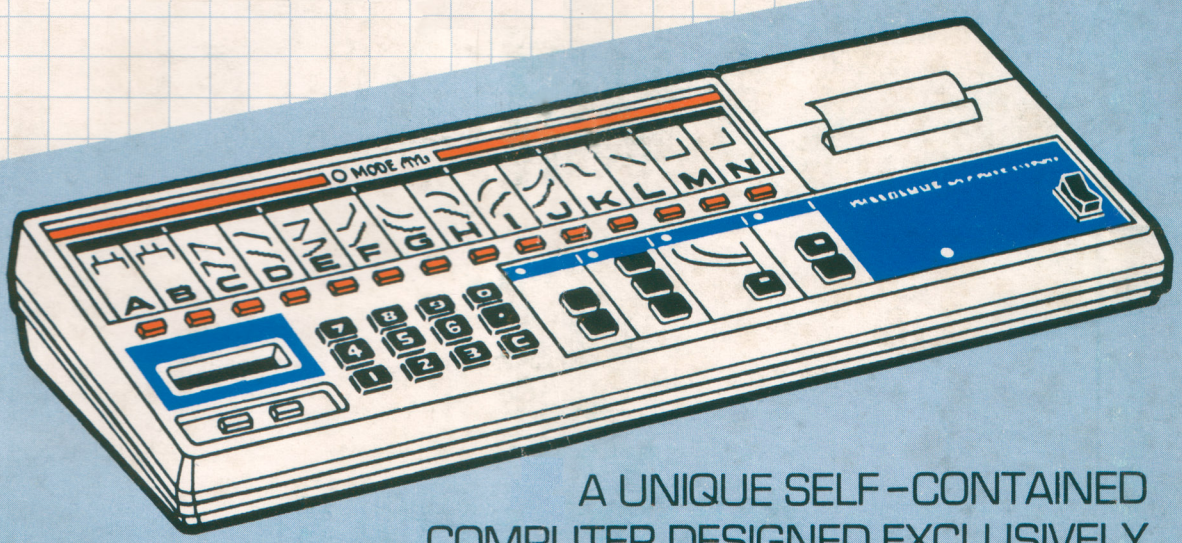

A UNIQUE SELF-CONTAINED
COMPUTER DESIGNED EXCLUSIVELY
FOR HAND AND MACHINE KNITTERS.

KNITTING COMPUTER

INTRODUCTION

CONGRATULATIONS..... You are now the owner of a KNITKING KNITTING COMPUTER..... and the more you use it, the more you will appreciate what a cleverly designed knitting aid it is. Its simplicity of operation and accuracy are sure to remove the tedium from the charting of garments.

The most important part of any garment charting is an accurate stitch and row gauge and we suggest that you obtain a stitch and row gauge in the following manner.

MACHINE KNITTERS - Cast on 60 stitches with waste yarn and knit 6 rows. Mark the tension number for your sample swatch by making holes (you can do this with a Lace Carriage or by hand) 4 transfers for Tension 4, 6 transfers for Tension 6, etc. Knit 6 more rows.

Change to garment yarn and set Counter at 0. Knit 30 rows (in Stockinette stitch or Pattern stitch-sccording to the garment). With contrast waste yarn knit the 10th stitch ON EACH SIDE - by hand. Knit 30 rows. Change to waste yarn and knit 12 rows.

Remove the sts. from the machine by pushing the Carriage across without yarn.

Pull and stretch the sample swatch both lengthwise and diagonally from corner to corner, then lengthwise again. Gently steam the sample - or you can allow the sample to rest several hours or even over night so that the stitches can return to their basic form.

You now measure your gauge with a centimeter tape measure. STITCH and ROW GAUGES must always be taken over 10 centimeters and the easiest method is as follows: Lay you centimeter tape measure on your knitting and measure the exact distance between the 40 stitch marks. It is important that you measure accurately to the closest millimeter, an incorrect measurement will affect the size of your finished garment.

A hand held calculator will simplify the procedure.

EXAMPLE: If the measurement over 40 stitches is 14.6 centimeters, you must divide 40 by 14.6. It equals 2.7397 which is the stitch gauge for 1 centimeter.

Multiply it by 10 (move the decimal point over) and you have 27.397. Reduce it to the closest 1/100 of a centimeter and 27.4 is the stitch gauge you will feed into your Computer.

For the Row Gauge, you must measure the 60 rows.

EXAMPLE: The measurement is 16.4 centimeters. Divide 60 by 16.4 = 3.6585 rows to 1 centimeter. Multiply by 10 - Row Gauge for 10 cm = 36.6, the Row Gauge you will feed into your Computer.

We suggest that you read and follow the instructions from the beginning of your Computer Manual so that you can SEE what happens. Do not rush from one operation to another..... wait for the Computer to do your figuring for you. There will always be a row of ***** on the paper roll when a specific operation is completed - wait for this before you go on to the next operation. Remember that you did not learn to use your knitting machine in one day - so take your time and understand each step before you go on to the next one and before you know it, you will be an expert and chart any pattern in a fraction of the time it took before.

HAND KNITTERS - Most American hand knitters are used to working with inches not centimeters, but in this day and age, tape measures have BOTH inches and centimeters printed. For you to find your stitch and row gauge, you must cast on 40 stitches and knit 40 rows for fine to sport weight yarn and cast on 20 stitches and knit 20 rows for 4-ply knitting worsted or heavier yarns. Be sure to knit your sample in Stockinette stitch or the exact pattern stitch you will use for your garment.

Lightly steam your sample swatch.

For your Stitch Gauge..... Measure the WIDTH of your sample with the centimeter tape. We will use the 20 stitches, 20 rows sample.

EXAMPLE: The width of your knitting is 15.6 centimeters over the 20 stitches. Divide the 20 stitches by 15.6 centimeters (a hand held calculator will simplify this procedure). $20 \div 1.56 = 1.282$. Multiply this by 10 (just move the decimal point over) and you get 12.8 which is the stitch gauge you will enter into your Computer.

For the Row Gauge..... Measure the 20 rows with your centimeter tape.

EXAMPLE: The row measure 14 centimeters. 20 rows $\div$ 14 centimeters = 1.4285. Multiply this by 10 (move decimal over) and you get 14.3, the number you will enter into your Computer.

We suggest that you read and follow the instructions from the beginning of your Computer Manual so that you can SEE what happens. Do not rush from one operation to another..... wait for the Computer to do your figuring for you. There will always be a row of ***** on the paper roll when a specific operation is completed - wait for this before you go on to the next operation. Remember that you did not learn to knit in one day - so take your time and understand each step before you go on to the next one and before you know it, you will be an expert and chart any pattern in a fraction of the time it took before.

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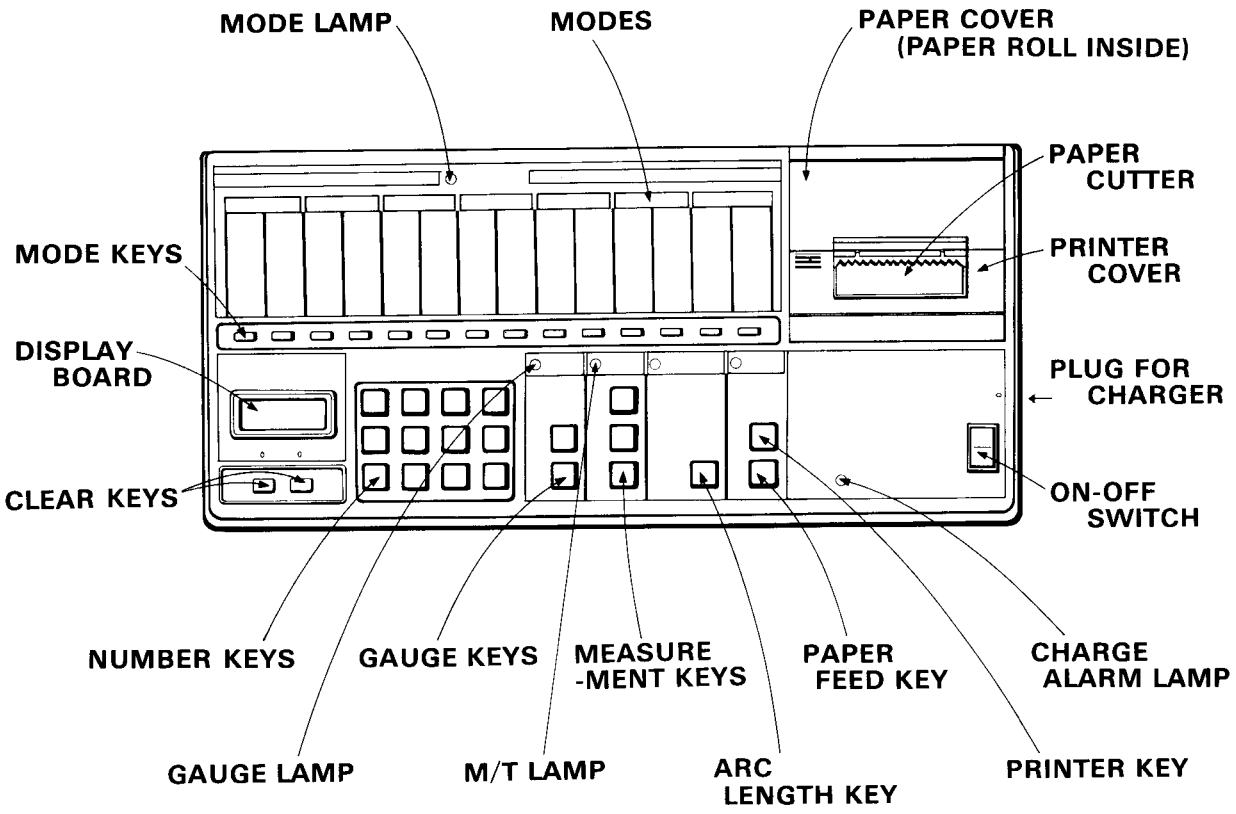
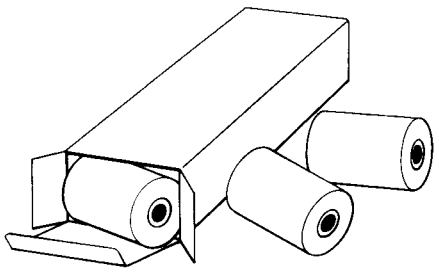
PAGE NO.

PARTS AND ACCESSORIES OF THE COMPUTER

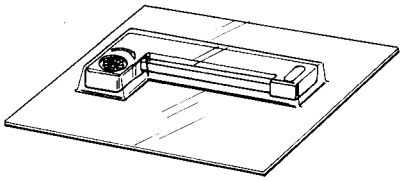
TOP VIEW OF THE COMPUTER



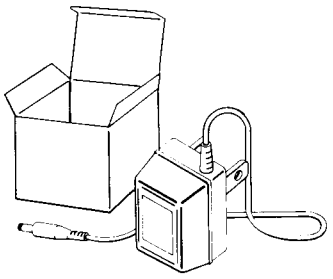
STANDARD ACCESSORIES



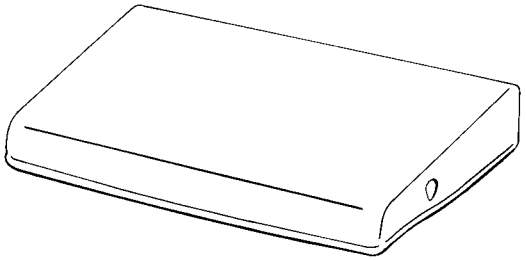
PAPER ROLL (5 rolls)



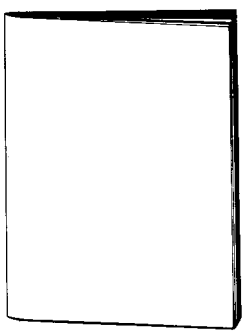
CARTRIDGE INK RIBBON



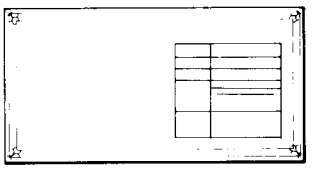
CHARGER



PLASTIC COVER

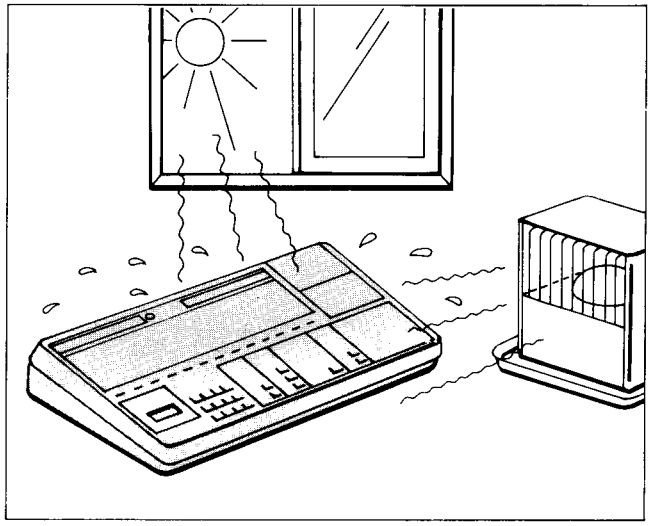


INSTRUCTION MANUAL

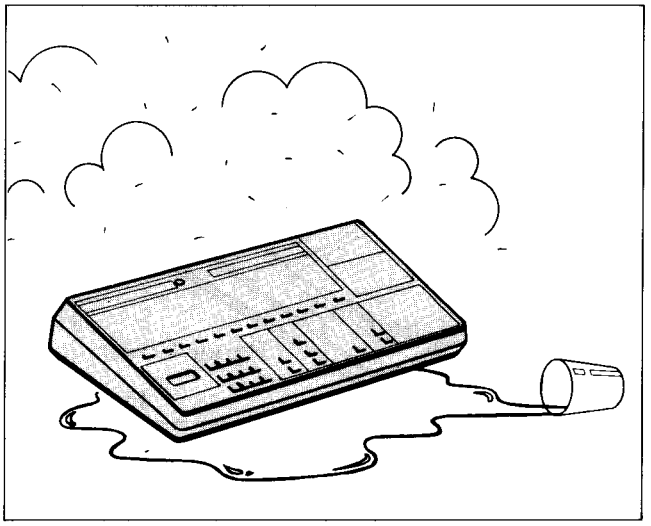


GUARANTEE CARD

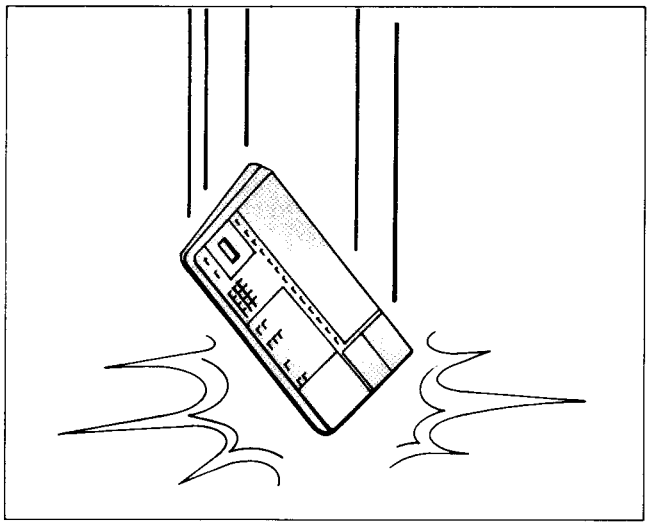
CARE IN HANDLING



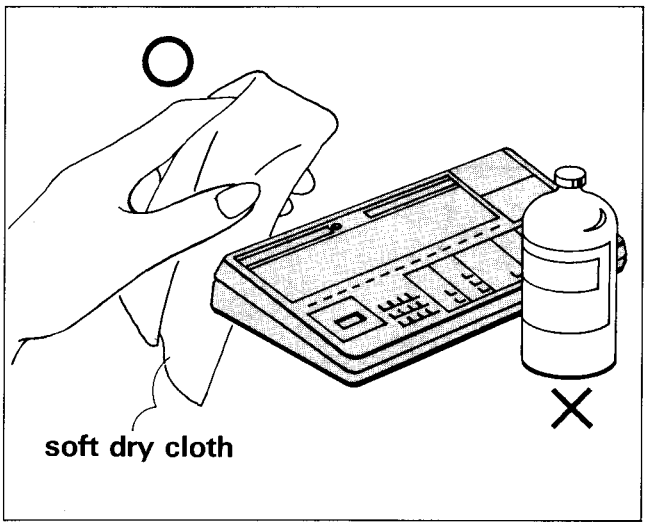
Keep out of the sun and away from heater.



Avoid dust and Humidity.



Do not drop or allow to fall.



Wipe the Computer with a soft dry cloth.
Never use benzine, thinner, etc.

HOW TO INSERT THE PAPER ROLL

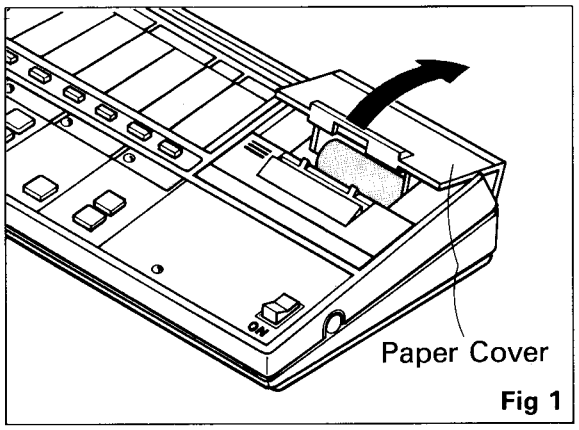


Fig 1

1. Open Paper Cover.

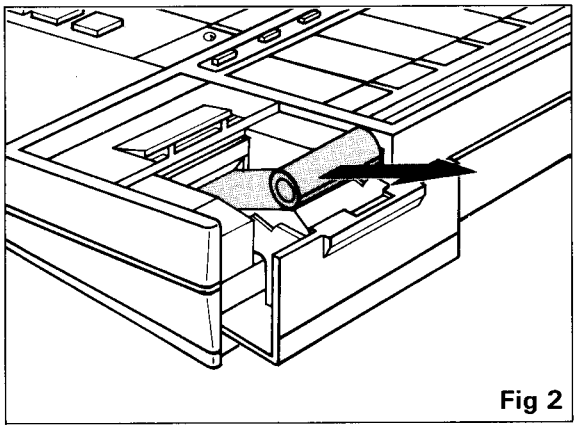


Fig 2

2. Remove empty Paper Roll.

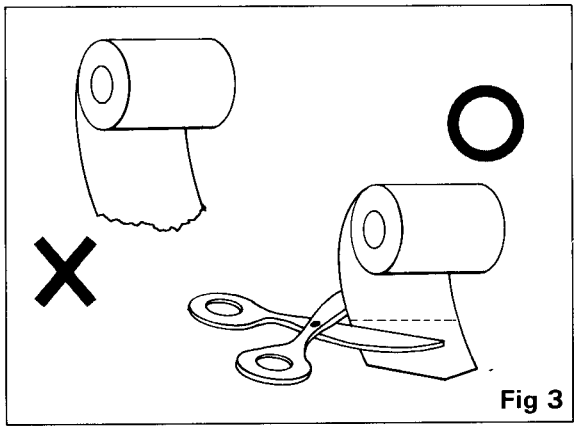


Fig 3

3. Open Paper Roll and neatly cut the edge as shown.

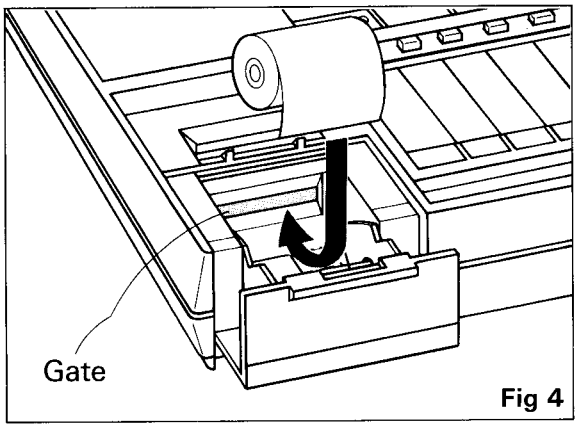


Fig 4

4. Turn the Switch "ON" and insert the Paper Tip as you see in Fig 4.

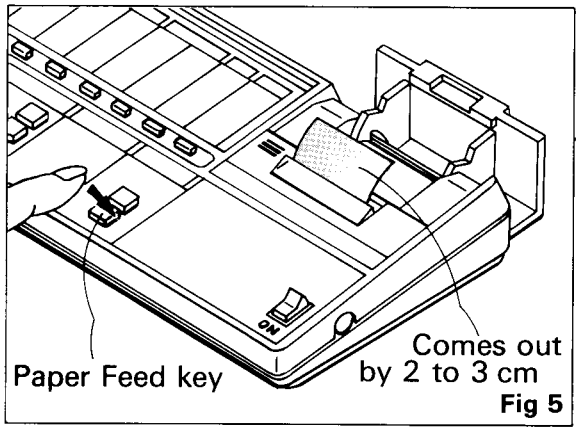


Fig 5

5. Press Paper Feed Key until paper extends 2 to 3 cm from the cut edge.

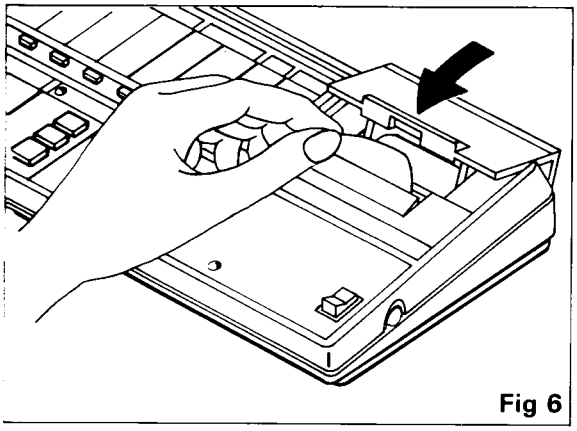


Fig 6

6. Hold paper toward you, then close paper cover.

HOW TO INSERT THE INK RIBBON

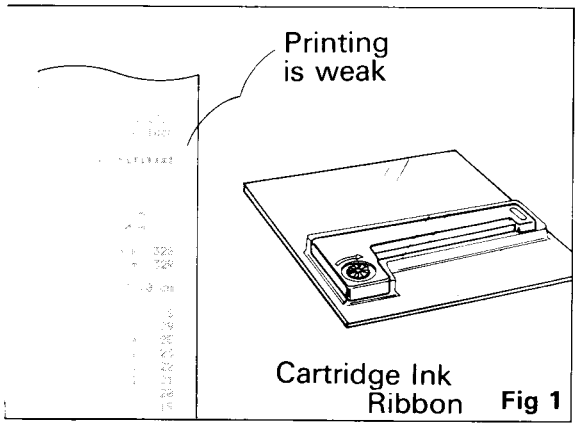


Fig 1

1. Use only the Cartridge Ink Ribbon made specifically for the Computer.
   If the printing becomes weak, change the Cartridge Ink Ribbon.

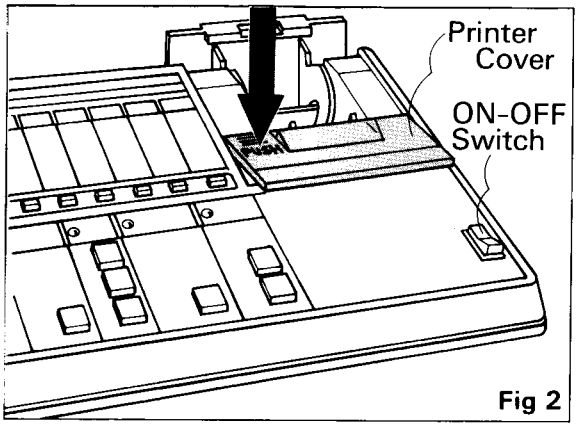


Fig 2

2. Turn the Switch "OFF", then open the Printer Cover by pressing the "PUSH" mark on the Cover. Remove the Paper Roll.

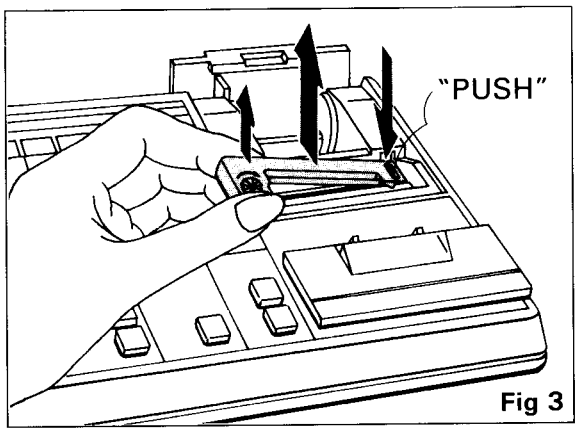


Fig 3

3. Press "PUSH" mark of the Cartridge Ink Ribbon and remove the Cartridge from the LEFT side.

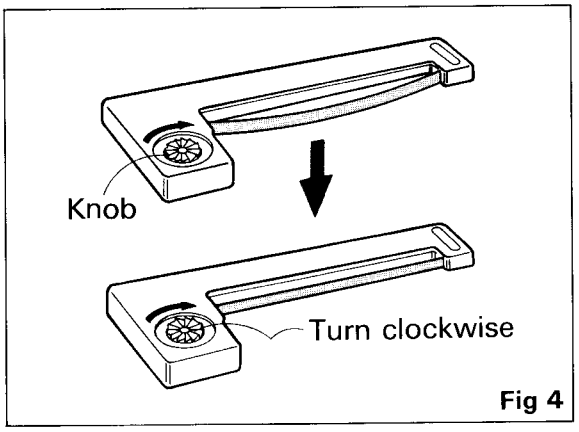


Fig 4

4. Turn the knob on the Cartridge Clockwise to adjust the tension of the Cartridge Ink Ribbon.

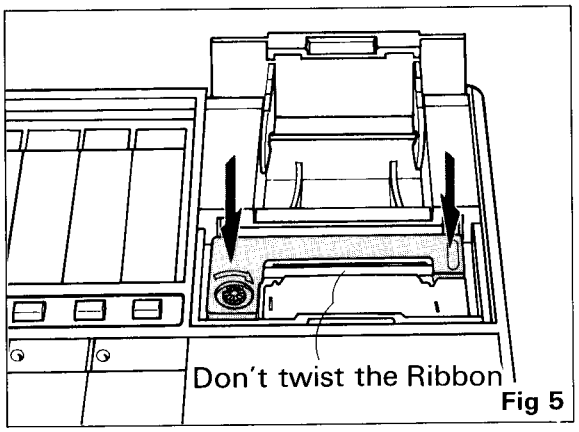


Fig 5

5. Place the Cartridge Ink Ribbon into position by pressing it down on both sides.

   Check that the Cartridge Ink Ribbon feeds in a smooth straight line and is not twisted.

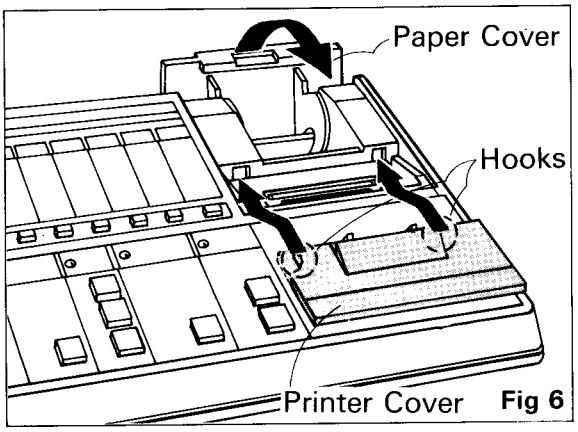
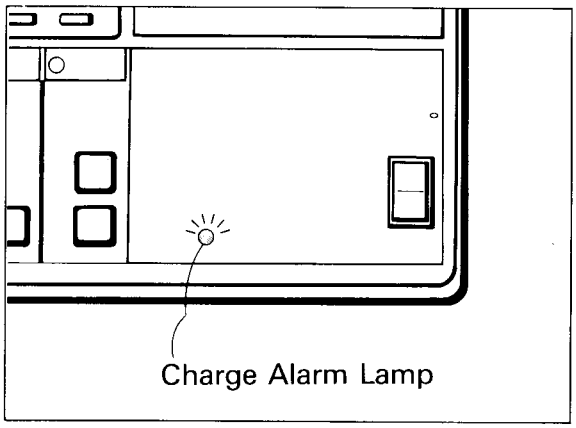


Fig 6

6. Set the top of Printer Cover first as shown in Fig 6, then press down on the lower edge to secure it into the machine, then close the Paper Cover.

CHARGING BATTERY

This computer uses re-chargeable batteries as its power source.



CHARGE TIME

When Charge Alarm Lamp flickers or machine does not start working or works slowly after you turn "ON" Switch, it is telling you to charge the batteries. If you ignore the signals, an alarm will sound.

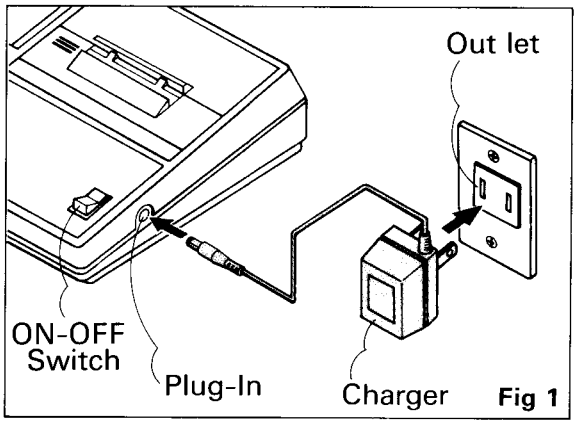


Fig 1

HOW TO CHARGE

Connect the machine to power source with Battery Charger as shown in Fig 1.

It takes approximately 10 hours to charge batteries. A good way is to allow batteries to charge overnight. Be sure Computer is turned "OFF" while charging.

NOTE

★Never operate the Computer while charging batteries.

Before you begin using the Computer, turn "ON" Switch and be sure Gauge Lamp flickers and "0" appears on Display Board.

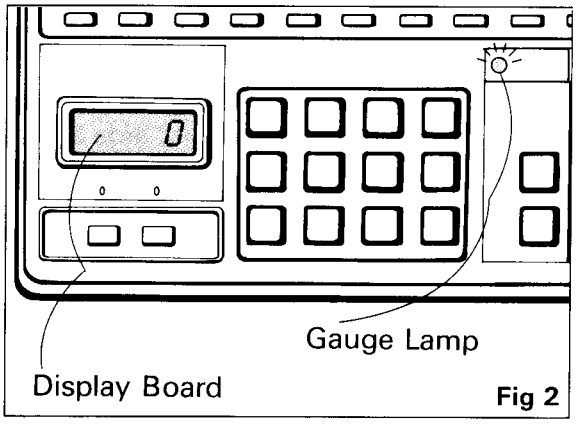
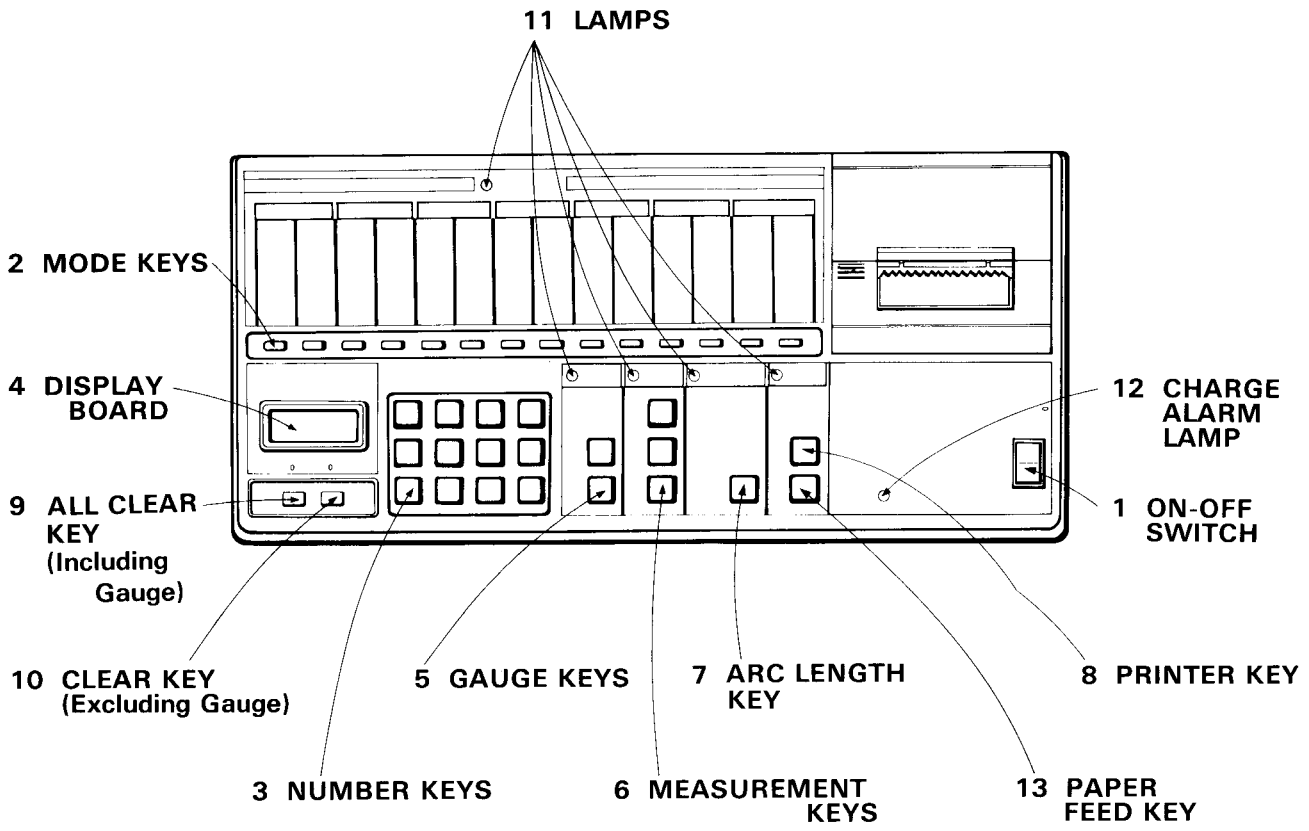


Fig 2

FUNCTIONS



1. ON-OFF SWITCH

2. MODE KEYS

These Keys stand for the different Modes to be used for shaping the shoulders, side darts, sleeves etc. When you press a specific Mode Key, the machine will prepare to calculate your instructions.

3. NUMBER KEYS

The Number Keys are used to enter measurements – rows or stitches into the machine. If you should enter a wrong number, immediately press the Red "C" Key then enter the Correct number.

4. DISPLAY BOARD

Through this window, you can check to see if you have entered the correct figures into the machine.

5. GAUGE KEYS

When you enter the figures of your gauge with "S" for stitches and "R" for rows, the machine will remember them until you clear them or turn the switch "OFF".

6. MEASUREMENT KEYS

These Keys are used to enter the figures into the machine for "X", "Y" or "Z" of the Modes A to N.

7. ARC LENGTH KEY

This Key is for length of curved line of sleeves, neckline, etc. The Key should be used only for Modes G, H, I and J.

8. PRINTER KEY & PRINTER

When you input the required figures in the correct order, they will appear on the Paper Roll, then press the "P" Key (which is the compensating Key for the curve measurement in cm). You should press this Key only for Modes G, H, I and J which are the CURVE LINES for INCREASING or DECREASING then press the ⊟Key and the Computer will then do all the figuring for you and the figures for increasing or decreasing will appear on the Paper Roll.

9. ALL CLEAR KEY (Including Gauge)

This Key clears every memory.

10. CLEAR KEY (Excluding Gauge)

This Key clears every memory except the figures for gauge.

11. LAMPS

These Lamps indicate the order of operation.

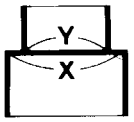
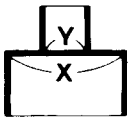
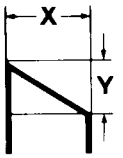
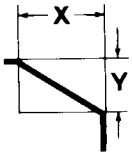
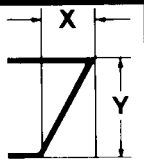
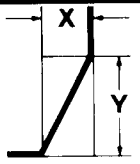
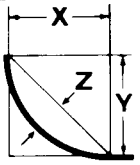
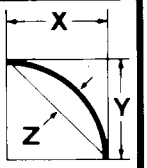
12. CHARGE ALARM LAMP

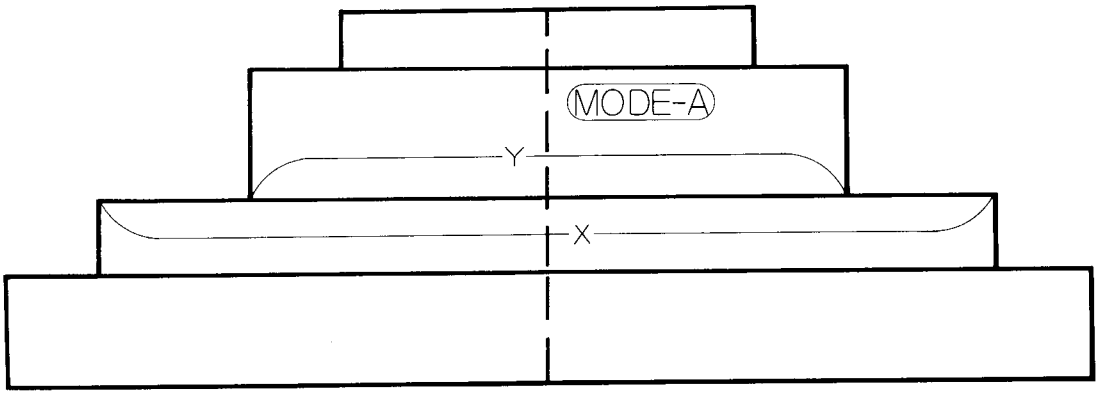
This Lamp lets you know when the batteries must be charged.

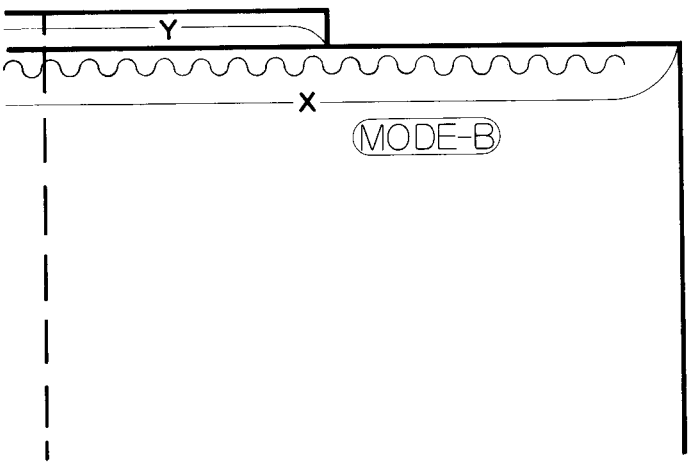
13. PAPER FEED KEY

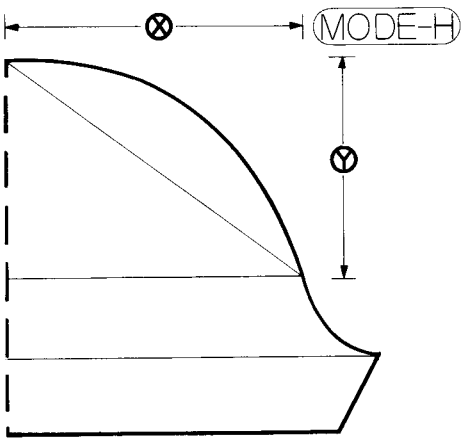
Paper roll will be fed without printing by pressing this Key.

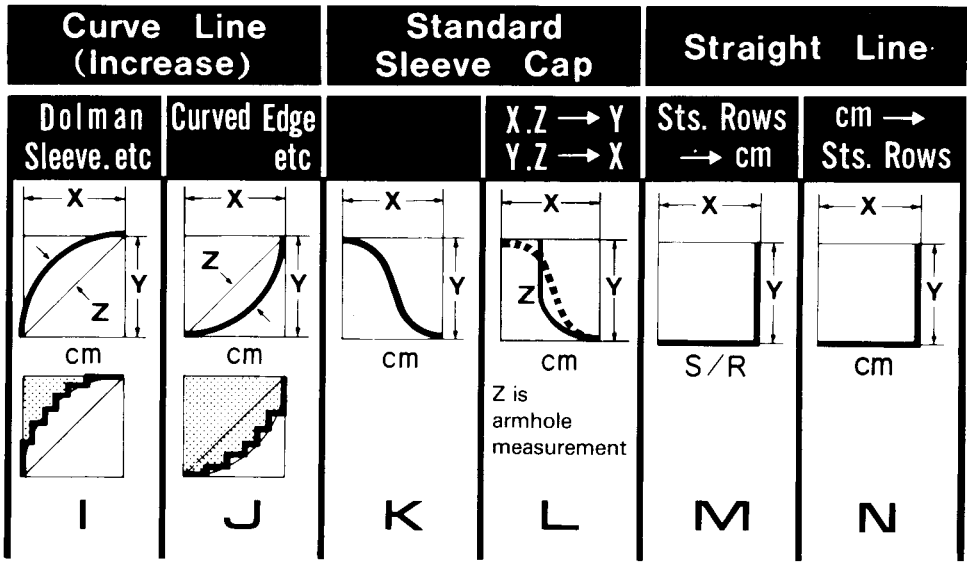
MEANING OF MODE

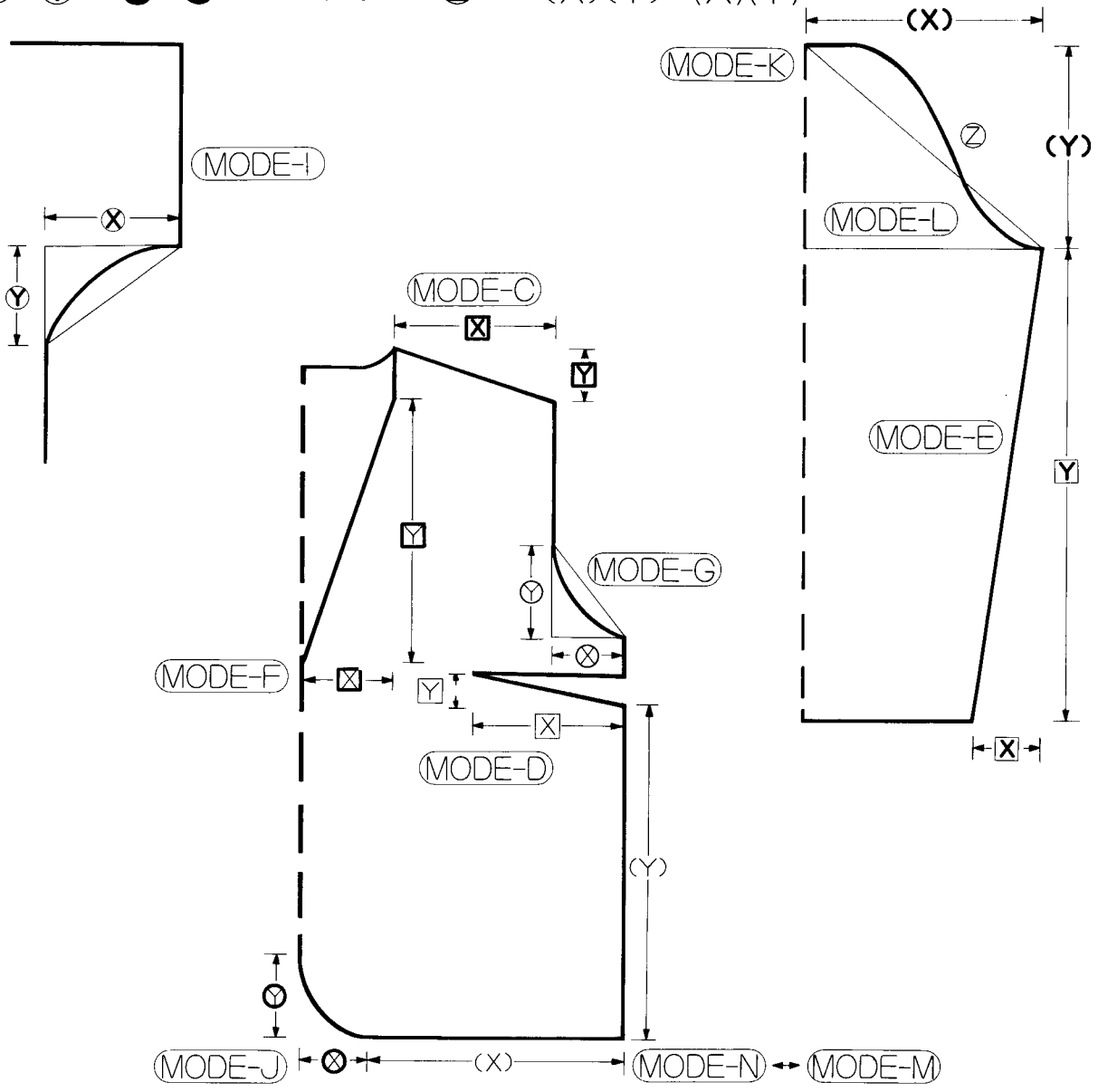
Dividing Calculation		Slanting Line (S>R)		Slanting Line (S<R)		Curve Line (Decrease)	
Round Yoke Linking etc	Gather etc	Shoulder etc	Side Darts etc	Shaping of Sleeve etc	V-Neck Line etc	Armhole Neck Line etc	Sleeve Cap etc
							
unit S/R	S/R X>2Y	cm	cm	cm	cm	cm	cm
A	B	C	D	E	F	G	H
X Y	X Y	X Y	X Y	X Y	X Y	X Y	X Y








Curve Line (Increase)
Standard Sleeve Cap
Straight Line
Dolman Sleeve. etc
Curved Edge etc
X.Z → Y
Y.Z → X
Sts. Rows → cm
cm → Sts. Rows
X
Y
Z
cm
S/R
Z is armhole measurement
I
J
K
L
M
N
(X)(Y)


MODE-I
MODE-K
MODE-L
MODE-E
MODE-C
MODE-G
MODE-F
MODE-D
MODE-J
MODE-N
MODE-M
(X)
(Y)

HOW TO SELECT THE MODE

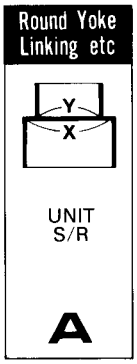
Please note that units of figures are different ;

A, B & M - Stitches or Rows

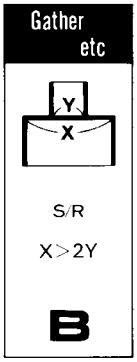
C, D, E, F, G, H, I, J, K, L & N - cm

Staggered shapings such as shown on Modes C to J show the position of the beginning and the end of stitch increasing or decreasing.

DIVIDING THE STITCHES OR ROWS for decreasing or increasing

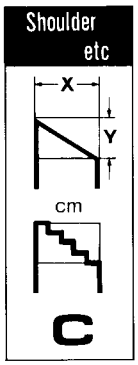


Round Yoke, Linking, etc.
Use LARGER figure, either stitches or rows for "X". Use SMALLER figure for "Y". Input the figures.
"X" is LESS than twice "Y".

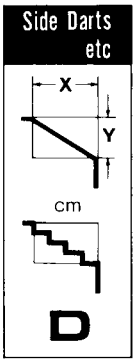


Gather, etc.
Same as A but "X" is MORE than twice "Y".

SLANTING LINE (Number of stitches are MORE than rows)

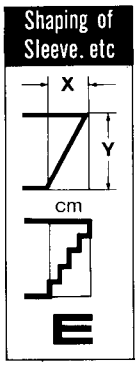


Shoulder, etc.
Stitches are "X"
Rows are "Y"
Input the figures in cm.

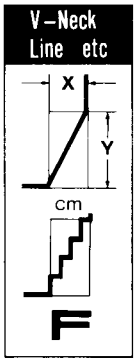


Side Darts, etc.
Same as C.
(Refer to Page 28 for difference between C and D)

SLANTING LINE (Number of stitches are LESS than rows)

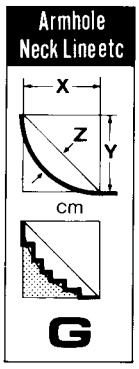


Shaping of Sleeve, etc.
Stitches are "**X**".
Rows are "**Y**".
Input the figures in cm.



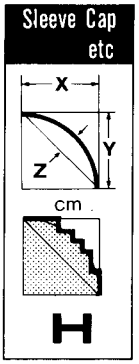
V-Neckline, etc.
Same as E.
(Refer to Page 28 for difference between E and F)

CURVE LINE (Decreasing)



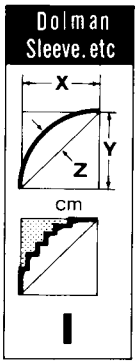
Armhole, Neckline, etc.
Stitches are "X"
Rows are "Y"

For other than a STANDARD CURVE LINE, 'Z' is necessary if you want to know the ACTUAL DEPTH in cm from one straight line to the curve line.
Input this measurement in cm and the CURVE shaping will automatically be given on the Computer.

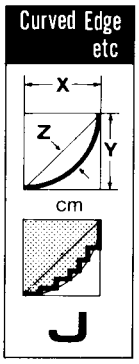


Sleeve Cap, etc.
Same as G.

CURVE LINE (Increasing)

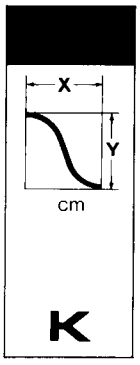


Dolman Sleeve, etc.
Same as G.
When you press "P" Key the length of curve in cm will be printed.

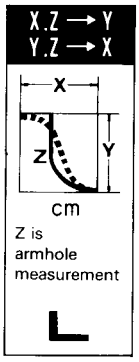


Curved Edge.
Same as G.

STANDARD SLEEVE CAP

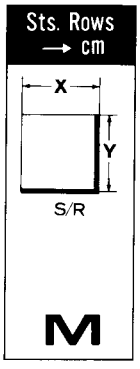


Standard Sleeve Cap
"X" is Sleeve width at underarm (Remember use half measurement).
"Y" is Sleeve Cap length.
Length of Sleeve cap automatically will be printed as "T".

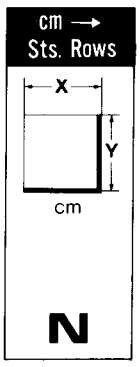


You need the 'Z' measurement that is different than when using Mode G, H, I, J.
Use MODE L which is the STRAIGHT LINE PLUS the CURVE measurement. See page 24.
Sleeve Cap length or sleeve width.
"X" is width at underarm (1/2 only).
"Z" is ARMHOLE measurement. Enter the measurements in cm and "Y" will print out for you.
"Y" is LENGTH of sleeve cap.
"Z" is ARMHOLE measurement. Enter measurements in cm and "X" will print out for you.

STRAIGHT LINE

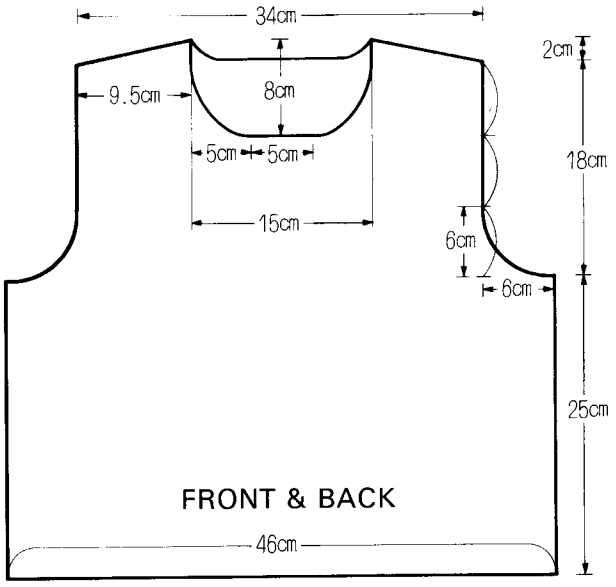


Measurement
"X" is number of stitches.
"Y" is number of rows.
Measurement of stitches and rows will be printed in cm.



Stitches and Rows
Input measurement of stitches in cm for "X". The number of stitches will print.
Input measurement of rows in cm for "Y". The number of rows will print.

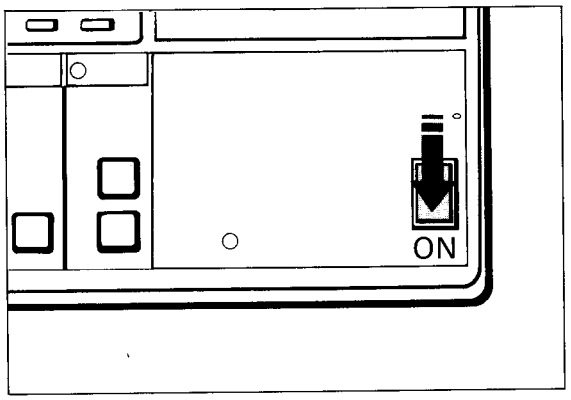
OPERATION



Example

Lamps will guide you for the next step with their flickering.
If you press a wrong key, it will not work.

★GAUGE★
14 Stitches 18 Rows

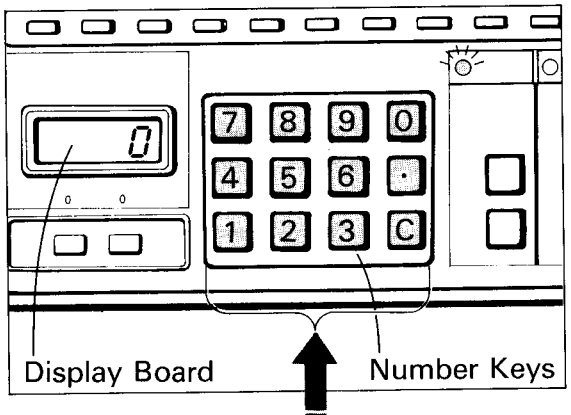


SWITCH

Turn the switch "ON", the Gauge Lamp will flicker and "0" appear in the Display Window.

ATTENTION

★When the switch is "ON", and " 0 " appears in the Display Window. The Computer is working. If you forget to turn the Switch "OFF". It will automatically turn itself OFF.



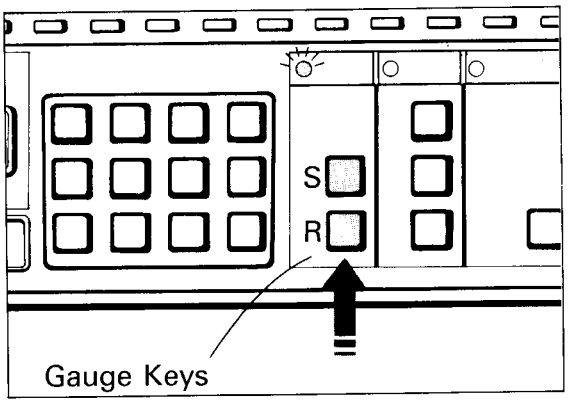
GAUGE INPUT

Press Number Keys 1 and 4 for stitches then press Gauge Key "S". Press Number Key 1 and 8 for rows, then Gauge Key "R".

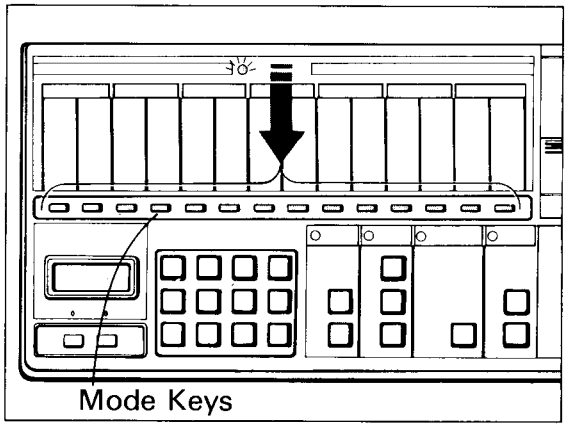
Remember to check the Display Board to be sure you have entered the correct numbers.

NOTE

★ Numbers must always be entered FIRST then press Gauge Key. If you press Gauge Key before the Number Keys "E" (error) will appear in the Display Board Press Clear Key (Including Gauge) then begin again.



The Stitch and Row Gauge used throughout these Instructions are given for Instruction purposes only. You must program the Stitch and Row Gauge you obtain from your own Sample Swatch.



MODE - INPUT

When you have entered the correct figures for Gauge, Mode Lamp will flicker.

Next - enter the Mode you want - for example, press Mode "G" Key for neckline (or armhole). The Mode will now be printed.

NOTE

★ If you accidentally press a wrong key, press Clear Key (excluding Gauge) then press correct Key.

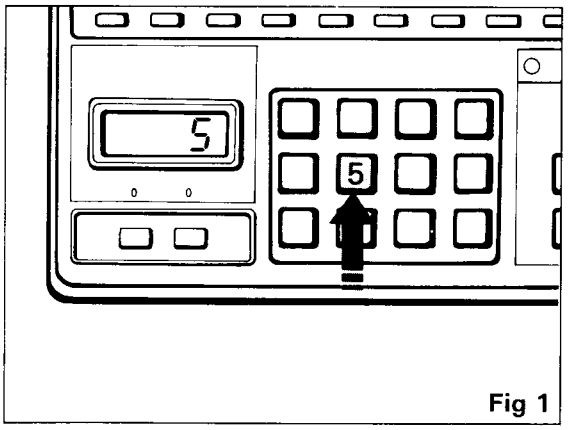


Fig 1

MEASUREMENT - INPUT

Measurement Lamp now flickers. Press Number Key 5, then Measurement Key "X". Press Number Key 8 then Measurement Key "Y".

Only the measurements in cm will print.

3 Lamps are now flickering.

Press "P" Key and the number of stitches and rows will print and the Computer will also print.

P = O R

T = 9.8 cm

"T" is the length of arc for Neckline.

After this step, "T" Lamp and Printer Lamp will still flicker.

Press [=] Key and decreases for Neckline (or armhole) will print, giving you the Rows, Stitches and remaining stitches for the shaping.

NOTE

★ Modes H, I and J all follow the same procedure as Mode-G.

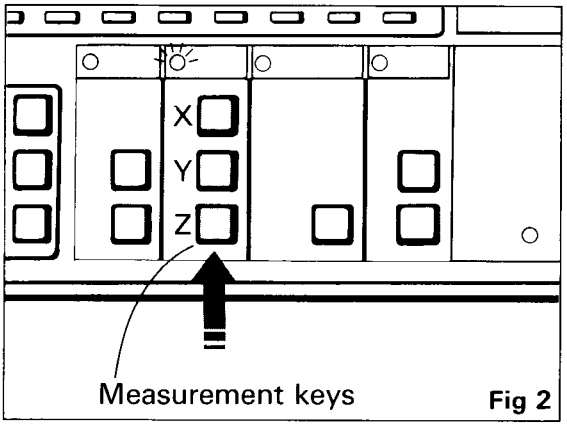


Fig 2

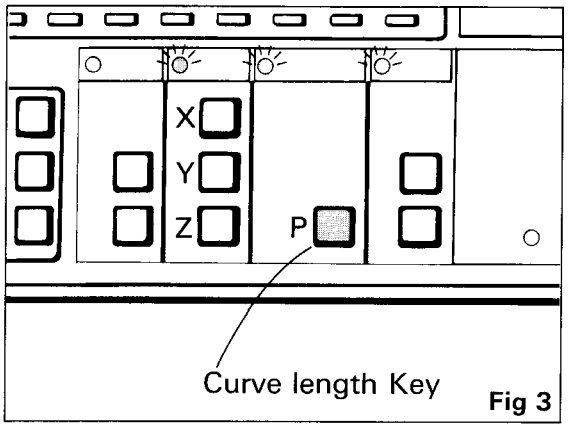
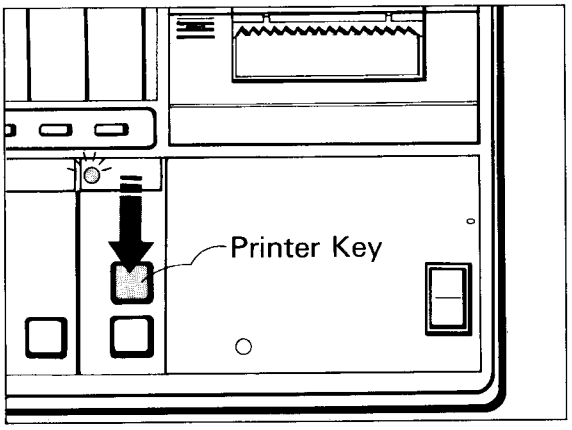


Fig 3



PRINTER

Press [=] Key of Printer Section.

Figures for decreasing stitches will print. For Modes A,B,C,D,E,F,K,L,M, and N, you will not press Printer [=] Key.

The figures will be printed automatically.

```
*GAUGE*

  S=   14.0/10cm
  R=   18.0/10cm

***************

* 1* MODE G

(X)=   5.0cm
(Y)=   8.0cm

 X=   5.0cm   7S
 Y=   7.8cm  14R

     P=   0 R
     T=   9.8 cm


      R        S
      1   2-   5
      3   2-   3
      5   1-   2
      7   1-   1
      9   0    1
     11   1-   0
     13   0    0
     14

***************
```

Figures that appear under R stand for rows, then number of stitches to be decreased, and finally number of stitches left under S . For instance, the first line should be read as :

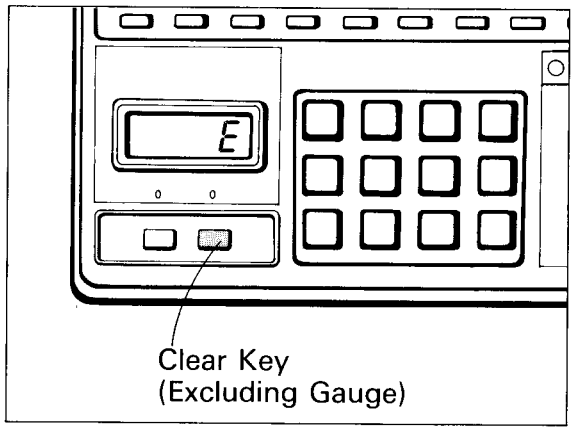
"On the first line, decrease 2 stitches leaving 5 stitches"

NOTE

★If "E" (ERROR ?) appears in Display Board read page 17 carefully and begin again.

MEMO

ERROR



WHAT IS ERROR?

```
* 1* MODE A

X=  21 S/R
Y=  35 S/R
 ERROR ?

****************
```

MODE-A and B

You are supposed to input larger number for "X" and smaller for "Y". If you input incorrectly "ERROR ?" will appear on paper and " E " in the Display Board. Press Clear Key (Excluding Gauge) then start again with Mode Key.

```
* 1* MODE C

(X)=   5.0cm
(Y)=  20.0cm

 X=   5.0cm   7S
 Y=  20.0cm  36R

 ERROR ?

****************
```

MODE-C and D

Measurements of stitches (cm) - which is more than measurement of rows - should be "X" and measurement of rows for"Y". If you put them in the wrong way, "ERROR?" will appear. "ERROR?" should be corrected as above.

```
* 1* MODE E

(X)=  13.0cm
(Y)=   7.0cm

 X=  12.9cm  18S
 Y=   7.8cm  14R

 ERROR ?

****************
```

MODE-E and F

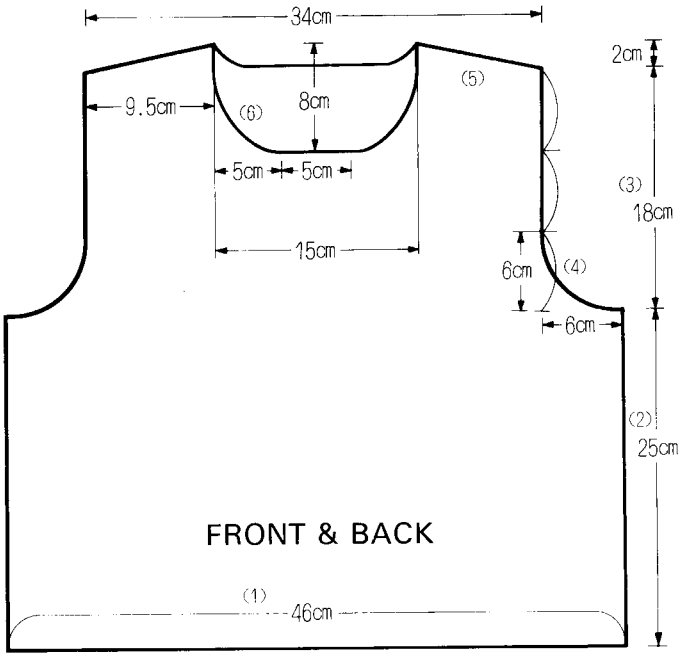
Measurement of stitches (cm) - which is less than rows - should be"X".
"ERROR?" should be corrected in the same way.

DETAIL OF EACH MODE

Experiment using the different Modes until you are thoroughly familiar with the Computer operation.

<Symbols>

(A)~(N)	Mode Key in Mode Section
1 2 · 5	Input Figure
S R	Stitch Key & Row Key
X Y Z	Measurement Keys
P	P Key of T section
PRINTER	Printer Key
.....	Computer working



1. SWITCH ON (see P.14)

2. INPUT GAUGE (see P.14)

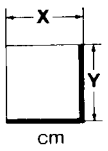
1 4 S····· 1 8 R ····PRINT OUT

```
*GAUGE*
  S=   14.0/10cm
  R=   18.0/10cm
**********************
```

3. START WITH BACK SECTION

(1) Using Mode-N, input 46 cm **X** (width) and the number of stitches needed will be printed.

cm → Sts. Rows



N

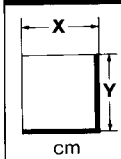
KEY ORDERS (N) ····· 4 6 X····· PRINT OUT

```
* 1* MODE N
(X)=   46.0cm
 X=    45.7cm   64S
**********************
```

<Adjusting Factor>
X = 46 cm → 45.7 cm
Please note that the Adjusting Factor means that the Computer will automatically adjust for measurements, stitches or rows to allow for reasonable shapings.

(2) The number of rows to underarm, (Use Mode-N) Input 25 cm **Y** (length) and the rows needed will be printed.

cm → Sts. Rows



N

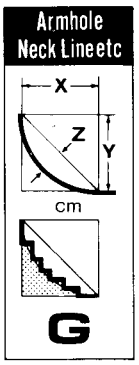
KEY ORDERS (N) ····· 2 5 Y····· PRINT OUT

```
* 2* MODE N
(Y)=   25.0cm
 Y=    25.6cm   46R
**********************
```

<Adjusting Factor>
Y = 25 cm → 25.6 cm
Same as (1)

(3) Same as (2), obtain row numbers for 18 cm of straight part of armhole. (Use MODE - N) 32 rows will be 17.8 cm.

(4) To get row numbers and stitch numbers for curved part of armhole. (Use MODE - G)



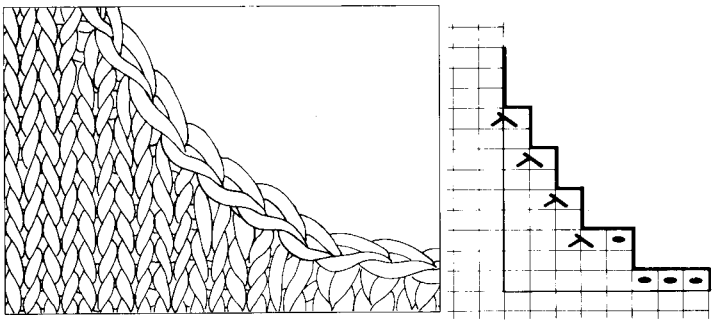
KEY ORDERS (G) ··· 6 X ··· 6 Y ··· P ··· PRINTER ···· PRINT OUT

```
* 4* MODE G

(X)=   6.0cm
(Y)=   6.0cm

 X=    5.7cm   8S
 Y=    6.7cm  12R

      P=    0 R
      T=    9.6 cm

       R        S
       1    3-  5
       3    2-  3
       5    1-  2
       7    1-  1
       9    1-  0
      11    0   0
      12

**********************
```

<Adjusting Factor>
X = 6.0 cm → 5.7 cm
Y = 6.0 cm → 6.7 cm

T (Arc length) is 9.6 cm

↔ On the 1st row decrease 3 sts. 5 sts. left
On the 3rd row decrease 2 sts. 3 sts. left
Oo the 5th row decrease 1 sts. 2 sts. left
On the 7th row decrease 1 st. none is left 11th and 12th rows shall be knitted as they are without any stitches decreased.



Where 2 or more stitches need to be decreased, you must bind off the stitches on carriage side, knit to the other side and bind off the same number of stitches.

NOTE

★ Obtain "T" length by pressing "P" Key, which can be used for the Cap length (See Page 13).

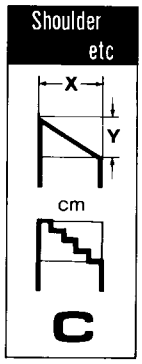
★ For "Z" you need not input figure unless you require an unusual curve. The machine will work for standard armhole of approximately 1/3 depth. (See page 31).

★ For balance 12 cm of armhole (for example), knit 20 rows straight.

CALCULATION

32 rows [obtained in above(3)] minus 12 rows [obtained in (4)]=20 rows. Actual measurement of armhole is 20.7 cm.

(5) **SHOULDER SHAPING** (Use MODE-C)

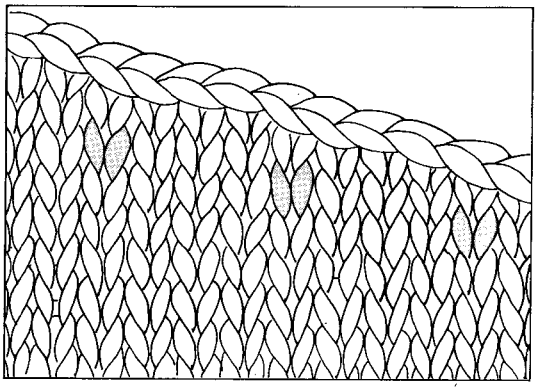


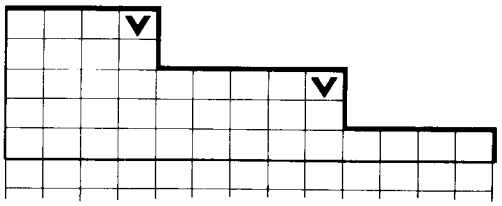
KEY ORDERS (C) ····· 9 · 5 X ····· 2 Y ····· PRINT OUT

```
* 5* MODE C

(X)=   9.5cm
(Y)=   2.0cm

 X=   9.3cm  13S
 Y=   2.2cm   4R

      R    S
      2-   4-   1
      2-   5-   1
           4

****************
```

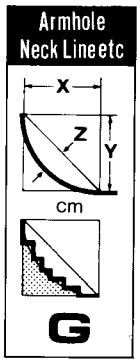
<Adjusting Factor>
X = 9.5 cm → 9.3 cm
Y = 2.0 cm → 2.2 cm
13 sts. must be divided by 4 rows

←→ Bind Off 4 stitches once in 2 rows, 5 stitches once in 2 rows. Leave 4 sts.





(6) **FRONT NECKLINE** (Use MODE-G) width of 5 cm length of 8 cm.
Rest 1/3 of width of front neck (5 cm)



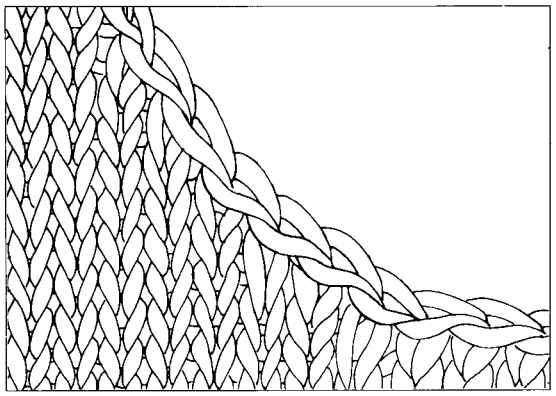
KEY ORDERS (G) ···· 5 X ···· 8 Y ···· P ···· PRINTER ··· PRINT OUT

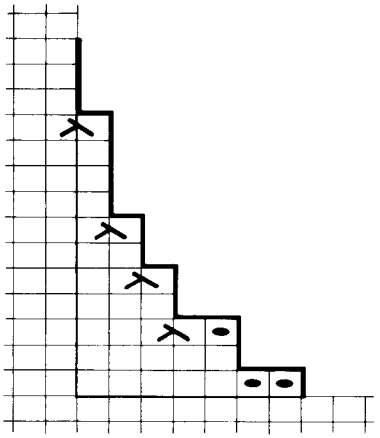
```
* 6* MODE G

(X)=   5.0cm
(Y)=   8.0cm

 X=   5.0cm   7S
 Y=   7.8cm  14R

     P=   0 R
     T=   9.8 cm


      ⇩
 NEXT PAGE
```

<Adjusting Factor>
X = 5.0 cm → 5.0 cm
Y = 8.0 cm → 7.8 cm
7 sts. of 5 cm should be decreased in 14 rows of 7 7.8 cm.
T (Arc length) is 9.8 cm.

```
 R        S
 1   2-   5
 3   2-   3
 5   1-   2
 7   1-   1
 9   0    1
11   1-   0
13   0    0
14
**************** 
```

On 1st row, decrease 2 sts. 5 sts left
On 3rd row, decrease 2 sts. 3 sts left
⋮
Knit the 13th and 14th row without decreasing stitches.



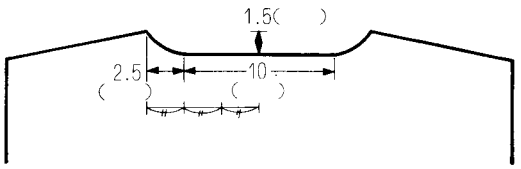


NOTE

★ The Computer has figured that 7 stitches are to be decreased on each side for the Neck Curve. Subtract the 14 stitches from the total Neck Width and the remaining stitches are to be bound off or remove onto waste yarn for the center neck.

NECK BACK

This is almost the same as the front neck so use the same operation for calculating.



You can Rest
2/3 of sts. in the middle

```
* 1* MODE G

(X)=   2.5cm
(Y)=   1.5cm

 X=   2.9cm   4S
 Y=   2.2cm   4R

      P=   0 R
      T=   3.9 cm


       R        S
       1   2-   2
       3   2-   0
       4
**************** 
```

〈Adjusting Factor〉
X = 2.5 cm → 2.9 cm
Y = 1.5 cm → 2.2 cm

Decrease 4 sts. of 2.9 cm in 4 rows of 1.5 cm.

T (Arc length) is 3.9 cm

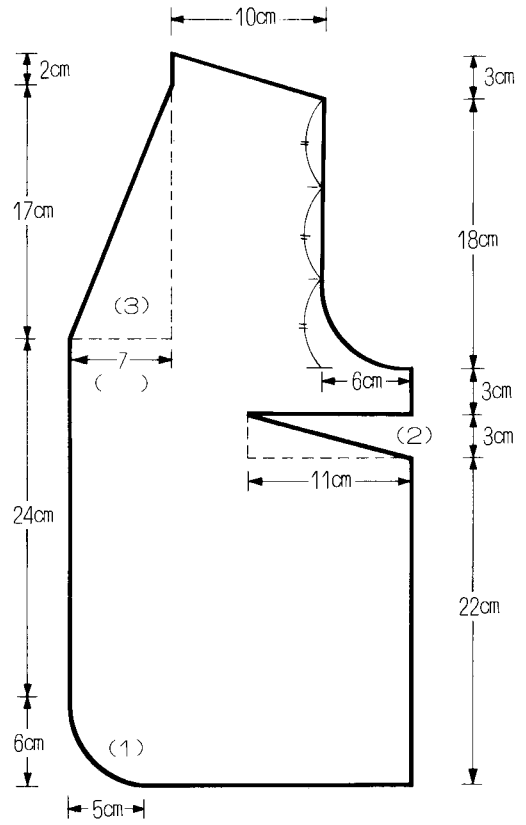
1 st row ; Decrease 2 sts. leaving 2 sts.
3 rd row ; Decrease 2 sts. leaving none.
4 th row ; Knit as is.

KEY ORDERS

(G)·····2·5 X·····1·5

Y·····P·····PRINTER·····PRINT OUT

4. CARDIGAN FRONT

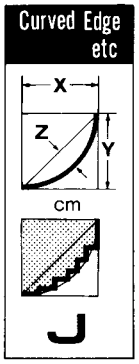


Casting-on, straight line, Armhole and shoulder shapings Follow same procedure as in **3**.

★GAUGE★

14 Stitches 18 Rows

(1) **CURVED EDGE** width of 5 cm length of 6 cm (Use MODE-J).



KEY ORDERS (J)···5 X···6 Y···P···PRINTER·····PRINT OUT

```
* 1* MODE J

(X)=   5.0cm
(Y)=   6.0cm

 X=   5.0cm   7S
 Y=   6.7cm  12R

     P=   0 R
     T=   9.0 cm


      R        S
      1   2+   2
      3   2+   4
      5   1+   5
      7   1+   6
      9   1+   7
     11   0    7
     12

**********************
```

<Adjusting Factor>

X = 5.0 cm → 5.0 cm

Y = 6.0 cm → 6.7 cm

Increase 7 sts. of 5 cm in 12 rows of 6.7 cm.

T (Arc length) is 9 cm

1st row: Increase 2 sts.

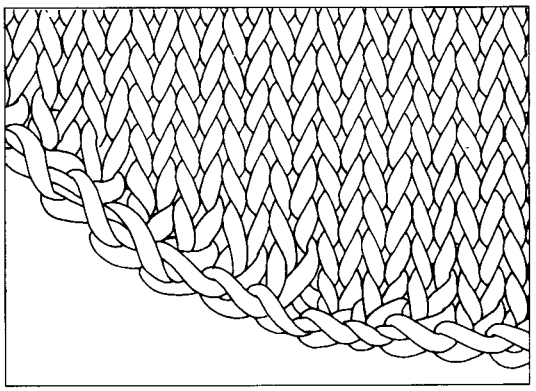
3rd row: Increase 2 sts.; total 4 sts.

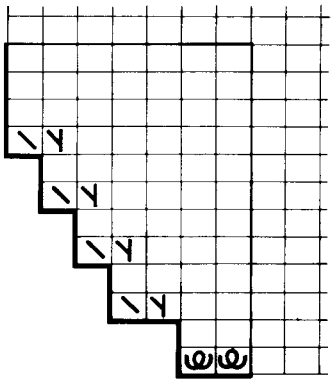
5th row: Increase 1 sts.; total 5 sts.

7th row: Increase 1 sts.; total 6 sts.

9th row: Increase 1 sts.; total 7 sts.

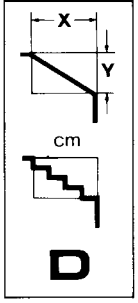
11th & 12th rows: No increasing.





(2) **SIDE DARTS** width of 11 cm length of 3 cm (Use MODE-D).

Side Darts etc



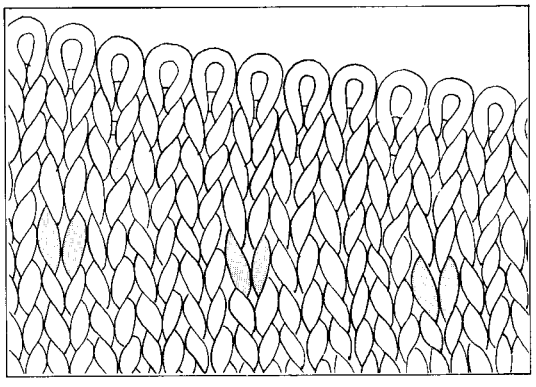
D

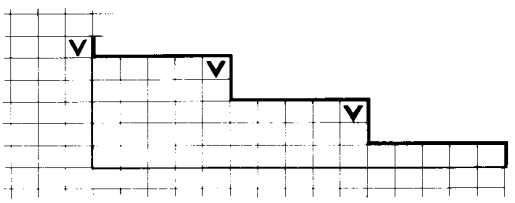
KEY ORDERS (D)·····[1][1]X·····[3]Y·····PRINT OUT

```
* 2* MODE D
(X)=  11.0cm
(Y)=   3.0cm

 X=  10.7cm  15S
 Y=   3.3cm   6R

     R    S
     2-   5-   3
**********************
```

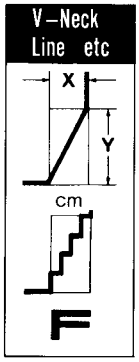
〈Adjusting Factor〉
X = 11.0 cm → 10.7 cm
Y = 3.0 cm → 3.3 cm

On opposite side of carriage, on every 2nd row, put 5 stitches into hoiding position 3 times, then knit straight over all stitches.





(3) **V-NECK** width of 7 cm length of 17 cm (Use MODE-F)

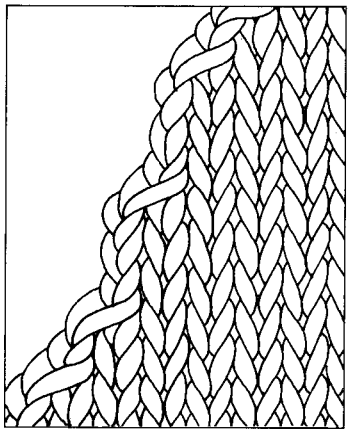


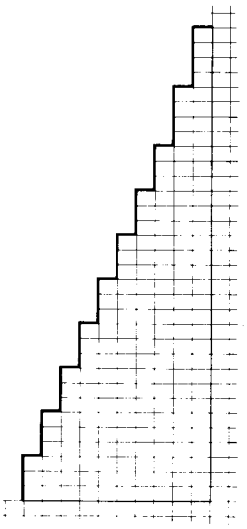
KEY ORDERS (F)·····7X·····17Y·····PRINT OUT

```
* 3* MODE F

(X)=   7.0cm
(Y)=  17.0cm

 X=   7.1cm  10S
 Y=  17.8cm  32R

        R S
      3-1-   8
      4-1-   2

****************
```

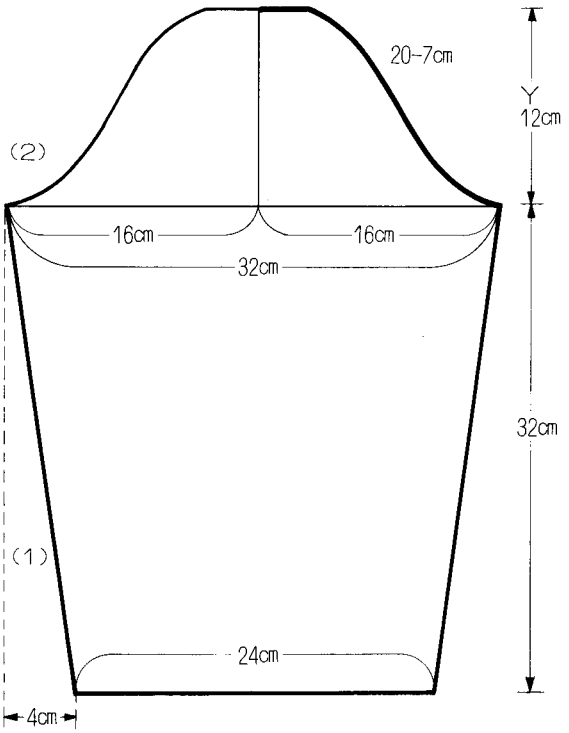
<Adjusting Factor>
X = 7.0 cm → 7.1 cm
Y = 17.0 cm → 17.8 cm
Divide 10 sts. into 32 rows.

⟷ Decrease 1 st. every 3 rows, 8 times
Decrease 1 st. every 4 rows, 2 times





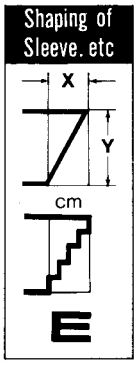
5. SLEEVE



To get the length of sleeve cap 'Y' from 'X' (which is 1/2 width of sleeve) you need the armhole measurement 'Z'.

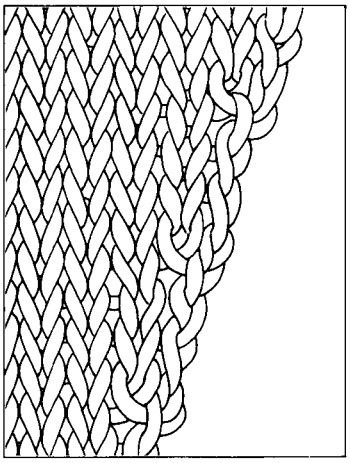
CALCULATION (See page 18 and 19)
For armhole measurement 'Z'
Armhole length 18 cm = 17.8 cm
Curved part of armhole
X 6.0 = 5.7 cm
Y 6.0 = 6.7 cm
T 9.6 cm
17.8 − 6.7 = 11.1 cm
11.1 + 9.6 = 20.7 cm
'Z' is 20.7 cm (armhole measurement)

(1) **SHAPING OF SLEEVE** width of 4 cm length of 32 cm (Use MODE-E)



KEY ORDERS (E)·····4 X·····3 2 Y····· PRINT OUT

```
* 1* MODE E

(X)=   4.0cm
(Y)=  32.0cm

 X=    4.3cm   6S
 Y=   32.2cm  58R

        R S
      8-1-   4
      9-1-   2
      8-0-   1

****************
```



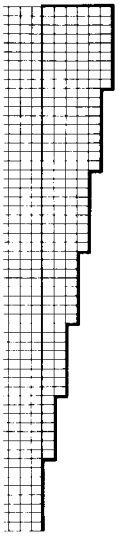
〈Adjusting Factor〉

X = 4.0 cm → 4.3 cm

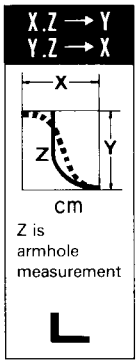
Y = 32.0 cm → 32.2 cm

Increase 6 sts. in 58 rows.

Increase 1 st. every 8 rows; 4 times
Increase 1 st. every 9 rows; 2 times
then knit 8 rows straight.



★ 〈Use MODE-L〉



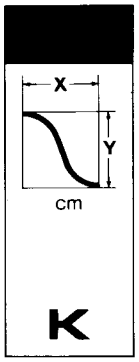

```
* 1* MODE L

   X=  16.0cm
   Z=  20.7cm

       Y=  13.1cm

****************
```

〈a〉 To get length of sleeve cap "Y" from "X" (1/2 width of sleeve 16 cm) and armhole "Z" 20.7 cm. Length of Cap = 13.1 cm "Y".

```
* 2* MODE L

   Y=  13.1cm
   Z=  20.7cm

       X=  16.0cm

****************
```

〈b〉 To get 1/2 width of sleeve "X" from 13.1 cm "Y" and 20.7 cm "Z".
1/2 Sleeve width = 16 cm "X".

(2) **SHAPING OF SLEEVE CAP** <Use MODE-K> X=16 cm Y=13.1 cm



KEY ORDERS (K)····16 X····13·1 Y·····PRINT OUT

```
* 3* MODE K
(X)=  16.0cm
(Y)=  13.1cm

 X=  15.7cm  22S
 Y=  13.3cm  24R

     T=  22.1 cm

      R        S
      1   3-  19
      3   2-  17
      5   2-  15
      7   1-  14
      9   1-  13
     11   1-  12
     13   0   12
     15   1-  11
     17   1-  10
     19   1-   9
     21   2-   7
     23   2-   5
     24

****************
```

<Adjusting Factor>

X = 16 cm → 15.7 cm

Y = 13.1 cm → 13.3 cm

Decrease 22 sts in 24 Rows.

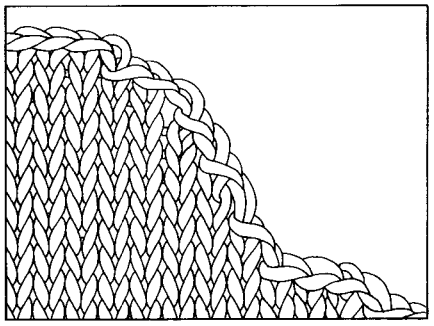
T (Arc length) is 22.1 cm

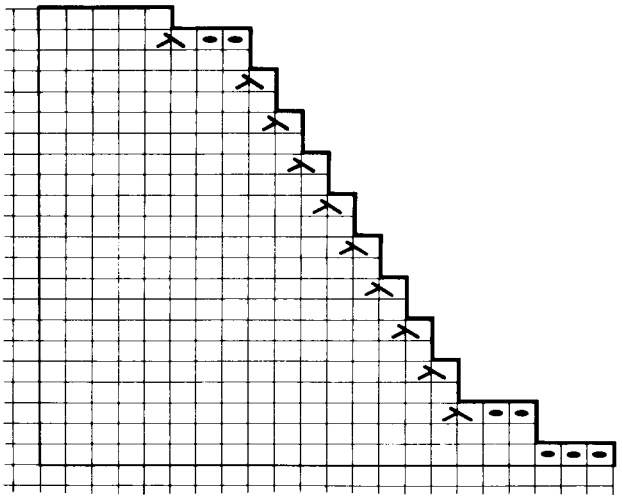
On 1st row; decrease 3 sts. 19 sts left

On 3rd row; decrease 2 sts. 17 sts left

⋮

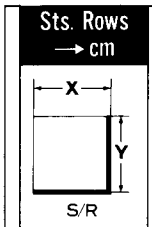
Knit the 24th row without decreasing stitches.





NOTE

★The machine gives you figures for knitting a standard Sleeve Cap. When you want to change them for a particular sleeve such as a gathered sleeve, a combination of Modes should be used.



M

To get measurement of stitches and rows, use Mode M. This is used when you would like to know the measurement of a pattern, especially if the sections must match. For instance: 5 sts. which you will decrease will be 3.6 cm.

KEY ORDERS (M)·····5 X····· PRINT OUT

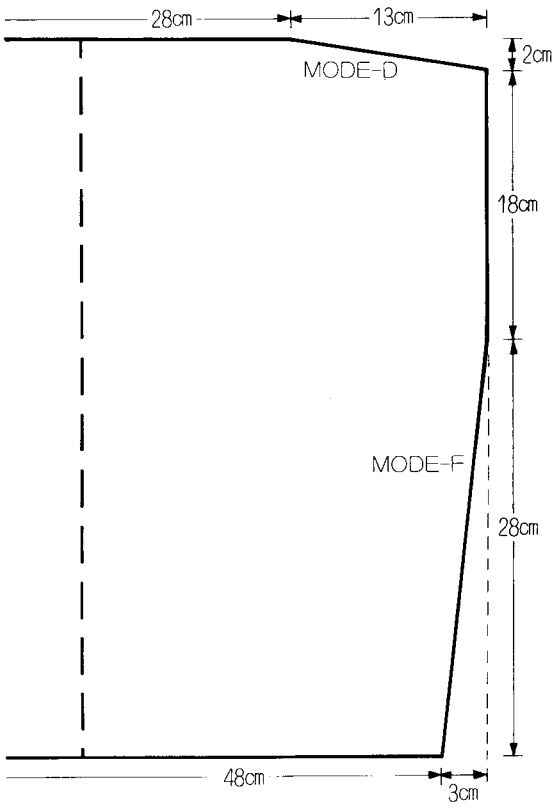
```
* 1* MODE M
      X=   5 S
       =   3.6cm
****************
```

All of the preceeding instructions enable you to use the Modes of the Computer for all the basic shapings of any garment.

ADVANCED TECHNIQUES OF MODE APPLICATION

BLOUSE WITH FRENCH SLEEVES

All of the following instructions show you how to use a variety of Modes to complete one knitted section using a number of different shapings.



MODE-F

KEY ORDERS (UNIT cm)

⋮

3 X

2 8 Y

⋮

PRINT OUT

```
* 1* MODE F

(X)=   3.0cm
(Y)=  28.0cm

 X=   2.9cm   4S
 Y=  27.8cm  50R

        R S
      12-1-   2
      13-1-   2

****************
```

Knit straight for a few rows. Increase stitches as per instructions and after the last stitch is increased continue with straight knitting.

MODE-D

KEY ORDERS (UNIT cm)

⋮

1 3 X

2 Y

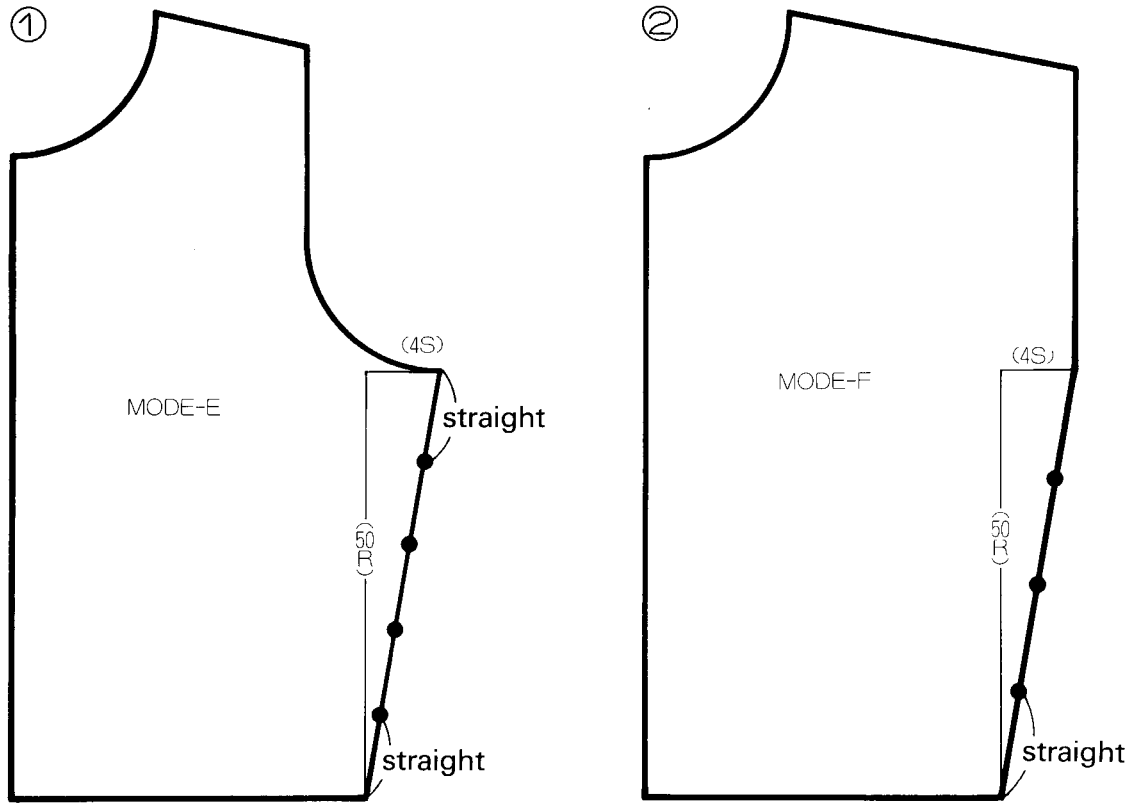
⋮

PRINT OUT

```
* 2* MODE D

(X)=  13.0cm
(Y)=   2.0cm

 X=  12.9cm  18S
 Y=   2.2cm   4R

      R    S
      2-   9-   2

****************
```

Use SHORT ROWS for shaping the shoulder Bind off 9 sts. once in 2 rows 2 times.

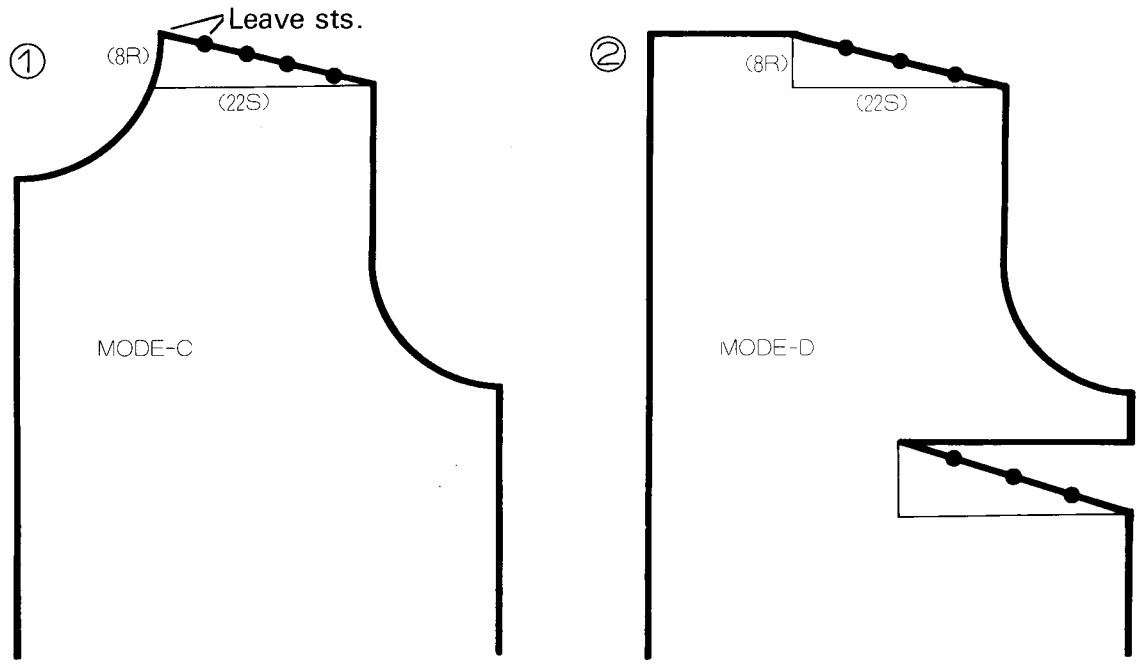
VARIOUS SLANT SHAPINGS



Number of rows is more than number of sts.

(1) When the vertical connects to the horizontal line on both ends.

(2) When one end connects to a horizontal line and the other end to a vertical line.



Number of stitches is more than number of rows.

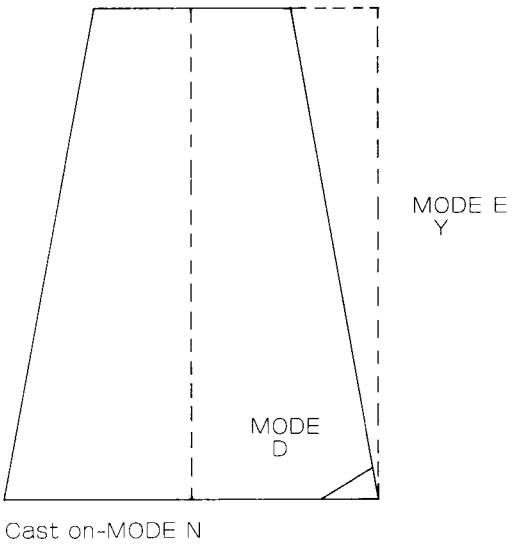
(1) When the slant line connects to a vertical line on both ends.

(2) When the slant line connects to one horizontal line and one vertical line.

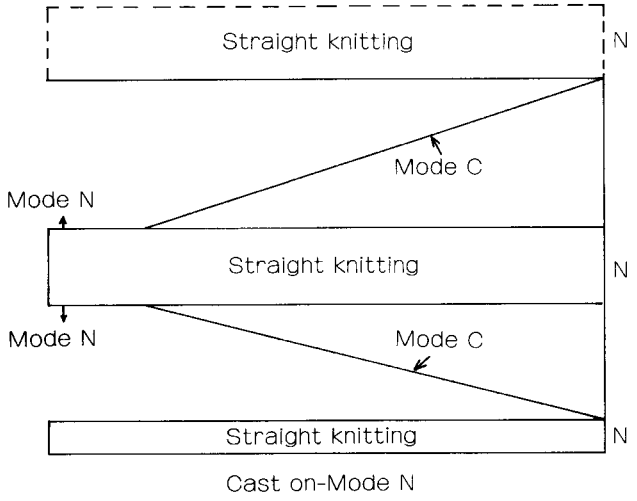
NECKBAND—SLEEVE BAND— Refer to pages 14 and 15. You need 'T' (arc length) of neckline, PLUS the measurement for center bind off for neck shaping. The stitch and row gauge for bands will be different than body of garment-so you must make another sample swatch to get a correct stitch and row gauge. Enter the new stitch and row gauge into computer. If neckband is to be in 2 sections, you will need the measurements for the 2 sections. USE MODE N for the cast on (as it will be a straight line). Number of sts. are X, number of rows are Y. When you enter the measurement in centimeters, the computer will give you the number of sts. and number of rows. Armhole bands work the same way.

A Line or 4, 6, 8 etc. gored Skirt.

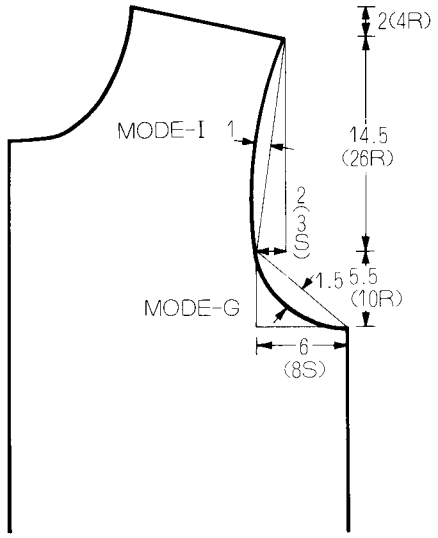
You need the full measurement of lower edge and also the full measurement of wait in centimeters. Divide these measurements into number of sections you need. Use MODE N for cast on for each section. For the side edge decreases, use lower edge of section minus the waist section measurement then divide in half for X and use Y for Length. USE MODE E.



SHORT ROW KNITTING—for a pleated or flared Skirt knitted sideways on the machine. See Drawing.



COMBINATION CURVE LINE



Use MODE-G & I for each part of the curve. If you have a straight line in between, Use MODE-M for vertical and MODE-F for slanting line.

MODE-G

KEY ORDERS (UNIT cm)

6 X
5 · 5 Y
1 · 5 Z

PRINTER

PRINT OUT

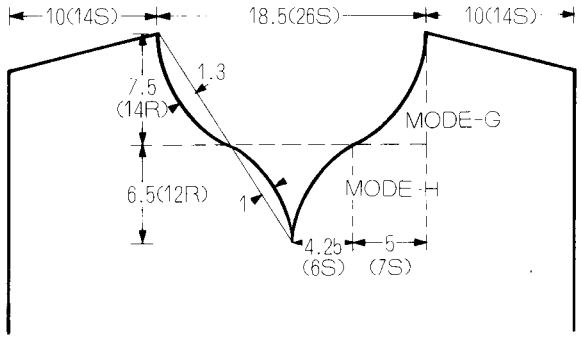
MODE-I

KEY ORDERS (UNIT cm)

2 X
1 4 · 5 Y
1 Z

PRINTER

PRINT OUT



Use MODE-H and G for each part of the curve.

MODE-H

KEY ORDERS (UNIT cm)

4 · 2 X
6 · 5 Y
1 Z

PRINTER

PRINT OUT

MODE-G

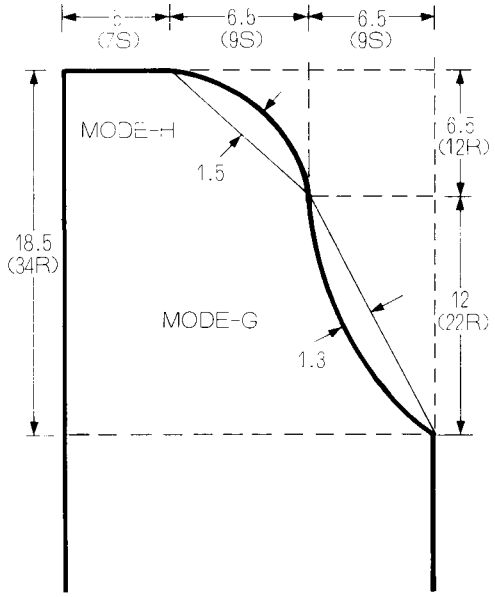
KEY ORDERS (UNIT cm)

5 X
7 · 5 Y
1 · 3 Z

PRINTER

PRINT OUT

PUFF SLEEVE TOP



Instead of MODE-K, Divide it into 2 sections and Use MODE-G and H.

MODE-G

KEY ORDERS (UNIT cm)

6 · 5 X
1 2 Y
1 · 3 Z

PRINTER

PRINT OUT

MODE-H

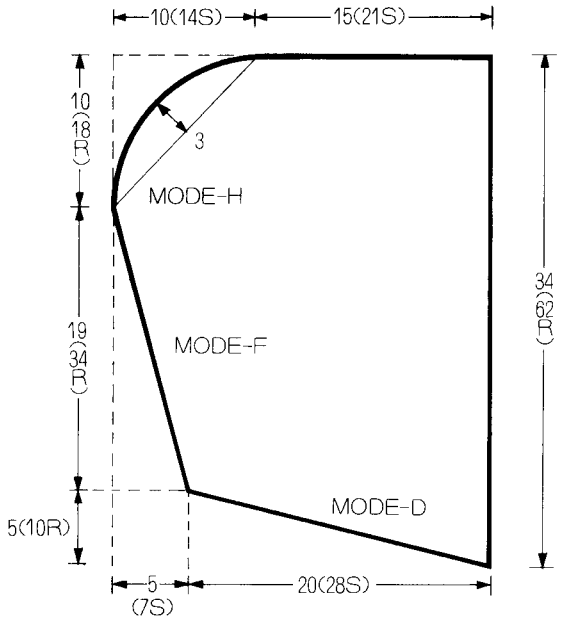
KEY ORDERS (UNIT cm)

6 · 5 X
6 · 5 Y
1 · 5 Z

PRINTER

PRINT OUT

HOOD



Divide it into sections.

MODE-D

KEY ORDERS (UNIT cm)

⋮

2 0 X

5 Y

⋮

PRINT OUT

MODE-F

KEY ORDERS (UNIT cm)

⋮

5 X

1 9 Y

⋮

PRINT OUT

MODE-H

KEY ORDERS (UNIT cm)

⋮

1 0 X

1 0 Y

3 Z

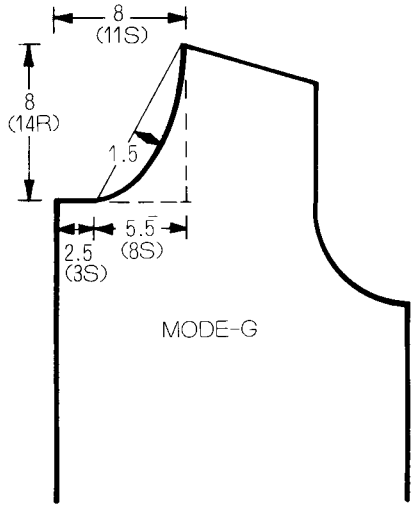
⋮

PRINTER

⋮

PRINT OUT

TO PICK UP STITCHES FROM NECK LINE



Use MODE-G. Place 5.5 cm for "X", 8 cm for "Y" and 1.5 cm for "Z". Press "P" Key of "T" section to get arc length. (T=10.2 cm)

Use MODE-N with 12.8 cm (10.2+2.5) measurement Key "X", then you will get number of stitches to be picked up at neck line.

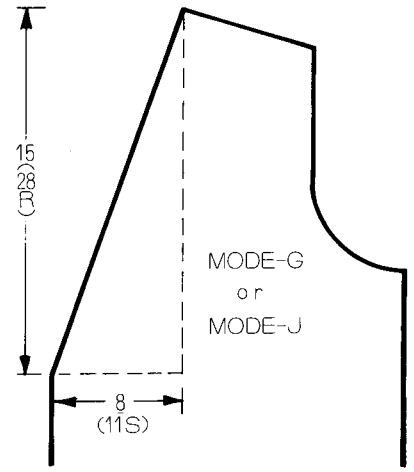
MODE-G T=10.2 cm

(Neck line)=10.2+2.5

=12.7 cm

MODE-N=12.7 cm 18S (Add 10%) →20S

LENGTH OF SLANT LINE



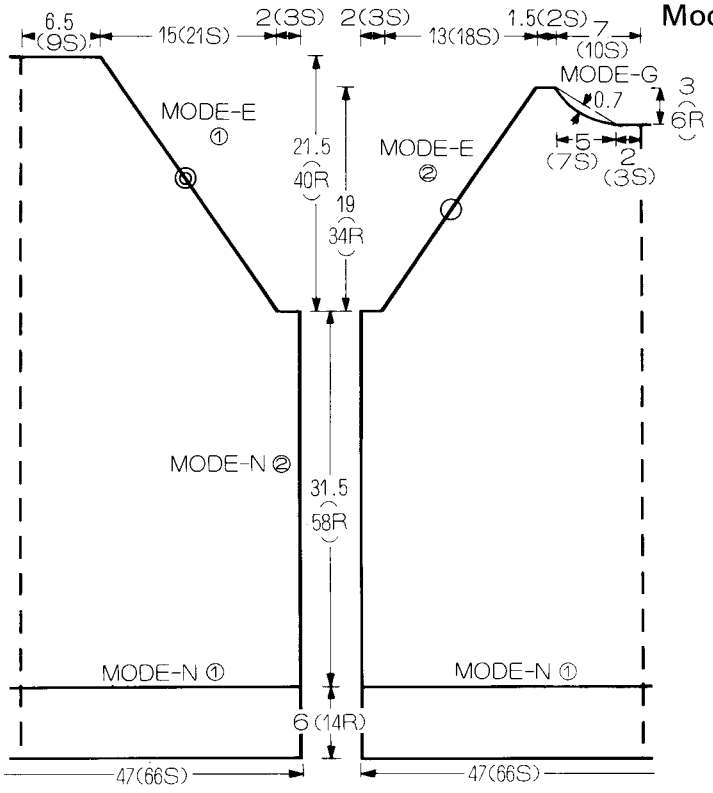
Use MODE-G or MODE-J

Input 8 cm for "X", 15 cm for "Y" and 0.1 for "Z". Press "P" Key.

MODE-G T=17.8 cm

MODE-G and J is used for curve, but if you input 0.1 for "Z", it will give you figure for slant line that is nearly straight.

RAGLAN SLEEVE



For Raglan slant, use Mode-E. For Neckline, use Mode-G. For Cast On use Mode-N.

MODE-N①

KEY ORDERS (UNIT cm)

47 X

PRINT OUT

MODE-N②

KEY ORDERS

31.5 Y

PRINT OUT

MODE-E①

KEY ORDERS (UNIT cm)

15 X

21.5 Y

PRINT OUT

MODE-E②

KEY ORDERS

13 X

19 Y

PRINT OUT

MODE-G

KEY ORDERS (UNIT cm)

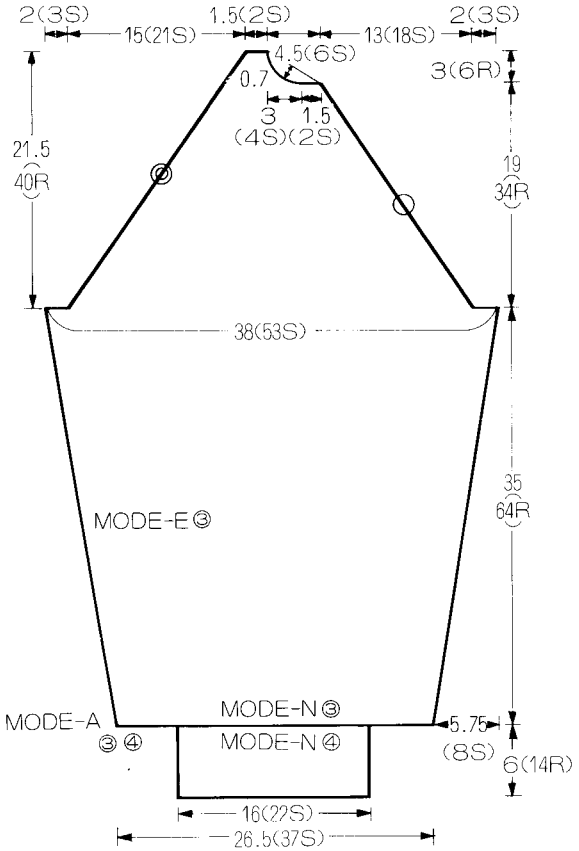
5 X

3 Y

0.7 Z

PRINTER

PRINT OUT



The raglan slant on sleeves in this example is the same as on the front and back raglan slant of garment.

MODE-N③

KEY ORDERS (UNIT cm)

26.5 X

PRINT OUT (37S)

MODE-N④

KEY ORDERS (UNIT cm)

16 X

PRINT OUT (22S)

MODE-E③

KEY ORDERS (UNIT cm)

5.7 X

35 Y

PRINT OUT

MODE-G

KEY ORDERS (UNIT cm)

3 X

3 Y

0.7 Z

PRINTER

PRINT OUT

MODE-A③④

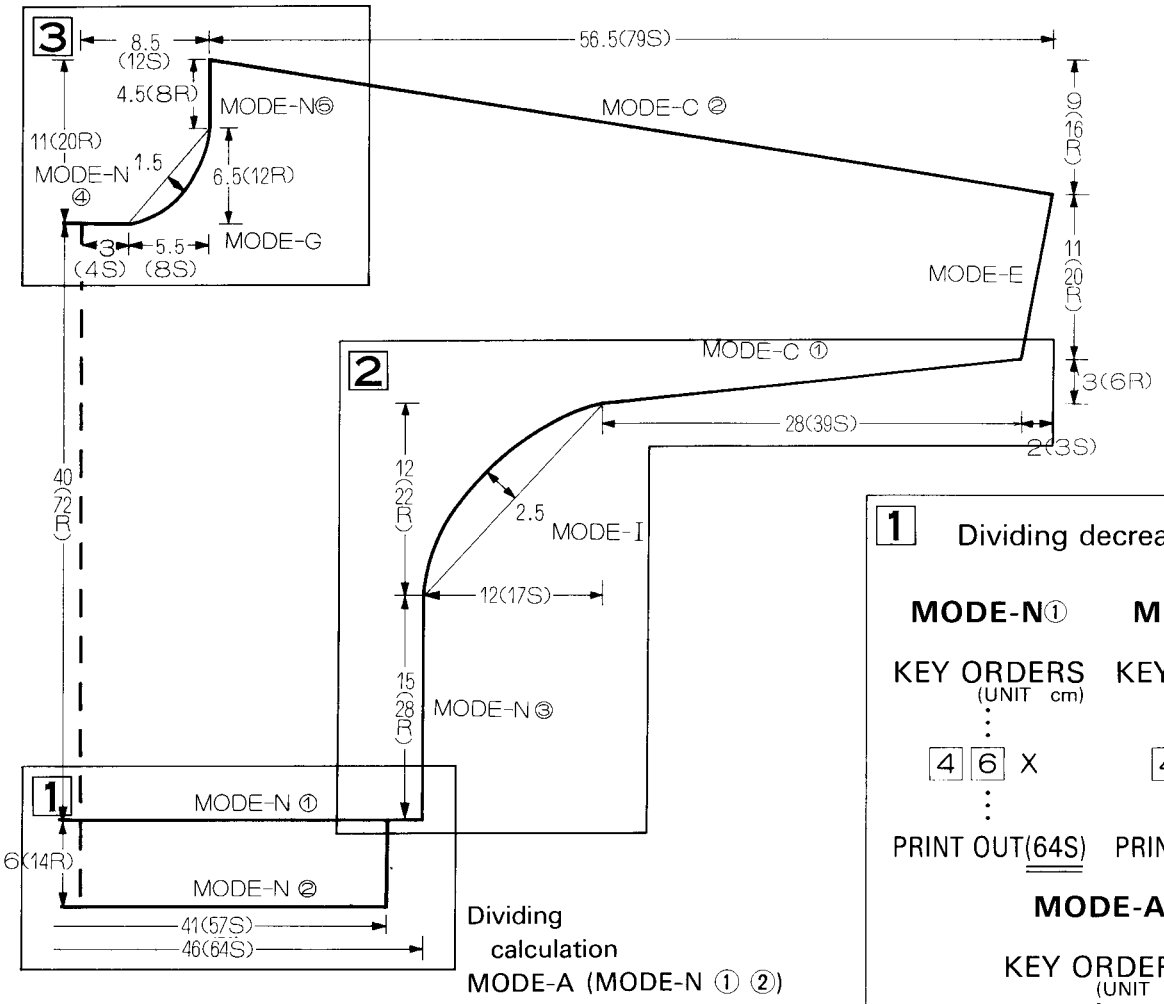
KEY ORDERS (UNIT S/R)

37 X

22 Y

PRINT OUT

DOLMAN SLEEVE & U-NECK



Dividing calculation
MODE-A (MODE-N ① ②)

1 Dividing decrease

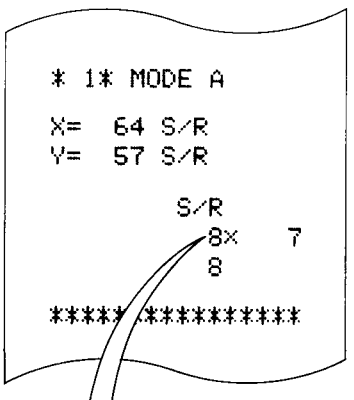
MODE-N①	MODE-N②
KEY ORDERS (UNIT cm)	KEY ORDERS (UNIT cm)
4 6 X	4 1 X
PRINT OUT(64S)	PRINT OUT(57S)

MODE-A

KEY ORDERS (UNIT S/R)

6 4 X
5 7 Y

PRINT OUT



Decrease 1st. every 8 sts. 7 times.

GATHER 〈Use MODE-B〉

(Figures = S or R) Larger number should be more than twice that of smaller number.

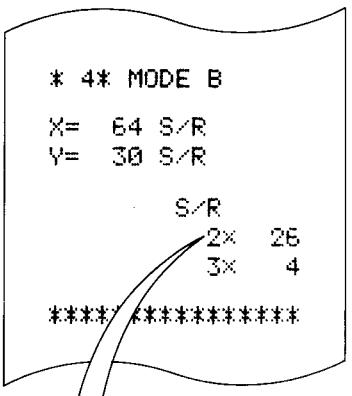
Example

MODE-B

KEY ORDERS (UNIT S/R)

6 4 X
3 0 Y

PRINT OUT



2 sts. onto 1; 26 times
3 sts. onto 1; 4 times

Please note meaning of the signals is different from MODE-A.

2 For Arm Curve of Dolman sleeve

MODE-N③

KEY ORDERS (UNIT cm)

[1] [5] Y

PRINT OUT

MODE-C①

KEY ORDERS (UNIT cm)

[2] [8] X

[3] Y

PRINT OUT

MODE-I

KEY ORDERS (UNIT cm)

[1] [2] X

[1] [2] Y

[2] [·] [5] Z

[PRINTER]

PRINT OUT

```
* 2* MODE I

(X)=  12.0cm
(Y)=  12.0cm
(Z)=   2.5cm

 X=  12.1cm  17S
 Y=  12.2cm  22R

      R        S
      1   0    0
      3   1+   1
      5   0    1
      7   1+   2
      9   1+   3
     11   1+   4
     13   1+   5
     15   2+   7
     17   2+   9
     19   2+  11
     21   3+  (14)
     22

**********/*****
```

Increase balance 3 sts. here.

3 U-Neck

MODE-N④

KEY ORDERS (UNIT cm)

[3] X

PRINT OUT

MODE-N⑤

KEY ORDERS (UNIT cm)

[4] [·] [5] Y

PRINT OUT

MODE-G

KEY ORDERS (UNIT cm)

[5] [·] [5] X

[6] [·] [5] Y

[1] [·] [5] Z

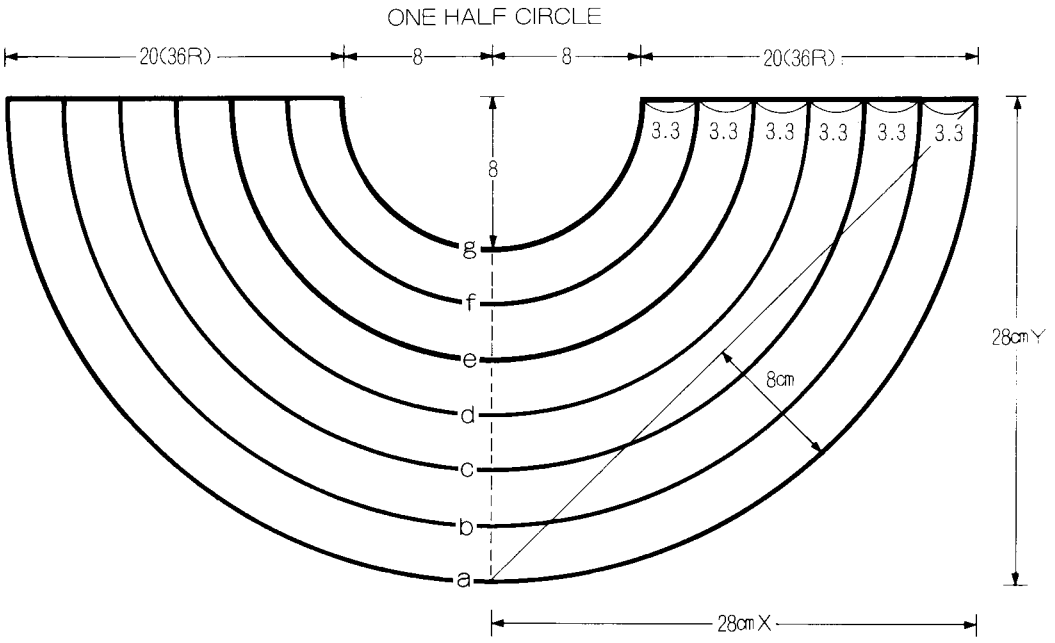
Press P Key.

then [PRINTER]

PRINT OUT

```
* 3* MODE G

(X)=   5.5cm
(Y)=   6.5cm
(Z)=   1.5cm

 X=   5.7cm   8S
 Y=   6.7cm  12R

     P=   0 R
     T=   9.4 cm

      R        S
      1   2-   6
      3   3-   3
      5   1-   2
      7   1-   1
      9   1-   0
     11   0    0
     12

***************
```

ROUND YOKE



This example decreases the stitches every 3.3 centimeters in length.

To calculate, use 1/4 the circle of Yoke, then when you have the calculation for this, multiply by 4 to get the total number of stitches for the complete circle of Yoke. However, when actually knitting the Yoke, use 1/2 the total number of stitches (a = 244 sts. ÷ 1/2 = 122 stitches for half of Yoke circle).

Ⓐ Find the number of rows (Y) for 3.3 cm using Mode N. Answer is 3.3 cm = 6 rows. In this example 6 rows are used between EACH SECTION.
Use Mode G and input 28 cm X, 28 cm Y. Press 'P' key and you will see that 43.6 cm is the curve of LINE a. For Line b, IMMEDIATELY input number of rows from Line a to Line b which is 6 rows (DO NOT INPUT MODE) and press 'P' Key which will give you the measurement in cm of curve for Line b. You must add 6 rows each time to the PREVIOUS section.

Ⓑ For EXAMPLE —

P = 6 R	
T = 38.4 cm	LINE b CURVE
P = 12 R	
T = 33.2 cm	LINE c CURVE

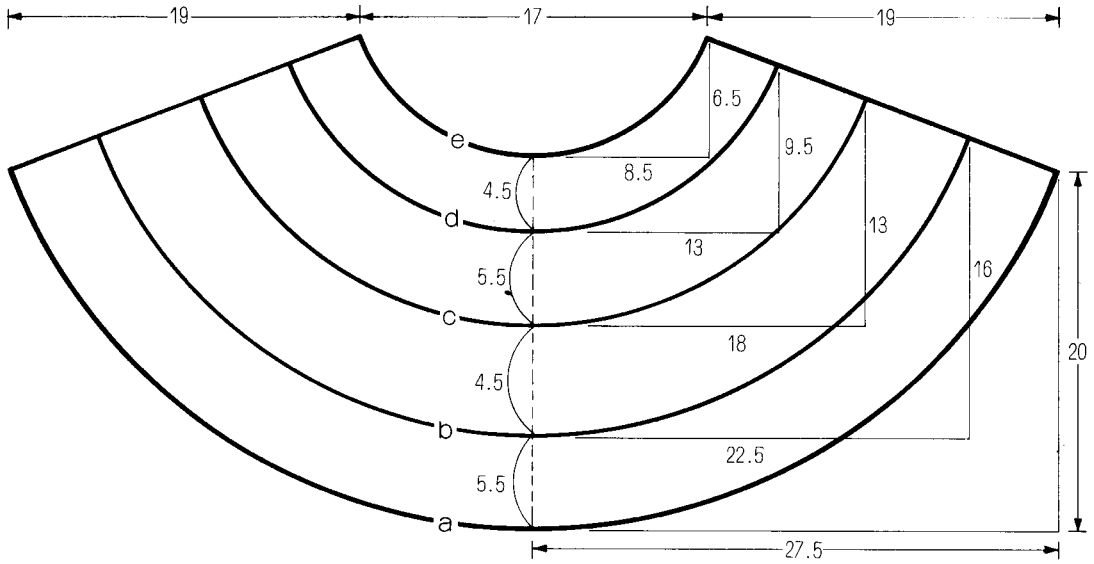
Continue in this way through Line g - each time adding 6 rows and pressing 'P' Key to get the curve measurement in cm.

```
* 1* MODE A
X= 244 S/R
Y= 216 S/R

        S/R
          8×  16
          9×  12
          8
**********
* 2* MODE A
X= 216 S/R
Y= 184 S/R

        S/R
          6×  14
          7×  18
          6
**********
```

After you know T length (page 34) press Clear Key excluding gauge.
Use Mode N and change EACH SECTION a, b, c, d, e, f, g from Centimeters into stitches.
Multiply EACH SET OF STITCHES by 4 to get the number of stitches needed for a full circle. For one half circle multiply by 2.
Use Mode A and input larger number of sts. for X and smaller number for Y.
FOR EXAMPLE: -

	KEY OPERATION	ARC LENGTH	X STITCHES	4X TOTAL STITCHES OF CIRCLE	HOW TO CALCULATE THE DECREASING OF STITCHES.	ADJUSTING FACTOR
a	P	43.6cm	**61S**	**244S**		
b	6 P	38.4cm	**54S**	**216S**	8×16 9×12 8	Double up 1 stitch every 8th stitch 16 times every 9th stitch 12 times 8 stitches left at end. Be sure to alternate the stitch decreases as needed; dividing them evenly across the width of kniting.
c	1 2 P	33.2cm	**46S**	**184S**	6×14 7×18 6	every 6th stitch 14 times every 7th stitch 18 times 6 stitches left at end.
d	1 8 P	28.0cm	**39S**	**156S**	6×18 7×10 6	every 6th stitch 18 times every 7th stitch 10 times 6 stitches left at end.
e	2 4 P	22.8cm	**32S**	**128S**	5×17 6×11 5	every 5th stitch 17 times every 6th stitch 11 times 5 stitches left at end.
f	3 0 P	17.5cm	**25S**	**100S**	4×16 5×12 4	every 4th stitch 16 times every 5th stitch 12 times 4 stitches left at end.
g	3 6 P	12.3cm	**17S**	**68S**	3×31 4× 1 3	every 3rd stitch 31 times every 4th stitch 1 time 3 stitches left at end.

ROUND YOKE WITH SHOULDER SHAPING



(a) Use MODE-G

KEY ORDERS (UNIT cm)

⋮

2 7 · 5 X

2 0 Y

⋮

Press P Key

⋮

T is printed(36.8cm)

⋮

Press Clear Key

(Exclucing Gauge)

Use MODE-N

KEY ORDERS (UNIT cm)

⋮

3 6 · 8 X

⋮

PRINT OUT

(b) Use MODE-G

KEY ORDERS (UNIT cm)

⋮

2 2 · 5 X

1 6 Y

⋮

Press P Key

⋮

T is printed(30.5cm)

⋮

Press Clear Key

(Excluding Gauge)

Use MODE-N

KEY RODERS (UNIT cm)

⋮

3 0 · 5 X

⋮

PRINT OUT

REPEAT FROM for b,c,d, and e.

Multiply number of stitches by 4 for complete circle.

Use MODE-A

KEY ORDERS (UNIT S/R)

⋮

larger number for X

smoller number for Y

⋮

PRINT OUT

REPEAT for each section.

NOTE

★ If you are working 1/2 of Yoke (instead of full Yoke) remember to double "X" stitches and use MODE-A in the same way as example shown.

This method for decreasing stitches can be used for all round shapings such as round cushions, round bags, etc.