

Foreword and general safety instructions

Part 1: Operation manual Cl. N291

1. Product specifications	
1.1 Use for the intended purpose	5
1.2 Technical data	5
 2. Elements and their function	
2.1 Elements at the machine head	6
2.2 Elements at the machine stand	10
 3. Operation of the sewing machine	
3.1 Threading the needle thread	12
3.2 Winding the bobbin thread	12
3.3 Changing the bobbin	12
3.4 Setting the bobbin thread tension	12
 4. Maintenance	14

Part 2: Installation manual CI. N291

1. General information	3
2. Assembling the machine stand	6
3. Completing and screwing on the table top	6
4. Connecting the sewing machine motor to the table top	6
5. Mounting the machine head, positioning the V-belt and fastening the pedal	7
6. Fastening the handwheel and synchronizer	8
7. Connecting the maintenance unit	8
8. Laying and connecting the electrical cables	8
9. Filling in the oil and readying the machine for service	8
10. Making a sewing test and checking the oil supply of the mist lubricator	8

The following patents and registered designs apply:

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DE 84 33 111	JP 61-61041
DE 26 16 738	JP 1 803 181
DE 28 03 971	JP 1 174 491
DE 28 15 297	JP 1 250 838
DE 30 43 141	JP 1 256 078
DE 32 15 408	JP 1 258 920
	JP 1 339 944
ES 428 674	
ES 458 540	KR 24 686
ES 477 288	
	SU 664 575
GB 1 530 873	
	TW 19 105
IT 209 238	TW 31 498
IT 1 017 437	TW 33 691
IT 1 077 155	TW 20 190
IT 1 077 924	TW 23 626
IT 1 109 783	
IT 1 140 081	US 4 116 145
IT 1 160 800	US 4 137 858
IT 1 194 222	US 4 364 319
	US 4 446 803
	US 4 457 244
	US 4 534 304
	US 4 646 668



1. Product specifications

1.1 Use for the intended purpose

The sewing unit must only be used for sewing textile fibres and leather.

1.2 Technical data

Needle system:

depending on sewing equipment:	2134-35 DUKK 134 KK
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Maximum number of stitches:

depending on sewing foot stroke and stitch length:	2000, 3000, 4000 1/min
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Maximum stitch length
forward (v), reverse (r)

N291-164 062:	6 (v); 6 (r) mm
N291 185 082:	10 (v), 8 (r) mm

Maximum sewing foot stroke:	7 mm
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Operating pressure:	6 ⁺ /-0.5 bar
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Line pressure:	7-10 bar
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Air consumption per work cycle:	0.15 NL
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Maximum clearance under the
sewing feet:

When sewing:	10 mm
When feet are lifted in needle up position:	17 mm

Maximum bobbin capacity:

with a thread size of Nm 80/2:	95 m
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Maximum thread size:

Cotton:	11/3 NeB
Synth. continuous:	11/3 Nm
Cor spun thread (poly- cotton):	11/4 Nm



2. Elements and their function

2.1 Elements at the machine head

Element	function
Screw 1	– This screw for the sewing foot pressure is turned in completely at the factory. Therefore, do not change its adjustment!
Thread guide 2	– Depending on the material thickness, sewing thread and stitch length, the position of the thread guide must be adjusted such that controlled guiding of the needle thread around the hook is assured. When it is set at "0" the largest amount of thread is released, as is required for very long stitches and very thick material.
Turning knob 3	– Setting the additional tension engageable with lever 5 at the desired value.
Lever 4	– Opening the needle thread main tension and needle thread additional tension.
Lever 5	– Activating and deactivating the additional tension. To do this, unlock the lever by pulling it to the right, and then change over.
Dial 6	– Set the "higher" foot stroke that has been activated with the corresponding key or knee switch.
Dial 7	– Set the "smaller" foot stroke.
Sight glass 8 with inlet opening	– Indicating the oil level in the reservoir. The oil level must not drop below "MIN". If necessary, fill the oil ESSO "SP NK 10" into the oil reservoir up to the mark "MAX".
Turning knob 9	– Setting the reverse stitch length.
Turning knob 10	– Setting the forward stitch length.
Hand lever 11	– Changing the stitch length infinitely between the adjusted forward and reverse stitch length.
Turning knob 12	– Setting the needle thread main tension at the desired value.
Lever 13	– Determining whether the needle thread main tension is opened or closed while the foot is lifted. Lever up: Tension opened Lever down: Tension closed
Needle 14	– When changing the needle, always turn off the main switch. Otherwise there is danger of injury!
Locking button 15	– Locking the sewing foot in its lifted position.







Element	function								
Sight glass 7 with inlet opening 6	<ul style="list-style-type: none"> Indicating the oil level in the reservoir for the hook lubrication. The reservoir must never be empty. Tilt the machine head backwards and fill the oil ESSO "SP NK 10" into the oil reservoir up to the mark "MAX". 								
Control panel 5	<ul style="list-style-type: none"> See the instruction manual of the motor manufacturer. 								
Light-emitting diodes (LEDs) 1, 2, 3 and 4	<ul style="list-style-type: none"> Indicating the maximum speed (number of stitches) depending on the foot stroke and stitch length: <table> <tr> <th>Active. LEDs</th><th>Maximum speed</th></tr> <tr> <td>1 2 3 4</td><td>4000 rpm*</td></tr> <tr> <td>2 3 4</td><td>3000 rpm*</td></tr> <tr> <td>3 4</td><td>2000 rpm</td></tr> </table> <p>* Smaller speeds are possible by the use of smaller pulleys or by inputting the respective values at the control panel.</p>	Active. LEDs	Maximum speed	1 2 3 4	4000 rpm*	2 3 4	3000 rpm*	3 4	2000 rpm
Active. LEDs	Maximum speed								
1 2 3 4	4000 rpm*								
2 3 4	3000 rpm*								
3 4	2000 rpm								
Key block 13									
Key 17	<ul style="list-style-type: none"> Activate "intermittent tacking" within the seam to be sewn - as long as the key is activated. 								
Key 16	<ul style="list-style-type: none"> Alternate the needle between its upper position (2nd position) and bottom position (1st position). 								
Key 15	<ul style="list-style-type: none"> Free for special functions. 								
Key 14	<ul style="list-style-type: none"> Activating the higher foot stroke that has been set with the relevant dial. The different operating modes may be found in the description of the knee switch 1 (page 10) that activates the same function. 								
Light-emitting diodes (LEDs) at the key block 13									
LED 10	<ul style="list-style-type: none"> Indicating "Sewing machine motor enabled". With enabled sewing machine motor, needle change, bobbin change, threading and other work within the motion range of elements are not permitted. <p>Otherwise there is danger of injury!</p>								
LED 8 and 9	<ul style="list-style-type: none"> Indicating "Bobbin empty except for remaining thread". (Only on machines with bobbin thread monitor) 								
LED 11 and 12	<ul style="list-style-type: none"> Indicating when the keys 14 and 15 are operated. 								







2.2 Elements at the stand


Elements	function
Main switch 2	– Turning on and off the machine.
Pedal 3	
Idle position	– No function.
Position "half back"	– Lifting the foot at machine standstill.
Position "completely back"	– Activating the thread trimmer and lifting the foot.
Positions "in front"	– Sewing at the desired speed.
Knee switch 1	– This key has the same function as the key 14 (page 9) of the key block: Activating a higher foot stroke. – The operating mode "Activation as long as the key is being operated" or "Activation until the key is being re-operated" or "Activation as long as the key is being operated and until all input stitches are sewn" depends on the input at the control panel.
Maintenance unit	
Air filter and water separator 8	– Before the water level reaches the filter, turn in the drain screw 7 accordingly. While doing so, do not interrupt the supply of compressed air.
Pressure regulator 9	– To adjust 6 bar pull up the sleeve 10 and turn it accordingly.
Mist lubricator 6	– Adjust approx. 1 drop for 10 work cycles using the set screw 4. To refill, vent the pneumatic system, turn out the screw 5 and refill the oil ESSO "SP NK 10" up to the "groove".





3. Operating the sewing machine

3.1 Threading the needle thread

- Turn off the main switch of the machine. 
Otherwise there is danger of injury!
- Thread the needle as shown in the figure.

3.2 Winding the bobbin thread

- Slip the bobbin 4 onto the bobbin winder 3.
- Pull the thread through the guide 1 and the tension assembly 2.
- Wind the thread clockwise approx. 5 times around the bobbin core and tear off at the thread clamp 6.
- Press the bobbin winder lever 5 into the bobbin.
- Sewing
The bobbin winder lever stops the winding process, when the bobbin is fully wound.
If the thread is not to be wound during sewing, the foot must be locked in its lifted position and the foot stroke must be set at its smallest value.

3.3 Changing the bobbin

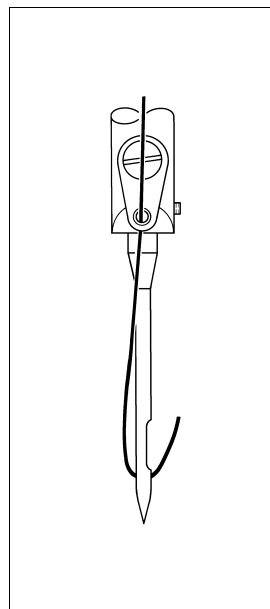


- Turn off main switch.
Otherwise there is danger of injury!
- Pull out the slide plate 7.
- Remove the bobbin case cap 8 with the bobbin 11.
To do this, grasp under the nose 10 of the bobbin case cap.
- Remove the bobbin.
- Install the fully wound bobbin such that the bobbin turns in the direction shown in the figure, when thread is drawn.
- Pull the thread through the slot 16, under the spring 14, through the slot 13, and from the inside to the outside through the hole 12.
- Install the bobbin case cap with the bobbin and close the latch 9.
- Push in the slide plate.

3.4 Setting the bobbin thread tension



- Turn off the main switch of the machine.
Otherwise there is danger of injury!
- Pull out the slide plate 7.
- Remove the bobbin case cap 8 with the bobbin 11. To do this, grasp under the nose 10 of the bobbin case cap.
- Turn the set screw 15 accordingly.
- Install the bobbin case cap with the bobbin and close the latch 9.
- Push in the slide plate.





4. Maintenance

The maintenance work must have been carried out at the latest after the service hours given in brackets []. Other maintenance intervals may be required when special materials are sewn.

Occurrence	Remarks
Machine head	
Removal of accumulated lint [8]	<ul style="list-style-type: none">– This applies in particular to the following places: Throat plate underside Feed dog rows Area around the hook Brake spring 17 (page 13) in the bobbin case cap.
Checking the oil level in the two reservoirs 7 (page 9) and 8 (page 7) [40]	<ul style="list-style-type: none">– See subject 2.1
Maintenance unit	
Cleaning the insert in the air filter 8 (page 11) [500]	<ul style="list-style-type: none">– Prior to this, vent the system.
Checking the oil level in the mist lubricator 6 (page 11) [180]	<ul style="list-style-type: none">– The oil level must not drop below the opening of the suction pipe.
Checking the oil supply of the mist lubricator [180]	<ul style="list-style-type: none">– See subject 2.2
Checking the tightness of the pneumatic system [500]	