FIFE GUIDING SOLUTIONS

MAXCESS

FIFE

FIFE SE-26B

Operating Instructions

EN

Line Guide Sensor

MI 1085 1

1 INSTRUCTION

About these operating instructions

These operating instructions describe the installation, commissioning, operation and maintenance of the SE-26B line sensor and provide important instructions for proper use.

These operating instructions are intended for both the system construction master as well as the operator who uses the SE-26B sensor in production. The Operating Instructions must be read and applied by everyone who is responsible for installation, commissioning, operating or maintaining the SE-26B sensor.

The Operating Instructions must be carefully kept and must always be available throughout the service life of the SE-26B sensor.

Translation of the original Operating Manual:
This Operating Manual is a translation. The original Operating Manual was composed in German.

Proper use

The SE-26B line sensor is intended for use on machines or systems. It is used for no-contact measurements of the lateral offset of a material web that is being guided. The SE-26B sensor is suitable for

- center guiding on a thin printed line.
- edge guiding on a printed line.
- guiding on a material edge.

Guiding is also possible with dashed lines, discontinuous pattern or discontinuous edges. The free spaces between the lines or pattern must not be too large, since guiding is blocked during that time.

The SE-26B works reliably with smooth, rough, dull or glossy material surfaces. This sensor can also be used with low color contrast between the background and printed line.

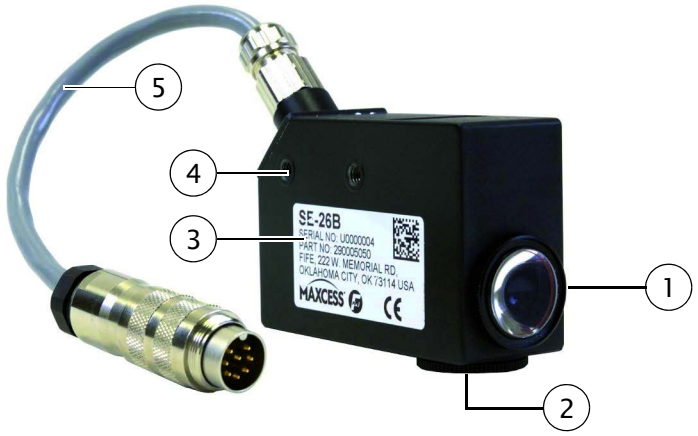
The SE-26B sensor must only be used in accordance with its intended purpose and in a technically flawless conditions.

Improper use

- Operation outside of the technical specifications is not permitted.
- Operation in areas where there is a danger of explosions is prohibited.
- Outdoor operation is not permitted.
- The SE-26B sensor may not be used as a support, handle or step.
- Any use other than the designated use is not permitted.

Operating principle

The SE-26B line sensor works with white LED light.



1 Lens
2 Cover
3 Nameplate
4 Thread for sensor bracket
5 Connection cable to a Fife controller

Figure 1.1: Line guiding sensor SE-26B

The light emitter in the SE-26B sensor generates a light spot on the surface of the material being scanned. Differences in contrast in this area will be sensed by the receiver. The difference in contrast could be produced for example by a printed line. In this case the line is the reference for control.

The lens and cover can be screwed off and replaced to change the scanning direction.

Note:
The explanation in the sections on commissioning and operation also apply to sensors SE-26 and SE-26A.

Einführung.fm

2 SAFETY INSTRUCTIONS

Important information

Problem-free and reliable operation of the SE-26B requires that the sensor

- properly shipped and stored,
- properly mounted and placed in operation,
- properly used and carefully maintained.

Proper operation and careful maintenance will ensure a long service life for the sensor.

Only persons who are acquainted with the installation, commissioning, operation and maintenance of the sensor and who possess the necessary qualifications for their activities may work on the sensor.

Please note the following:

- The content of these operating instructions
- The safety instructions printed on the unit
- The requirements of the machine manufacturer
- National, state and local requirements for accident prevention and environmental protection

Information about safety instructions

The safety instructions and symbols described in this section are used in these Operating instructions. They are used to avoid possible dangers for users and to prevent material damage.

SIGNAL WORD
Source of danger and its results.

⇨ Avoiding dangers

The signal word **WARNING** refers to the danger of moderate to sever bodily injuries.

The signal word **CAUTION** refers to the danger of slight to moderate bodily injuries or material damage.

Symbols

Warning/caution - dangerous area
Reference to general hazards that may result in bodily injuries or damage to the device

Warning/caution - danger due to crushing
Refers to danger of injury caused by crushing

Warning/caution - danger due to cutting
Refers to danger of injury caused by cutting

Additional symbols

- This endash is followed by an enumeration.
- This dot is followed by a prompt to do something.

Note:
Reference to important information.

Preventing hazards

- The SE-26B sensor may not be used as a support, handle or step. There is a danger that the sensor will become damaged (breaking off/snapping), resulting in personal injury.

Installation and commissioning

- A damaged sensor must not be installed or placed in operation.
- Assembly work must be performed while the machine is stopped and protected against being turned on again.
- All assembly tasks must only be performed when there is no electrical power in the system.
- The sensor must not be placed in operation unless it has been securely mounted.
- Electrical connections should always be made or disconnected on the sensor while there is no electrical power in the system. Failure to observe these instruction may result in damage to the sensor.

Sicherheit.fm

- The parameters specified in Section *Technical Data* must be observed.
- Only replacement parts that have been approved by Fife-Tidland may be used.
- No changes must be made to the sensor.
- Electrical lines must not be subjected to any mechanical loads.

Operation

- Danger of injury by crushing
  ⇨ Do not place your hands on or near moving parts (rollers, material web, etc.) during operation.

- Danger of injury due to cutting on the edge of the material web
  ⇨ Do not place your hands on the edge of the (moving) material web during operation.

Maintenance

- Danger of injury by crushing
  ⇨ Maintenance work must only be performed on the sensor when the power is turned off, the machine is stopped, and it is protected against being turned back on.

3 INSTALLATION

Transport and storage

- The sensor and/or the unit on which the sensor is mounted must be secured against slipping during transport.
- The sensor must be stored in a cool, dry place.
- The sensor must not be stored in the vicinity of powerful magnetic fields. The electronic components of the sensor may be damaged.

Scope of delivery

- Sensor SE-26B
  The model designation and the serial and part number are on the nameplates on the housing.
  → see item 3 in *Figure 1.1, page 1-2*
- Operating Instructions

Mounting

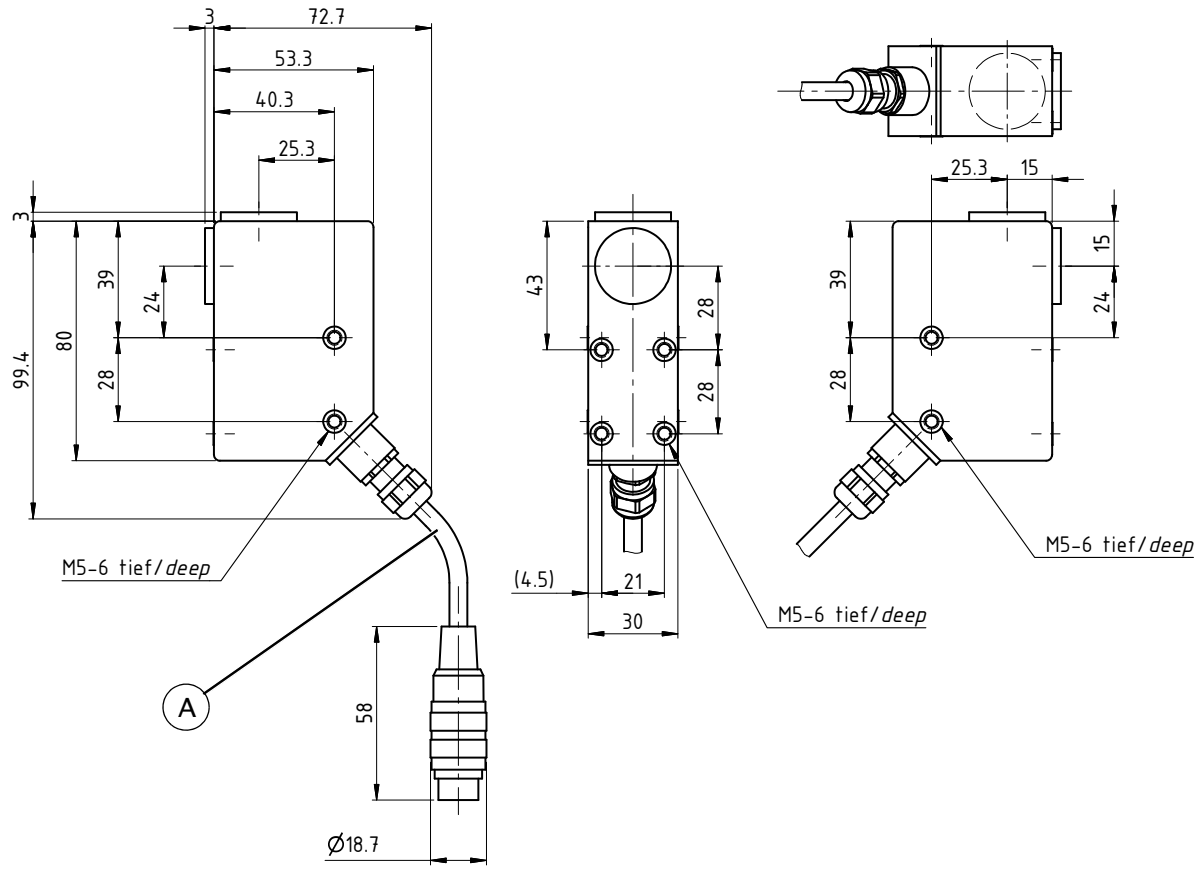
WARNING

⇨ All assembly tasks on the sensor must be performed when there is no electrical power in the system.

⇨ Assembly tasks and mechanical settings must only be performed when the machine has been stopped and has been secured from being turned on again.

Montage.fm

Dimensions



A Cable length plus connector about 300 mm

Figure 3.1: SE-26B Dimensions

Mounting location

- Protection Class: IP65
- Operating temperature: 0°C ... 50°C
- Relative humidity: 5% to 85%
- Protect from vibrations
- Not in the vicinity of strong magnetic fields
  The electronic components may be damaged.
- Not in places where there is a risk of explosions
- Distance between lens and material being scanned:
  approx. 10mm
- The material web must be guided in the area where the light spot appears (guide point) by a support rod or support roller. A plane change is not permitted.
- Protect the lens of the sensor against extraneous light.

Mechanical fastening

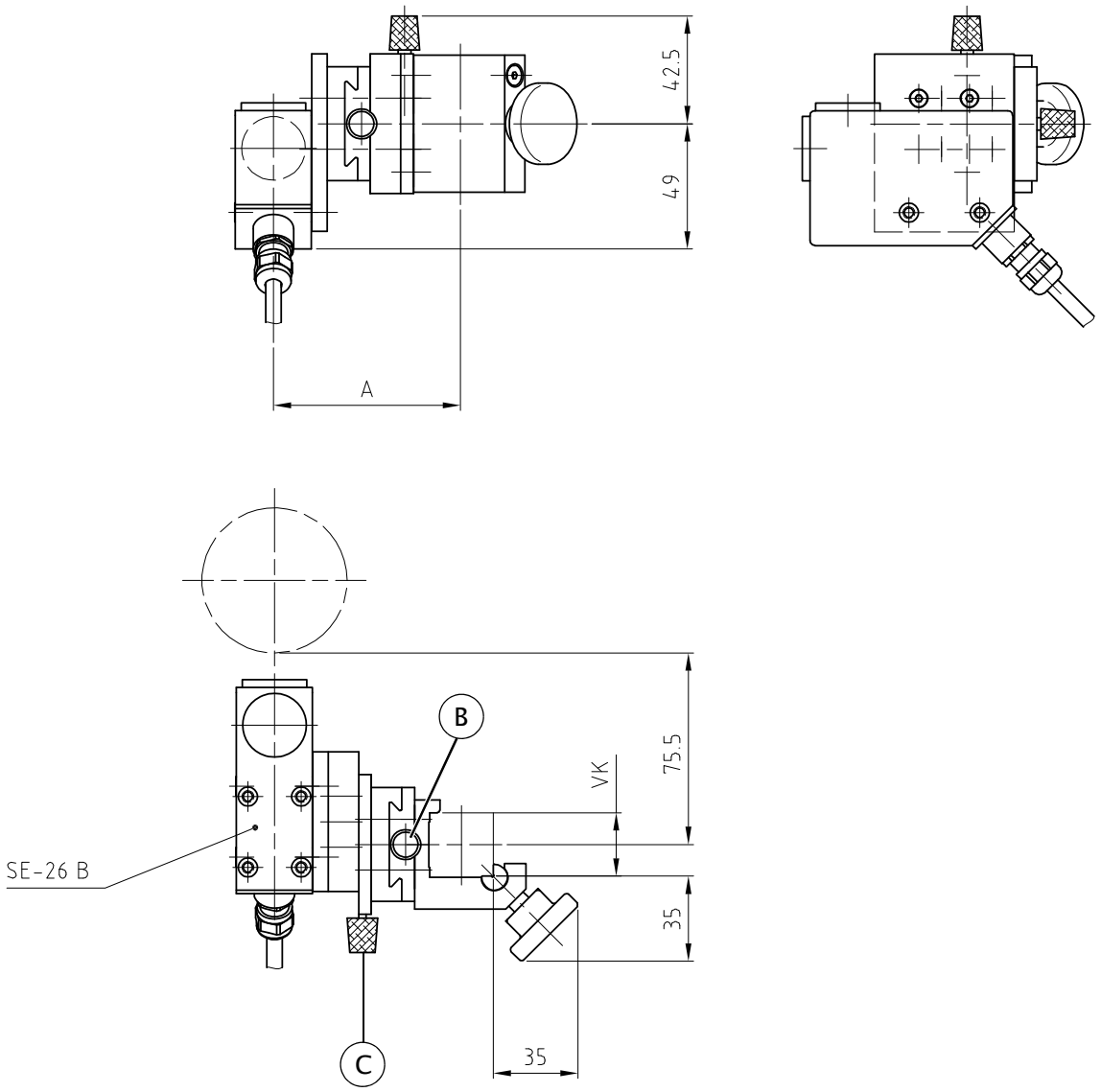
Holes with M5 threads are available on the housing for mounting the sensor (*Figure 3.1*). A large variety of assembly options are possible in connection with the various sensor mountings.

CAUTION

Using long bolts introduces the risk of a short-circuit and destroying the electronics that are located inside the housing.

Please note when assembling sensor that only the original M5*6 bolts or similar ones should be used.

Sensor bracket type MAMB



B Fine positioning C Fine adjustment for focus

Figure 3.2: SE-26B with sensor bracket MAMB

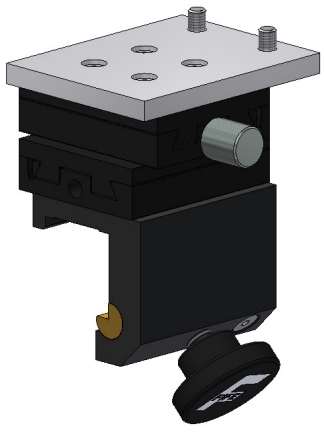
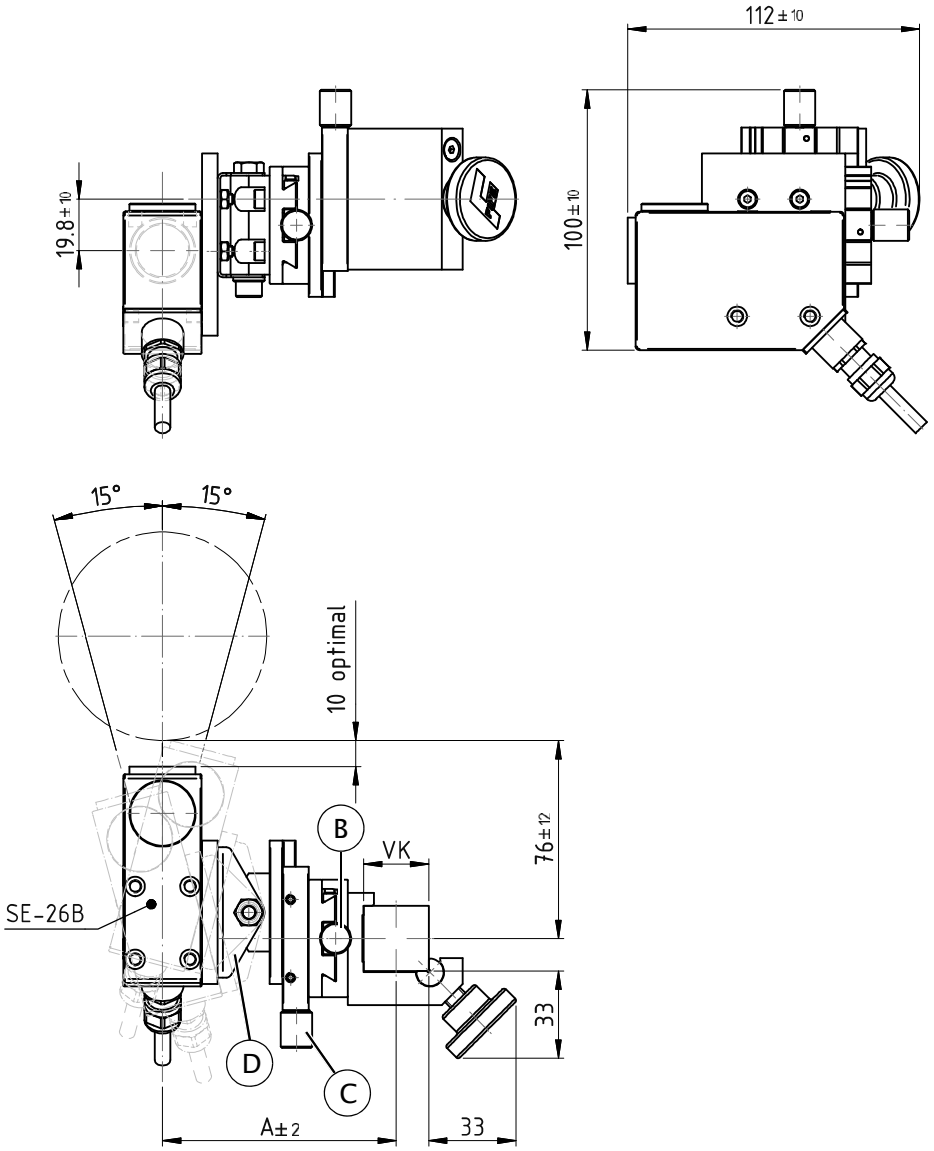


Figure 3.3: MAMB

Type	A	VK
MAMB-25 smooth	74	25
MAMB-30 smooth	78	30

Sensor bracket type MAMB SE-26B, pivoting



B Fine positioning
C Fine adjustment for focus
D Pivot point for angle setting

Figure 3.4: SE-26B with sensor bracket MAMB, pivoting

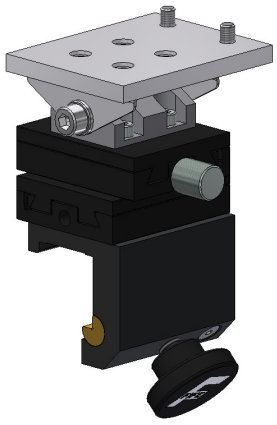


Figure 3.5: MAMB SE-26B

Type	A	VK
MAMB-25 SE-26B smooth	89,5	25
MAMB-30 SE-26B smooth	93,5	30

Montage.fm

Fine adjustment

Fine positioning

This setting allows for precise positioning of the light spot on the line/material edge being scanned.

Fine adjustment for focus

The fine adjustment of the distance between sensor and material web must be made so that the light spot appears well focused on the material web.

Changing the sensor alignment

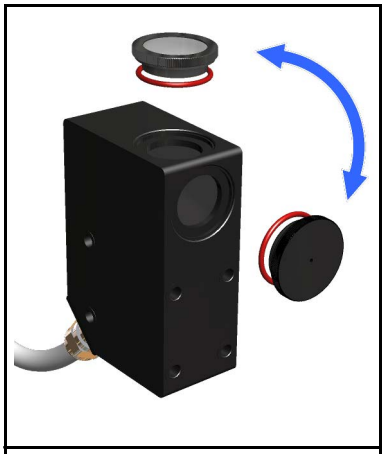


Figure 3.6: Sensor alignment

- Unscrew the lens and cover
- Replace the parts and screw them back in again

Note:
When screwing the parts in, make certain there is an O-ring under each of them.
→ See *Figure 3.6*

Mounting arrangement with different materials

Smooth non-reflective materials

- Mount the sensor perpendicular to the material web so that all of the light from the sensor is reflected into the lens

Glossy reflective materials

Examples:
Glossy laminates, metallic materials, glossy films

- Mount the sensor at an angle of 15° from perpendicular
  This will cause a portion of the sensor light to be reflected away from the lens.
  → see *Figure 3.7*

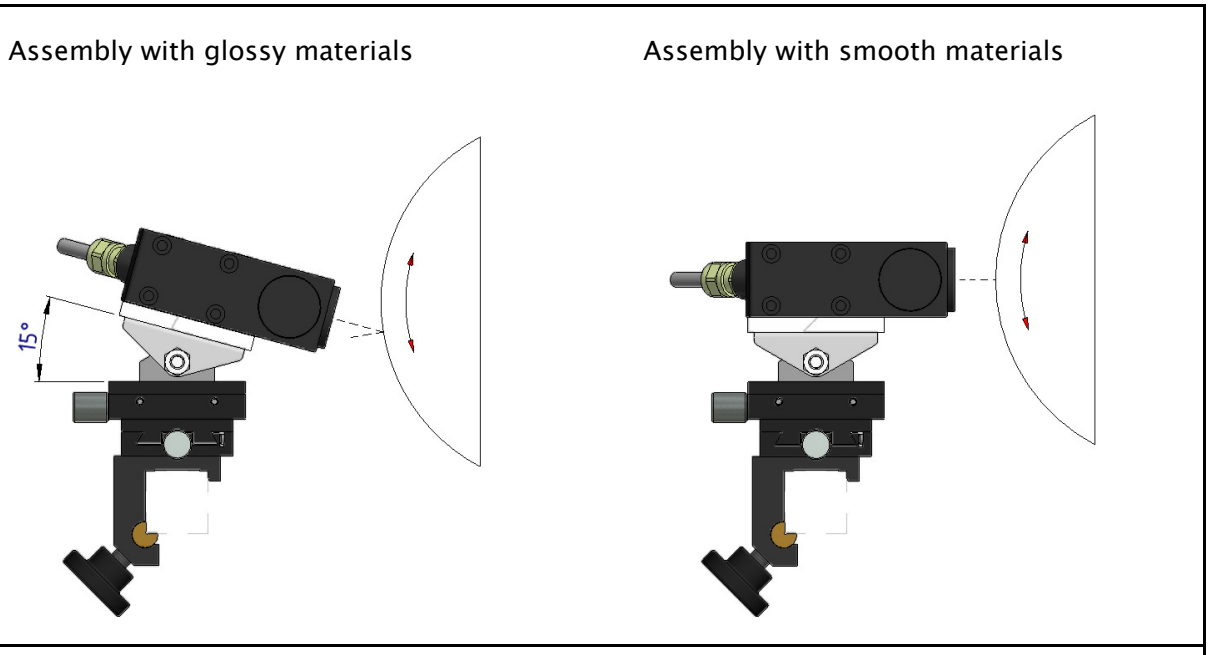


Figure 3.7: SE-26B and different material types

Electrical connection

CAUTION
The sensor could be damaged.

⇨ Electrical connections should always be made or disconnected on the sensor while there is no electrical power in the system.

⇨ Electrical lines must not be subjected to any mechanical loads.

⇨ The entire wiring, for which the installer is responsible, must meet the fundamental requirements of the relevant standard(s).

The sensor must be connected to the web guide controller according to the system diagram in the system documentation.

Montage.fm

4 COMMISSIONING

WARNING:
Before commissioning, ensure that:

⇨ Commissioning of the sensor is performed while the web is stopped.

⇨ No one is in the danger zone of the moving parts.

WARNING:
There is a risk of crushing and cutting injuries on the web material itself and/or due to the motion of the web.

⇨ Do not grasp moving parts (rollers, web, etc.) or anything close to them during commissioning.

⇨ Do not touch the edges of the material web.

Commissioning

Once all assembly and connection tasks have been checked and are in proper condition, the sensor system can be placed in operation.

Preparation of the web guide controller

The web guide controller must be prepared for use with a line sensor.

→ See the *Commissioning* section in the section describing the relevant web guide controller:
- D-MAXE with Operator Interface OI-TS (*Page 6-1*)
- D-MAXE with Operator Interface OI-N (*Page 7-1*)
- DP-20/DP-30 (*Page 8-1*)
- Fife-500 (*Page 9-1*)
- CDP-01
  → *Sensor Calibration with Line Sensor SE-26* can be found in the "CDP-01 Operating Manual."

Note:
When a complete system is delivered, the web guide controller has already been mostly calibrated in the factory. The same is not true for deliveries of individual parts or replacement parts, however.

5 OPERATION

WARNING:
Danger of injury by crushing

⇨ Do not place your hands on or near moving parts (rollers, material web, etc.) during operation.

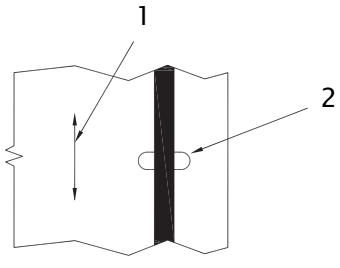
WARNING:
Danger of injury due to cutting on the edge of the material web

⇨ Do not place your hands on the edge of the (moving) material web during operation.

Selecting suitable references

The operator must select a suitable reference (a line or an edge) that can be found again unambiguously within the sensor field of view on the material web.

Line



1 Direction of motion of the material web
2 Light spot

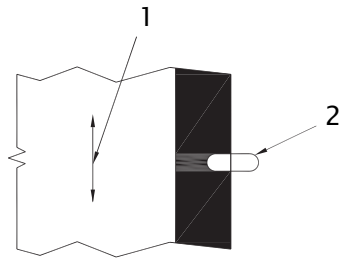
Figure 5.1: Line

The material web is guided to the center of a printed line.

- Line width between 1.3 mm and 2.5 mm
- Distance of at least 2.5 mm on both sides of the line from other edges or printing
- Thin lines very rich in contrast, even up to 0.25 mm can be used
- Lines can be continuous or broken

Betrieb.fm

Edge



1 Direction of motion of the material web
2 Light spot

Figure 5.2: Edge

The material web is guided to

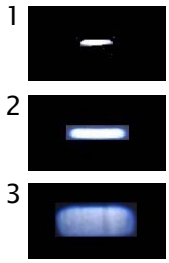
- the edge of a material on a roller or support plate.
- the edge of a continuous printed sample.
- the edge of a line that is wider than 2.5 mm and has a continuous background.

Setting up references

The reference is set up on the web guide controller to which the setup menu is connected.

Preconditions

- Position the sensor so that the desired reference is centered in the sensor field of view.
- The reference must be set up while the material web is stopped.



- The light spot of the line sensor must appear clearly and unambiguously on the material web.
  1 - No light spot, distance too small
  2 - Light spot well focused, distance correct
  3 - No light spot, distance too great
- There must be no plane change of the material web in the area of the light spot.

Set-up

Setting up the reference depends on the web guide controller in use.

→ See section *Setting up a reference* in the section describing the relevant web guide controller:
- D-MAXE with Operator Interface OI-TS (*Page 6-3*)
- D-MAXE with Operator InterfaceOI-N *(Page 7-3*)
- DP-20/DP-30 (*Page 8-3*)
- Fife-500 (*Page 9-3*)
- CDP-01
  → *Sensor Calibration with Line Sensor SE-26* can be found in the "CDP-01 Operating Manual."

6 D-MAX(E) WITH OPERATOR INTERFACE OI-TS

Preparing the controller for use

Note:
Detailed information about sensor calibration is available in the "D-MAX Operating Instructions". "Supplementary Operating Instructions“ may also be available.

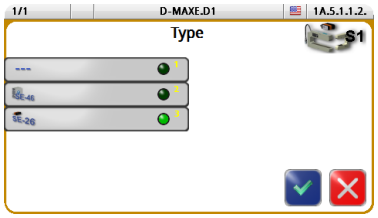
Precondition:
The SE-24B sensor is connected to the D-MAX(E) controller as specified in the system diagram to X5 or X9.

Placeholder **y**:
These places in the menu IDs depend on the currently selected job.

Select sensor type

- Press the Manual key to set the "Manual" operation mode

- Select menu 1y.5.1.1.2 *Type*
  (Press the 6 button and hold it for 2 sec. → Button 5: Hardware → Button 1: Sensors → Button Sensor S1 .. Sensor S4: select the desired sensor → Button 2: Type)



- Set the *Type* to SE-26

Selecting a reference type

Depending on the selected reference type, a distinction is made in set-up for:

- a (broken) line

or

- a material edge or (broken) print edge.

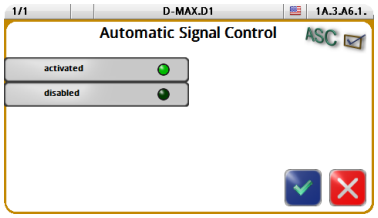
The properties of a reference are described in section *Selecting suitable references, page 5-1*.

- Select job:
  Press the 4 key until the suitable controller type for
  - Line center (menu ID J or K)
  or
  - Material edge or print edge (menu ID L or M)
  is selected

Setting up the *ASC* function with broken line/edges

Turning on ASC blocking

- Select menu 1y.3.y6.1 *ASC Automatic Signal Control*
  (Button 6 → Button 6: ASC → Button 1: ASC)



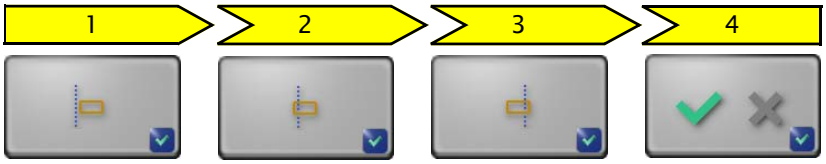
- Activate the *ASC* parameter

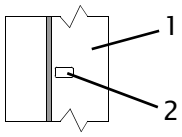
Setting up references

Setting up a (broken) line as a reference

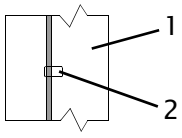
Calibrating the analog signal inputs of the D-MAX(E)

- Select menu 1y.3.y11.7.1
  (Button 6 → Button 0: *Calibrate sensor*)

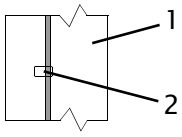




1. Determine the first reference value
   To do this position the line sensor so that the line is positioned to the left of the light spot.
   1 - Material web
   2 - Light spot



2. Determine the second reference value
   To do this position the line sensor so that the line is positioned on the left border within the light spot.



3. Determine the third reference value
   To do this position the line sensor so that the line is positioned on the right border within the light spot.

4. The result of the calibration is displayed and can be saved.

Note:
If an error occurs during the calibration, the error will appear in the menu and the calibration must be repeated.

Adjusting the D-MAX(E) web guide controller

Note:
The settings must be made for the selected job.

Setting the polarity

The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.

- Select menu 1y.3.y8
  (Button 6 → Button 8: Polarity)
- Set the *Polarity*

Setting the gain

The gain must be set optimally.

- Select menu 1y.3.y3
  (Button 6 → Button 3: Gain)
- Set the *Gain*

Set up for broken lines only

Adjusting the ASC limits

Set the values of the *ASC limits* to the range from −10% to +100%.

- Select menu 1y.3.y6. *ASC*
  (Button 6 → Button 6: ASC)

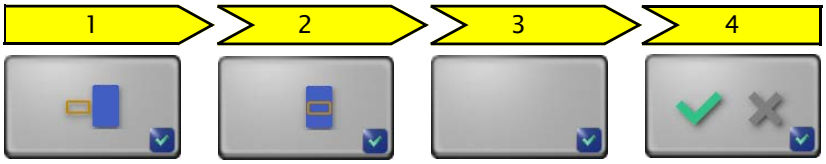
- Select menu 1y.3.y6.2 (Button 2)
  Enter threshold 1
  Typical value: +100%

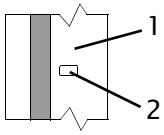
- Select menu 1y.3.y6.3 (Button 3)
  Enter threshold 2
  Typical value: −10%

Setting up a (broken) material or print edge as a reference

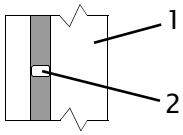
Calibrating the analog signal inputs of the D-MAX(E)

- Select menu 1y.3.y11.5.1
  (Button 6 → Button 0: *Calibrate sensor*)





1. Determine the first reference value
   To do this position the line sensor so that the light spot is positioned completely outside the reference.
   1 - Material web
   2 - Light spot



2. Determine the second reference value
   To do this position the line sensor so that the light spot is positioned completely inside the reference.
3. Optional:
   The connected sensor field of view is entered in mm or inches.
   More details on the field of view can be found in the „Supplementary Operating Instructions" or in the overview in the system documentation.
   If the value is not known, the system can accept the suggested value.
4. The result of the calibration is displayed and can be saved.

Note:
If an error occurs during the calibration, the error will appear in the menu and the calibration must be repeated.

Adjusting the D-MAX(E) web guide controller

Note:
The settings must be made for the selected job.

Setting the polarity

The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.

- Select menu 1y.3.y8
  (Button 6 → Button 8: Polarity)
- Set the *Polarity*

Setting the gain

The gain must be set optimally.

- Select menu 1y.3.y3
  (Button 6 → Button 3: Gain)
- Set the *Gain*

Set up for broken material edges or print edges only

Adjusting the ASC limits

Set the values of the *ASC limits* to the range from −90% to +90%.

- Select menu 1y.3.y6. *ASC*
  (Button 6 → Button 6: ASC)

- Select menu 1y.3.y6.2 (Button 2)
  Enter threshold 1
  Typical value: +90%

- Select menu 1y.3.y6.3 (Button 3)
  Enter threshold 2
  Typical value −90%

7 D-MAX(E) WITH OPERATOR INTERFACE OI-N

Preparing the controller for use

Note:
Detailed information about sensor calibration is available in the "D-MAX Operating Instructions". "Supplementary Operating Instructions“ may also be available.

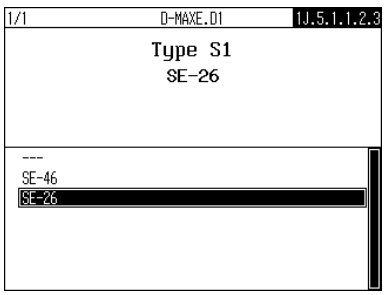
Precondition:
The SE-24B sensor is connected to the D-MAX(E) controller as specified in the system diagram to X5 or X9.

Placeholder **y**:
These places in the menu IDs depend on the currently selected job.

Select sensor type

F3 D

- Press the Manual key to set the "Manual" operation mode



- Select menu 1y.5.1.1.2 *Type*
  (Press Enter key→ Hardware IOs → Sensor Setup → Sensor S1 .. Sensor S4: select the desired sensor → Type)
- Set the *Type* to SE-26

Selecting a reference type

Depending on the selected reference type, a distinction is made in set-up for:

- a (broken) line

or

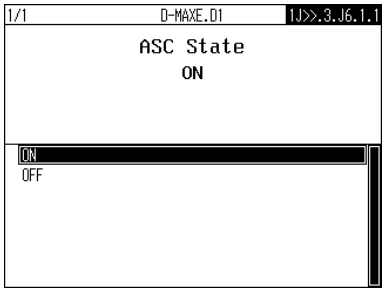
- a material edge or (broken) print edge.

The properties of a reference are described in section *Selecting suitable references, page 5-1*.

- Select job:
  Press the 4 key until the suitable controller type for
  - Line center (menu ID J or K)
  or
  - Material edge or print edge (menu ID L or M)
  is selected

Setting up the *ASC* function with broken line/edges

Turning on ASC blocking



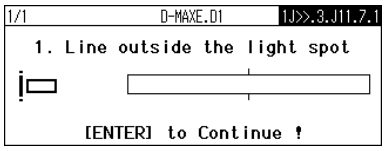
- Select menu 1y>>.3.y6.1 *ASC State*
  (F6 key → ASC State)
- set the *ASC* parameter to ON

Setting up references

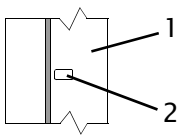
Setting up a (broken) line as a reference

Calibrating the analog signal inputs of the D-MAX(E)

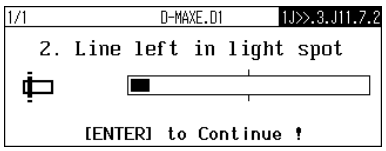
- Select menu1y>>6 zum Abgleichen
  (F6 key→ Calibration SE-26 ...)



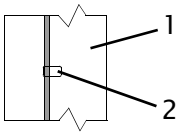
- Determine the first reference value



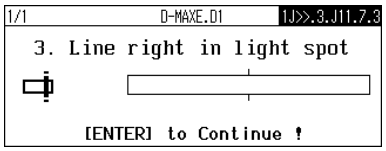
To do this position the line sensor so that the line is positioned to the left of the light spot.
1 - Material web
2 - Light spot



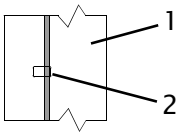
- Determine the second reference value



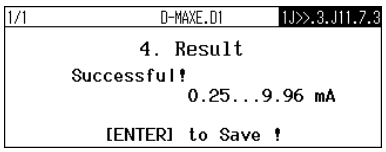
To do this position the line sensor so that the line is positioned on the left border within the light spot.



- Determine the third reference value



To do this position the line sensor so that the line is positioned on the right border within the light spot.



- The result of the calibration is displayed and can be saved.

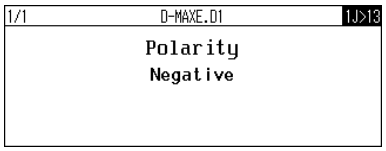
Note:
If an error occurs during the calibration, the error will appear in the menu and the calibration must be repeated.

Adjusting the D-MAX web guide controller

Note:
The settings must be made for the selected job.

Setting the polarity

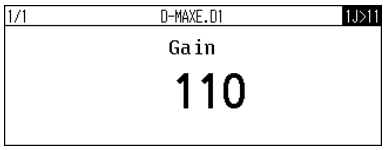
The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.



- Select menu 1y>>.3.y8
  (F6 key → Polarity)
- Set the *Polarity*

Setting the gain

The gain must be set optimally.



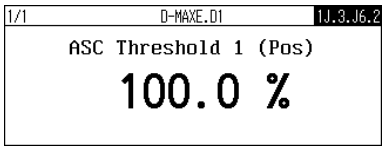
- Select menu1y>>.3.y3
  (F6 key → Gain)
- Set the *Gain*

Set up for broken lines only

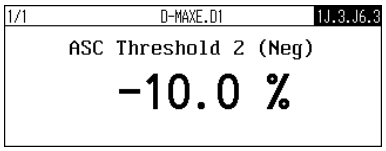
Adjusting the ASC limits

Set the values of the *ASC limits* to the range from -10% to +100%.

- Select menu 1y.3.y6. *ASC*
  (Enter key → Job Settings → ASC)



- Select menu 1y.3.y6.2
  Enter *ASC Threshold 1 (Pos)*
  Typical value:: +100%

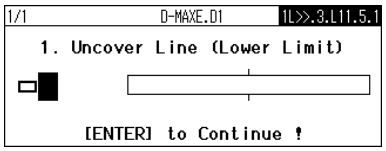


- Select menu 1y.3.y6.3
  Enter *ASC Threshold 2 (Neg)*
  Typical value: -10%

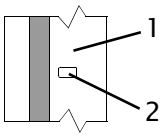
Setting up a (broken) material or print edge as a reference

Calibrating the analog signal inputs of the D-MAX(E)

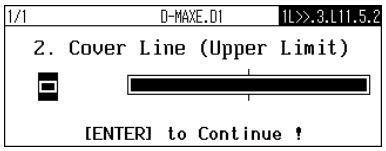
- Select menu 1y>>5 for calibration
  (F6 key→ Calibration SE-26 ...)



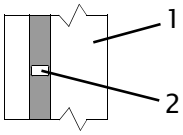
- Determine the first reference value



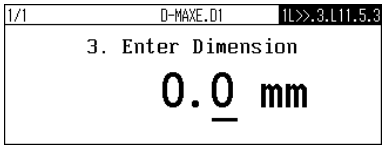
To do this position the line sensor so that the light spot is positioned completely outside the reference.
1 - Material web
2 - Light spot



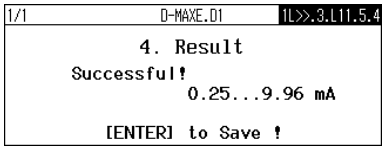
- Determine the second reference value



To do this position the line sensor so that the light spot is positioned completely inside the reference.



- Optional:
  The connected sensor field of view is entered in mm or inches.
  More details on the field of view can be found in the „Supplementary Operating Instructions" or in the overview in the system documentation.
  If the value is not known, the system can accept the suggested value.



- The result of the calibration is displayed and can be saved.

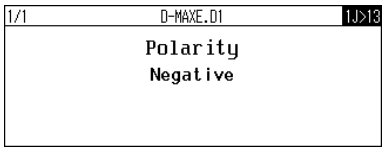
Note:
If an error occurs during the calibration, the error will appear in the menu and the calibration must be repeated.

Adjusting the D-MAX(E) web guide controller

Note:
The settings must be made for the selected job.

Setting the polarity

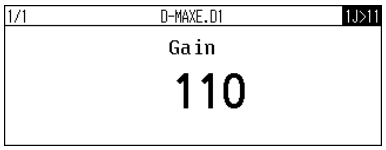
The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.



- Select menu 1y>>.3.y8
  (F6 key → Polarity)
- Set the *Polarity*

Setting the gain

The gain must be set optimally.



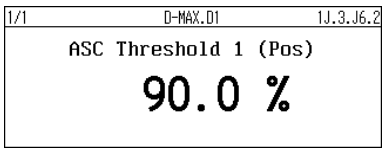
- Select menu1y>>.3.y3
  (F6 key → Gain)
- Set the *Gain*

Set up for broken material edges or print edges only

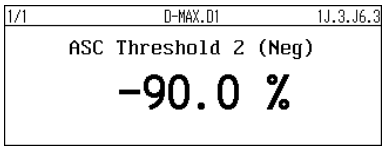
Adjusting the ASC limits

Set the values of the *ASC limits* to the range from -90% to +90%.

- Select menu 1y.3.y6. *ASC*
  (Enter key → Job Settings → ASC)



- Select menu 1y.3.y6.2
  Enter *ASC Threshold 1 (Pos)*
  Typical value: +90%



- Select menu 1y.3.y6.3
  Enter *ASC Threshold 2 (Neg)*
  Typical value: -90%

8 DP-20 / DP-30

Preparing the controller for use

Note:
Detailed information about sensor calibration is available in the "DP-20 Operating Instructions" or the "DP-30 Operating Instructions".

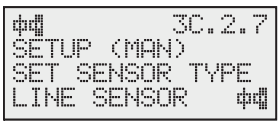
Note:
The DP-20 must be equipped with firmware version 1.05 or higher.

Precondition:
The SE-26B sensor is connected to the DP-20 web guide controller on input X4 or to the DP-30 web guide controller on input X5. The calibration described here only applies to this input.

Placeholder **x**:
These places in the menu IDs depend on the selected reference type.

Select sensor type

- Press the Manual key to set „Manual“ operating mode



- Select menu 3x.2.7 *Sensor Type*
  (Manual → Special → Set sensor type)
- Set the *sensor type* to LINE SENSOR

Selecting a reference type

Depending on the selected reference type, a distinction is made in set-up for:

- a (broken) line
  or
- a material edge or (broken) print edge.

The properties of a reference are described in section *Selecting suitable references, page 5-1*.

- Continue pressing the Sensor key until
  - Sensor line centre - ⫞ (menu 3D) or
  - Material edge or print edge ⫤ (menu 3E)

  is selected

Setting up the *ASC* function with broken line/edges

Selecting the ASC Source

- DP-20 controller: select menu 3x.5.3
  DP-30 controller: select menu 3x.5.4
  (Manual → Custom → ASC Source)
- As ASC source select Line sensor - Line edge ⫤

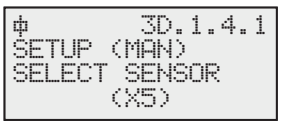
Switching on ASC Control

- DP-20 controller: select menu 3x.5.1
  DP-30 controller: select menu 3x.5.2
  (Manual → Custom → ASC Control)
- Set the status of *ASC Control* to ON

Setting up references

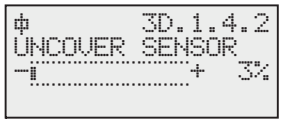
Setting up a (broken) line as a reference

Calibrating the analog signal inputs of the DP-20 / DP-30

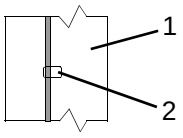


- Select menu 3D.1.4.1 *Select sensor*
  (Manual → Basic → Calibration → Select Sensor)
- DP-20 controller: select (X4)
  DP-30 controller: select (X5)
  (line sensor - line centre ⌖)

- Press the ENTER key



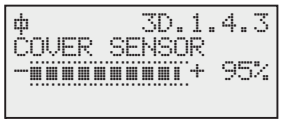
- Determine the first reference value



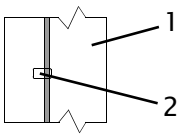
To do this position the line sensor so that the line is positioned on the left border within the light spot.

1 - Material web
2 - Light spot

- Press the ENTER key
  Wait a few seconds. The reference value will be determined.

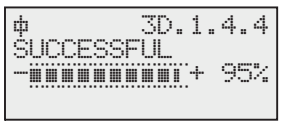


- Determine the second reference value



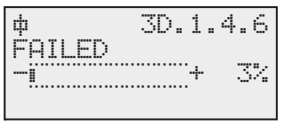
To do this position the line sensor so that the line is positioned on the right border within the light spot.

- Press the ENTER key
  The result will be determined.



The DP-20 / DP-30 web guide controller will return to the operator area if the calibration is successful.

OR



If there is not enough contrast for control, “FAILED” appears in the display.

- Cancel entries

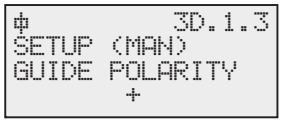
Calibration of the sensor must be repeated until the process can be successfully completed.

Adjusting the DP-20 / DP-30 web guide controller

Note:
The settings must be made for reference type D - line center ⌖.

Setting the polarity

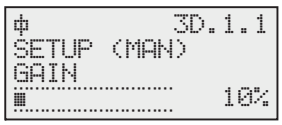
The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.



- Select menu 3D.1.3
  (Manual → Basic → Polarity)
- Set the *Polarity*

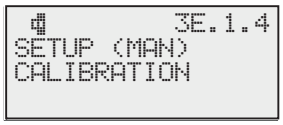
Setting the gain

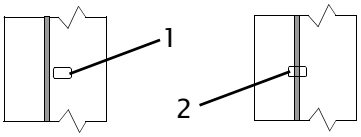
The gain must be set optimally.



- Select menu 3D.1.1
  (Manual → Basic → Gain)
- Set the *Gain*

Set up for broken lines only

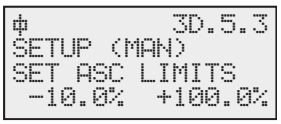




- Calibrate a material edge or print edge.
  → see *Calibrating the analog signal inputs of the DP-20 / DP-30, page 8-5*

  Position the sensor and line as follows for this calibration:
  1. first reference value „Uncover sensor“
  2. second reference value „Cover sensor“

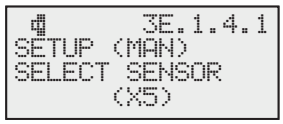
Set the ASC limits.



- DP-20 controller: Select menu 3D.5.2
  DP-30 controller: Select menu 3D.5.3
  (Manual → Custom → ASC Limits)
- Set the values of the *ASC limits*
  typical values: -10% and +100%

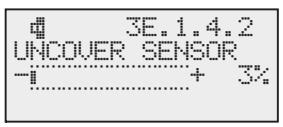
Setting up a (broken) material or print edge as a reference

Calibrating the analog signal inputs of the DP-20 / DP-30

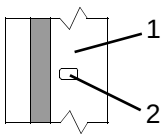


- Select menu 3E.1.4.1 *Select sensor*
  (Manual → Basic → Calibration → Select sensor)
- DP-20 controller: select (X4)
  DP-30 controller: select (X5)
  (line sensor - print or material edge)

- Press the ENTER key



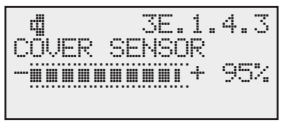
- Determine the first reference value



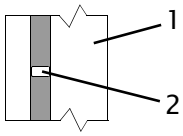
To do this position the line sensor so that the light spot is positioned completely outside the reference.

1 - Material web
2 - Light spot

- Press the ENTER key
  Wait a few seconds. The reference value will be determined.

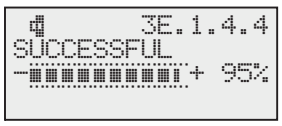


- Determine the second reference value



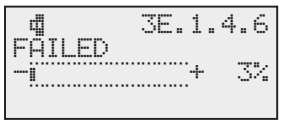
To do this position the line sensor so that the light spot is positioned completely inside the reference.

- Press the ENTER key
  The result will be determined.



The DP-20 / DP-30 web guide controller will return to the operator area if the calibration is successful.

OR



If there is not enough contrast for control, “FAILED” appears in the display.

- Cancel entries

Calibration of the sensor must be repeated until the process can be successfully completed.

Adjusting the DP-20 / DP-30 web guide controller

Note:
The settings must be made for reference type E – line edge .

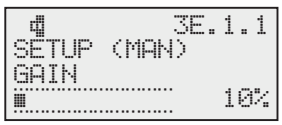
Setting the polarity

The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.

- Select menu 3E.1.3
  (Manual → Basic → Polarity)
- Set the *Polarity*

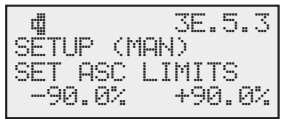
Setting the gain

The gain must be set optimally.



- Select menu 3E.1.1
  (Manual → Basic → Gain)
- Set the *Gain*

Set up for broken material edges or print edges only



Set the *ASC limits*.

- DP-20 controller: Select menu 3E.5.2
  DP-30 controller: Select menu 3E.5.3
  (Manual → Custom → ASC Limits)
- Set the values of the *ASC limits*
  typical values: -90% and +90%

9 FIFE-500

Preparing the controller for use

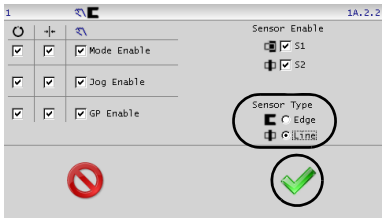
Note:
Detailed information about sensor calibration is available in the „FIFE-500 Operating Instructions“.

Precondition:
The SE-46C sensor must be connected to the FIFE-500 web guide controller according to the system diagram in the system documentation.

Placeholder **x**:
These places in the menu IDs depend on the selected reference type.

Select sensor type

- Press the Manual button to set „Manual“ operating mode



- Select menu 1x.2.2 *Control Options*
  (Setup button → Right Arrow button → Control Options button)
- Set the *sensor type* to **Line**
- Press the ENTER button

- Press the RETURN button to return to the operator level

Selecting a reference type

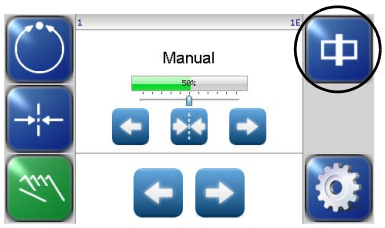
Depending on the selected reference type, a distinction is made in set-up for:

- a (broken) line

or

- a material edge or (broken) print edge.

The properties of a reference are described in section *Selecting suitable references, page 5-1*.



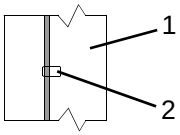
- Press the SENSOR key until the suitable controller type for
  - Line center (menu ID E)
  or
  - Material edge or print edge (menu ID D)
  is selected.

Setting up references

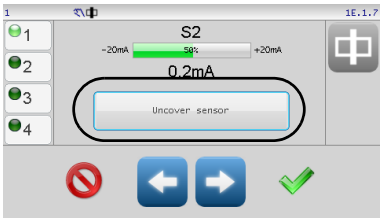
Setting up a (broken) line as a reference

Calibrating the analog signal inputs of the FIFE-500

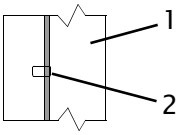
- Select menu 1E.1.7 *Sensor Setup*
  (Setup button → Sensor Setup button)
- Press the "Start Calibration" button



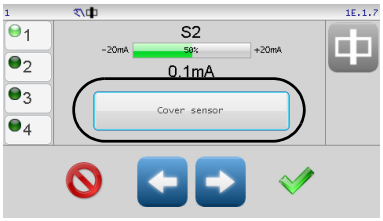
- first reference value
  To do this position the line sensor so that the line is positioned on the left border within the light spot.
  1 - Material web
  2 - Light spot



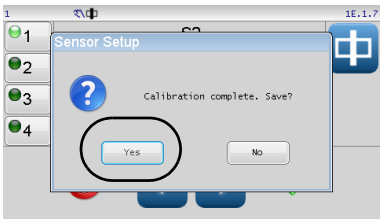
- Press the "Uncover sensor" key to determine the first reference value



- second reference value
  To do this position the line sensor so that the line is positioned on the right border within the light spot.



- Press the "Cover sensor" key to determine the second reference value



- Press the YES button to save the calibration

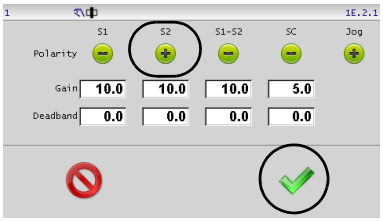
Note:
If an error occurs during the calibration, the error will appear in the menu and the calibration must be repeated.

Adjusting the FIFE-500 web guide controller

Note:
The settings must be made for sensor mode E - line center (S2).

Setting the polarity

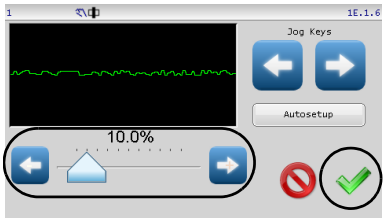
The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.



- Select menu 1E.2.1
  (Setup button → Right Arrow button → Guide Settings button)
- Set the *polarity* for S2
- Press the ACCEPT button to exit menu

Setting the gain

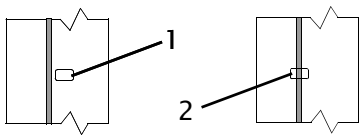
The gain must be set optimally.



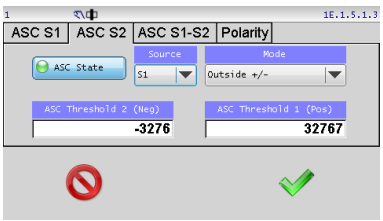
- Select menu 1E.1.6.
  (Setup button → Gain button)
- Set the *Gain*
- Press the ACCEPT button to exit menu

Set up for broken lines only

- Calibrate a material edge or print edge.
  → See *Calibrating the analog signal inputs of the FIFE-500, page 9-5*



Position the sensor and line as follows for this calibration:
1. first reference value „Uncover sensor“
2. second reference value „Cover sensor“



- Select menu 1E.1.5.1.3
  (Setup button → ASC button→ ASC Settings button)
- Select the **ASC S2** tab
- Activate **ASC State** (LED green)
- Select **S1** source

- Select **Outside** +/- mode
- Set ASC Threshold 1 (Pos)
  typical value: **32767** (+100%)
- Set ASC Threshold 2 (Neg)
  typical value: -**3276** (-10%)

- Press the ACCEPT button to exit menu

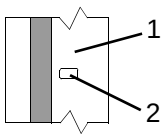
- Press ASC ON button

The "ASC ON" symbol appears in the menu header and in the operator level

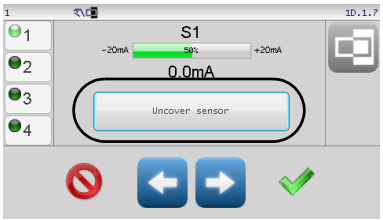
Setting up a (broken) material or print edge as a reference

Calibrating the analog signal inputs of the FIFE-500

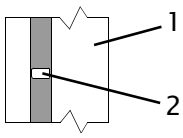
- Select menu 1D.1.7 *Sensor Setup*
  (Press Setup button → Press Sensor Setup button)
- Press the "Start Calibration" button



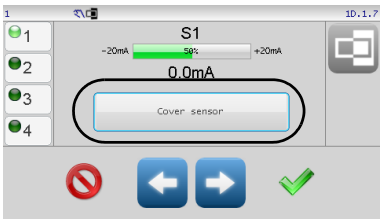
- first reference value
  To do this position the line sensor so that the light spot is positioned completely outside the reference.
  1 - Material web
  2 - Light spot



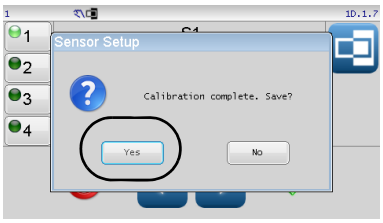
- Press the "Uncover sensor" key to determine the first reference value



- second reference value
  To do this position the line sensor so that the light spot is positioned completely inside the reference.



- Press the "Cover sensor" key to determine the second reference value



- Press the YES button to save the calibration

Note:
If an error occurs during the calibration, the error will appear in the menu and the calibration must be repeated.

Adjusting the FIFE-500 web guide controller

Note:
The settings must be made for sensor mode D - Material edge or print edge (S1)

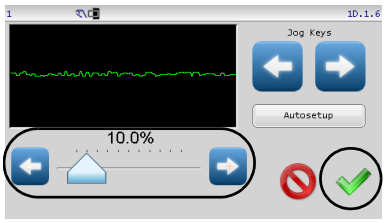
Setting the polarity

The guiding direction (polarity) must be checked depending on the mechanical installation direction of the system and adjusted if necessary.

- Select menu 1D.2.1
  (Setup button → Right Arrow button → Guide Settings button)
- Set the *polarity* for S1
- Press the ACCEPT button to exit menu

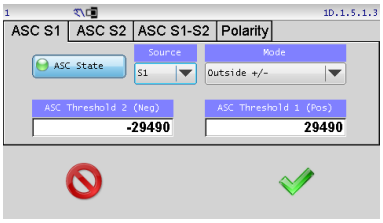
Setting the gain

The gain must be set optimally.



- Select menu 1D.1.6.
  (Setup button → Gain button)
- Set the *Gain*
- Press the ACCEPT button to exit menu

Set up for broken material edges or print edges only



- Select menu 1D.1.5.1.3
  (Setup button → ASC button→ ASC Settings button)
- Select the **ASC S1** tab
- Activate **ASC State** (LED green)
- Select **S1** source
- Select **Outside** +/- mode
- Set ASC Threshold 1 (Pos)
  typical value: **29490** (+90%)
- Set ASC Threshold 2 (Neg)
  typical value: -**29490** (-90%)

- Press the ACCEPT button to exit menu

- Press ASC ON button

  The "ASC ON" symbol appears in the menu header and in the operator level

10 MAINTENANCE

WARNING:
Danger of injury by crushing.

⇨ Maintenance work must only be performed on the sensor when the power is turned off and the machine is stopped and protected against being turned on again.

Maintenance

No regular maintenance is required on the sensor.

Cleaning

Depending on the amount of ambient dirt and dust, the lens should be cleaned regularly with a lint-free cloth.

Note:
No aggressive cleaning agents can be used. This could cause the sensor to be damaged.

Decommissioning

- Turn off the electrical power to the system.
- Disconnect the signal cable from the sensor.
- Unscrew the sensor from its bracket.
- Store the sensor in a cool, clean and dry place.

  OR

  Dispose of the sensor according to your national requirements.

Wartung.fm

11 TROUBLESHOOTING

Fault description	Probable cause	Solution
No Light Spot	Cable connection loose.	Check the cable connections on the sensor and on the web guide controller
	No power to Fife guiding controller.	Check the power supply on the web guide controller

12 TECHNICAL DATA

General information

Supply voltage

+/-12V supply from Fife controller

Supply current

50mA, +12V
40mA, -12V

Sensor Output

Line guiding: -20mA bis +20mA
Edge guiding: -20mA bis +10mA

Ambient conditions

Operating: 0°C - 50°C
Storage: 0°C - 80°C
Relative humidity: 5% - 85%

Dimension

see *Figure 3.1, page 3-2*

Enclosure

IP65

Climatic class

3K3 (EN 60721)

Pollution degree

2 (IEC 664-1)

Optical properties

Illumination

white light

Light source

LED
100 000 lifetime hours

Light Spot Size

1,2 x 4,2mm

optimal distance between lens and material web

10mm

TechnDaten.fm

Standards

The sensor was constructed in accordance with the standards and regulations of the European Union. A Declaration of Conformity is available.

13 SERVICE

Requests for Service

When requesting service, please have a copy of the order confirmation ready with the order number.

When requesting replacement parts, please indicate also the part numbers, drawing numbers, model descriptions and configuration number.

Please be careful to keep all documents accompanying the product in a safe place. This will allow us to help you more quickly in the event that service is required.

Adresses

To request service, or if you need replacement parts, please contact one of the following addresses.

Fife-Tidland GmbH

Max-Planck-Straße 8
65779 Kelkheim
Deutschland

Siemensstraße 13-15
48683 Ahaus
Deutschland

Telefon: +49 - 6195 - 7002 - 0
E-Mail: service@maxcess.eu
Web: www.maxcess.eu

Maxcess

222 West Memorial Road
Oklahoma City, OK 73114, USA
Telefon: +1 - 405 - 755 - 1600
E-Mail: service@maxcessintl.com
Web: www.maxcessintl.com

Service.fm

MAXCESS

EUROPE, MIDDLE EAST AND AFRICA
Tel +49.6195.7002.0
sales@maxcess.eu
www.maxcess.eu

NORTH, CENTRAL AND SOUTH AMERICA
Tel +1.405.755.1600
sales@maxcessintl.com
www.maxcessintl.com

CHINA
Tel +86.756.881.9398
info@maxcessintl.com.cn
www.maxcessintl.com.cn

JAPAN
Tel +81.43.421.1622
japan@maxcessintl.com
www.maxcess.jp

INDIA
Tel +91.22.27602633
india@maxcessintl.com
www.maxcess.in

ValleyRoller WEBEX FIFE TIDLAND MAGPOWR