



DELTA

Additional Instructions

Perfect Quality Sensor

IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

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1 General information

The sensor measures the thickness of sewing material to be sewn in front of the sewing foot. Based on the measured value, the machine can use various functions, such as stroke adjustment for sewing over thickened areas, automatic sewing foot lift, initial alignment stitch position, seam end detection with the familiar light barrier functions.

Components of the kit

Check whether the scope of delivery for kit 0867 594644 is correct prior to installation.

Part number	Quantity	Description
7910 867700 EN	1	Additional Instructions
0867 494384	1	I/O Link master
0867 594434	1	Holder with sensor
9202 002497	1	Screw M5x16
9225 201810	1	Countersunk screw M4x20
9874 867003	1	Cable

2 Assembling the PQ sensor

WARNING



Possible risk of injury due to moving and cutting parts!

Cutting and puncture possible.

Assembly **ONLY** with the machine switched off.

NOTICE

Property damage may occur!

Cables may become damaged and impair the operation of the machine.

Always lay the cables so as not to create any chafing or pinching points.

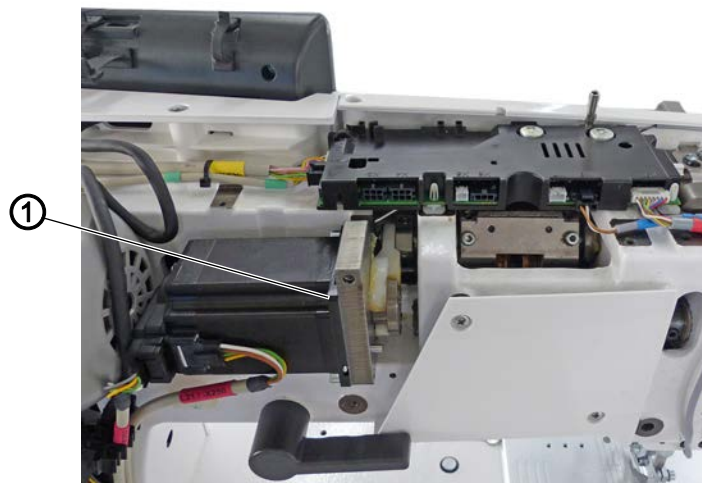
NOTICE

Property damage may occur!

Damage to the lens of the sensor possible.

ALWAYS clean the sensor carefully with a soft cloth. **DO NOT** use cleaning agents.

Fig. 1: Assembling the PQ sensor (1)



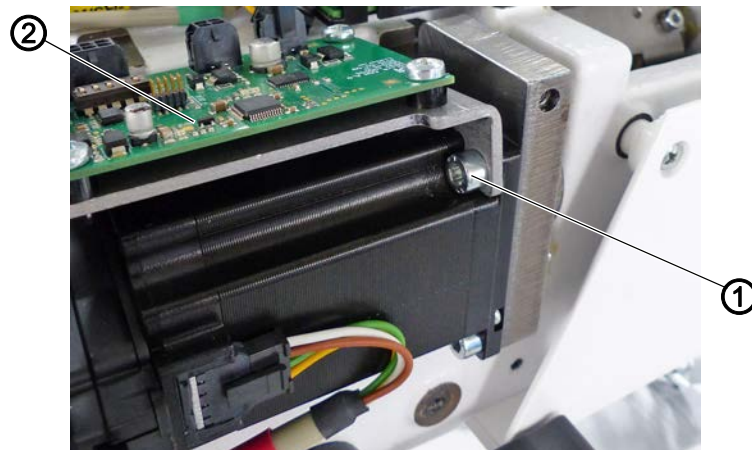
(1) - Screw

How to mount the PQ sensor:



1. Switch off the machine and disconnect it from the power supply.
2. Disassemble head cover, arm cover, motor cover.
3. Loosen screw (1).

Fig. 2: Assembling the PQ sensor (2)



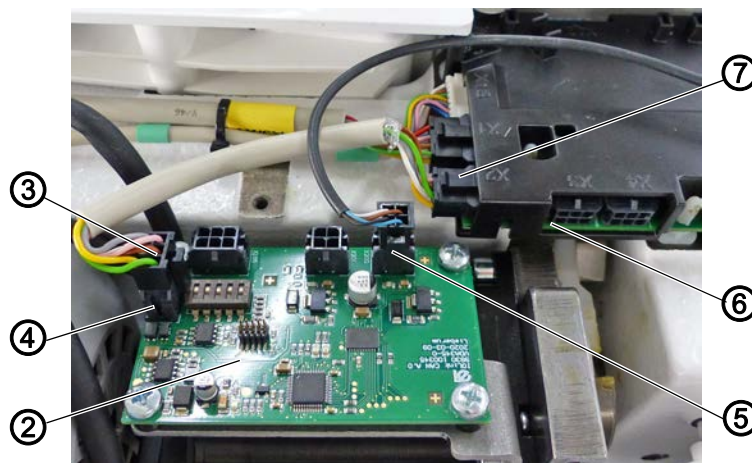
(2) - PCB

(1) - Screw



4. Screw down the PCB (2) with screw (1).
ATTENTION: The PCB (2) must be at an angle.

Fig. 3: Assembling the PQ sensor (3)



(2) - PCB
(3) - Plug
(4) - Slot

(5) - Plug
(6) - PCB
(7) - Plug

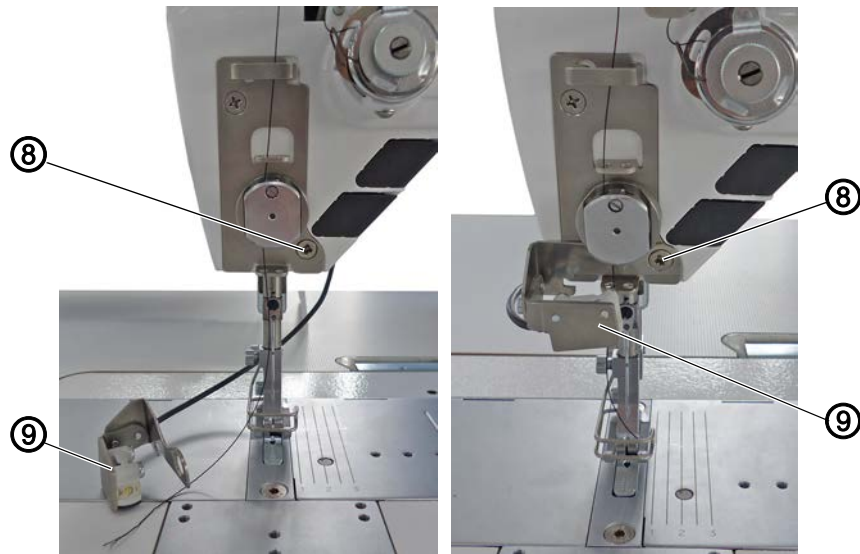


5. Connect PCB (2) to the PCB (6): Insert plug (3) of the cable into slot (4) of the PCB (2) and plug (7) of the cable into slot of the PCB (6).
6. Place cover on the PCB (2).



7. Insert plug (5) of the PQ sensor cable into the PCB (2).

Fig. 4: Mounting the PQ sensor (4)



(8) - Screw

(9) - PQ sensor



8. Loosen screw (8).

9. Tighten PQ sensor (9) with screw (8).

10. Lay cable of the PQ sensor (9) in the machine, if necessary fix it with cable ties, avoiding crushing and chafing points.

11. Reinstall motor cover, arm cover and head cover.



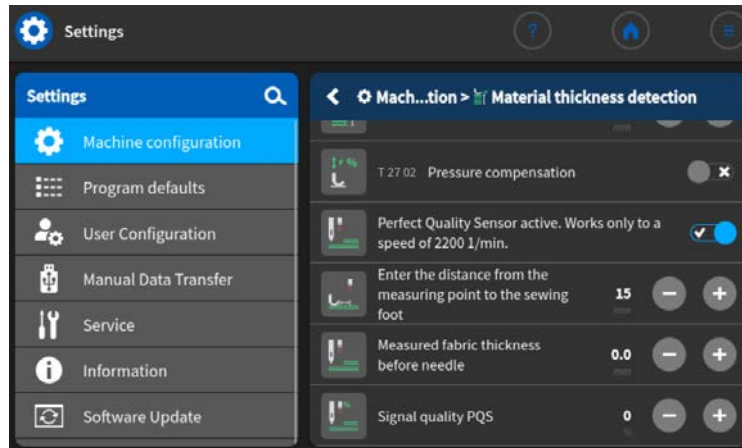
Important

Clean underside of the sensor daily with a soft cloth; this is the only way to ensure reliable operation.

3 Settings in the software

3.1 Activating the PQ sensor

Fig. 5: Activation of the PQ sensor (1)

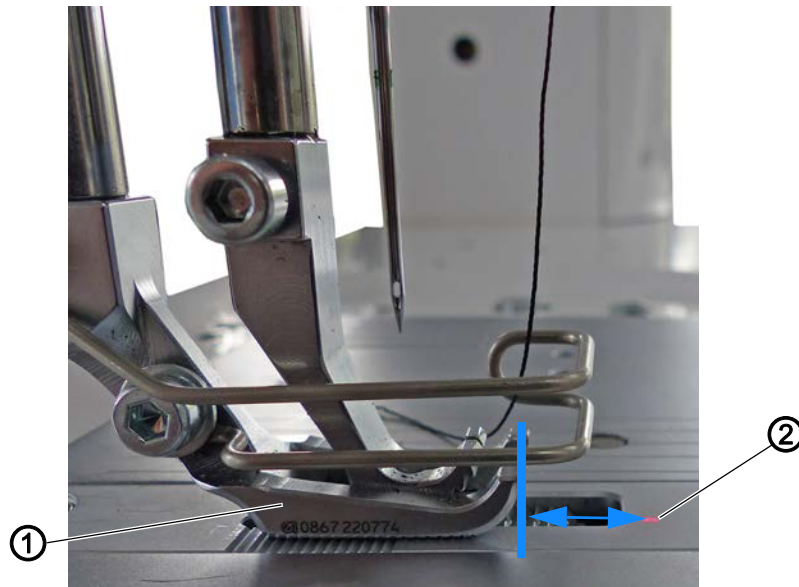


To activate the PQ sensor:



1. Activate sensor under *Machine Configuration - Material Thickness Detection - Perfect Quality Sensor*.

Fig. 6: Activation of the PQ sensor (2)



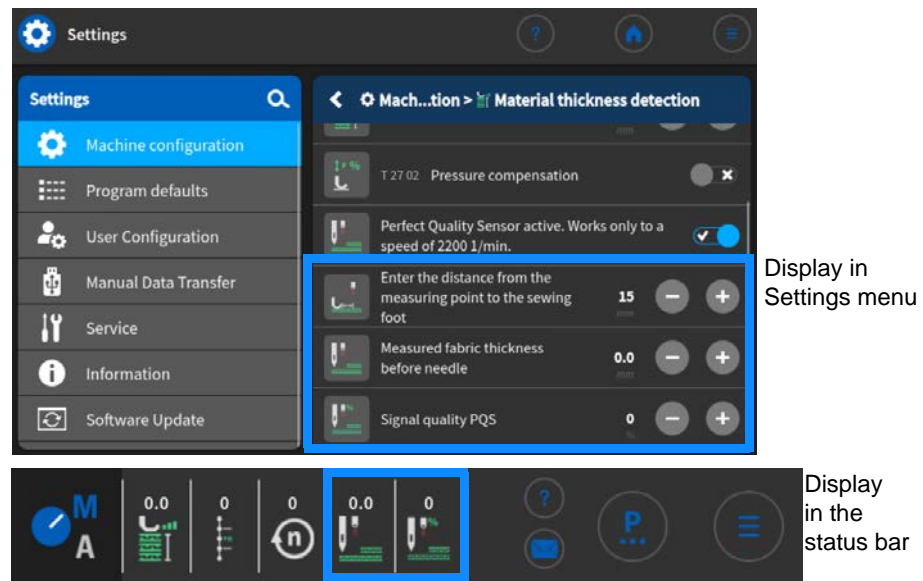
(1) - Presser foot

(2) - Light spot+



2. Measure distance between red light spot (2) and the front edge of the presser foot (1).
3. Enter the measured value in the software under *Enter distance from measuring point to sewing foot*.

Fig. 7: Activation of the PQ sensor (3)



Important

After the machine is switched on, the PQ sensor calibrates itself. There must be nothing in the area of the red measuring point on the throat plate.

The sensor requires a warm-up time of at least 10 minutes for proper measurement. If the machine was switched off for a relatively long period of time, the sensor might not function properly during the warm-up time.

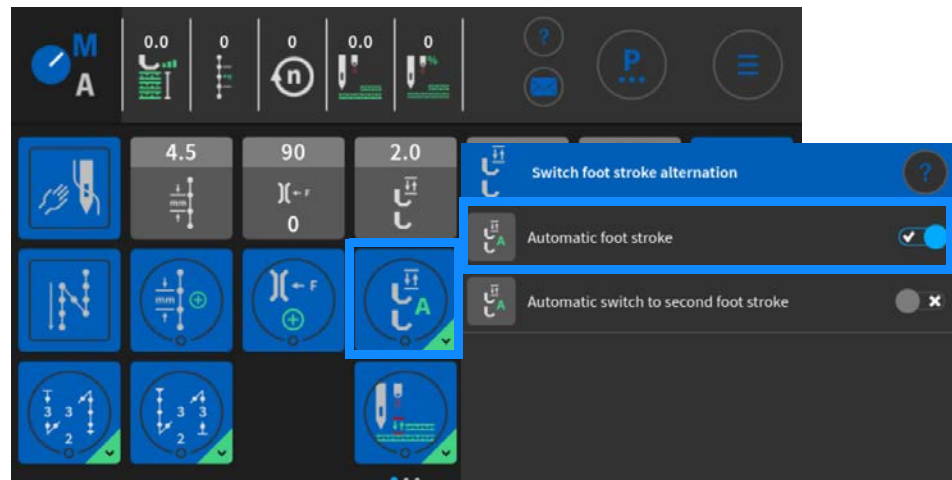
3.2 Setting the PQ sensor (manual mode)

In manual mode, all options can be activated and deactivated individually via the corresponding tiles.

3.2.1 Automatic sewing foot stroke

If the PQ sensor detects a change in the thickness of the sewing material, the sewing foot stroke is automatically adjusted. The adjustment is made depending on the set sewing foot stroke and the measured change in thickness of sewing material.

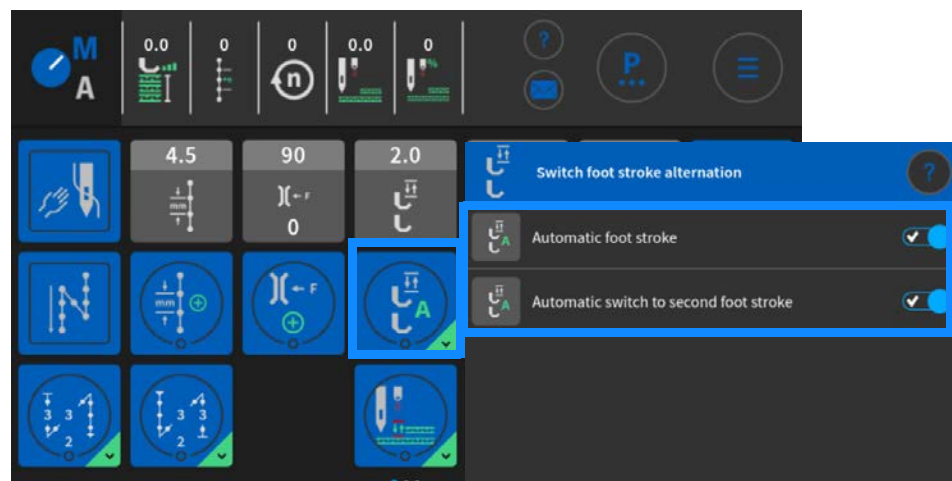
Fig. 8: Automatic sewing foot stroke



3.2.2 Automatic sewing foot stroke with switchover to 2nd stroke height

If the PQ sensor detects a change in thickness of sewing material, the sewing foot stroke is automatically switched to the set 2nd stroke height.

Fig. 9: Automatic sewing foot stroke with switchover to 2nd stroke height

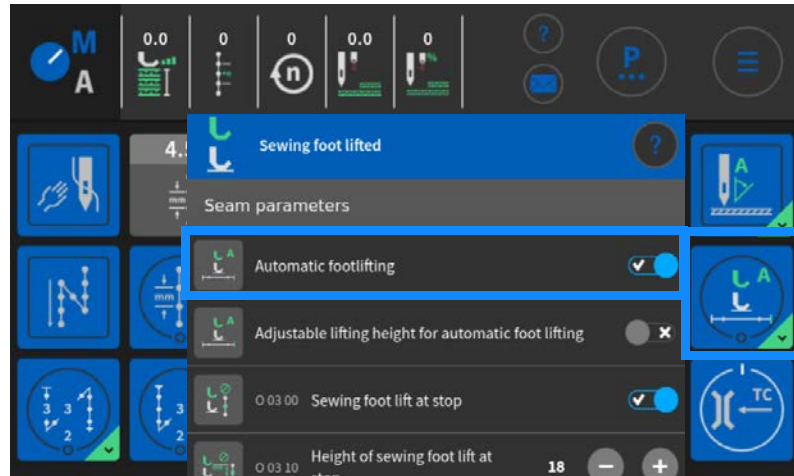


3.2.3 Automatic sewing foot lift

Adjusted to the thickness of the sewing material, the sewing feet are automatically lifted when the sewing material is inserted. The height of the sewing foot is only adjusted upward at other measured values while the sewing material is being inserted.

When the pedal is pressed, the sewing feet are lowered and the sewing process starts.

Fig. 10: Automatic sewing foot lift

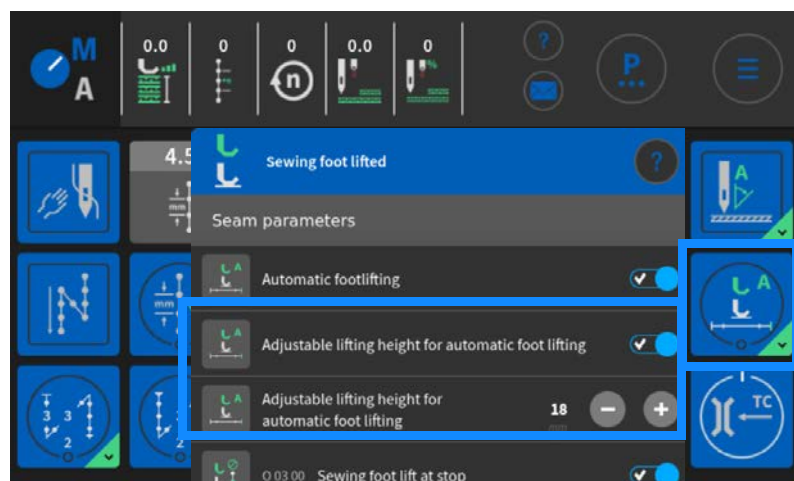


3.2.4 Automatic sewing foot lift with adjustable lifting height

The ventilation height of the sewing feet when the sewing material is being inserted can be preset to a value from 1 to 20.

When the pedal is pressed, the sewing feet are lowered and the sewing process starts.

Fig. 11: Automatic sewing foot lift with adjustable lifting height

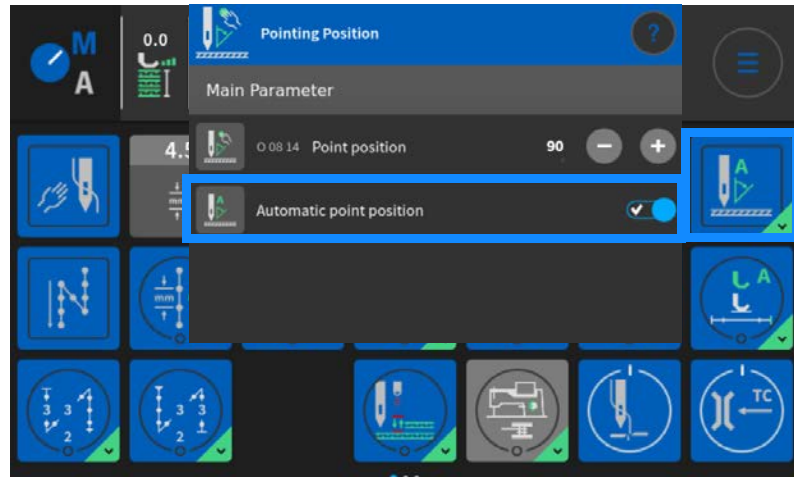


3.2.5 Automatic initial alignment stitch position

When the material is being inserted, the thickness of sewing material is detected and the needle position is adjusted to the thickness of the sewing material. The needle is positioned slightly above the sewing material. The height of the needle is only adjusted upwards for other measured values while the sewing material is being inserted.

When the pedal is pressed, the sewing feet are lowered and the sewing process starts.

Fig. 12: Automatic initial alignment stitch position



3.2.6 Checking the height limit

A limit value can be entered for the maximum sewing material thickness. The sewing process does not start if the limit value is exceeded. During sewing, the machine stops if the limit value is exceeded.

Fig. 13: Checking the height limit



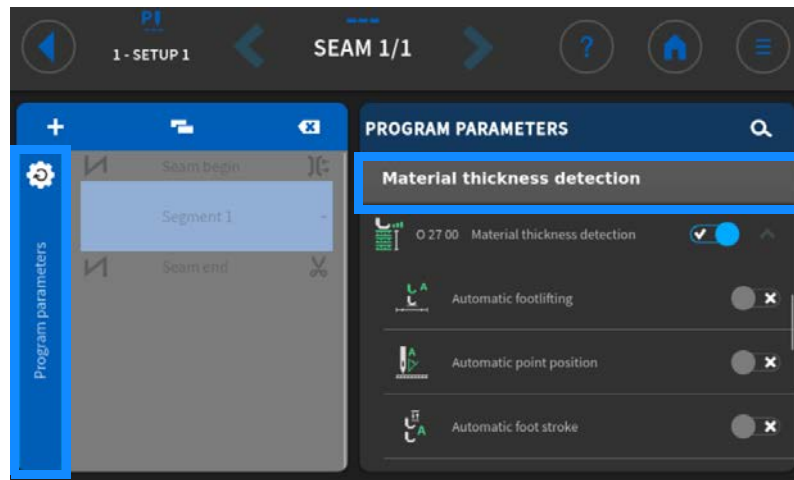
3.2.7 Function of the light barriers

The PQ sensor detects the end of the sewing material. The light barrier function for seam end detection can therefore be used without restriction.

3.3 Setting the PQ sensor (automatic mode)

In automatic mode all options can be activated and deactivated in the global program parameters. These are accessible via the following path: *Automatic Mode - Parameters - Program Parameters - Material Thickness Detection*

Fig. 14:



The explanation of the individual options can be found in the description for setting the PQ sensor in manual mode.



DÜRKOPP ADLER GmbH
Potsdamer Str. 190
33719 Bielefeld
Germany
Phone: +49 (0) 521 925 00
Email: service@duerkopp-adler.com
www.duerkopp-adler.com