PFAFF

Programming field for writing and modifying sewing programs for the PFAFF 3568-12/21 and -12/22

When using the programming field, the instruction manuals of the PFAFF 3568-12/22 and -12/22 respectively, and the notes on safety contained within them are to be observed.
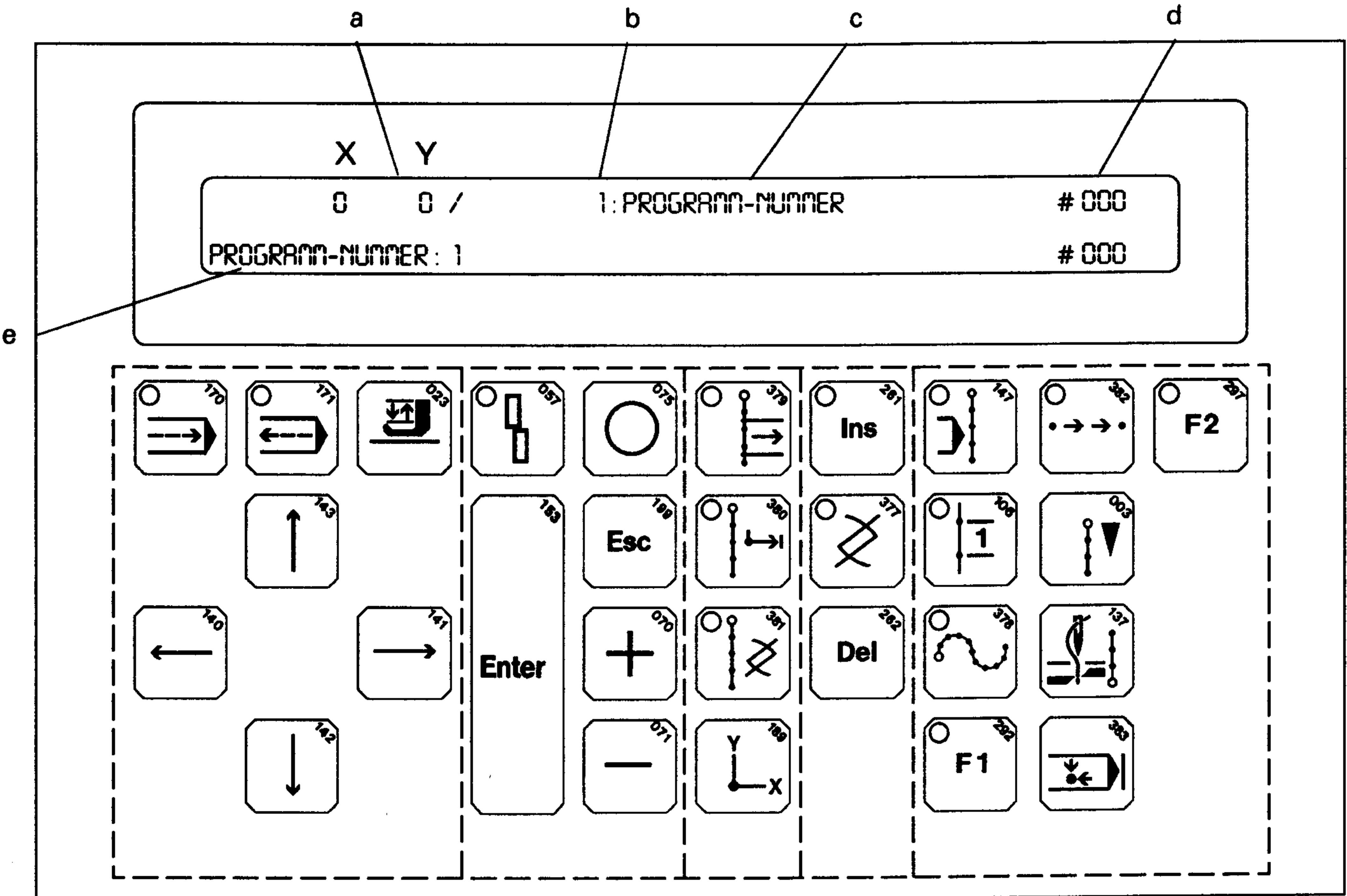
Contents

1   Explanatory notes

Display field

a = coordinates of the "X" or "Y" axis in 1/10mm relative to the reference point of the coordinates.

b = section number

c = section type

d = text number of the displayed text

e = operator prompt/menu control/error messages

Modes of operation

Ins = Insert

not pressed (diode off)
= **basic status**

pressed (diode on)
= **Betriebsart "Einfügen"**

Alter*

Del = Delete

Direct functions

Cycle sectionwise forwards through pattern*

Cycle sectionwise backwards through pattern*

Presser foot up/down

Carriage movement buttons

Dialogue buttons

Error Reset
Diode lights when error message*

Finish programming/modifying

Enter (confirm input)
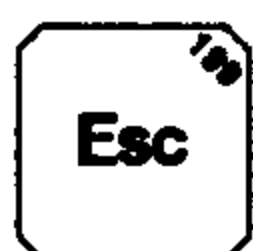
Esc Stop a chosen function or mode which has not yet been processed.

+
- Raise input values
- Answer dialogue questions with "yes"
- Scroll forwards in menu guide
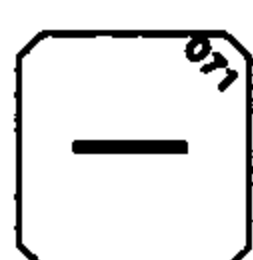
—
- Lower input values
- Answer dialogue questions with "no"
- Scroll backwards in menu guide

Block and pattern manipulations
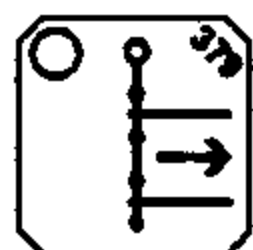
Block *
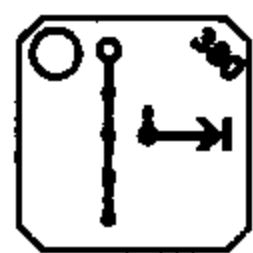
Displace pattern*
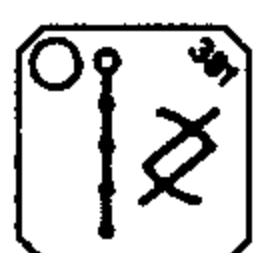
Manipulate pattern, rotate/mirror/scale up*
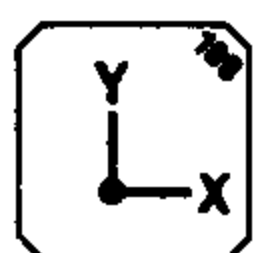
Reference point for coordinates

Insert "functions"
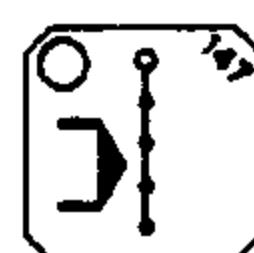
Line (straight line between two points)*
The stitch length must be defined in order to input a .
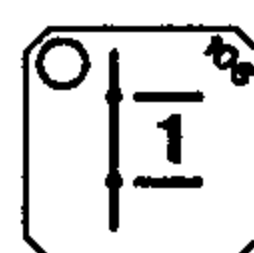
Stitch/feed (max. 6 mm)*
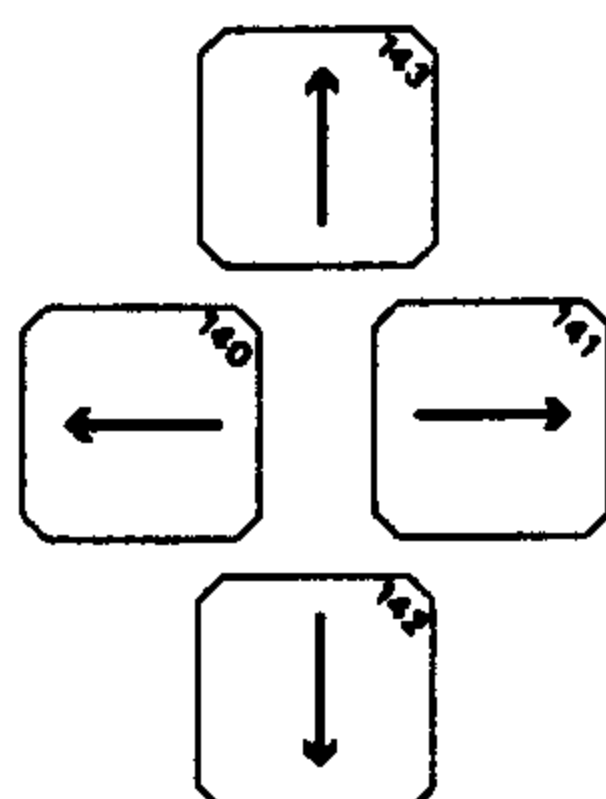Input of a single stitch regardless of stitch length.

Curve *

F1 **Graphic menu:** *
- Standard stitch-length
- Stitch length
- Stitch width
- Circle
- Arc
- Curve end
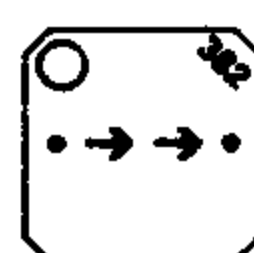
Moves carriage quickly *

Start sewing

Thread trim

Load point program end
(not applicable to PFAFF 3568)
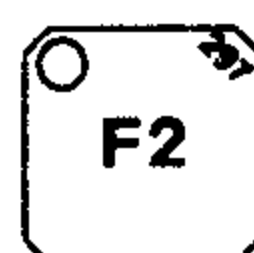
F2 **Machine function menu:** *
- Speed
- Reduced speed on
- Reduced speed off
- Zigzag on
- Zigzag off
- Secondary tension on
- Secondary tension off
- Set output
- Reset output
- Programmed stop
- Wait for input high
- Wait for input low
- Wait for time
- Shift parameter

* = function active when diode lit

2   Connecting and starting the programming field

Connect the programming field on the front left hand side of the machine with the transmission cable.
Start machine
- Operating mode: ready.

CHOOSE FUNCTION OR SCROLL	#250

Display: machine

[−] Choose Menu 2 (= #261) , confirm with [Enter]

2. MENU	#300

[+]

1 - PROGRAM MANAGEMENT	#301

Display: machine

[+] Scroll in the main functions till

[2]

2 - SEAM PATTERN PROGR. / CORRECT	#302

Display: machine

[Enter]

WHICH PROGRAM NUMBER:99	#520

Display:machine

Enter program number:
- a new number that is not yet in the machine's memory for a program to be written
- a number from the machine's memory for a program modification

[Enter]

PRESS HOME KEY	#007

Display:machine

[↓•←]

PROGRAMMING FIELD ENABLED	#521

Display: machine

Programming field

JIG CODE NOT PROGRAMMED	PROGRAM NUMBER AFTER CORRECTION

Display: Programming field when writing a new program (see section 8)   Display: Programmiing field when correcting an existing program (see section 9)
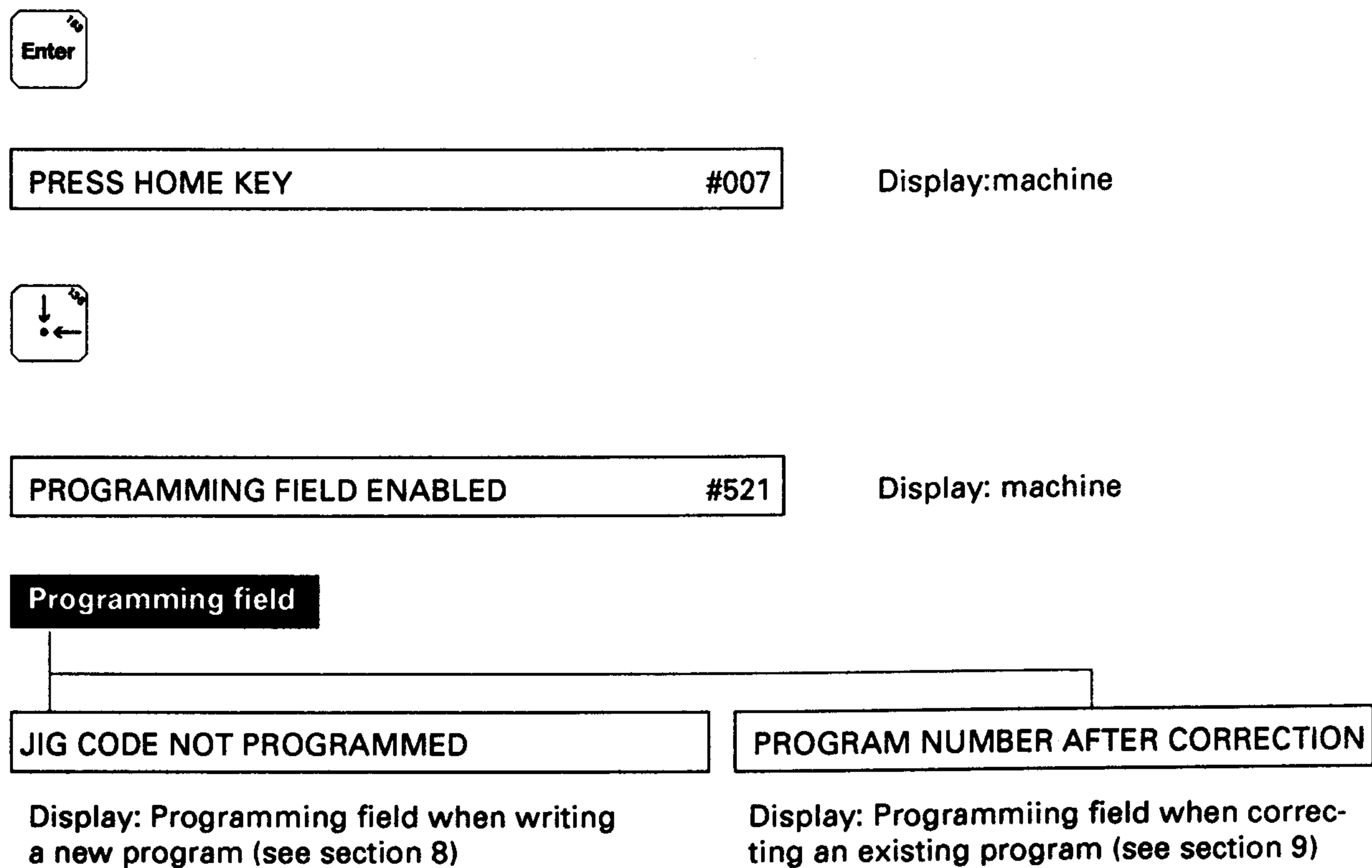
3   Diagram "Write/correct program"

| WHICH PROGRAM NUMBER | Display machine

Choose program number

Programming field

Program exists   Program does not exist

| PROGRAM NUMBER AFTER CORRECTION | display Progr. field | JIG CODE: NOT PROGRAMMED |

| HINDRANCES: YES/NO |

| BASIC STATUS | ← key [Ins] → | INSERT |

| ALTER | | DELETE | | ALTER | | DELETE |

— cycle through pattern
— presser foot up/down
— block —— mark block start
          — mark block end
          — block manipulation —— scale up block
                                — rotate block
                                — mirror block
                                — move block
                                — delete block

— move pattern
— manipulate pattern —— scale factor X-axis
                      — scale factor Y-axis
                      — rotation angle
                      — mirror

— coordinate reference point
— end

— presser foot up/down
— block —— insert block forwards
          — insert block backwards
— Straight line
— single stitch
— curve
— F1 —— standard stitch-length
       — stitch length
       — stitch width
       — circle
       — arc
       — curve end
— fast slew
— start sewing
— cut
— F2 —— speed
       — reduced speed on
       — reduced speed off
       — zigzag on
       — zigzag off
       — secondary tension on
       — secondary tension off
       — set output
       — reset output
       — programmed stop
       — wait for input high
       — wait for input low
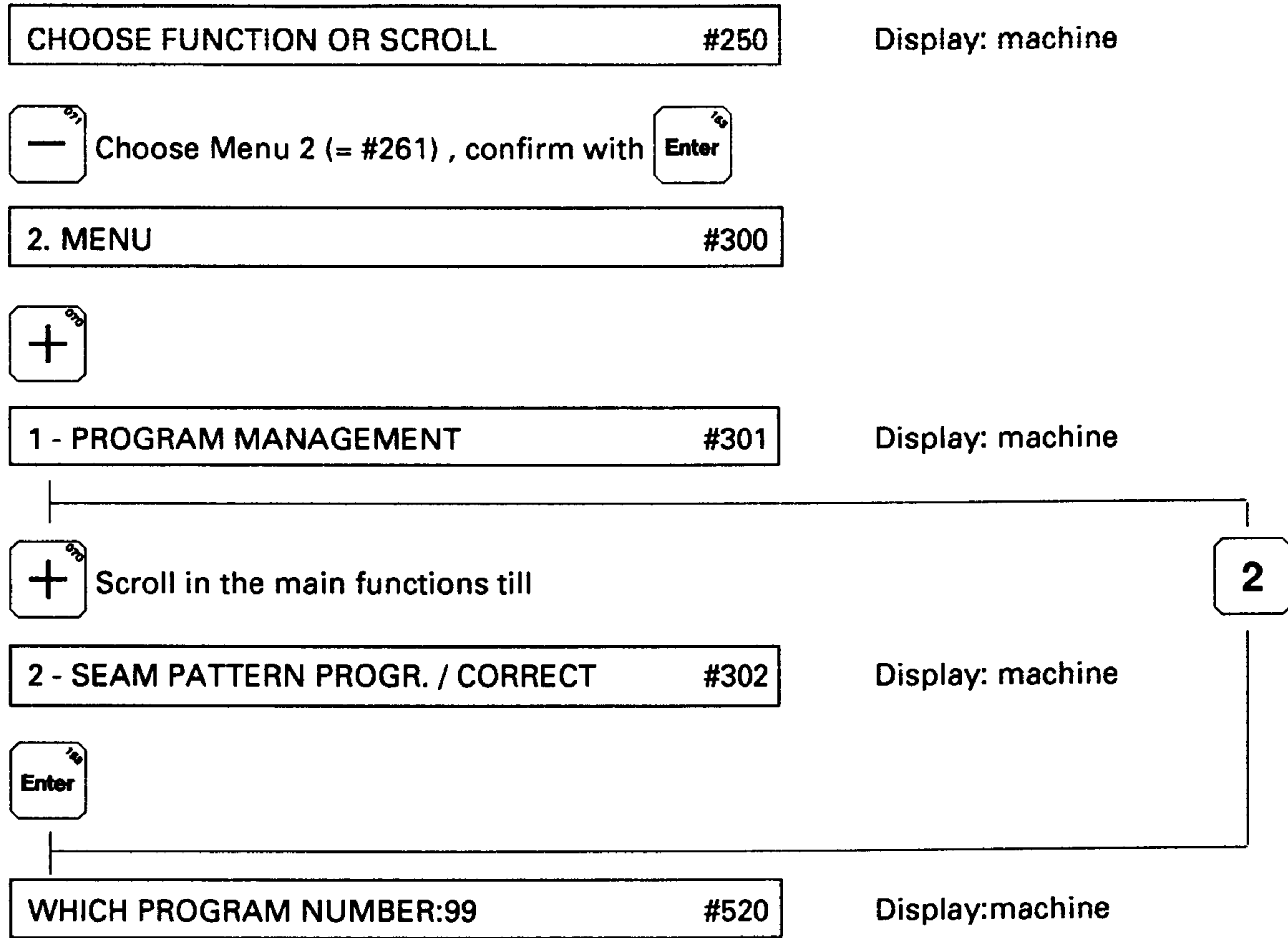   — wait for time
       — displace parameter
— coordinate reference point
— end

4 Modes of operation

4.1 **Basic status** = (when diode in the [Ins] key is not lit)

The following functions are possible in this mode:

- cycle forwards sectionwise through pattern = [→]

- cycle backwards sectionwise through pattern = [←]

- presser foot up/down = [🧵]

- manipulate block = [↦]

- displace pattern = [↦]

- manipulate pattern = [✗]

- coordinate reference point = [Y L x]

- change to insert mode = [Ins] (diode lit)

- call up alter mode = [✗]

- call up delete mode = [Del]

- end programming/correction = [O]

4.2 **Insert** = (when the diode in the [Ins] key is lit)

In the INSERT mode new sections can be inserted into the pattern.
Frequently required functions can be selected directly via the keys.
 Less common functions are summarized in menus and can be selected via
the [F1] and [F2] keys

Direct functions:

- straight line = [ )|]

(straight line between two points)
The stitch length must be defined to input a straight line.

- Single stitch/feed =

Input of a single stitch regardless of the inputted stitch length.
(single stitch max. 6 mm)

- curve =

Any number of points can be placed on the curve (curve points may not be end points).
The control calculates the curve with regard to a defined stitch length.
The more points entered on the curve, the more exact the curve will be.

- fast slew =

Enables the fast movement of the X-Y carriage. Both axes are driven independently to the endpoint as fast as possible. The resulting route is not a straight line (care to be taken when hindrances on sewing jig).

⚠ **Sewing in fast slew mode is not allowed.**

- start sewing =

This function starts the sewing process.
All following sections will be sewed until function cut thread.

-cut thread =

This function starts the thread-cutting process.
(start sewing function must be active).

- block =

A marked block can be inserted forwards or backwards at the current position.

-presser foot up/down =

- coordinate reference point =

This function resets the coordinate values at "0" thus creating a new coordinate reference point.

-end programming/correction =

4.2.1   Graphic functions = [F1]

4.2.1.1   - standard stitch-length

This function sets a stitch length that is most commonly needed in the pattern.
This stitch length is displayed in the machine's display and can be influenced subsequently

with the alter stitch length key (= [ ]).

4.2.1.2   - stitch length

This function sets a stitch length for a pattern.
This stitch length is not displayed in the machine's display and cannot be altered by the alter

stitch length key (= [ ]).

4.2.1.3   - stitch width

This function superimposes a zigzag onto an outline with the X-/Y- carriage.
The stitch length represents here the feed along the outline from stitch to stitch and is to be selected accordingly.
Position of the stitch width in relation to the outline can be selected (symmetrical, left, right, 1st stitch right, 1st stitch left). Switch of the stitch width with "0".

4.2.1.4   - circle

To make a circle the control requires three points on the circumference.
The first point is automatically the start point of the circle.
A stitch length must be defined.

4.2.1.5   - arc

To make an arc, the control requires an arc point at the beginning of the arc and at its end.
A stitch length must be defined.

4.2.1.6   - Curve end

This function turns a curve point into a curve end point.

4.2.2   Machine functions = F2

4.2.2.1   - speed

The speed for the pattern can be selected (max. 4100 RPM). The value entered can only be reduced via the max. speed input on the machine.

4.2.2.2   -reduced speed on, reduced speed off

Specific parts of the pattern which are to be sewed at reduced speed can be selected.
Input RPM at the machine.

4.2.2.3   - zigzag on, zigag off

Specific parts of the pattern can be selected in which the mechanical zigzag of the sewing machine is to be switched on and off.
This function can be influenced additionally at the machine.

4.2.2.4   -secondary tension on, secondary tension off

Specific parts of the pattern can be selected in which the secondary tension is to be switched on and off.

4.2.2.5   - set output, reset output

Freely programmable outputs can be set and reset via the pattern program.

4.2.2.6   - programmed stop

A machine stop at a specific point in a pattern (without thread trim) can be programmed.

4.2.2.7   -wait for input high, wait for input low

This function causes the machine to wait until an input (switch, proximity switch) has reached a certain level.
Here the following is meant: high = input LED lit, low = input LED not lit.

4.2.2.8   - wait for time
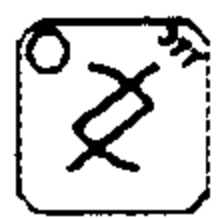
This function allows the input of a waiting time.
The machine stops at this point until the waiting time is over.

4.2.2.9   - shift parameters

These can be moved in order to activate programmed functions from F2 at a particular point in a pattern. This displacement can be placed before i.e. minus x-stitches or after i.e.plus x-stitches.

(x = number of stitches)

4.3   Alter =

Alterations are possible in modes "basic status" (sec.4.1) and "insert" (sec. 4.2).

The current section will be altered, e.g.:

- coordinate point
- machine function
- program number
- jig code
- hindrances

The subsequent sections are not influenced by a section of a pattern being moved.

4.4   Delete =

Delete is possible in modes "basic status" (sec.4.1) and "insert" (sec. 4.2).

The current value will be deleted.

In circle (arc) the complete circle must be deleted. Individual points cannot be deleted.

5 Description of functions

5.1 Direct functions

cycle sectionwise forwards through pattern.

cycle sectionwise backwards through pattern.

With both functions the following appears in the display:

- X-/Y- coordinates
- current section number
- section type and, if applicable, parameter.

presser foot up/down
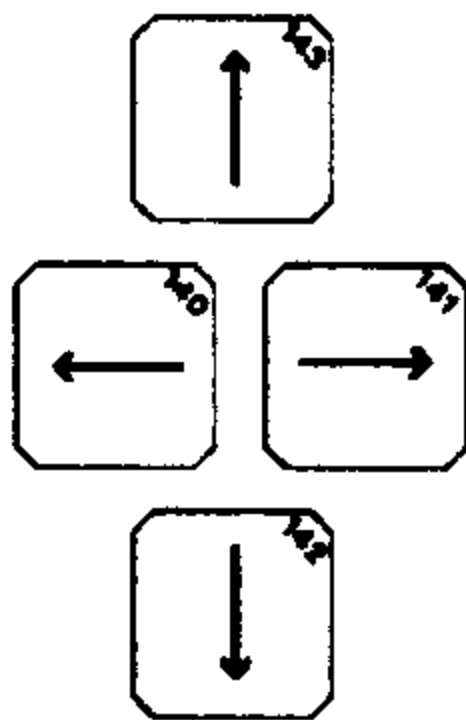
carriage movement keys

The X-/Y- carriage can be moved with these keys when inputting carriage

positions in 1/10 mm steps.

Attention: direction of arrow = direction of movement of the needle to the pattern.

Current coordinates are displayed.

5.2 Dialogue functions

reset error
(erase error message after invalid input)

finish programming/correction

Enter

confirm input

Esc

abort a selected function

raise input values
answer dialogue questions with "yes"
scroll forwards in menu guide
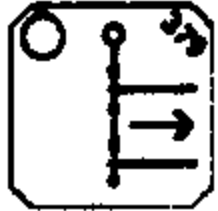
lower input values
answer dialogue questions with "no"
scroll backwards in menu guide

5.3 Block

Note: block functions are only possible in the "basic status" mode,

(diode of key [Ins] not lit).

Within the main function "Block" (= [⊟]) the following sub functions are possible:
- mark block-beginning
- mark block-end
- manipulate block
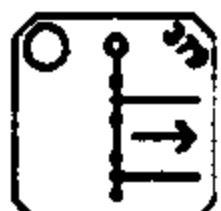
Within the sub function "manipulate block" the following functions are possible:

-scale-up block
-rotate block
-mirror block
-shift block
-delete block.

5.3.1 Mark block-beginning

Cycle to the place in the pattern where the block is to begin, with the [⟹] key.

Press the [⊟] key and select the sub function "mark block-beginning" with [+] or [—]

confirm with [Enter]

5.3.2 Mark block-end

Cycle to the place in the pattern where the block end is to be with the [⟹] key.

Press [⊟] and select the sub function "mark block-end" with [+] or [—]

confirm with [Enter]

The block is now marked.

While cycling through the pattern, the marked block can be recognized by the asterisk (*) in the display.

5.3.3 Block manipulations

This function alters a marked block. This can be a complete sewing program or part of a sewing program.
After selecting the function "blockmanipulation" the message appears:

MOVE TO BEGIN OF BLOCK WITH ENTER   #110

After pressing [Enter] the X-/Y- carriage goes automatically to the block beginning.

All subsequent block commands refer to this point.

5.3.3.1 Scale up block
(The marked block or part of a block can be scaled up or down with this function).
After selecting the function the message appears:

ENTER FACTOR FOR X-AXIS: 1.00   #453

input the desired factor (0.20 to 9.99).
input value: 0.20 to 0.99   = scale down X-axis,
                1.00 bis 9.99   = scale up X-axis.

confirm input with [Enter] The message appears

ENTER FACTOR FOR Y-AXIS: 1.00   #454

input the desired factor (0.20 to 9.99).
input value: 0.20 to 0.99   = scale down Y-axis,
                1.00 bis 9.99   = scale up Y-axis.

confirm input with [Enter]

The marked block has been scale up/down as selected.

Example of a scale-up block:

beginning of block   end of block
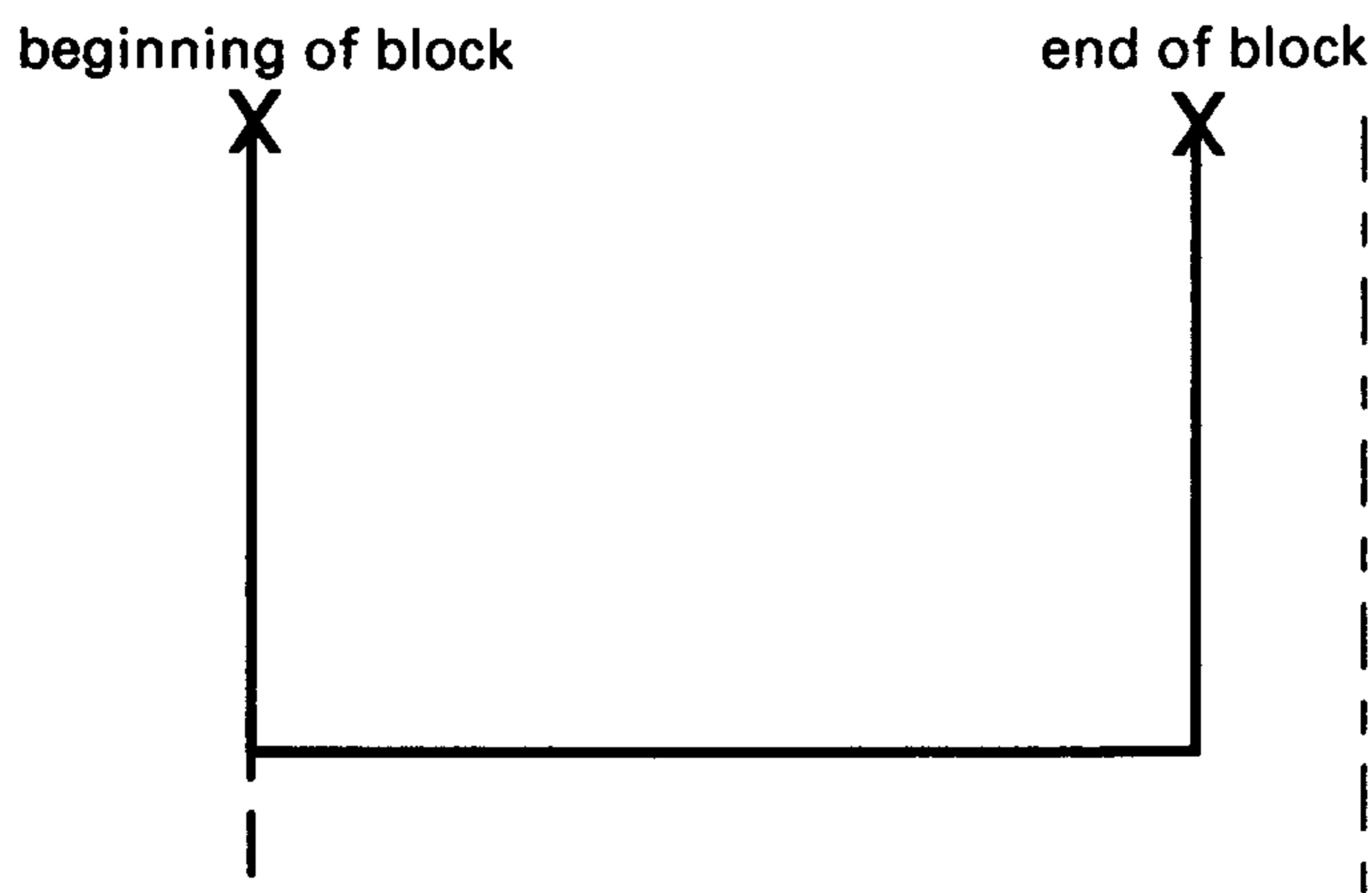
5.3.3.2 Rotate block

After selecting this function the message appears:

ENTER ROTATION ANGLE: #455

Select the desired rotation angle with [+] or [—]

rotate clockwise = negative angle-value (e.g.-10 deg.)

rotate anticlockwise = positive angle-value (e.g. 10 deg.)

confirm input with [Enter]

The marked block has been rotated as selected.

beginning of block   end of block
X   X
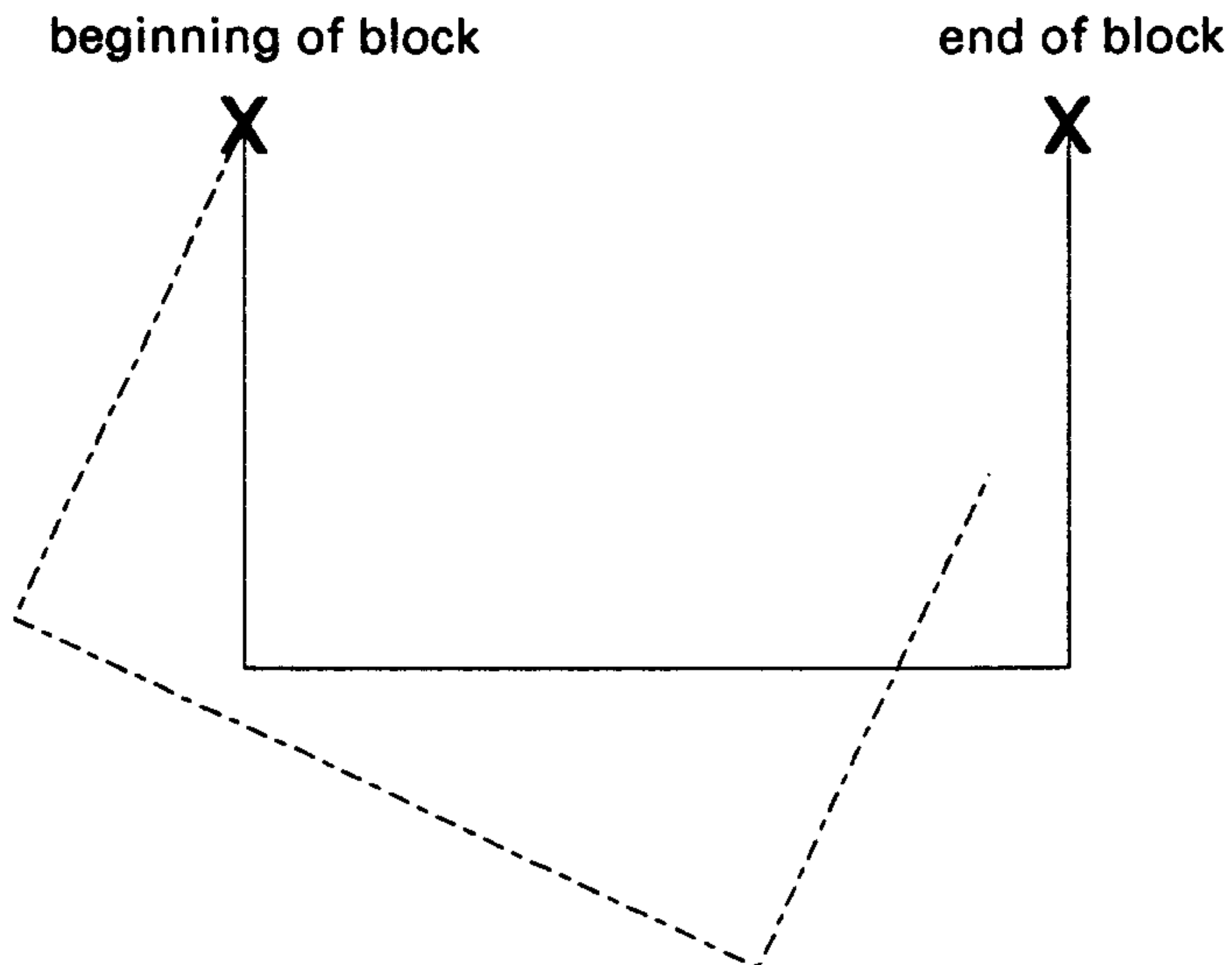
5.3.3.3 Mirror block

After selecting this function the message appears:

MIRROR WITH + #456

The block is mirrored at the that passes through the block beginning and which lies parallel to the Y-axis.

beginning of block   end of block
X   X
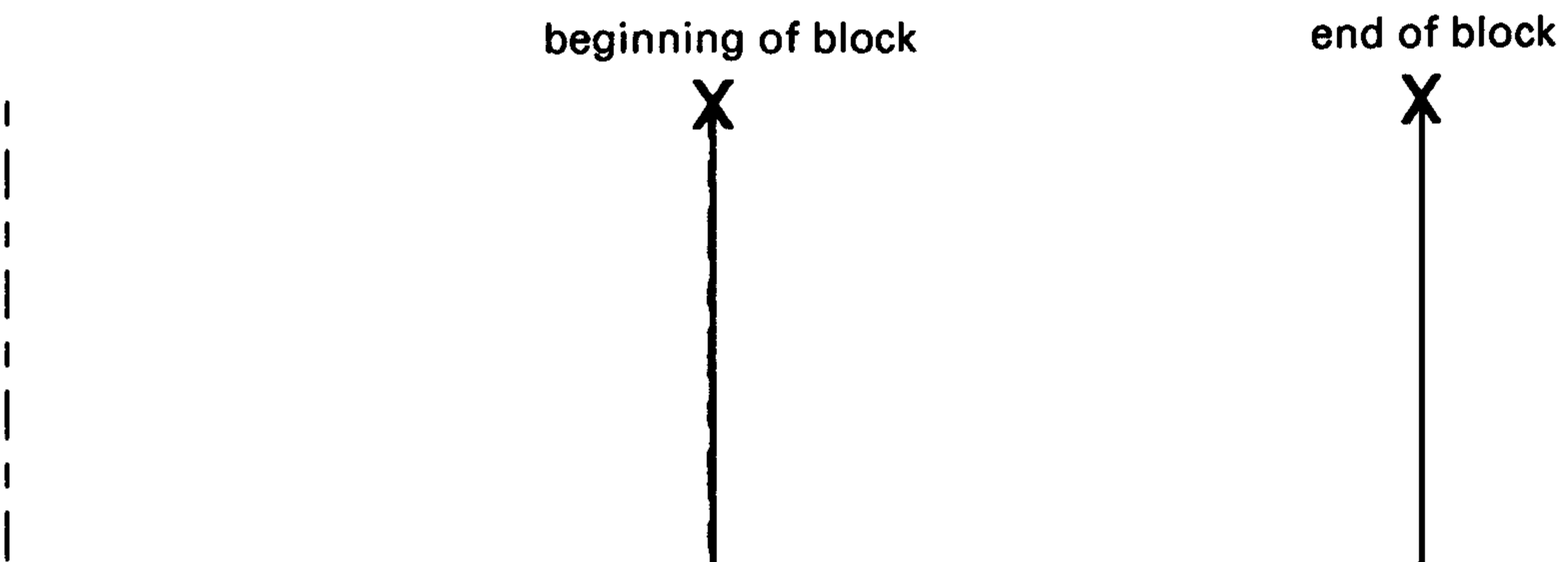
5.3.3.4 Move block

After selecting this function the message appears:

ENTER NEW POINT   #552

Move to the new point with
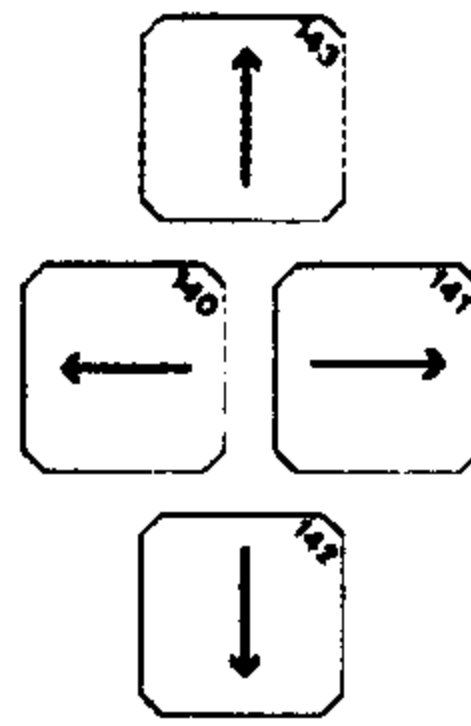
confirm input with

The new point is selected and the block is moved to it.

beginning of block   end of block
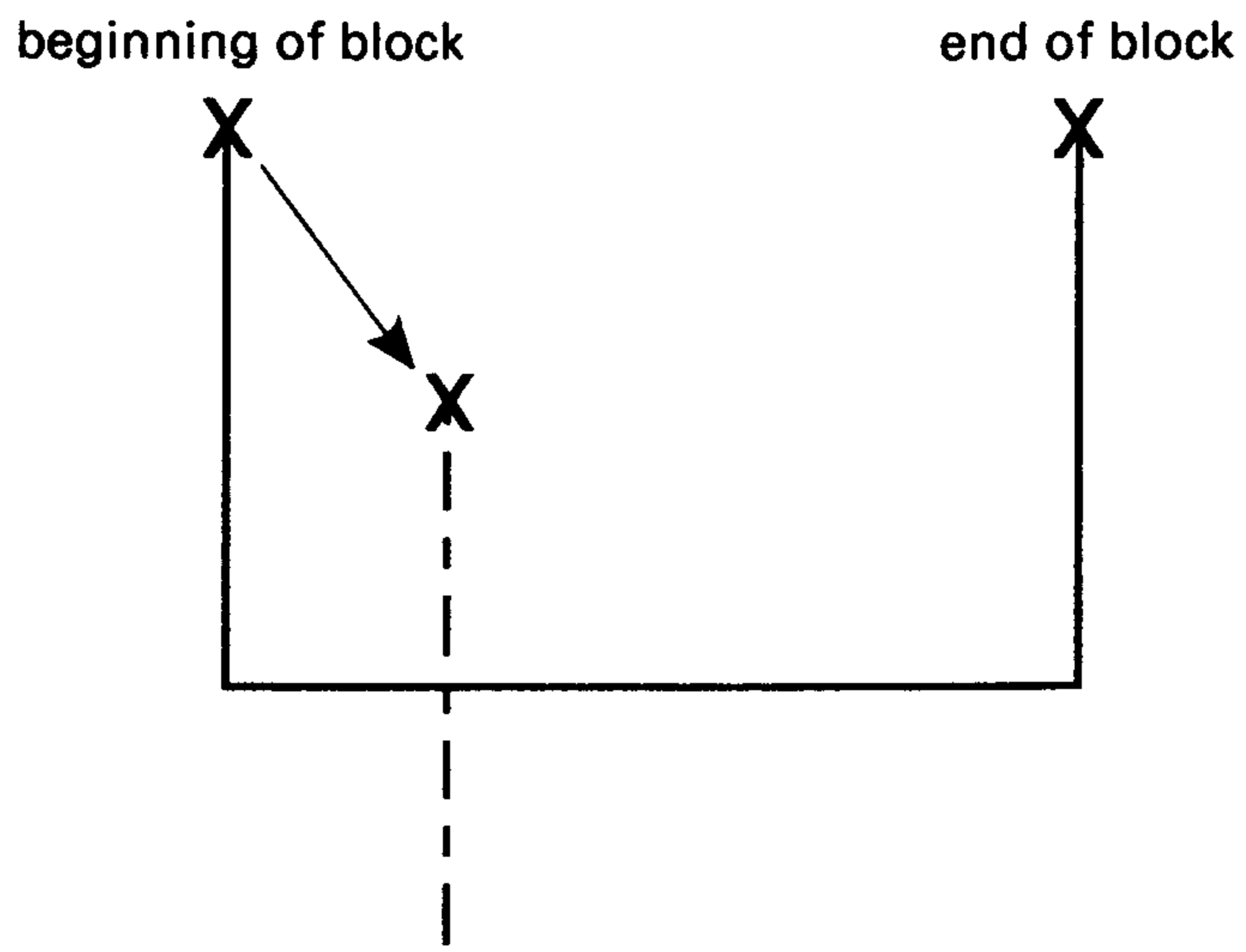
5.3.3.5 Delete block

After selecting this function the marked block is deleted by pressing the [Enter] key.
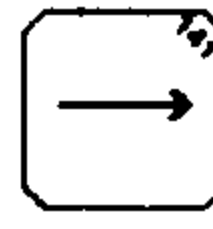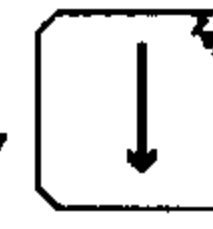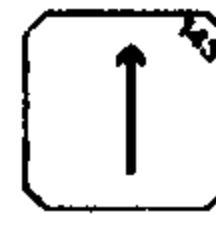
5.4 Displace pattern

With the ⬚ key move to the point in the pattern which is to be displaced.

Press ⬚ the message appears:

ENTER DISPLACEMENT   #350

with the keys ⟵ , ⟶ , ⬇ and ⬆ move the carriage to the new point. The current coordinates will be displayed.
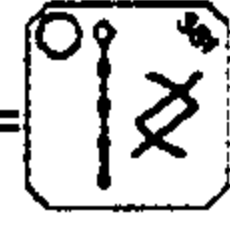
confirm input with ⬚ .

Example of pattern displacement: The point in the illustration is displaced to 2'.

Starting with point 2' all of the subsequent coordinates are displaced in the same way.
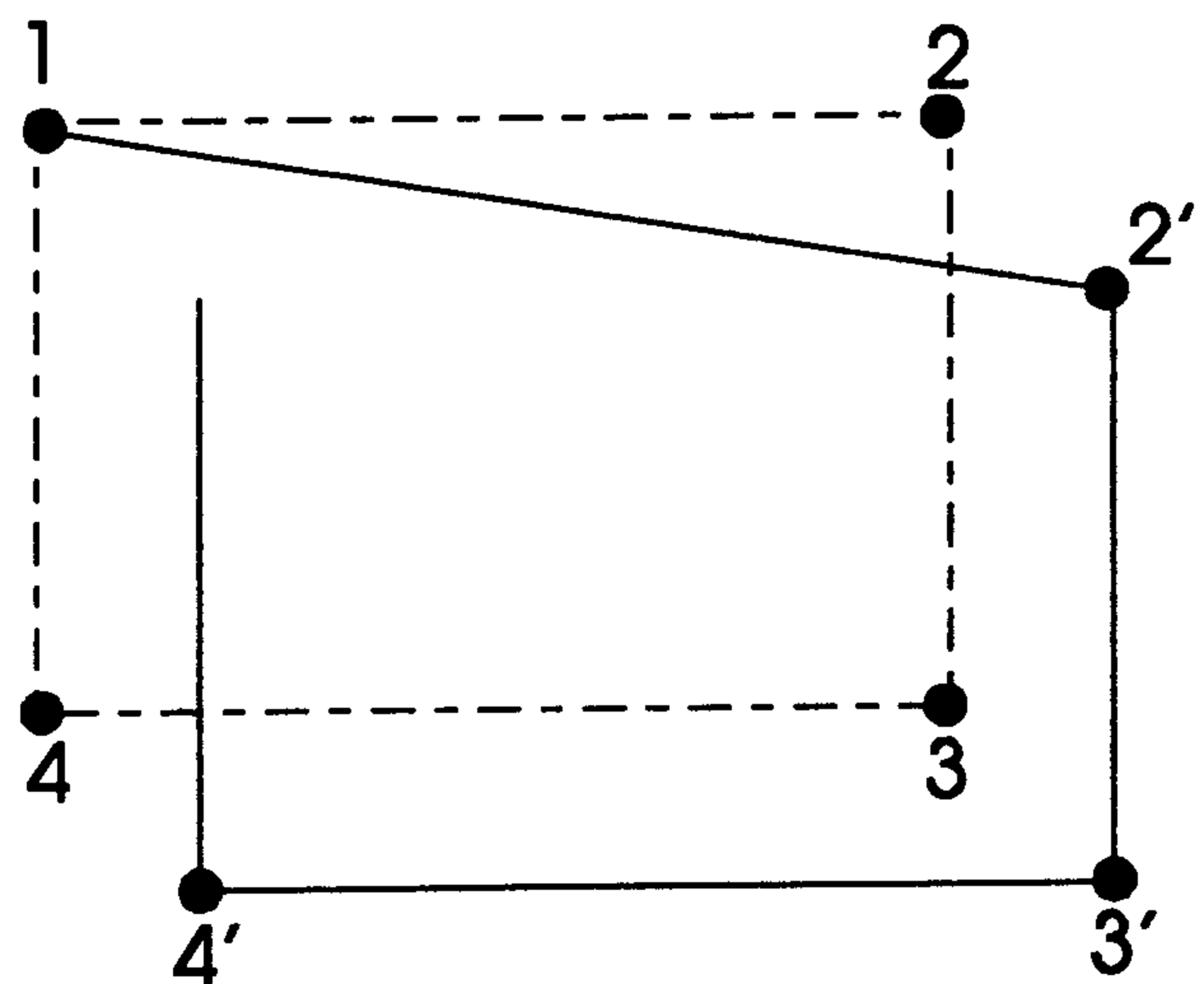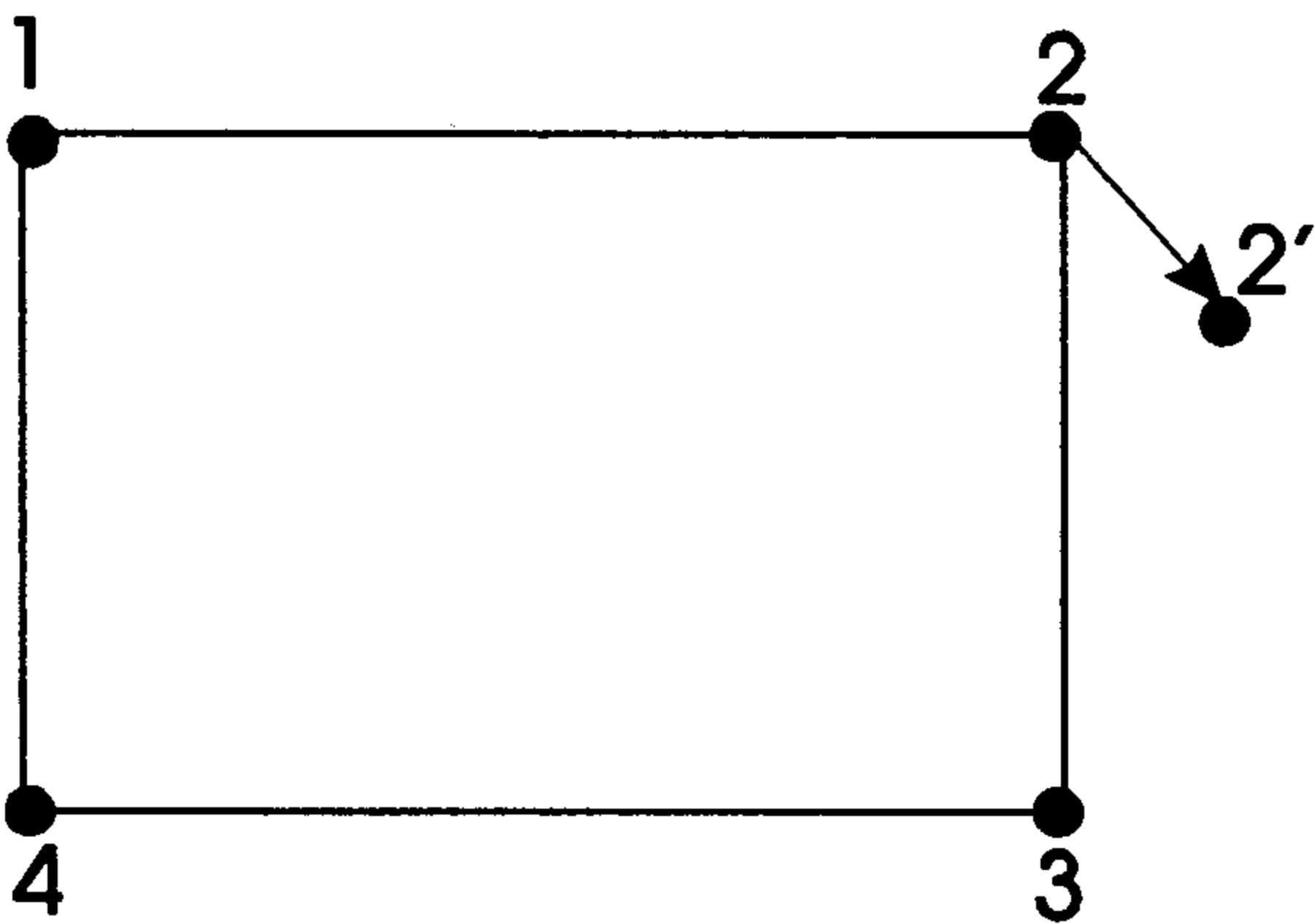
5.5   Pattern manipulation

Within the main function "pattern manipulation" (= ⬚) the following sub functions are possible:

-scale-up factor X-axis
-scale-up factor Y-axis
-rotation angle
-mirror

The sub functions can be selected with ⬚ or ⬚.
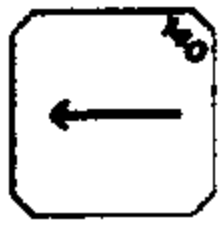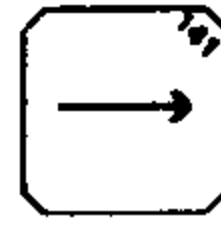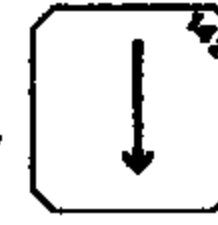
After selecting pattern manipulation (press ⬚ key) the message appears:

ENTER SYMMETRY POINT   #450

The pattern manipulation will be carried out based on this point.

There are two types of symmetry point input:

1.   Input with carriage movement.
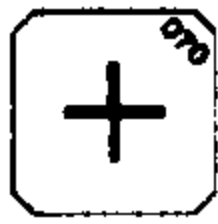
Move the carriage to the symmetry point with the keys ⬚, ⬚, ⬚ and ⬚.
The current coodinates will be displayed.

2.   Input without moving the carriage.
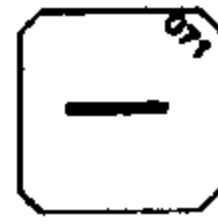
Press ⬚ or ⬚ the message appears:

SYMMETRY POINT X-AXIS XXX   #451

The coordinate value can be changed with ⬚ and ⬚.

Confirm input with ⬚, the message appears:

SYMMETRY POINT Y-AXIS XXX   #452

The coordinate value can be changed with ⬚ and ⬚.

Confirm input with ⬚, the message appears:

SCALE-UP FACTOR FOR X-AXIS   #470

The desired sub functions can be selected with ⬚ or ⬚.

5.5.1 **Scale-up factor X-axis.** After selection the message appears:

ENTER FACTOR X-AXIS   #453

input the desired factor (0.20 to 9.99).
input value: 0.20 to 0.99   = scale down X-axis,
                  1.00 to 9.99   = scale up X-axis.

confirm input with [Enter]
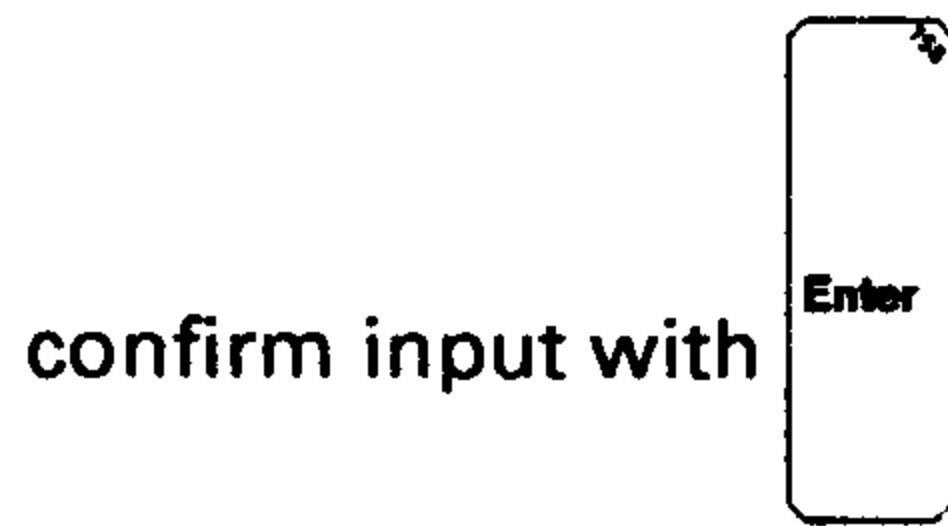
5.5.2 **Scale-up factor Y-axis.** After selection the message appears:

ENTER FACTOR FOR Y-AXIS: 1.00   #454

input the desired factor (0.20 to 9.99).
input value: 0.20 to 0.99   = scale down Y-axis,
                  1.00 to 9.99   = scale up Y-axis.

confirm input with [Enter]
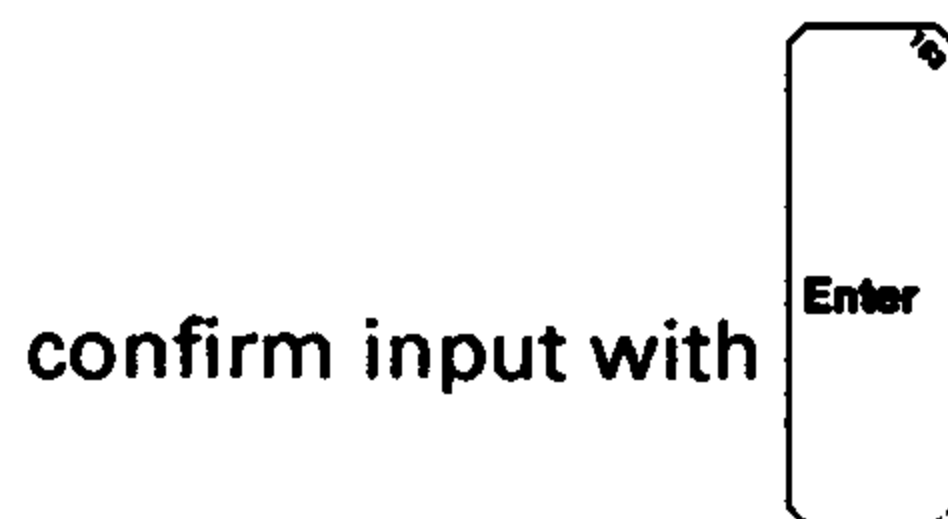
5.5.3 **Rotation angle.** After selection the message appears:

ENTER ROTATION ANGLE: #455

select desired rotation angle with the [+] and [−] keys.

Rotate clockwise   = negative angle value (e.g. -10 deg.)

Rotate anticlockwise   = positive angle value (e.g. 10 deg.)

The rotation is effected around the selected symmetry point.

5.5.4 **Mirror.** After selection the message appears:

MIRROR WITH +   #456

after pressing [+] the pattern will be mirrored at the which runs parallel to the Y-axis through the symmetry point.

Note: pattern manipulations are only carried out after pressing the [O] key.
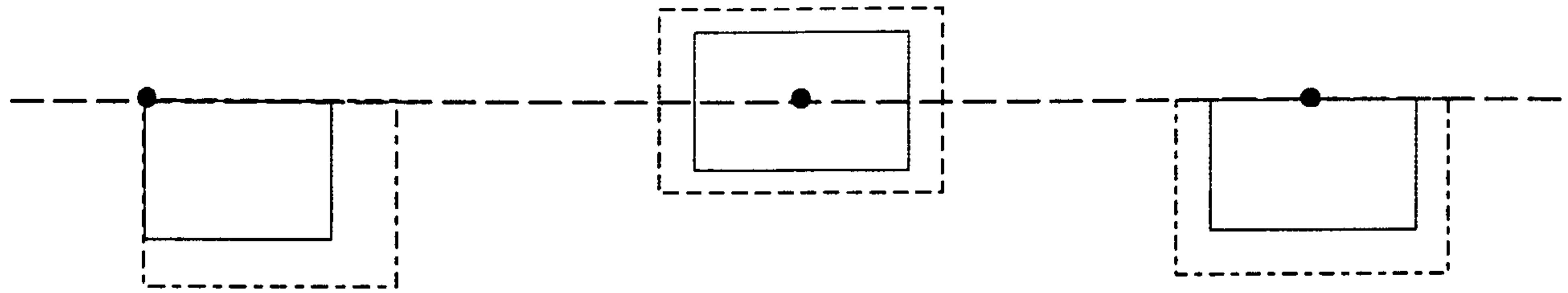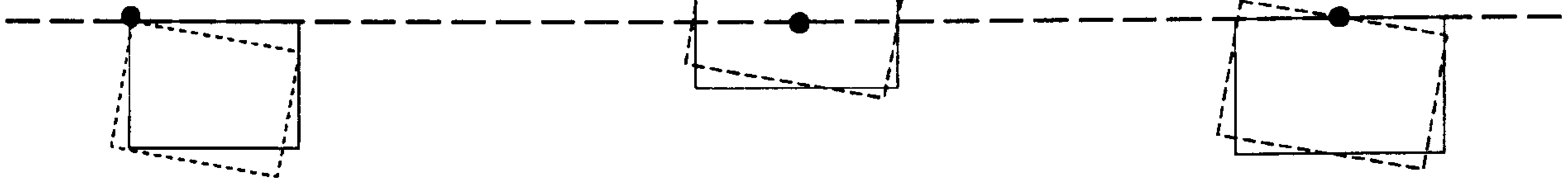
rotation angle

rotation angle
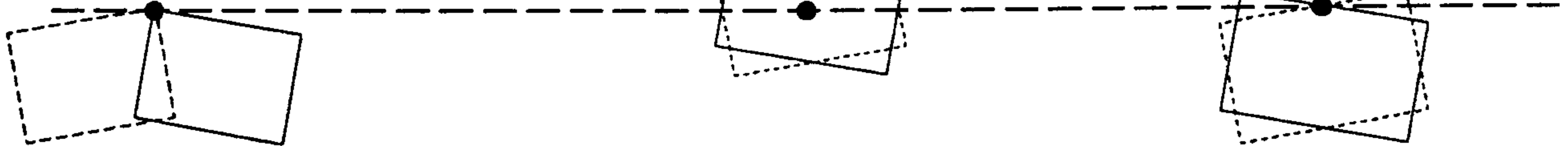
● = symmetry point

5.6   Coordinate reference point

With the $\boxed{\text{L}_x^Y}$ key the coordinate values in the display are set at X 0 - Y 0. Thus a new coordinate reference point is created.

The function can be carried out in the following operation modes:

basic status   = $\boxed{\text{Ins}}$ not pressed (diode not lit)

insert   = $\boxed{\text{Ins}}$ pressed (diode lit)

alter   = $\boxed{\text{⊠}}$ pressed (diode lit)

6 Jig monitor/-code

(additional equipment)

.1 For the jig monitor the sewing jig is fitted with a code by attaching magnets. This code allows the control to read the code via the additional equipment.

.2 If you wish to work with the function JIG MONITOR this must be switched on (see instruction manual for Pfaff 3568-2/21 or -1/22 or -2/22 4.4.3 jig monitor).

.3 A jig code must be programmed in the sewing program.

.4 The jig code is a value from (0-99).
Behind the entered value, the corresponding order of the magnets appears in binary code.
Here the last four places represent the correspond to the digit in the ones column and the front four places correspond to the digit in the tens column.

JIG CODE:　25　(- - * - - * - *)
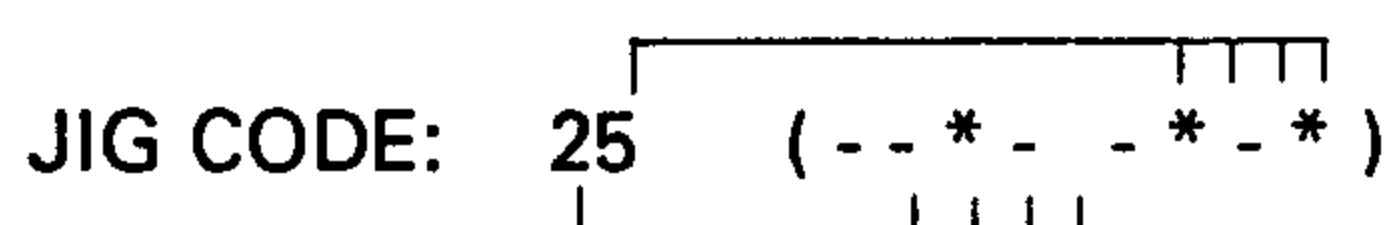
Conversion table

number	ones (tens)	Bit3 (Bit 7)	Bit 2 (Bit 6)	Bit 1 (Bit 5)	Bit 0 (Bit 4)
0		-	-	-	-
1		-	-	-	*
2		-	-	*	-
3		-	-	*	*
4		-	*	-	-
5		-	*	-	*
6		-	*	*	-
7		-	*	*	*
8		*	-	-	-
9		*	-	-	*

.5   display of the magnet positions when entering code

Bit 4 ——————————— Bit 3
Bit 5 ——————————— Bit 2
Bit 6 ——————————— Bit 1
Bit 7 ——————————— Bit 0

JIG CODE: 25   (- - * - - * - *)
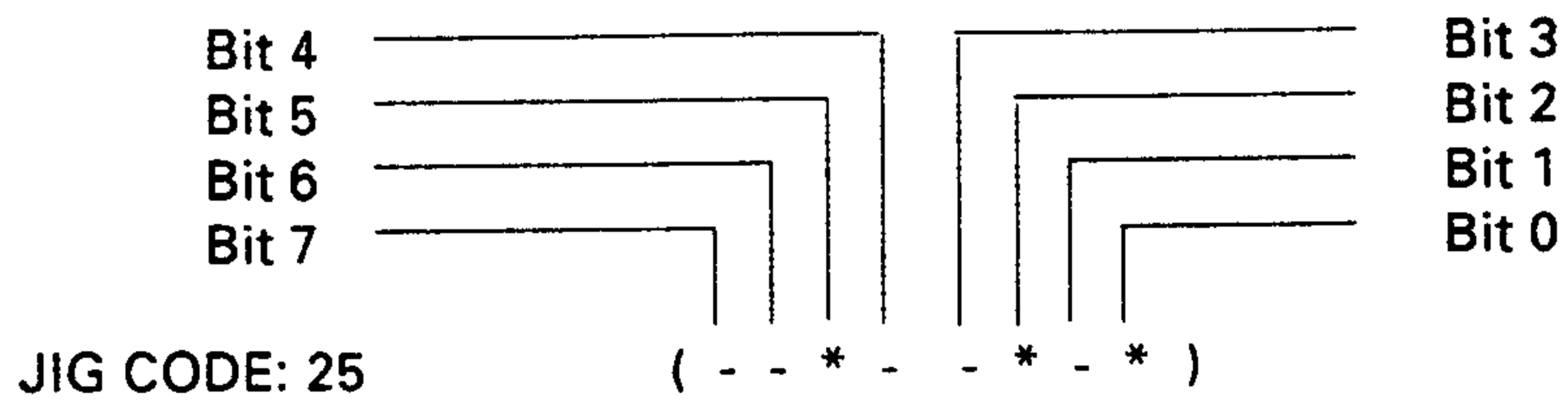
- = no magnet
* = magnet

.6   order of the magnets on the underside of the jig.
      (jig shown here from above)

Bit 0 ——▷ *   o ◁—— Bit 4
Bit 1 ——▷ o   * ◁—— Bit 5
Bit 2 ——▷ *   o ◁—— Bit 6
Bit 3 ——▷ o   o ◁—— Bit 7
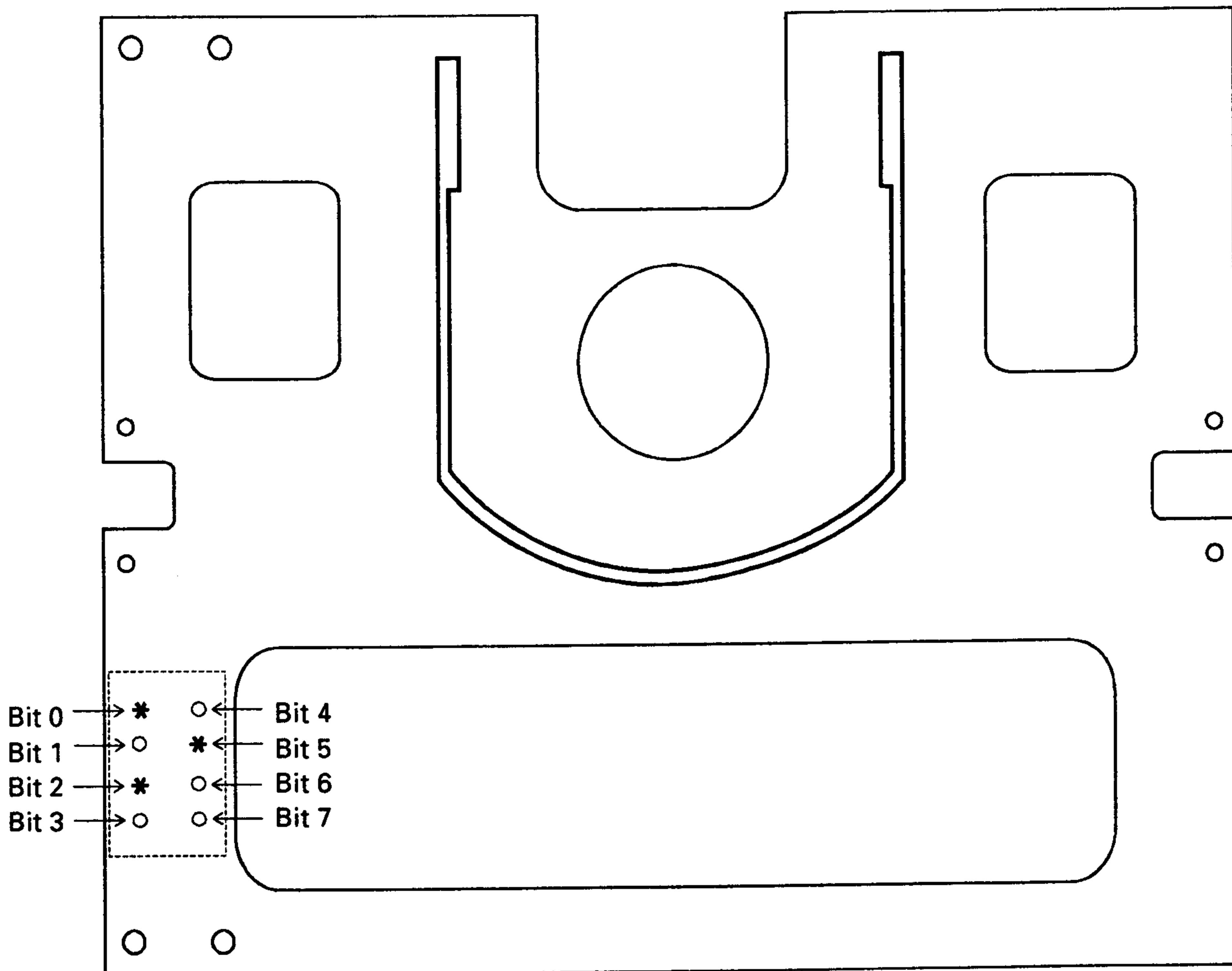
o = no magnet
* = magnet

7 order of the magnets on the underside of the jig.

(jig shown here from above)

122

6,4

33

36,2

○ Needle

Machine zero point

3,2

Pattern zero
point

28 Stiche

Y+

X- ← ↑ →X+

Y-

127

134

61
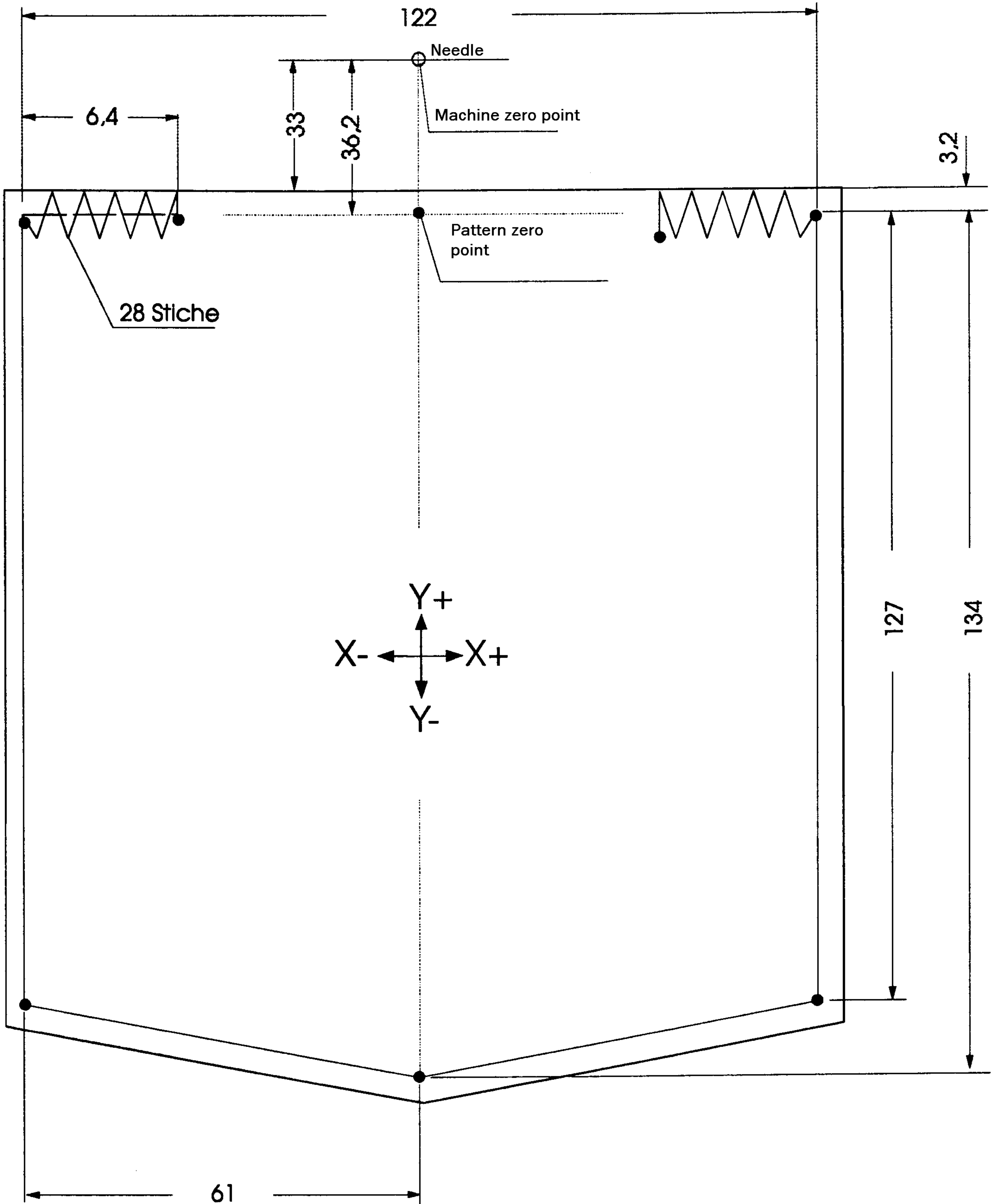
Note: In the program which follows, the initial description only shows the pattern form without the machine functions such as "reduce speed", "secondary tension" etc. The shift parameters are not considered.
These extras are described in section 8 "pattern proofing".
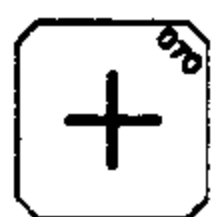
8 Write sewing program (see pattern example in section 7)

program model: sketch with coordinate values:
Max. pattern size = 220 x 250 mm.k
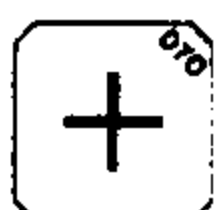
Note:. Requirement for using the existing sewing program is the identity of the sewing jig and the corresponding form-related folder-part-set.

Connect and switch on the programming device in accordance with section 2.

```
┌─────────────────────────────────────┐
│  0        0    /    2: JIG CODE      #640 │
│  JIG CODE NOT PROGRAMMED             #100 │
└─────────────────────────────────────┘
```

[+] or [−]

```
┌─────────────────────────────────────┐
│  0        0    /    2: JIG CODE      #640 │
│  JIG CODE:99    ↔                    #101 │
└─────────────────────────────────────┘
```

select desired jig code (0-99) with [+] or [−] (see page 22)

[Enter]

```
┌─────────────────────────────────────┐
│  0        0    /    3: HINDRANCES    #603 │
│  HINDRANCES YES "+", NO "−"          #102 │
└─────────────────────────────────────┘
```
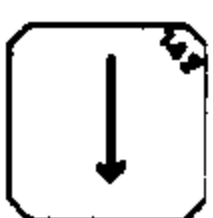
[−] for sewing jig without hindrances

```
┌─────────────────────────────────────┐
│  0        0    /    3:HINDRANCES     #603 │
│  JIG WITHOUT OBSTACLES               #703 │
└─────────────────────────────────────┘
```
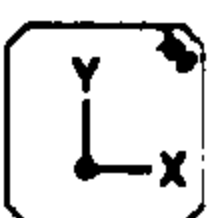
[→] fast slew

```
┌─────────────────────────────────────┐
│  0        0    /    3:HINDRANCES     #603 │
│  INSERT FAST SLEW                    #183 │
└─────────────────────────────────────┘
```

Move to Y-coordinate -362 (=36.2 mm) (pattern zero-point) with carriage movement key

[↓]
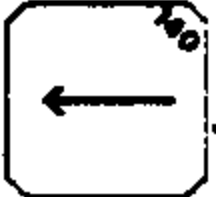
```
┌─────────────────────────────────────┐
│  0       -362 /    3:HINDRANCES      #603 │
│  ENTER FAST SLEW END POINT           #163 │
└─────────────────────────────────────┘
```

[L x]

The coordinate reference-point becomes the new pattern zero-point (X = 0, Y = 0).

-This simplifies the inputting of the coordinates.

Move to X-coordinate -610 (=61 mm) with the carriage movement key ⬅.

```
-610      0    /      3:HINDRANCES          #603
ENTER FAST SLEW END POINT                  #163
```

Enter

```
-610      0    /      5: FAST SLEW          #614
```

▼   start sewing

```
-610      0    /      6: START SEWING       #606
```

F1   graphic menu

```
-610      0    /      6: START SEWING       #606
STANDARD STITCH LENGTH                     #200
```

Enter

```
-610      0    /      6: START SEWING       #606
CHOOSE STANDARD STITCH LGTH: 3.00 mm       #160
```

select desired standard stitch length (in example 3.4 mm) with + or −.

Enter

```
-610      0    /      7:ST. STITCH LENGTH   #611
STANDARD STITCH LENGTH :3.40 mm            #705
```

⌇   straight line

```
-610       0    /      7:ST. STITCH LENGTH    #611
INSERT LINE      #180
```

Move to new X-value -546 (=54.6 mm) with the carriage movement key [→] .

Enter

```
-546       0    /      8:LINE               #616
LINE END POINT #151
```

F2   machine function menu

```
-546       0    /      8:LINE               #616
SPEED                                       #240
```

Press [+] or [—] till "zigzag".

```
-546       0    /      8:LINE               #616
ZIGZAG                                      #242
```

Enter

```
-546       0    /      8:LINE               #616
START ZIGZAG WITH ENTER                     #169
```

Enter

```
-546       0    /      9:ZIGZAG ON          #636
INSERT LINE                                 #180
```

F1   graphic menu

```
-546       0    /      9:ZIGZAG ON          #636
STANDARD STITCH LENGTH                      #200
```

```
-546       0    /      9: ZICK-ZACK EIN     #636
```

Press ⊞ or ⊟ till "stitch length"

```
┌─────────────────────────────────────────────┐
│  -546      0   /    9:ZIGZAG ON       #636    │
│  STITCH LENGTH                        #201    │
└─────────────────────────────────────────────┘
```

Enter

```
┌─────────────────────────────────────────────┐
│  -546      0   /    9:ZIGZAG ON       #636    │
│  CHOOSE STITCH LENGTH: 3.40 mm        #161    │
└─────────────────────────────────────────────┘
```

Select desired length for zigzag bar with ⊞ oder ⊟ key.

$$\text{value} = \frac{\text{bar length}}{\text{stitch total}} \qquad \left(\text{in example } \frac{6,4}{28} = 0.23\right)$$

Enter

```
┌─────────────────────────────────────────────┐
│  -546      0   /    10: STITCH LENGTH  #612   │
│  INSERT LINE                          #180    │
└─────────────────────────────────────────────┘
```

Move to x-value -610 with carriage movement key ⟵.

```
┌─────────────────────────────────────────────┐
│  -546      0   /    10: STITCH LENGTH  #612   │
│  ENTER LINE END POINT                 #150    │
└─────────────────────────────────────────────┘
```

Enter

```
┌─────────────────────────────────────────────┐
│  -610      0   /    11:LINE            #616   │
│  LINE END POINT                       #151    │
└─────────────────────────────────────────────┘
```

F2   machine function menu

```
┌─────────────────────────────────────────────┐
│  -610      0   /    11:LINE            #616   │
│  SPEED                                #240    │
└─────────────────────────────────────────────┘
```

Press ⊞ or ⊟ till "zigzag"

```
┌─────────────────────────────────────────────┐
│  -610      0    /     11:LINE         #616    │
│  ZIGZAG                               #242    │
└─────────────────────────────────────────────┘
```

```
┌──┐
│  │
│Enter│
└──┘
```

```
┌─────────────────────────────────────────────┐
│  -610      0    /     11:LINE         #616    │
│  STOP ZIGZAG WITH ENTER               #170    │
└─────────────────────────────────────────────┘
```

```
┌──┐
│  │
│Enter│
└──┘
```

```
┌─────────────────────────────────────────────┐
│  -610      0    /     12 ZIGZAG OFF   #637    │
│  INSERT LINE                          #180    │
└─────────────────────────────────────────────┘
```

```
┌──┐
│ F1│          graphic menu
└──┘
```

```
┌─────────────────────────────────────────────┐
│   610      0    /     12 ZIGZAG OFF   #637    │
│  STANDARD STITCH LENGTH               #200    │
└─────────────────────────────────────────────┘
```

```
┌──┐
│  │   standard stitch length is set at 3.40 mm.
│Enter│
└──┘
```

```
┌─────────────────────────────────────────────┐
│  -610      0    /     13:ST. STITCH LENGTH #611│
│  INSERT LINE                          #180    │
└─────────────────────────────────────────────┘
```

Move to Y-coordinate -1270 with carriage movement key ↓ .
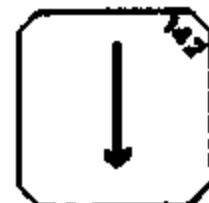
```
┌──┐
│  │
│Enter│
└──┘
```

```
┌─────────────────────────────────────────────┐
│  -610    -1270/     14:LINE           #616    │
│  LINE END POINT                       #151    │
└─────────────────────────────────────────────┘
```

Move to Y-coordinate -1340 and X-coordinate 0 with the carriage movement keys ↓ and
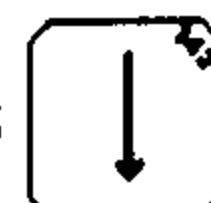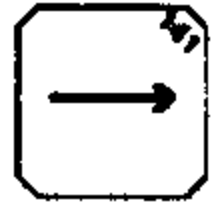
→ .
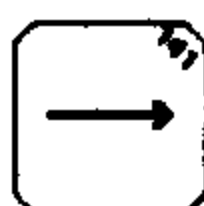
| Enter |

| 0 | -1340 / | 15:LINE | #616 |
| LINE END POINT | | | #151 |

Move to Y-coordinate -1270 and X-coordinate 610 with the carriage movement keys [↑] and
[→].

| Enter |

| 610 | -1270 / | 16:LINE | #616 |
| LINE END POINT | | | #151 |

Move to Y-coordinate 0 with the carriage movement key [↑].

| Enter |

| 610 | 0 / | 17:LINE | #616 |
| LINE END POINT | | | #151 |

Move to X-coordinate 546 with the carriage movement key [←].

| Enter |

| 546 | 0 / | 18:LINE | #616 |
| LINE END POINT | | | #151 |

[F2]   machine function menu

| 546 | 0 / | 18:LINE | #616 |
| SPEED | | | #240 |

Press [+] or [−] till "zigzag".

```
546      0    /     18:LINE         #616
ZIGZAG                              #242
```

Enter

```
546      0    /     18:LINE         #616
START ZIGZAG WITH ENTER             #169
```

Enter

```
546      0    /     19:ZIGZAG ON    #636
INSERT LINE                         #180
```

F1   graphic menu

```
546      0    /     19:ZIGZAG ON    #636
STANDARD STITCH LENGTH              #200
```

Press $+$ or $-$ till "stitch length".

```
546      0    /     19:ZIGZAG ON    #636
STITCH LENGTH                       #201
```

Enter

```
546      0    /     19:ZIGZAG ON    #636
CHOOSE STITCH LENGTH                #161
```

Select stitch length for zigzag bar with $+$ or $-$.

$$\text{Value} = \frac{\text{bar length}}{\text{stitch total}} \qquad \text{(in example} \quad \frac{6.4}{28} = 0.23)$$

Enter

```
┌─────────────────────────────────────────┐
│  546      0   /     20:STITCH LENGTH  #612 │
│  INSERT LINE                          #180 │
└─────────────────────────────────────────┘
```

Move to X-coordinate 610 with carriage moovement key [→].

```
┌─────────────────────────────────────────┐
│  610      0   /     20:STITCH LENGTH  #612 │
│  ENTER LINE END POINT                 #150 │
└─────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────┐
│  610      0   /     21:LINE           #616 │
│  LINE END POINT                       #151 │
└─────────────────────────────────────────┘
```

[F2]   machine function menu

```
┌─────────────────────────────────────────┐
│  610      0   /     21:LINE           #616 │
│  SPEED                                #240 │
└─────────────────────────────────────────┘
```

Press [+] or [−] till "zigzag".

```
┌─────────────────────────────────────────┐
│  610      0   /     21:LINE           #616 │
│  ZIGZAG                               #242 │
└─────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────┐
│  610      0   /     21:LINE           #616 │
│  STOP ZIGZAG WITH ENTER               #170 │
└─────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────┐
│  610      0   /     22:ZIGZAG OFF     #637 │
│  INSERT LINE                          #180 │
└─────────────────────────────────────────┘
```

[✂]   cut thread

```
┌─────────────────────────────────────────┐
│  610      0   /     23:CUT THREAD     #607 │
│  INSERT LINE                          #180 │
└─────────────────────────────────────────┘
```
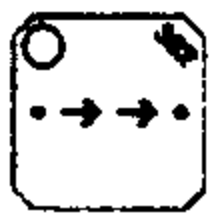
fast slew

```
 610      0    /    23:CUT THREAD      #607
 INSERT FAST SLEW                      #183
```

Move to x-coordinate with carriage movement key .

Enter
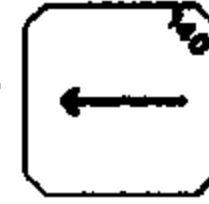
```
 0        0    /    24:FAST SLEW       #614
```
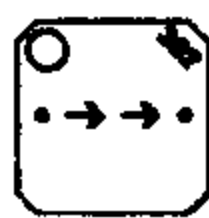
                     fast slew

```
 0        0    /    24:FAST SLEW       #614
 INSERT FAST SLEW                      #183
```

Move to Y-coordinate +362 with carriage movement key .

Enter
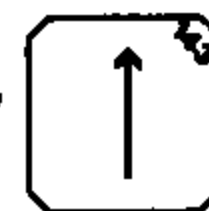
```
 0        362  /    25:FAST SLEW       #614
```

                     finish programming.

```
 0        362  /    25:FAST SLEW       #614
 CREATE STITCH DATA WITH "+"           #400
```



```
 0        362  /    25:FAST SLEW       #614
 STITCH GENERATION IN PROGRESS         #401
```

```
 PROGRAMMING DISPLAY SWITCHED OFF      #106
```

*Note: A data record can only be created witht [+] . Only the geometrical data record is

saved with [—] or [Enter] .

After inputting this program number, the message appears:

PROGRAM INCOMPLETE   #115

This program can be worked on within the function "correct sewing program".

9 Correct sewing program

This function serves to modify patterns or to insert or delete already programmed graphic functions or machine functions (see section 3 diagram "writing/correcting programs".
In the following example, the inserting of machine functions into the existing sewing program from section 8 is described.)

The programming device is ready to make a correction in accordance with section 2.

```
┌─────────────────────────────────────────────┐
│  0        0    /     1.PROGRAM NUMBER   #601 │
│  PROGRAM NUMBER AFTER CORRECTION:       #103 │
└─────────────────────────────────────────────┘
```

If the displayed program is to remain unchanged after carrying out the correction, a new program number must be entered for the program which is to be altered.

Enter

```
┌─────────────────────────────────────────────┐
│  0        0    /     1.PROGRAM NUMBER   #601 │
│  PROGRAM NUMBER : 99                     #700 │
└─────────────────────────────────────────────┘
```

Press **⟹** till "zigzag on"

```
┌─────────────────────────────────────────────┐
│  -546      -362 /    9.ZIGZAG ON        #636 │
└─────────────────────────────────────────────┘
```

Press **Ins** (diode lights)
        = insert mode

F2   machine function menu

```
┌─────────────────────────────────────────────┐
│  -546      -362 /    9. ZIGZAG ON       #636 │
│  SPEED                                   #240 │
└─────────────────────────────────────────────┘
```

Press **+** or **−** till "shift parameter"

```
┌─────────────────────────────────────────────┐
│  -546      -362 /    9.ZIGZAG ON        #636 │
│  SHIFT PARAMETER                         #248 │
└─────────────────────────────────────────────┘
```

Enter

```
┌─────────────────────────────────────────────┐
│  -546      -362 /    9.ZIGZAG ON        #636 │
│  ENTER STITCH PARAMETER: STITCHES        #179 │
└─────────────────────────────────────────────┘
```

Press ⊟ till -2 ST (=-2 stitches)

Note: A shift parameter of -7 stitches is to be entered when creating a double seam in the functions "zigzag on" and "zigzag off".

In the example shown, the function "zigzag on" is at the beginning of the seam. As the sewing machine has not yet reached max. speed at this stage, a shift parameter of -2 stitches is sufficient.

Enter

```
-546      -362 /      9:ZIGZAG ON          #636
SHIFT PARAMETER: -2 STITCHES               #744
```

F2   machine function menu

```
546       -362 /      9: ZIGZAG ON         #636
SPEED                                      #240
```

Press ⊞ or ⊟ till "reduced speed"

```
-546      -362 /      9:ZIGZAG ON          #636
REDUCED SPEED                              #241
```

Enter

```
-546      -362 /      9:ZIGZAG ON          #636
START REDUCED SPEED WITH ENTER            #167
```

Enter

```
-546      -362 /      10:REDUCED SPEED ON  #638
```

F2   machine function menu

```
-610      -362 /      13:ZIGZAG OFF        #637
SHIFT PARAMETER                            #248
```

Press ⊞ or ⊟ till "shift parameter"

```
-546      -362 /    10:REDUCED SPEED ON #638
SHIFT PARAMETER                        #248
```

[Enter]

```
-546      -362 /    10:REDUCED SPEED ON #638
SHIFT PARAMETER: 0 STITCHES            #744
```

Press ⊟ till -5 ST (=-5 stitches)

[Enter]

```
-546      -362 /    10: RED. DREHZAHL EIN #638
VERSCHIEBE-PARAMETER: -5 ST             #744
```

Press [Ins] (diode off)

= basic status mode

Press [⟹] till "zigzag off"

```
-610      -362 /    13:ZIGZAG OFF       #637
```

Press [Ins] (diode lights)

= insert mode

Press [F2]   machine function menu

```
-610      -362 /    13: ZIGZAG OFF      #637
SPEED                                  #240
```

Press ⊞ or ⊟ till "shift parameter"

```
-610      -362 /    13:ZIGZAG OFF       #637
SHIFT PARAMETER                        #248
```

[Enter]

```
-610      -362 /     13:ZIGZAG OFF        #637
ENTER SHIFT PARAMETER: STITCHES          #179
```

Press [—] till -7 ST (-7 stitches)

[Enter]

```
-610      -362 /     13:ZIGZAG OFF        #637
SHIFT PARAMETER: -7 STITCHES             #744
```

[F2]   machine function menu

```
-610      -362 /     13:ZIGZAG OFF        #637
SPEED                                     #240
```

Press [+] or [—] till "reduced speed"

```
-610      -362 /     13: ZIGZAG OFF       #637
REDUCED SPEED                             #241
```

[Enter]

```
-610      -362 /     13:ZIGZAG OFF        #637
STOP REDUCED SPEED WITH ENTER            #168
```

[Enter]

```
-610      -362 /     14:REDUCED SPEED OFF #639
```

Press [Ins] (diode off)

    = basic status mode

Press ⬜➡ till "line" with the displayed coordinates.

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/    16:LINE    #616 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```
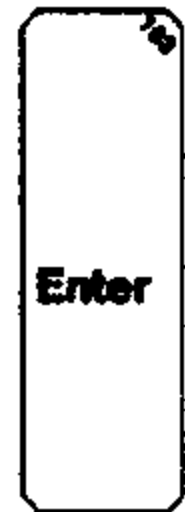
Press ⬜ Ins (diode lights)

= insert mode

Press ⬜ F2   machine function menu

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/    16:LINE    #616 │  │
│  │ SPEED                         #240 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```

Press ➕ or ➖ till "secondary tension"

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/    16:LINE    #616 │  │
│  │ SECONDARY TENSION             #243 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```
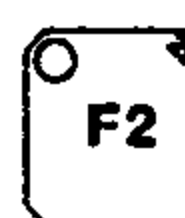
⬜ Enter

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/    16:LINE    #616 │  │
│  │ SECONDARY TENSION ON WITH ENTER #165 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```

⬜ Enter

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/ 17:SECONDARY TENSION ON  #629 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```

⬜ F2

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/ 17:SECONDARY TENSION ON  #629 │  │
│  │ SPEED                         #240 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```

Press ➕ or ➖ till "shift parameter"

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ -610     -1632/ 17:SECONDARY TENSION ON  #629 │  │
│  │ SHIFT PARAMETER               #248 │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```

[Enter]

```
-610       -1632 / 17:SECONDARY TENSION ON  #629
ENTER SHIFT PARAMETER: STITCHES             #179
```

Press [+] or [—] till "5 ST (=5 stitches)

[Enter]

```
-610 -    1632 / 17:SECONDARY TENSION ON   #629
SHIFT PARAMETER -5 STITCHES                 #744
```

[F2]   machine function menu

```
-610       -1632 / 17:SECONDARY TENSION ON  #629
SPEED                                       #240
```

[Enter]

```
-610       -1632 / 17:SECONDARY TENSION ON  #629
SPEED: 4100 RPM                             #164
```

Press [+] or [—] till 3100 RPM (= 75% of max. speed)

[Enter]

```
-610       -1632 /     18:SPEED             #610
SPEED:3100 RPM                              #740
```

[F2]   machine function menu

```
-610       -1632 /     18: SPEED            #610
SPEED                                       #240
```

Press ⊞ or ⊟ till "shift parameter"

```
┌─────────────────────────────────────────────┐
│  -610     -1632/     18:SPEED        #610     │
│  SHIFT PARAMETER                     #248     │
└─────────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────────┐
│  -610     -1632/     18:SPEED        #610     │
│  ENTER SHIFT PARAMETER: STITCHES     #179     │
└─────────────────────────────────────────────┘
```

Press ⊟ till -5ST (= -5 stitches)

[Enter]

```
┌─────────────────────────────────────────────┐
│  -610     -1632/     18:SPEED        #610     │
│  SPEED:3100 RPM / SHIFT PAR. -5 ST.  #740     │
└─────────────────────────────────────────────┘
```

[F2]   machine function menu

```
┌─────────────────────────────────────────────┐
│  -610     -1632/     18:SPEED        #610     │
│  SPEED                               #240     │
└─────────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────────┐
│  -610     -1632/     18 SPEED        #610     │
│  SPEED: 3100 RPM                     #164     │
└─────────────────────────────────────────────┘
```

Press ⊞ or ⊟ till 4100 RPM

[Enter]

```
┌─────────────────────────────────────────────┐
│  -610     -1632/     19:SPEED        #610     │
│  SPEED: 4100 RPM                     #740     │
└─────────────────────────────────────────────┘
```

Press [Ins] (diode off)

= basic state mode

Press [→] till coordinate X 0;Y-1702.

```
0        -1702/      20:LINE         #616
```

Press [Ins] (diode lights)

= insert mode

[F2]   machine function menu

```
0        -1702/      20:LINE         #616
SPEED                                #240
```

[Enter]

```
0        -1702/      20:LINE         #616
SPEED:4100 RPM                       #164
```

Press [+] or [—] till 3100 RPM (=75% of max. speed)

[Enter]

```
0        -1702/      21:SPEED        #610
SPEED:3100 RPM                       #740
```

[F2]

```
0        -1702/      21:SPEED        #610
SPEED #240
```

Press [+] or [—] till "shift parameter"

```
0        -1702/      21:SPEED        #610
SHIFT PARAMETER                      #248
```

[Enter]

```
┌─────────────────────────────────────────────┐
│  0        -1702/     21:SPEED        #610    │
│  ENTER SHIFT PARAMETER: STITCHES     #170    │
└─────────────────────────────────────────────┘
```

Press [—] till -5ST (=-5 stitches)

[Enter]

```
┌─────────────────────────────────────────────┐
│  0        -1702/     21:SPEED        #610    │
│  SPEED:3100RPM SHIFT PARAMETER -5 STITCHES #740 │
└─────────────────────────────────────────────┘
```

[F2]   machine function menu

```
┌─────────────────────────────────────────────┐
│  0        -1702/     21:SPEED        #610    │
│  SPEED                               #240    │
└─────────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────────┐
│  0        -1702/     21:SPEED        #610    │
│  SPEED:3100 RPM                      #164    │
└─────────────────────────────────────────────┘
```

Press [+] or [—] till 4100 RPM

[Enter]

```
┌─────────────────────────────────────────────┐
│  0        -1702/     22:SPEED        #610    │
│  SPEED:4100 RPM                      #740    │
└─────────────────────────────────────────────┘
```

Press [Ins] (diode off)

= basic status mode

Press [⇒] till coordinate X 610;Y -1632.

```
610      -1632/    23:LINE              #616
```

Press [Ins] (diode lights)

= insert mode

[F2]   machine function menu

```
610      -1632/    23: LINE             #616
SPEED                                   #240
```

[Enter]

```
610      -1632/    23: LINE             #616
SPEED:4100 RPM                          #164
```

Press [+] or [—] till 3100 RPM (75% of max. speed)

[Enter]

```
610      -1632/    24:SPEED            #610
SPEED:3100RPM                          #740
```

[F2]   machine function menu

```
610      -1632/    24:SPEED            #610
SPEED                                  #240
```

Press [+] or [—] till "shift parameter"

```
610      -1632/    24:SPEED            #610
SHIFT PARAMETER                        #248
```

[Enter]

```
610      -1632/    24:SPEED            #610
ENTER SHIFT PARAMETER: STITCHES        # 179
```

Press ⊞ or ⊟ till -5ST (= -5 stitches)

[Enter]

```
┌─────────────────────────────────────────────┐
│  610      -1632/     24: SPEED        #610    │
│  SPEED: 3100 RPM/ SHIFT PAR. -5 ST.   #740    │
└─────────────────────────────────────────────┘
```

[F2]   machine function menu

```
┌─────────────────────────────────────────────┐
│  610      -1632/     24:SPEED         #610    │
│  SPEED                                #240    │
└─────────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────────┐
│  610      -1632/     24: SPEED        #610    │
│  SPEED:3100                           #164    │
└─────────────────────────────────────────────┘
```

Press ⊞ or ⊟ till 4100 RPM

[Enter]

```
┌─────────────────────────────────────────────┐
│  610      -1632/     25:SPEED         #610    │
│  SPEED: 4100                          #741    │
└─────────────────────────────────────────────┘
```

[F2]   machine function menu

```
┌─────────────────────────────────────────────┐
│  610      -1632/     25: SPEED        #610    │
│  SPEED                                #240    │
└─────────────────────────────────────────────┘
```

Press ⊞ or ⊟ till "secondary tension"

```
┌─────────────────────────────────────────────┐
│  610      -1632/     25:SPEED         #610    │
│  SECONDARY TENSION                    #243    │
└─────────────────────────────────────────────┘
```

Enter

```
610        -1632/    25: SPEED              #610
STOP SECONDARY TENSION WITH ENTER          #166
```

Enter

```
610        -1632/ 26:SECONDARY TENSION OFF #630
```

Press **Ins** (diode off)

   = basic status mode

Press **⟹** till coordinates x 546; Y-362.

```
546        -362 /     29:ZIGZAG ON          #636
```

Press **Ins** (diode lights)

   = insert mode

F2   machine function menu

```
546        -362 /     29:ZIGZAG ON          #636
SPEED                                       #240
```

Press **+** or **−** till "shift parameter"

```
546        -362 /     29:ZIGZAG ON          #636
SHIFT PARAMETER                             #248
```

Enter

```
546        -362 /     29:ZIGZAG ON          #636
ENTER SHIFT PARAMETER: STITCHES             #179
```

Press **−** till -7ST (= -7 stitches)

Enter

```
546      -362 /     29:ZIGZAG ON      #636
SHIFT PARAMETER: -7 STITCHES           #744
```

F2   machine function menu

```
546      -362 /     29:ZIGZAG ON      #636
SPEED                                  #240
```

Press + or − till "reduced speed "

```
546      -362 /     29: ZIGZAG ON     #636
REDUCED SPEED                          #241
```

Enter

```
546      -362 /     29 ZIGZAG ON      #636
START REDUCED SPEED WITH ENTER         #167
```

Enter

```
546      -362 /     30:REDUCED SPEED ON #638
```

F2   machine function menu

```
546      -362 /     30 REDUCED SPEED ON #638
SPEED                                  #240
```

Press + or − till "shift parameter"

```
546      -362 /     30 REDUCED SPEED ON #638
SHIFT PARAMETER                        #248
```

[Enter]

```
546       -362/      30:REDUCED SPEED ON #638
ENTER SHIFT PARAMETER: STITCHES           #179
```

Press [—] till -5ST (= -5 stitches)

```
546 -362/      30:REDUCED SPEED ON        #638
SHIFT PARAMETER: -5 STITCHES              #744
```

Press [Ins] (diode off)

= basic status mode

Press [⟹] till coordinate X 610.

```
610       -362 /      33:ZIGZAG OFF       #631
```

Press [Ins] (diode lights)

= insert mode

[F2]   machine function menu

```
610       -362 /      33:ZIGZAG OFF       #637
SPEED                                     #240
```

Press [+] or [—] till "reduced speed"

```
610       -362 /      33:ZIGZAG OFF       #637
REDUCED SPEED                             #241
```

[Enter]

```
610       -362 /      33:ZIGZAG OFF       #637
STOP REDUCED SPEED WITH ENTER            #168
```

[Enter]

```
610      -362 /     34:REDUCED SPEED OFF #639
```

Press ⬚ **Ins** (diode off)

= basic status mode

⬚ finish programming

```
610      -362 /  34:REDUCED SPEED OFF   #639
CREATE STITCH DATA WITH "+"           #400
```

⬚ **+**

```
▼
STITCH GENERATION IN PROGRESS         #401
```

```
PROGRAMMING DISPLAY SWITCHED OFF      #106
```

10   Change jig code

For changing a code number which is in an existing sewing program without changing the program number.

The programming device is ready for corrections in accordance with section 2.

```
 0       0   /    1:PROGRAM NUMBER      #601
PROGRAM NUMBER AFTER CORRECTION:99      #103
```

Enter

```
 0       0   /    1:PROGRAM NUMBER      #601
PROGRAM NUMBER:99                        #700
```

Press ⇒ till "jig code:0 (*--* *--*)"

```
 0       0   /    2:JIG CODE            #640
JIGCODE0(*--**--*)                       #701
```

(scissors icon)

```
 0       0   /    2:JIG CODE            #640
ENTER NEW JIG CODE:                      #303
```

change jig code with + or −.

Enter

```
 0       0   /    2:JIG CODE            #640
JIGCODE(*--**--*)                        #701
```

(O icon)

```
 0       0   /    2:JIG CODE            #640
CREATE STITCH DATA WITH "+"              #400
```

+

STITCH GENERATION IN PROGRESS   #401

PROGRAMMING DISPLAY SWITCHED OFF   #106

line end point, 2nd stitch
X= -553;Y= -437

line end point, 3rd stitch
X= -593; Y= -477

line end point, 1st stitch
X= -513;Y= -477

circle start point
circle end point
cut thread

start stitch
line end point, 4th stitch
X= -553;Y= -517

circle point 1
X= -513;Y= -557

circle point 2
X= -553;Y= -597

122

Nadel

Maschinen-
Nullpunkt

needle

machine zero point

33

36,2

3,2

15,5

8

8

X = +553
Y = -517

Y+
X-   X+
Y-

61

1

11   Programming example of a complex seam

programming pattern: sketched pattern (1:1) or drawing with coordinates of machine zero point.

In the example shown, a complex seam will be programmed into the pattern programmed in section 8 and then copied in the menu "block" and added to the right hand side of the pattern.
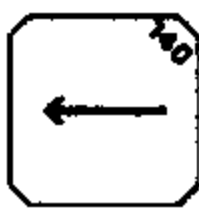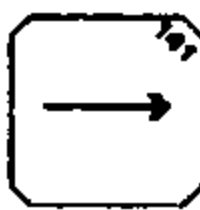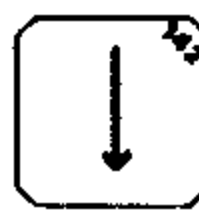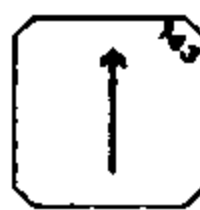
The programming field is switched on and the applicable program number is entered.

cycle through the pattern with [→] until you reach section number 35: cut thread.

```
610      -362 /    35.CUT THREAD         #607
```
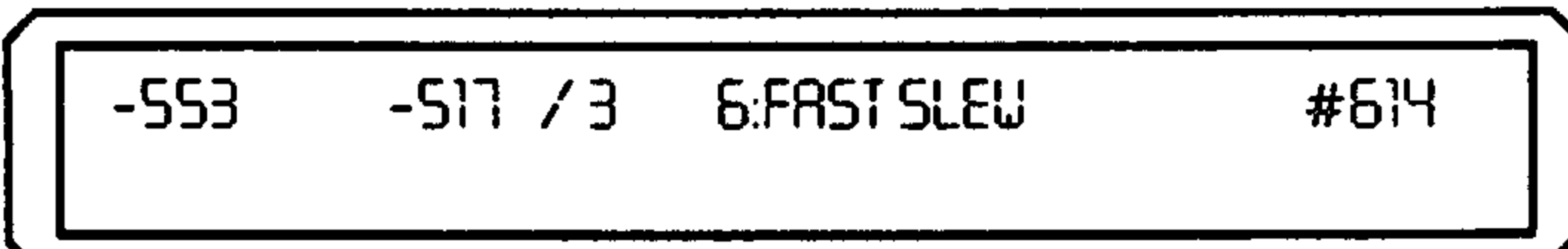
Press [Ins] (diode on)
          = insert mode

[→→]   insert fast slew

With [←], [→], [↓] and [↑]   move to the beginning of the complex seam
                                    (in example X= -553, Y= -517)

```
-553     -517 /    35:CUT THREAD         #607
ENTER FAST SLEW END POINT               #163
```

[Enter]

```
-553     -517 /3   6:FAST SLEW          #614
```

[↓▼]   start sewing

```
-553     -517 /    37.START SEWING       #606
```

[F1]   graphic menu

```
-553     -517 /    37:START SEWING       #606
STANDARD STITCH LENGTH                  #200
```

Press [+] or [−] till "stitch length"

```
┌─────────────────────────────────────────┐
│  -553      -517  /    37: START SEWING      #606  │
│  STITCH LENGTH                              # 201  │
└─────────────────────────────────────────┘
```

[Enter]

```
┌─────────────────────────────────────────┐
│  -553      -517  /    37: START SEWING      #606  │
│  CHOOSE STITCH LENGTH X.XX mm               #161  │
└─────────────────────────────────────────┘
```

select desired stitch length of the complex seam with [+] or [−] (e.g. 2.00 mm)

[Enter]

```
┌─────────────────────────────────────────┐
│  -553      -517  /    38: STITCH LENGTH     #612  │
│  STITCH LENGTH: 2.00mm                      # 706  │
└─────────────────────────────────────────┘
```

[symbol]   line on (diode lit)

Move to line end point 1 seam with [←], [→], [↓] and [↑].
(in example X= -513, Y= -447)

[Enter]

```
┌─────────────────────────────────────────┐
│  -513      -477  /    39: LINE              #616  │
│  LINE END POINT                             #151  │
└─────────────────────────────────────────┘
```

Move to line end point 2 seam with [←], [→], [↓] and [↑].
(in example X= -553, Y= -437)
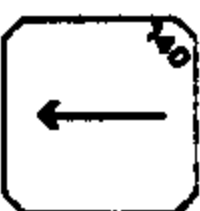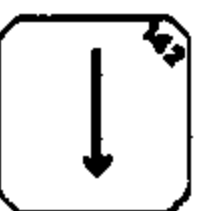
[Enter]

```
┌─────────────────────────────────────────┐
│  -553      -437  /    40: LINE              #616  │
│  LINE END POINT                             #151  │
└─────────────────────────────────────────┘
```

Move to line end point 3 seam with ⟵, ⟶, ⬇ and ⬆.

(in example X= -593, Y= -477)

[Enter]

```
-593     -477 /    41:LINE           #616
LINE END POINT                       #151
```
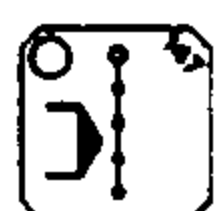
Move to line end point 4 seam with ⟵, ⟶, ⬇ and ⬆.

(in example X= -553, Y= -517)

[Enter]

```
-553     -477 /    42:LINE           #616
LINE END POINT                       #151
```
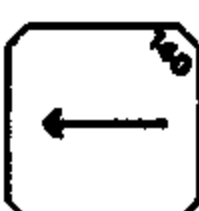
[line symbol]   line off (diode off)

[F1]   graphic menu

Press ➕ or ➖ till "circle"

```
-553     -477 /    42:LINE           #616
CIRCLE                               #203
```

[Enter]

```
-553     -477 /    42:LINE           #616
ENTER CIRCLE POINT 1                 #156
```

Move to circle point 1 with ⟵, ⟶, ⬇ and ⬆.

(in example X= -513, Y= -557)

[Enter]

```
-513      -557 /     42:LINE              #616
ENTER CIRCLE POINT 2  #157
```

Move to circle point 2 with [←] , [→] , [↓] and [↑] .

(in example X= -553, Y= -597)

[Enter]

```
-553      -597 /     45: CIRCLE END POINT #620
MOVE TO LAST POINT WITH ENTER           #107
```

[Enter]

carriage moves to circle end point (= circle start point)

[cut thread symbol]   cut thread

```
-553      -517 /     46:CUT THREAD        #607
```

Press [Ins] (diode off)

> = basic status mode

Cycle complex seam backwards till section number 36: fast slew with [⇐] .

[block symbol]   block

```
-553      -517 /     36:FAST SLEW         #614
MARK START OF BLOCK                      #500
```

[Enter]

Cycle complex seam forwards till section number 46: cut thread with ⟦⟧ .

⟦block icon⟧   block

```
┌─────────────────────────────────────────────┐
│  -553    -517 /    46:CUT THREAD      #607   │
│  MARK START OF BLOCK                  #500   │
└─────────────────────────────────────────────┘
```

Press ⟦+⟧ or ⟦−⟧ till "mark end of block"

```
┌─────────────────────────────────────────────┐
│  -553    -517 /    46:CUT THREAD      #607   │
│  MARK END OF BLOCK                    #501   │
└─────────────────────────────────────────────┘
```
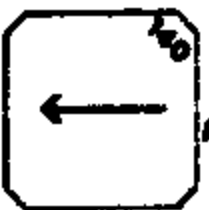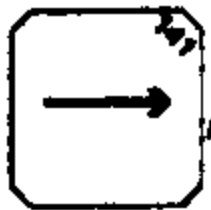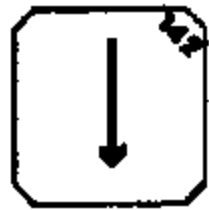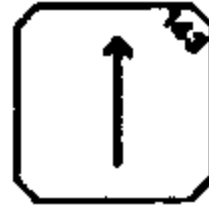
⟦Enter⟧

The block is marked.

When cycling through the pattern, the marked block can be recognized by the asterisk (*) in the display.

Press ⟦Ins⟧ (diode lights)
        = insert mode

⟦insert fast slew icon⟧   insert fast slew

Move to seam start of the opposite complex seam with ⟦←⟧, ⟦→⟧, ⟦↓⟧ and ⟦↑⟧ .

(in example X= -553, Y= -517)

```
┌─────────────────────────────────────────────┐
│  553     -517 /    *46:CUT THREAD     #607   │
│  ENTER END POINT FAST SLEW            #163   │
└─────────────────────────────────────────────┘
```

⟦Enter⟧

```
┌─────────────────────────────────────────────┐
│  553     -517 /    47:FAST SLEW       #614   │
│                                              │
└─────────────────────────────────────────────┘
```

⟦block icon⟧   block

```
553       -517 /       47:FAST SLEW       #614
INSERT BLOCK FORWARDS                     #540
```

Enter

```
553       -51  7/"    47:FAST SLEW       #614
```

Cycle through pattern till section number 60: end of program with ⇒.

Press Ins (diode off)
= basic status mode

○   stop programming

```
553       -517 /"    47:FAST SLEW       #614
CREATE STITCH DATA WITH "+"               #400
```

+

```
STITCH GENERATOR IN PROGRESS              #401
```

```
PROGRAMMING DISPLAY SWITCHED OFF          #106
```

PFAFF