

Your Global Automation Partner

TURCK

RA-SAB-5-....

Spring Arms

Instructions for Use

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1 About these instructions

These instructions for use describe the structure, functions and the use of the product and will help you to operate the product as intended. Read these instructions carefully before using the product. This is to avoid possible damage to persons, property or the device. Retain the instructions for future use during the service life of the product. If the product is passed on, pass on these instructions as well.

1.1 Target groups

These instructions are aimed at qualified personal and must be carefully read by anyone mounting, commissioning, operating, maintaining, dismantling or disposing of the device.

1.2 Explanation of symbols used

The following symbols are used in these instructions:



DANGER

DANGER indicates a dangerous situation with high risk of death or severe injury if not avoided.



WARNING

WARNING indicates a dangerous situation with medium risk of death or severe injury if not avoided.



CAUTION

CAUTION indicates a dangerous situation of medium risk which may result in minor or moderate injury if not avoided.



NOTICE

NOTICE indicates a situation which may lead to property damage if not avoided.



NOTE

NOTE indicates tips, recommendations and useful information on specific actions and facts. The notes simplify your work and help you to avoid additional work.



CALL TO ACTION

This symbol denotes actions that the user must carry out.



RESULTS OF ACTION

This symbol denotes relevant results of actions.

1.3 Other documents

Besides this document, the following material can be found on the Internet at www.turck.com:

- Data sheet

1.4 Feedback about these instructions

We make every effort to ensure that these instructions are as informative and as clear as possible. If you have any suggestions for improving the design or if some information is missing in the document, please send your suggestions to techdoc@turck.com.

2 Notes on the product

2.1 Product identification

These instructions apply to the following spring arms:

- RA-SAB-5-20
- RA-SAB-5-24

2.2 Scope of delivery

The scope of delivery includes:

- Spring arm
- Mounting bracket
- 3 × M3 screws

2.3 Turck service

Turck supports you with your projects, from initial analysis to the commissioning of your application. The Turck product database under www.turck.com contains software tools for programming, configuration or commissioning, data sheets and CAD files in numerous export formats.

The contact details of Turck subsidiaries worldwide can be found on p. [► 21].

3 For your safety

The product is designed according to state-of-the-art technology. However, residual risks still exist. Observe the following warnings and safety notices to prevent damage to persons and property. Turck accepts no liability for damage caused by failure to observe these warning and safety notices.

3.1 Intended use

The spring arms are designed for securing measuring wheels with a circumference of 200 mm or 6" together with encoders with a diameter of 36...40 mm.

The devices may only be used as described in these instructions. Any other use is not in accordance with the intended use. Turck accepts no liability for any resulting damage.

3.2 General safety notes

- The device must only be mounted, installed, operated and maintained by trained and qualified personnel.
- The device may only be used in accordance with applicable national and international regulations, standards and laws.

4 Product description

4.1 Device overview

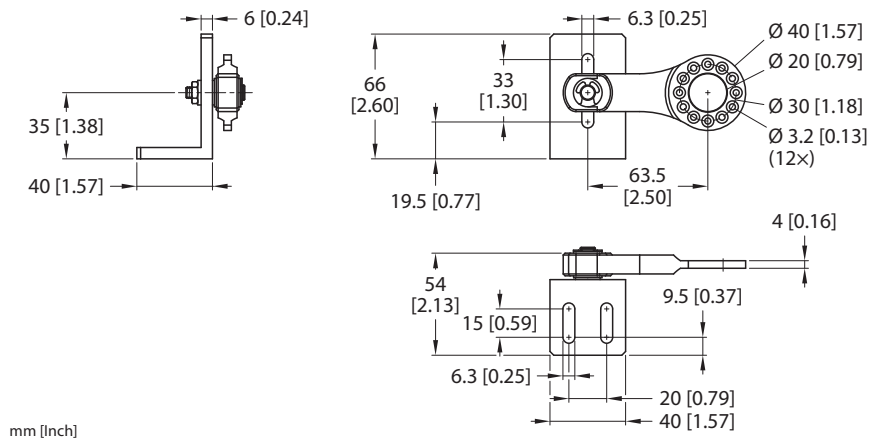


Fig. 1: Dimensions RA-SAB-5-20

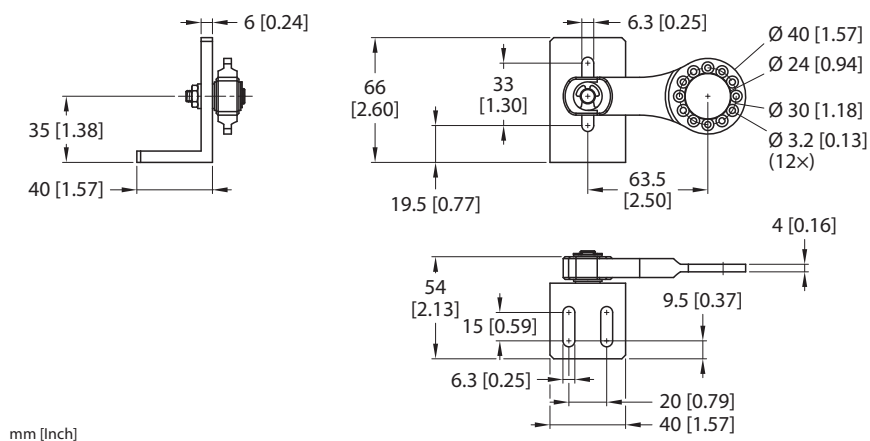


Fig. 2: Dimensions RA-SAB-5-24

4.2 Functions and operating modes

Measuring wheels up to a circumference of 200 mm and encoders with a diameter of 36...40 mm can be mounted on the spring arms.

The encoder can be mounted in 30° increments using the 12-hole attachment on both sides of the spring arm.

4.3 Technical accessories

4.3.1 Technical accessories — encoders

The following encoders can be mounted on RA-SAB-5-20 spring arms:

Dimension drawing	Type	Description
	REI-04...C-...	Incremental encoder, Industrial Line with clamping flange: diameter 36.5 mm; optical measuring principle; shaft material: stainless steel; shaft diameter: 6 mm; solid shaft: various sizes
	REI-E-111...	Incremental encoder, Efficiency Line with synchro flange/clamping flange: diameter 40 mm; optical measuring principle; shaft material: stainless steel; shaft diameter: 6 mm; solid shaft: various sizes

The following encoders can be mounted on RA-SAB-5-24 spring arms:

Dimension drawing	Type	Description
	REM-97...C-... REM-99...C-... REM-101...C-...	Absolute encoder, multiturn, Industrial Line with clamping flange: diameter 36 mm; magnetic measuring principle; shaft material: stainless steel; shaft diameter: 6 mm; solid shaft: various sizes
	REM-190...C-IOL...	Absolute encoder, multiturn, Industrial Line with clamping flange: diameter 36 mm; magnetic measuring principle; shaft material: stainless steel; shaft diameter: 6 mm; solid shaft: various sizes; IO-Link
	RES-182...C-... RES-184...C-...	Absolute encoder, singleturn, Industrial Line with clamping flange: diameter 36 mm; magnetic measuring principle; shaft material: stainless steel; shaft diameter: 6 mm; solid shaft: various sizes

Dimension drawing	Type	Description
<p>mm [inch]</p>	RES-192...C-...	Absolute encoder, singleturn, Industrial Line with clamping flange: diameter 36 mm; magnetic measuring principle; shaft material: stainless steel; shaft diameter: 6 mm; solid shaft: various sizes; IO-Link

4.3.2 Technical accessories — measuring wheels

The following measuring wheels are compatible with the spring arms:

Dimension drawing	Type	Description
	RA-MW-200-5.5-DK1-6	Measuring wheel for encoder for length measurement; circumference: 0.2 m; material: aluminum; surface: aluminum, cross-knurled
	RA-MW-200-6.5-PS1-6	Measuring wheel for encoder for length measurement; circumference: 0.2 m; material: aluminum; surface: polyurethane, smooth
	RA-MW-200-5.5-OR1-6	Measuring wheel for encoder for length measurement; circumference: 0.2 m; material: aluminum; surface: O-ring (NBR70)
	RA-MW-B0-5.5-DK1-6	Measuring wheel for encoder for length measurement; circumference: 6"; material: aluminum; surface: aluminum, cross-knurled
	RA-MW-B0-6.5-PS1-6	Measuring wheel for encoder for length measurement; circumference: 6"; material: aluminum; surface: polyurethane, smooth
	RA-MW-B0-5.5-OR1-6	Measuring wheel for encoder for length measurement; circumference: 6"; material: aluminum; surface: O-ring (NBR70)

5 Installing



NOTE

Observe the maximum deflection and spring travel specifications.

Use the following tools for mounting:

- Wrench SW10
- Phillips screwdriver PH1
- Allen key SW2
- Allen key SW2.5

5.1 Installing the spring arm

The spring arm can be mounted to the measuring section from below or above. The maximum tightening torque of the hex nut is 3 Nm.

To mount and adjust the pretensioning, proceed as follows:

- ▶ Loosen the hex nut with serrated lock washer from the mounting screw and remove it from the spring arm.

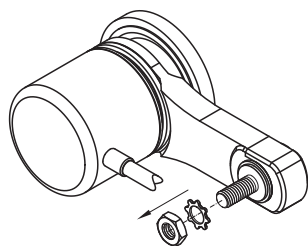


Fig. 3: Loosening and removing the hex nut

- ▶ Pass the fixing screw through the hole in the mounting bracket (1). Alternatively, pass the fixing screw through a 6.3 mm diameter hole.
- ▶ Tighten the serrated lock washer and hex nut onto the fixing screw (2). Tighten the hex nut by hand.

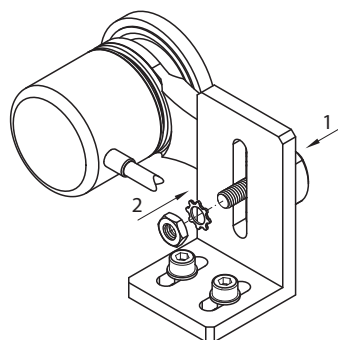


Fig. 4: Securing the fixing screw to the mounting bracket

- ▶ Remove the closure cap at the end of the spring arm completely.

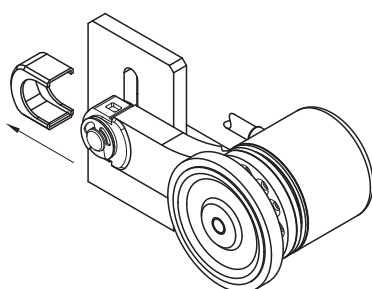


Fig. 5: Removing the closure cap

- ▶ Pass the Allen key from above through the hole into the fixing screw of the spring arm (1).
- ▶ Adjust the pretensioning using the Allen key. Observe the diagram.
- ▶ Hold the Allen key in the desired position for the pretensioning (2).

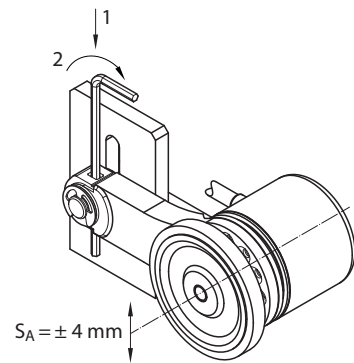


Fig. 6: Adjusting the pretensioning

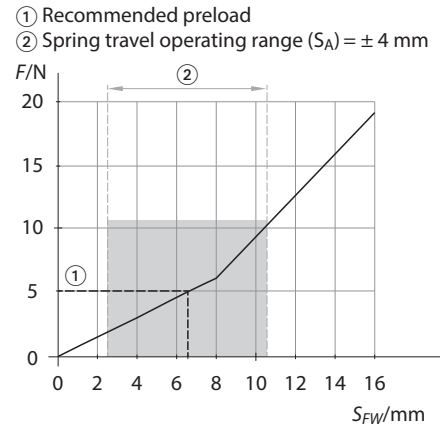


Fig. 7: Recommended pretensioning

- ▶ Tighten the hex nut (1).
- ▶ Remove the Allen key (2).

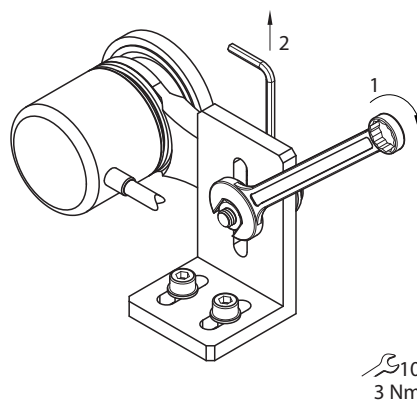


Fig. 8: Tightening the hex nut and removing the Allen key

- ▶ Check the pretensioning: Raise the measuring wheel. Observe the maximum spring travel.
- ▶ Put on the closure cap and click it into place.

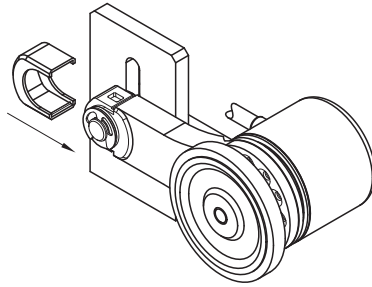


Fig. 9: Putting on the closure cap clicking it into place

5.2 Installing the encoder

The maximum tightening torque of the screws is 1 Nm.



NOTICE

Incorrect orientation or insufficient length of electrical connection

Damage to the electrical connection

- ▶ Pay attention to the orientation and length of the electrical connection.

- ▶ Position the encoder on the desired side.

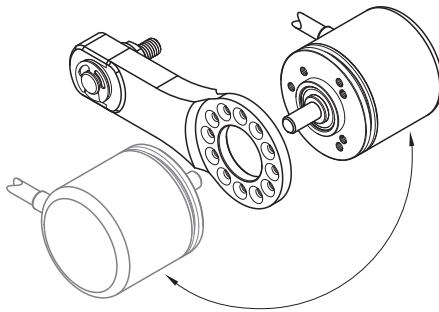


Fig. 10: Position the encoder on the desired side

- Align the encoder in 30° increments.

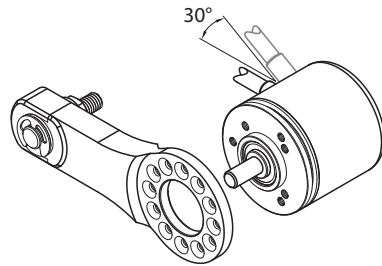
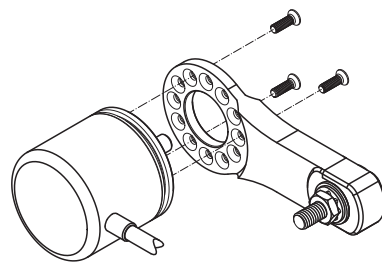


Fig. 11: Align the encoder in 30° increments

- Mount the encoder on the 12-hole attachment using three M3 screws.



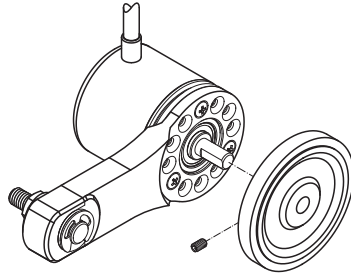
M3
1 Nm

Fig. 12: Installing the encoder

5.3 Installing the measuring wheel

The maximum tightening torque of the screw is 1 Nm.

- ▶ Place the measuring wheel on the encoder shaft and slide it fully onto the encoder.
- ▶ Mount the measuring wheel with a set screw on the flat surface of the encoder shaft.



● 1.5 mm
1 Nm

Fig. 13: Installing the measuring wheel

6 Maintenance



WARNING

Entrapment of long hair and loose clothing

Risk of injury from rotating shafts

- ▶ Shut down or cover the drive shaft.
-

The device is maintenance-free. Clean with a damp cloth if required.

7 Repair

The device must not be repaired by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to Turck.

7.1 Returning devices

Returns to Turck can only be accepted if the device has been equipped with a Decontamination declaration enclosed. The decontamination declaration can be downloaded from <https://www.turck.de/en/retoure-service-6079.php> and must be completely filled in, and affixed securely and weather-proof to the outside of the packaging.

8 Decommissioning



WARNING

Entrapment of long hair and loose clothing

Risk of injury from rotating shafts

▶ Shut down or cover the drive shaft.

- ▶ De-energize the system.
- ▶ Loosen the screws on the encoder and measuring wheel.
- ▶ Remove the encoder and measuring wheel.
- ▶ Loosen the hex nut with serrated lock washer from the mounting screw and remove it from the spring arm.
- ▶ Remove the spring arm.

9 Disposal

The devices must be disposed of correctly and must not be included in general household garbage.

10 Technical data

Technical data	
Recommended pretensioning	5 N
Maximum spring travel	16 mm [0.63"]
Spring travel within working area	±5 mm [0.20"]
Operating temperature	-20...+70 °C
Material	Aluminum
Type of protection	IP60
Shock resistance (EN 60068-2-27)	1000 m/s ² , 6 ms
Vibration resistance (EN 60068-2-6)	55...2000 Hz, 100 m/s ²

11 Turck subsidiaries — contact information

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