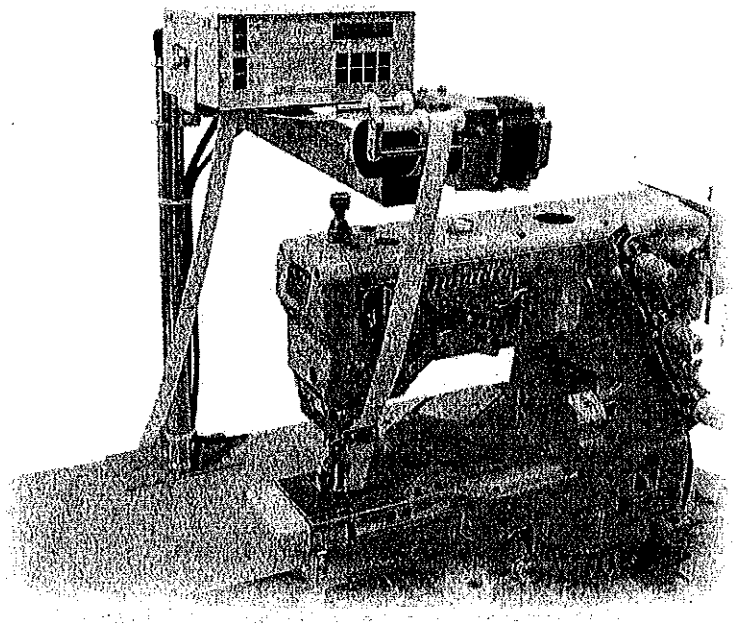
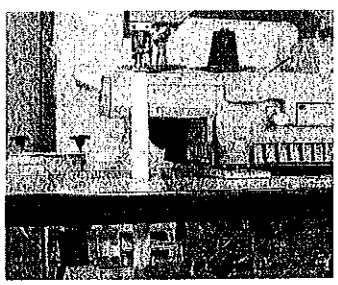
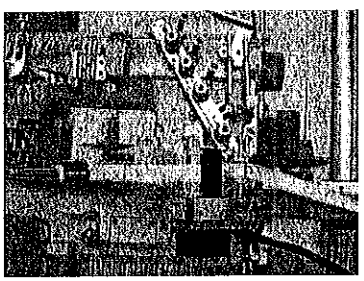
SAHIL *Industrial Sewing Machines, Automation and Accessories*







➢ Operation manual

BDS 1536

➢ Version;1.01

➢ 23 – 10 - 2005

BDS 1536

Electronic metering device with automatic tension control

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Electronic metering device with automatic tension control

1. General

- The **BDS 1536** electronic metering device is used for;
  automatically metering, feeding and tension control of elastic or binding.

- In one seam up to 8 different tensions can be programmed. *

- The change from one tension to the next is made:

  1. Manually by knee switch,
  2. Automatically after stitch count (counting with a photocell – special feature)
  3. Or both.

- The device can also be used for elastic feeding (slack feeding without tension).

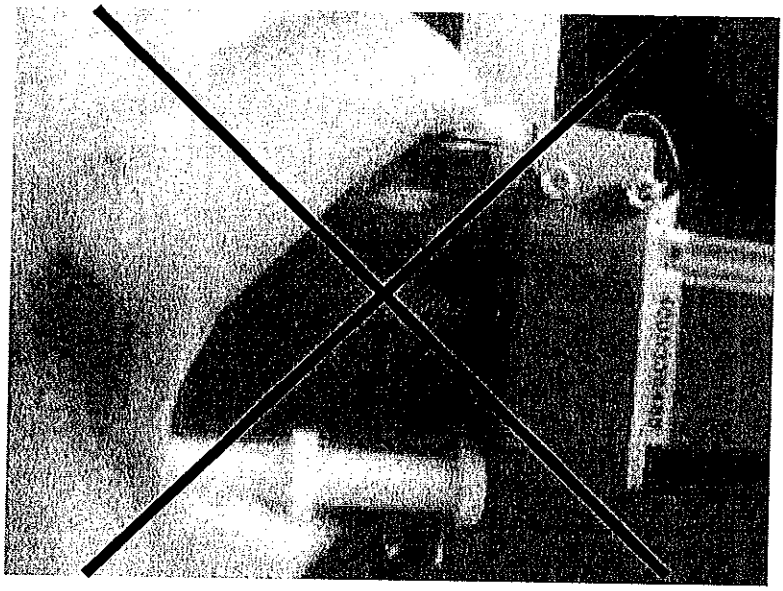
!!! Attention!!!

The serial number of the metering unit must be the same as the serial number of the control box!

BDS 1536

Electronic metering device with automatic tension control

2. Unpacking and mounting



!! Attention sensitive measurement !!

- Take the metering device carefully out of the packing
- Never touch the front roller
- The control of the tension is made at the front roller with an internal pressure-sensor; any mechanical damage would create irregular tension control and incorrect garment size.
- In this case the device must be recalibrated again.

- Therefore if the device has to be returned to the manufacture for service or repair, please use only the original packing, otherwise you do not have any guarantee.

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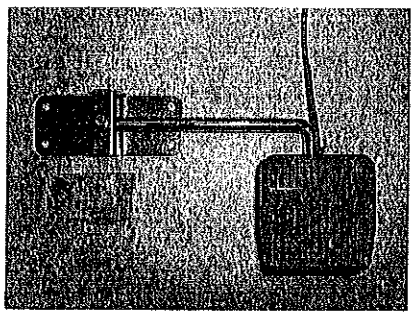
Electronic metering device with automatic tension control

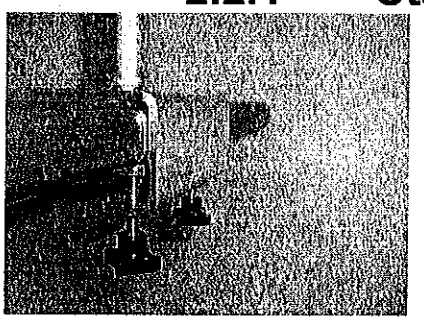
2.1 Mounting the knee switch



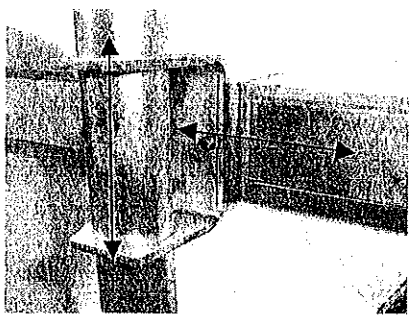
- The knee switch is seen in the photo on the left.
- You can position the knee switch on the left or right side under the table.

2.2 Mounting and positioning the stand

2.2.1 Stand



- The stand is mounted with the 2 adjustable screws onto any table of a sewing machine or workstation.



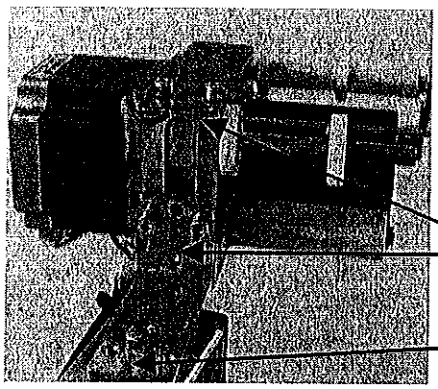
- Insert the squared carrier in the support and fix it with the screws.
- With the support the height-position and length-position of the unit can be adjusted.
- If possible, the elastic should not touch the machine before the pressure foot

BDS 1536

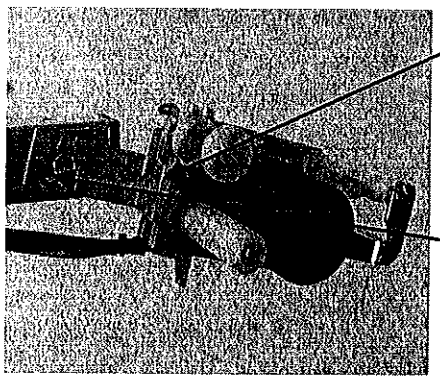
Electronic metering device with automatic tension control

2.2.2 Holder (angle)

- The control box and the metering unit are connected by 2 cables, within a shield , one for the pressure sensor and the other for the stepper motor.

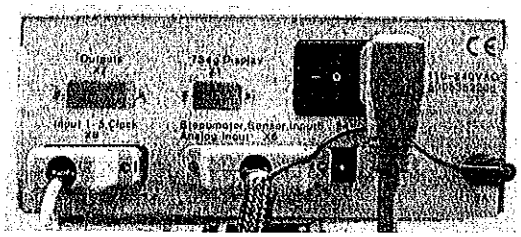


- The metering unit of the **BDS 1536** can be mounted in any position by the angled holder and the 2 fixing locations on the metering unit.
- Bracket fixing locations.
- Support fixing positions



- Bracket fixing locations.
- Support fixing positions

2.2.3 CABLE



CONNECTIONS

- 1. Connect the 25 pin metering unit.
- 2 Connect the sensor plug, arrow to the top
- 3. Connect the Knee switch.
- 4. Connect any options.(special order)
- 5. Connect the Mains power lead.

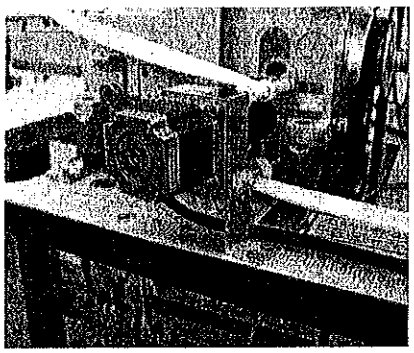
CAUTION WHEN MOVING THE UNIT

1. REMOVE THE MAINS CONNECTION
2. REMOVE THE SENSOR CONNECTION
3. REMOVE THE METERING UNIT CONNECTION
4. REMOVE THE KNEE SWITCH AND OPTIONS CONNECTIONS

BDS 1536

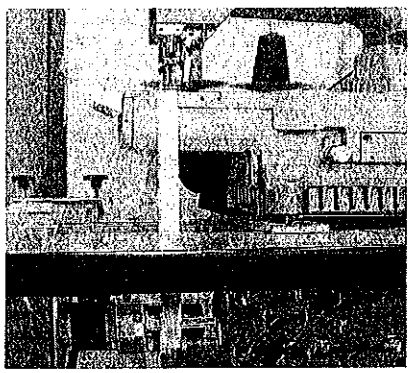
Electronic metering device with automatic tension control

2.2.4 Metering unit from the side

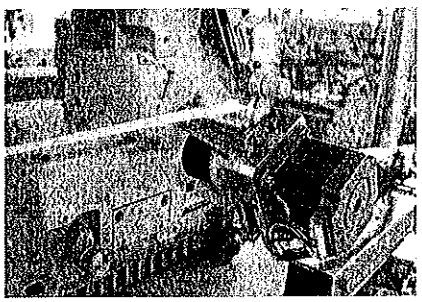


- Using side operation.
- The device is mounted as shown on the picture.
- Fixing location is now on top of the unit.

2.2.5 Metering unit from below

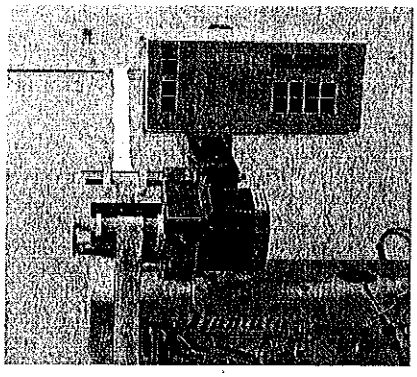


- Also from below, the device can be mounted as shown in the picture.
- The control box can be mounted on the stand or on the table

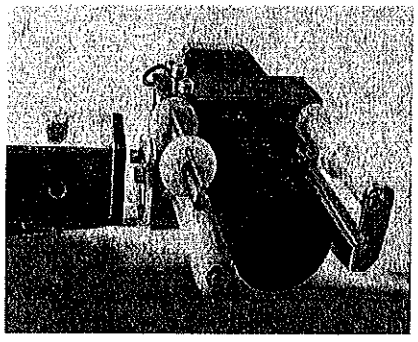


- Also from the side.
- The control box can be mounted on the stand or on the table.

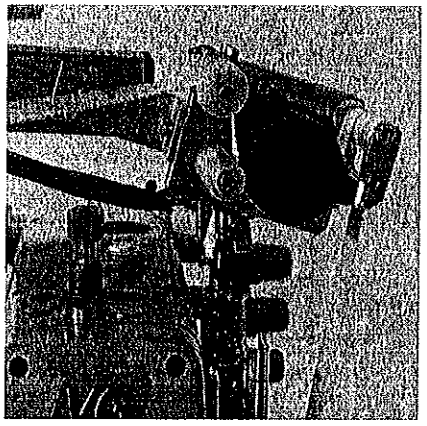
2.2.6 Metering unit from above



➢ The **BDS 1536** also can be mounted from above. The elastic has to move straight under the presser foot.



➢ The **BDS 1536** can be mounted directly under the support bar or from the side of the support bar



➢ Also please note the elastic has to move free without touching any part of the sewing head, otherwise it could create wrong tension and therefore an incorrect measurement.

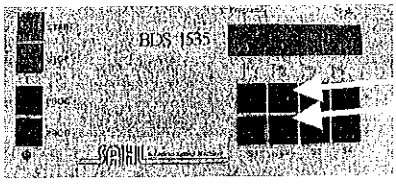
➢ Please note these points when you position the device.

2.2.7 0 kilo adjustment.

The unit is factory set to be used with metering from above.

If a different Metering unit position is required.

Please reset the "0" kilo adjustment.



- Switch of the unit. **And remove the elastic**
- **Press and hold buttons S2+ and S2-**
- Switch on the unit

BDS Boot V1.061

- After switching on the following indications appears. this lasts about 5 seconds

Prog. Parameter loading active

- Then the program parameters are loaded.

AUTOM . 0 Kg Setting completed

- Then the Automatic "0" calibration is made
- **Now release the S2+ and S2- Buttons**

BDS 1536 Version 1.00

- And last you can see the device name with it's user software version number
- The unit will go to the start at the last program
- Press stop and Insert the elastic.

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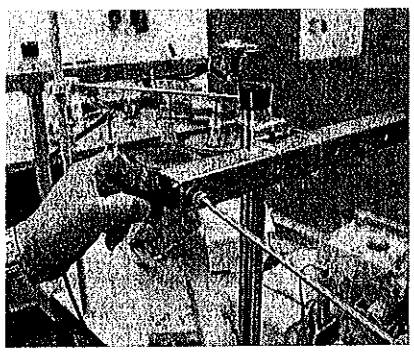
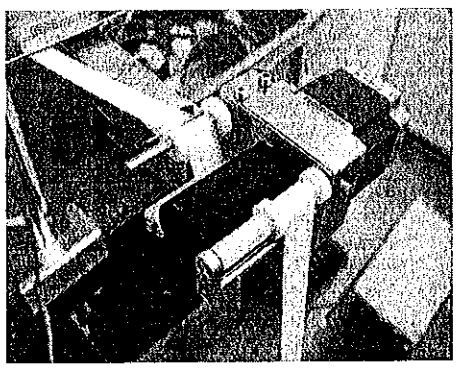
2.3 Mounting the roll holder for the elastic



- The elastic roll holder can be mounted on the stand
- Therefore remove the black cap on the back side, screw the holder on the last hole and plug in the black cap.

2.4 Inserting the elastic



- With the adjustable ring-guides a straight insertion can be made.
- Insert the elastic through the roll as shown left

3 Switch on

- There are 3 possible operational modes (knee, semi automatic and automatic). Adjustable with parameter **P19** – see **5.4 Adjustment of the operation mode (Mechanic P19).**
- In each mode 19 programs can be stored.

BDS Boot V1.061

- After switching on the following indications appears. this lasts about 5 seconds
- At first you can see the Boot-version, If you have any questions regarding this unit the manufacture will ask for this boot version

Prog. Parameter loading active

- Then the program parameters are loaded...

BDS 1536 Version 1.00

- And last you can see the device name with it's user software version number
- If you have any questions regarding this unit, the manufacture will ask for this user software version.

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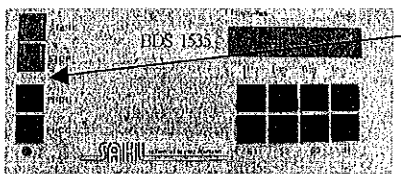
3.2 Select a programme

```
P...1 Knee1-4 RUN
>100  101  102 103
```

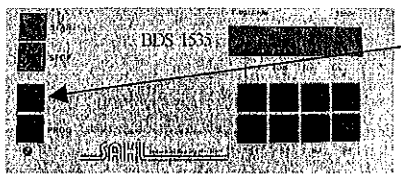
- **P...1**.... program number 1
- When switching on the device the same program number is shown as when you switched off. Switching on the first time you see the left indication.
- **Tens: Knee**.... tensions are changed by pressing the knee switch. (knee mode)
- **Run...**the unit is ready to start working
- **1-4**....the 4 indicated tension values (100, 101, 102 und 103) are adjusted at delivery and show the tensions 1 to 4.

```
P...1 Knee1-4  P...1
 100  101  102 103
```



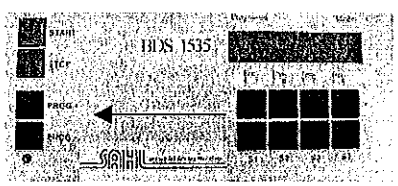
- Press STOP

- Next program (see 4.8. program linking)
- Press PROG +



```
P...1 Knee5-8  P...1
 104  105  106 107
```

- **5-8**....shows the values of the tensions 5 to 8.
- How to work with less than 8 tensions you can see in chapter **5.7 Working with less than 8 tensions or**
  5.7.1 Working with more than 8 tensions.

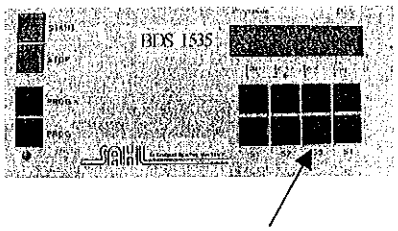


- Pressing **PROG +** or **PROG -** you can select the program you want to work with.

```
Pull off        Stop
tens  ...20   tm....5
```

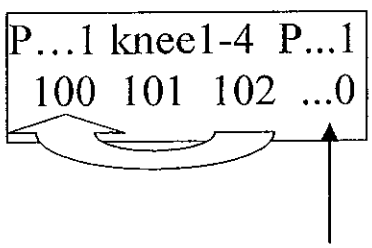
- After program 19 the pull off mode appears.
- See **4.8 Pull off mode (no tension)**

3.3 Tension adjustment



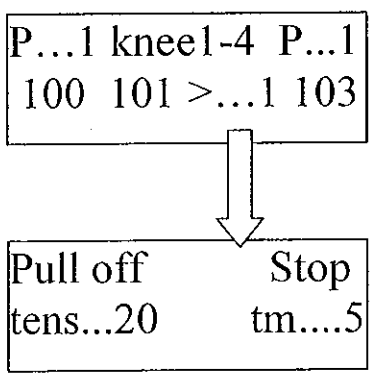
- With the eight tensions switches **S1 + & - to S4 + & -** you can increase + (upper button) or decrease - (lower button) the tension values.
- When pressing and holding the buttons the tension values change faster.
- In general the tension value should not be lower than **15**.
- If you have to work with lower tensions see chapter **5.6 Adjustment for tensions lower than 15**

3.4 Tension value = 0



- If a tension is set to **0**, the tension changes from the tension before the 0 back to the first tension. (In our example we want to work with 3 tensions. after the 3rd tension (102) the device changes back to the 1st tension (100).
- This adjustment is used when working with less than 8 tensions (see chapter **5.7 Working with less than 8 tensions**)

3.5 Tension value = 1



- If a tension is set to **1**, the device changes to the pull off mode.
- See chapter **4.8 Pull off mode (no tension)**.for adjustments.

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3.6 Tension value = 2 – 14

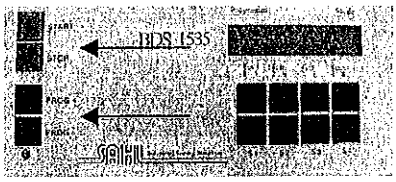
- If a tension value is adjusted in between 2 and 14, there is no regulation. The elastic tension control will only be forward.
- This none regulation range can be changed but only in the parameters (see chapter **5.6 Adjustment for tensions lower than 15)**.

3.7 Tension value = 15 – 999

- If a tension is adjusted in between 15 and 999 the elastic tension control is regulated.
- This controlled range can be changed only in the Sahl code (see chapter **5.6 Adjustment for tensions lower than 15).**

4 Starting

4.2 Starting



- **Attention: before starting, the elastic must be correctly inserted and fixed under the presser foot!**
- Take care that the elastic does not touch any part of the sewing head on it's way from the roll to the presser foot.
- Select a program with the **prog +** or **prog -** button (Press **start** button
- An arrow marks the first tension.
- Pulling the inserted elastic (start sewing) the **BDS 1536** rolls start to transport. If the pulling stops the device controls backwards and also stops.

P...1 knee1-4 P...1
>100 101 102 103

4.3 Interrupt

- A program interrupt is made when:
  1. The **stop** button is pressed
  2 The **prog** button is pressed
  3. The elastic runs back (e.g. after cutting)

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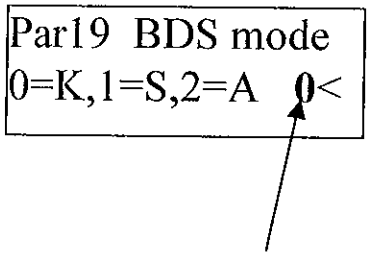
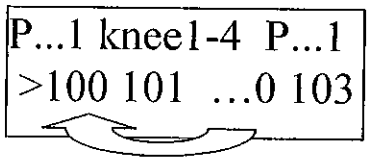
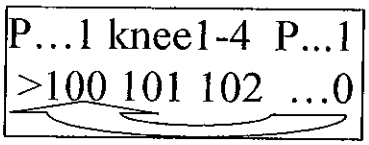
4.4 Sequence with knee switch (P19=0)



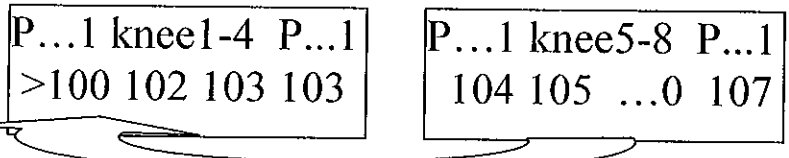
- Select mode "**knee**". set parameter **P19 = 0** (see chapter **5.4 Adjustment of the operation mode (Mechanic** P19))
- Adjust the tensions with the four + & - tension switches.
- Pressing the knee-switch causes the tension to change to the next one.
- The current tension is marked with an arrow (>).
- After reaching the last tension the device changes to the first tension.



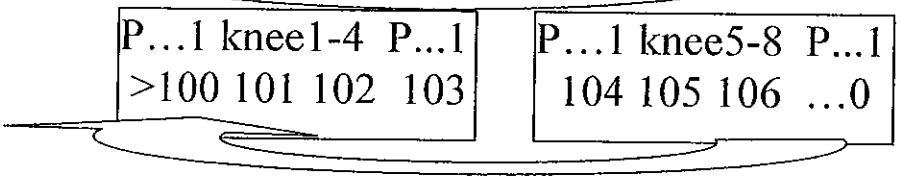
- By programming the tension value = 0 you can work with less than 8 tensions.
- On the left you can see the programming for 2 tensions...



- 3 tensions....



- 6 tensions....

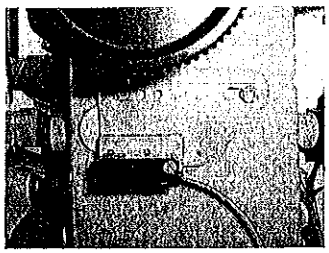


- and 7 tensions

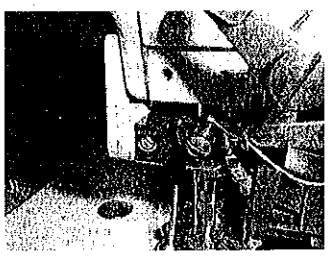
For more than 8 tensions
See **4.8 programs linking**

4.5 Sequence with stitch count (P19=2)

- A sequence with stitch count is only possible by using the special feature (A type) **ASZ-adapter** (2 photocells)



- One photocell is for the counting of the stitches and is mounted as shown on the left side.

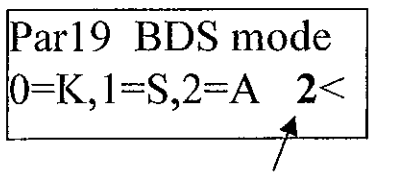


- The second photocell is used to recognize the start- and end-point of the sewing part and therefore the start of the counting. The mounting has to be near the presser foot.

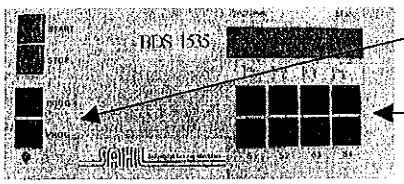
- A second (D type) **ASZ-adapter** version is the synchronizer type which is mounted on the hand wheel.

BDS 1536

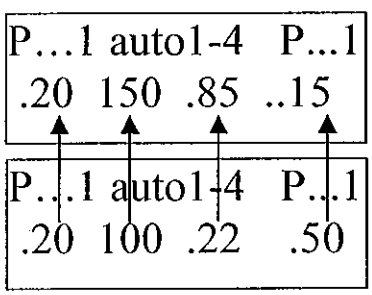
Electronic metering device with automatic tension control

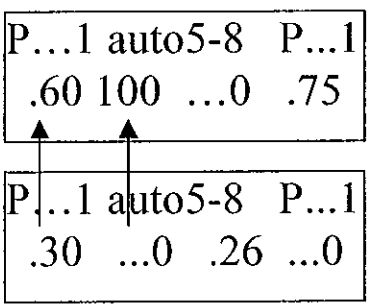


- Select mode "**auto**", set parameter **P19= 2** (see chapter **5.4 Adjustment of the operation mode (Mechanic** P19))



- With the **prog** + or **prog** - button you can chose the program you wish to use (e.g. program 1 as shown below)
- Each program has 4 screens





- You can see the stitches after which the tension should change to the next one
- In our example we sew 20 stitches with tension 20,
  100 stitches with tension 150
  22 stitches with tension 85
  50 stitches with tension 15
  30 stitches with tension 60
- Then the device changes to the last tension 100.
- Depending on the adjustment of parameter **P20 BDS – S Stop** the tension changes to the first one:

  1. - After the photocell becomes uncovered or

  2. - After the photocell becomes uncovered **and** the knee switch is pressed.(P20 semi mode only)