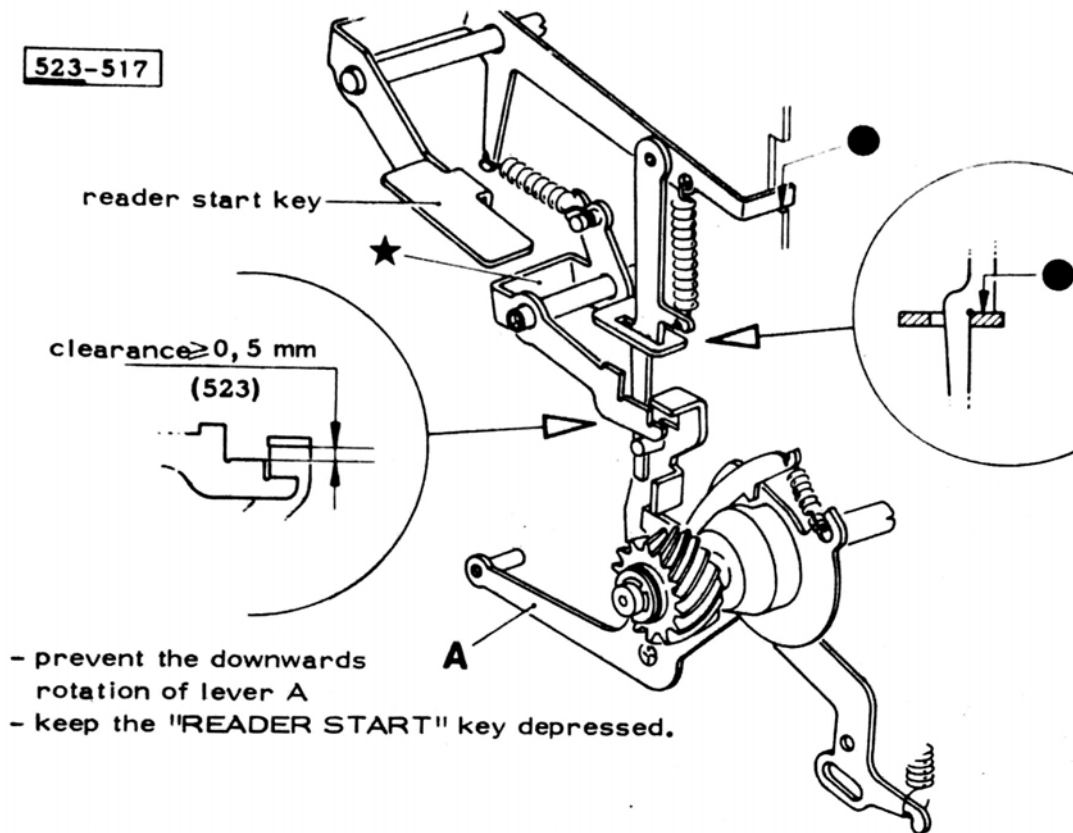


521-522) CHECK THE REST POSITION OF THE "READER CLUTCH TOOTH"



523) CHECK THE "READER CLUTCH LEVER" RELEASE

523-517

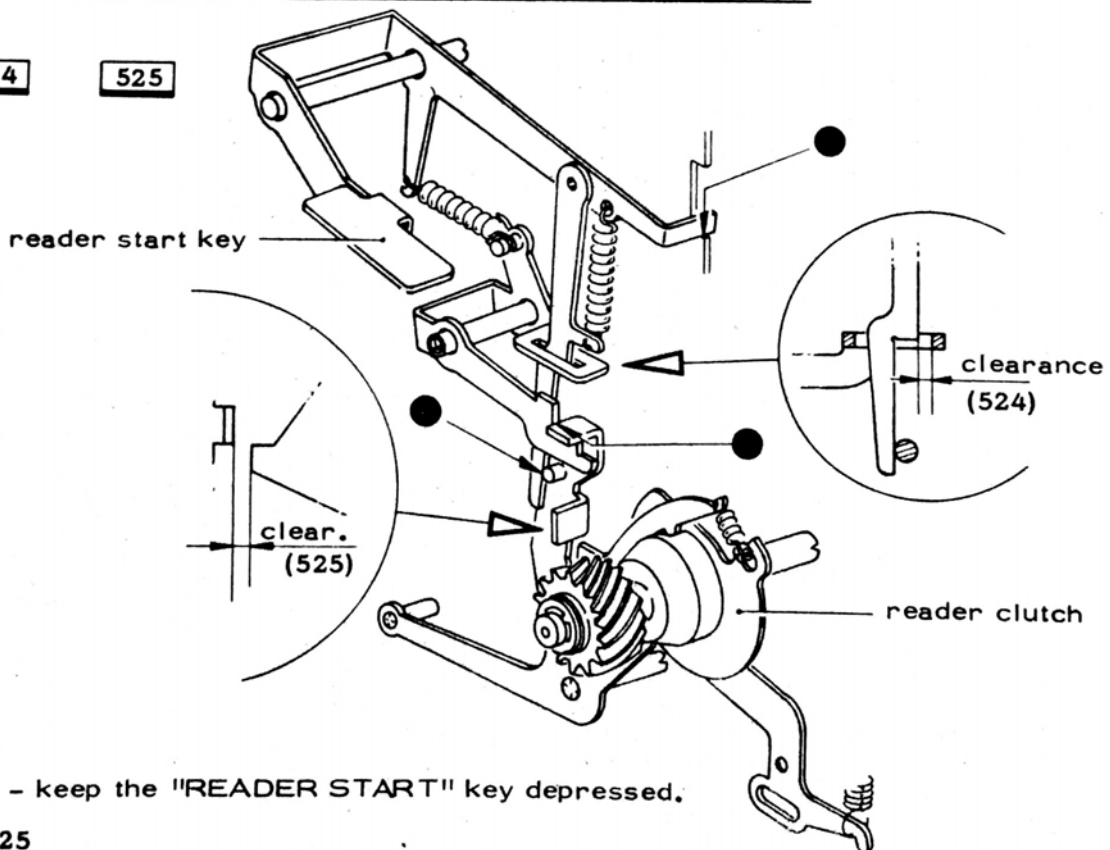


524) CHECK THE ANGULAR WORK POSITION OF THE LINK FOR THE
READER CLUTCH LEVER RELEASE

525) CHECK THE READER CLUTCH TOOTH RELEASE

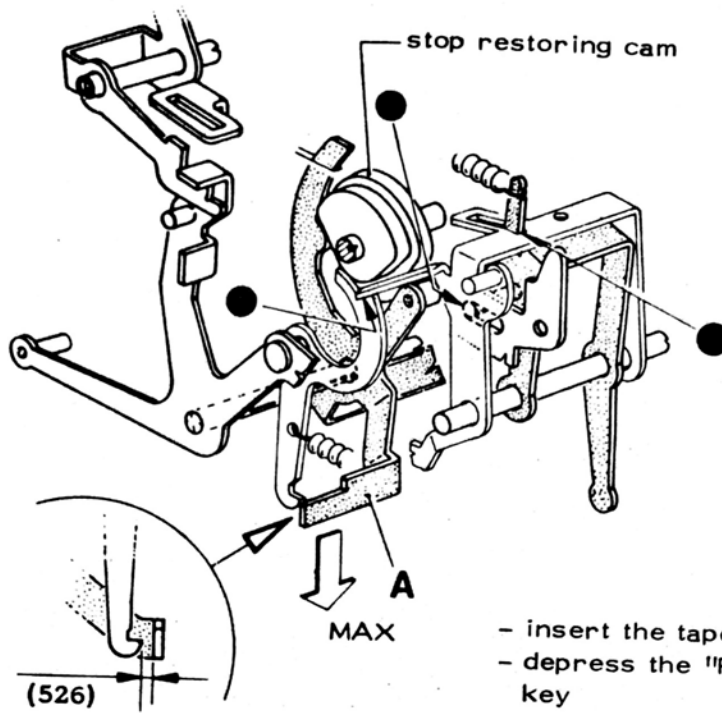
524

525



526) CHECK THE EXCLUSION OF THE "READER CLUTCH LEVER" RELOAD WITH TAPE INSERTED

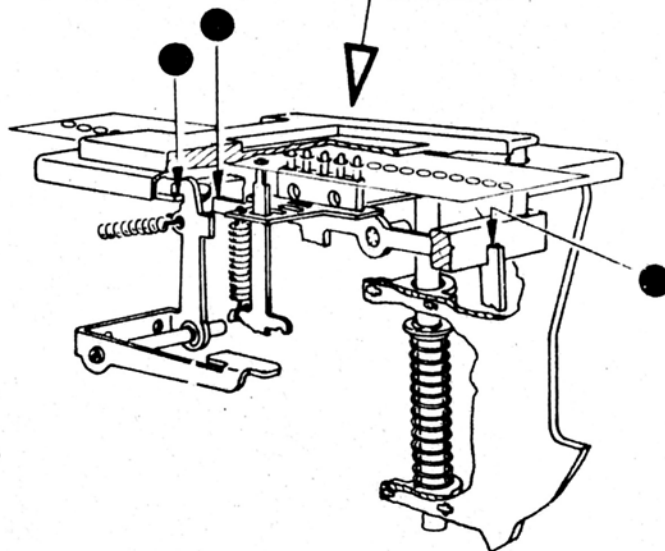
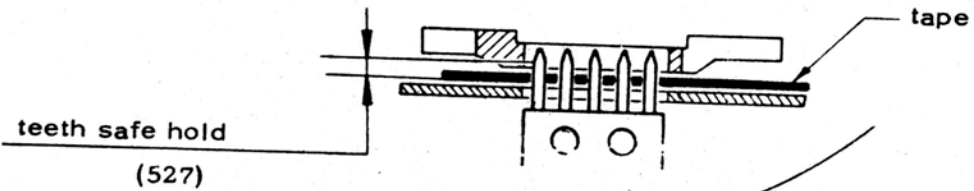
526



- insert the tape
- depress the "READER START" key
- lower bridge A to maximum control position.

527) CHECK THE FEED TEETH HOLD ON THE TAPE

527



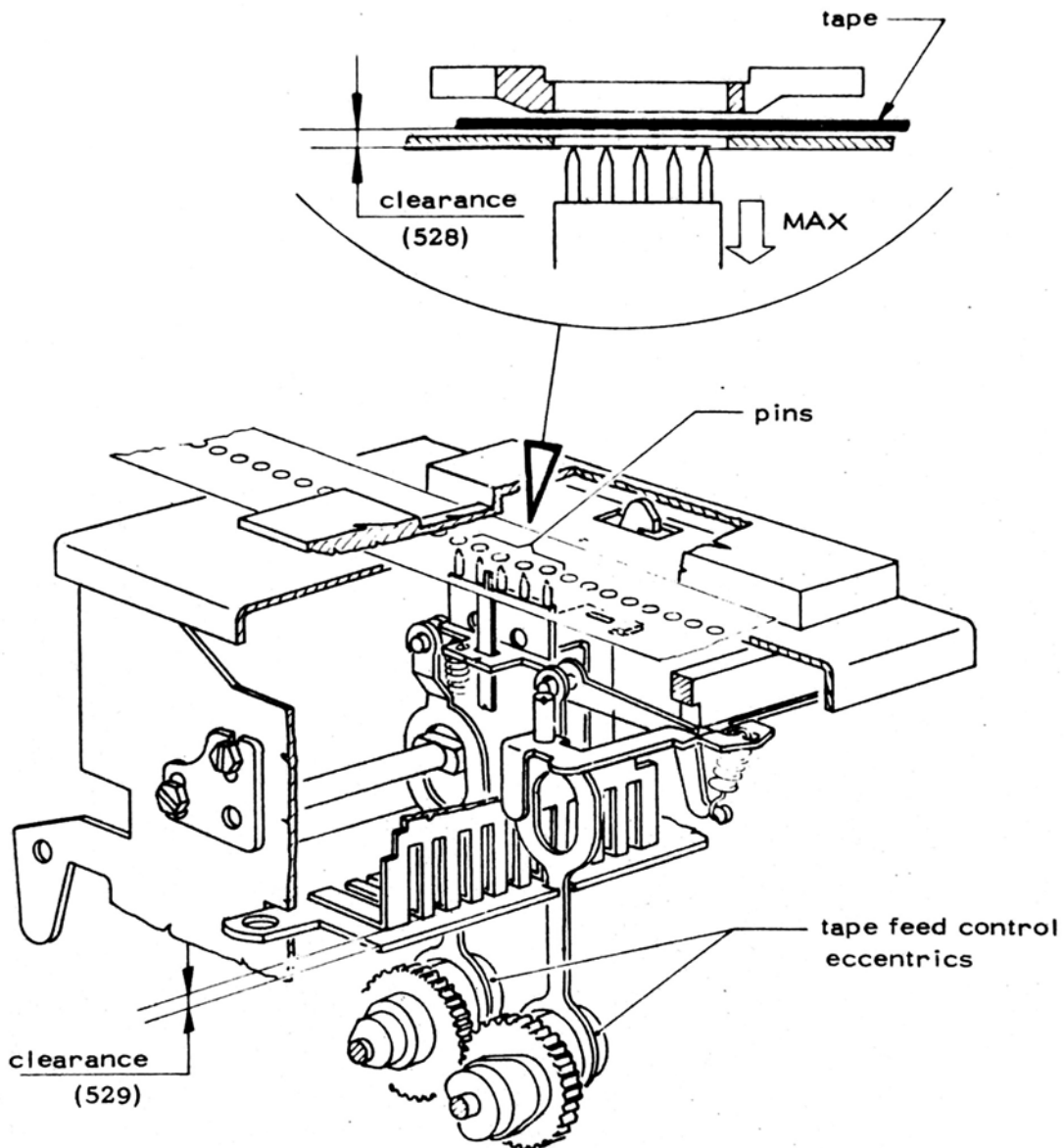
- insert the tape.

528) CHECK THE DISENGAGEMENT OF THE "FEED TEETH" FROM THE TAPE

529) CHECK THE TRAVEL OF THE "FEED TEETH CAGE"

528

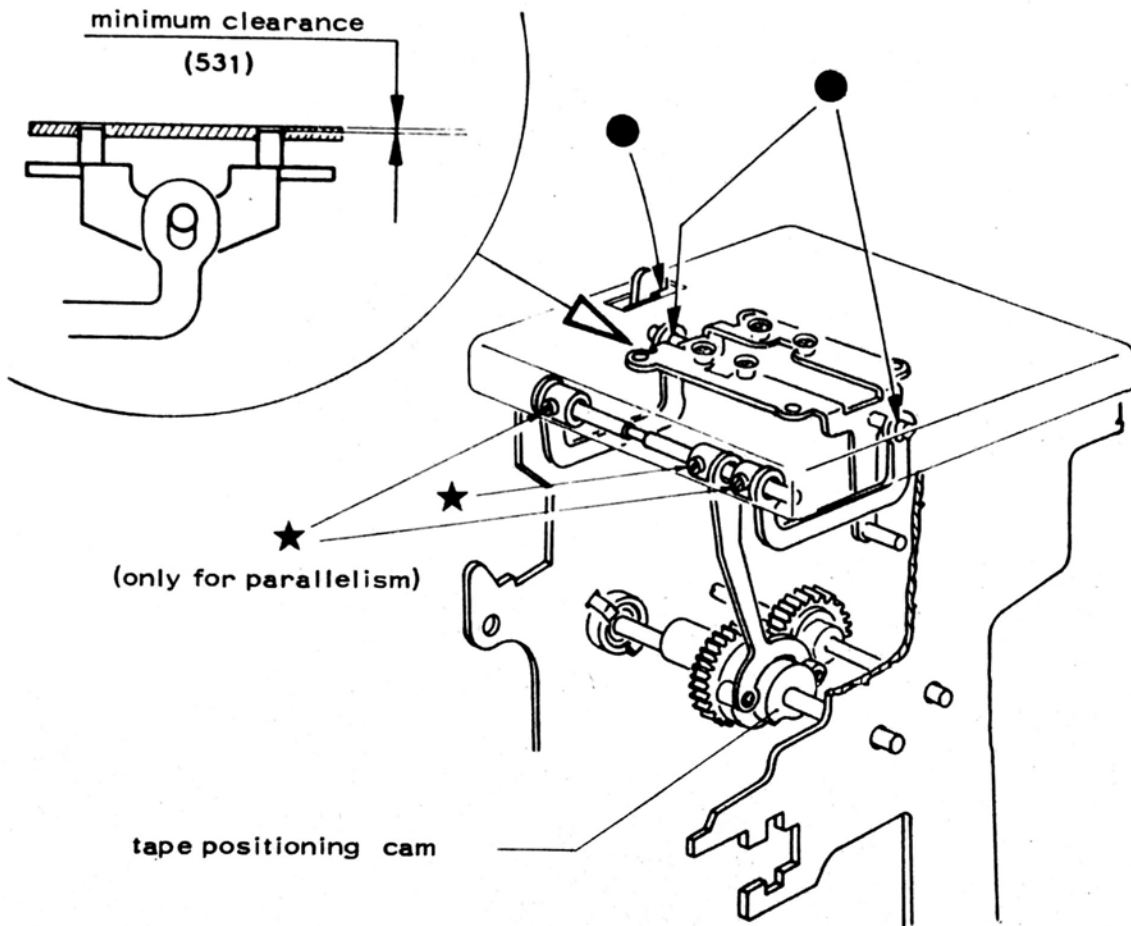
529



- insert the tape
- depress the "READER START" key
- rotate the printing shaft for maximum control position of the feed pins.

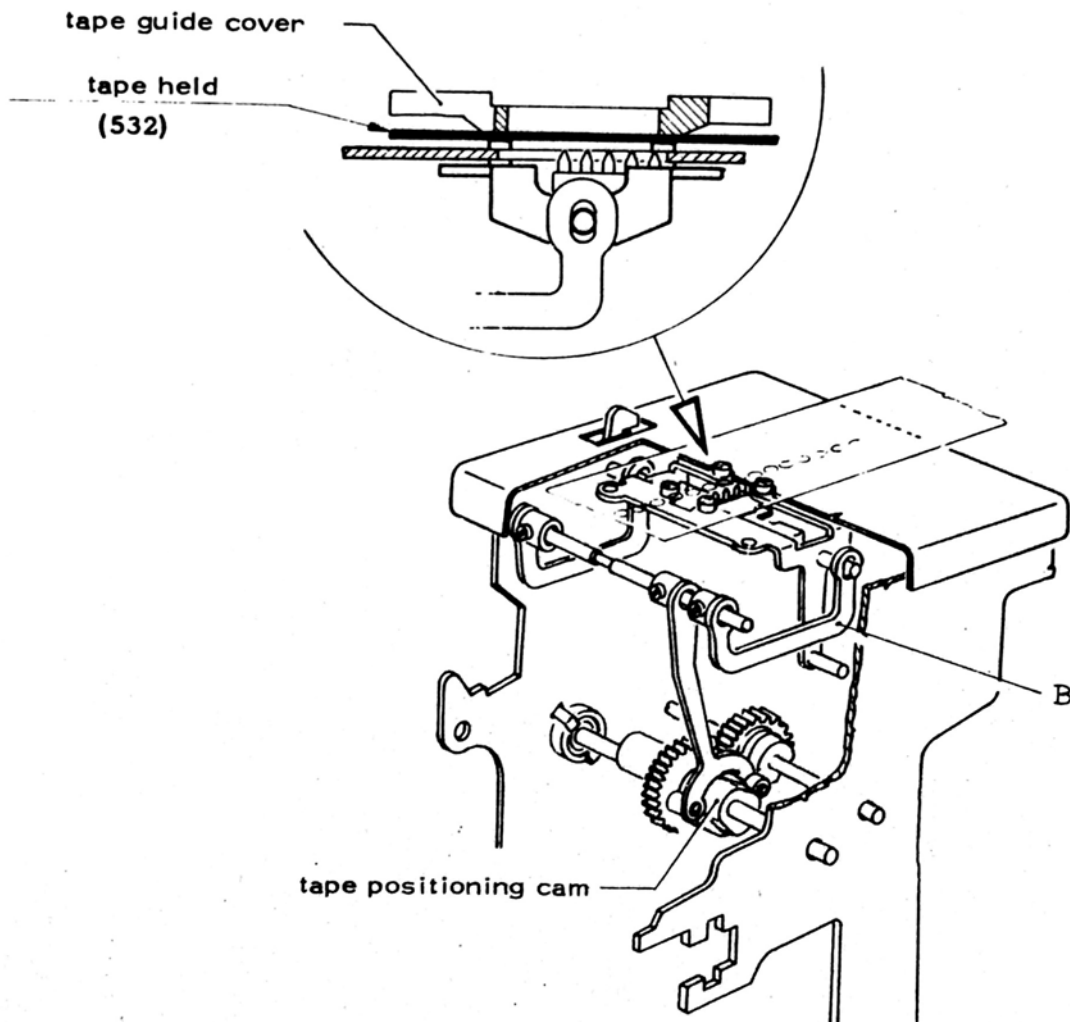
531) CHECK THE REST POSITION OF THE PINS FOR TAPE
FRICTION

531



532) CHECK THE WORK POSITION OF THE PINS FOR TAPE OPERATION

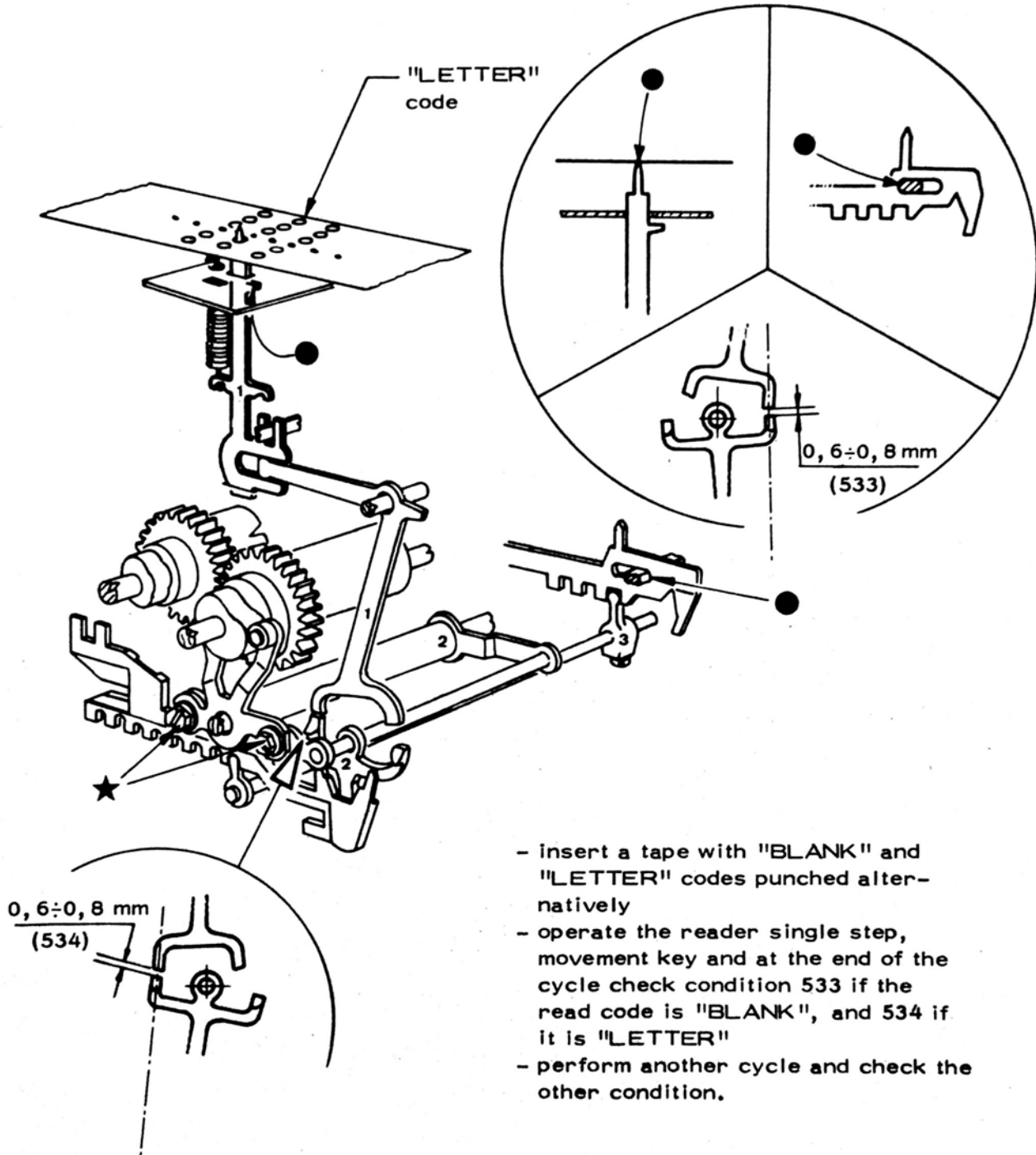
532



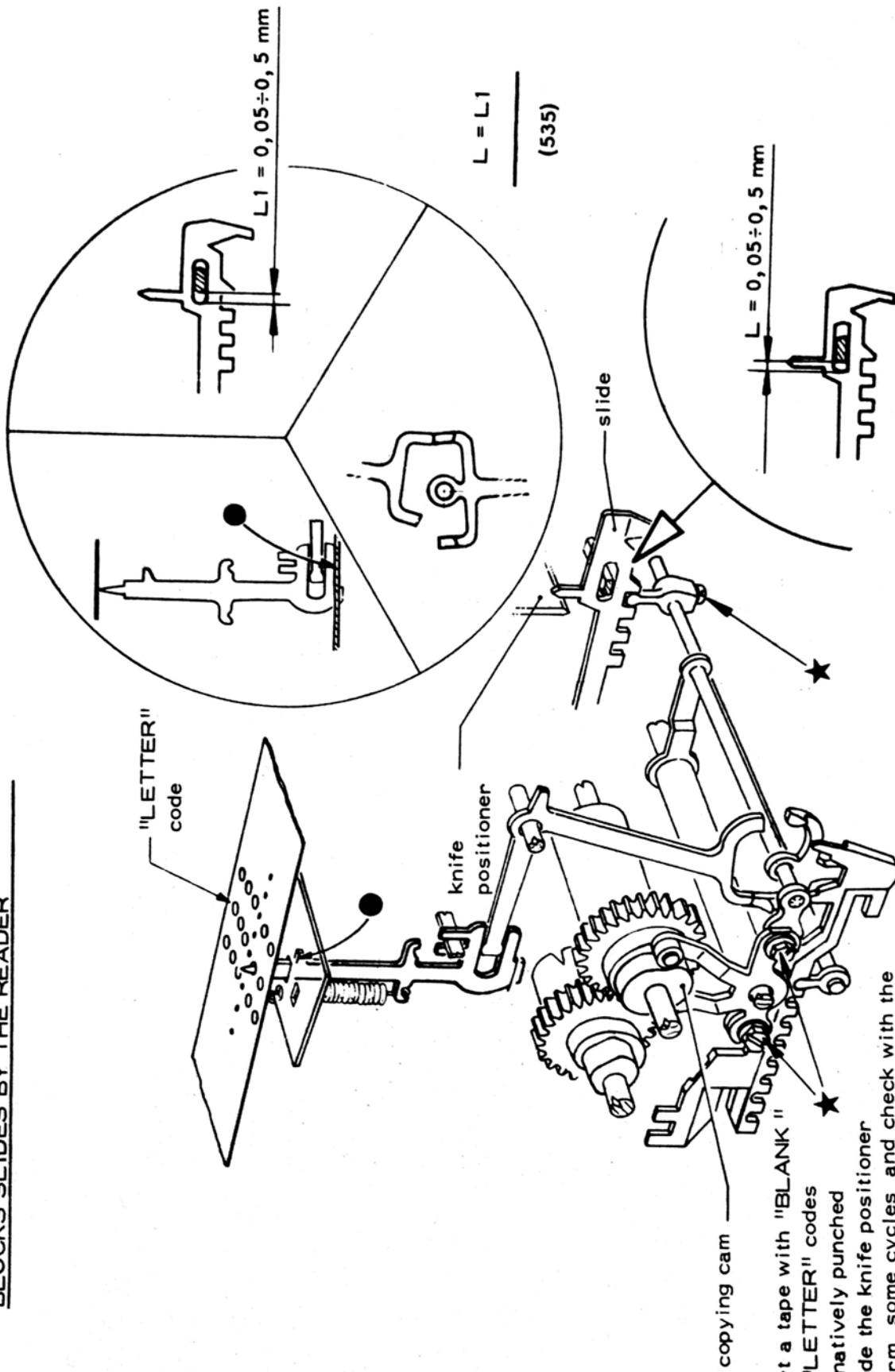
- start the letter
- rotate the printing shaft for maximum upwards control position of lever B.

533-534) CHECK THE QUANTITY OF CONTROL OF THE
"SERIALIZER BLOCKS SLIDES" BY THE READER

533

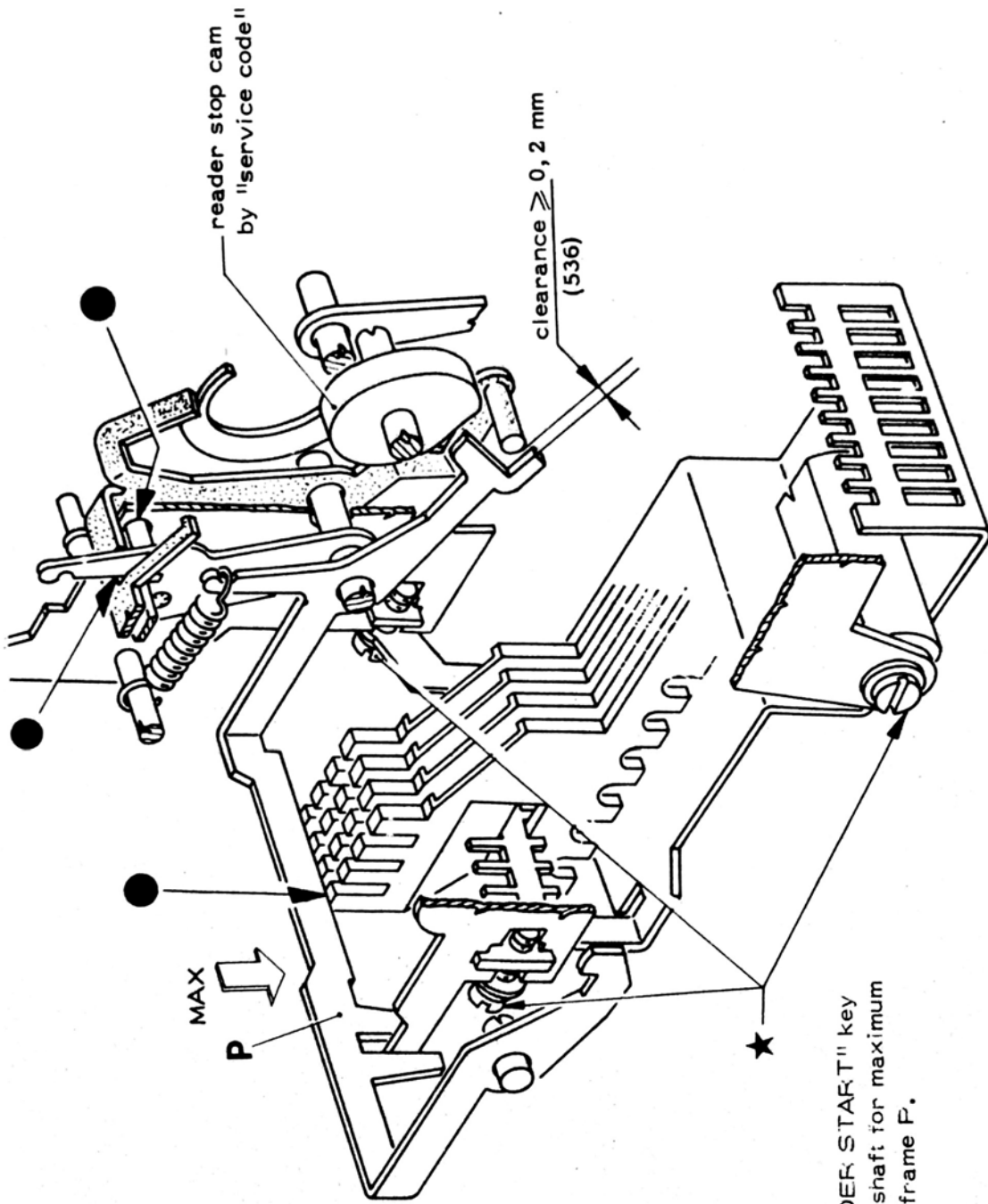


535) CHECK THE POSITION OF THE SERIALIZER
BLOCKS SLIDES BY THE READER



- insert a tape with "BLANK " and "LETTER" codes alternatively punched
- exclude the knife positioner
- perform some cycles and check with the slides at maximum control position frontwards and blackwards.

536) CHECK THE POSITION OF THE SUPPORT FOR READER STOP SLIDES BY SERVICE CODES

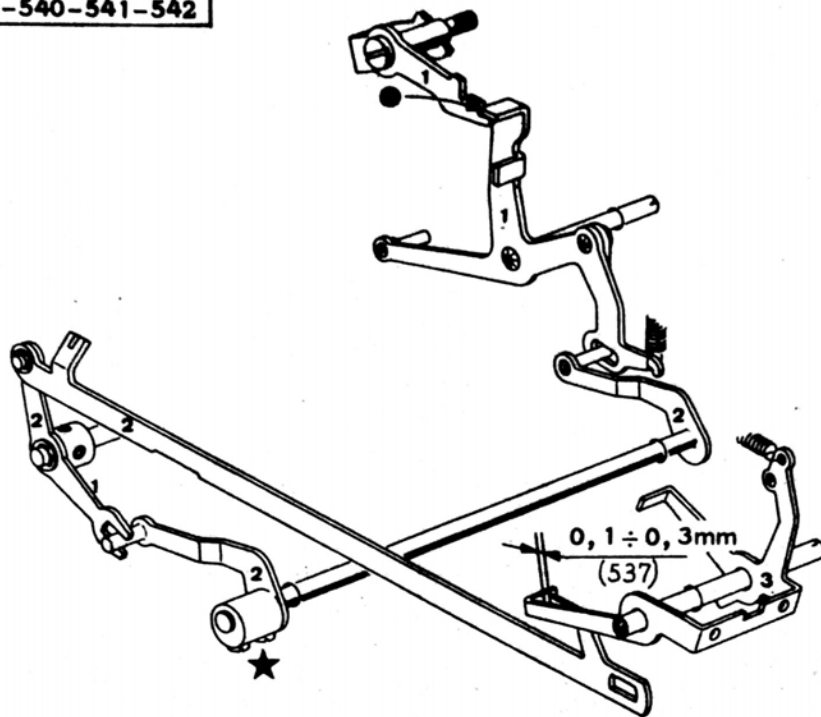


536

- insert the tape
- depress the "READER START" key
- rotate the printing shaft for maximum control position of frame P.

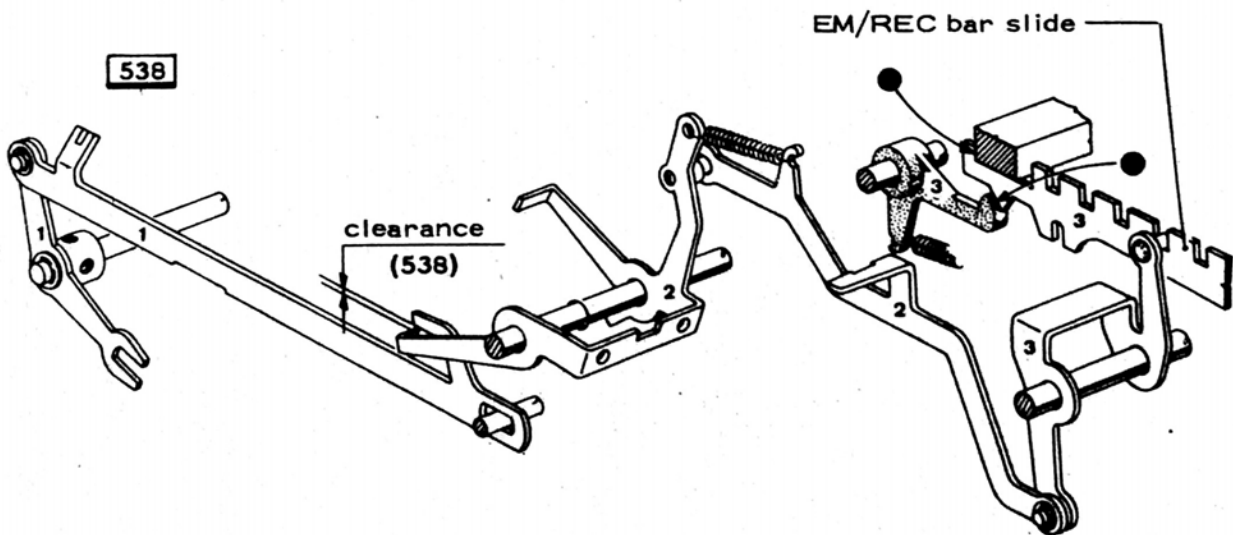
537) CHECK THE PASS-BY CLEARANCE OF THE "READER START" LOCKING ARM

537-539-540-541-542



- set the EM/REC bar in emission.

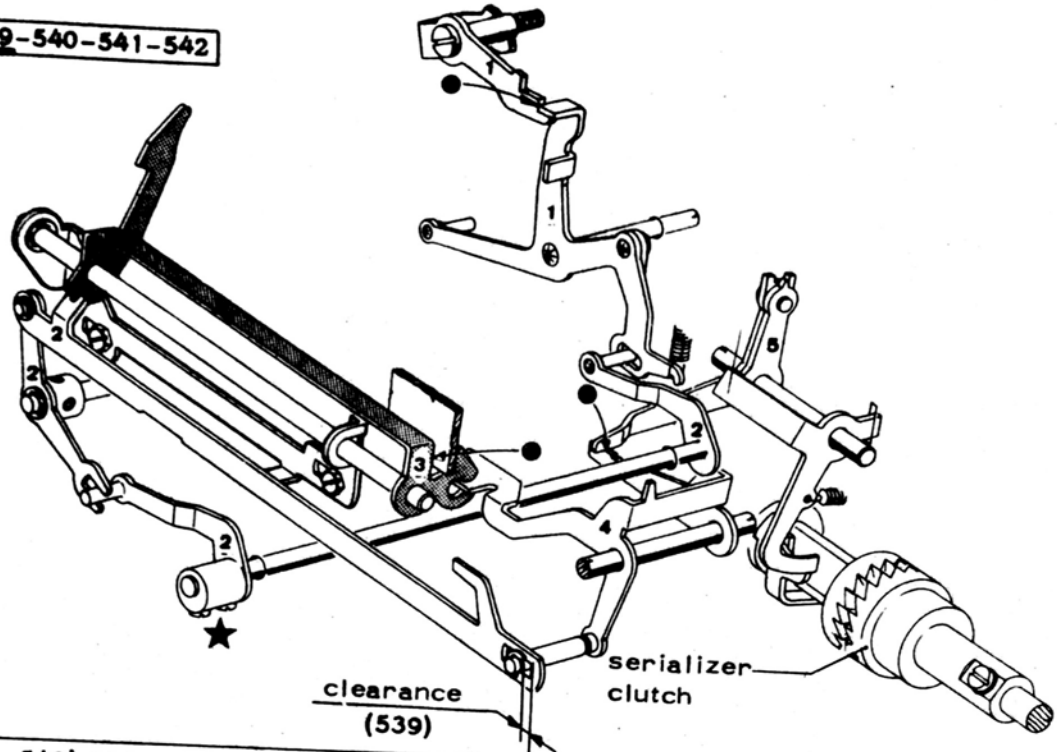
538) CHECK THE "READER STARTING LOCKING ARM" POSITION ON LOCKING



- set the EM/REC bar in reception.

539) CHECK THE REST POSITION OF THE "CONNECTING ROD FOR
SERIALIZER CLUTCH RELEASE BY THE READER"

537-539-540-541-542

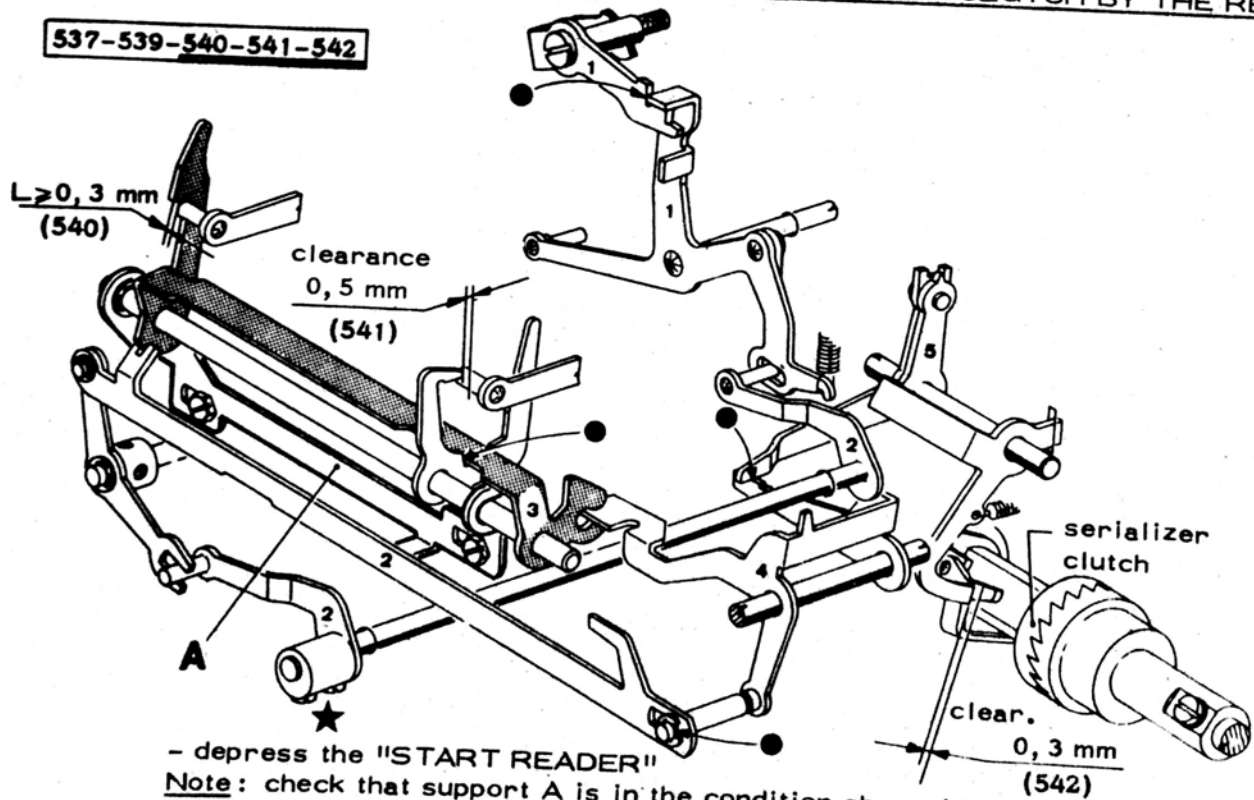


540) CHECK THE EXCLUSION OF THE "AUTOMATIC REPLY COPYING
HOOK" BY THE READER

541) CHECK THE EXCLUSION OF THE "NORMAL COPYING HOOK" BY
THE READER

542) CHECK THE RELEASE OF THE SERIALIZER CLUTCH BY THE READER

537-539-540-541-542



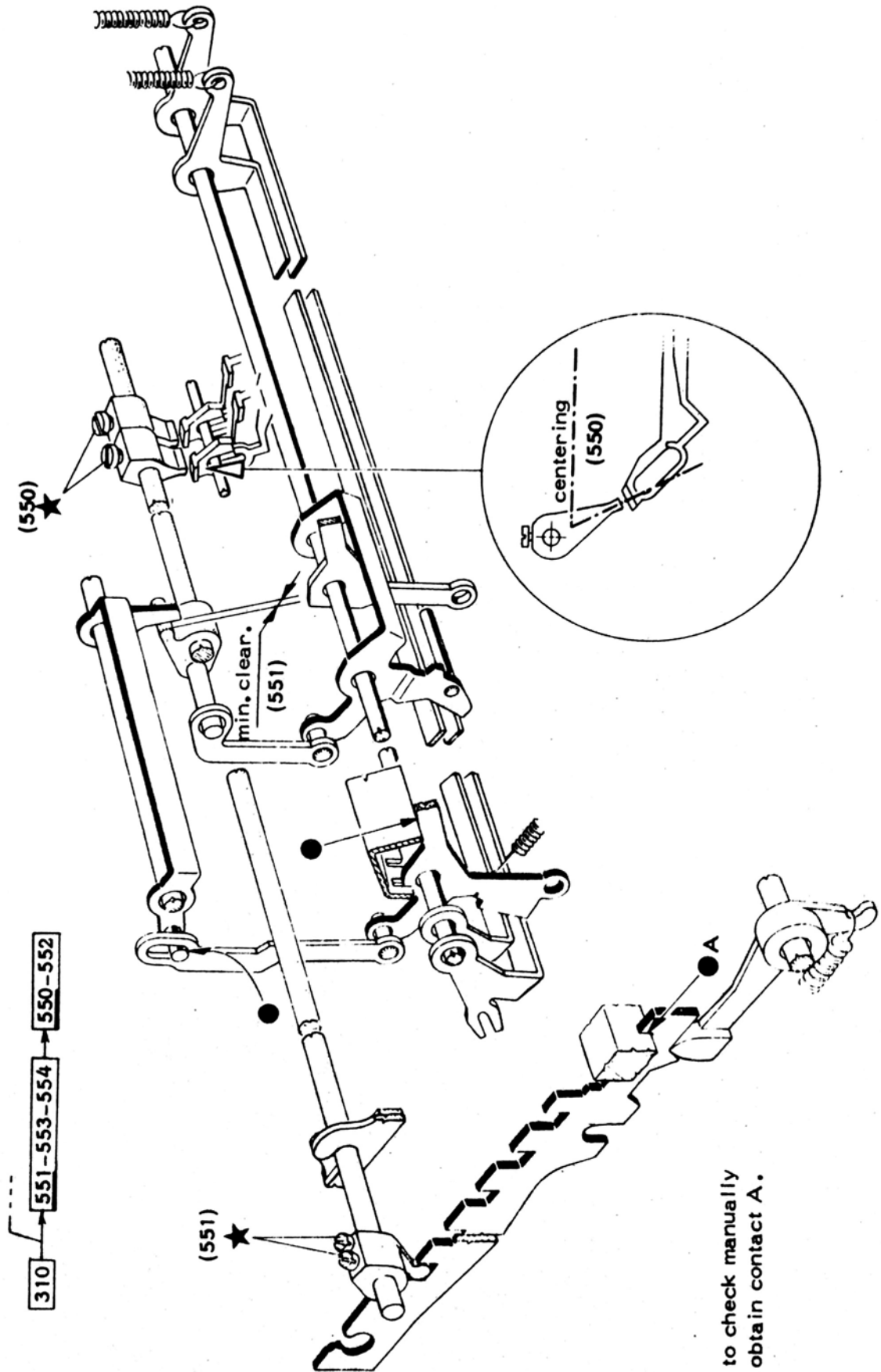
- depress the "START READER"

Note: check that support A is in the condition shown in
the figure (the screws on the right of the slots).



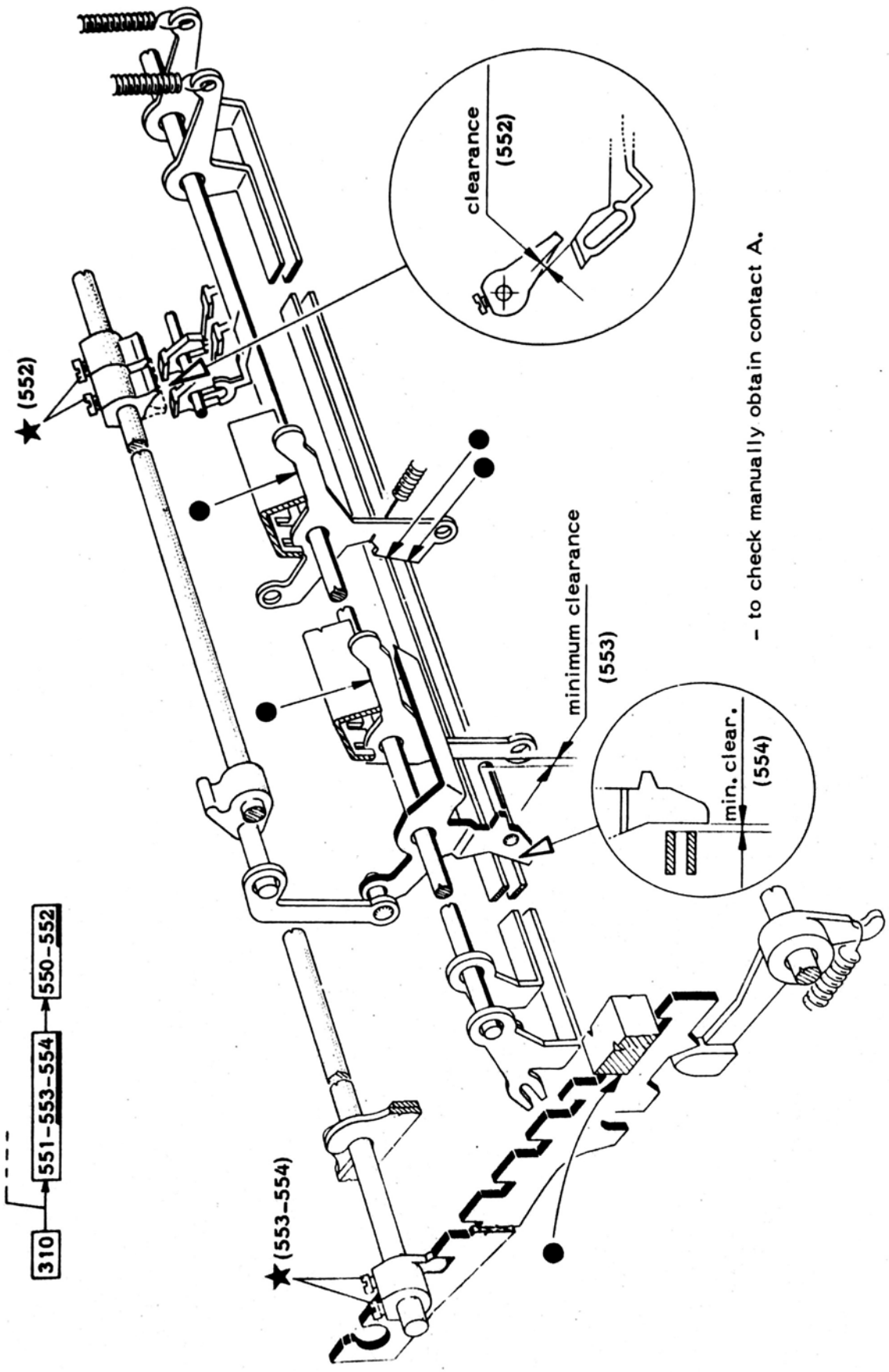
SPECIAL KINEMATICS
and TL

550-551) CHECK THE SUPPRESSION POSITION OF THE SUPPRESSION BAR



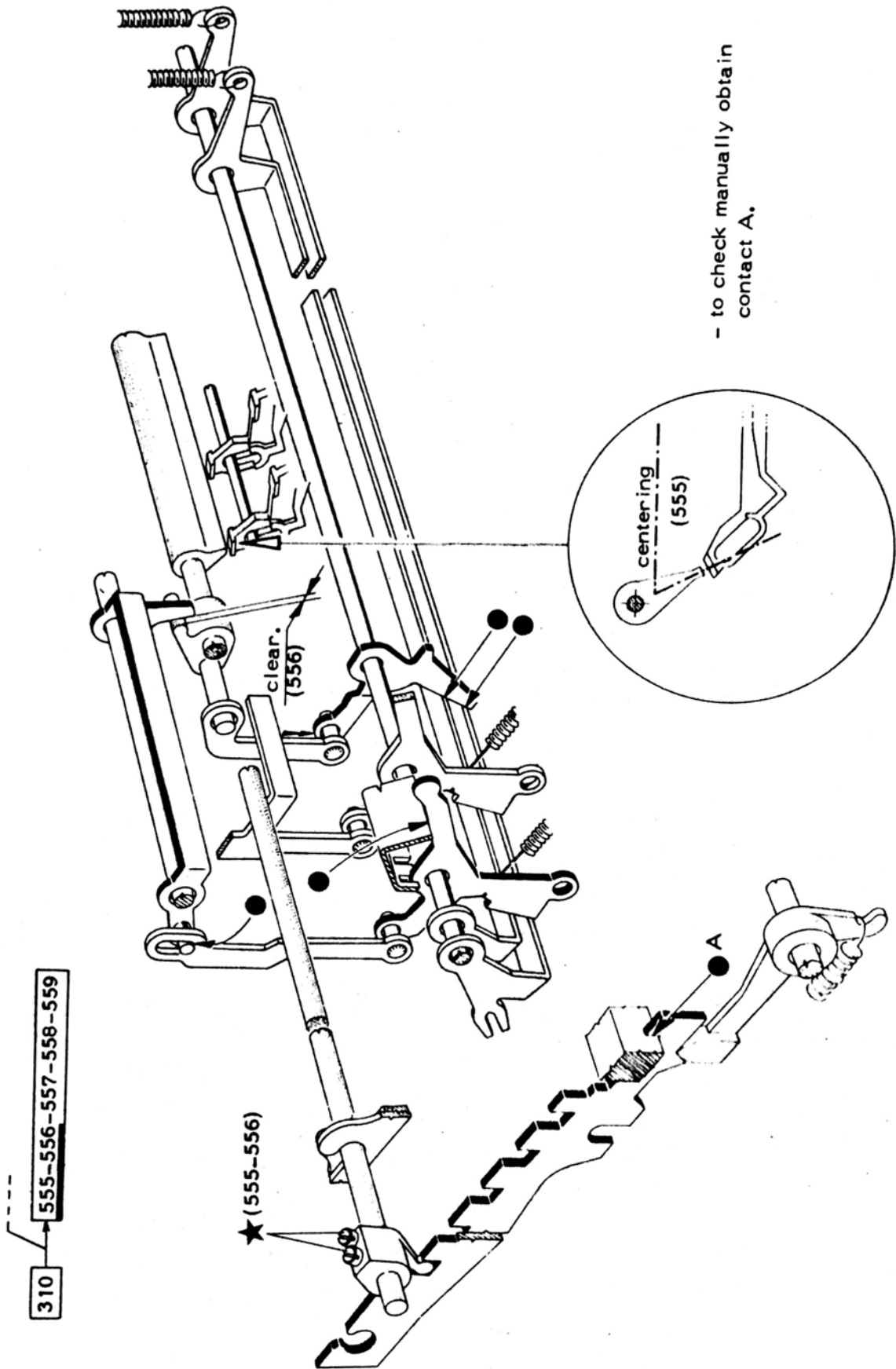
- to check manually obtain contact A.

552-553-554) CHECK THE REST POSITION OF THE SUPPRESSION BARS



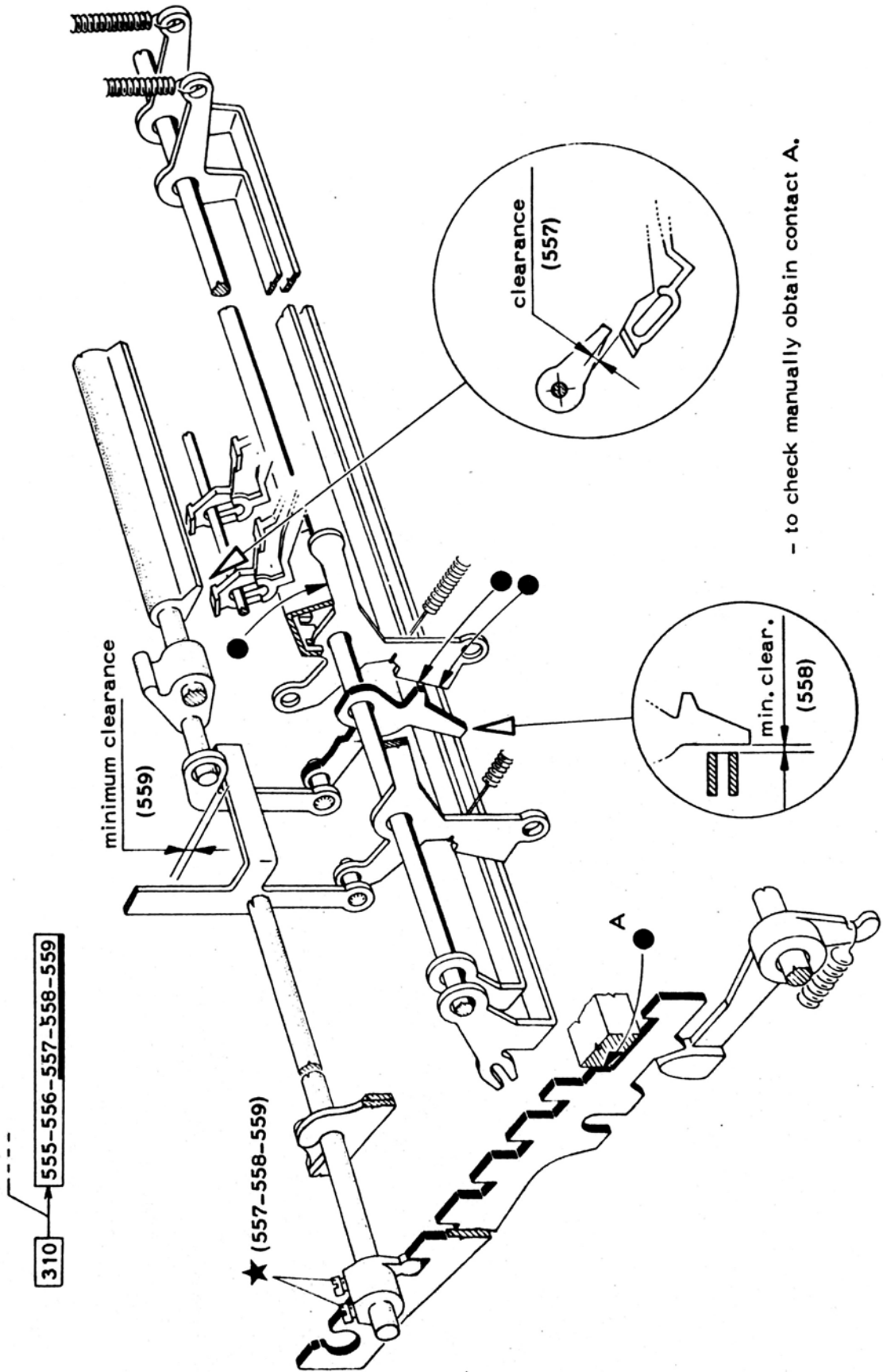
- to check manually obtain contact A.

555-556) CHECK THE SUPPRESSION POSITION OF THE SUPPRESSION BARS



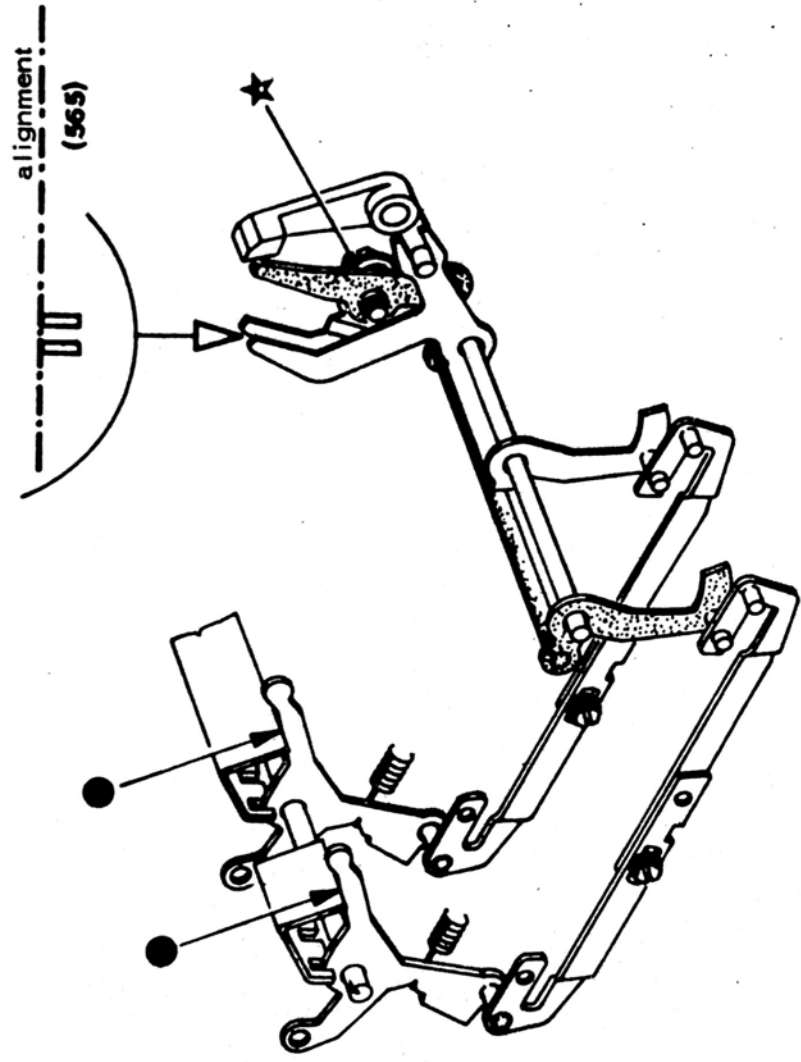
- to check manually obtain contact A.

557-558-559) CHECK THE REST POSITION OF THE SUPPRESSION BAR

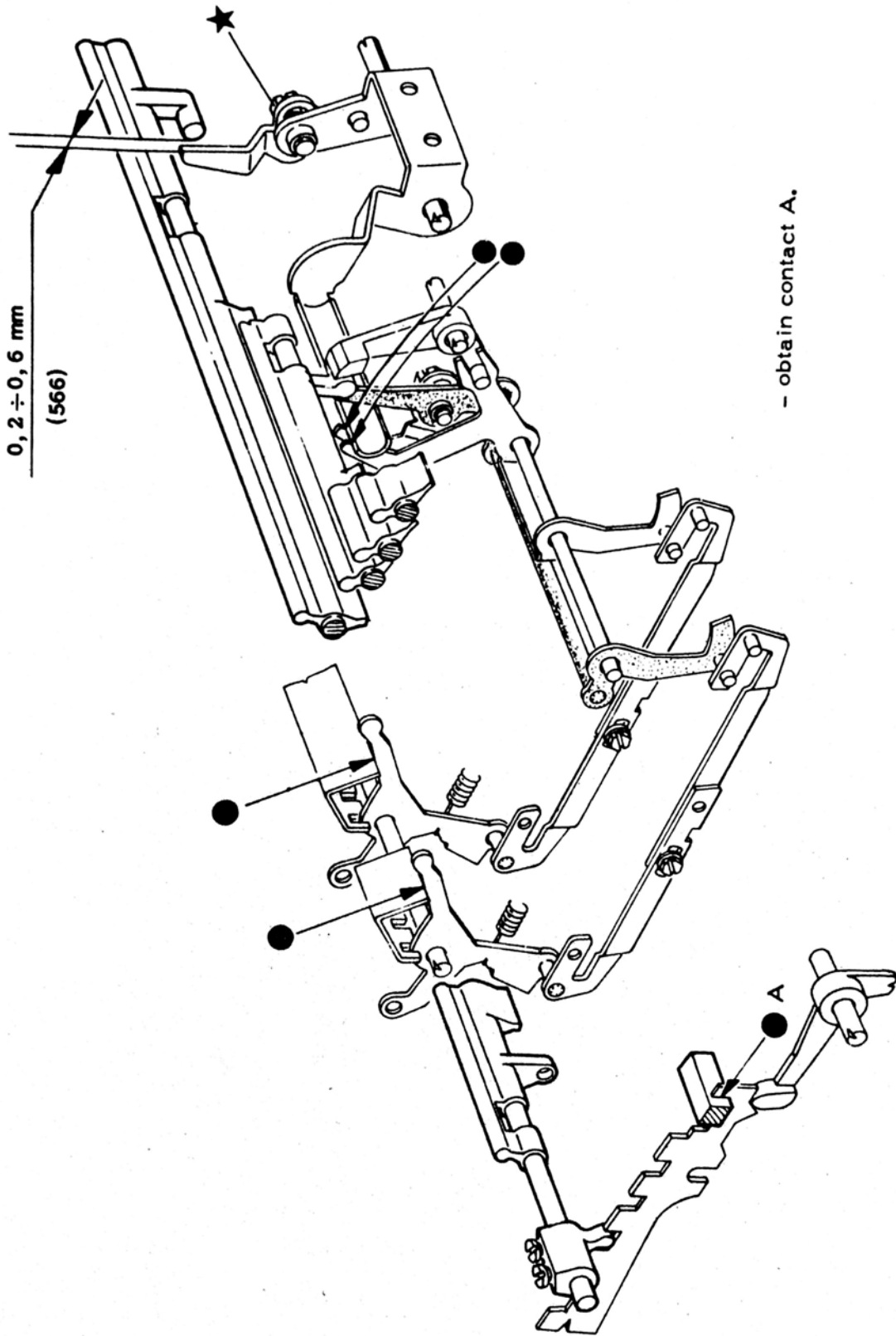


- to check manually obtain contact A.

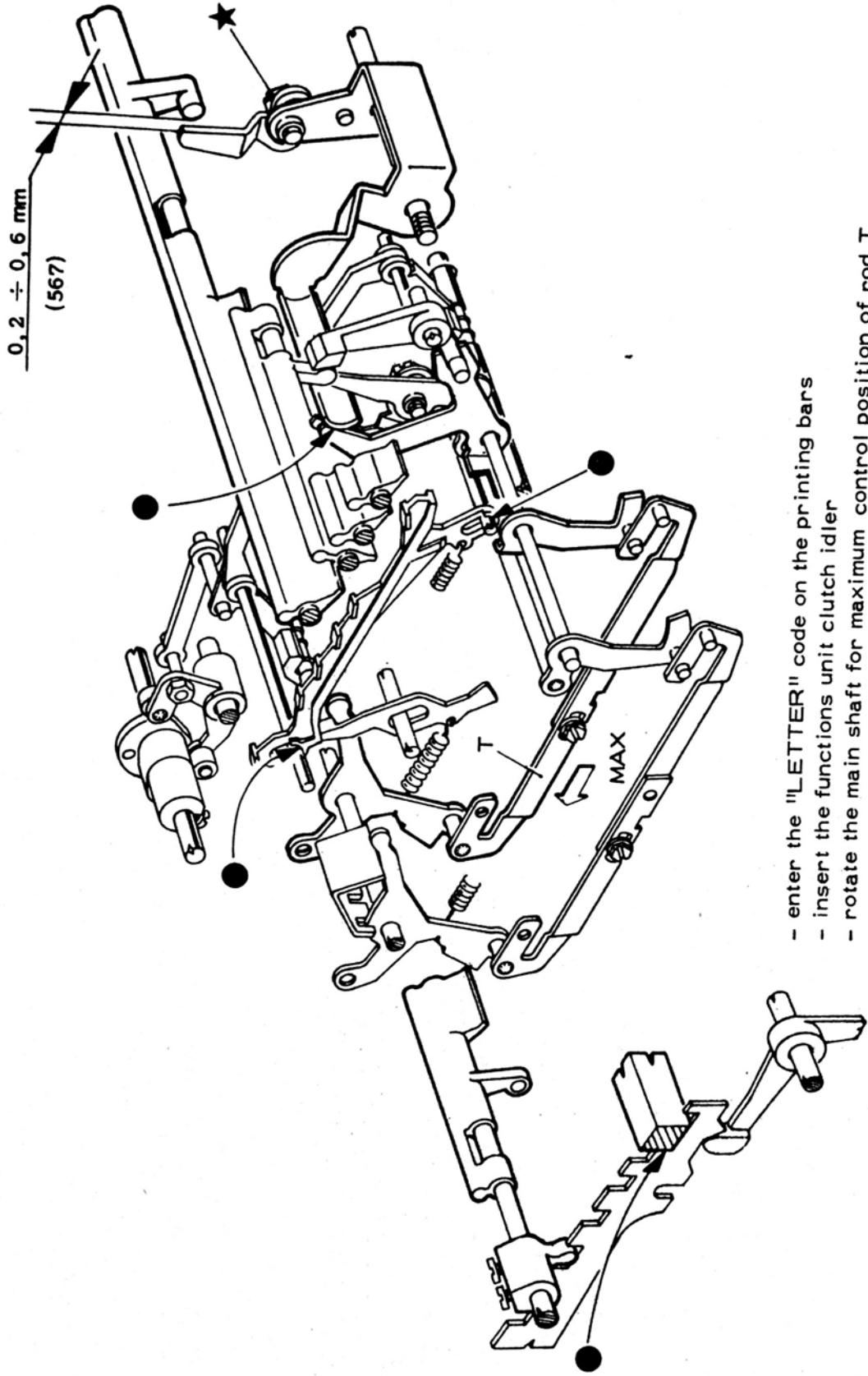
565) CHECK THE POSITION OF THE TRIPLE EXCHANGE BRIDGE CONTROL APPENDIX



566) CHECK THE POSITION OF THE APPENDIX OF THE TRIPLE EXCHANGE BAR CONTROL BRIDGE

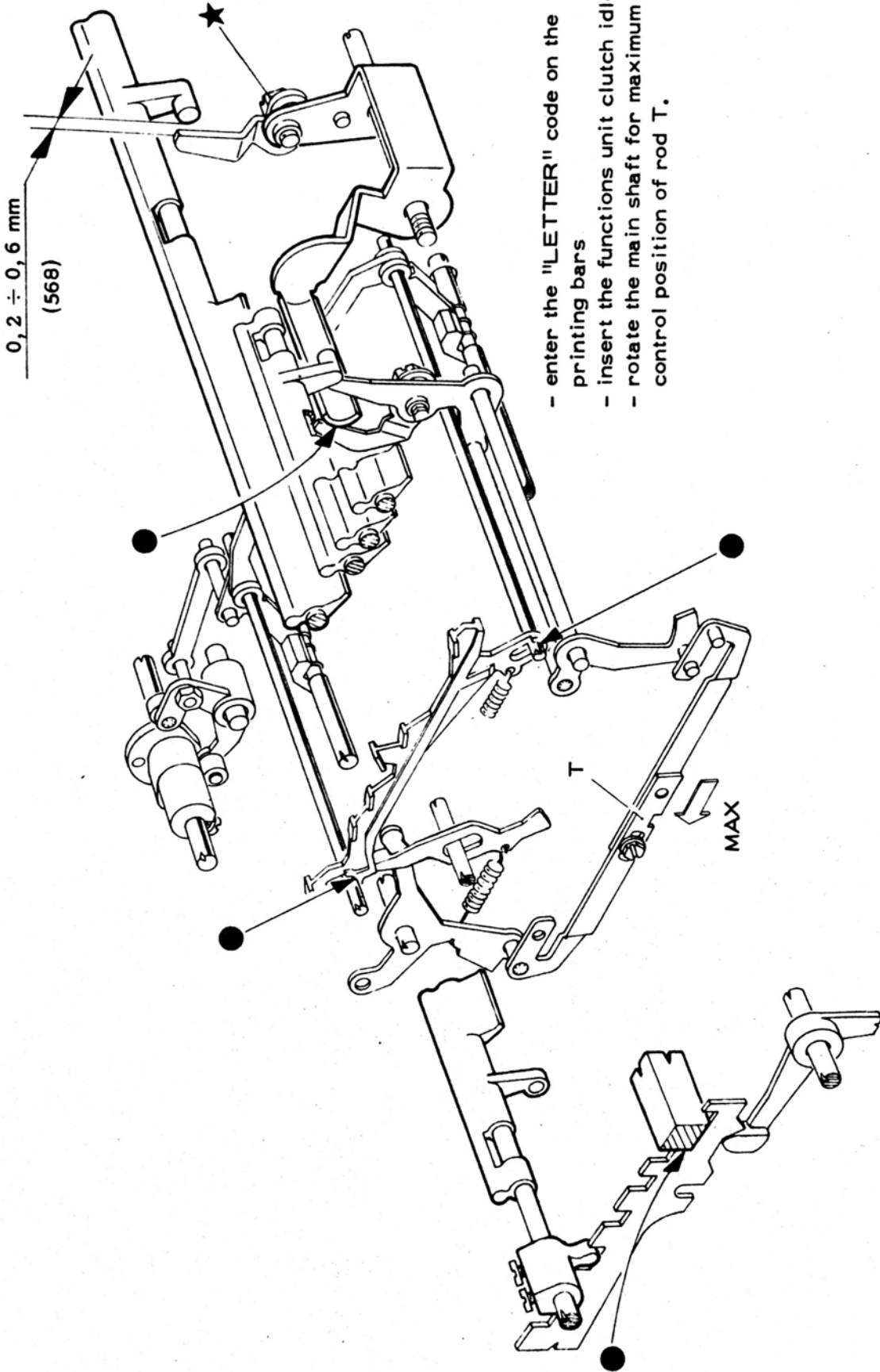


567) CHECK THE POSITION OF THE APPENDIX OF THE TRIPLE EXCHANGE BAR CONTROL BRIDGE



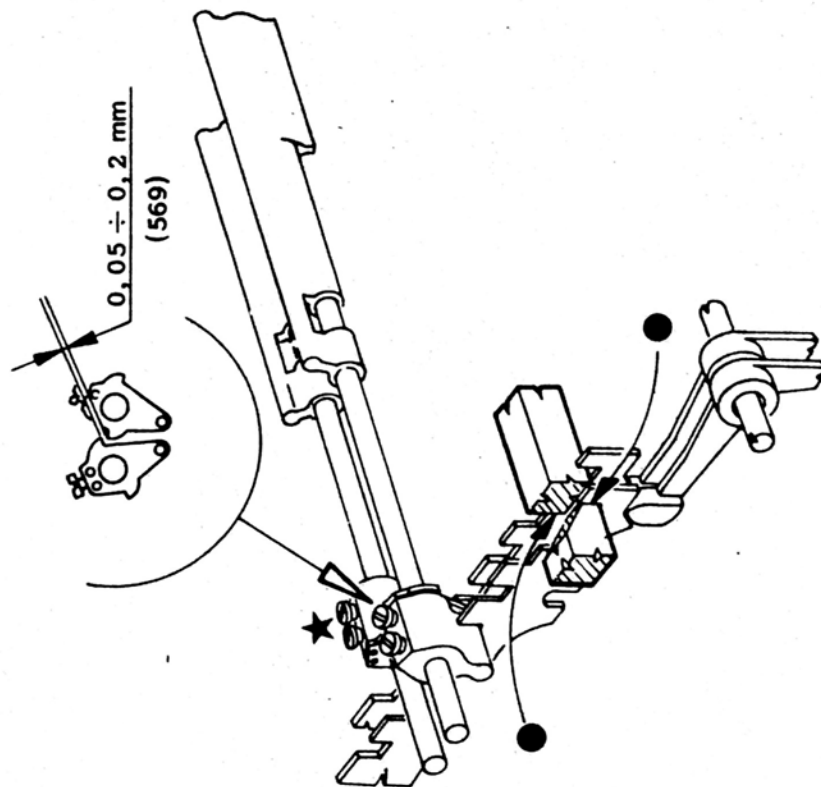
- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of rod T.

568) CHECK THE POSITION OF THE APPENDIX OF THE TRIPLE EXCHANGE BAR CONTROL BRIDGE

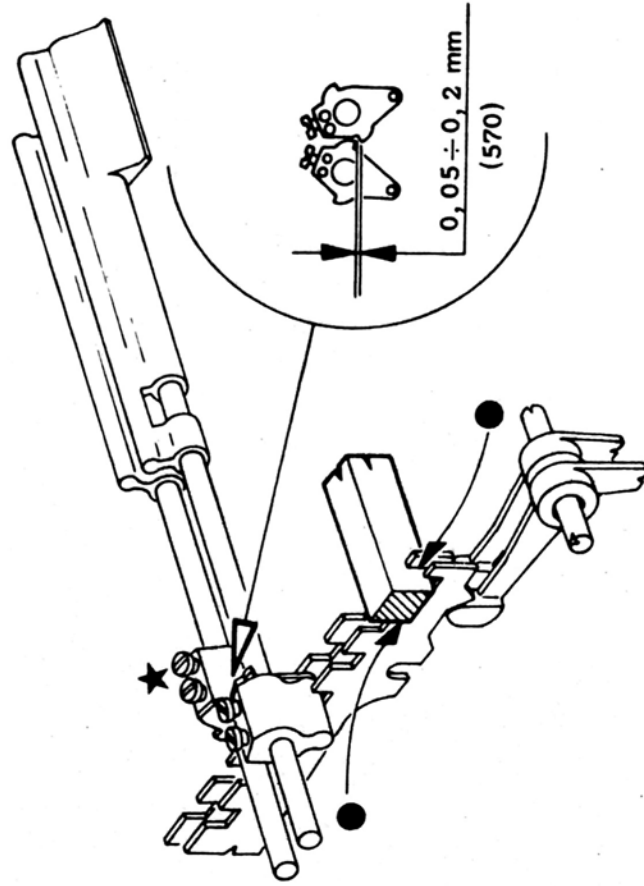


- enter the "LETTER" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of rod T.

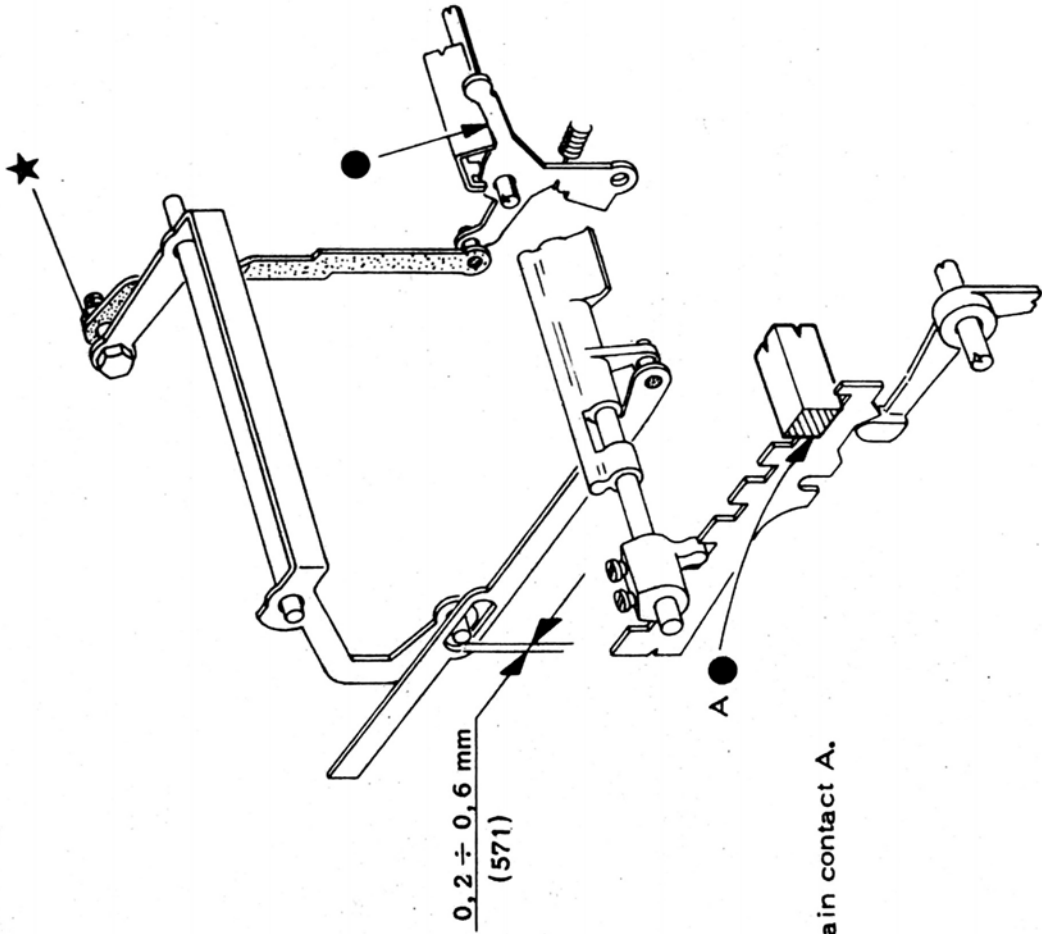
569) CHECK THE POSITION OF THE FGR/L TR BAR
CONTROL CRANK BY TRIPLE EXCHANGE BAR



570) CHECK THE POSITION OF THE FGR/L TR BAR
CONTROL CRANK BY TRIPLE EXCHANGE BAR

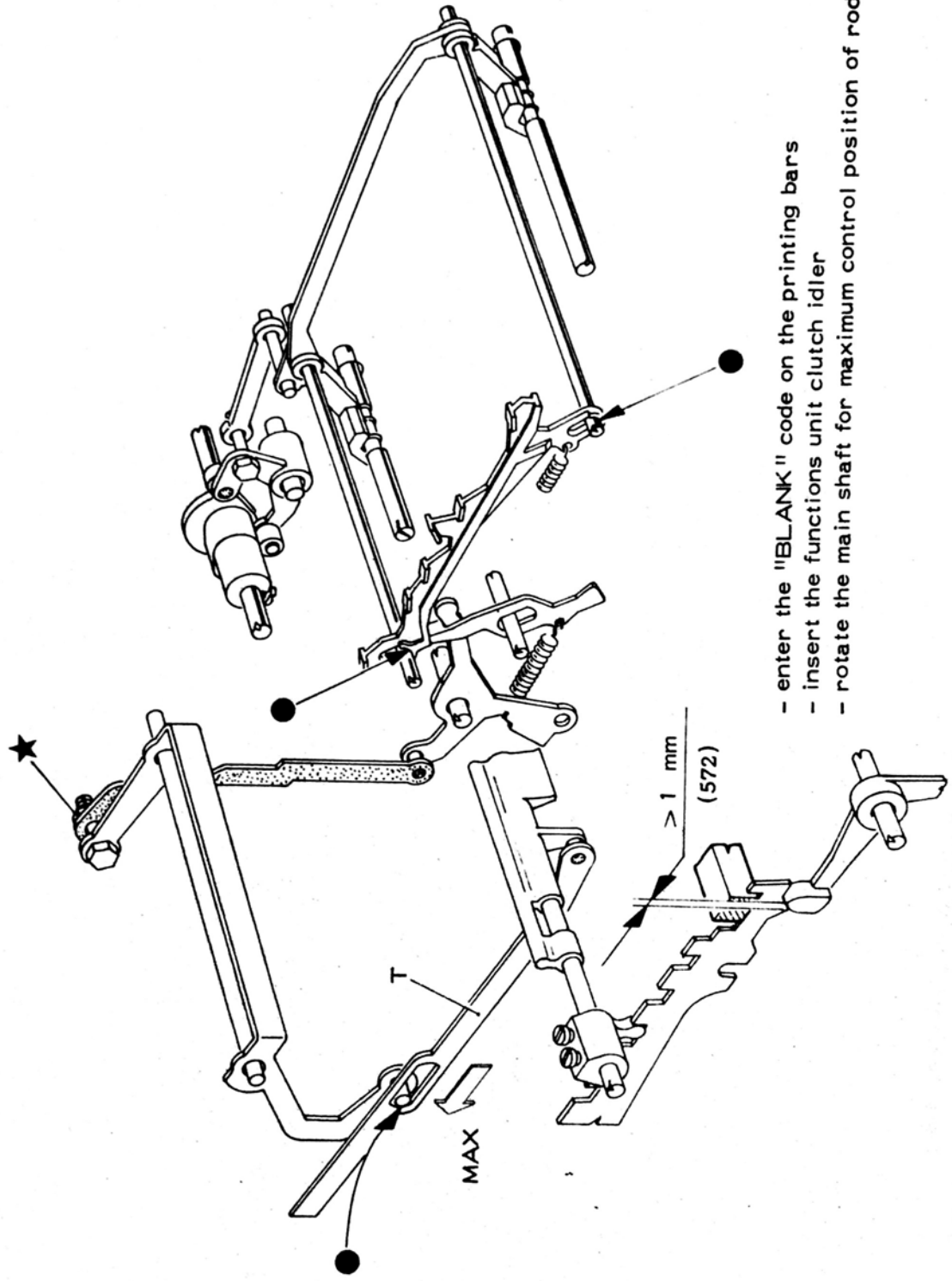


571) CHECK THE POSITION OF THE TRANSMISSION BRIDGE FOR TRIPLE EXCHANGE BAR REVERSAL



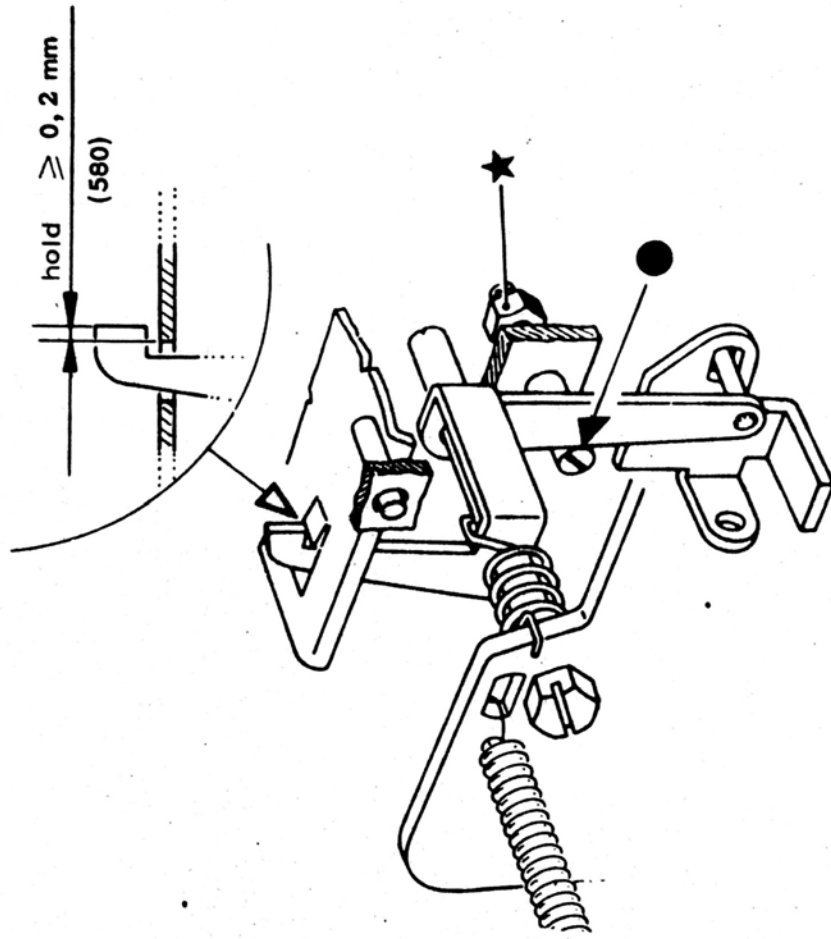
- manually obtain contact A.

572) CHECK THE POSITION OF THE TRANSMISSION BRIDGE FOR TRIPLE EXCHANGE BAR REVERSAL

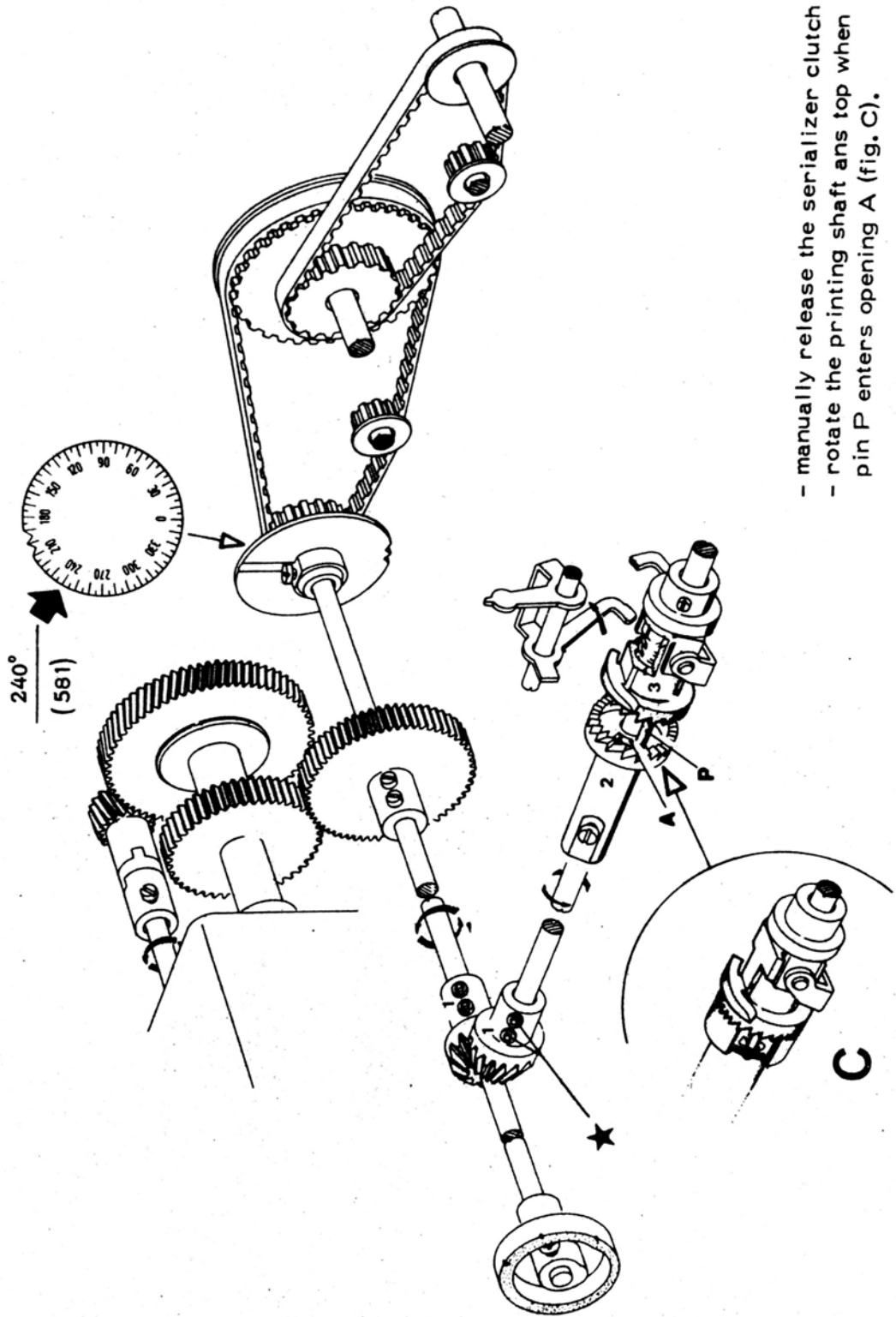


- enter the "BLANK" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of rod T.

580) CHECK THE POSITION OF THE RIBBON HOLDING PLATE

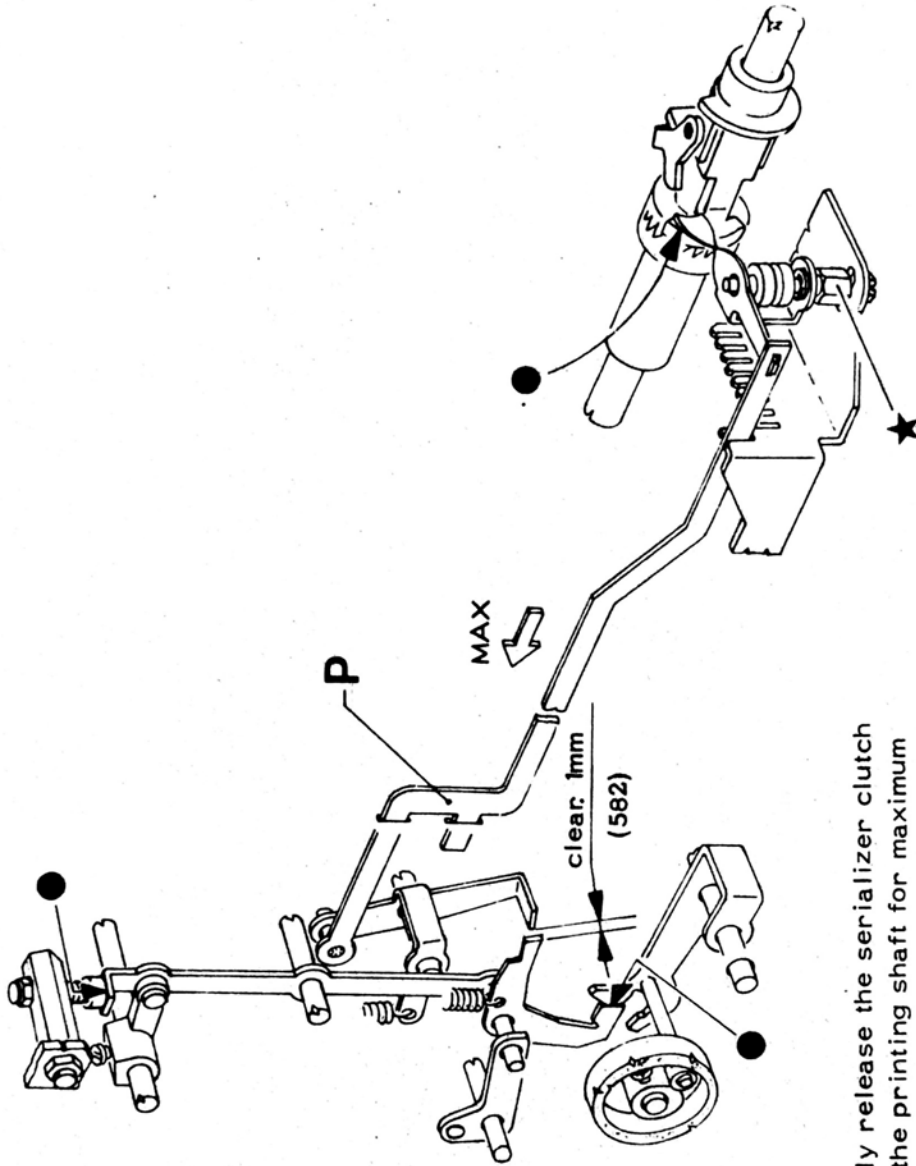


581) CHECK THE TIMING OF THE SERIALIZER CLUTCH



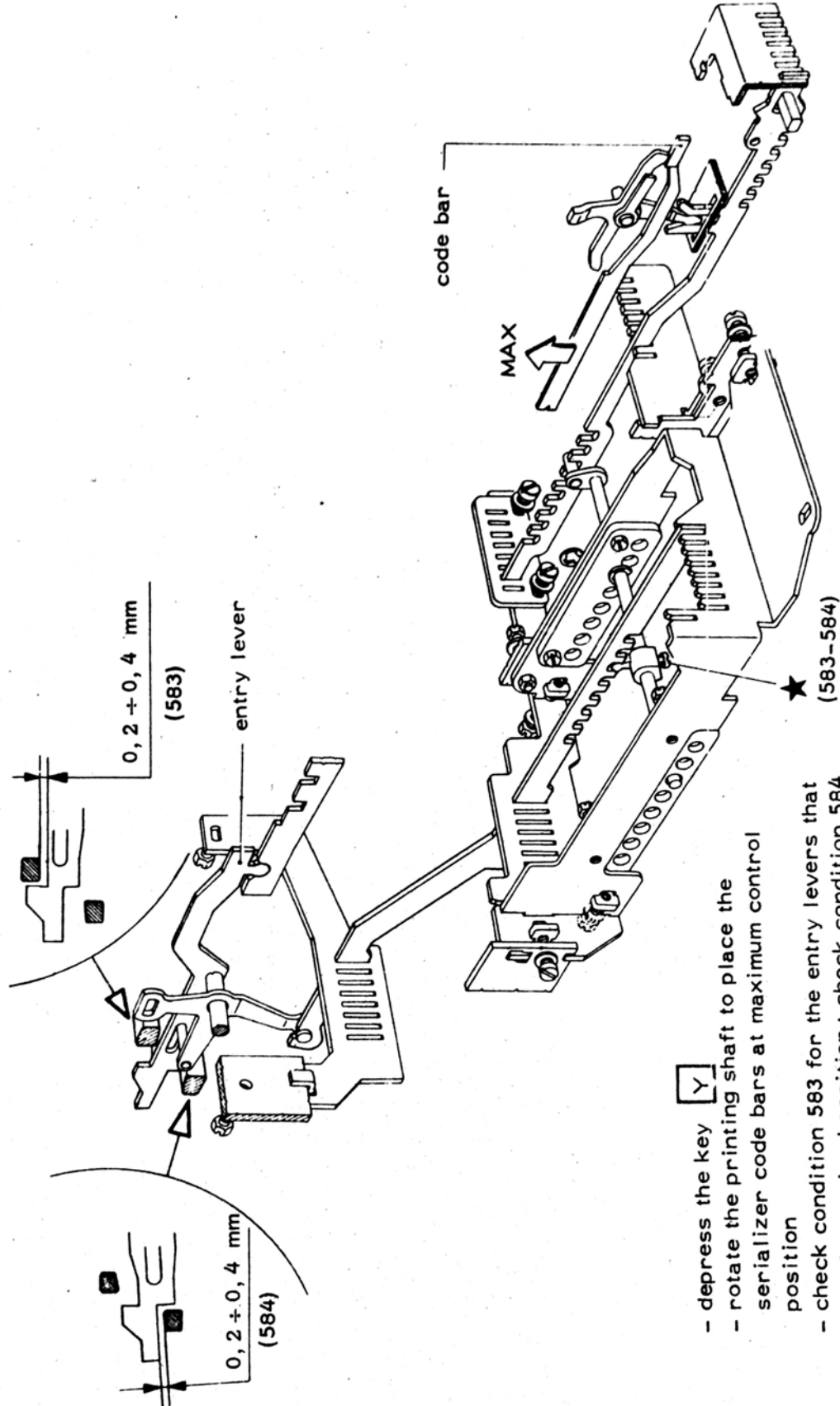
- manually release the serializer clutch
- rotate the printing shaft ans top when pin P enters opening A (fig. C).

582) CHECK THE RELEASE OF THE TRANSFER BY SERIALIZER KINEMATIC



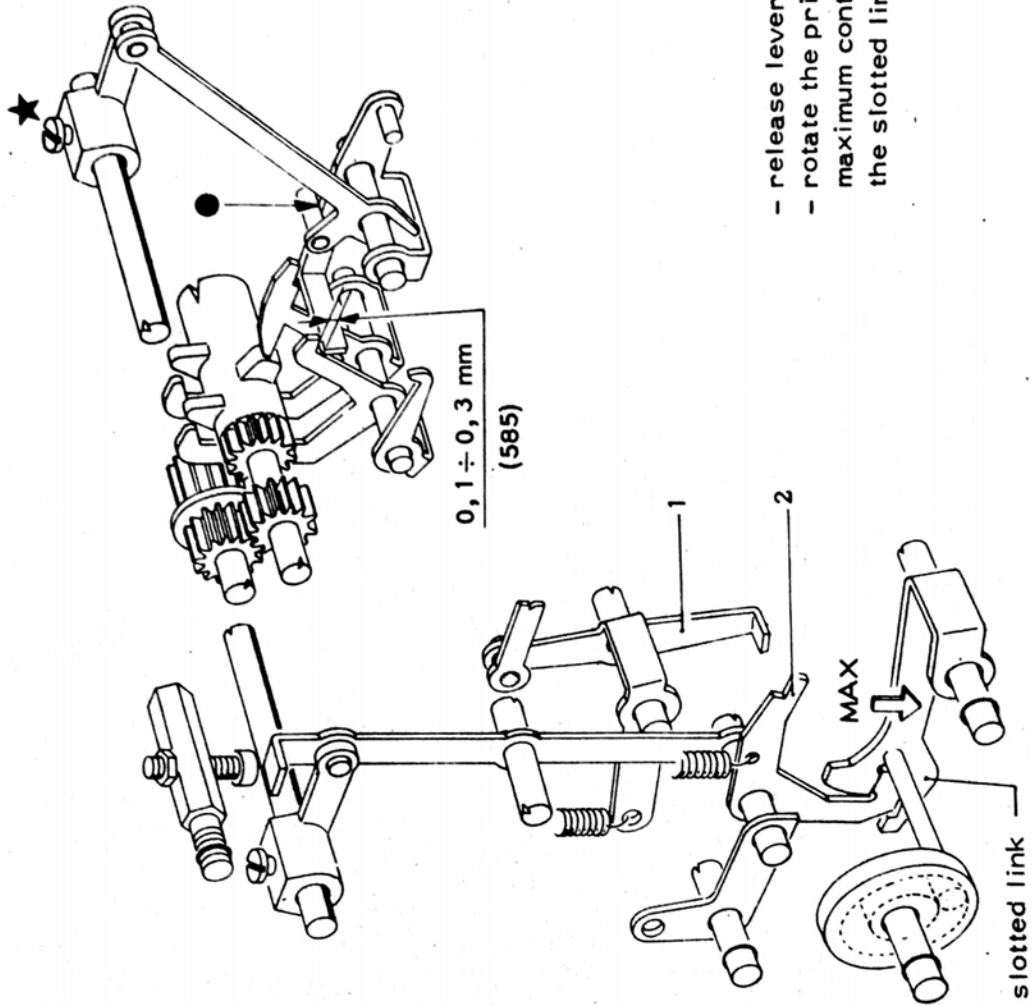
- manually release the serializer clutch
- rotate the printing shaft for maximum control position of link P.

583-584) CHECK THE POSITION OF THE CODE ENTRY LEVERS



- Y
- depress the key
 - rotate the printing shaft to place the serializer code bars at maximum control position
 - check condition 583 for the entry levers that are in a raised position; check condition 584 for the levers that are in a lowered position.

585) CHECK THE TIMER CLEARING



- release lever 1 from hook 2
- rotate the printing shaft for maximum control position of the slotted link

DEVICES

This chapter deals with:

SERVICE CABLE and CANNON PLUG	5.01
"POSTE ITALIA" SERVICE CABLE	" 5.02
ELECTRIC OUTS with REED SWITCH	" 5.03-5.04
ELECTRIC OUTPUTS with MICROSWITCH	" 5.05-5.06

DEVICES:

Refer.	TL 315	Re 315	Te 315	name	page
D001		X	X	"Paper roll end near" indicator	5.07+5.14
D002		X	X	"Paper tape end near" indicator	5.15+5.17
D003		X	X	"Motor in motion" indicator	5.18
D004		X	X	"Motor at rated" speed" indicator (replaced by D024)	—
D005			X	"Reader end of paper tape" indicator	5.19-5.20
D011		X	X	"Torn paper or end of paper" indicator	5.21+5.24
D012			X	Electrically commanded reader stop (replaced by D022)	—
D013			X	"Automatic reply in motion" indicator	5.25-5.26
D014			X	"Taut paper tape and reader in motion" indic.	5.27+5.29
D022			X	Reader stop by correspondent	5.30+5.32
D024		X	X	"Motor at rated speed" indicator	5.33+5.36
D030			X	Total keyboard lock	5.37-5.38
D032			X	Electrically commandend tape punch inclu- sion and exclusion	5.39-5.40
D033			X	Electrically commanded reader start	5.41-5.42
D046	X		X	Vertical jump - SE 335/1 reader drive	5.43-5.54
D130	X	X	X	Reading light	5.55-5.56
D202			X	48V telegraphic power supply (replaced by D212)	—
D203			X	60V telegraphic power supply (replaced by 213)	—
D212			X	48V telegraphic power supply	5.58+5.64
D213			X	60V telegraphic power supply	5.58+5.64

CANNON PLUG SERVICES

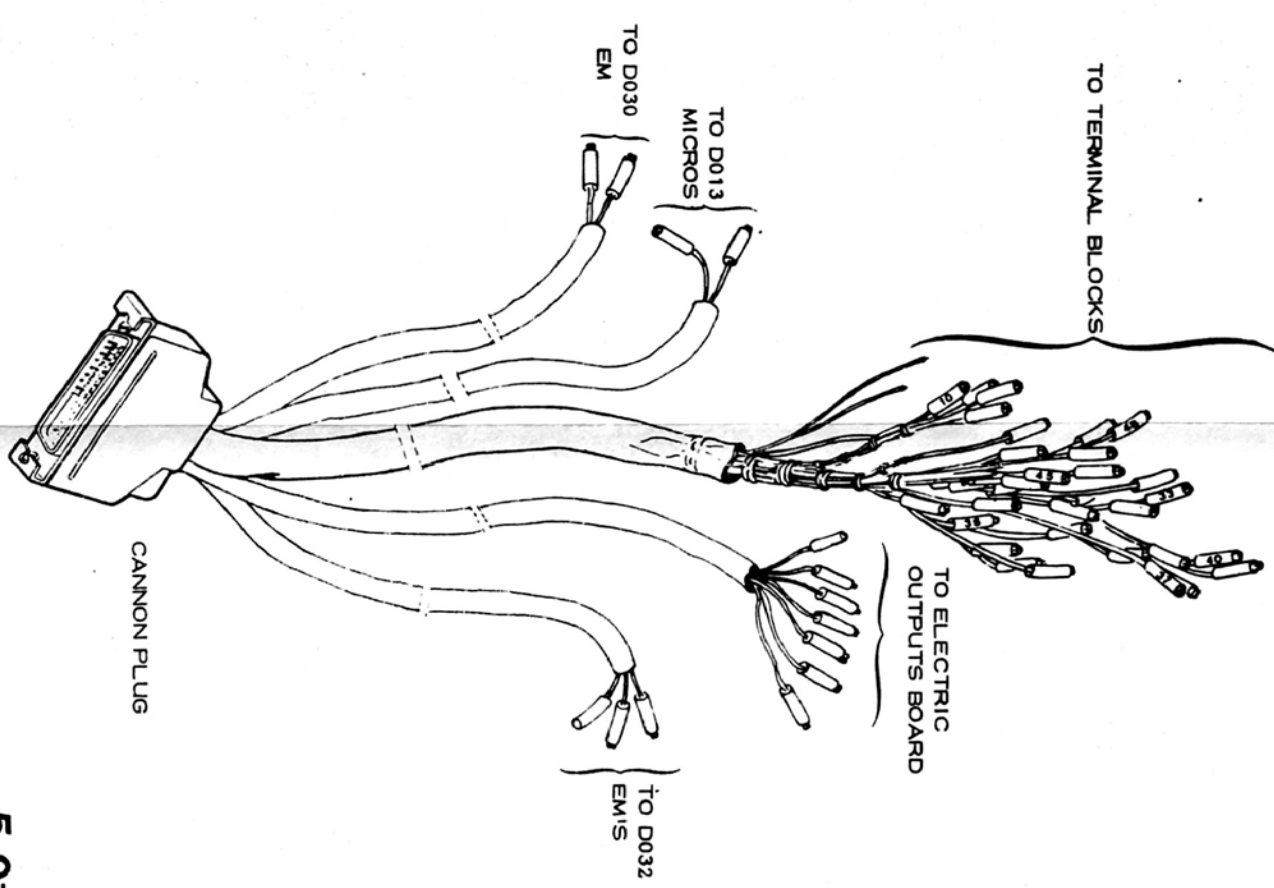
DEVICES	CANNON PLUG	DESTINATION	SERVICE NAME
D. 001	1	M4 - 45	Paper roll and near ^a indicator
D. 008	2	M4 - 46	Tape end near on inserted tape punch ^a indicator
D. 003	3	M4 - 37	Motor in motion ^a indicator
D. 011	4	M4 - 42	Form paper ^a indicator
D. 033	5	M5 - 55	Electrically commanded reader start
D. 033	6	M8 - 56	Electrically commanded reader start
R.M.	7	R.M. Point ⁷	Motor relay
R.M.	8	R.M. Point ⁸	Functions electric outputs ^a relative to
UEF	9	PUE	automatic reply
UEF	10	PUE	Functions electric outputs ^a relative to
UEF	11	PUE	Functions electric outputs ^a relative to
UEF	12	PUE	the reader start
D. 030	13	PBTT	Functions electric outputs ^a relative to
D. 030	14	PBTT	the bell
D. 014	15	M5 - 73	Total keyboard lock
D. 014	16	M5 - 75	Indicator
D. 014	17	M5 - 74	Taut tape and reader in motion on inserted reader ^a indicator
D. 001	18	M4 - 44	Taut tape and reader in motion on inserted reader ^a indicator
D. 002	19	M4 - 47	Paper roll end near ^a indicator
D. 003	20	M4 - 38	Tape end near on inserted tape punch ^a indicator
D. 011	21	M4 - 40	Motor in motion ^a indicator
N.U.	22	M4 - 69	Form paper ^a indicator
N.U.	23	M4 - 70	Motor in motion ^a indicator
N.U.	24		Form paper ^a indicator
N.U.	25		Motor in motion ^a indicator
N.U.	26		Form paper or end of paper ^a indicator
N.U.	27		Reader stop by correspondent ^a
N.U.	28		Reader stop by correspondent ^a
N.U.	29		Reader stop by correspondent ^a
N.U.	30		Motor in motion ^a indicator
N.U.	31		Form paper or end of paper ^a indicator
D. 005	32	M4 - 71	Motor in motion ^a indicator
D. 005	33	M4 - 72	Form paper or end of paper ^a indicator
D. 001	34	M4 - 43	Motor in motion ^a indicator
D. 002	35	M4 - 48	Tape end near tape punch on inserted ^a indicator
D. 003	36	M4 - 39	Motor in motion ^a indicator
D. 011	37	M4 - 41	Form paper or end of paper ^a indicator
D. 022	38	M3 - 9	Reader stop by correspondent ^a
D. 022	39	M2 - 33	Reader stop by correspondent ^a
D. 022	40	M2 - 33	Reader stop by correspondent ^a
N.U.	41		Motor in motion ^a indicator
N.U.	42		Form paper or end of paper ^a indicator
N.U.	43		Motor in motion ^a indicator
N.U.	44		Form paper or end of paper ^a indicator
D. 032	45		Motor in motion ^a indicator
D. 032	46		Form paper or end of paper ^a indicator
D. 032	47		Motor in motion ^a indicator
D. 032	48		Form paper or end of paper ^a indicator
D. 013	49	MRAM	Motor in motion ^a indicator
D. 013	50	MGRAM	Form paper or end of paper ^a indicator

NOTE 1 a - If pins 43-44-45 are respectively connected to points 66-65-67 of M1, the relative service cable is S016 and the devices are D212 and D213.

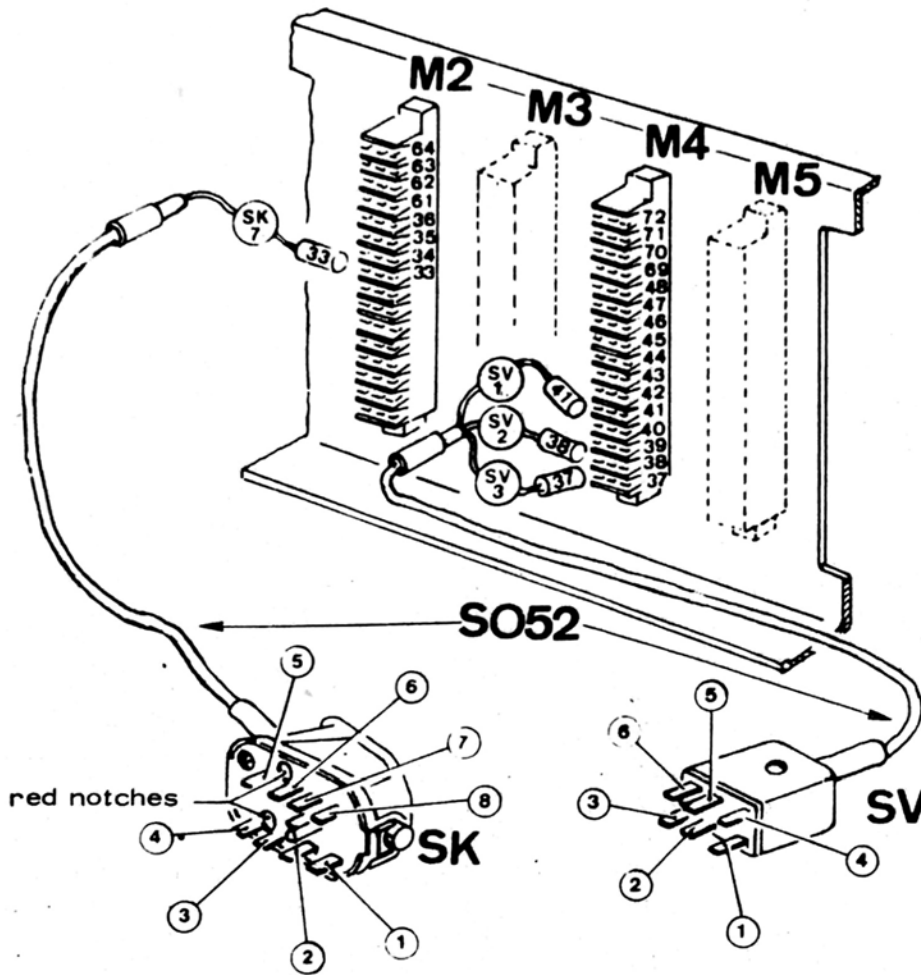
b - If the pins are missing or are connected to the electric outputs board through the electric outputs cable, the relative service cable is S015. Even if these pins are present on the TE 315's, they are not utilized.

NOTE 2 - Connectors with wire marker sleeve with letter, connected to the "Functions Electric Outputs" print-out board.

SERVICE CABLE AND CANNON PLUG (see note 1)



"POSTE ITALIA" SERVICE CABLE (S052)



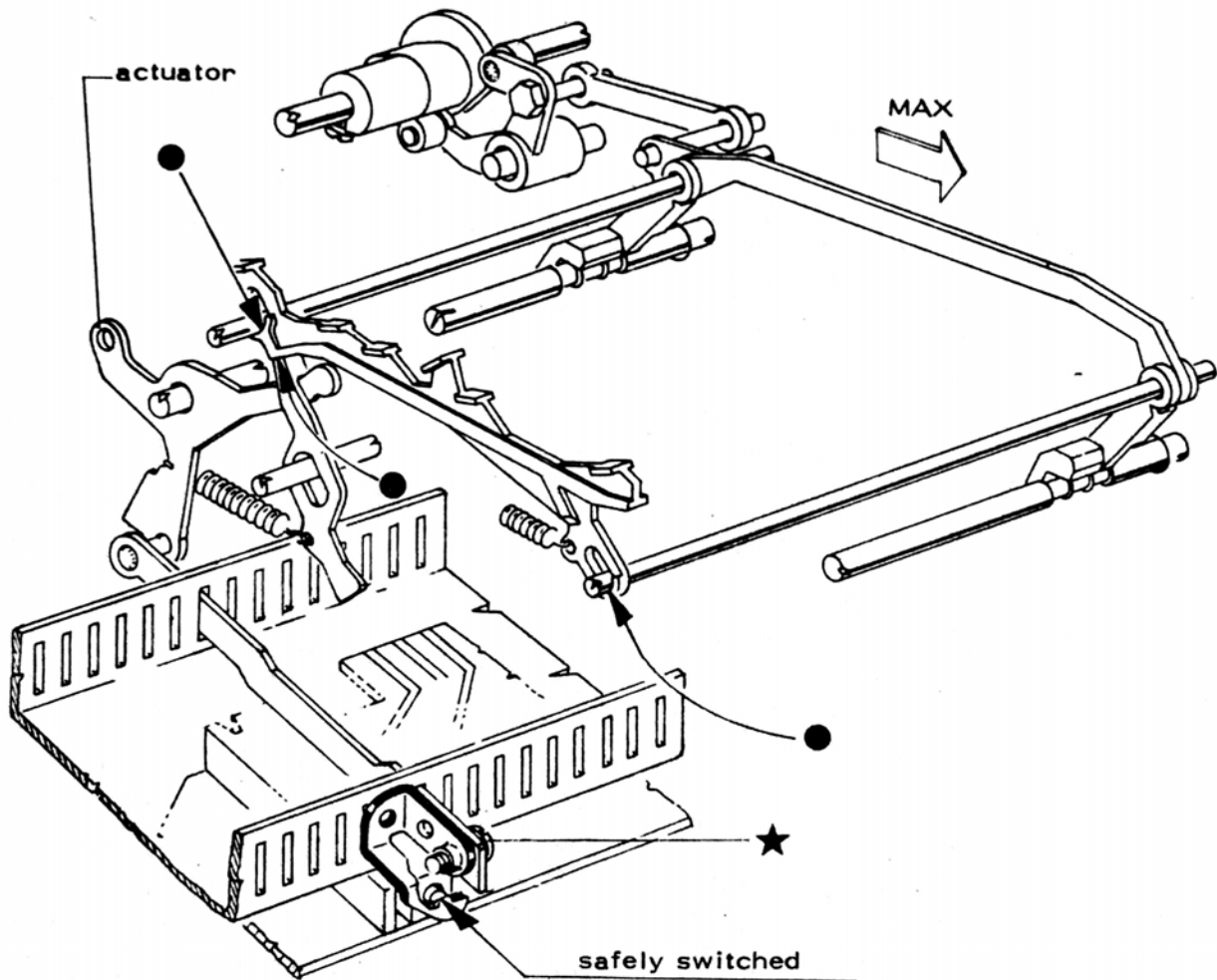
KUKE PLUG (SK)

Pin	Bridging	Service
1		Warning signal
2		
3		
4		
5		
6		
7		
8		

VEAM PLUG (SV)

Pin	Bridging	Service
1		
2		
3		
4		
5		
6		

**1) CHECK THE LOCKING POSITION OF THE DRY-REED CONTROLLING
BLADE**

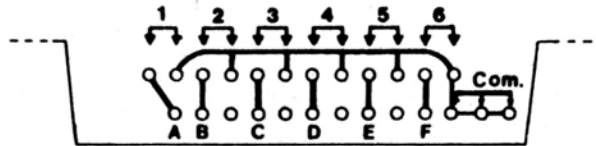


(1)

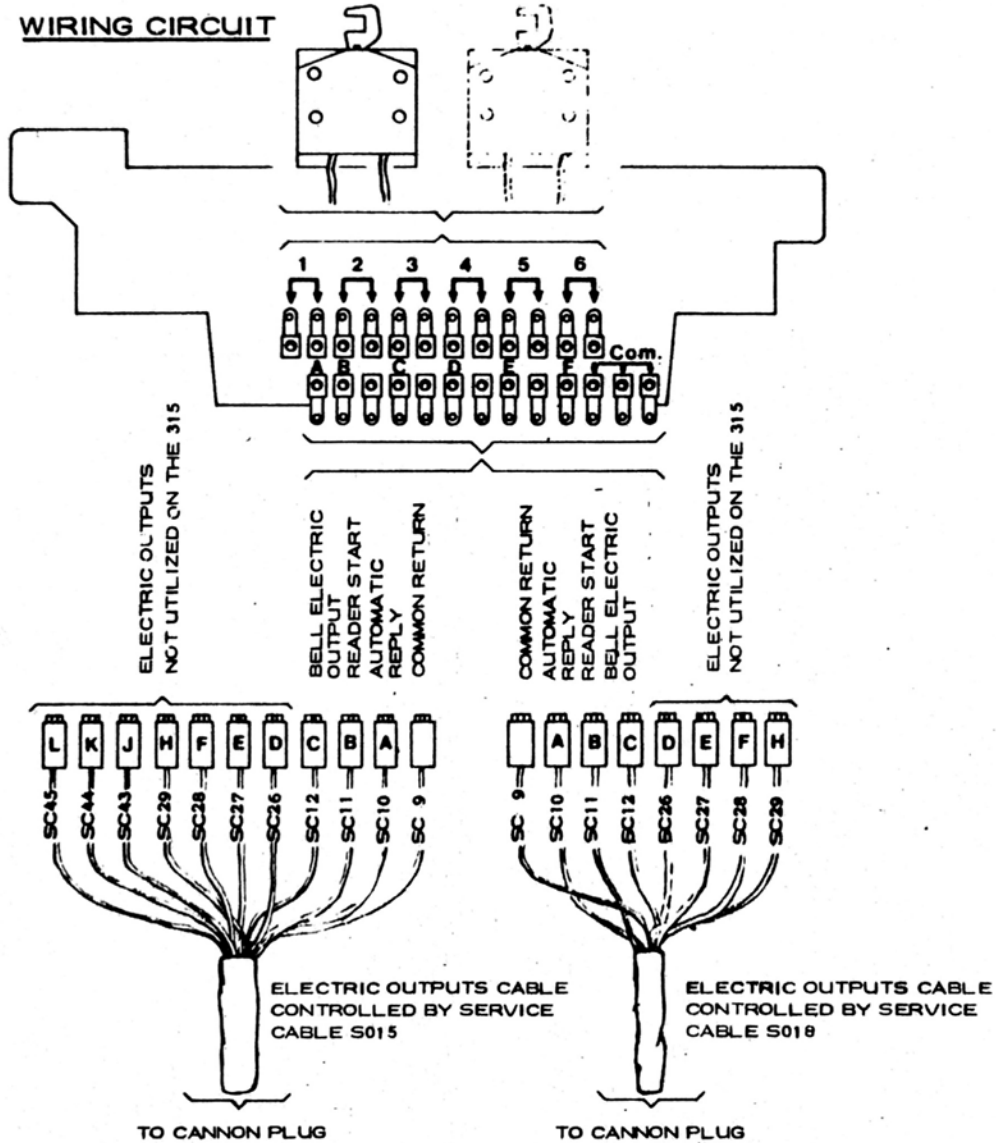
- enter on the code bars the sequence or the code relative to the electric output to be checked
- release the functions clutch
- rotate the main shaft for maximum control position of the actuator.

FUNCTIONS ELECTRIC OUTPUTS WITH MICROSWITCHES

BOARD CIRCUIT



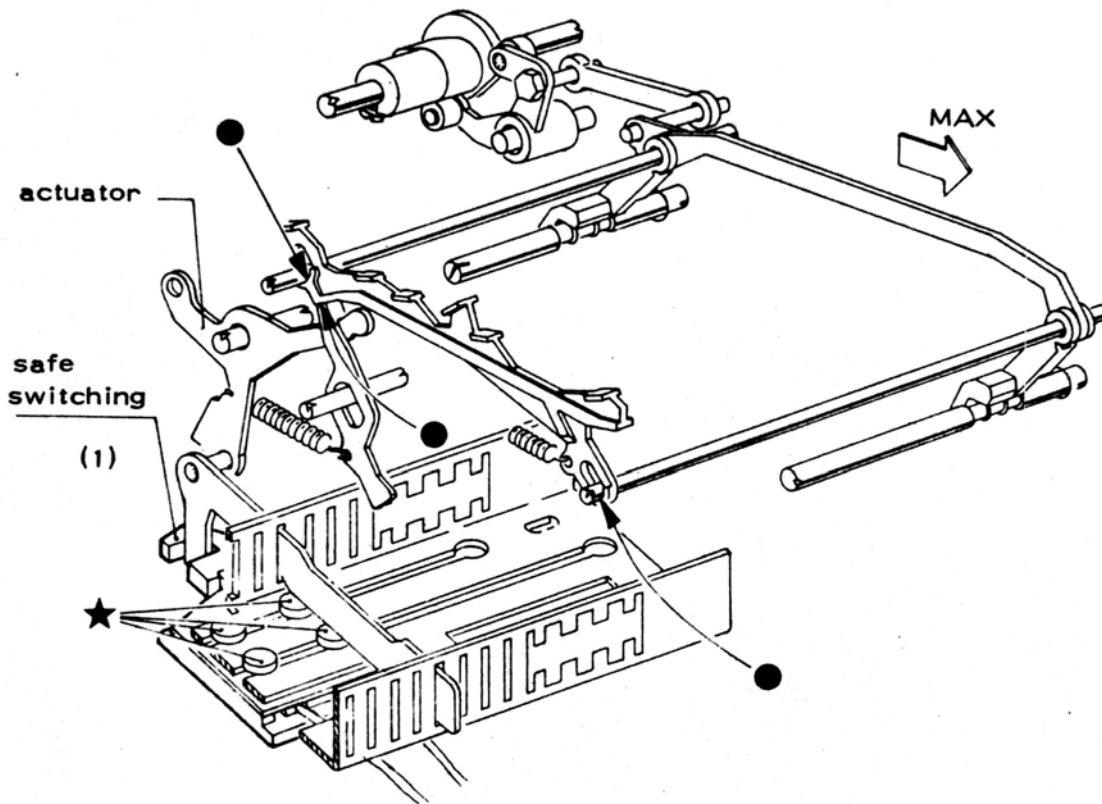
WIRING CIRCUIT



NOTES:

- 1) - The functions electric outputs" cable fastons are connected to the board terminals in the position shown on the AT 0037.
- 2) - The "functions electric outputs" cable course follows that relative to service cables S015 - S018.
- 3) - The micro position on the board is shown on the AT 0037.
- 4) - The fastons that are not utilized are connected to terminals that do not interest a micro.
- 5) - If fastons with letters different from those shown, are connected to the micros, consult AT 0037 to clarify the service used.

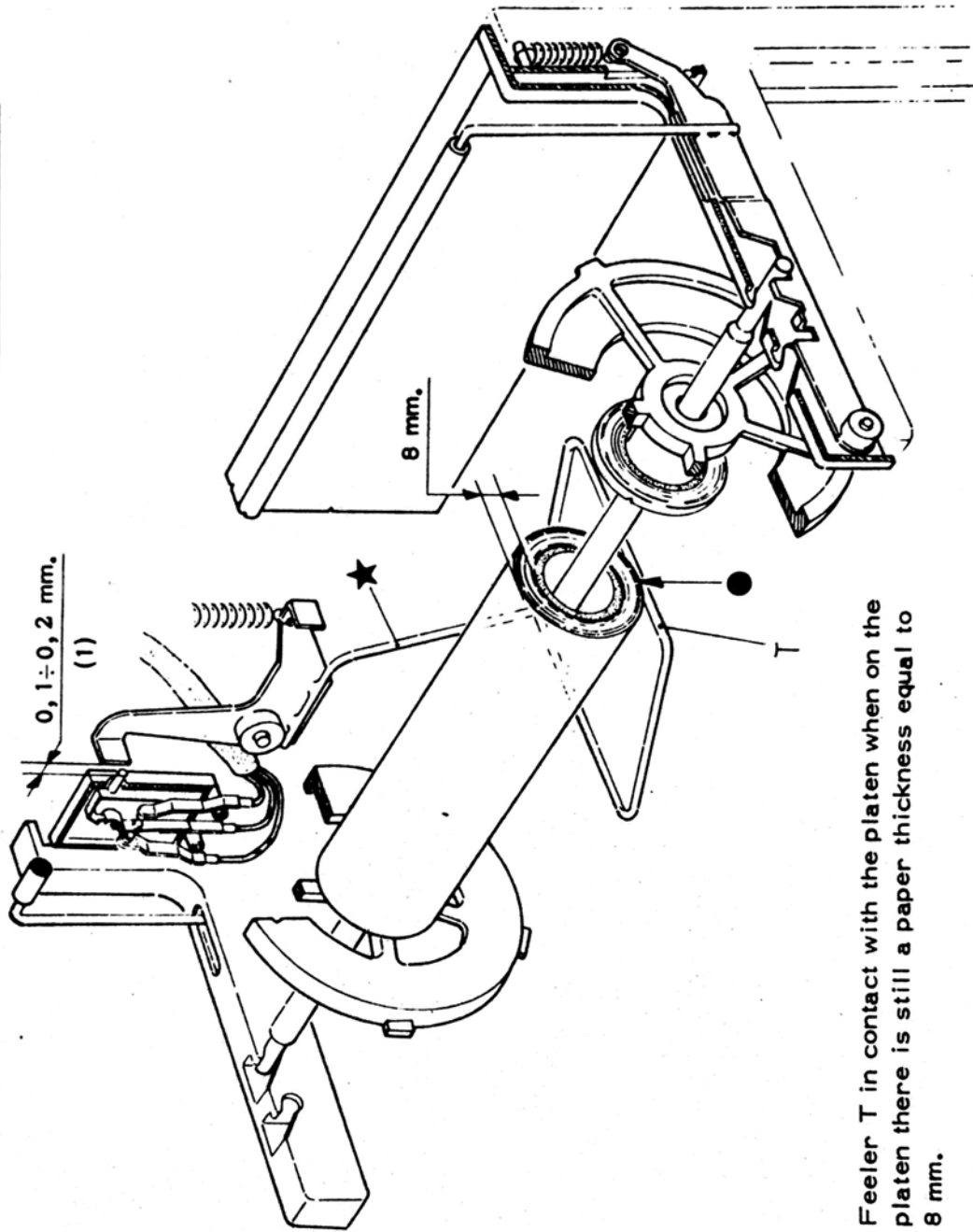
1) CHECK THE MICROSWITCH LOCKING POSITION



- enter on the code bars the sequence or the code relative to the electric output to be checked
- release the functions clutch
- rotate the main shaft for maximum control position of the actuator.

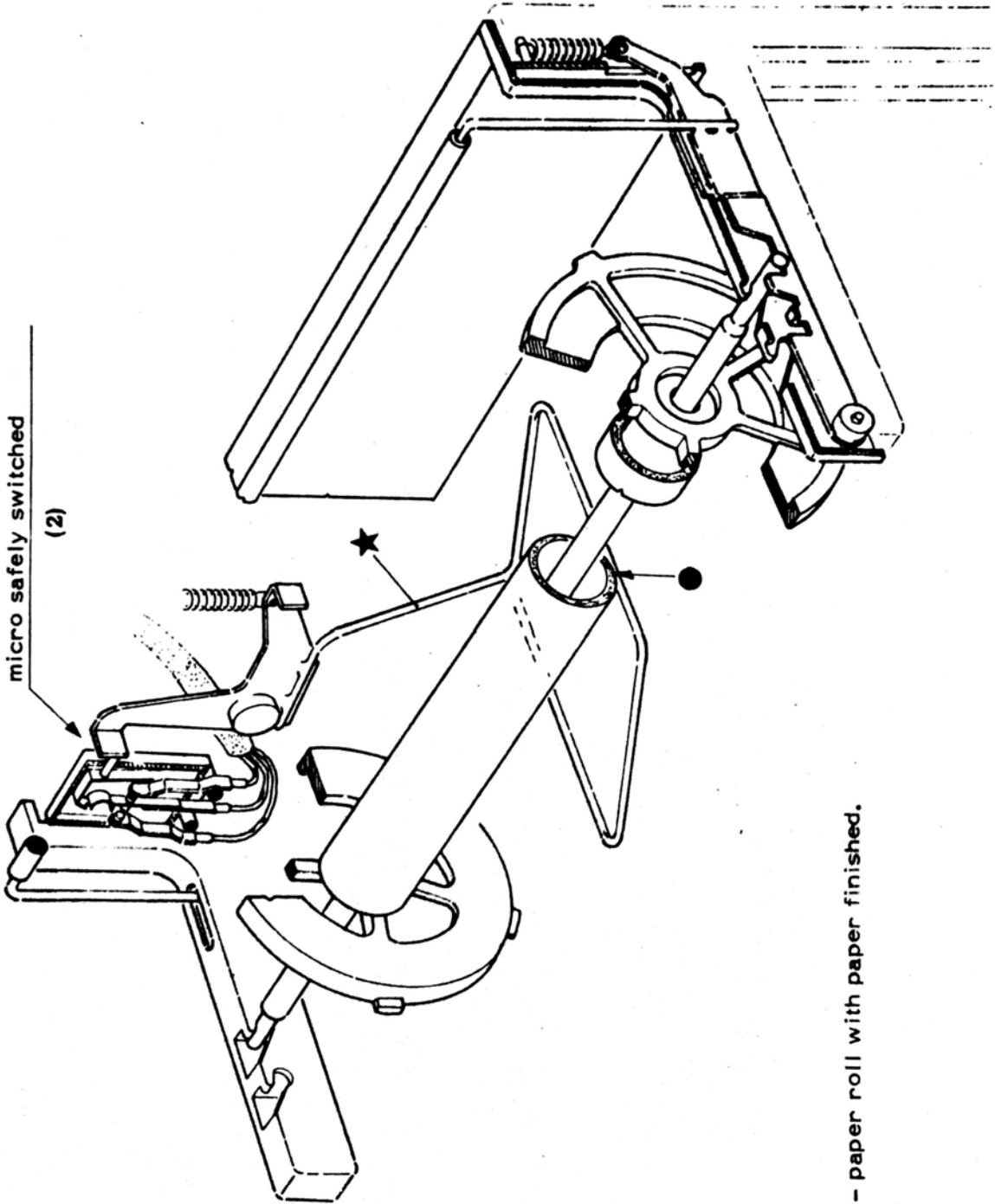
D001 "PAPER ROLL END NEAR" INDICATOR

1) CHECK THE POSITION OF THE END OF PAPER ROLL DEVICE FEELER



Note: Feeler T in contact with the platen when on the platen there is still a paper thickness equal to 6 mm.

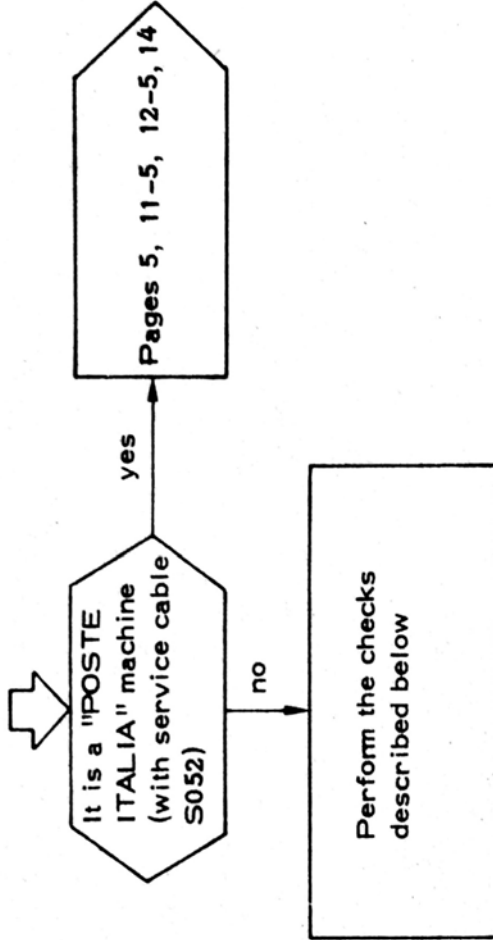
2) CHECK THE POSITION OF THE "END OF PAPER ROLL DEVICE" FEELER



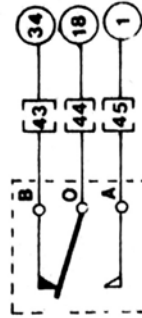
- paper roll with paper finished.

5.09

D001



ELECTRIC CIRCUIT



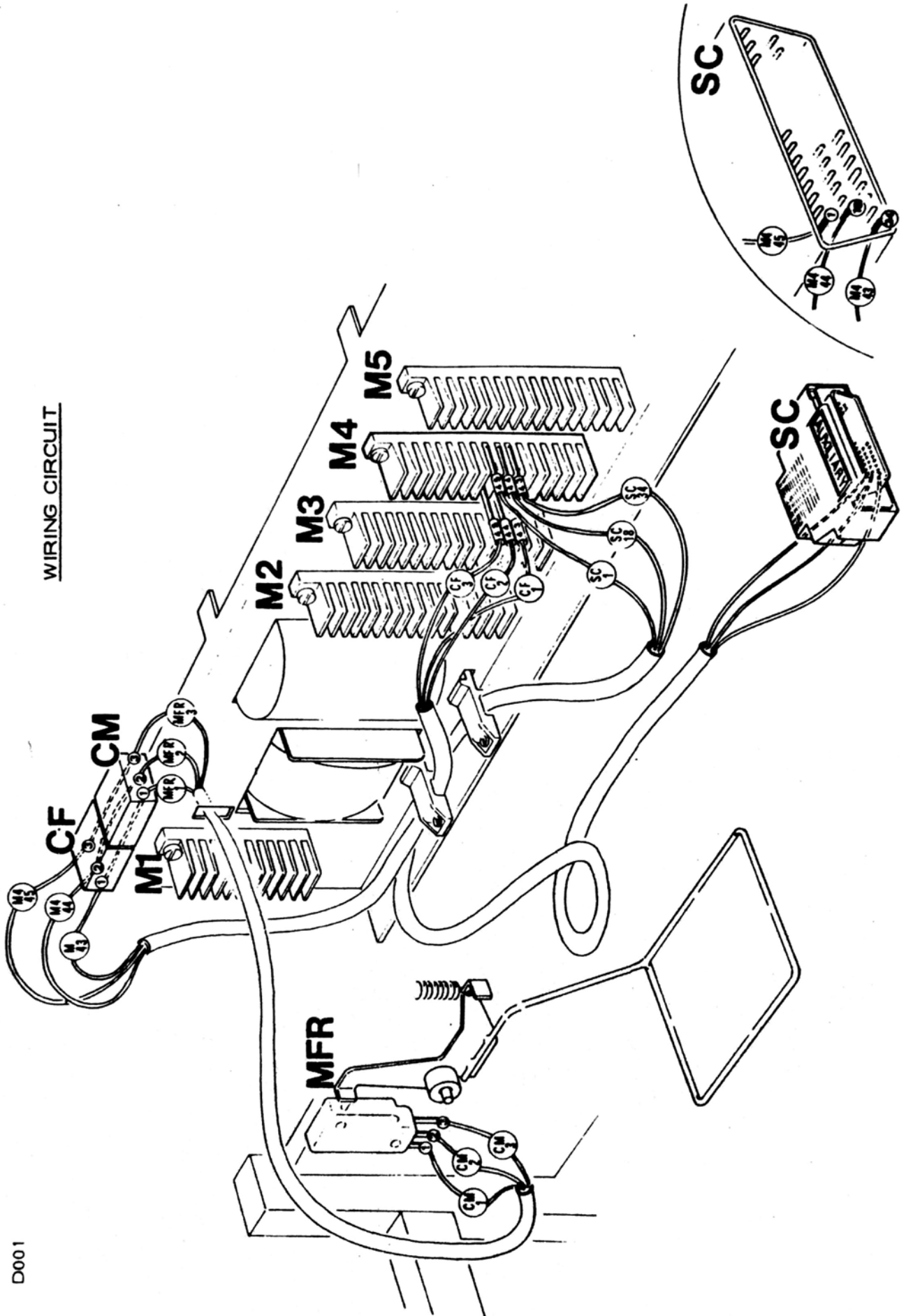
(End of paper roll micro) MFR

ELECTRIC CHECKS

with paper: continuity between points 34 and 18 of CANNON plug (CS)
without paper: continuity between points 1 and 18 of CANNON plug (CS)

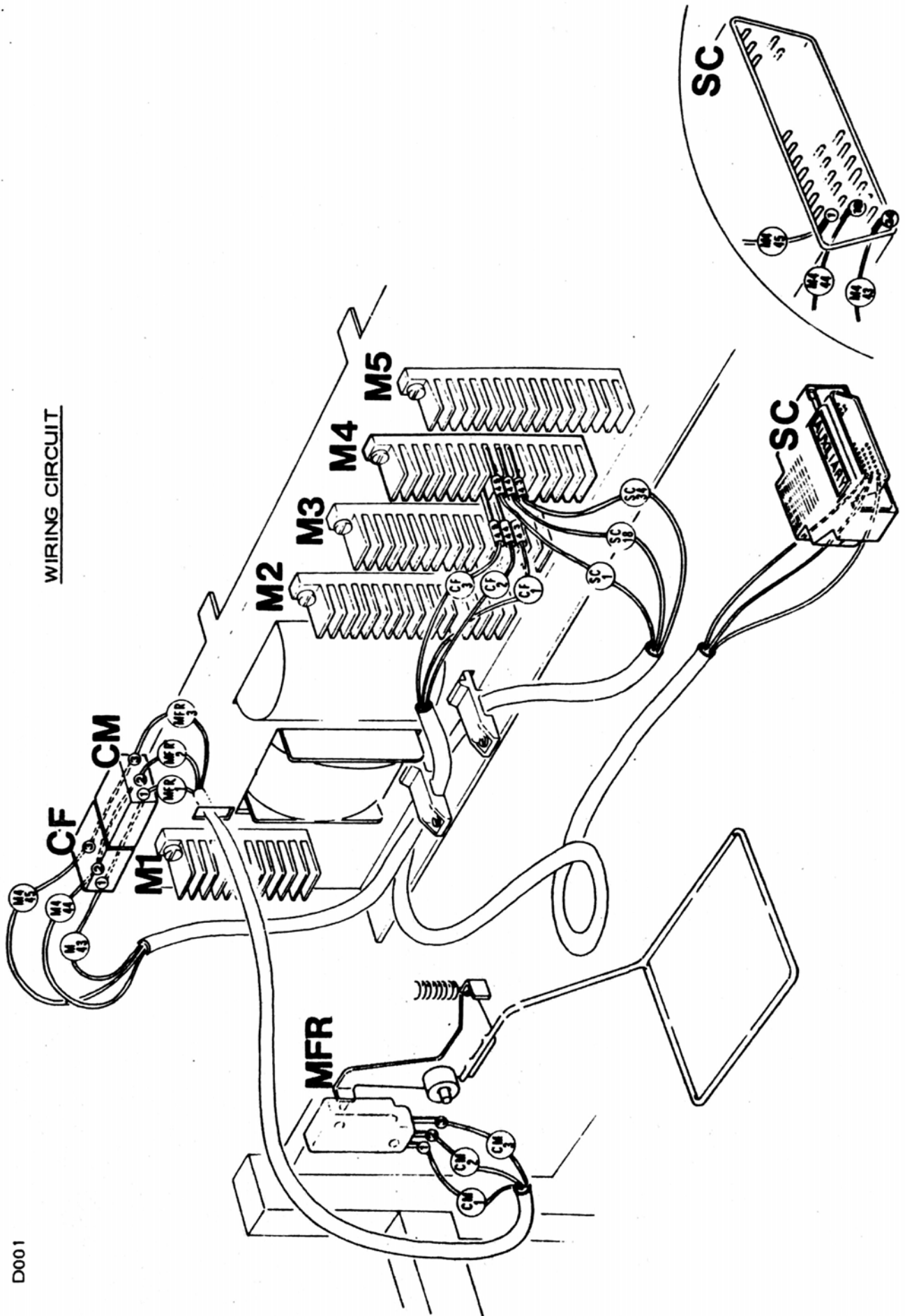
D001

WIRING CIRCUIT



D001

WIRING CIRCUIT



- Perform the mechanical checks relative to D011

ELECTRIC CHECKS FOR "POSTE ITALIA"
MACHINES WITH CABLE S052 (SEE NOTE)

1) CHECK THE END OF PAPER ROLL MICRO : MFR)

- disconnect end [44] of jumper [44] - [39]
- with paper: continuity between points [43] and [44]
- without paper: continuity between points [45] and [44]

2) CHECK THE END OF PAPER MICRO (MFC)

- disconnect end [40] of jumper [40] - [43]
- with not-torn paper: continuity between points 40 and 41
- with torn paper: continuity between points 42 - 40

3) CHECK: D024 MICRO AND BOARD, BALLAST RESISTANCE AND TRANSFORMER

- disconnect end [38] of vean plug
- machine on check the correct motor speed (check 240)

CHECKS PERFORMED WITH MOTOR AT RATED SPEED

check in their order:

- 1) ballast resistance: between points [24] and [12] $V = 15 - 20$ a. c.
- 2) transformer: between points [25] and [26] $V = 24$ V a. c.
- 3) board:

- a) "EM2" electromagnets: at the ends of 30uF C2 condenser $V = 24$ V a. c.
- b) micro: continuity between points [38] - [39]. Turn the machine off and check continuity between points [38] - [37]

CHECKS PERFORMED WITH MOTOR NOT AT RATED SPEED

check in their order:

- 1) ballast resistance: between points [24] and [12] $V = 0$ V a. c.
- 2) transformer: between points [25] and [26] $V = 24$ V a. c.
- 3) board:

- a) "EM2" electromagnets: at the ends of 30uF condenser $V = 0$ V a. c.
- b) "EM2" micro: continuity between points [38] and [37]. If the motor doesn't move at correct speed perform check 240, then check continuity between points [38] and [39] with motor at rated speed.

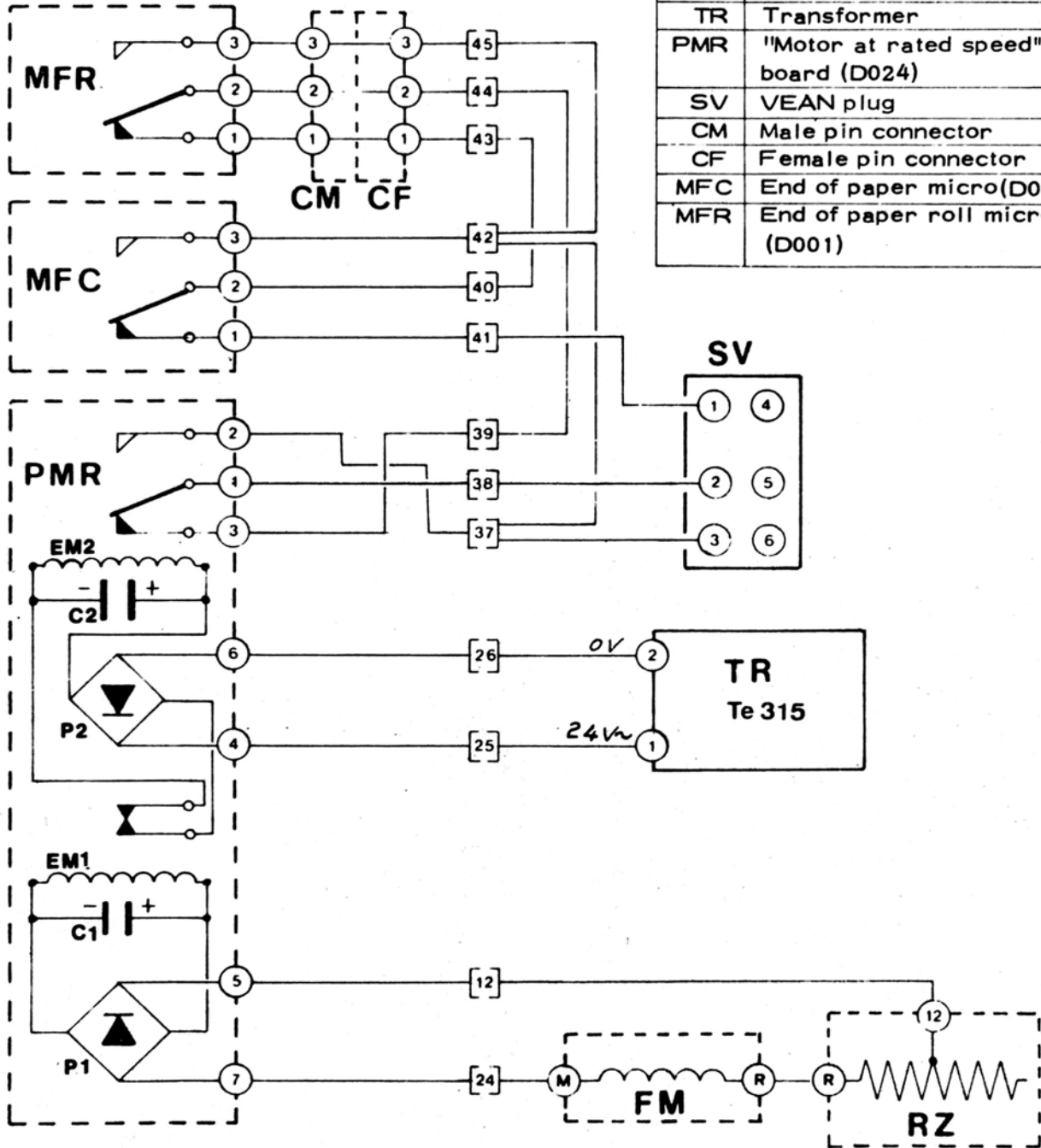
NOTE - In case all three devices have to be assembled, make sure that jumper [39] - [41] does not exist (if it does, remove it) and perform the following bridgings:

$\left. \begin{array}{l} [42] - [45] \quad [40] - [43] \\ [39] - [44] \quad [37] - [42] \end{array} \right\} \text{ on M4}$

For wirings refer to sections D001/D011/D024 and, according to the cable, to sections S015 - S018 or S052.

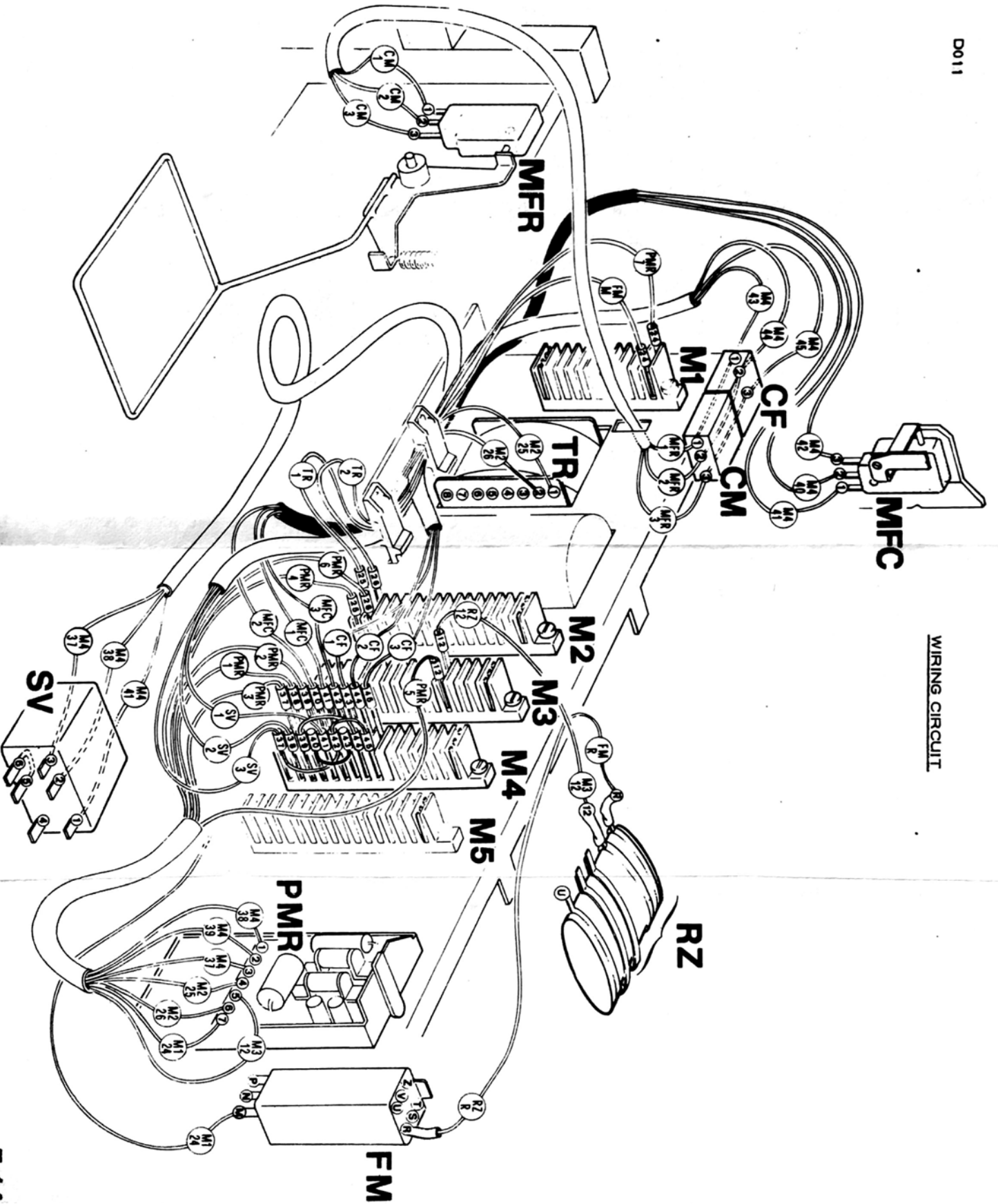
NOTE: on "POSTE ITALIA" machines with cable S052, devices D001-D011 are always assembled simultaneously with D024.

ELECTRIC CIRCUIT



RZ	Ballast resistance
FM	Motor filter
TR	Transformer
PMR	"Motor at rated speed" board (D024)
SV	VEAN plug
CM	Male pin connector
CF	Female pin connector
MFC	End of paper micro(D011)
MFR	End of paper roll micro (D001)

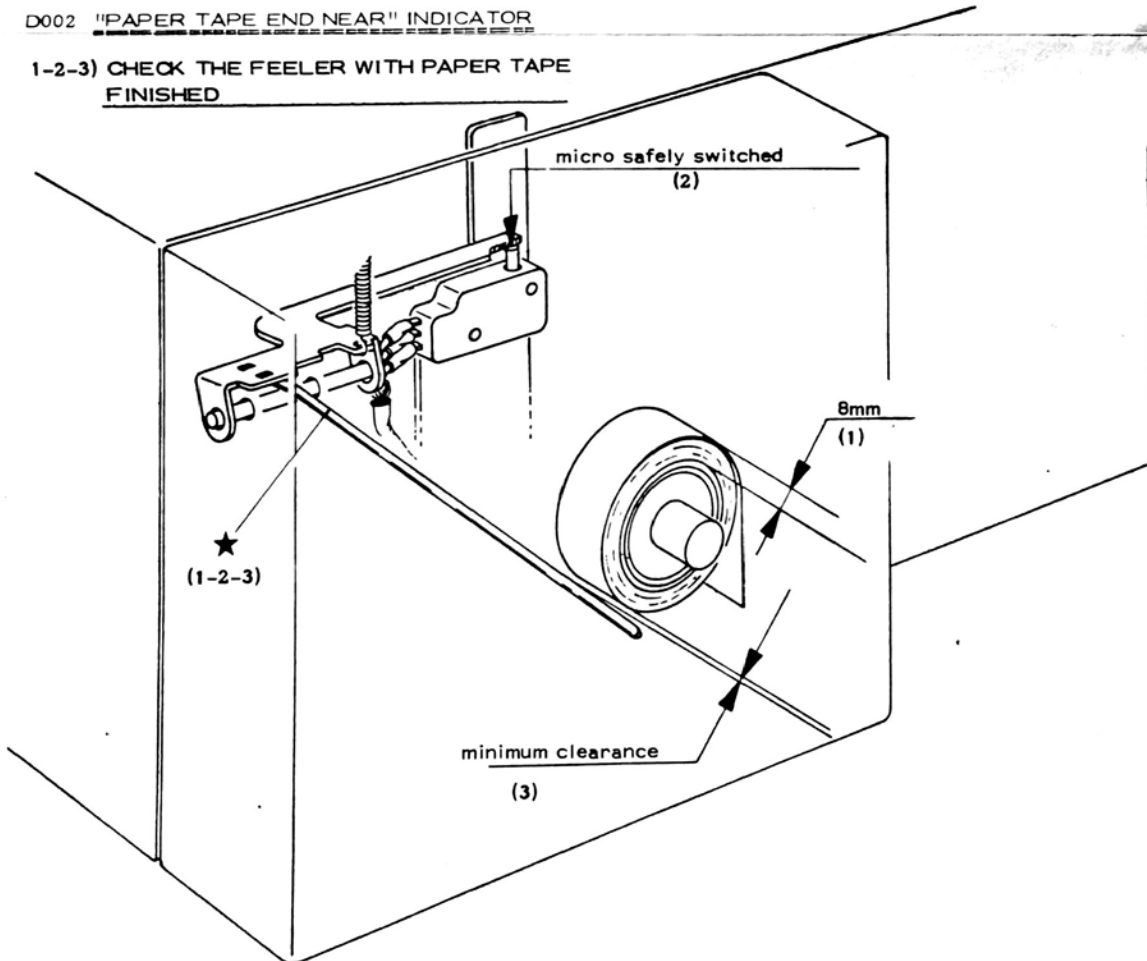
WIRING CIRCUIT



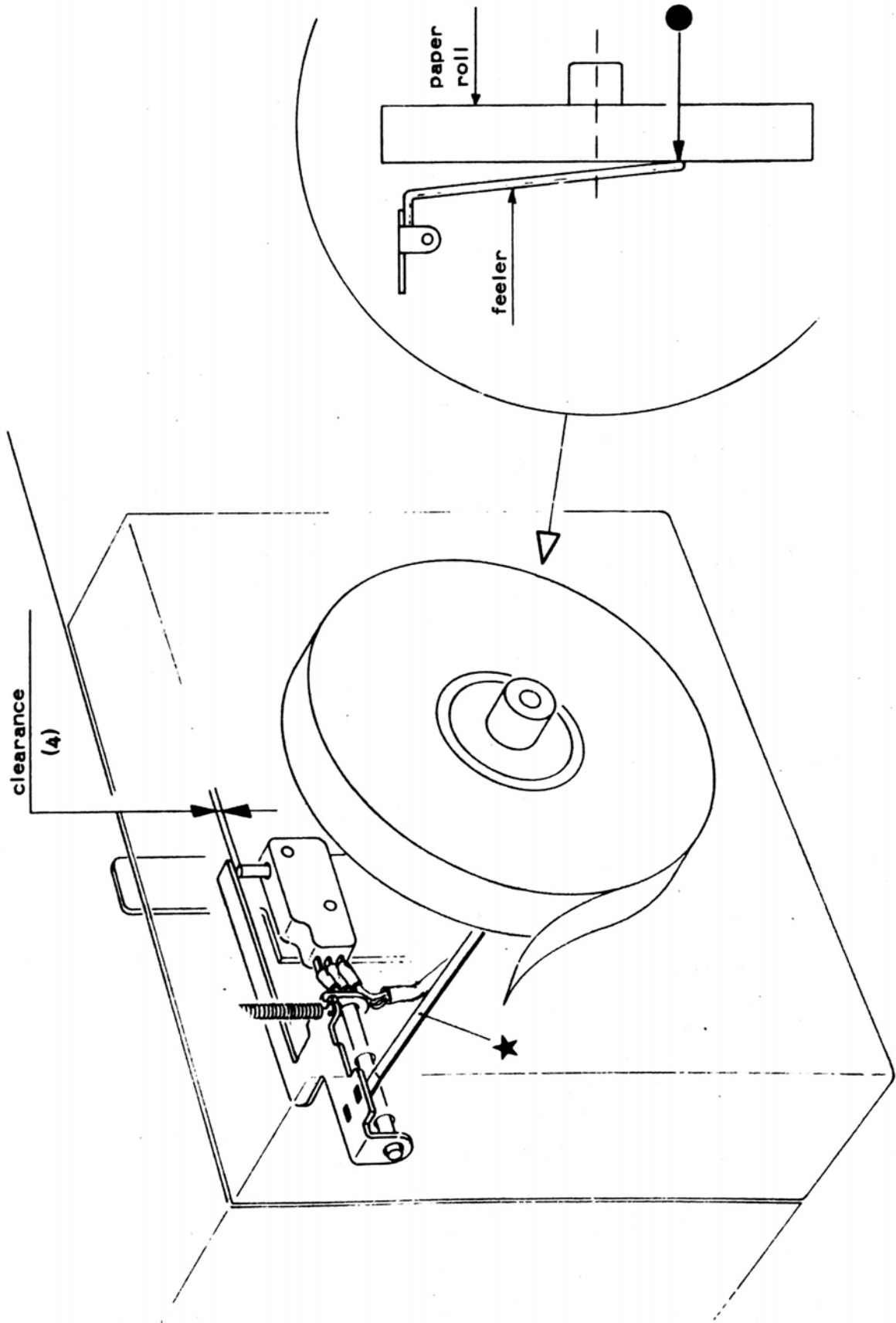
5.15

D002 "PAPER TAPE END NEAR" INDICATOR

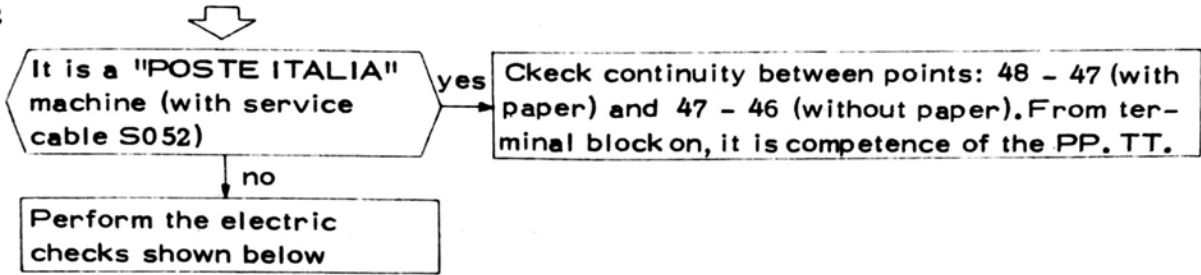
1-2-3) CHECK THE FEELER WITH PAPER TAPE
FINISHED



4) CHECK THE FEELER WITH NEW PAPER ROLL

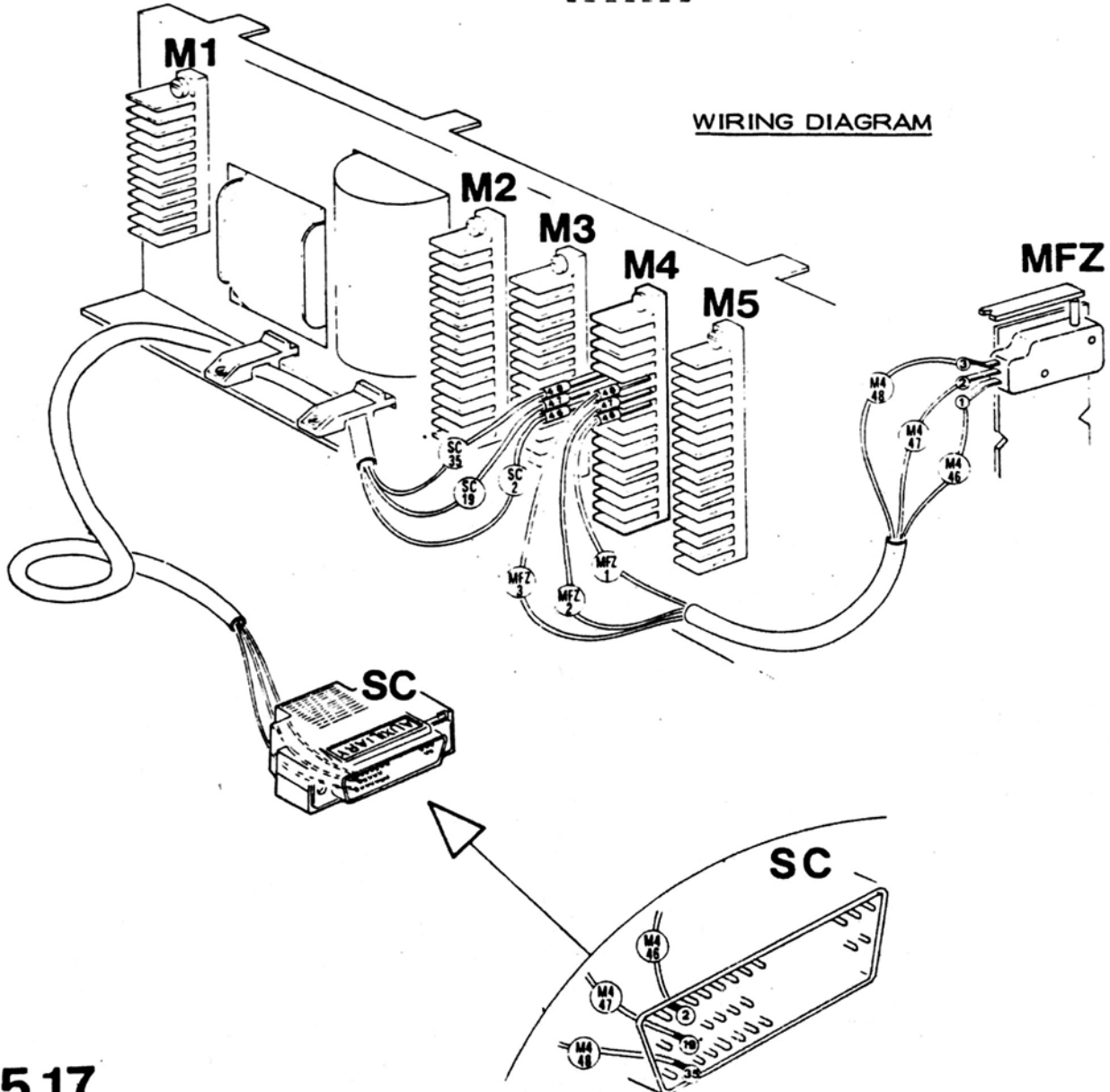
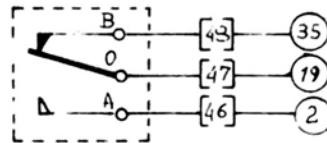


D002



ELECTRIC CHECKS

With paper: continuity points 19 - 35 of "Canon" plug
Without paper: continuity between points 19 - 2 of "Canon" plug

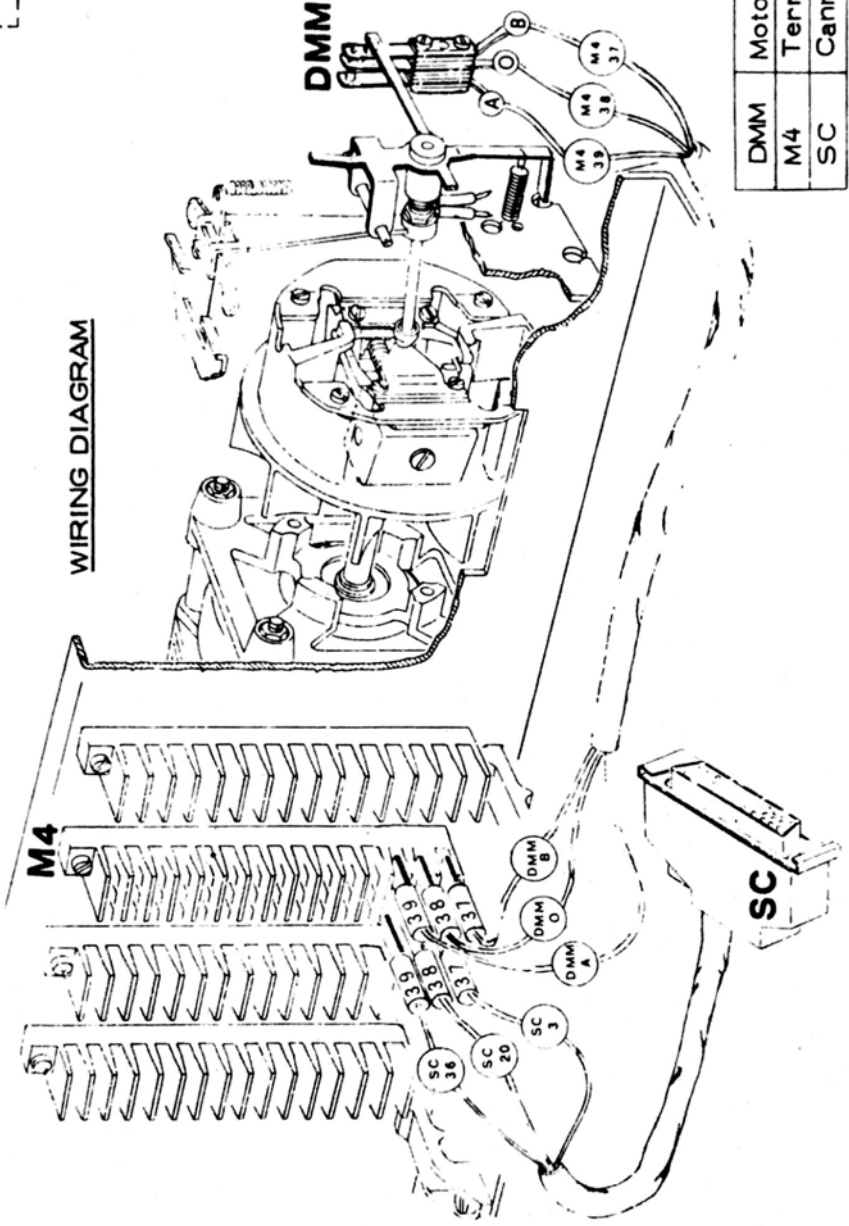
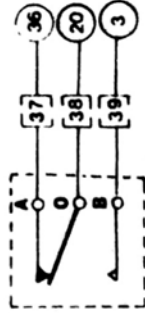


(D003) MOTOR IN MOTION INDICATOR - DMM

Perform the mechanical check of switch DMM (these checks are similar to those of the centrifugal switch and are relative to objectives: 240-241-242-243 of MECHANICAL CHECKS)

ELECTRIC CHECKS

- Machine off; continuity between points 20 - 3 of CANNON plug
- With motor at rated speed: continuity between points 20 - 36 of CANNON plug

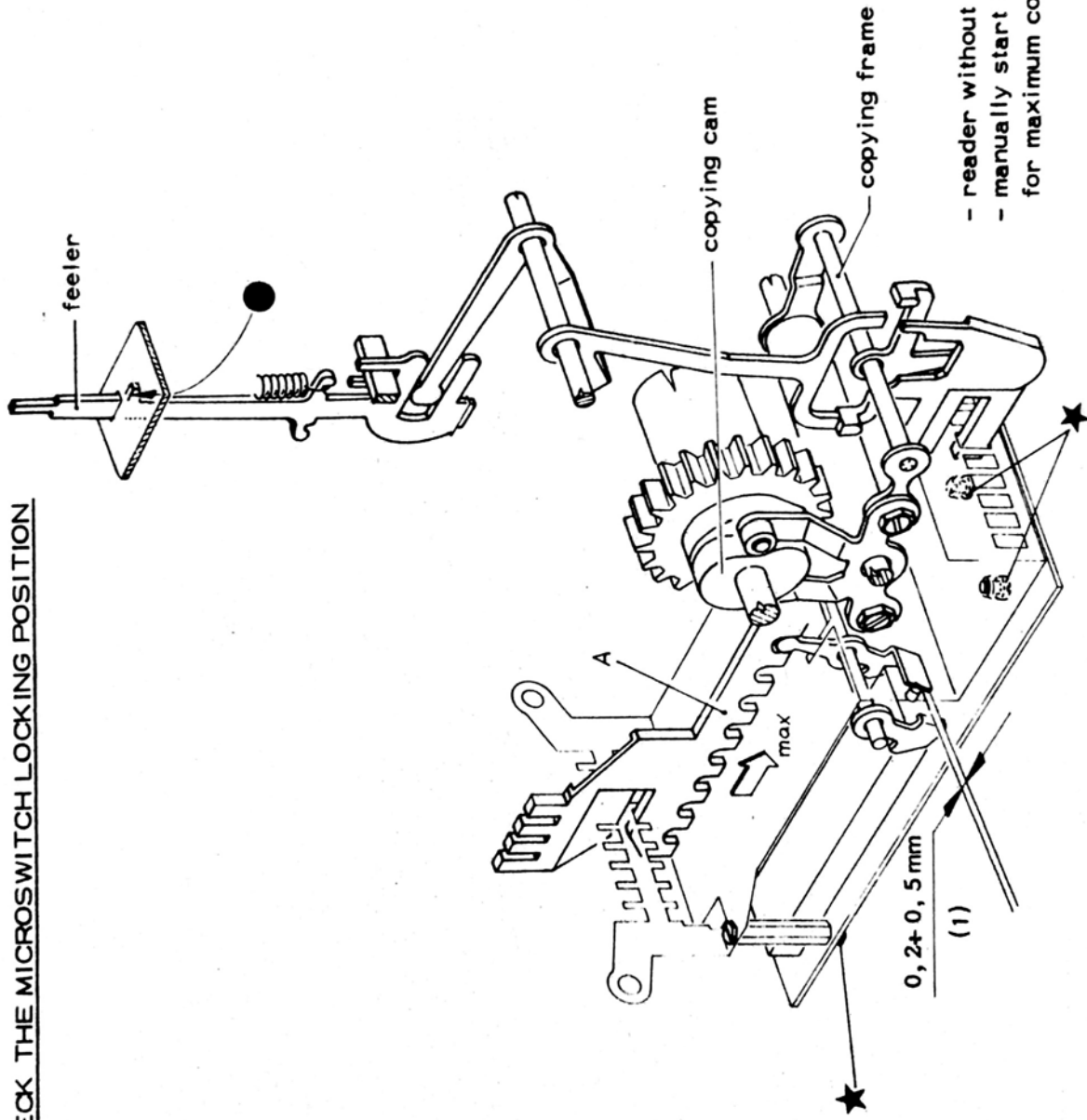


DMM	Motor in motion deviator
M4	Terminal block
SC	Cannon plug

D005 - "READER END OF PAPER TAPE" INDICATOR

5.19

1) CHECK THE MICROSWITCH LOCKING POSITION

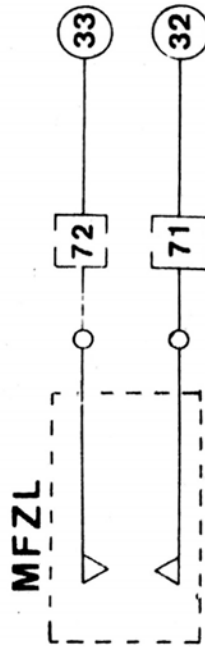
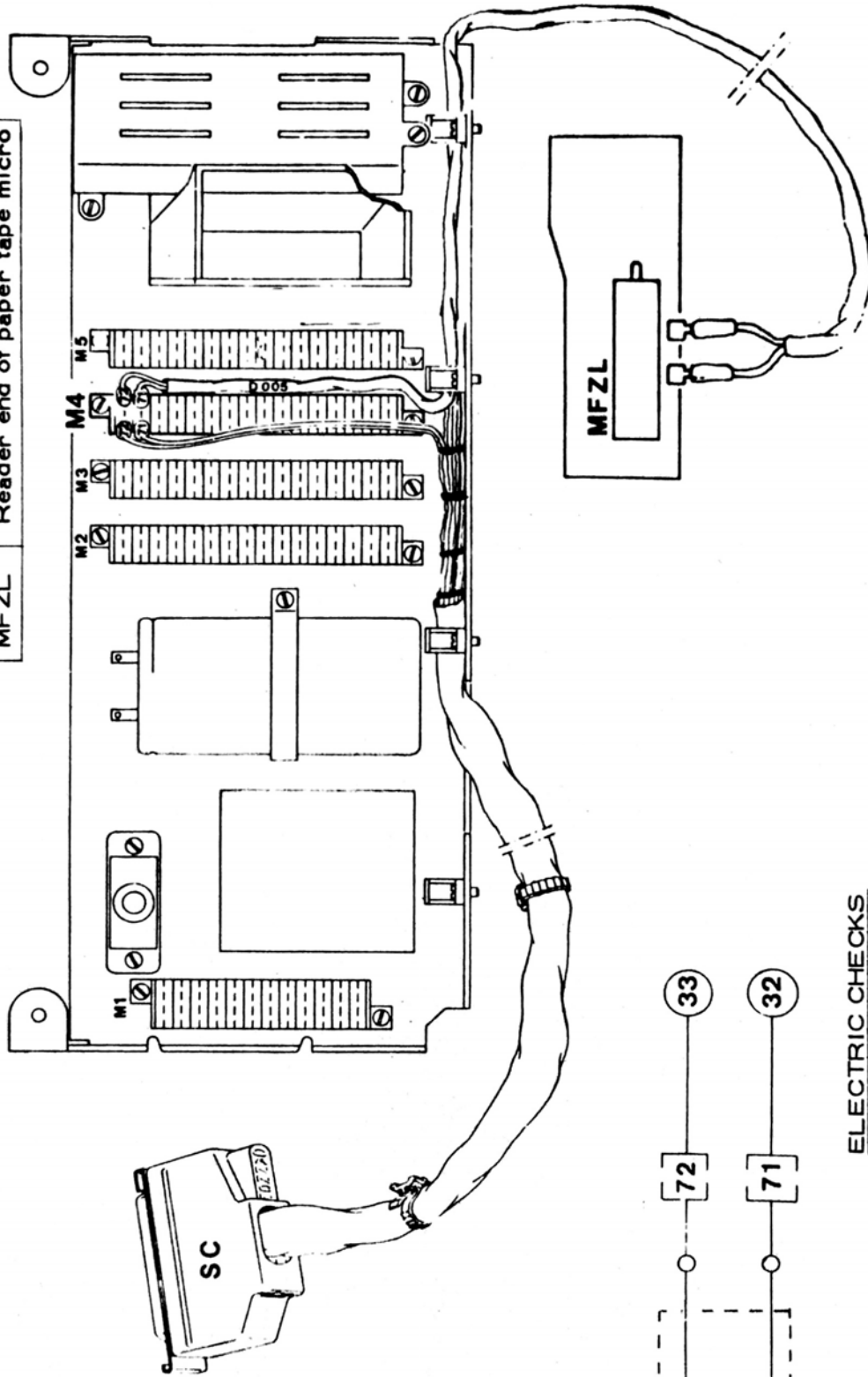


- reader without tape
- manually start the reader and rotate for maximum control position of slide A.

D005

WIRING CIRCUIT

SC	CANNON plug
MFZL	Reader end of paper tape micro



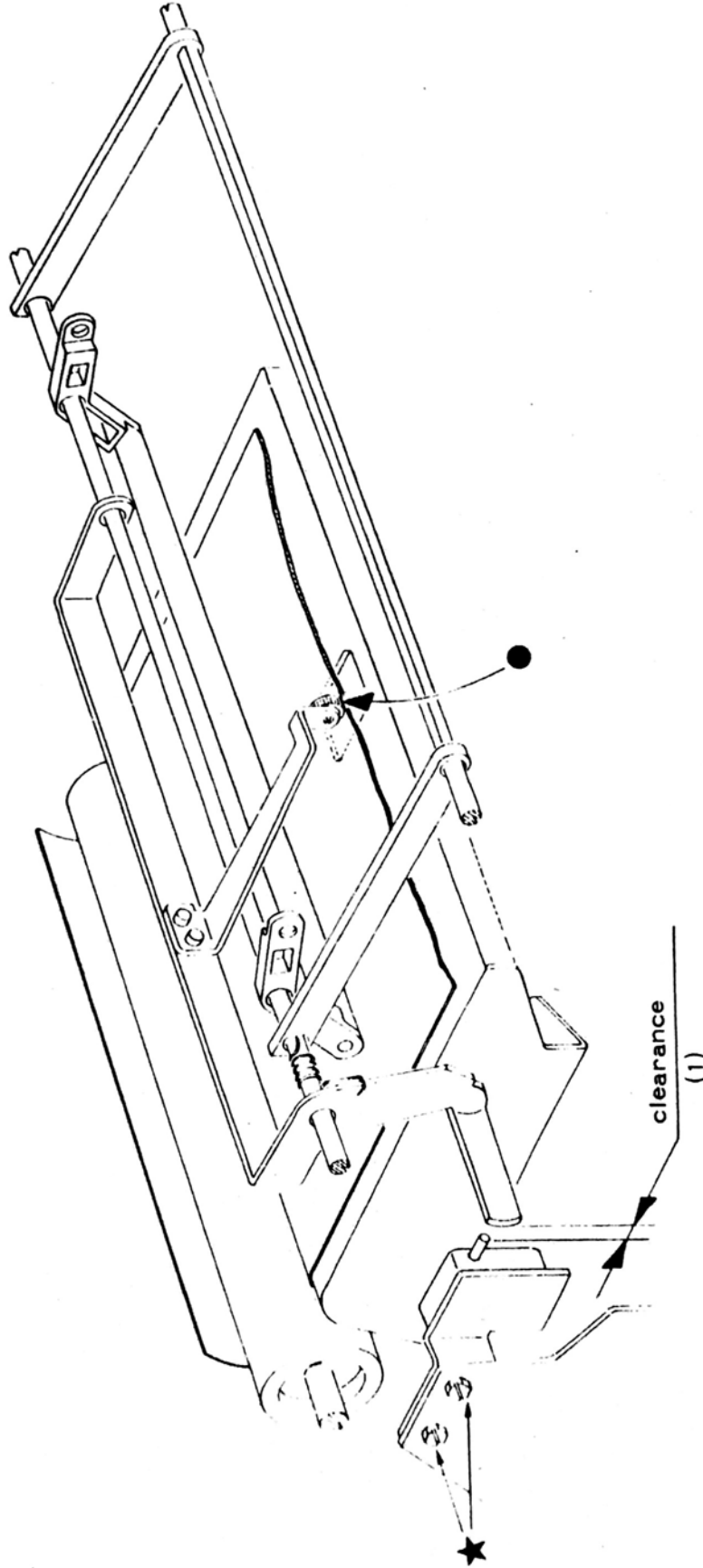
ELECTRIC CHECKS

- reader with paper tape: there is no continuity between points 33 - 32
- reader without paper tape: continuity between points 33 - 32 with machine in mechanical check conditions as shown on page 5, 19.

5.21

D011 "TORN PAPER OR END OF PAPER" INDICATOR

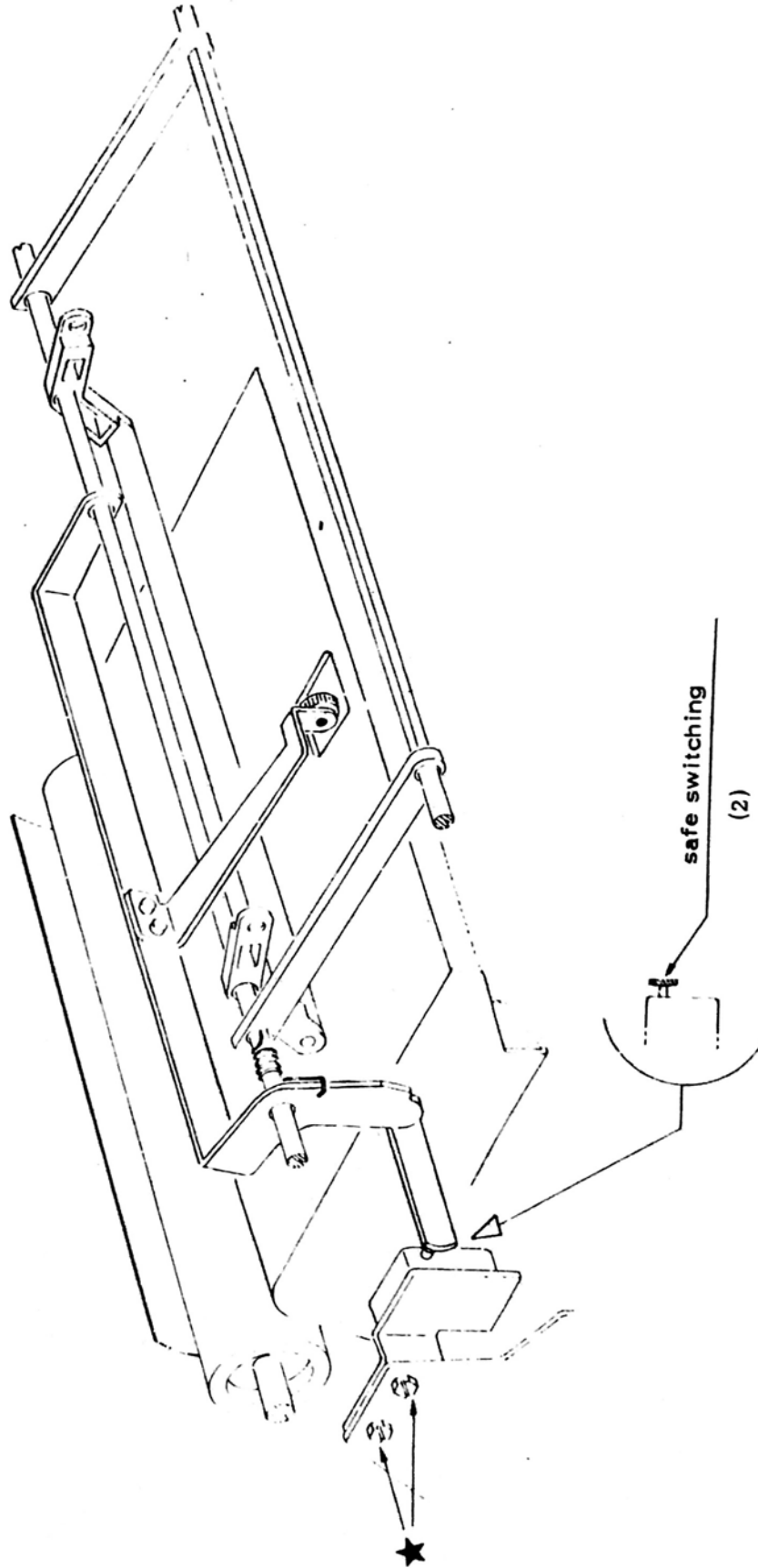
1) CHECK THE MICRO LOCKING POSITION



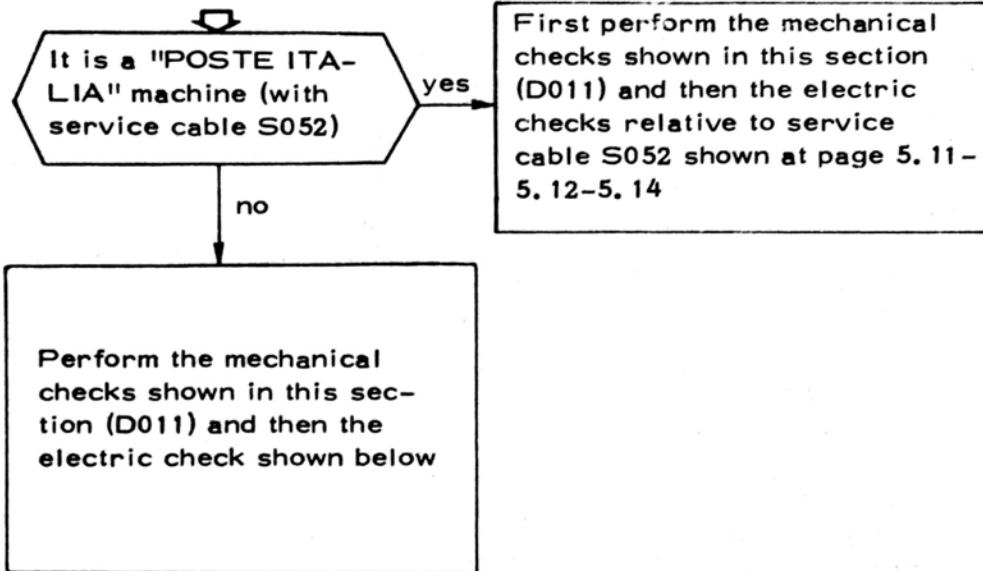
- machine with paper inserted.

D011

2) CHECK THE MICRO LOCKING POSITION



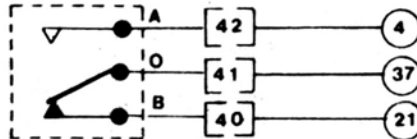
-- machine without paper



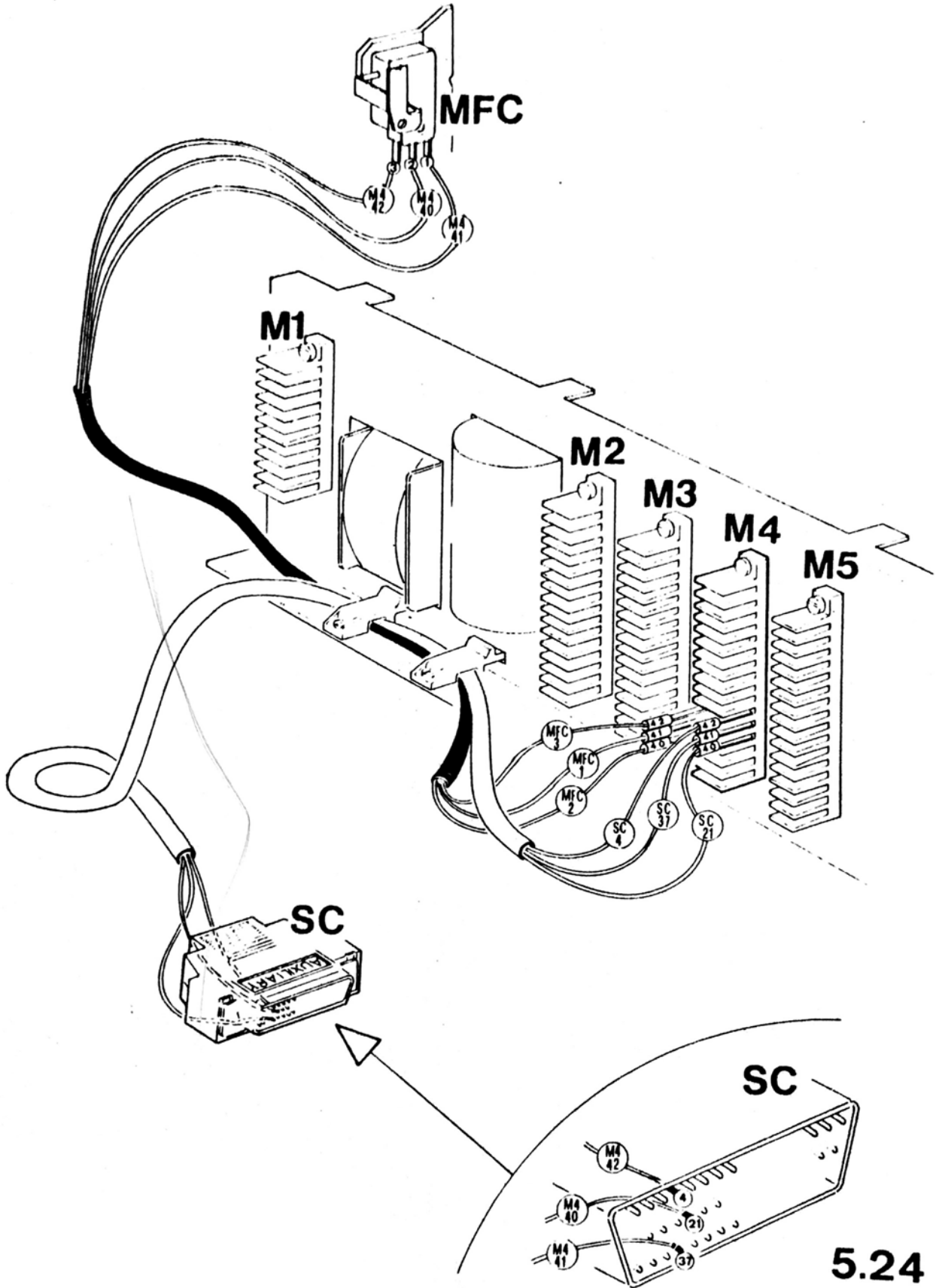
ELECTRIC CHECKS

- With paper: continuity between points (21) - (37) of Cannon plug (SC)
- Without paper: continuity between points (4) - (37) of Cannon plug (SC)

(End of paper micro) **MFC**

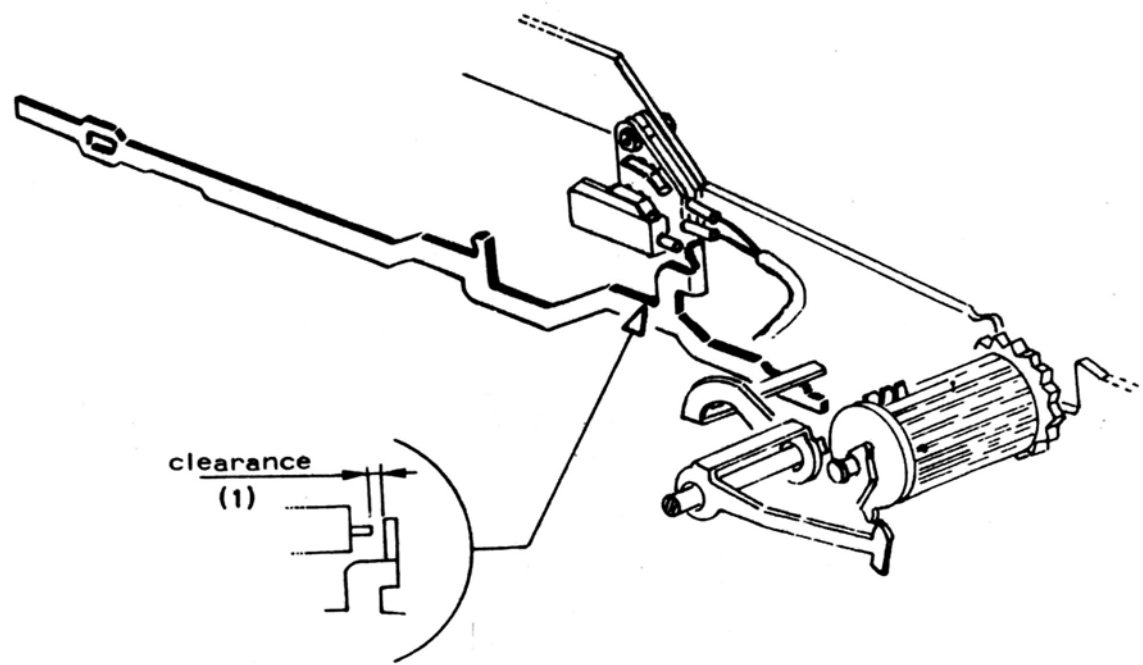


WIRING CIRCUIT

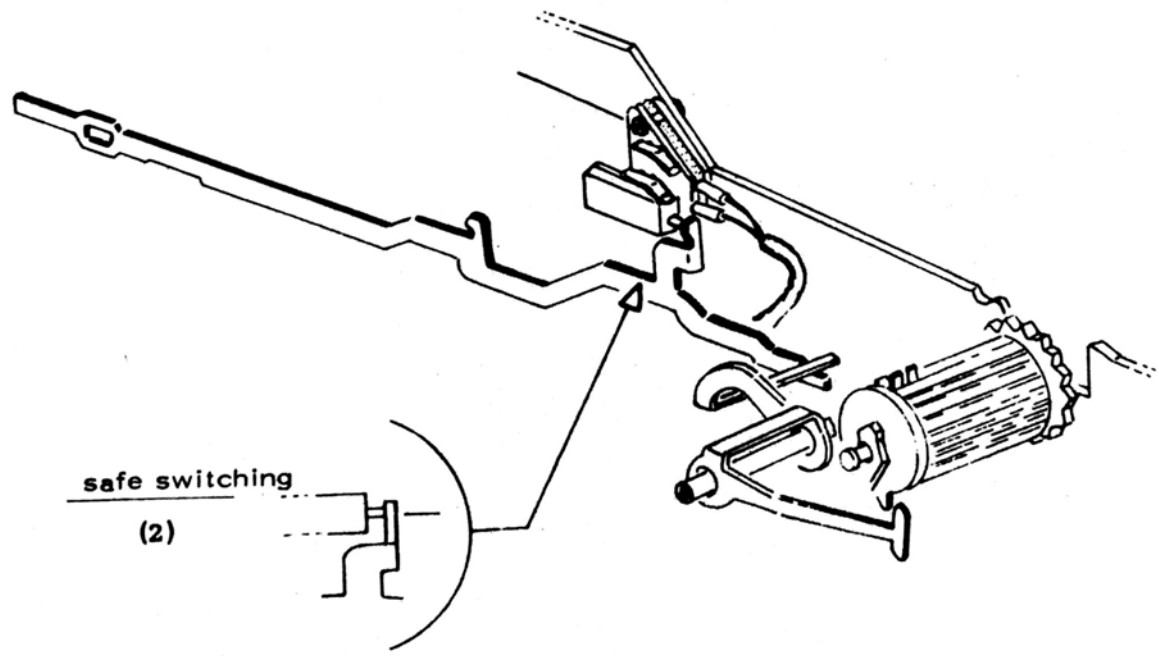


D013 "STARTED AUTOMATIC REPLY" INDICATOR

1) CHECK THE MICRO LOCKING POSITION



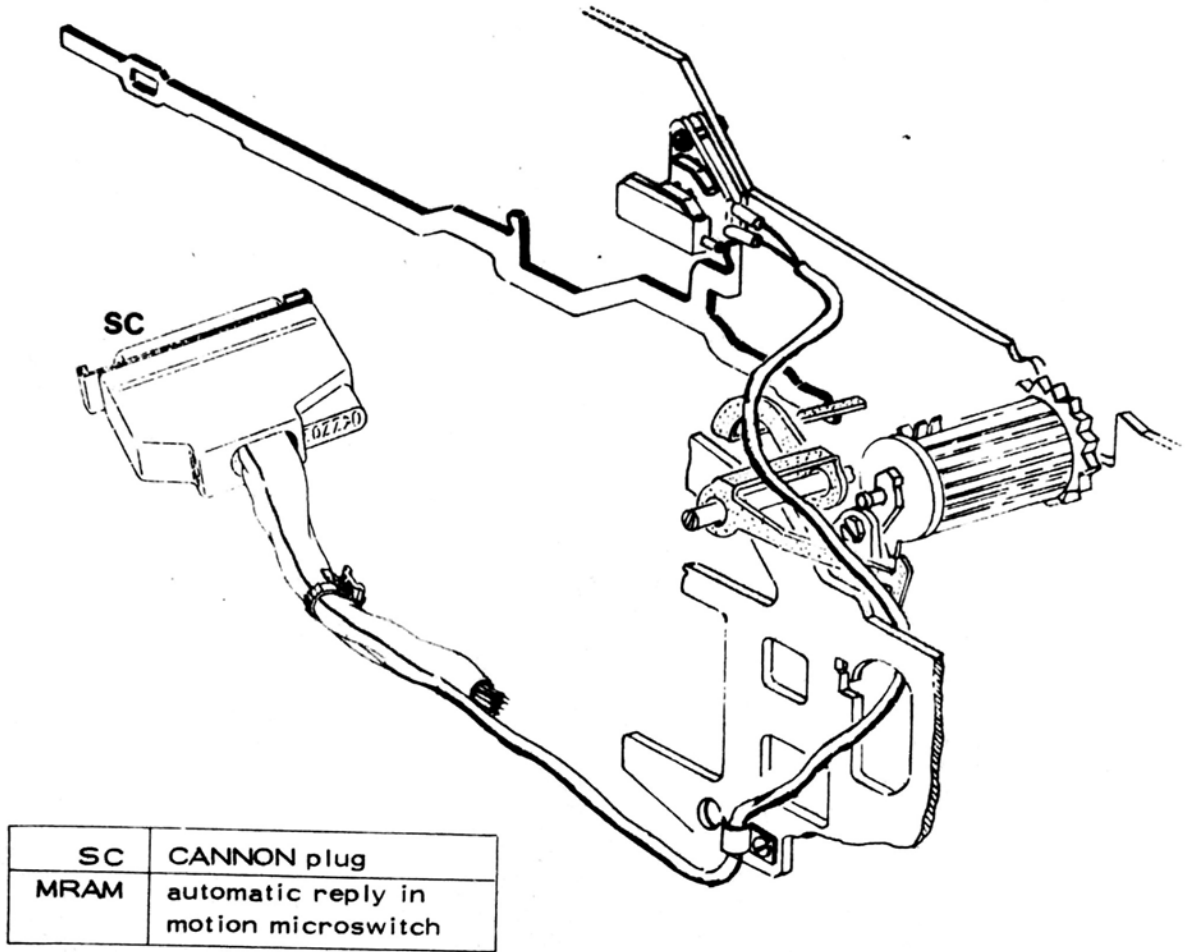
2) CHECK THE MICRO LOCKING POSITION



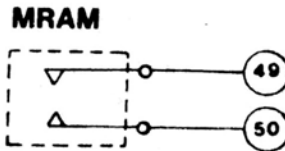
5.25 - automatic reply in motion.

D013

WIRING CIRCUIT



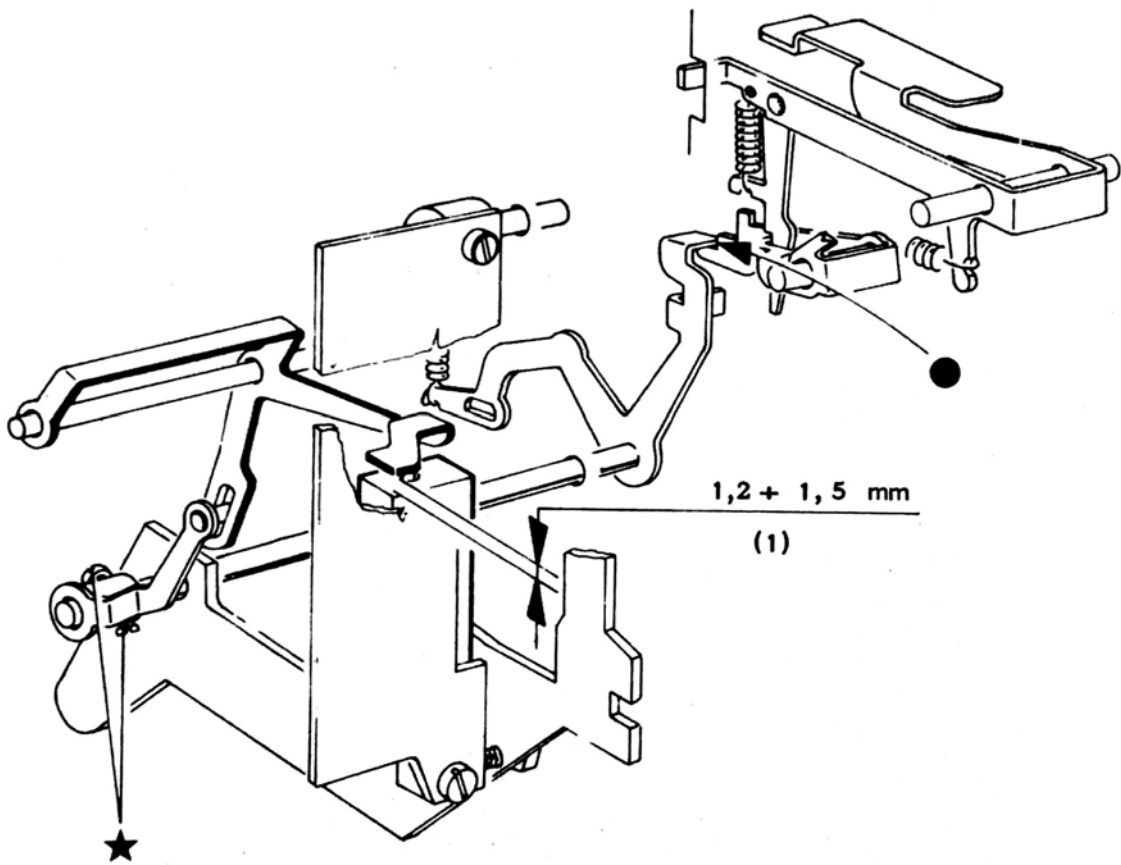
ELECTRIC CHECKS



- Machine at rest: there is no continuity between points (50) - (49) of CANNON plug.
- With automatic reply started: continuity between points (50) - (49) of CANNON plug.

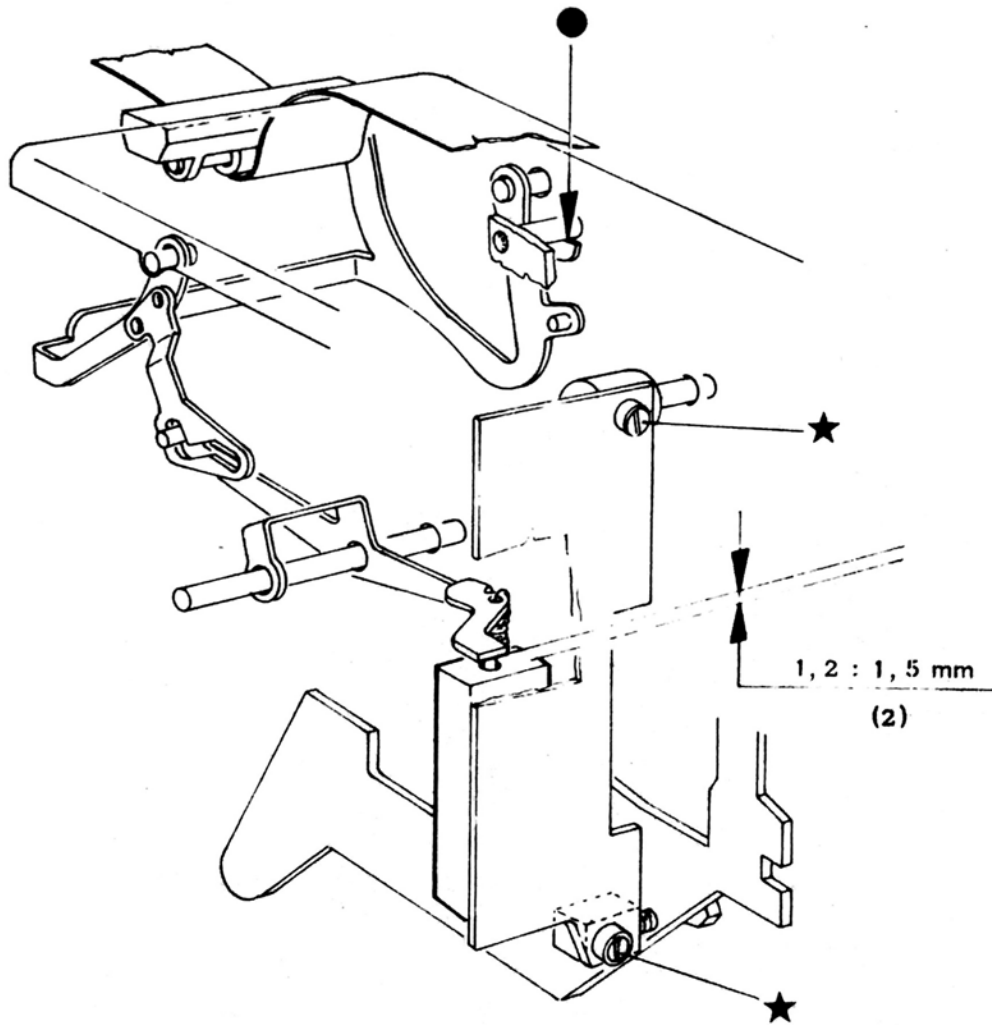
D014 "TAUT PAPER TAPE AND READER IN MOTION INDICATOR"

- 1) CHECK THE ANGULAR POSITION OF MICRO CONTROL CRANK



D014

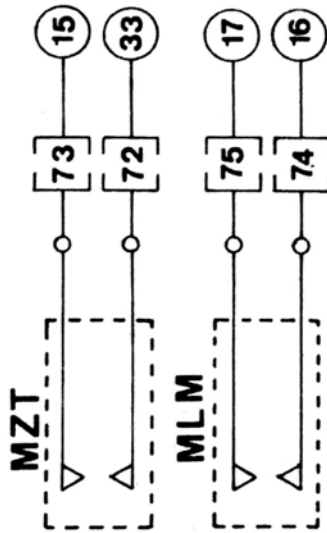
2) CHECK THE MICRO LOCKING POSITION



D014

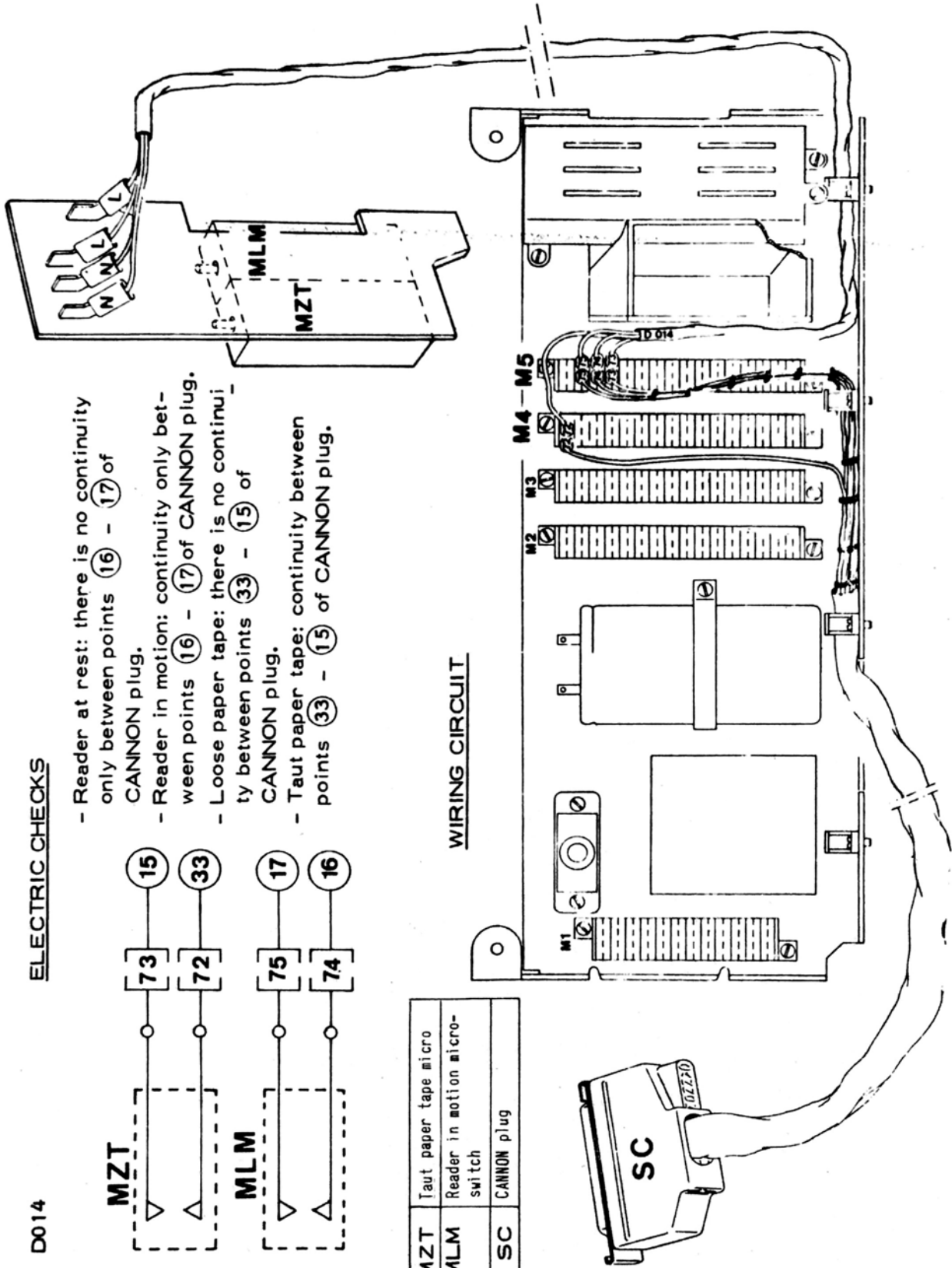
ELECTRIC CHECKS

- Reader at rest: there is no continuity only between points 16 - 17 of CANNON plug.
- Reader in motion: continuity only between points 16 - 17 of CANNON plug.
- Loose paper tape: there is no continuity between points 33 - 15 of CANNON plug.
- Taut paper tape: continuity between points 33 - 15 of CANNON plug.



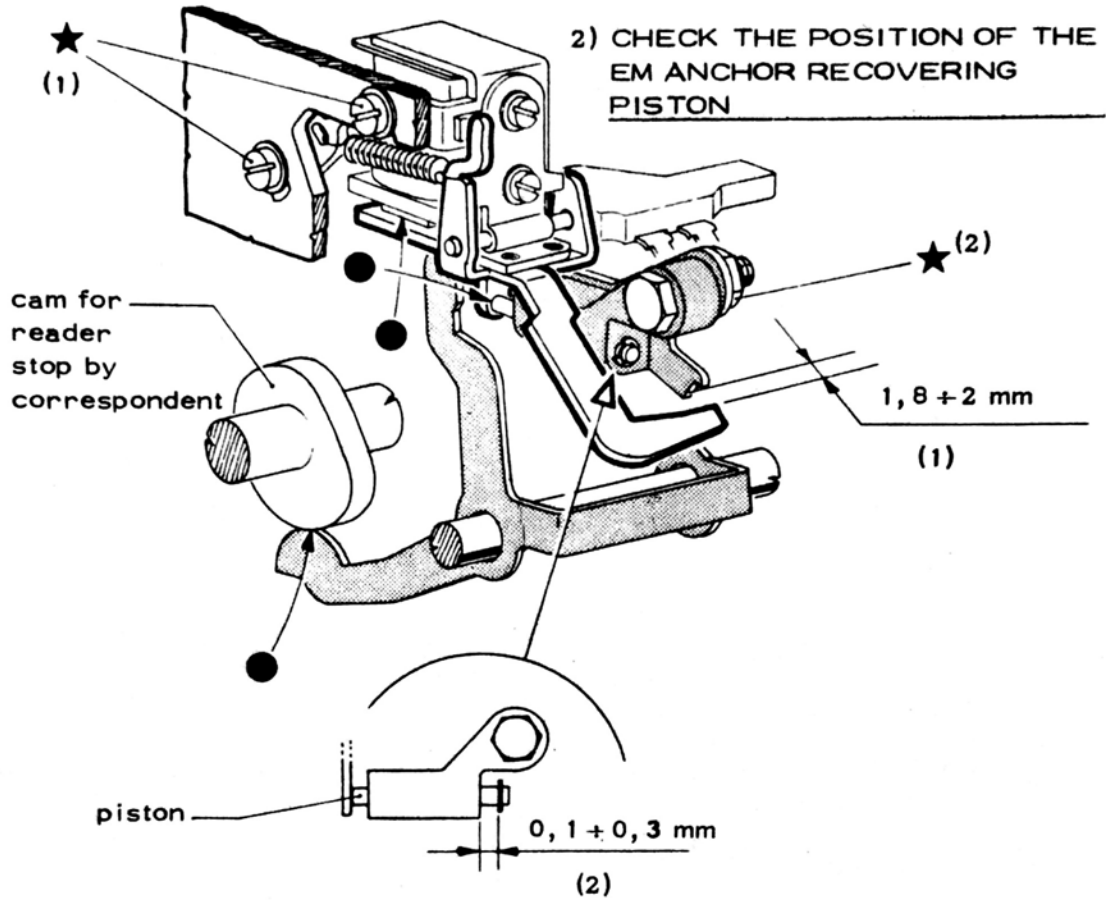
MZT	Taut paper tape micro
MLM	Reader in motion micro-switch
SC	CANNON plug

WIRING CIRCUIT

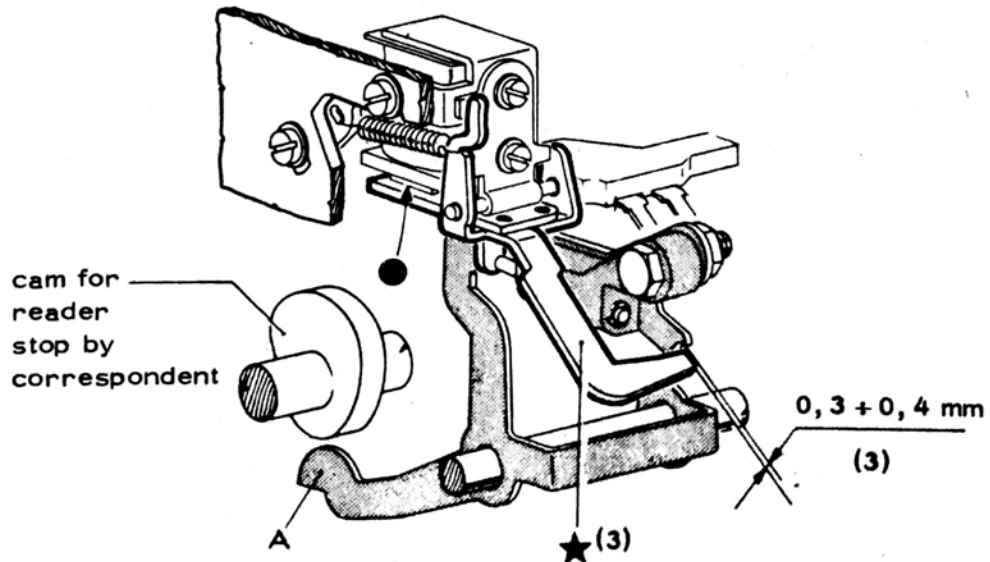


D022 READER STOP BY CORRESPONDENT

1) CHECK THE EMAL RELAY LOCKING POSITION



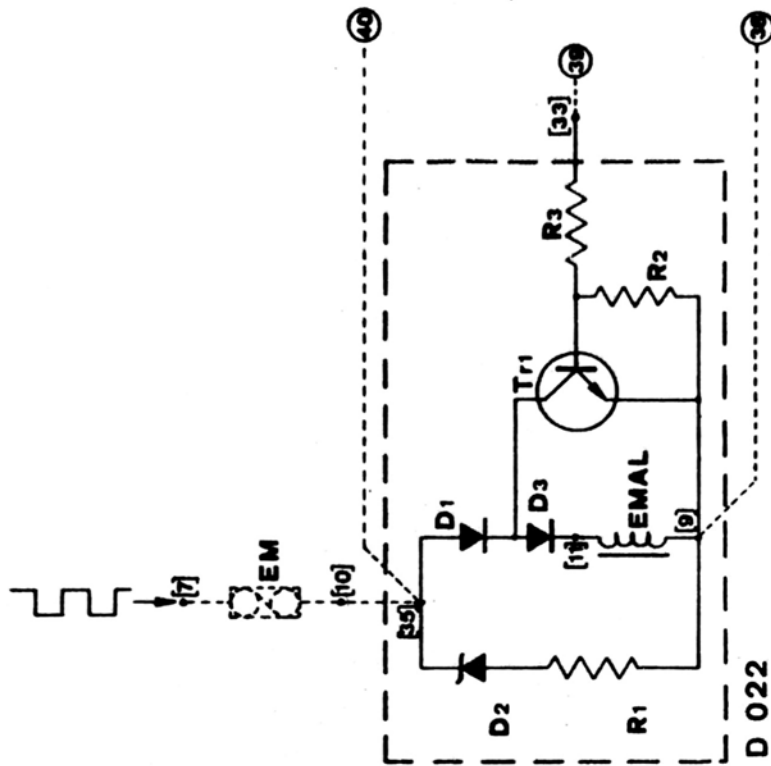
3) CHECK THE EM ANCHOR POSITION



- rotate the reader stop cam until it release wing A.

PALC BOARD COMPONENTS	
D1	P400
D2	1N750 A
D3	P400
TR1	1W8995 A
R1	68 Ω 1 W 2%
R2	1,5 KΩ 1/4 W
R3	2,7 KΩ 1/4 W
EMAL	62 Ω

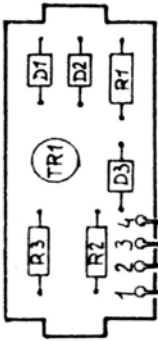
ELECTRIC CIRCUIT (double current connection)



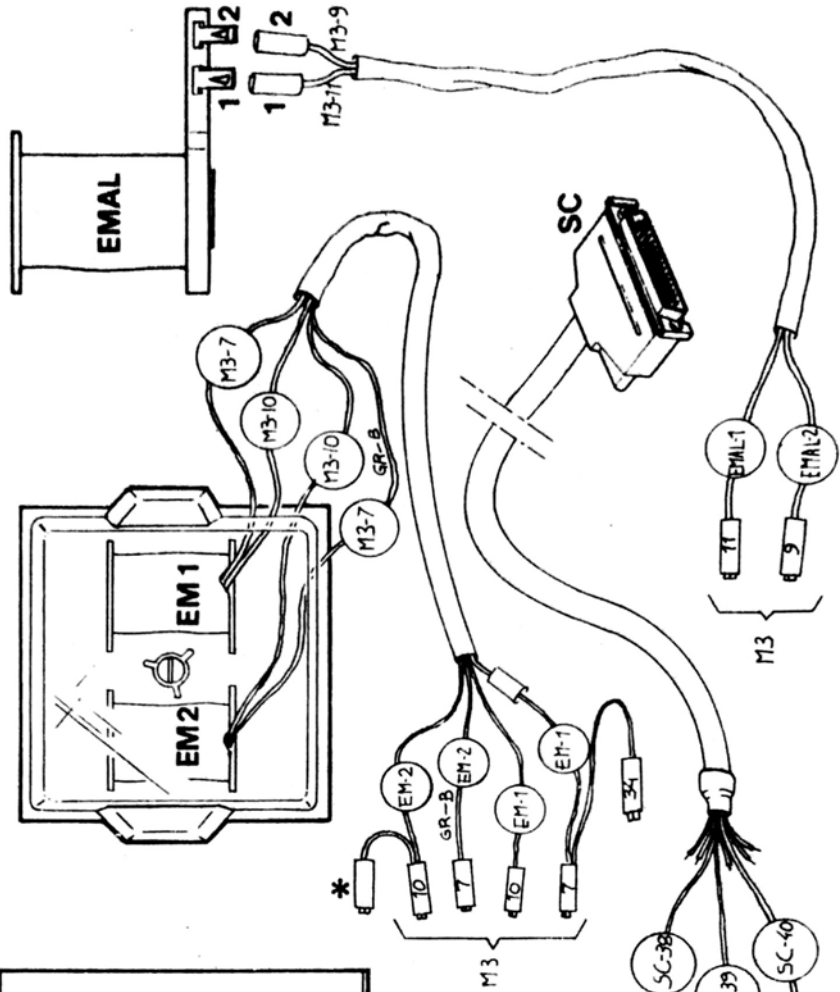
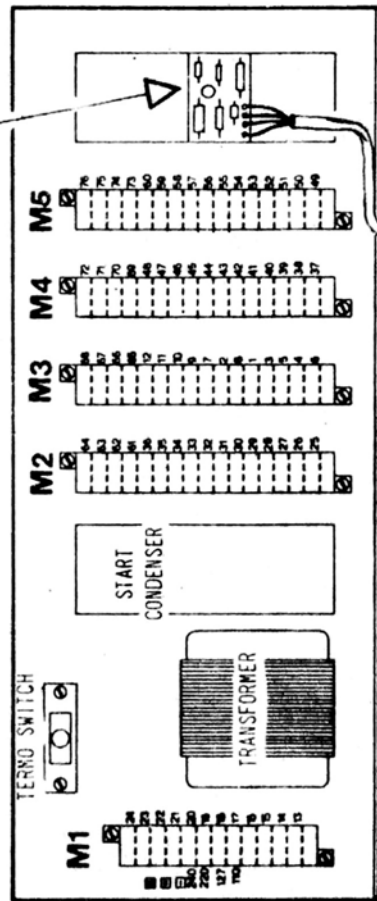
EMAL	Reader stop electromagnet
EM1	Reception electromagnet
EM2	
SC	Cannon plug
M2	
M3	
M4	Terminal blocks
M5	
PALC	Stop reader by correspondent board

WIRING CIRCUIT

PALC

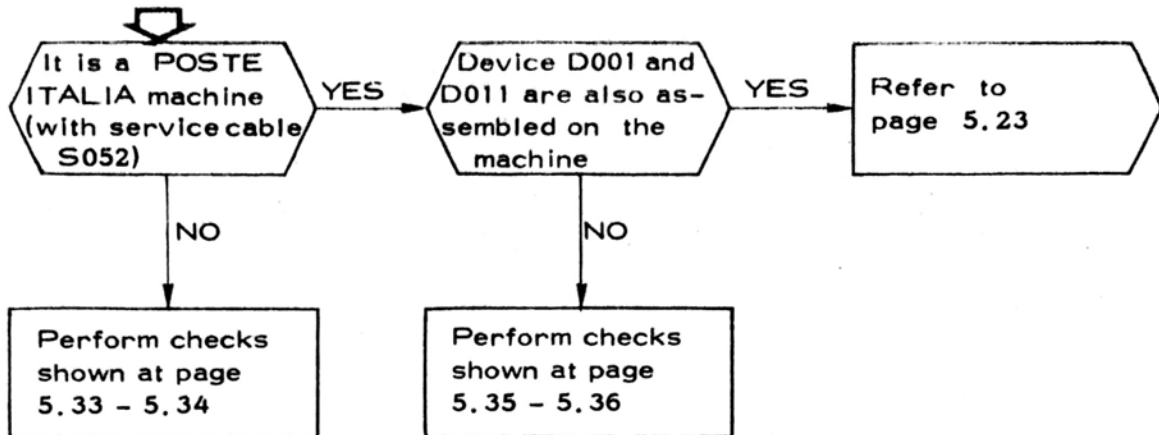


D022



*	For double current - M2-35 For simple current - M3-2
**	For double current - M3-2 For simple current - M2-36

D024 MOTOR AT RATED SPEED INDICATOR



CHECK: D024 MICRO AND BOARD BALLAST RESISTANCE AND TRANSFORMER:

- disconnect end [38] of cannon plug
- machine on, check the correct motor speed (check 240)

CHECKS PERFORMED WITH MOTOR AT RATED SPEED

check in their order:

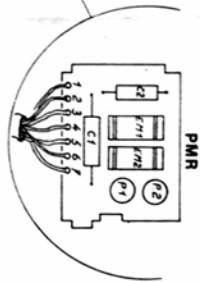
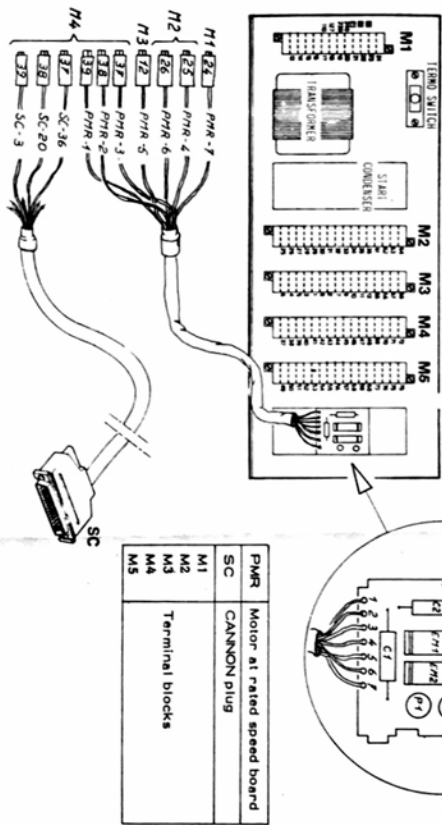
- 1) ballast resistance: between points [24] and [12] $V=15 + 20 V$ a.c.
- 2) transformer: between points [25] and [26] $V=24 V$ a.c.
- 3) board:
 - a) "EM2" electromagnets: at the ends of $30 \mu F$ C2 condenser $V=24 V$ d.c.
 - b) micro: continuity between points 38 39 turn the machine off and check continuity between points [38] - [37]

CHECKS PERFORMED WITH MOTOR NOT AT RATED SPEED

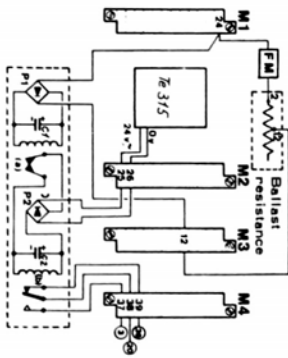
check in their order:

- 1) ballast resistance: between points 24 and 12 $V=0V$ a.c.
- 2) transformer: between points [25] and [26] $V=24 V$ a.c.
 - a) "EM2" electromagnets: at the ends of $30 \mu F$ C2 condenser $V=0V$ d.c.
 - b) electromagnet micro: continuity between points 38 37
If the motor doesn't move at correct speed perform check 240 and check continuity between points [38]-[39] with motor at rated speed.

WIRING CIRCUIT WITH CANNON PLUG

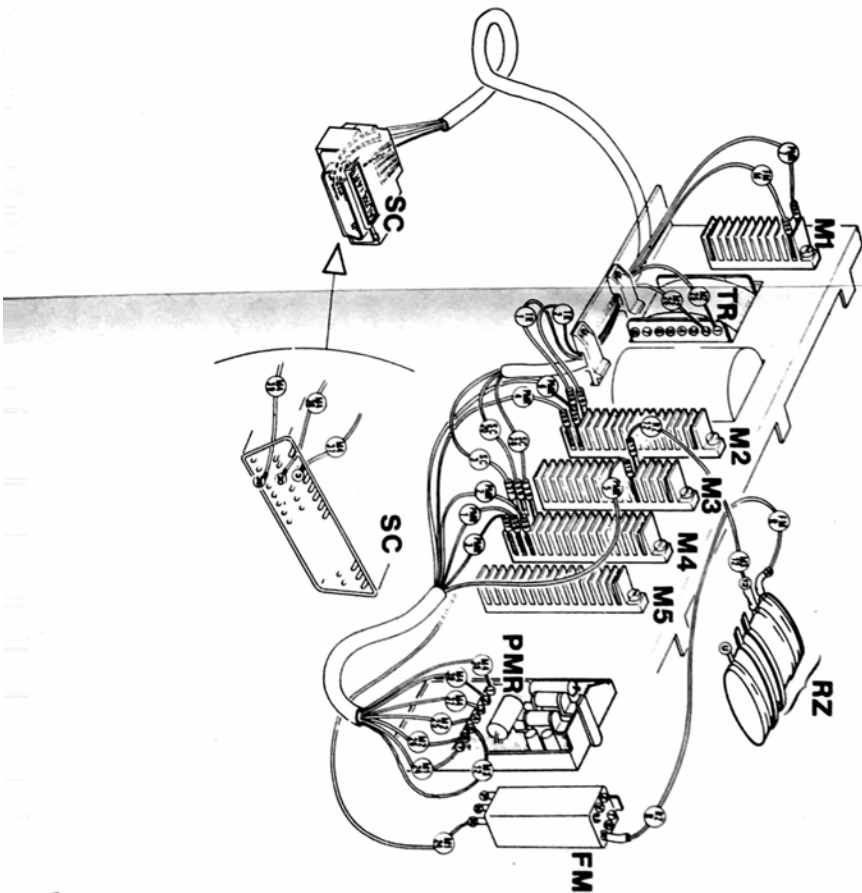


ELECTRIC CIRCUIT WITH MOTOR AT RATED SPEED



PMR BOARD COMPONENTS	
C1	150 μ F 50 V
C2	30 μ F 50 V
EM1	800 Ω
EM2	1000 Ω
P1	GIE W04
P2	GIE W04

WIRING DIAGRAM



CHECK D024 BOARD AND MICRO, BALLAST RESISTANCE AND TRANSFORMER

- disconnect end 38 of van plug
- machine on, check the motor correct speed (objective 240 of mechanical checks).

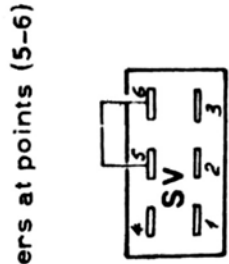
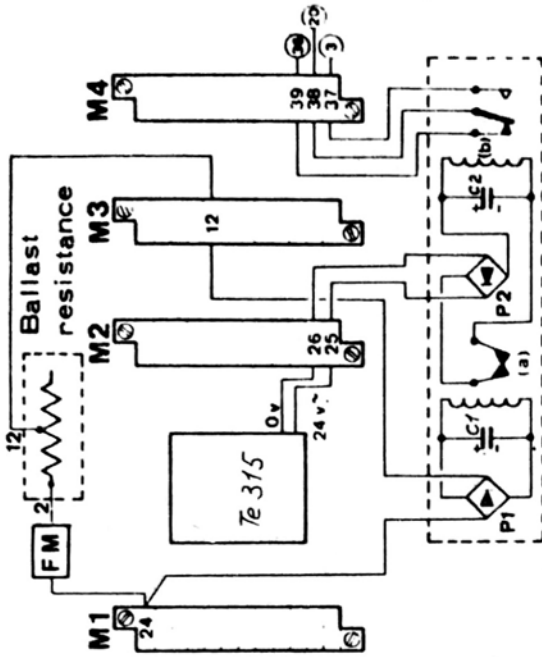
CHECKS PERFORMED WITH MOTOR AT RATED SPEED

- check in their order:
 - 1) ballast resistance: between points [24] and [12] $V = 15 + 20$ a.c.
 - 2) transformer: between points [25] and [26] $V = 24$ V a.c.
 - 3) board:
 - a) "EM2" electromagnets: at the ends of $30 \mu\text{F}$ condenser $V = 24$ d.c.
 - b) micro: continuity between points 38 and 39. Turn the machine off and check continuity between points 38 - 37.

CHECKS PERFORMED WITH MOTOR NOT AT RATED SPEED.

- check in their order:
 - 1) ballast resistance: between points [24] and [12] $V = 0$ V a.c.
 - 2) transformer: between points [25] and [26] $V = 24$ V a.c.
 - 3) board:
 - a) "EM2" electromagnets: at the ends of $30 \mu\text{F}$ condenser $V = 0$ V d.c.
 - b) electromagnet micro: continuity between points 38 - 37. If the motor doesn't move at correct speed perform check 240, then check continuity between points [38] - [39] with motor at rated speed.

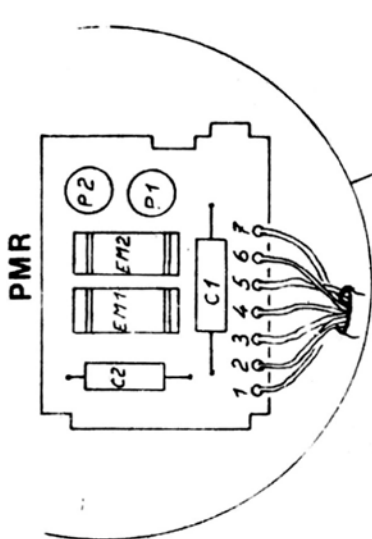
ELECTRIC CIRCUIT WITH MOTOR AT RATED SPEED



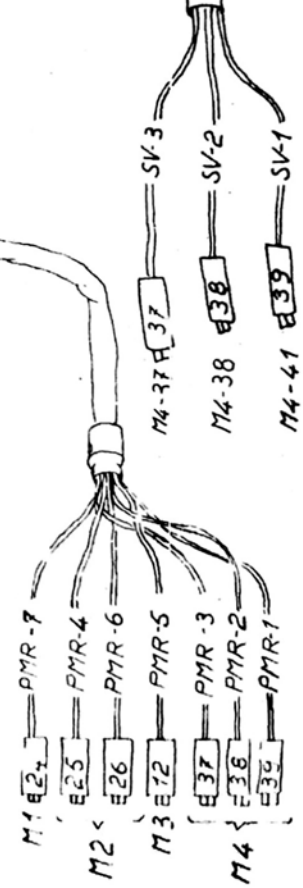
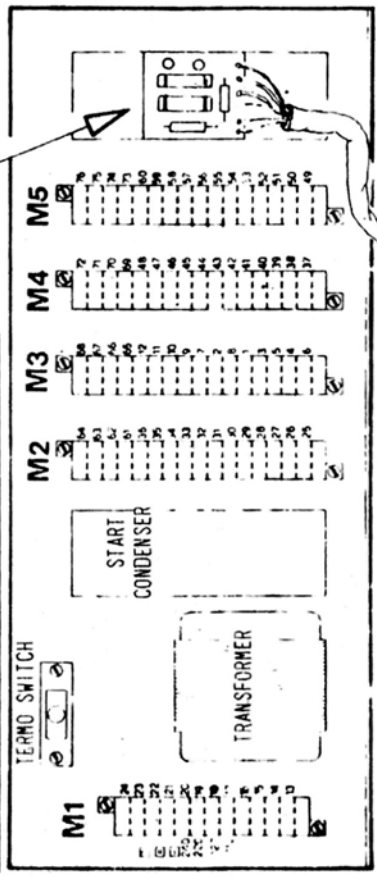
Jumpers at points (5-6)

Soldering side view

PMR BOARD COMPONENTS	
C1	150 μ F 50 V
C2	30 μ F 50 V
EM1	800 Ω
EM2	1000 Ω
P1	GIE W04
P2	GIE W04



WIRING CIRCUIT WITH VEAN PLUG

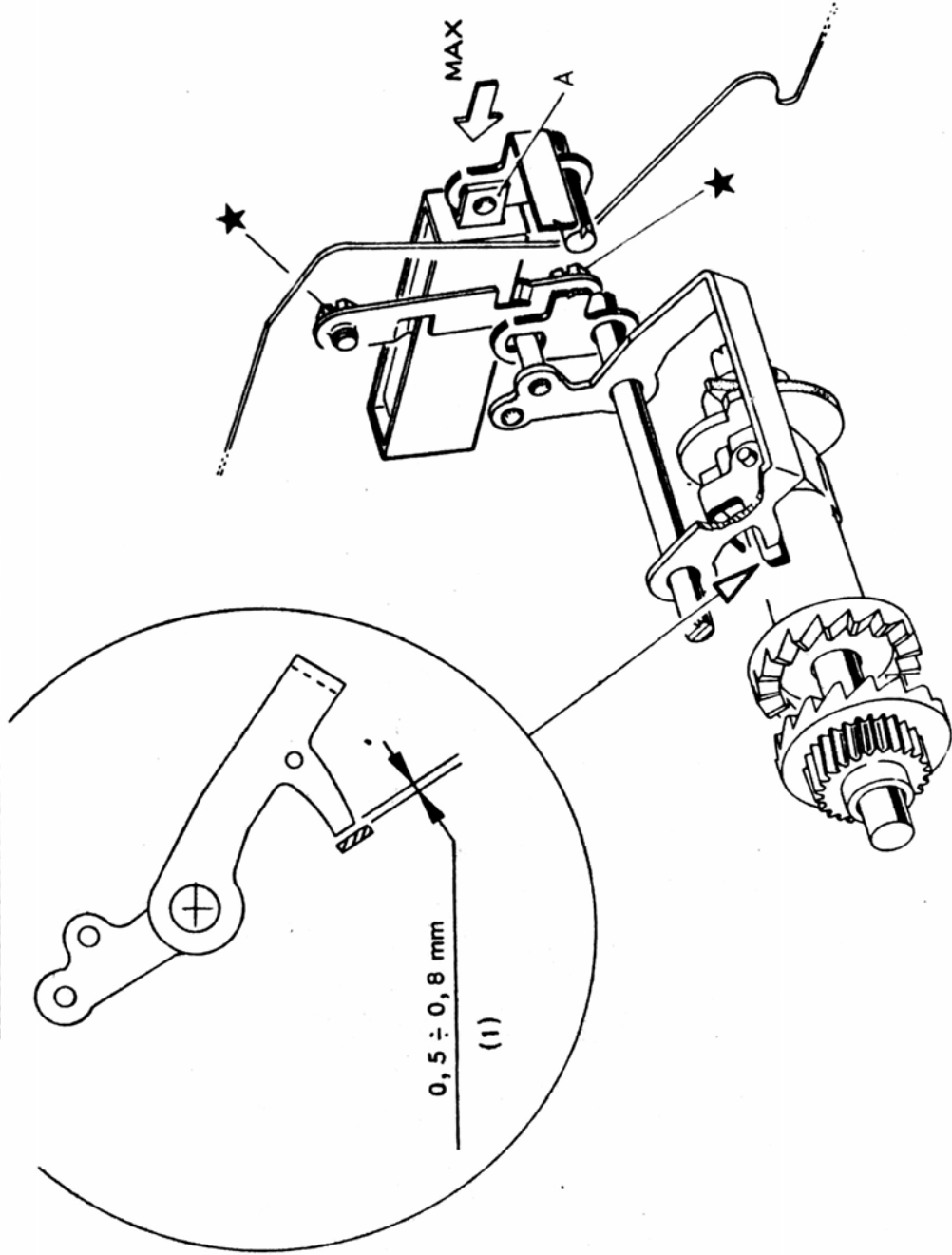


D024

5.37

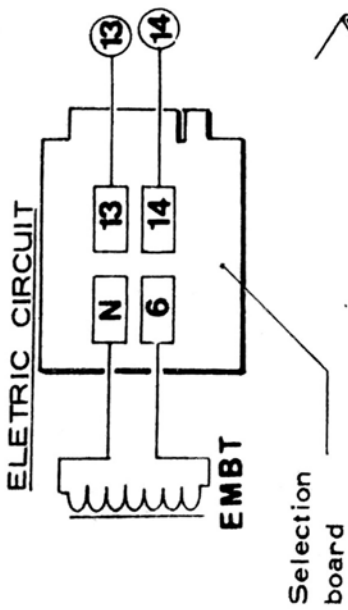
D030 TOTAL KEYBOARD LOCKING

1) CHECK THE RELAY LOCKING POSITION

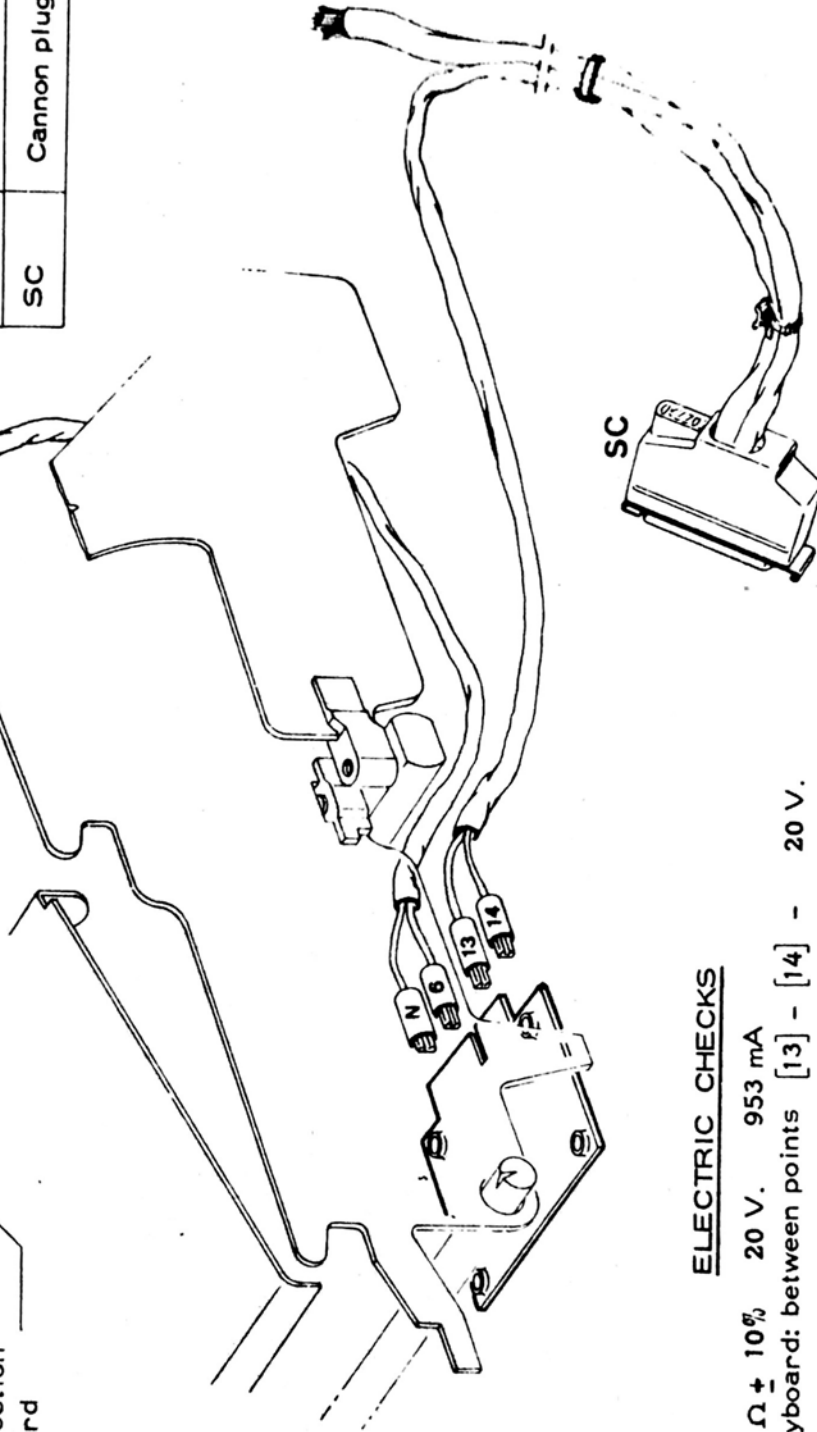
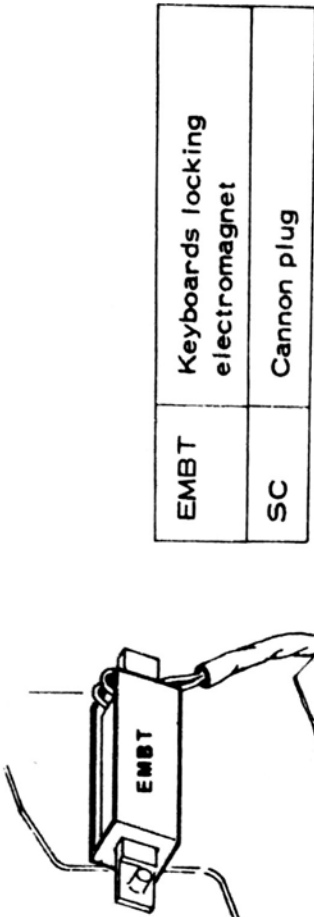


- Manually move relay A core to the end of travel as shown in the figure

D030



WIRING CIRCUIT

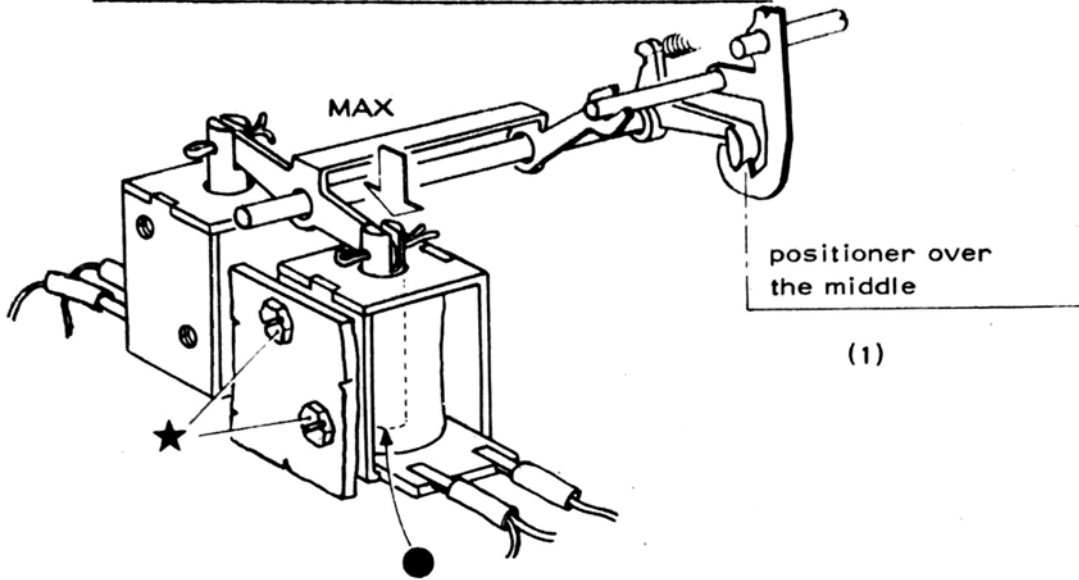


ELECTRIC CHECKS

EMBT: $21 \Omega \pm 10\%$ 20 V. 953 mA
 Locked keyboard: between points [13] - [14] - 20 V.

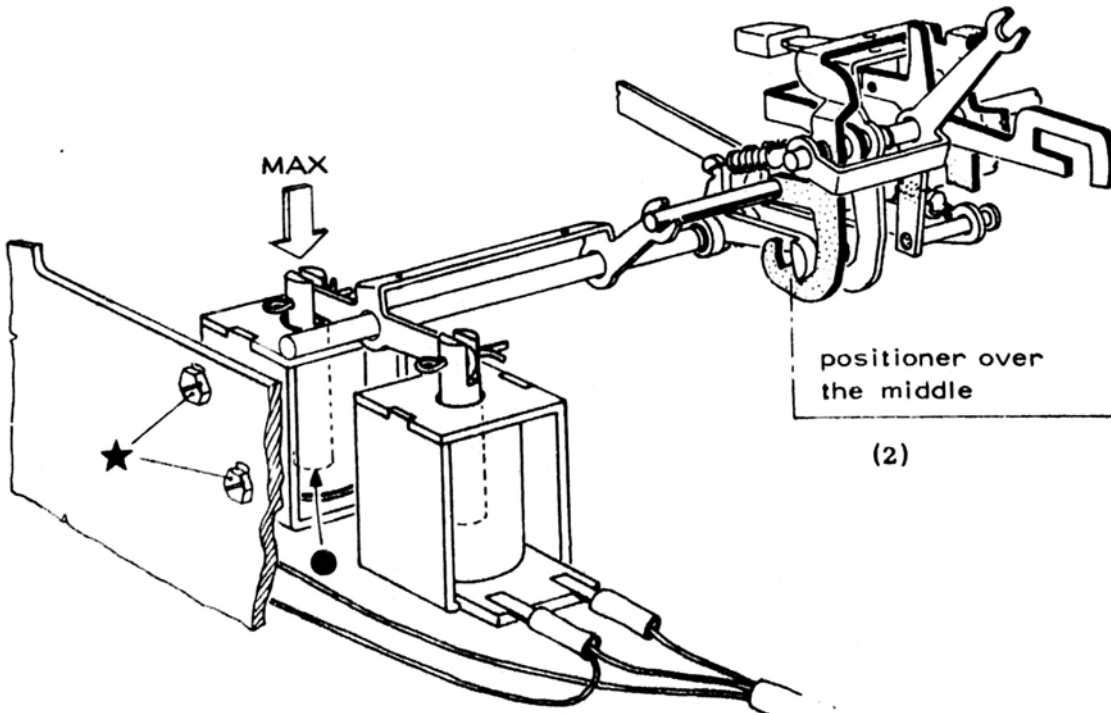
D032 ELECTRICALLY COMMANDED TAPE PUNCH INCLUSION AND EXCLUSION

1) CHECK THE EM's LOCKING POSITION



- manually press downwards the EM core shown by the arrow

2) CHECK THE EM's LOCKING POSITION



- manually press downward the EM core shown by the arrow

D032

WIRING CIRCUIT

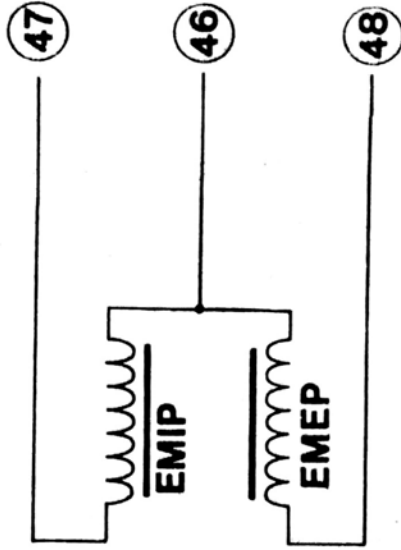
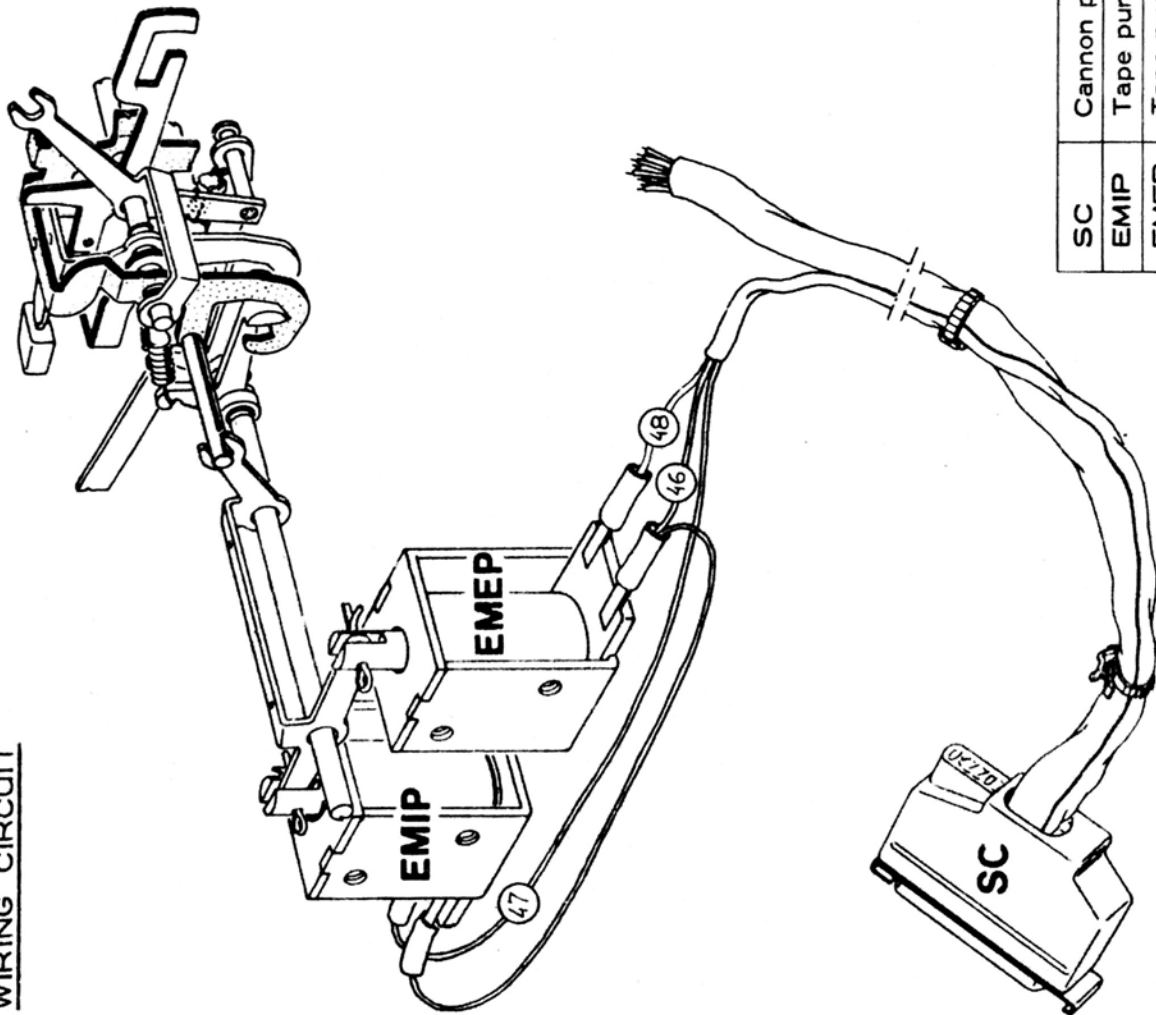
ELECTRIC CHECKS

electromagnets check:

$60 \Omega \pm 10\%$

between points (46) - (47)

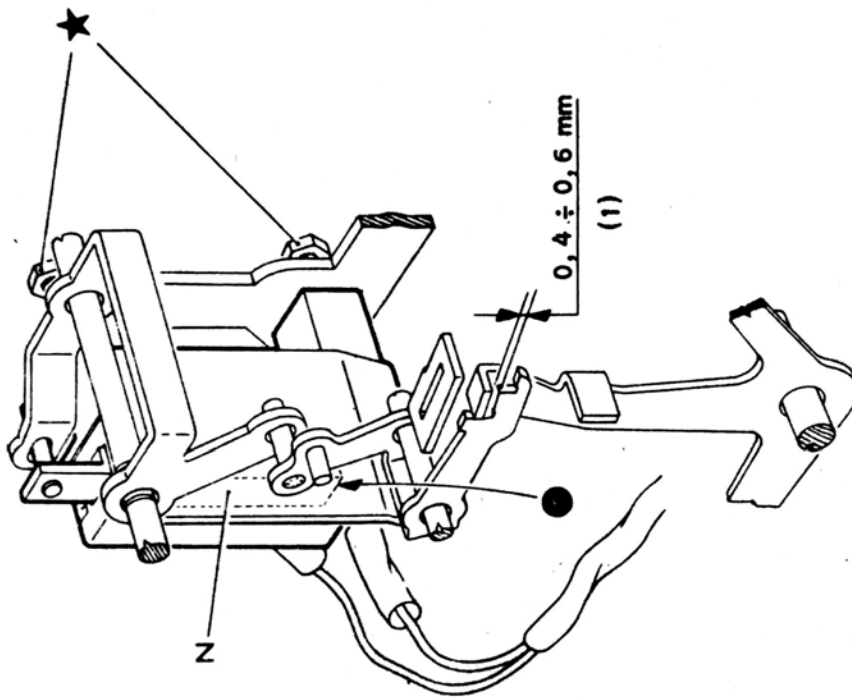
(46) - (48)



SC	Cannon plug
EMIP	Tape punch inclusion electromagnet
EMEP	Tape punch exclusion electromagnet

D033 ELECTRICALLY COMMANDES READER START

- 1) CHECK THE EM LOCKING POSITION

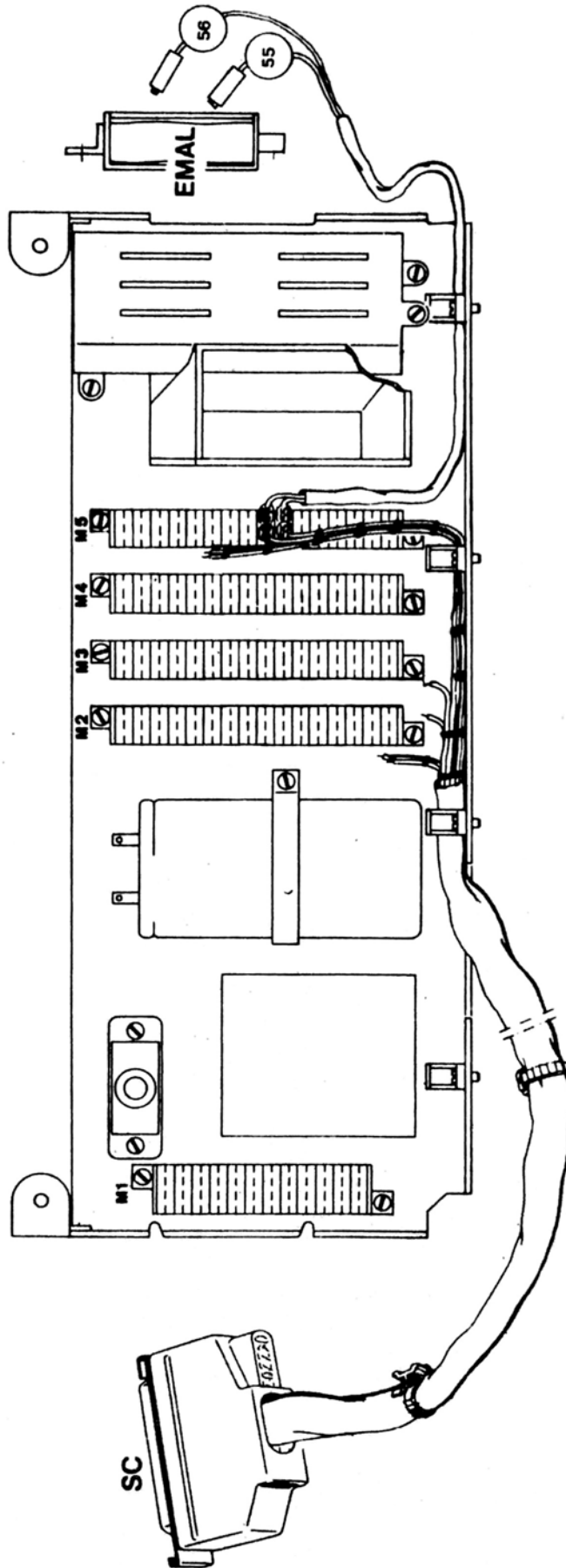


- manually press downwards core N to obtain the contact shown in the figure

D033

EMAL	Reader start electromagnet
SC	Cannon plug
M5	Terminal block

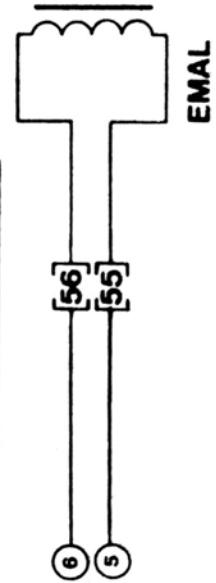
WIRING CIRCUIT



ELECTRIC CHECKS

Electromagnet check: $30 \Omega \pm 10\%$ between points (5) and (6)

ELECTRIC CIRCUIT



N.B.: after the check, perform the check relative to "ELECTRIC OUTPUTS" section

D046 VERTICAL JUMP AND SE 335/1 READER DRIVE

The device D046 is also present on class 300 machines without tabulation, provided they are supplied with vertical jump.

In our case, dealing with the TE 315, the device D046 is being examined together with vertical jump.

VERTICAL JUMP

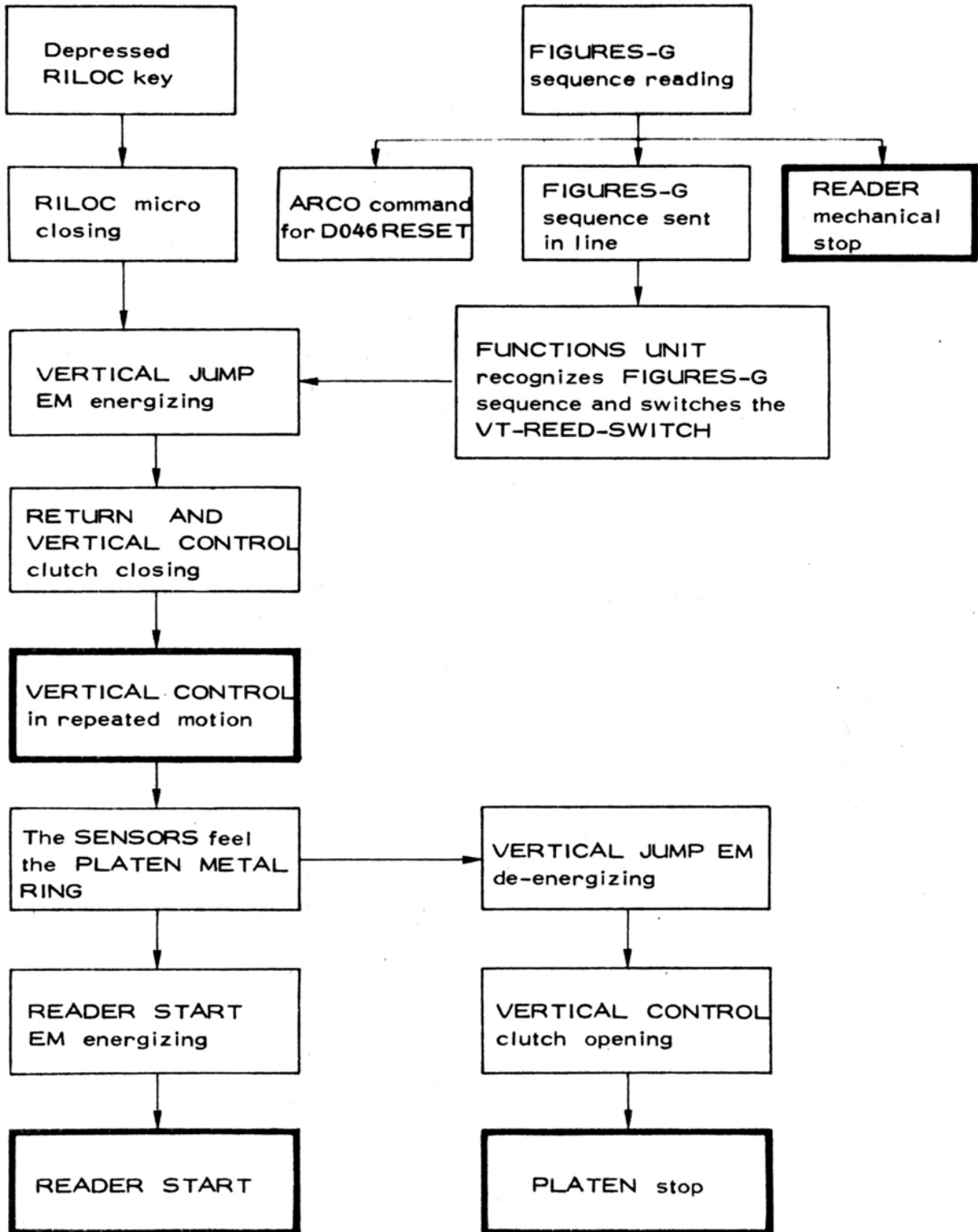
The vertical jump is assembled on TE 315, RE 315, and TL 315.

- On TE 315 and TL 315 the vertical jump is linked to the reader drive (D046)
- The reader drive doesn't exist on RE 315
- The type of reader assembled for D046 is SE 335/1, supplied with self-lock on the "figures-G" sequence.

D046 Index

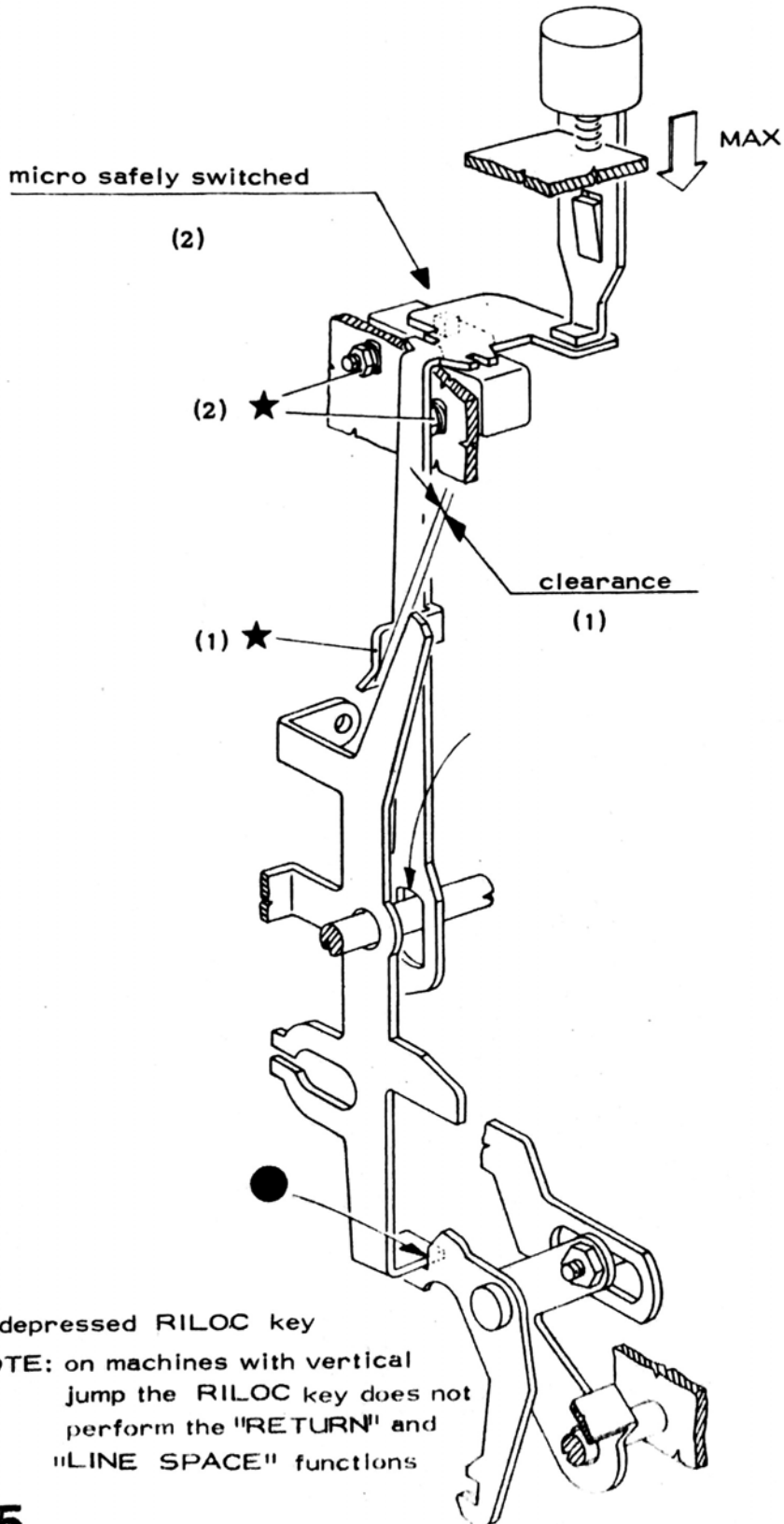
foreword	page	5.43
blocks diagram	"	5.44
vertical jump mechanical checks	" 5.45 + 5.47	
reader drive mechanical checks	" 5.48 + 5.49	
timing of paper feed pins on sprocket platen	"	5.50
electric and wiring circuit relative to TE and TL vertical jump and reader drive	" 5.51 + 5.52	
electric and wiring circuit relative to RE 315 vertical jump	" 5.53 + 5.54	

BLOCKS DIAGRAM OF VERTICAL JUMP AND READER DRIVE OPERATION



1) CHECK THE VERTICAL CONTROL CLUTCH COMMAND EXCLUSION

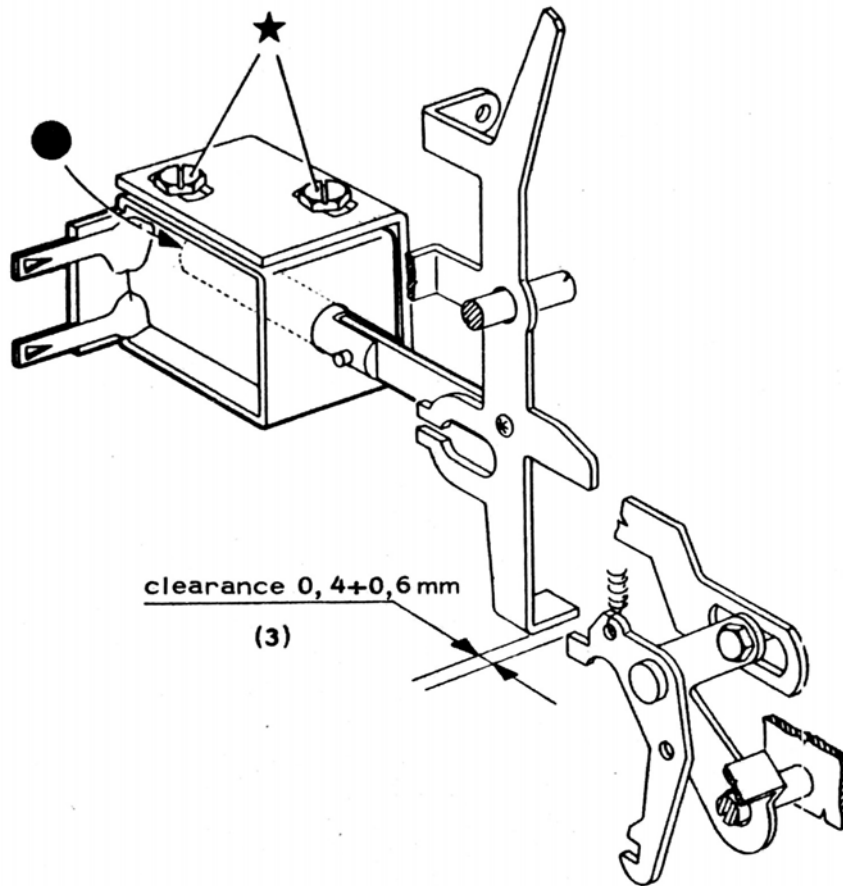
2) CHECK THE "RILOC" MICRO LOCKING POSITION



- depressed RILOC key

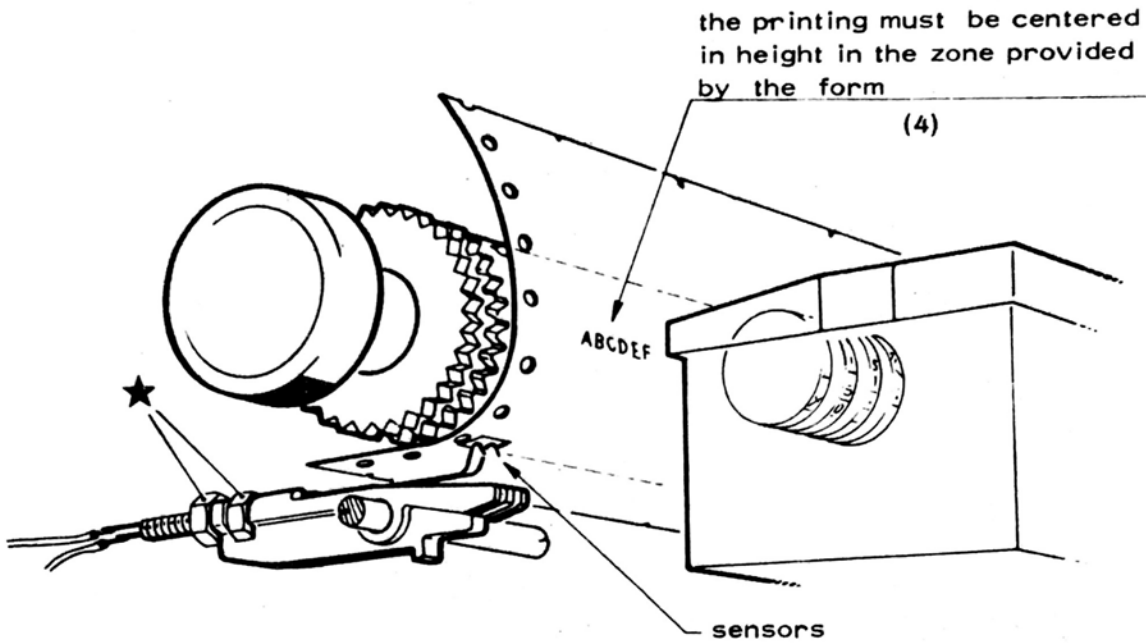
NOTE: on machines with vertical jump the RILOC key does not perform the "RETURN" and "LINE SPACE" functions

3) CHECK THE VERTICAL CONTROL CLUTCH CLOSING
BY E.M. FOR VERTICAL JUMP

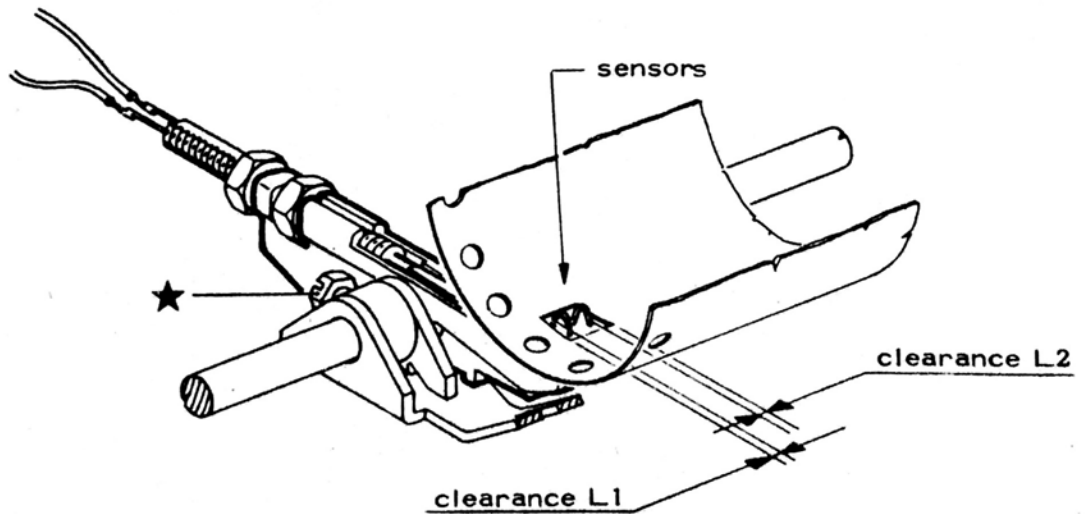


- manually obtain the contact shown in the figure

4) CHECK THE POSITION OF THE VERTICAL JUMP STOP FEELING SENSORS

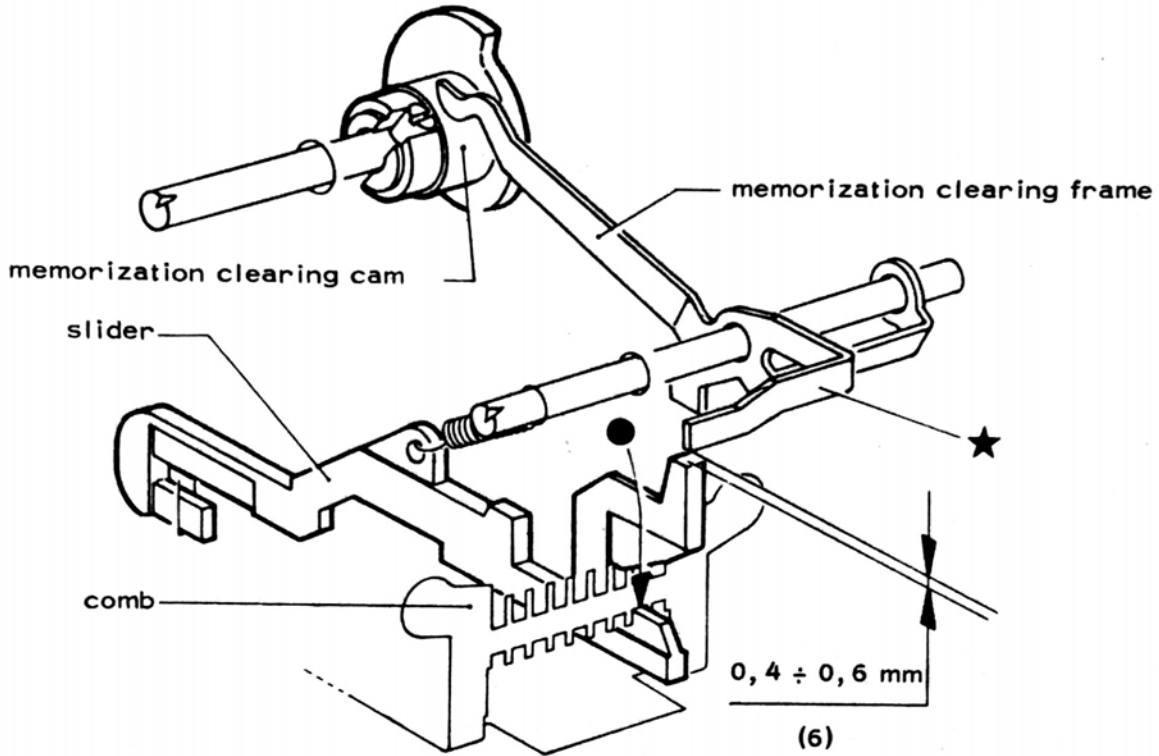


5) CHECK THE POSITION OF THE VERTICAL JUMP STOP FEELING SENSORS



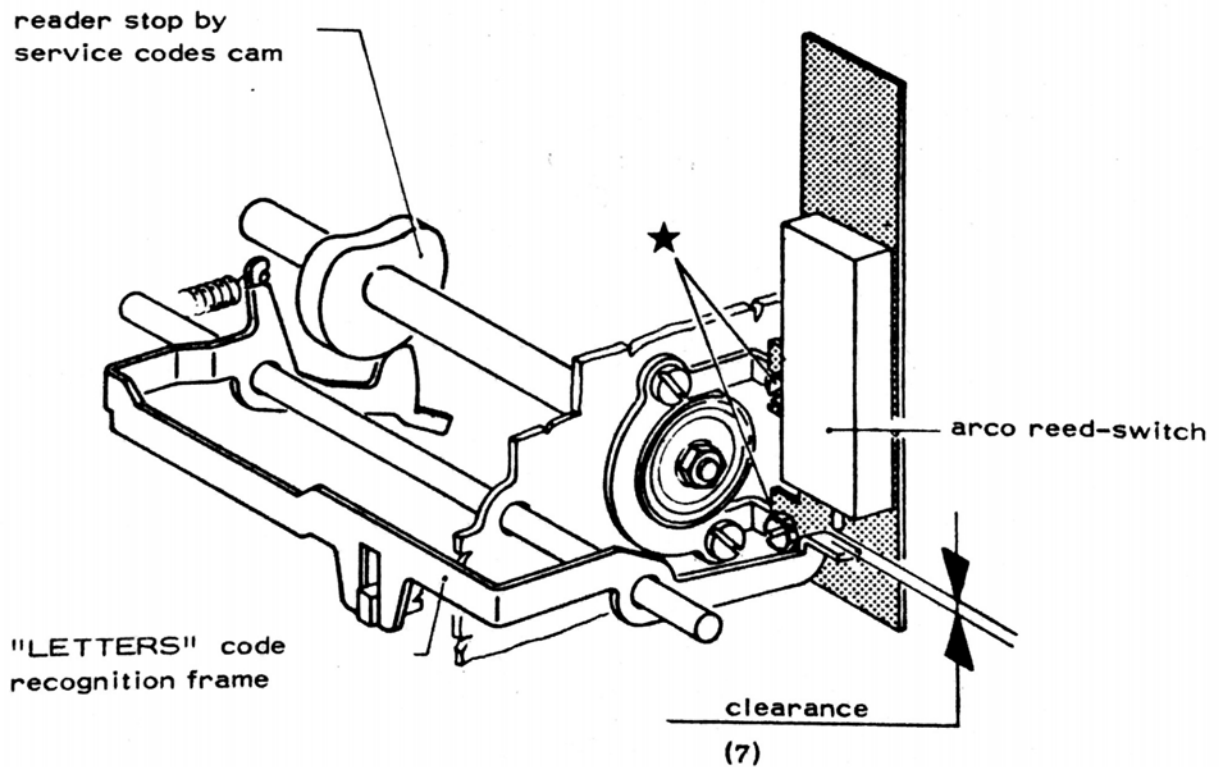
D046

6) CHECK THE POSITION OF MEMORIZATION CLEARING FRAME



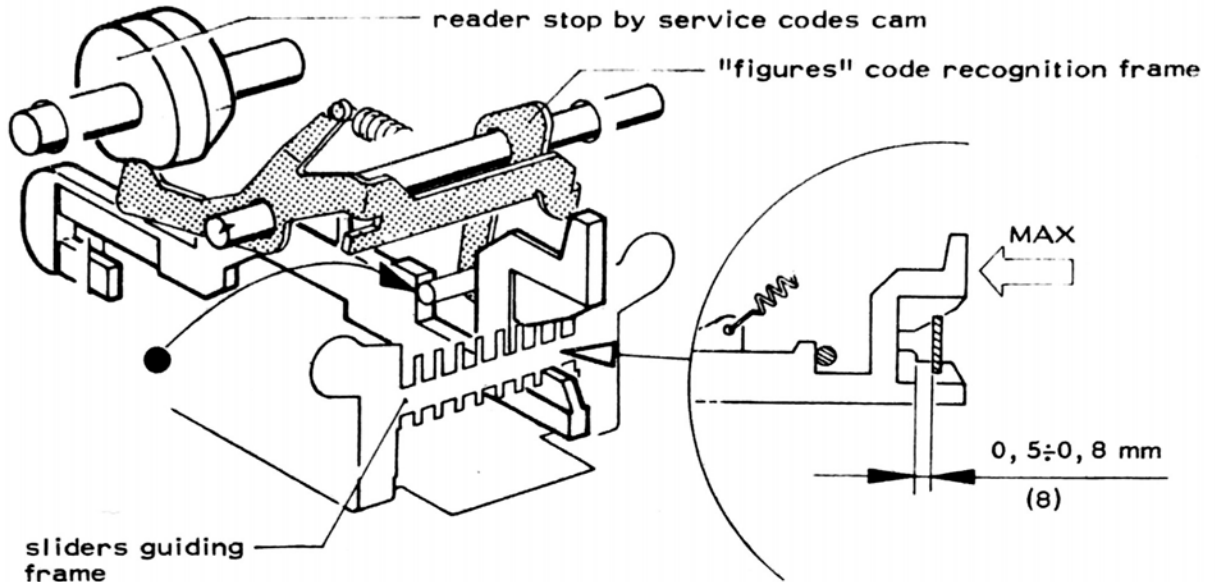
- manually hook the slider to the guiding comb to obtain the contact shown in the figure

7) CHECK THE ARCO REED-SWITCH LOCKING POSITION



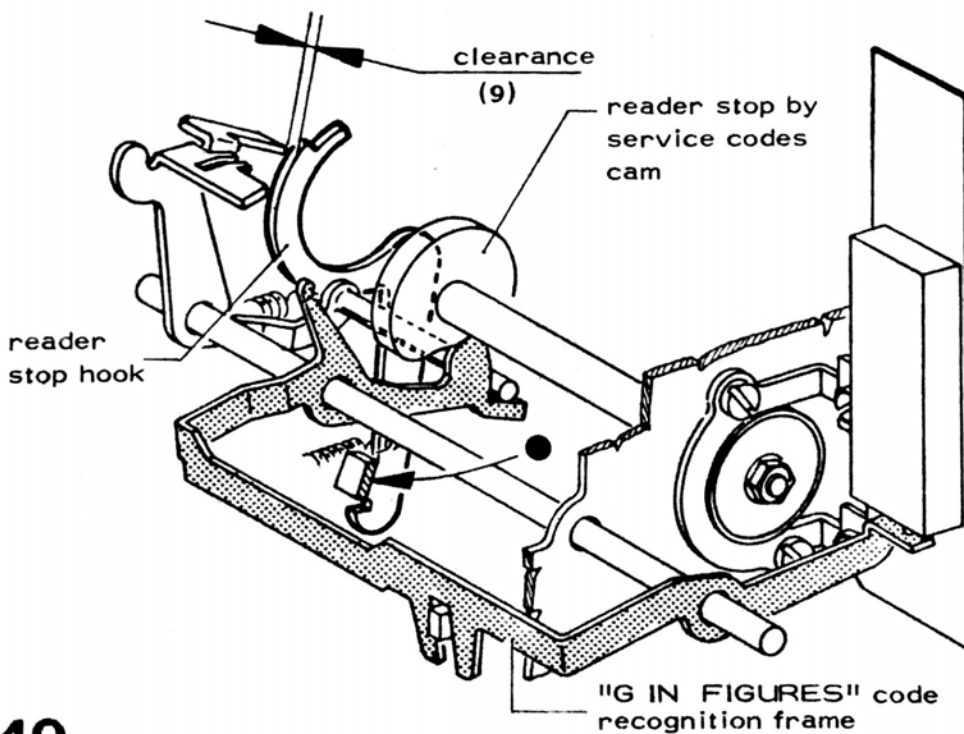
D046

8) CHECK THE HOOKING BETWEEN "FIGURES" CODE RECOGNITION SLIDER AND SLIDERS-GUIDING FRAM



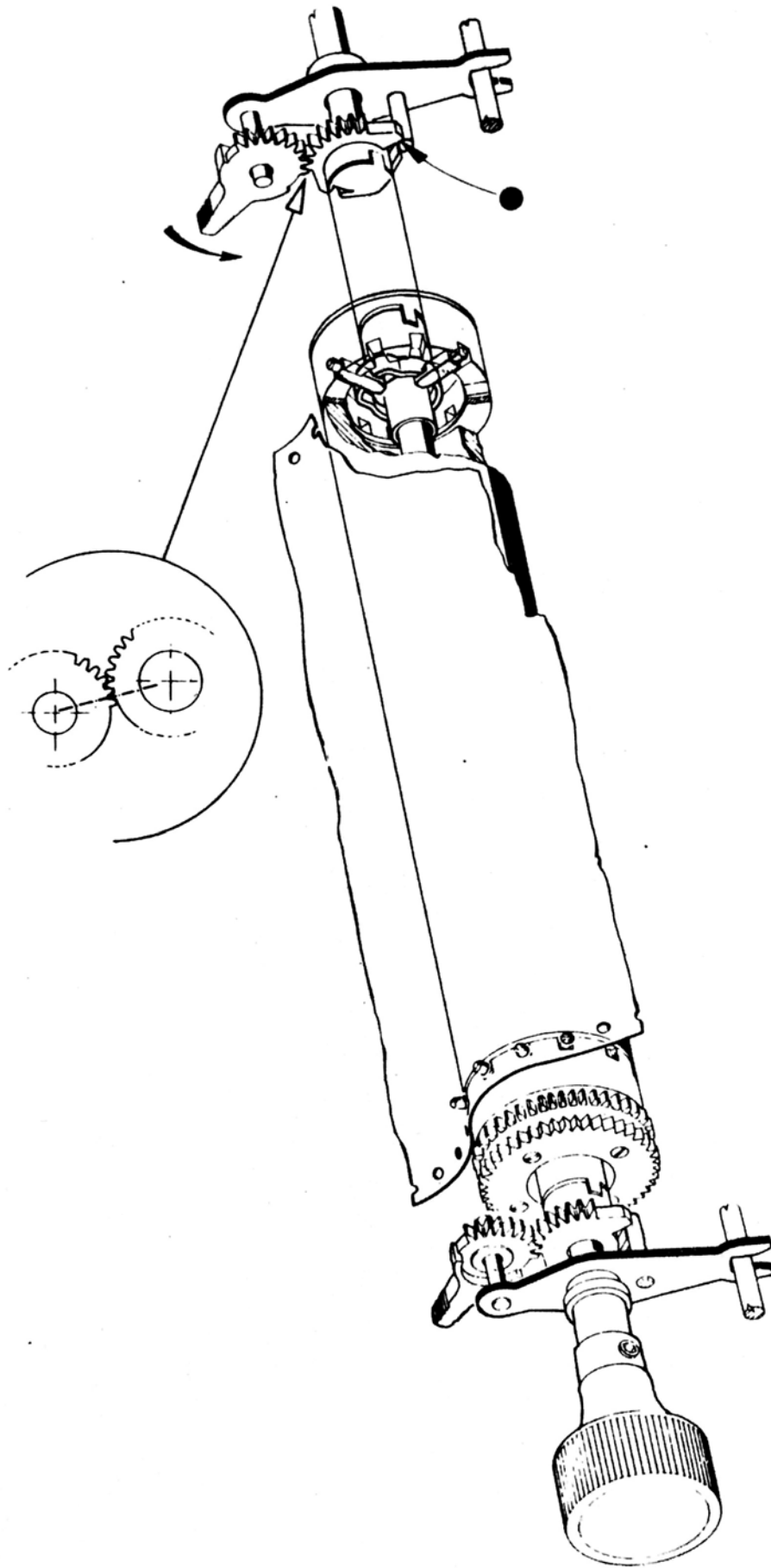
- Insert a tape that has the "FIGURES" code followed by the "G in figures" code punched on it
- Rotate until maximum control position of the "FIGURES" code recognition slider

9) CHECK THE RELEASE CLEARANCE BETWEEN READER STOP HOOK AND "G IN FIGURES" CODE RECOGNITION FRAME



D046

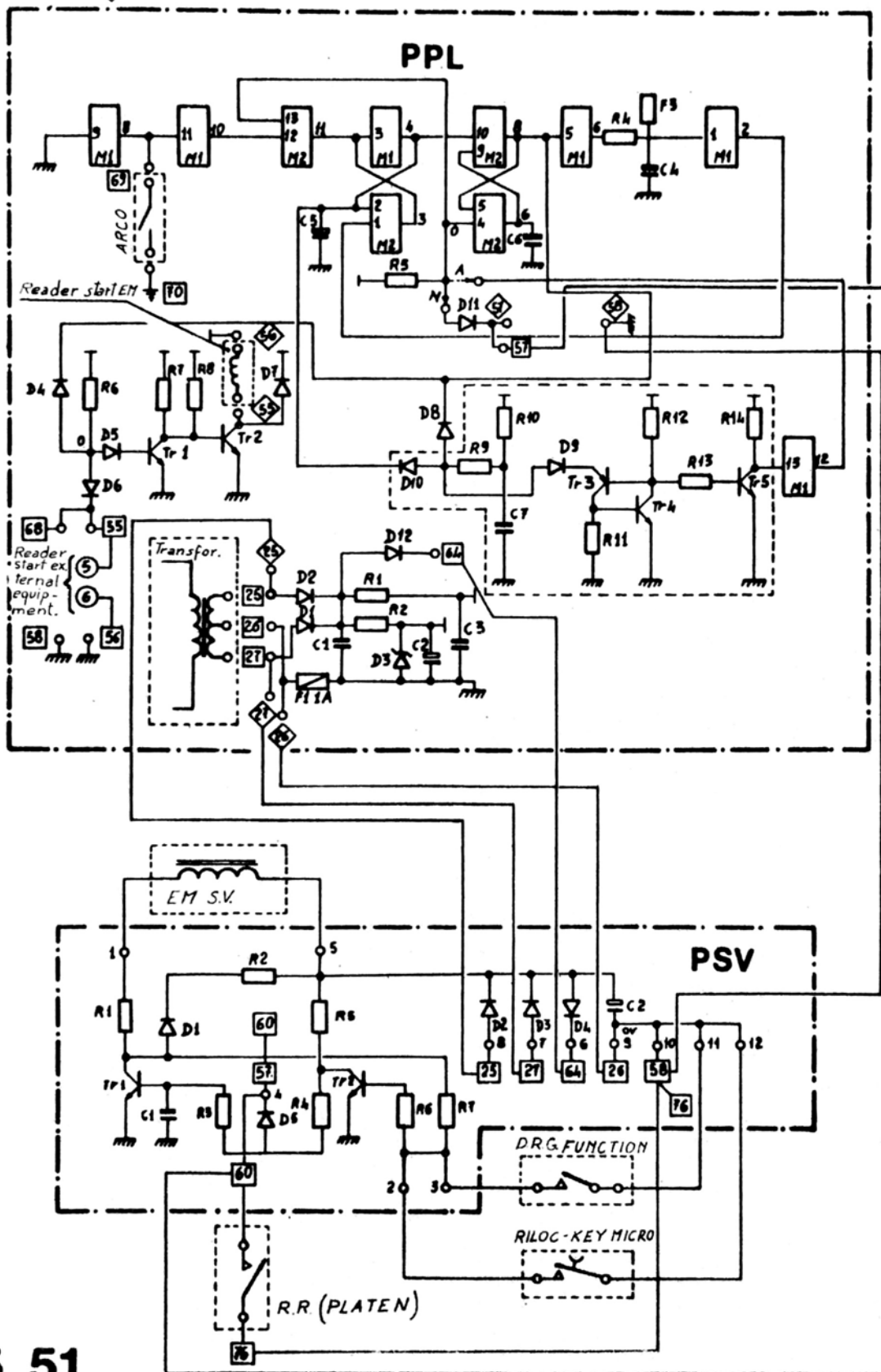
TIMING OF PAPER FEED PINS ON SPROCKET PLATEN



- The timing check is performed also on the platen left side.

ELECTRIC CIRCUIT RELATIVE TO TE AND TL VERTICAL JUMP AND READER DRIVE

Note: □ points soldered on reader drive printed circuit
◇ faston sectioned points on printed circuit



WIRING CIRCUIT RELATIVE TO TE AND TL VERTICAL JUMP AND READER DRIVE

- PPL - COMPONENTS

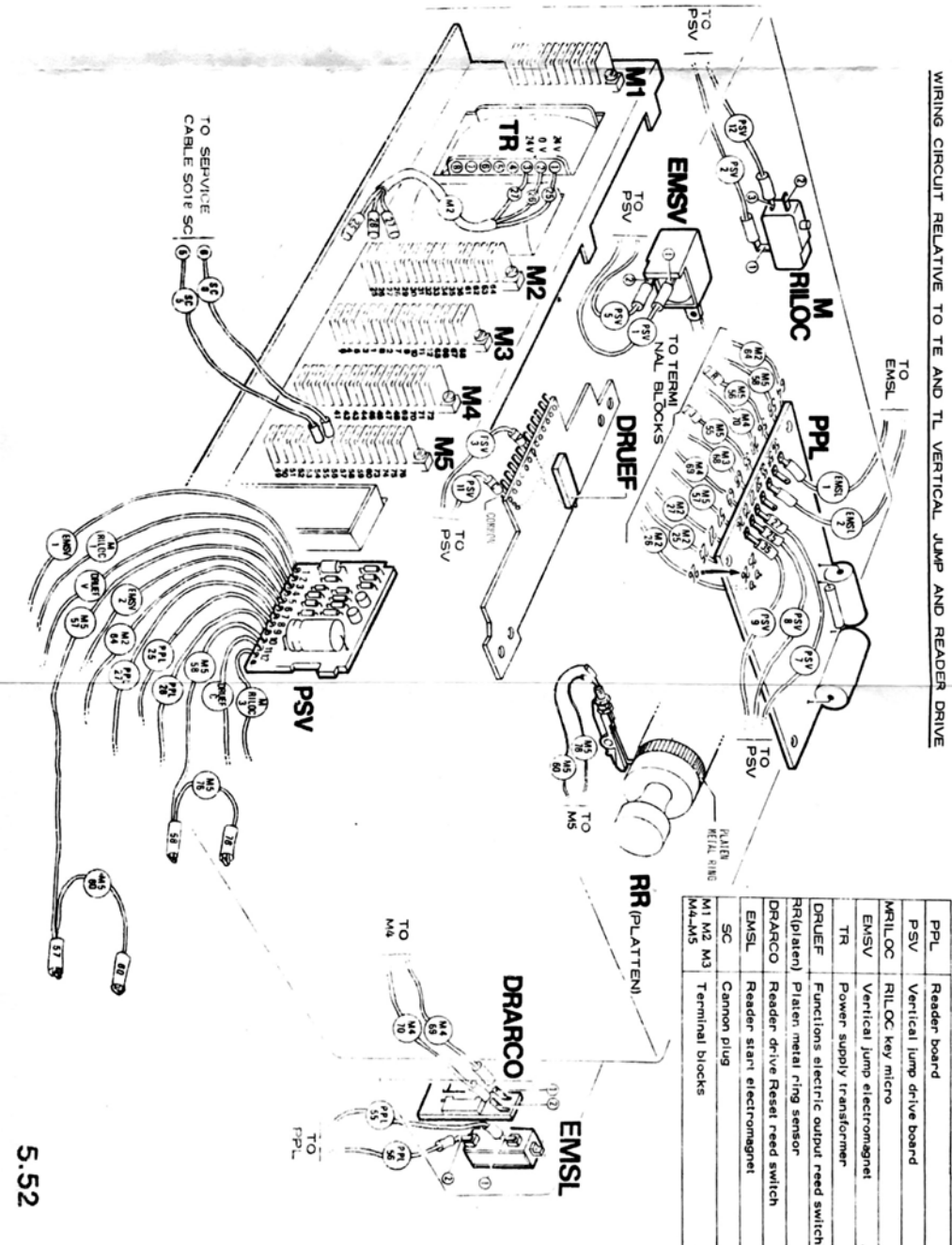
COMPONENT	VALUE	POWER OR VOLTAGE	TOLER.
R1	42 Ω	7W	5%
R2	330 Ω	7W	5%
R3	6.8 KΩ	1/4W	5%
R4	5.6 KΩ	"	5%
R5	5.6 KΩ	"	5%
R6	1KΩ	1/2W	5%
R7	2KΩ	"	5%
R8	100 Ω	"	"
R9	100 Ω	"	"
R10	33 KΩ	"	"
R11	22 KΩ	"	"
R12	22 KΩ	"	"
R13	22 KΩ	"	"
R14	100 KΩ	1/4W	5%
C1	150 μF	50 V	"
C2	1000 μF	50 V	"
C3	10 μF	10 V	"
C4	10 μF	10 V	"
C5	1 μF	25 V	"
C6	1 μF	25 V	"
C7	3.3 μF	10 V	"
D1	P100	"	"
D2	P100	"	"
D3	1N271A	"	"
D4	1N6055	"	"
D5	"	"	"
D6	"	"	"
D7	P100	"	"
D8	1N6055	"	"
D9	"	"	"
D10	P100	"	"
D11	"	"	"
T1	1W 8005	"	"
T2	1W 8005	"	"
T3	1W 8005	"	"
T4	1W 8005	"	"
T5	1W 8005	"	"
F1	1 A	"	"
M1	DTL5936	"	"
M2	DTL5946	"	"

COMPONENTS (PSV)

Component	Value	Power or Voltage	Toler.
R1	47 Ω	3W	10%
R2	220 Ω	1/4W	5%
R3	620 Ω	1/4W	5%
R4	1.8K Ω	1/4W	5%
R5	2.2K Ω	1/2W	5%
R6	4.7K Ω	1/8W	5%
R7	22 KΩ	1/8W	5%
C1	1 μF	35 V	10%

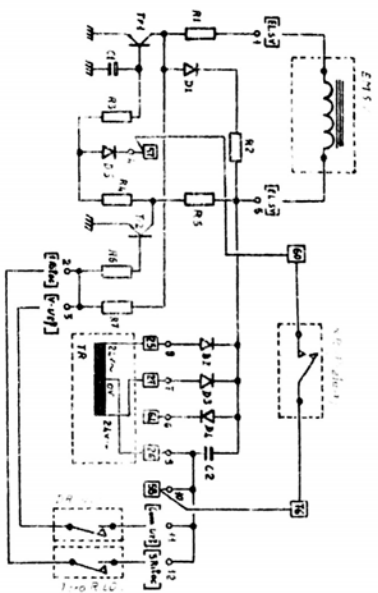
COMPONENTS (PSV)

Component	Value	Power or Voltage	Electr.
C2	150 μF	50V	
D1	P100		
D2	P100		
D3	P100		
D4	P100		
D5	1N6055		
TR1	1W8005		
TR2	1W8005		



D0046

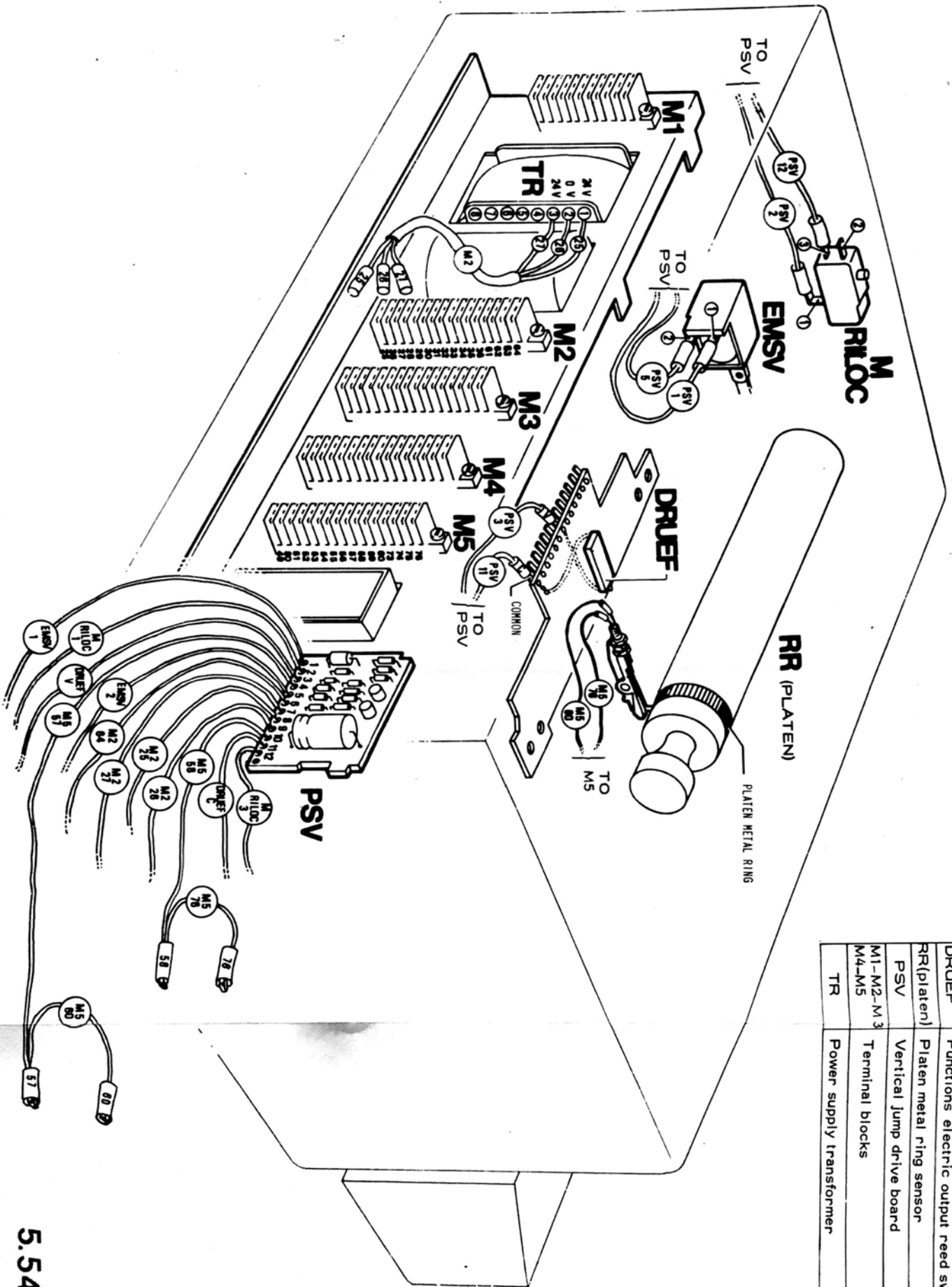
ELECTRIC CIRCUIT RELATIVE TO REL. 315 VERTICAL JUMP



5.53

COMPONENTS (P.S.V.)			
Component	Value	Power or Voltage	Tolerance
R1	47 Ω	3 W	10%
R2	220 Ω	1/4 W	5%
R3	620 Ω	1/4 W	5%
R4	1.9 KΩ	1/4 W	5%
R5	2.2 KΩ	1/2 W	2%
R6	4.7 KΩ	1/8 W	5%
R7	22 KΩ	1/8 W	5%
C1	1 μF	35V	10%
C2	150 μF	50V	Electr.
D1	P100		
D2	P100		
D3	P100		
D4	P100		
D5	1x8055		
TR1	1w8995		
TR2	1w8995		

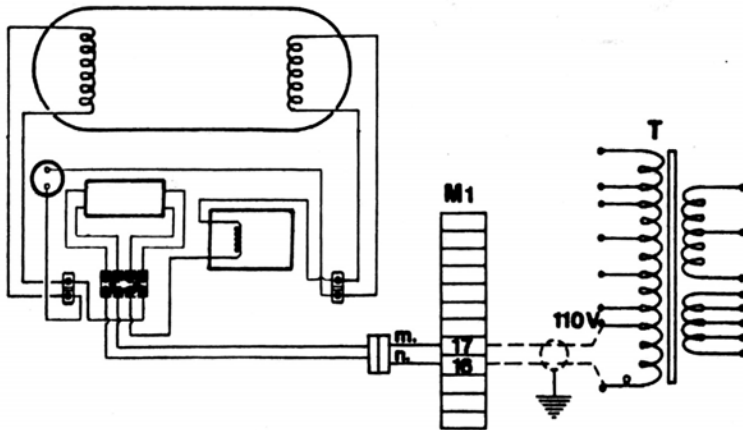
WIRING CIRCUIT RELATIVE TO RE 315 VERTICAL JUMP



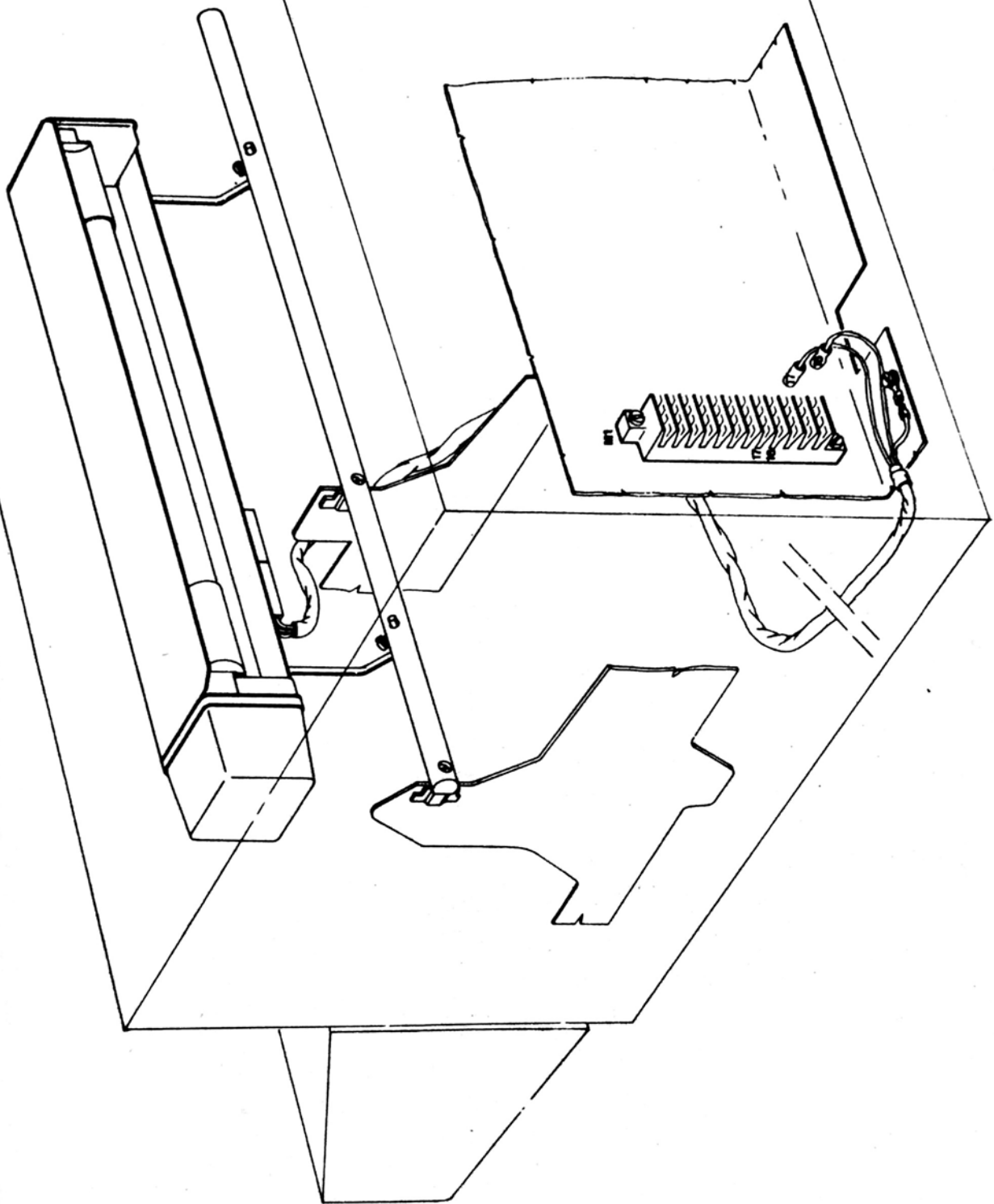
MRILOC	RILOC Key micro
EMSV	Vertical jump electromagnet
DRUEF	Functions electric output reed switch
RR(platen)	Platen metal ring sensor
PSV	Vertical jump drive board
M1-M2-M3	Terminal blocks
M4-M5	
TR	Power supply transformer

D130 READING LIGHT

ELECTRIC CIRCUIT



WIRING CIRCUIT



D130

D212 - TELEGRAPHIC POWER SUPPLY (+ 48 V)

D213 - TELEGRAPHIC POWER SUPPLY (+ 60 V)

Possible connections:

- local in simple current	page.	5.60
- local in double current	"	5.61
- point to point in simple current	"	5.62
- semi-duplex in double current with check	"	5.63-5.65

Operations to be performed in order to set the power supply in service

- move jumper [16] - [24] of terminal block M1 in [16] [14] to supply the transformer with power even with motor stopped.
- preset the electromagnets for "simple current" or "double current" according to the type of connection
- connect the power supply outputs following the instructions shown on the telegraphic diagrams tables

Operations to be performed to set the power supply out of service

- restore jumper [16] - [24]
- connect the outputs as follows:

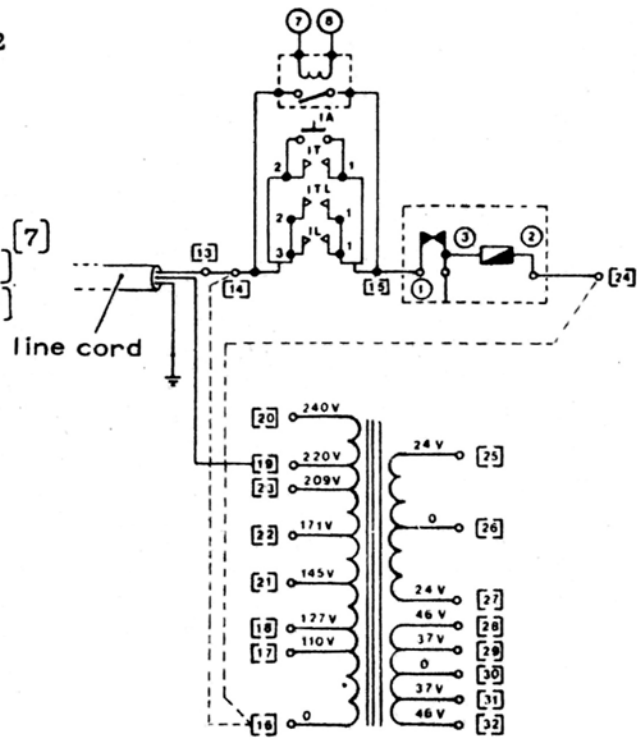
A and C at point 31 of M2

H and F at point 61 of M2

D and F at point 62 of M2

B at point 36 of M2

- transform jumpers [1] - [7] or [4] - [7] in [1] - [1] [7] also transform [30] - [2] in [4] [4]



ELECTRIC CHECKS

Check board pal

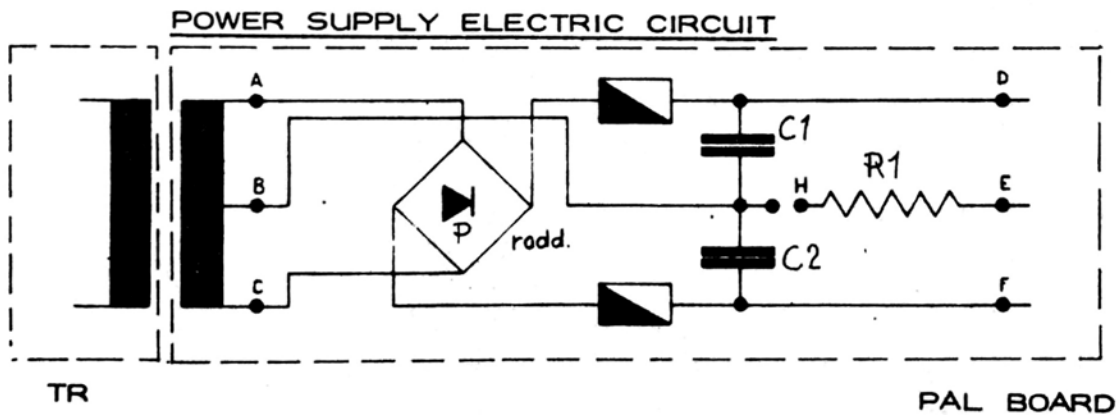
- measure the voltages at the board Input, at points A-B and BC: they must have the values shown at the side.
If the measures do not correspond check the transformer

- Measure the output continuous voltages at points B-D and B-F.
If the measures do not correspond to the values shown at the side, replace the board.

PAL faston	D212	D213
A - B	37V in C, A.	46V in C, A.
B - C		
B - D	<u>+48V</u> in C, C.	<u>+60V</u> in C, C.
B - F		

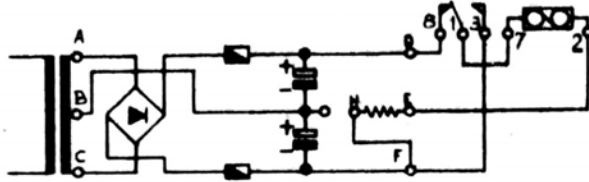
Check R1 resistance of board PAL

- disconnect faston E
- check the R1 resistance value between connectors E-H only if they are not connected at point [6] of terminal blocks.

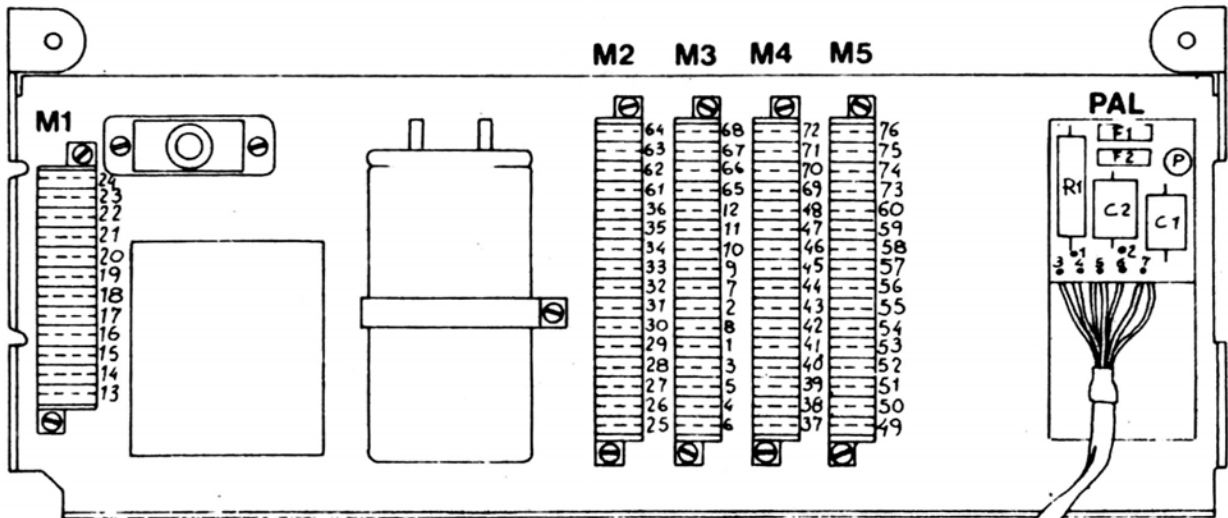


LOCAL CONNECTION IN SIMPLE CURRENT

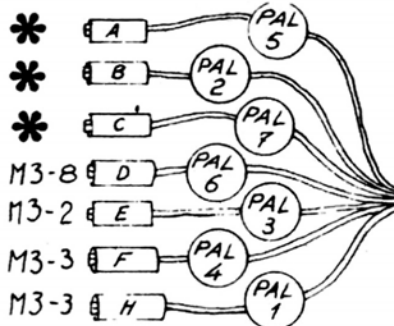
ELECTRIC CIRCUIT



WIRING CIRCUIT



- M3-1
- M3-7
- M3-4
- M3-4
- M1-16
- M1-14



PAL = POWER SUPPLY BOARD
 M1 }
 M2 } = TERMINAL BLOCKS
 M3 }

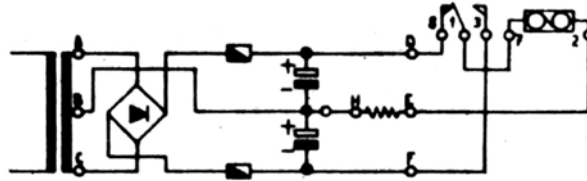
FASTON	D212(48V)	D213(60V)
A	M2-29	M2-28
B	M2-30	M2-30
C	M2-31	M2-32

- *
- *
- *

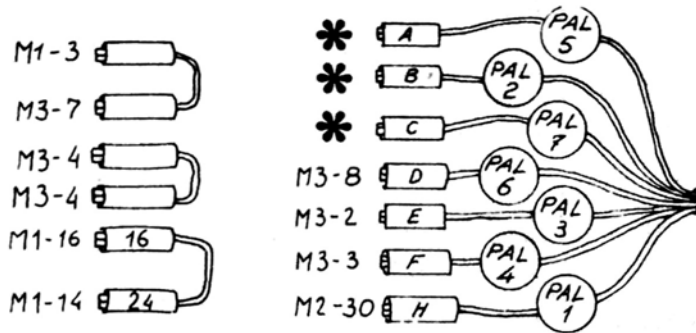
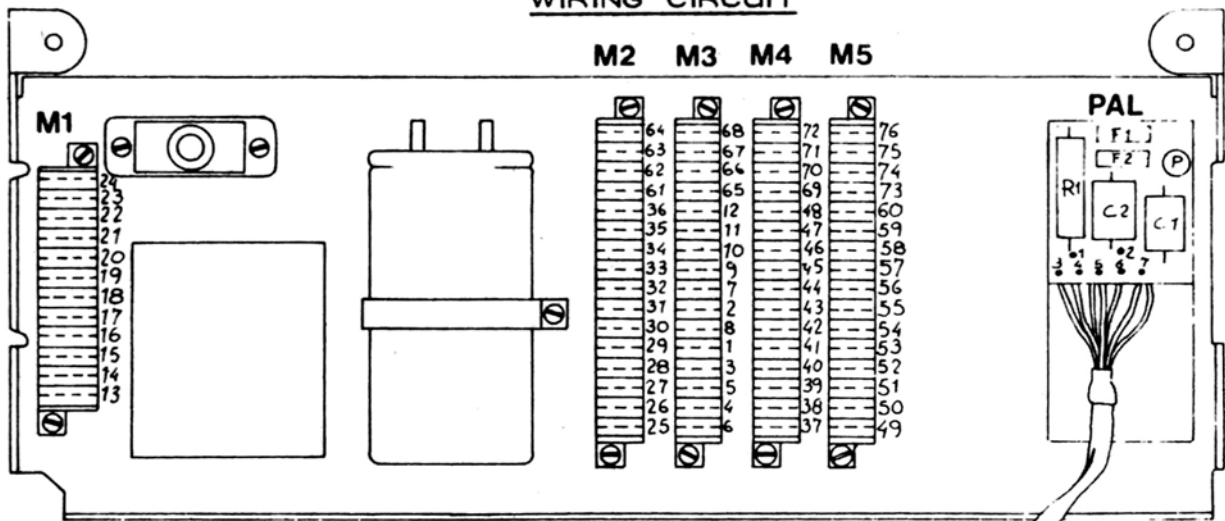
Power Supply Board Components			
D212		D213	
C1	50 F 100V	C1	50 F 100V
C2		C2	
F1	(5x20) 0, 1A	F1	(5x20) 0, 1A
F2		F2	
R1	1, 1K 20W	R1	1, 4K 20W
P	GIE 0, 4 W	P	GIE 0, 4 W

LOCAL CONNECTION IN DOUBLE CURRENT

ELECTRIC CIRCUIT



WIRING CIRCUIT



PAL=POWER SUPPLY BOARD

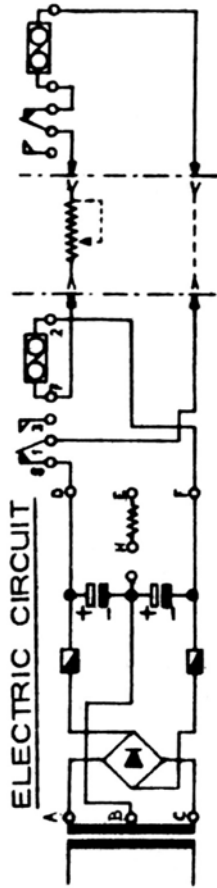
M1 }
M2 } =TERMINAL BLOCKS
M3 }

FASTON	D212(48V)	D213(60V)
* A	M2-29	M2-28
* B	M2-30	M2-30
* C	M2-31	M2-32

Power Supply Board Components

D212		D213	
C1	50 F 100V	C1	50 F 100V
C2		C2	
F1	(5x20) 0, 1A	F1	(5x20) 0, 1A
F2		F2	
R1	1, 1K 20W	R1	1, 4K 20W
P	GIE 0, 4 W	P	GIE 0, 4 W

POINT TO POINT CONNECTION IN SIMPLE CURRENT

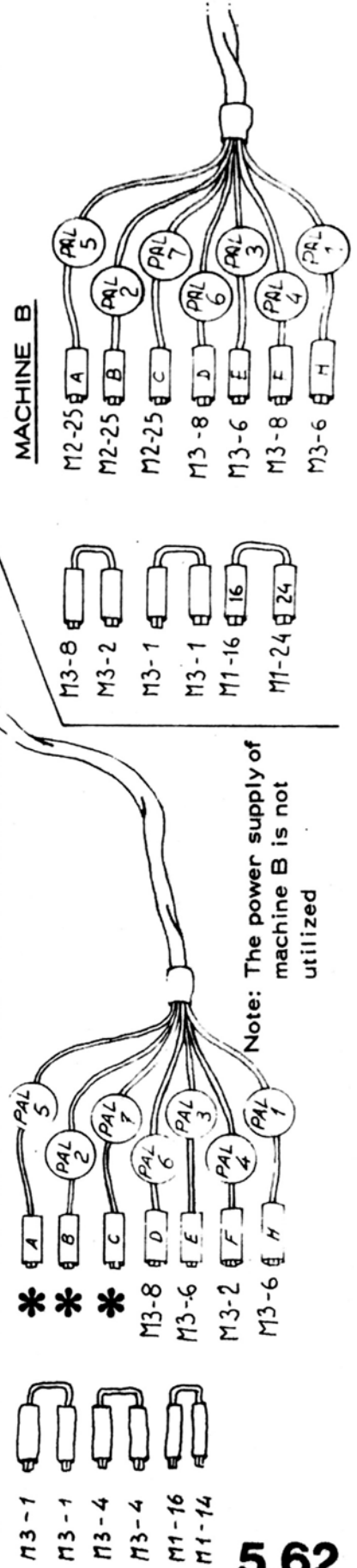
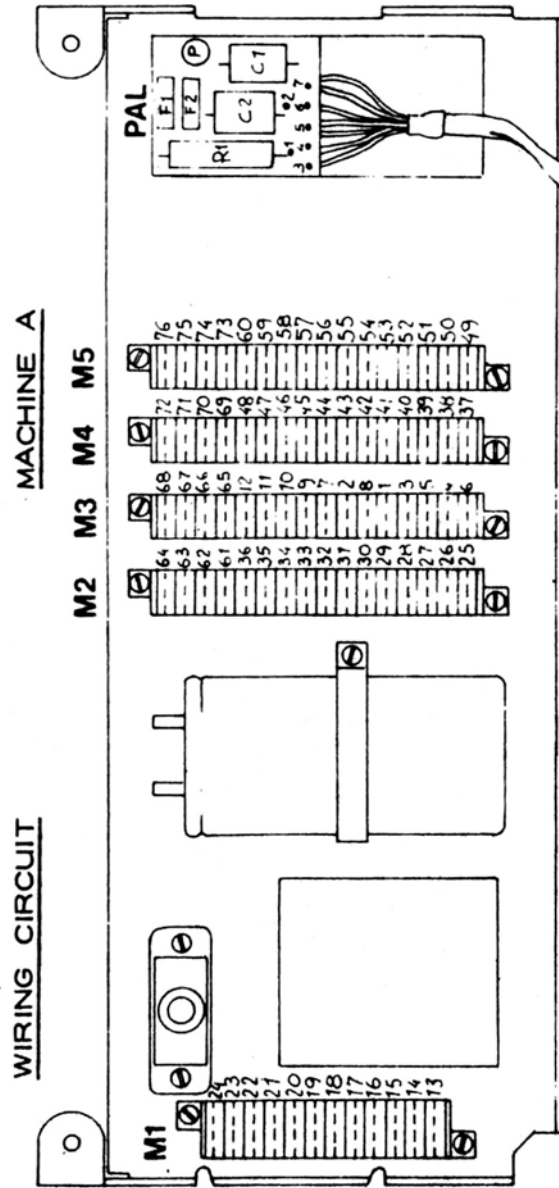


Power Supply Board Components		
D212		D213
C1	50 F 100V	C1
C2		C2
F1	(5x20) 0, 1A	F1
F2		F2
R1	1, 1K 20W	R1
P	GIE 0, 4 W	P

PAL=POWER SUPPLY BOARD
 M1 }
 M2 } =TERMINAL BLOCKS
 M3 }

FASTON	D212(48V)	D213(60V)
A	M2-29	M2-28
B	M2-30	M2-30
C	M2-31	M2-32

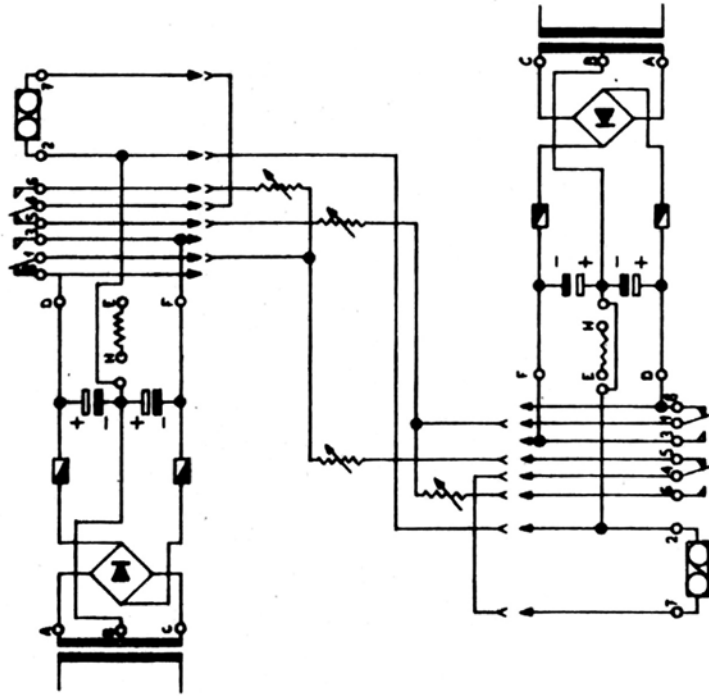
* * *



Note: The power supply of machine B is not utilized

D212-D213

ELECTRIC CIRCUIT

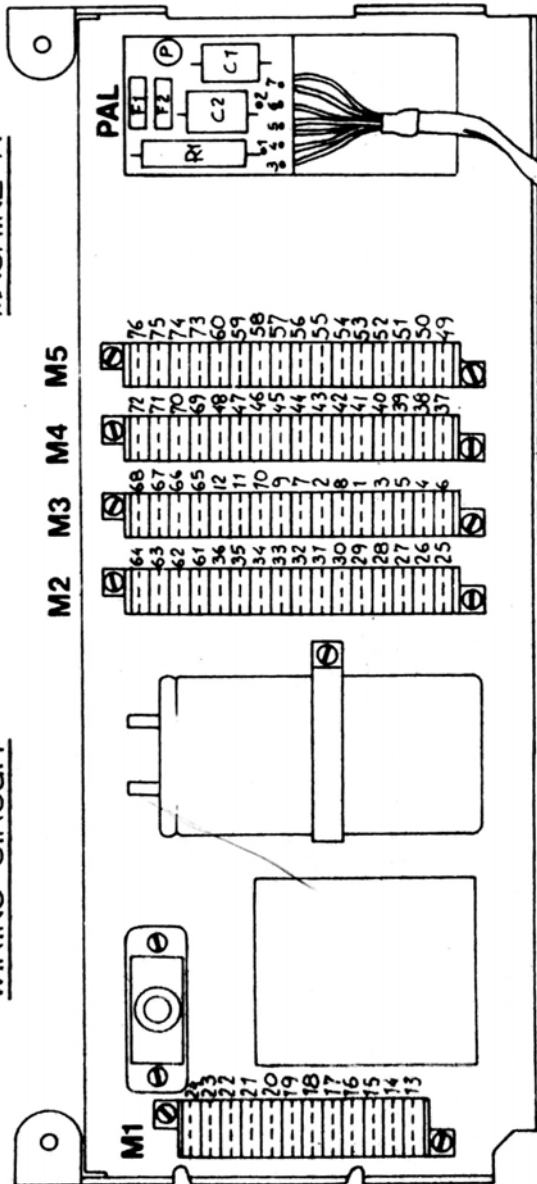


D212		D213	
C1	50 F 100V	C1	50 F 100V
C2	(5x20) 0, 1A	C2	
F1	1, 1K 20W	F1	(5x20) 0, 1A
F2	GIE 0, 4 W	F2	
R1		R1	1, 4K 20W
P		P	GIE 0, 4 W

SEMI-DUPLEX CONNECTION IN DOUBLE CURRENT WITH CHECK

WIRING CIRCUIT

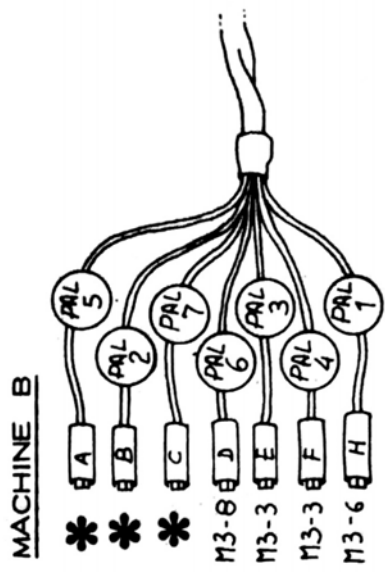
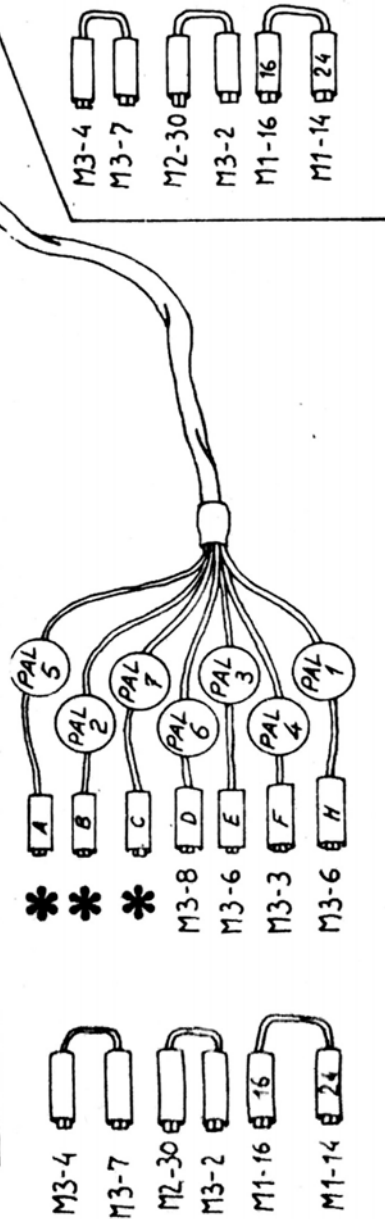
MACHINE A



PAL=POWER SUPPLY BOARD
 M1 }
 M2 } = TERMINAL BLOCKS
 M3 }

	FASTON	D212(48V)	D213(60V)
*	A	M2-29	M2-28
*	B	M2-30	M2-30
*	C	M2-31	M2-32

MACHINE B



MODIFICATIONS

MODIFICATIONS
(from serial number 55594)

Index:

- modifications purpose	page	6.01
- features	"	6.01
- checks modifications	"	6.04
- Diagnostic Guide modifications	"	6.04 + 6.07
- tests modifications	"	6.08
- new adjustments relationships flow-charts	"	6.08
- new mechanical checks	"	6.09 + 6.13

MODIFICATIONS

A few modifications have been made starting from serial number 555594 (date of application, November 1972).

MODIFICATIONS PURPOSE:

- To improve the adjustment of the automatic reply release.
- Release the start of the reader and automatic reply from the EM/REC bar conditions.

FEATURES

As a result of these modifications, the following machine operations are now possible.

<u>OPERATIONS TO BE PERFORMED</u>	<u>MACHINE FUNCTIONS</u>
1 "HERE IS" key depression with buffer partially loaded and the keyboard in motion.	a) Immediate start of the A.R. b) Interruption of codes output; codes still in the buffer at the start of the A.R. are lost. c) Error possibility on the last code printed before the A.R. start.
2 "START READER" key depression with buffer partially loaded and keyboard in motion	- Immediate start of the reader - (See items b) and c) of previous paragraph).
3 Depression of a keyboard key with A.R. in motion	- The A.R. does not stop. - The codes entered in the keyboard are lost and the keyboard does not.

OPERATIONS TO BE PERFORMED	MACHINE FUNCTIONS
4 "START READER KEY" depression with A.R. in motion.	<ul style="list-style-type: none"> - The A.R. does not stop. - The reader starts after emission of the last A.R. code
5 Depression of a keyboard key with reader in motion	<ul style="list-style-type: none"> - The reader does not stop. - The codes entered in the keyboard are lost and the keyboard does not lock.
6 First depress the "HERE IS" key and then the "START READER" key, with buffer partially loaded and keyboard in motion.	<ul style="list-style-type: none"> - The A.R. starts immediately. - The emission of codes from the buffer is interrupted; codes still in the buffer at the A.R. start are lost. - Possible error on the last code printed before the A.R. start.
7 First depress the "START READER" key and then the "HERE IS" key with buffer partially loaded and keyboard in motion.	<ul style="list-style-type: none"> - The reader starts immediately. - The emission of codes from the buffer is interrupted and the codes still in the buffer at the A.R. start are lost. - Possible error on the last code printed before the reader start.
8 "START READER" key, depression with "repeat" in motion.	<ul style="list-style-type: none"> - The reader starts immediately.

The following conditions remain unchanged:

OPERATIONS TO BE PERFORMED	MACHINE FUNCTIONS
<p>1 "REPEAT" key depression with keyboard in motion, buffer partially loaded.</p>	<ul style="list-style-type: none"> - The buffer remains locked and partially loaded. - The emitter repeatedly sends out the code in output at the time of the interruption.
<p>2 "REPEAT" key depression with A.R. in motion.</p>	<ul style="list-style-type: none"> - The A.R. continues without interruption.
<p>3 "HERE IS" key depression with reader in motion.</p>	<ul style="list-style-type: none"> - The reader continues without interruption. - The A.R. start is booked. - The A.R. sequence starts after the last reader code has been emitted.
<p>4 "REPEAT" key depression with reader in motion.</p>	<ul style="list-style-type: none"> - The reader continues without interruption.
<p>5 Depression of a keyboard key with "repeat" in motion.</p>	<ul style="list-style-type: none"> - The buffer is loaded. - The emitter repeatedly sends out the code in output.
<p>6 "HERE IS" key depression with "repeat" in motion.</p>	<ul style="list-style-type: none"> - The function cannot be performed.

CHECKS MODIFICATIONS

The following checks have been added: 210 - 211 - 212 - 213 - 214 - 215
216. The following checks have been eliminated: 106 - 107 - 111 - 114 -
115 - 116 - 117 - 195 - 196 - 197 - 198 - 538.

The additional checks are shown at the end of this chapter.

DIAGNOSTIC GUIDE MODIFICATIONS

As a result of these modifications, are shown below those sections that have been modified. (It is advisable not to mark the changes on the Diagnostic Guide, in order to keep two distinct sections for each numbered area).

- a) All symptoms described in "RECIPROCAL LOCKINGS" of the EM section, have been eliminated and replaced by the following:

WITH READER IN MOTION, THE A. R. START IS NOT LOCKED
WITH A. R. IN MOTION, THE READER START IS NOT LOCKED

CAUSE	E1			
The rest position of the A.R. and reader lock insertion bridge is incorrectly adjusted		214		
The work position of the A.R. and reader lock insertion bridge is incorrectly adjusted		216		

WITH THE BUFFER PARTIALLY LOADED, AT THE DEPRESSION OF "HERE IS" KEY OR "START READER" KEY, AT THE END OF THE TRANSMISSION BY READER OR A.R., THE CODES IN THE BUFFER ARE PRINTED ABUSIVELY

CAUSE	E2			
The memorization hook release by "HERE IS" and "START READER" keys, is incorrectly adjusted		210		

b) Sections: A5 - C1 - C2 - C3 - C4 - Q2 will be as follows:

STARTING OF SERIALIZER ABUSIVE CYCLES

	CAUSE	A5		
	- Timing of serializer clutch release cam		47	
	- The serializer clutch is kept closed		48	
	- Memorization hook release		51	
	- Copying hook recovery		103	
	- Rest positions of the serializer clutch - Release kinematic by the "Automatic reply"		109 110	
	- Rest position of the A.R. and reader lock insertion bridge		213	

AT THE DEPRESSION OF THE "HERE IS" KEY THE A.R. DOES NOT START

	CAUSE	C1		
	- Rest position of the "serializer clutch closing memorization rod"		107	
	- Rest position of the "serializer clutch closing memorization bridge"		108	
	- Work position of the "serializer clutch closing memorization bridge"		112	
	- Serializer clutch release by automatic reply		113	
	- The serializer clutch release by "HERE IS" key is incorrectly adjusted		212	
	- The work position of the A.R. and reader lock insertion bridge is incorrectly adjusted		215	

THE A.R. DOES NOT START OR STOPS IMMEDIATELY AFTER STARTING ONLY WHEN THE STARTING IS CAUSED BY THE "HERE IS" CODE RECEPTION

CAUSE	C2		
- Positioning of the "EM/REC" bar		333	
- Positioning of the FIGURES/LETTERS bar (FGR/LTR)		337	
- Positioning of the LTR/FGR bar in FGR		429	
- The serializer clutch release by "HERE IS" code is incorrectly adjusted		211	
- The work position of the A.R. and reader lock insertion bridge is incorrectly adjusted			

THE A.R. STOPS BEFORE (SENDING ALL CODES)

CAUSE	C3		
- Rest position of the "serializer clutch closing memorization bridge"		108	
- Work position of the "serializer clutch closing memorization bridge"		112	

THE A.R. STARTS ABUSIVELY

CAUSE	C4		
- Positioning of the "EM/REC" bar		333	
- Positioning of the FIGURES/LETTERS bar (FGR/LTR)		338	
- Rest position of the "Automatic reply" drum feed rod		130	

THE READER DOES NOT START

CAUSE	Q2		
- Forward movement of the "EM/REC bar positioning sector"		172	
- Forward movement of the "EM/REC bar positioning sector"		173	
- Positioning of the EM/REC bar in reception		175	
- Rest position of the "START READER" key control lever		502	
- Rest position of the "reader clutch lever" releasing link		517	
- Rest position of the "reader clutch lever" release		518	
- "Reader clutch lever" release		523	
- Reader clutch tooth" release		525	
- "Locking" position of the start reader locking arm		538	
- The serializer clutch release by reader		542	

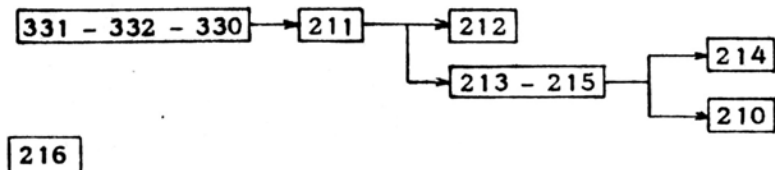
TESTS MODIFICATIONS

The test relative to "RECIPROCAL LOCKINGS" is replaced by the following:

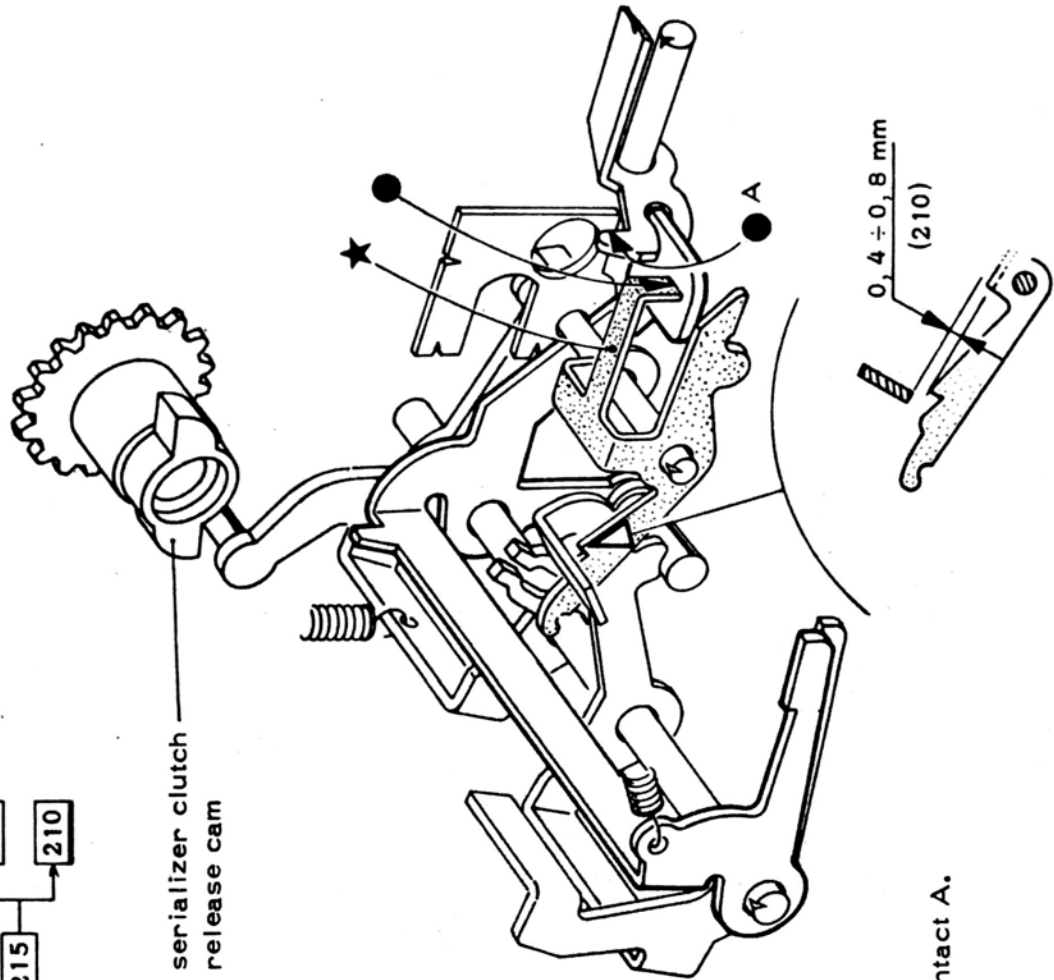
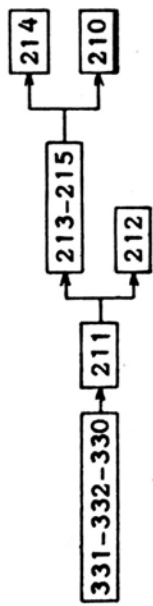
OPERATIONS TO BE PERFORMED	CHECK that:
<ul style="list-style-type: none"> - Insert a tape in the reader. Start the reader, then depress the the "HERE IS" - Start the A.R., then depress the "START READER" key - Insert a tape in the reader. Alternatively perform letters and figures cycles in order to accumulate codes in the memory. When the buffer is partially loaded depress the "HERE IS" key. Repeat the test for the "START READER" key 	<ul style="list-style-type: none"> - the A.R. does not start (E1). - the reader does not start(E1). - at the end of reader or A.R. cycles there are no abusive printings (E2).

NEW ADJUSTEMENTS RELATIONSHIPS FLOW-CHARTS

- The new mechanical checks flow chart is shown below:



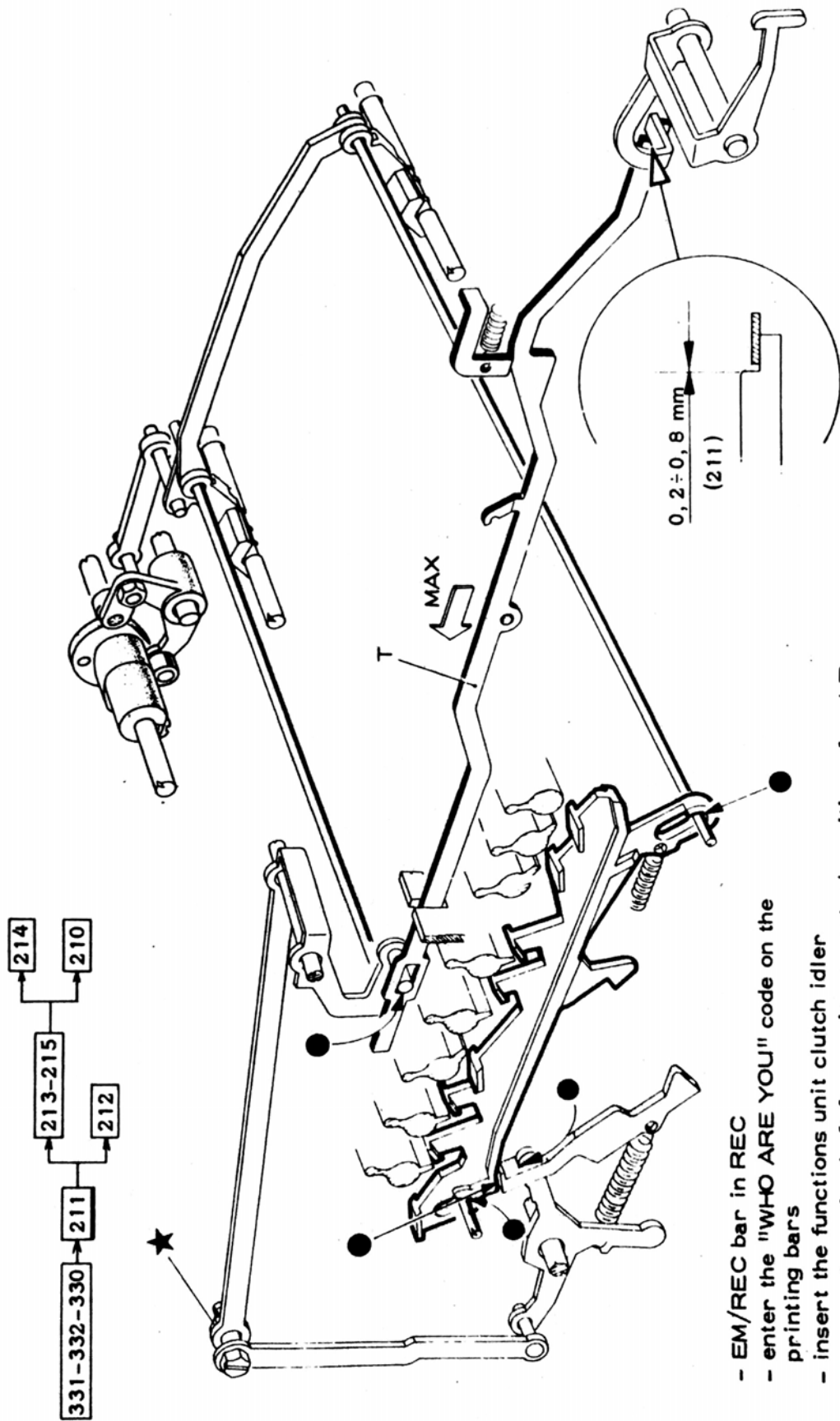
210) CHECK THE MEMORIZATION HOOK RELEASE



- to check manually obtain contact A.

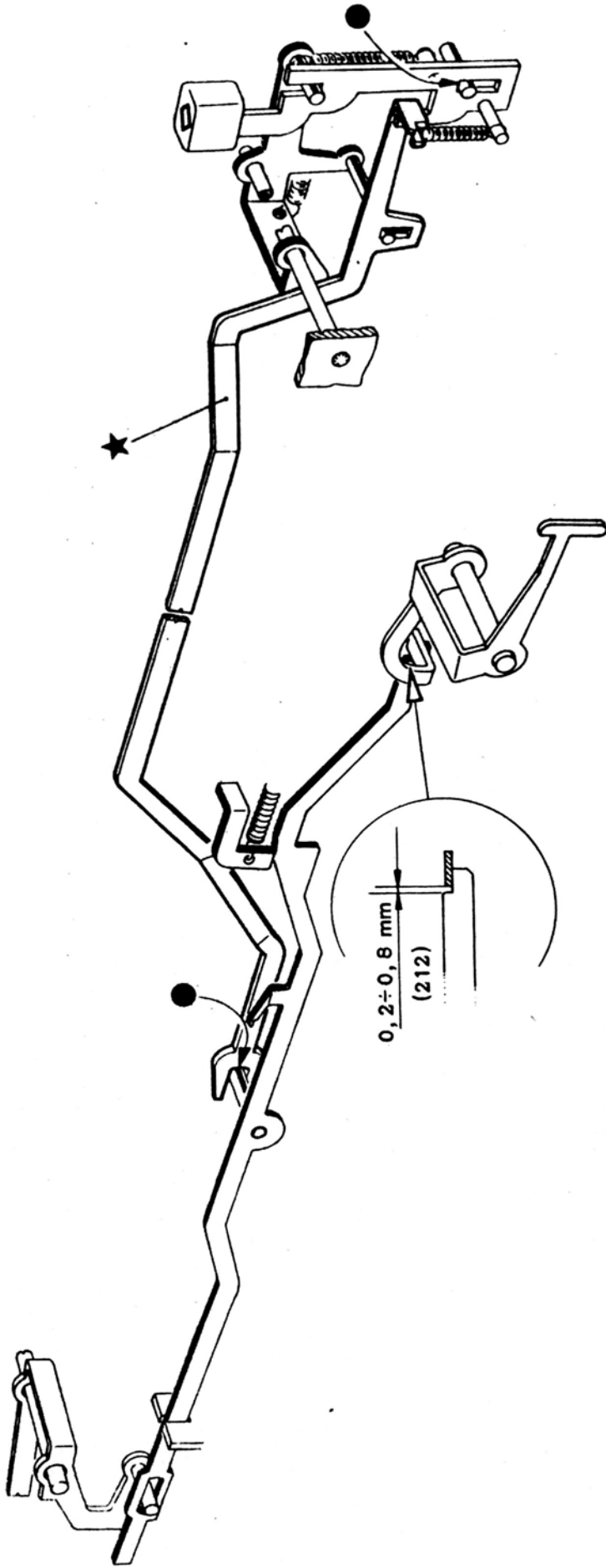
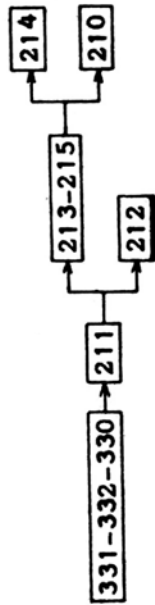
211) CHECK THE SERIALIZER CLUTCH RELEASE BY "WHO ARE YOU" CODE

6.10



- EM/REC bar in REC
- enter the "WHO ARE YOU" code on the printing bars
- insert the functions unit clutch idler
- rotate the main shaft for maximum control position of rod T.

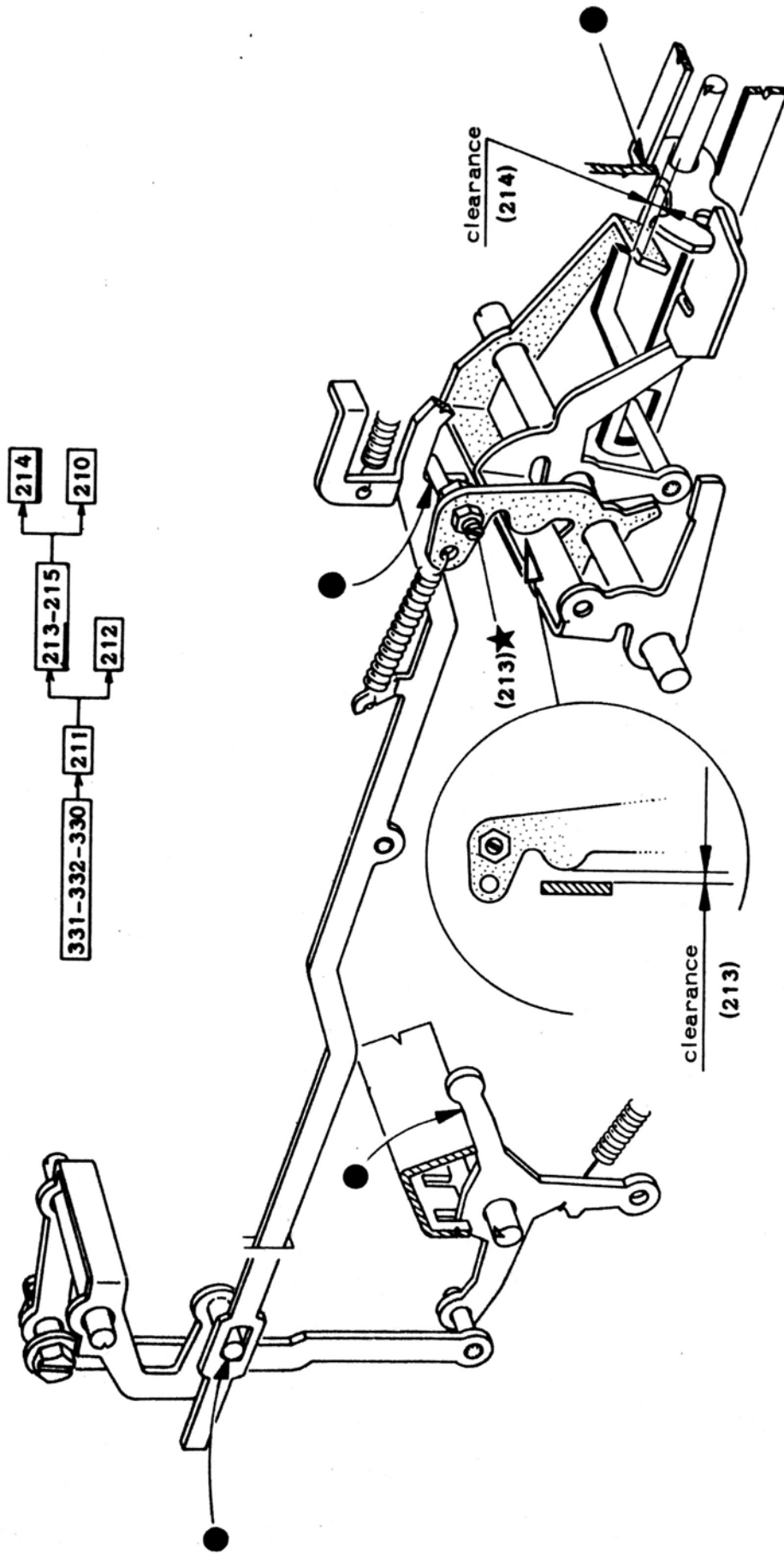
212) CHECK THE SERIALIZER CLUTCH RELEASE BY "HERE IS" KEY



- depress the "HERE IS" key and keep it depressed.

6.12

213-214) CHECK THE REST POSITION OF THE A.R. AND READER LOCK INSERTION BRIDGE



NOTES

NOTES

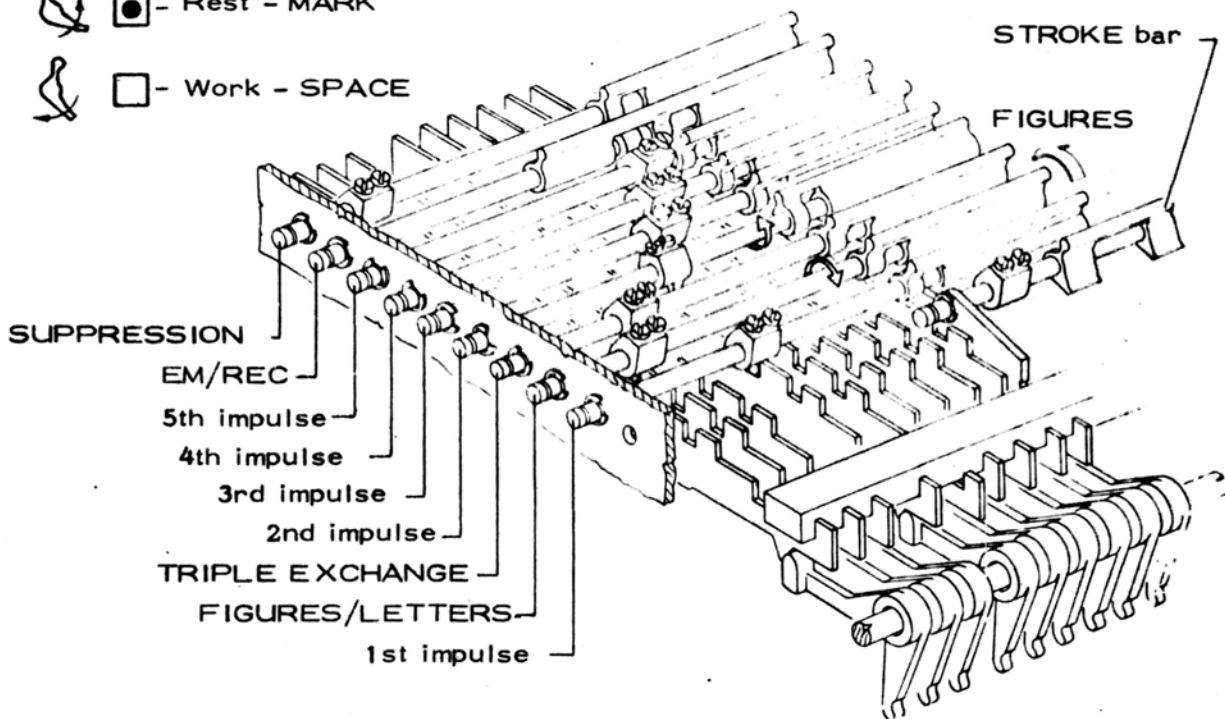
Index

INTERPRETATION OF MECHANICAL CODES:	page
- on the printing bars	" 7.01
- on the Intermediate levers	" 7.02
- on the sensed levers	" 7.03
- on the serializer slides	" 7.04
- on the barrels	" 7.05
ENGAGEMENT TIMES of some FUNCTIONS and corresponding position of the GONIOMETER PULLEY	" 7.06
RELATIONSHIPS	" 7.07

INTERPRETATIONS MECHANICAL CODES ON THE PRINTING BARS

 - Rest - MARK

 - Work - SPACE



Alphabet N° 2 with CCITT 5 unit code

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

- Rest impulse

- Work impulse

(°) = Code combinations that in "figures" vary from customer to customer.

- "Who are you?"

Ω - Bell

^ - Carriage return

≡ - Line space

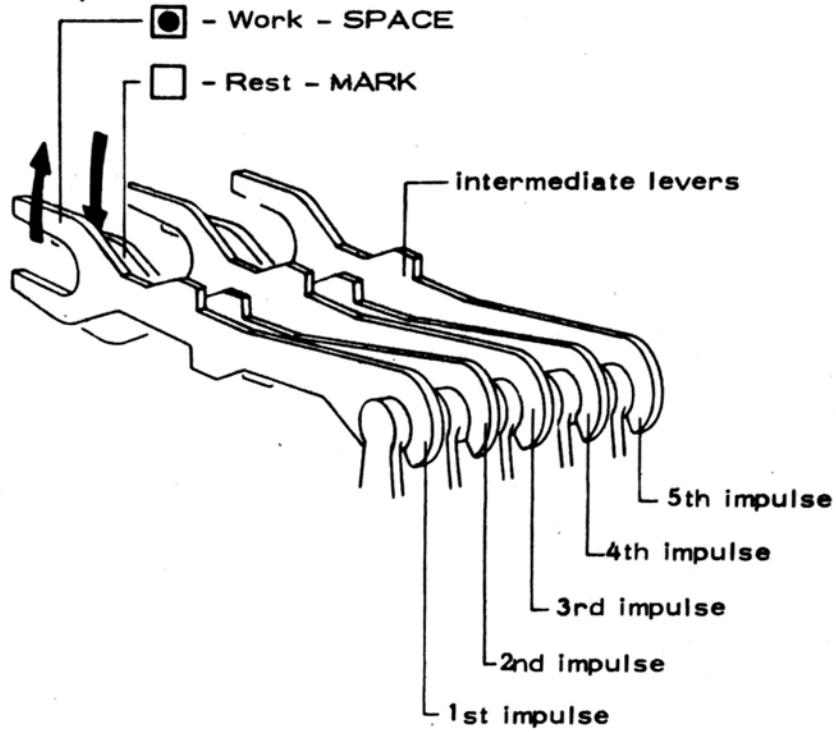
ESP - Space

A... - Letters

1... - Figures

* - Unused code combination

INTERPRETATION OF MECHANICAL CODES ON THE INTERMEDIATE LEVERS

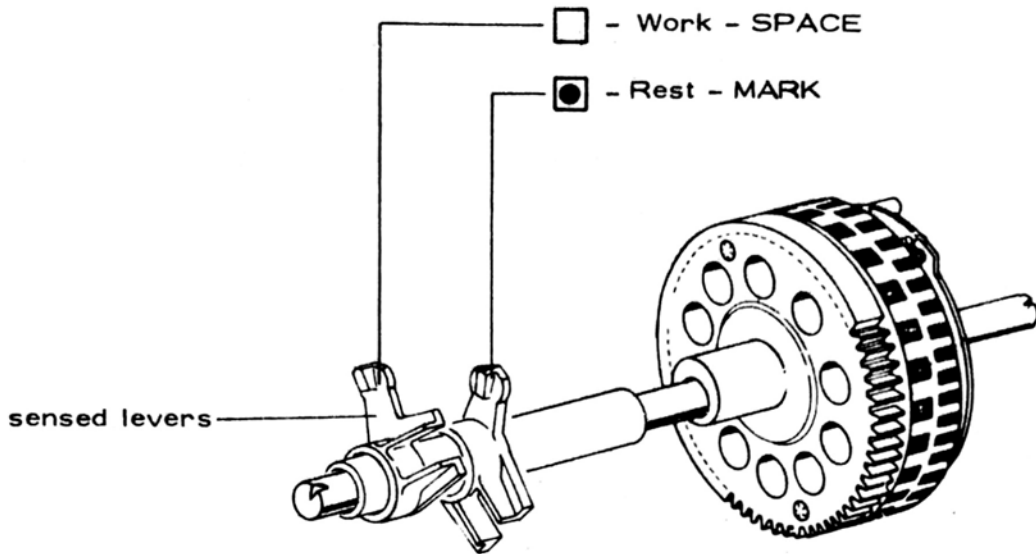


Alphabet N° 2 with CCITT 5 unit code

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

- - Rest impulse
- - Work impulse
- (°) - Code combinations that in "figures" vary from customer to customer.
- # - "Who are you?"
- Ω - Bell
- < - Carriage return
- ≡ • - Line space
- ESP - Space
- A... - Letters
- 1... - Figures
- * - Unused code combination

INTERPRETATION OF MECHANICAL CODE ON THE SENSED LEVERS

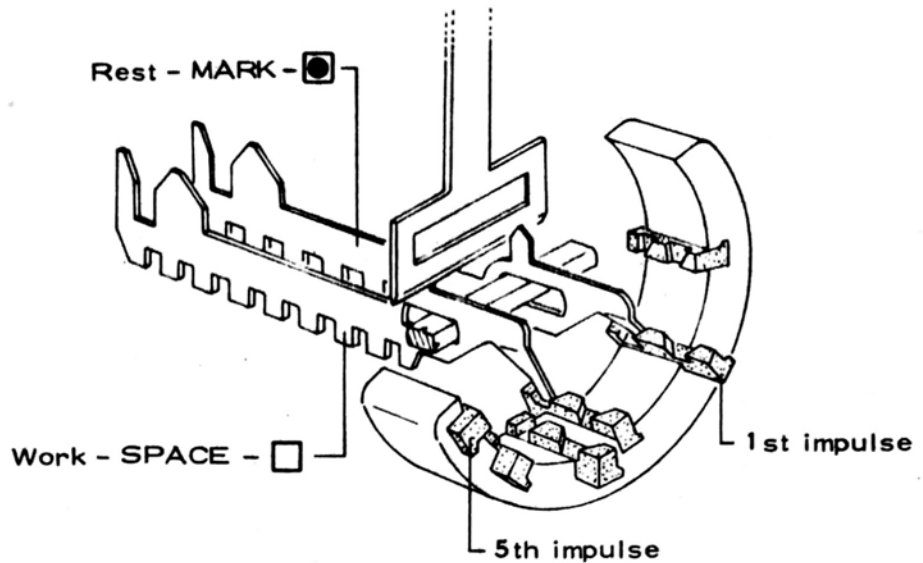


Alphabet N° 2 with CCITT 5 unit code

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

- - Rest impulse
- - Work impulse
- (°) = Code combinations that in "figures" vary from customer to customer.
- # - "Who are you?"
- Ω - Bell
- ∧ - Carriage return
- ≡ - Line space
- ESP - Space
- A... - Letters
- 1... - Figures
- *
- - Unused code combination

INTERPRETATION OF MECHANICAL CODES
ON THE SERIALIZER SLIDES

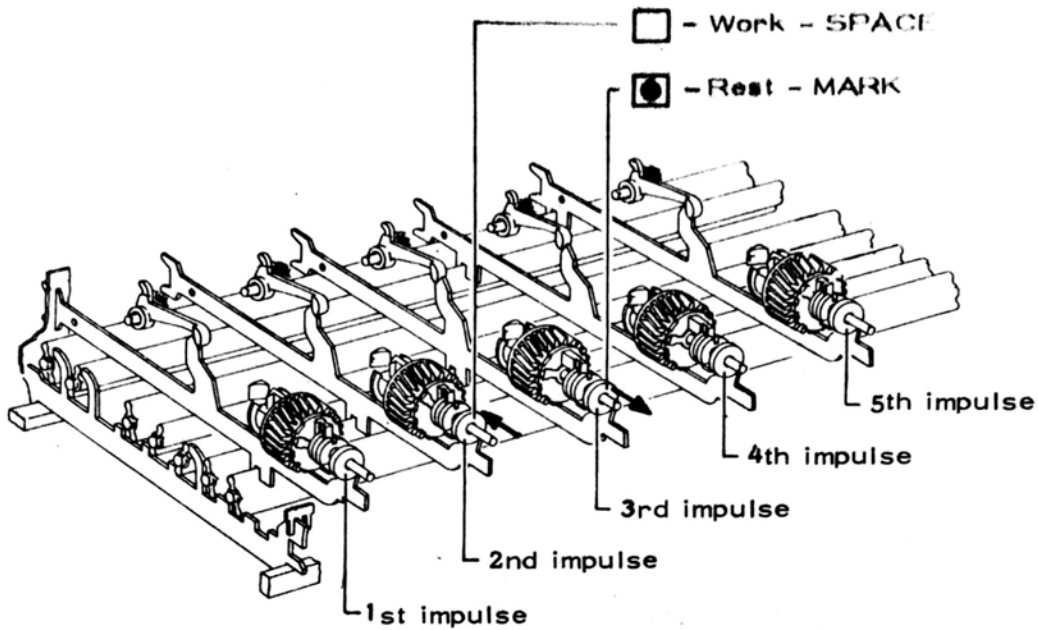


Alphabet N° 2 with CCITT 5 unit code

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

- = Rest impulse
- = Work impulse
- (°) = Code combinations that in "figures" vary from customer to customer.
- # = "Who are you?"
- Ω = Bell
- ∧ = Carriage return
- ≡ = Line space
- ESP = Space
- A... = Letters
- 1... = Figures
- * = Unused code combination

INTERPRETATION OF THE MECHANICAL CODES (on the barrels)



Alphabet N° 2 with CCITT 5 unit code

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

- = Rest impulse
- = Work impulse
- (°) = Code combinations that in "figures" vary from customer to customer.
- # = "Who are you?"
- Ω = Bell
- < = Carriage return
- ≡ = Line space
- ESP = Space
- A... = Letters
- 1... = Figures
- *
- = Unused code combination

ENGAGEMENT TIMES of SOME FUNCTIONS
and CORRESPONDING POSITION of the GONIOMETER PULLEY

	Position of the goniometer pulley in degrees
- Entry of a code on the printing bars	150°
- Insertion of the functions unit clutch idler	30°
- Insertion of the vertical control clutch idler	200°
- Insertion of the horizontal control clutch idler	220°
- Insertion of the stroke clutch idler	280°
- Insertion of the tape punch clutch idler	270°