

**Preface and General Safety Notes**

**Part 1: Operating Instructions CI.744-122**

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# 1. Product Description

## 1.1\_ Summary and Intended Use

The 744-122 sewing unit is for sewing pre-determined, straight or curved seams. A rail appropriate to the seam configuration holds and guides the material.

The material transport is conducted by a step motor. The sewing unit has electro-pneumatic controls.

The Microcontrol control units have the integrated "Multitest" testing and monitoring system. Along with monitoring the sewing process this allows a quick checking of the input and output elements. Possible operating errors and malfunctions are shown in the display.

Depending on the program, the control of the sewing unit can occur via photocell or distance measurement.

Along with continuous seams from seam beginning to seam end the following additional functions can be selected with the control unit:

- Slit at the beginning of the material
- Slit at the end of the material
- Slit at the beginning and at the end of the material
- Seam interruption or partial stitch condensing
- Seam interruption with slit at the beginning and at the end of the material
- Security at the seam end through chain stitching or stitch condensing

Through equipment with the appropriate parts sets, the sewing unit can be used for the following work procedures:

1. Primary seams: Work procedure A, e.g. rear sleeve seam, mid-back seam, front sleeve seam, side piece seam-overcoat, front sleeve seam with outer material-lining in one step etc.
2. Sewing waistbands on trousers: work procedure D
3. Sewing waistbands on skirts: Work procedure E

The selector switch on the back of the control unit front panel must have a setting appropriate to the work procedures.

The setting normally occurs at the factory.

Which selector switch setting should be chosen for which work procedure can be found in the Microcontrol controls summary in the annex to these instructions.

Please direct further enquiries concerning work procedures/applications to DÜRKOPP ADLER AG or its offices.



## 1.2 Technical Specification

Nominal voltage: Standard machine  
3x380-400V+N, 50 Hz

The nominal voltage (operating voltage) for which the sewing unit was set up is shown on the plate attached to the spar at the front left under the table top.

For operation with other mains voltages the information contained in the enclosed connection diagram 9870 744001 B must be strictly adhered to and the necessary connection changes made. Depending on the mains voltage and cycle the necessary modification parts, e.g. pulley, V-belt, protection switch insert, etc. are available under the following order no.s:

3x380-400V+N 50 Hz - 744 100121  
3x220-230V 50 Hz - 744 100122  
3x220-230V 60 Hz - 744 100123  
3x415V+N, 50 Hz - 744 100124

### Machine Head

- One needle-dual chain stitch Stitch type 401
- Class 935-933-200
- with controlled thread trimmer on the base plate
- Number of stitches: adjustable between 3800-5400 stitches/min.
- Stitch length: adjustable for 2,1 mm, 2,5 mm, 3,0 mm or 3,6 mm
- Stitch length by stitch condensing: 2,0 mm, 1,5 mm or off
- Needle system: 934 SIN

### Sewing Lengths

Depending on the equipment, the maximum sewing length can be either 1000 mm or 1250 mm. Appropriate transport drive parts and material guide rails make possible a quick conversion.

### Material Guide Rail

The left, right and wait positions can be selected with the control unit. The wait position keeps the feed area clear.

The return speed of the material guide rail can be reduced through a coding. It is dependent on the form of the material guide rail.

The rail clearance stroke is 30 mm.

### Compressed Air :

Operating pressure: 6 bar

Air consumption: approx. 9 NL per operating cycle

### Vacuum:

The sewing unit is prepared for connection to an in-house vacuum facility. If this is not available then a rotary blower must also be ordered.

For 3 x 380-400V+N, 50 Hz - Order no.722 3031K  
For 3 x 415V+N, 50 Hz - Order no.722 3032K  
For 3 x 220-230V, 50 Hz - Order no.722 3033K  
For 3 x 220-230V, 60 Hz - Order no.722 3034K  
For 3 x 220V, 50 Hz - Order no.722 3035K

Dimensions: Width: 3600 mm (2100 mm)  
Depth: 1000 mm (1000 mm)  
Height: 1500 mm to top of  
- control unit (1400 mm)

( ) = Shipping dimensions

The sewing unit (work level) is height adjustable from 920-1140 mm for standing operation.

## 1.3 Optional Equipment

Order no.

794 7451 Side table  
935 - - - Edge cutter and chain trimmer  
935 20607 Throat plate with stitch hole 1,5x5 mm  
935 20608 Throat plate with stitch hole 1,8x5 mm



## 2. Operation



Turn main switch off!  
- Risk of Injury -

- when threading
- when replacing sewing tools e.g. needle
- when cleaning
- when leaving the work place unattended
- by maintenance work

### 2.1 Replacing the material guide rail by primary seams



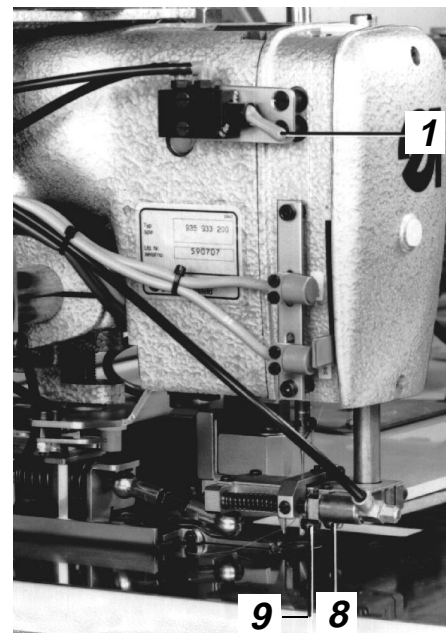
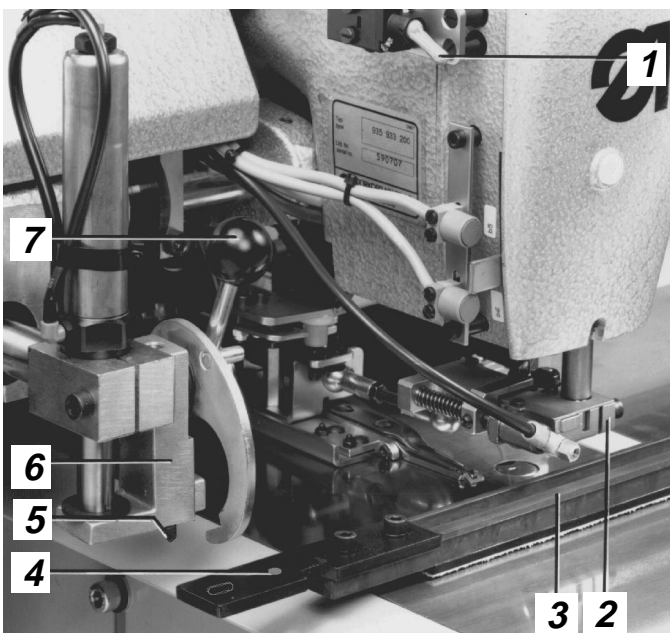
Turn main switch off!  
- Risk of Injury! -

#### Removing

- Place valve lever 1 in the down position.
- Lift the guide piston 2 with its two rollers 9 and 8 out of the rail 3.
- Pull the rail 3 out of the needle area from the front.
- Release the left and right clamp lever 7.
- Remove the rail after lifting the clamp piston 6 and place in the mounting at the left on the covering hood.

#### Inserting

- The insertion of the rail is conducted in the reverse order.
- When tightening the clamp lever 7 care should be taken to see that the pin 5 of the clamp piston 6 snap into the hole 4 of the rail.
- The roller 8 of the guide piston and the roller\_9 for the thread trimmer must be lowered into the groove on the rail. Place the valve lever 1 up again. Otherwise the display \*Schiene\* will appear. - A starting of the sewing unit is then not possible.





## 2.2 Attaching the material stopper by primary seams

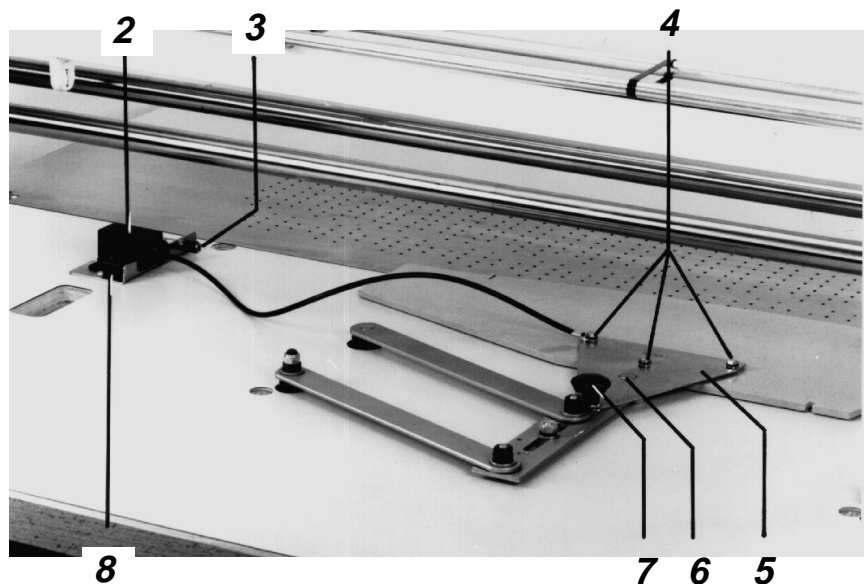


Turn main switch off!  
- Risk of Injury -

- The contours of the material stopper and the material guide rail must agree in the transport carriage's right hand position.
- Turn the star grip 7 back several turns.
- Slide the holder plate 5 under the star grip 7 in such a manner that its cutout is exactly seated on the collar bolt and the hole locks above the location peg 6.
- Screw the star grip 7 tight.
- When equipped with material holder 1 on the material stopper its compressed air hose should be plugged into the pneumatic socket 3.
- The coding plug\_2\_ is always to be plugged into the socket 8\_. It contains the coding for the allowable rail return speed.

## 2.3 Setting the seam interval by primary seams

The uniform gap between material guide rail and material stopper, that is, the planned seam interval, is to be set after loosening the screws 4.





## 2.4 Needles - Yarns - Thread tension

### Needles

System 934 SIN needles are to be used.  
(SIN = slightly rounded point)

Recommended needle thickness:

Nm 80  
Nm 90 for thin material

Nm 100 for medium material

Nm 110  
Nm 120 for thick material

Throat plates with wider stitch holes are to be used for needle thicknesses above Nm 100. See Section 1.3 Optional Equipment.



Turn main switch off!  
- Risk of Injury -

When inserting the needle care is to be taken that the hollow neck of the needle points to the left when seen from the operating side of the sewing unit.



### Yarns

High sewing security and good sewability are achieved with covering yarns, especially

- with dual polyester endless - polyester covered, e.g. Epic Poly Poly, Rasant x, Saba C and others;
- with dual polyester endless - cotton covered, e.g. Frikka, Koban, Rasant and others.

As yarn thickness dependent on the needle thickness we recommend:

Needle thickness	Covering yarn
Nm	polyester-endless
90	120 (Nm 80/2)
100	100 (Nm 65/2)
110	75 (Nm 50/2)

Concerning the threading of the needle and bobbin threads see the enclosed operating card.

### Thread tension

The tension of the needle thread must be greater than that of the bobbin thread. The bobbin thread tension is therefore equipped with a spring of thinner wire.

Too high thread tensions cause the material being sewn to pucker.

A too low bobbin thread tension can cause faulty stitches.

For drawing the threads for trimming or by seam interruptions the needle thread tension is released pneumatically.

## 2.5 Inserting the material and starting the sewing unit

The sewing unit is equipped at the factory for a specific work procedure, e.g. for primary seams, for sewing waistbands on trousers or for sewing waistbands on skirts.

For each of these work procedures there are multiple insertion methods with varying switching stages for feeding, suction and starting available. For the choice of insertion methods for each work procedure and type of handling see Section 4.5 of the Microcontrol summary in the manual annex. Switching on the feed procedure occurs via the "E" key of the control unit. Then an activation through the STOP key is necessary.



## 2.6 Thread monitor for needle and bobbin thread

The threads are monitored by proximity switches. The needle thread by the b15 switch in conjunction with the metal eye on the arm head. The metal eye and switch b14 for the bobbin thread are immediately in front of the hook.

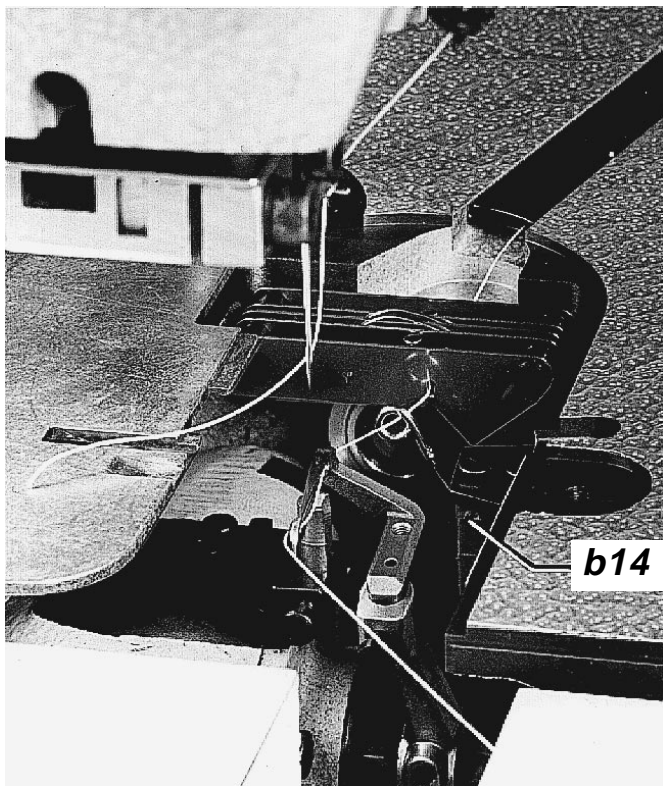
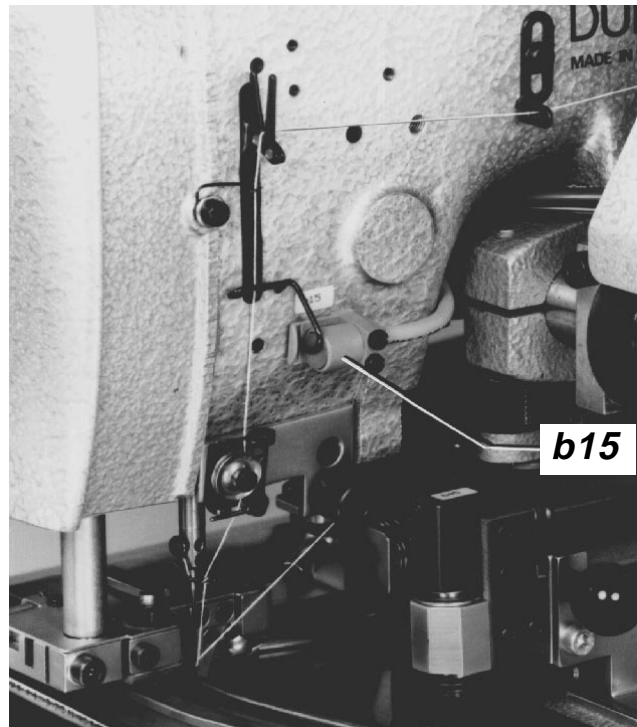
By needle thread breakage the display shows -X-  
By bobbin thread breakage the display shows -XX-

The sewing unit cannot be re-started.

**When threading:**



Turn main switch off!  
- Risk of Injury -



## 2.7 Build-on stacker by primary seams

In order that the pieces sewn can be stacked centered on the stacker 1 according to their length, a clamp-on moment in advance of the pull-out moment can be selected.  
(For this the b417.5 selector switch on the back of the control unit front panel must be in the "open" position.)

To choosing the clamp-on moment see the operating card 744-122.

The stacker can be opened pneumatically via pedal for removing the stacked pieces sewn.

