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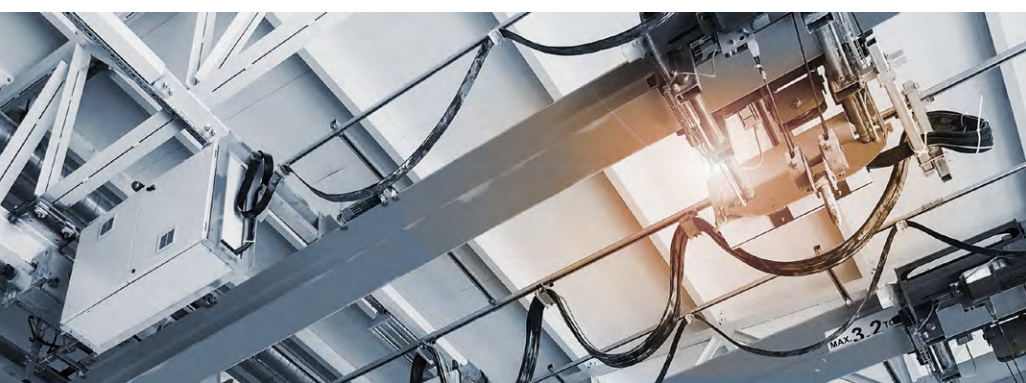
MEASURING WHEEL SYSTEMS

SPEED MEASUREMENT
POSITION DETECTION
LENGTH MEASUREMENT

Measuring wheel systems

Systems for speed measurement, position detection and length measurement

Measuring wheel systems from Kübler are the ideal solution for reliable speed measurement, position detection and length measurement in applications with linear movements. These are recorded rotationally via the measuring wheel with attached encoder directly on the surface of the material to be measured and converted into linear data. Integrated springs ensure the necessary contact force of the measuring wheel on the measuring surface for reliable measured value acquisition.



Further information on
measuring wheel systems



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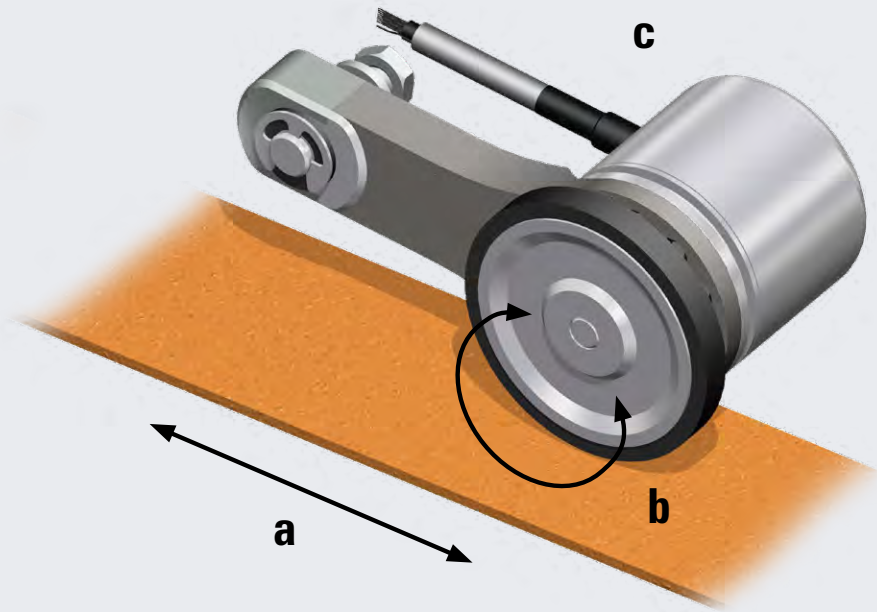
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Measuring wheel systems - operating principle



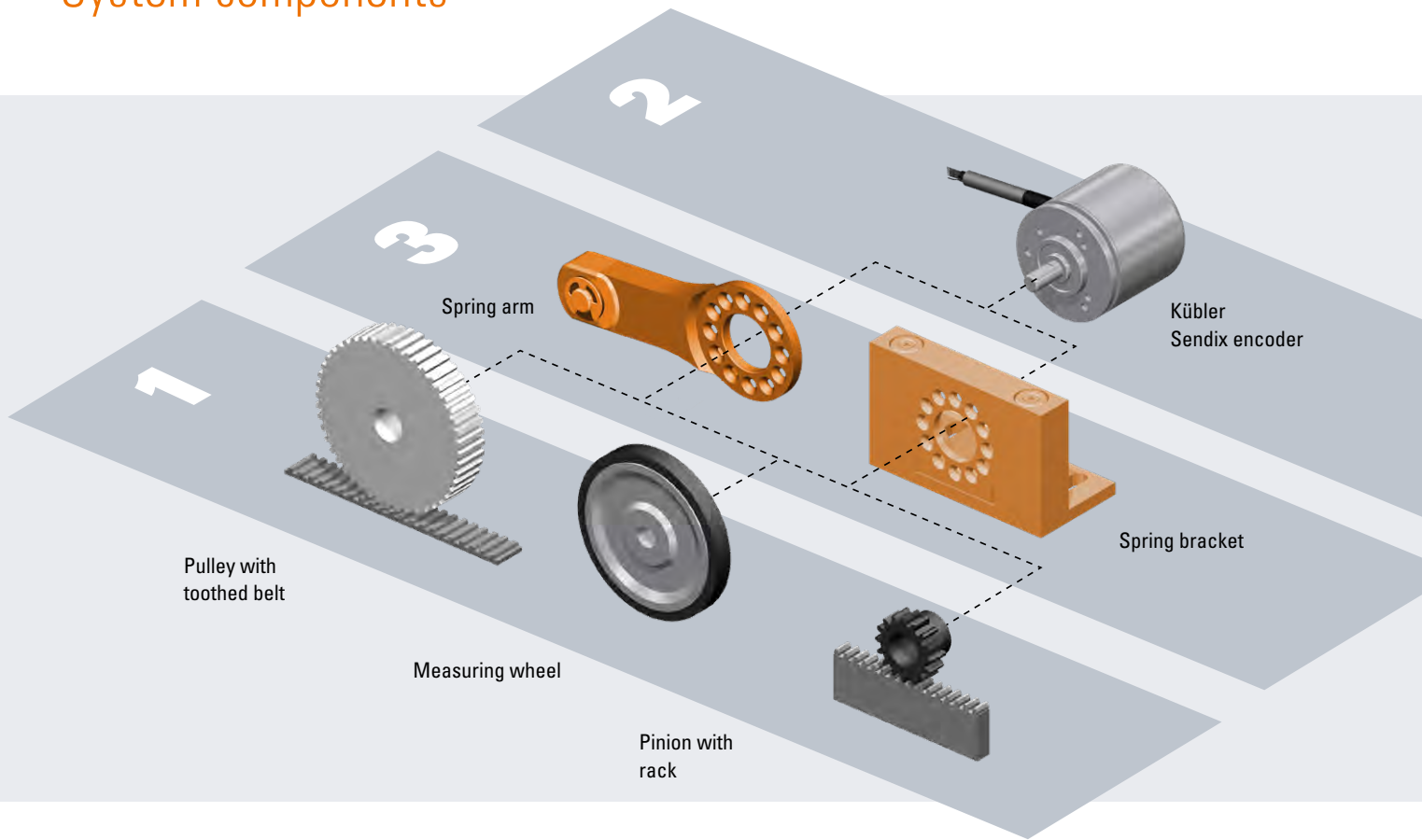
Measuring wheel systems are used for the detection of linear movements

The linear movement (a) of a material to be measured is converted into a rotational movement (b) by a contacting measuring wheel (or pulley or pinion). An mounted incremental or absolute encoder (c) detects this rotation and converts it into speed, position and distance values.

The linear resolution of the measuring wheel system (mm or inch) results from the ratio of the measuring wheel circumference and the rotary resolution of the encoder (ppr).

	Measuring step (distance/pulse)		Resolution (pulses/distance)	
Calculation	$\frac{\text{distance}}{\text{ppr}}$	$= \frac{\text{Measuring wheel circumference}}{\text{Pulse number encoder}}$	$\frac{\text{ppr}}{\text{distance}}$	$= \frac{\text{Pulse number encoder}}{\text{Measuring wheel circumference}}$
Example 1 Measuring wheel circumference = 300 mm Pulse number encoder = 3000 ppr	$\frac{300 \text{ mm}}{3000 \text{ ppr}}$	$= 0.1 \text{ mm / puls}$	$\frac{3000 \text{ ppr}}{300 \text{ mm}}$	$= 10 \text{ pulses / mm}$
Example 2 Measuring wheel circumference = 12inch Pulse number encoder = 1200 ppr	$\frac{12 \text{ inch}}{1200 \text{ ppr}}$	$= 0.01 \text{ inch / puls}$	$\frac{1200 \text{ ppr}}{12 \text{ inch}}$	$= 100 \text{ pulses / inch}$

System components



Due to the functional principle, the measuring wheel systems have a 3-part structure

1. Detection of the linear movement

The linear movement is detected by means of a measuring wheel that runs directly on the material to be measured.

Different measuring wheel coatings

Measuring wheels with different coatings are available for different surfaces of the material to be measured. They ensure slip-free contact between the material to be measured and the measuring wheel.

Different measuring wheel circumferences

The interaction of encoder resolution and measuring wheel circumference is decisive for the calculation of the measurement result.

Special versions

Systems with a combination of pinion/rack or pulley/toothed belt offer 100 % measuring accuracy without slip.

2. Data detection / data transfer

The measuring wheels are connected directly to the shaft of a Kübler Sendix encoder.





Incremental encoders, encoders for all relevant fieldbus systems and versions for Industry 4.0 concepts - the Kübler portfolio offers the right solution for every network requirement.

3. Spring-loaded encoder mounting

Spring arms and spring brackets are available in different sizes and with different contact forces for different applications.

Integrated springs press the measuring wheel onto the surface of the material to be measured. This enables slip-free measurement and also compensates for tolerances perpendicular to the movement of the material being measured.

Portfolio overview measuring wheel systems


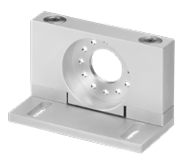
				
		Compact-Line		
Type		MWE11	MWE21	MWE31
Design spring element		Spring bracket	Spring arm MWE20	Spring bracket MWE30
Highlights		Smallest size	Adjustable preload Flexible mounting options	Compact design Internal springs
Measuring wheel circumference	recommended other options	100 mm –	200 mm / 6" –	200 mm –
Contact force max.		10 N	20 N	15 N
Spring travel max.		10 mm	16 mm	10 mm
Encoder	clamping flange / shaft	ø 24 mm / ø 6 mm	ø 36 or 40 mm / ø 6 mm	ø 36 or 40 mm / ø 6 mm
Encoder interfaces incremental		Push-Pull HTL	Push-Pull HTL RS422 TTL Open Collector NPN	Push-Pull HTL RS422 TTL Open Collector NPN
Encoder interfaces absolute		–	Analog output SSI CANopen IO-Link	Analog output SSI CANopen IO-Link
				
further encoders / interfaces on request				






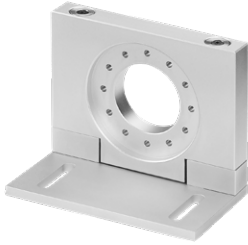
Performance-Line

MWE41	MWE61	MWE62 Double measuring wheel system
Spring bracket MWE40	Spring arm MWE60	Spring arm MWE60
Compact design Internal springs	Highest contact force, adjustable	Highest contact force, adjustable
300 mm 12"	300 mm / 12" 200 mm, 500 mm	300 mm / 12" 200 mm, 500 mm
25 N	40 N	40 N
10 mm	80 mm	80 mm
ø 58 mm / ø 10 mm	ø 58 mm / ø 10 mm	ø 58 mm / ø 10 mm
Push-Pull <input type="checkbox"/> HTL RS422 <input type="checkbox"/> TTL Open Collector <input type="checkbox"/> NPN	Push-Pull <input type="checkbox"/> HTL RS422 <input type="checkbox"/> TTL Open Collector <input type="checkbox"/> NPN	Push-Pull <input type="checkbox"/> HTL RS422 <input type="checkbox"/> TTL Open Collector <input type="checkbox"/> NPN
Analog output <input type="checkbox"/> SSI CANopen IO-Link PROFINET EtherNet/IP PROFIBUS	Analog output <input type="checkbox"/> SSI CANopen IO-Link PROFINET EtherNet/IP PROFIBUS	—

Portfolio overview system components





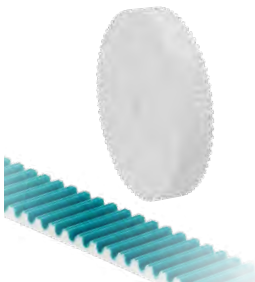
Spring arms / spring brackets			
		Compact-Line	
Type		MWE20 Spring arm	MWE30 Spring bracket
Highlights		Adjustable contact force Flexible mounting options	Compact design Internal springs
For encoder	clamping flange / shaft	ø 36 or 40 mm / ø 6 mm	ø 36 or 40 mm / ø 6 mm
Measuring wheel circumference	recommended	200 mm / 6"	200 mm
	other options	–	–
Contact force max.		20 N	15 N
Spring travel max.		16 mm	10 mm

Measuring wheels				
		Diamond knurl (aluminum)	Rubber / Plastic smooth (polyurethane)	Tufted rubber (polyurethane)
Coating measuring wheel				
Measured material surface / Application	Cardboard, wood, textile	•	•	•
	Plastic, paper	•	•	•
	Wire, greased metals, steel profiles, leather	–	•	–
	Carpet, cables, nonwoven	–	–	•
	Greased metals, glass, floor coverings	–	–	–
	Painted surfaces	–	•	–
	Rubber, soft plastic	•	–	–
Measuring wheel circumference	100 mm	•	•	–
	200 mm	•	•	•
	300 mm	•	•	•
	500 mm	•	•	•
	6"	•	•	–
	12"	•	•	•



Performance-Line

MWE40 Spring bracket	MWE60 Spring arm
Compact design Internal springs	Highest contact force, adjustable
ø 58 mm / ø 10 mm	ø 58 mm / ø 10 mm
300 mm 12"	300 mm / 12" 200 mm, 500 mm
25 N	40 N
10 mm	20 mm

				
O-ring (NBR70)	Double O-ring (NBR70)	Plastic corrugated (polyurethane)	Pinion + rack	Belt pulley + Toothed belt
•	•	•	<ul style="list-style-type: none"> · 100 % slip-free · For encoder shaft 6 mm and 10 mm · Rack 1 m, stackable 	<ul style="list-style-type: none"> · 100 % slip-free · For encoder size ø 58 mm · Toothed belt up to 100 m
•	•	•		
-	-	-		
-	-	-		
-	-	•		
•	•	•	Pitch circumference = 50 mm	Pitch circumference = 360 mm
-	-	-		
•	•	•		
•	•	•		
-	-	•		
•	-	-	Pitch circumference = 50 mm	Pitch circumference = 360 mm
•	•	•		

Portfolio overview Kübler Sendix encoders

Kübler Sendix encoders (recommended selection - for further variants see short form catalog)						
	incremental					
Technology	optical sensor					
Type	2400	KIS40	KIS50	5805	M3661	M3663
Interface	Push-Pull HTL 	Push-Pull HTL RS422 TTL Open Collector NPN 	Push-Pull HTL RS422 TTL Open Collector NPN 	Push-Pull HTL RS422 TTL 	Analog output 	
Resolution max.	1.024 ppr	2.500 ppr	5.000 ppr	36.000 ppr	12 bit ST 16 bit MT	14 bit ST 24 bit MT
Suitable for measuring wheel system	MWE11	MWE2x / MWE3x	MWE4x / MWE6x		MWE2x / MWE3x	
Clamping flange	ø 24 mm	ø 40 mm	ø 58 mm	ø 58 mm	ø 36 mm	ø 36 mm
Shaft diameter	6 mm	6 mm	10 mm	10 mm	6 mm	6 mm

i Industry 4.0 / IIoT ready



„Industry 4.0 / IIoT ready“ means: In addition to the classical measuring task and transmission of measured values, encoders must also provide further functionalities for networking the products and collecting or transmitting additional information.

Which Industry 4.0 / IIoT functionalities an encoder needs to be „Industry 4.0 / IIoT ready“ depends on the overall concept. The decisive factor here is the role assigned to the encoder. Either as a part of or as an independent Industry 4.0 / IIoT object (asset). This determines whether the encoder must have its own administration shell or be integrated into an existing administration shell.

kuebler.com/iiot





Absolute multitrurn

magnetic sensor				optical sensor		mechanical drive
M3668	M5861	M5863	M5868	F5863	F5868	5868
 	Analog output		 	 	 	 <small>Conformance tested</small>
14 bit ST 29 bit MT	12 bit ST 16 bit MT	14 bit ST 24 bit MT	14 bit ST 29 bit MT	17 bit ST 24 bit MT	16 bit ST 16 bit MT	16 bit ST 12 bit MT
MWE4x / MWE6x						
ø 36 mm	ø 58 mm	ø 58 mm	ø 58 mm	ø 58 mm	ø 58 mm	ø 58 mm
6 mm	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm

IO-Link

IO-Link is establishing itself more and more on the market - and the trend is rising. IO-Link is used today in machine tools, production lines, intralogistics and packaging machines. IO-Link stands for simplicity, cost reduction and as a starting point for implementing future Industrie 4.0 / IIoT concepts. IO-Link products from Kübler open up new possibilities for your application.

kuebler.com/io-link

Industrial Ethernet

The use of Industrial Ethernet communication in modern industry is continuously increasing. In the future, in line with the Industrie 4.0 idea, all areas of industrial production plants will be united in a single network on the Industrial Ethernet platform, from the field devices to the control level to the cloud. And this with real-time data exchange. The corresponding communication capability of the sensors plays an essential role here.

kuebler.com/industrial-ethernet



Time and cost savings



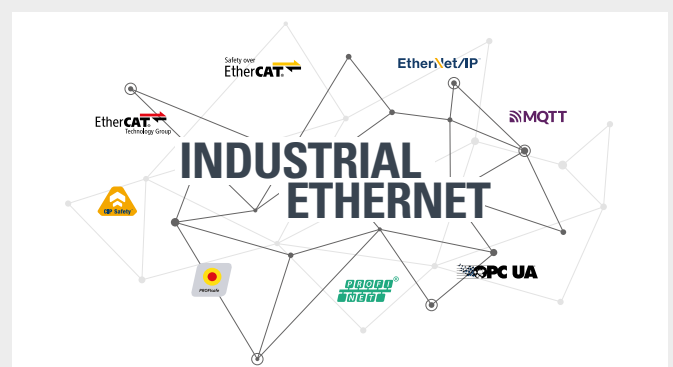
Independent in use



Efficient production thanks to Smart Sensor profile



Remote diagnosis and condition monitoring



Measuring wheel systems - applications

Measurement of speed, position and distance directly on conveyor belts, steel and sheet metal working machines, storage and conveyor systems, sorting systems, conveyor belts, textile machines, printing and paper industry etc.

Application examples:

Speed measurement on a guide shaft

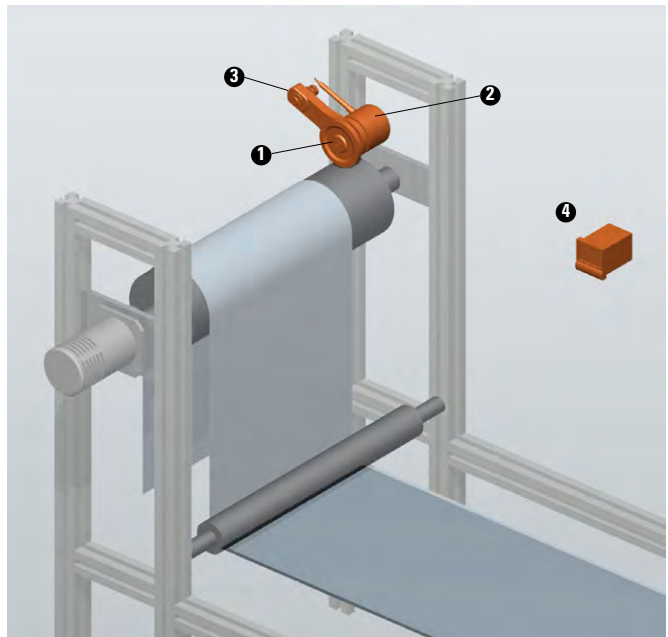
Requirement

- Reliable speed measurement
- Continuous contact force
- Easy to integrate
- Compact design

Kübler solution

Measuring wheel system **MWE21** consisting of

- 1 Measuring wheel circumf. 200 mm, plastic smooth
- 2 Encoder Sendix KIS40, 1000 ppr
- 3 Spring arm MWE20
- 4 Preset counter Codix 924
The integrated speedometer function makes it easy to visualize and control speeds.



Speed measurement on a conveyor belt

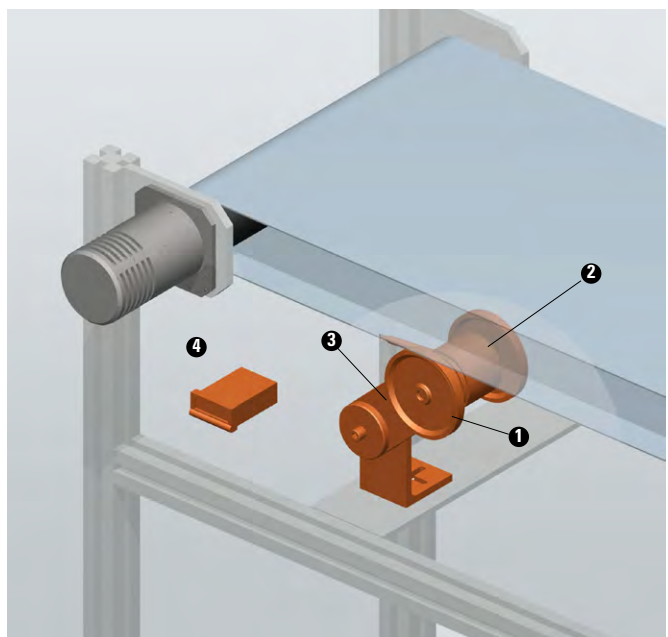
Requirement

- Direct measurement on the material to be measured (not via a motor encoder -> slip in the system)
- Can be mounted from below against the conveyor belt (overhead mounting)
- High contact pressure
- Large spring travel (tolerance compensation from conveyor belt)
- Redundant double measuring wheel system (two support points for the measuring wheels)

Kübler solution

Measuring wheel system **MWE62** consisting of

- 1 Measuring wheel circumf. 300 mm, double O-ring
- 2 Encoder Sendix KIS50, 1000 ppr
- 3 Spring arm MWE60
- 4 Preset counter Codix 571T
In addition to a touch function, the LED preset counter has the option of visualizing measured values (presets) with color changes when they are reached or fallen short of.



Length measurement - example wooden boards

Requirement

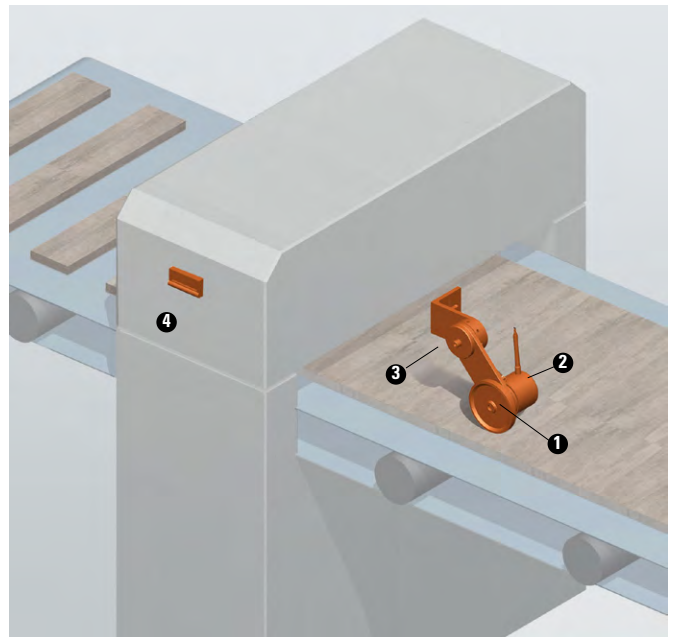
- Precise length measurement
- High contact forces
- Easy maintenance
- Robust overall system

Kübler solution

Measuring wheel system **MWE61** consisting of

- 1 Measuring wheel circumf. 300 mm, diamond knurl
- 2 Encoder Sendix KIS50, 1000 ppr
- 3 Spring arm MWE60
- 4 Preset counter Codix 560

The desired measuring length can be set via the LED preset counter. When the set value is reached, a cut-to-length process is triggered.



Position measurement on gantry cranes

Requirement

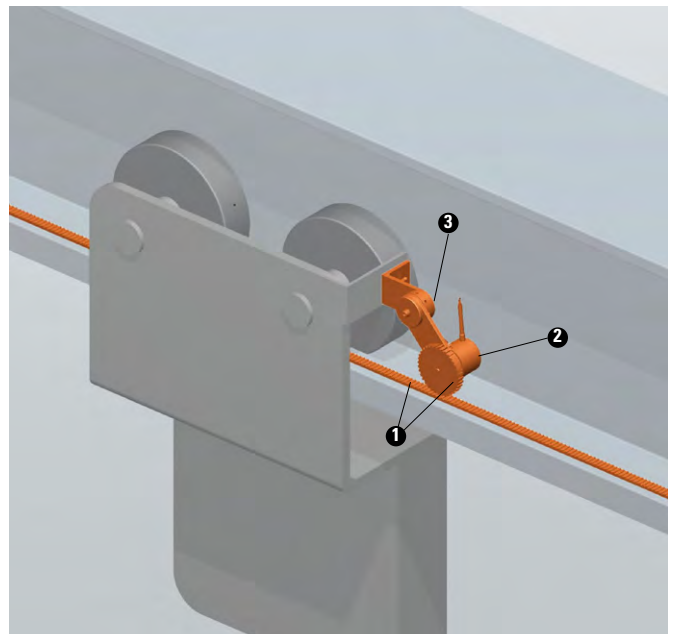
- 100 % slip-free measurement
- Exact positioning
- Absolute position feedback
- High contact force
- High shock resistance

Kübler solution

Measuring wheel system **MWE61** consisting of:

- 1 Measuring wheel Pulley with toothed belt
- 2 Encoder Sendix F5868 PROFINET
- 3 Spring arm MWE60

Direct communication with the controller via PROFINET interface.



Measuring wheel system MWE11 Incremental encoder 2400

The compact measuring wheel system MWE11 with the smallest size can be integrated very flexibly, even in the tightest installation spaces.



- **Easy handling**
Measuring wheel, sensor and spring bracket are pre-assembled and therefore easy to install: screw on - connect - done.
- **Compact design**
Dimensions of the complete unit only 74 x 50 x 52 mm.
- **Measuring wheels in 2 variants**
Circumference 100 mm - measuring wheel coating available with diamond knurl or rubber surface.



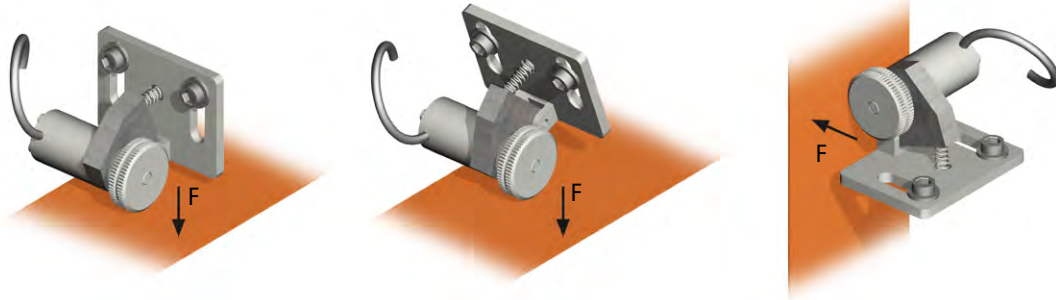
FEATURES AT A GLANCE

- Contact force max. 10 N
- Spring travel max. 10 mm
- Measuring wheel circumference 100 mm
- Encoder size \varnothing 24 mm
- Incremental

Technology in detail

Various mounting options

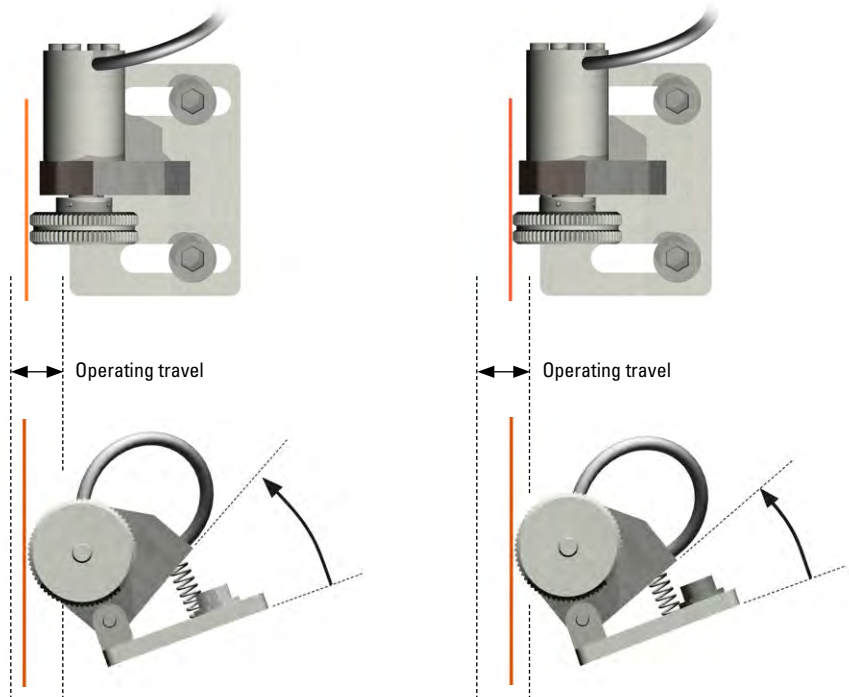
The measuring wheel system can be placed on the material to be measured in different ways.



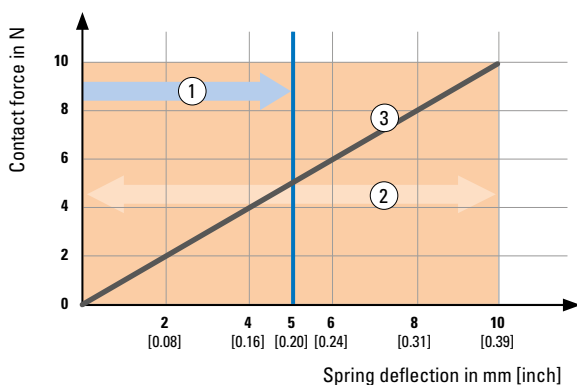
Setting the preload

The distance between the MWE11 measuring wheel system and the material to be measured can be adjusted via 2 slotted holes.

This simultaneously sets the desired preload of the spring.



Contact force of the measuring wheel on the material to be measured



- ① Preload, recommended : 5 N
- ② Operating travel, max. : 10 mm
- ③ Contact force in relation to spring deflection

Measuring wheel system MWE21

Incremental or absolute encoders size \varnothing 36 / 40 mm

The compact measuring wheel system MWE21 with adjustable preload can be integrated very flexibly even in the tightest installation spaces.



- **Wide range of encoders**

Incremental Sendix encoder with a max. resolution of up to 2500 pulses/revolution as well as absolute encoders for different communication interfaces such as IO-Link for integration in Industry 4.0 concepts.

- **Suitable measuring wheels for all measured material surfaces**

Circumference 200 mm or 6" - measuring wheel coating available with O-ring, smooth plastic or diamond knurl surface.

- **Contact force up to max. 20 N**

With adjustable preload and mechanical spring deflection limitation for a long service life. The integrated spring ensures a working range of the measuring wheel of up to 16 mm vertical to the measuring surface to compensate for tolerances.



FEATURES AT A GLANCE

- Contact force max. 20 N
- Spring travel max. 16 mm
- Measuring wheel circumference 200 mm / 6"
- Encoder size \varnothing 36 / 40 mm
- Incremental or absolute

Technology in detail

Mounting options encoder on spring arm

The encoder is attached to the encoder spring arm with 3 screws.



The fastening points are designed in such a way that mounting on both sides of the encoder spring arm is possible.



Mounting left (Delivery state)



Mounting right

For a flexible cable outlet direction, the encoder can additionally be mounted in 30° steps.



0° (delivery state)



30°



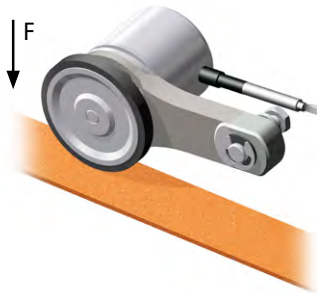
60°



90°

Various mounting options

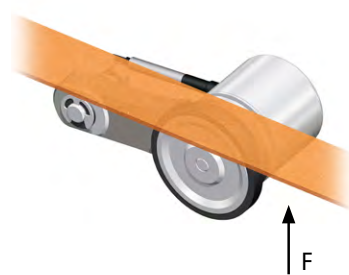
horizontally



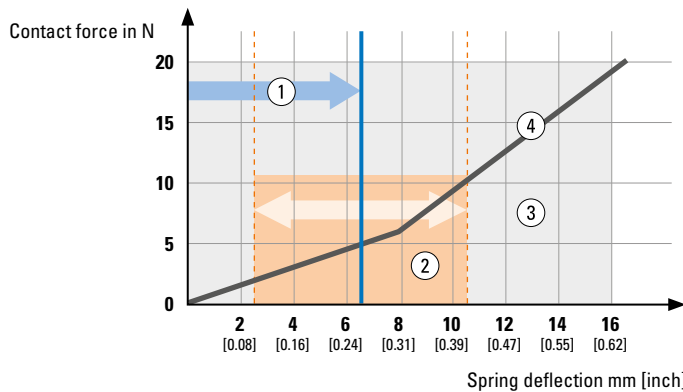
vertically



overhead



Contact force of the measuring wheel on the material to be measured



- ① Recommended preload: 5 N (approx. 6.5 mm deflection)
- ② Rec. operating travel: ± 4 mm (from the rec. preload)
- ③ Maximum spring deflection: 16 mm
- ④ Contact force in relation to spring deflection (Functional principle based on 2 integrated springs)

Measuring wheel system MWE31

Incremental or absolute encoders size \varnothing 36 / 40 mm

The compact MWE31 measuring wheel system with internal springs can be quickly and easily integrated into even the tightest installation spaces.



- **Wide range of encoders**

Incremental Sendix encoder with a max. resolution of up to 2500 pulses/revolution as well as absolute encoders for different communication interfaces such as IO-Link for integration in Industry 4.0 concepts.

- **Suitable measuring wheels for all measuring surfaces**

Circumference 200 mm - measuring wheel coating available with O-ring, smooth plastic or diamond knurl surface.

- **Contact force up to max. 15 N**

The integrated spring ensures a working range of the measuring wheel of up to 10 mm vertical to the measuring surface to compensate for tolerances.

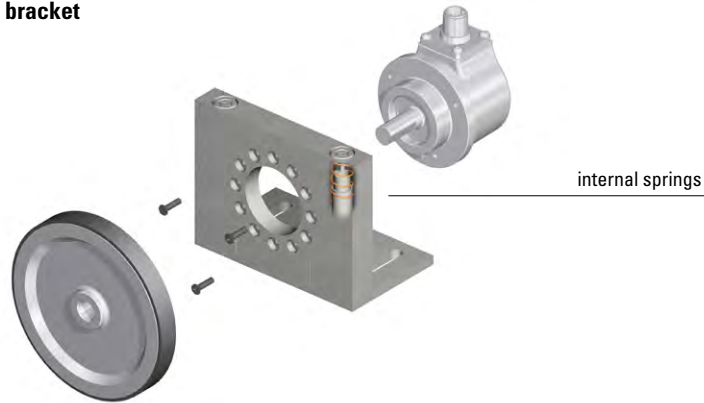
+ FEATURES AT A GLANCE

- **Contact force max. 15 N**
- **Spring travel max. 10 mm**
- **Measuring wheel circumference 200 mm**
- **Encoder size \varnothing 36 / 40 mm**
- **Incremental or absolute**

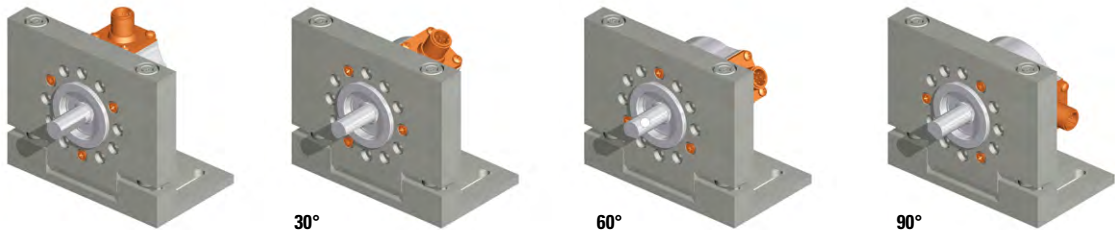
Technology in detail

Mounting options encoder on spring bracket

The encoder is attached to the spring bracket with 3 screws.



For a flexible outlet direction of the cable or connector, the encoder can additionally be mounted in 30° steps.



0° (delivery state)

30°

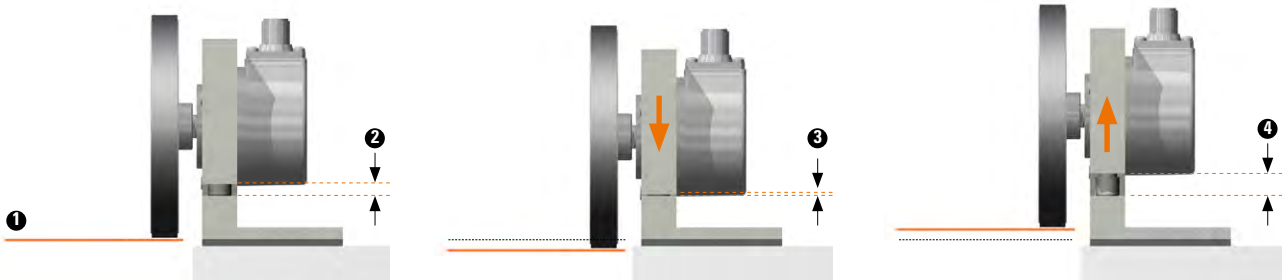
60°

90°

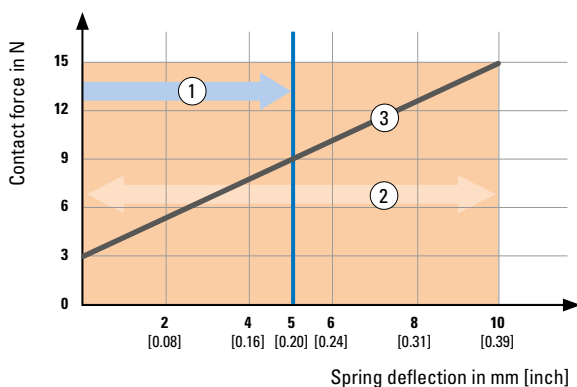
Mounting on the application

Install the MWE31 on the material to be measured ❶ in such a way that the requested preload is obtained. (ideally approx. 5 mm of the spring deflection ❷)

The working range is from 0 mm ❸ (equivalent to 3 N) to 10 mm ❹ (equivalent to 15 N)



Contact force of the measuring wheel on the material to be measured



❶ Preload, recommended : 9 N (approx. 5 mm deflection)

❷ Operating travel, max. : 10 mm

❸ Contact force in relation to spring deflection
(Functional principle based on 2 integrated springs)

Measuring wheel system MWE41

Incremental or absolute encoders size \varnothing 58 mm

The MWE41 measuring wheel system with internal springs can be quickly and easily integrated into many applications.



- **Wide range of encoders**

Incremental Sendix encoders with a max. resolution of up to 36,000 pulses/revolution as well as absolute encoders for different communication interfaces such as IO-Link or Profinet for integration in Industry 4.0 concepts.

- **Suitable measuring wheels for all measuring surfaces**

Circumference 300 mm – measuring wheel coating available with O-ring or double O-Ring, smooth or corrugated plastic, diamond knurl surface and tufted rubber.

- **Contact force up to max. 25 N**

The internal spring ensures a working range of the measuring wheel of up to 10 mm vertical to the measuring surface to compensate for tolerances.

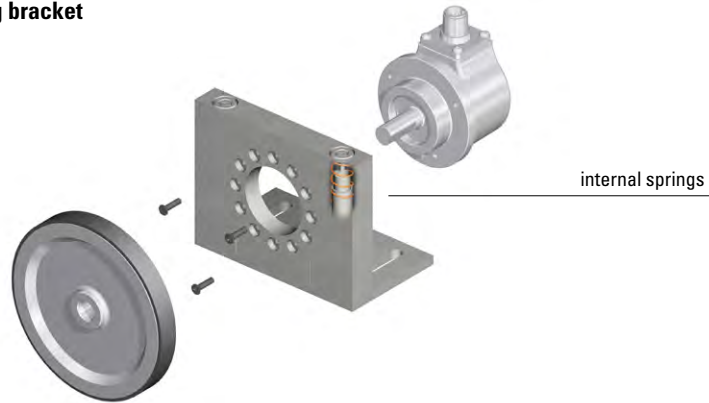
+ FEATURES AT A GLANCE

- Contact force max. 25 N
- Spring travel max. 10 mm
- Measuring wheel circumference 300 mm
- Encoder size \varnothing 58 mm
- Incremental or absolute

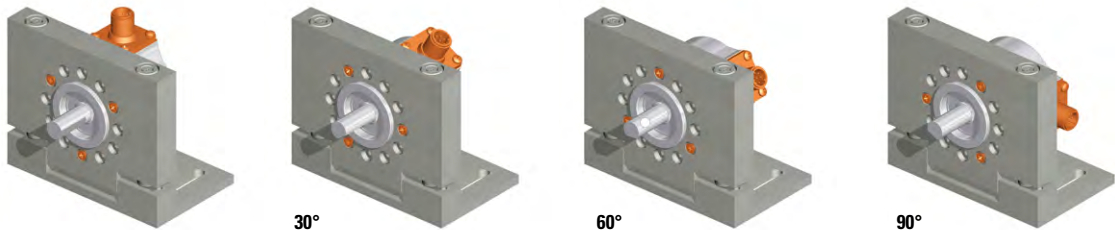
Technology in detail

Mounting options encoder on spring bracket

The encoder is attached to the spring bracket with 3 screws.



For a flexible outlet direction of the cable or connector, the encoder can additionally be mounted in 30° steps.



0° (delivery state)

30°

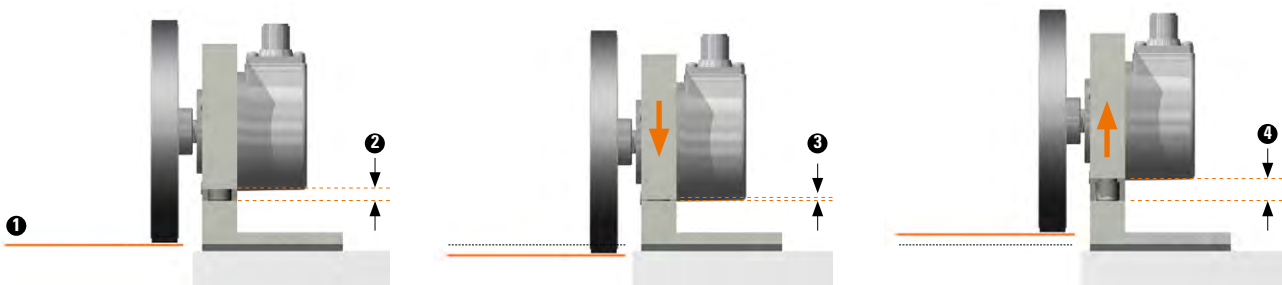
60°

90°

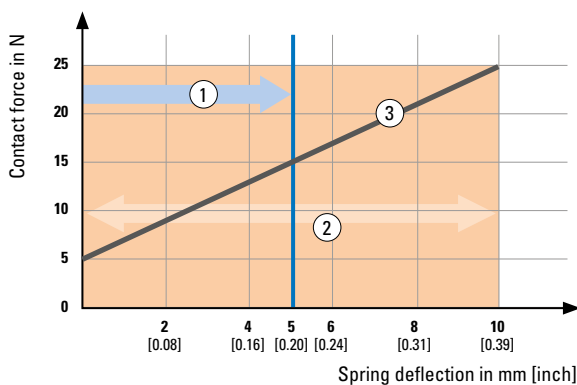
Mounting on the application

Install the MWE41 on the material to be measured ❶ in such a way that the requested preload is obtained. (ideally approx. 5 mm of the spring deflection ❷)

The working range is from 0 mm ❸ (equivalent to 5 N) to 10 mm ❹ (equivalent to 25 N)



Contact force of the measuring wheel on the material to be measured



- ❶ Preload, recommended : 15 N (approx. 5 mm deflection)
- ❷ Operating travel, max. : 10 mm
- ❸ Contact force in relation to spring deflection
(Functional principle based on 2 integrated springs)

Measuring wheel system MWE61

Incremental or absolute encoders size \varnothing 58 mm

The robust MWE61 measuring wheel system offers maximum spring deflection at maximum contact force to compensate for tolerances vertical to the transport movement of the material to be measured.



- **Wide range of encoders**

Incremental Sendix encoders with a max. resolution of up to 36,000 pulses/revolution as well as absolute encoders for different communication interfaces such as IO-Link or Profinet for integration in Industry 4.0 concepts.

- **Suitable measuring wheels for all measuring surfaces**

Circumferences 300 mm or 12" – measuring wheel coating available with O-ring or double O-Ring, smooth or corrugated plastic, diamond knurl surface and tufted rubber.

- **Contact force up to max. 40 N**

Utilizes a stepless adjustable preload. To compensate for tolerances, the integrated spring ensures a working range of the measuring wheel up to a maximum of 80 mm vertical to the measuring surface.

FEATURES AT A GLANCE

- Contact force max. 40 N
- Spring travel max. 80 mm
- Measuring wheel circumference 300 mm / 12"
- Encoder size \varnothing 58 mm
- Incremental or absolute

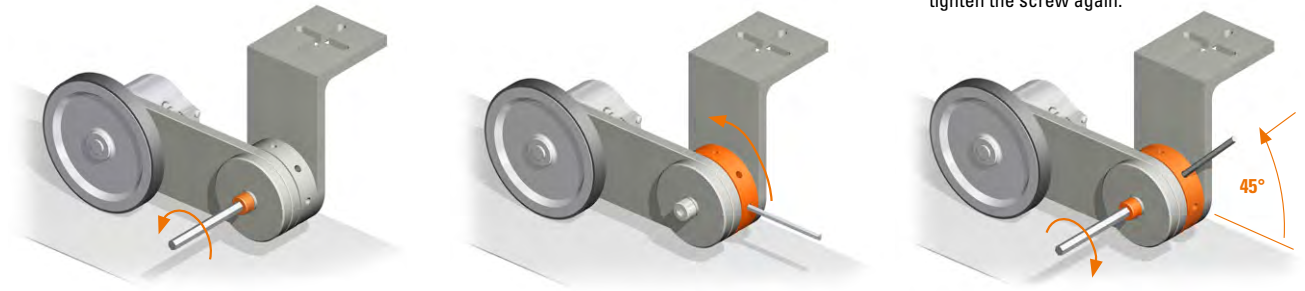
Technology in detail

Setting the preload

1. Mount the measuring wheel system on the application and release screw.

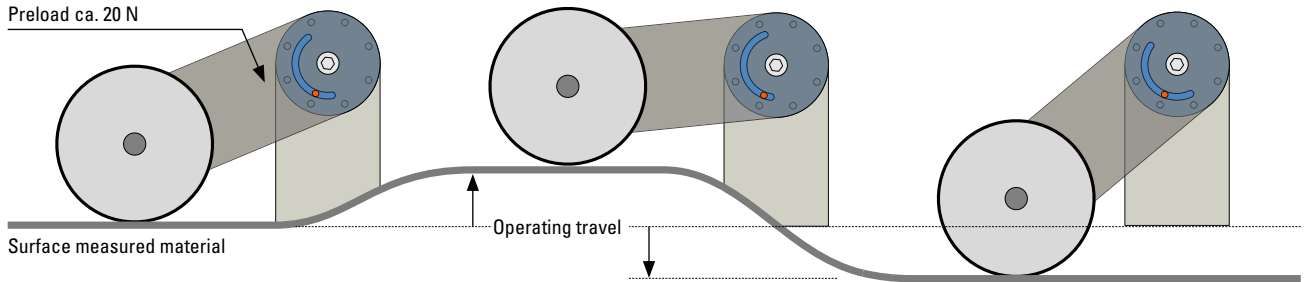
2. Turn the adjustment ring with a thin allen key or screwdriver until the desired preload is reached.

3. As a guide: Internal detent points in 45° steps correspond to approx. 20 N. Hold the position of the adjustment ring and tighten the screw again.



Installation example

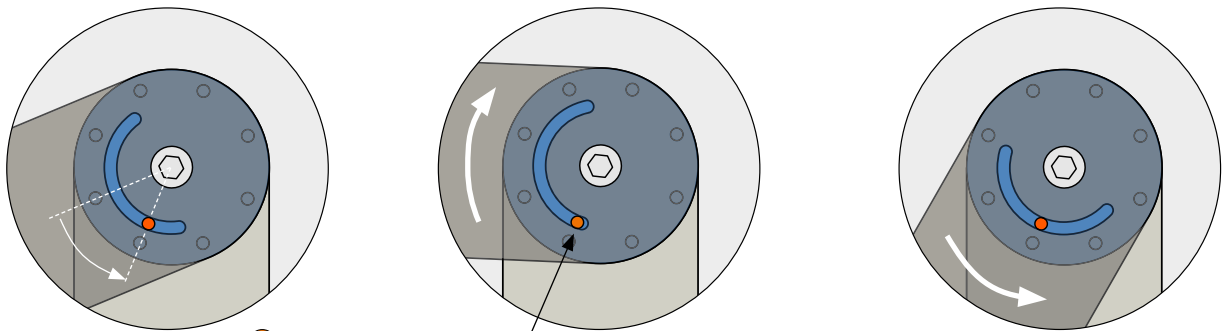
Preload ca. 20 N



Preload

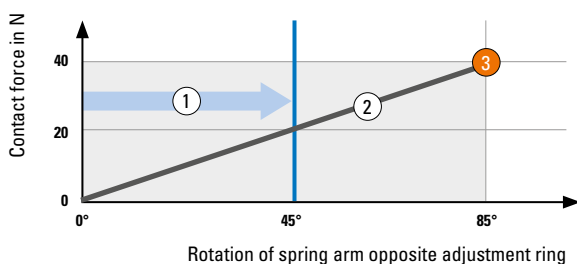
Contact force max.

Contact force min.



3 Spring deflection limitation

Contact force of the measuring wheel on the material to be measured



1 Preload (example):

20 N

by turning the setting wheel by approx. 45°
- corresponds to a detent point

2 Contact force

3

Spring deflection limitation to protect against overload

Double measuring wheel system MWE62

Incremental encoder KIS50

The robust MWE62 measuring wheel system offers maximum spring deflection at maximum contact force to compensate for tolerances perpendicular to the transport movement of the material to be measured.

The use of 2 measuring wheels guarantees optimum contact with the material to be measured, even under difficult conditions.



- High contact reliability to the measured material**
 The use of a second measuring wheel on the encoder ensures a high degree of contact with the measuring surface even under difficult conditions - high vibrations or unevenness.
- Suitable measuring wheels for all measuring surfaces**
 Circumferences 300 mm or 12" – measuring wheel coating available with O-ring or double O-Ring, smooth or corrugated plastic, diamond knurl surface and tufted rubber.
- Contact force up to max. 40 N**
 Utilizes a stepless adjustable preload. To compensate for tolerances, the integrated spring ensures a working range of the measuring wheel up to a maximum of 80 mm vertical to the measuring surface.

+ FEATURES AT A GLANCE

- Contact force max. 40 N
- Spring travel max. 80 mm
- Measuring wheel circumference 300 mm / 12"
- Encoder size \varnothing 58 mm
- Incremental

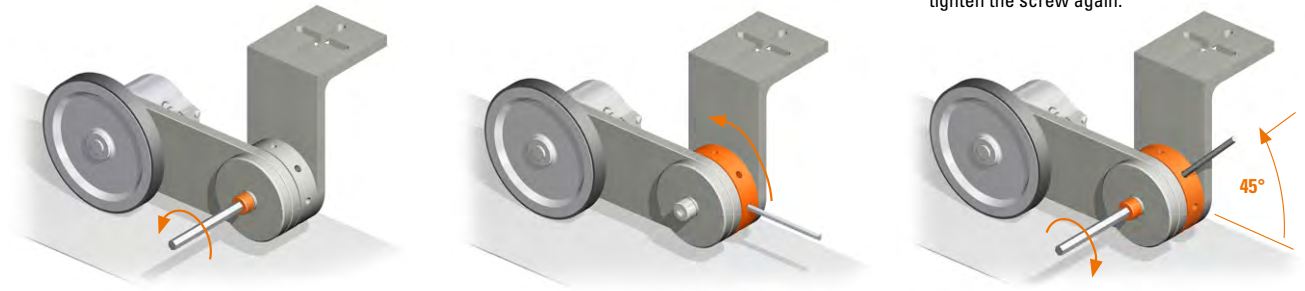
Technology in detail

Setting the preload

1. Mount the measuring wheel system on the application and release screw.

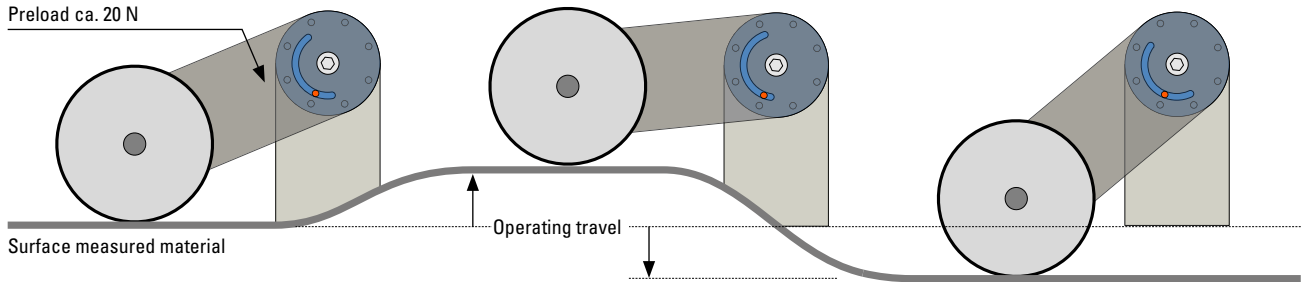
2. Turn the adjustment ring with a thin allen key or screwdriver until the desired preload is reached.

3. As a guide: Internal detent points in 45° steps correspond to approx. 20 N. Hold the position of the adjustment ring and tighten the screw again.



Installation example

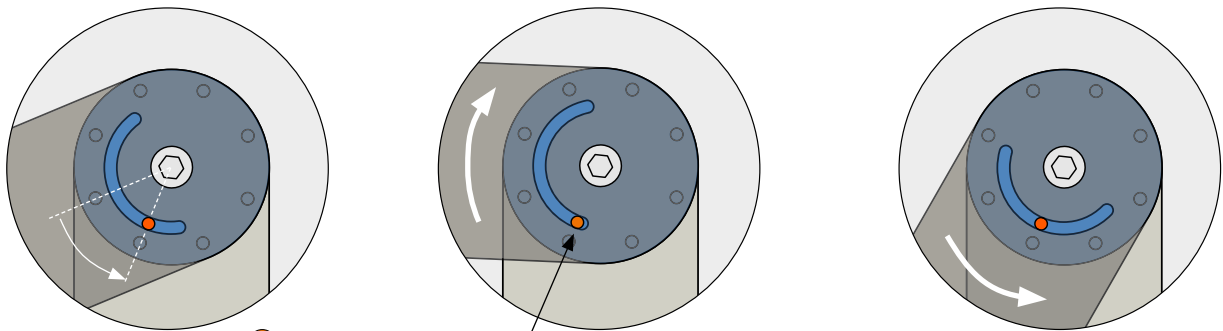
Preload ca. 20 N



Preload

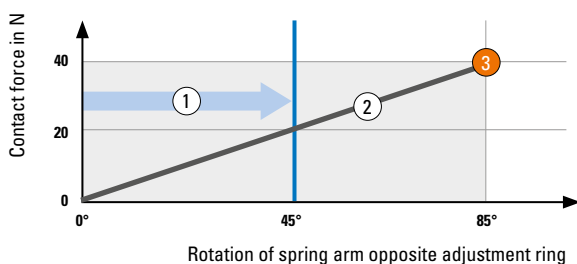
Contact force max.

Contact force min.



3 Spring deflection limitation

Contact force of the measuring wheel on the material to be measured



1 Preload (example):

20 N

by turning the setting wheel by approx. 45°
- corresponds to a detent point

2 Contact force

3

Spring deflection limitation to protect against overload

Product portfolio – Made in Germany



MEASUREMENT

Rotary speed and position detection, linear position, and speed measurement as well as inclination angle detection.

- Encoders
- Bearingless encoders
- Motor Feedback Systems
- Linear measuring systems
- Shaft copying systems
- Inclinometers

TRANSMISSION

Reliable and interference-free transmission of power, signals, and data. Communication between control system and sensors.

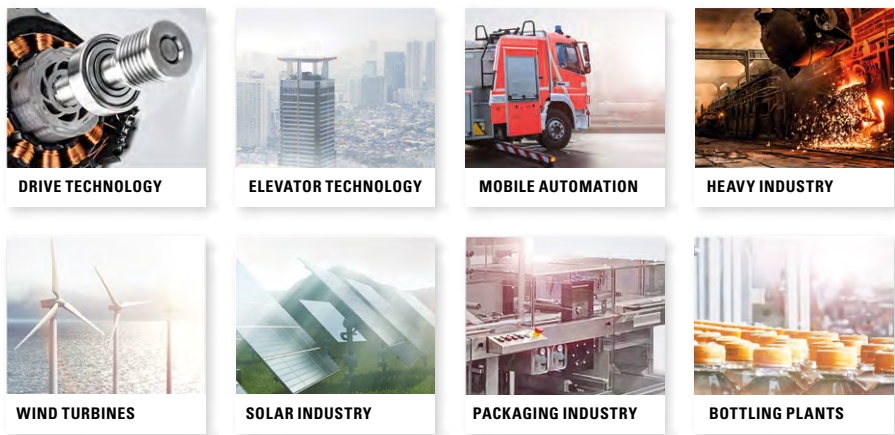
- Slip rings
- Slip rings, customized solutions
- Signal converters and optical fiber modules
- Cables and connectors

EVALUATION

Recording of quantities, counting of units of any kind, and reliable speed and position recording for functional safety.

- Displays and counters
- Process devices
- Safe speed monitors up to SIL3/PLe

We offer solutions for the following industries:



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Kübler Service for worldwide planning reliability

24one **24one delivery promise**

Manufacturing in 24 hours. For orders placed on working days before 9 AM, the product will be ready for dispatch on that same day. 24one is limited to 20 pieces per delivery.

10 by 10

We will manufacture and deliver 10 encoders within 10 working days (365 days a year - with the exception of 24th Dec. until 2nd Jan.)

48 h **48 h Express-Service**

We can process your order within 48 hours; we can ship stock items the same day.

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