

## Digital Position Indicators



Extremely versatile and robust:

Measurement and  
display directly on  
the shaft...



# Short Overview of DPIs ...

Functional comparison of digital position indicators.

	DA02	DA04	DA05/1	DA08	DA09S	DA10	DA10R/1	DE09
<b>Housing</b>								
Plastic	•	•			•	•	•	•
Aluminium die casting				•				•
Zinc die casting			•					
<b>Functioning</b>								
Mechanical	•	•	•	•	•	•	•	
Electronical								•
<b>Display</b>								
3 decades*	•							
4 decades*		•		•				
5 decades*			•	•	•	•	•	
LCD, 5-digit								•
<b>Digit height</b>								
in mm, approx. size	4	6	6	4,5	7	6	6	7
<b>Hollow shaft</b>								
ø in mm	10	14	20	20	20	30	30	20
<b>Dimensions</b>								
WxHxD (appr. in mm absolute)	22x33x26	33x47x31	56x82x70	58x108x58	48x67.5x38.5	56x75x52	56x84x70	48x87x70

\* decade = digit ring with decimal division



### Mechanical indicators

plastic or metal housings  
hollow shaft diameters of 6–30 mm  
maximum digit height 7 mm  
chokable design (>reading position)

By using the original counters made by SIKO, position values can be controlled easily and directly on the axle. The following plus points make them so popular...

- high service life thanks to consistent further development
- clear, digitally indicated values, precisely controllable
- Modifiable displays thanks to individual gear ratios



### Electronic indicators

LC displays  
absolute, battery-buffered  
programmable parameters  
resolutions up to 0.01 mm  
bus interface RS 485

- can be retrofitted easily and efficiently
- Plug-on technology by means of hollow shaft enables easy mounting

Thanks to their fully developed technology, millions of these small "orange-coloured indicators" are being used worldwide.

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3D at SIKO: Excerpts from a virtual flight through the DA09S...

# Digital position indicators: always clearly readable and flexible in their use

Low-cost mechanical and electronic solutions

See the important information: display precision even after the comma – in connection with SIKO's clever magnifying lens you don't miss a thing.



## Mechanical indicators

Using the original SIKO counters, position values on shafts become easily adjustable. High precision, clear readability and long service life confirm: these mechanical counters are highly developed and therefore are used in their millions worldwide.

With conventional handwheel adjustments, measured values are displayed analog. However, the so-called "vernier" can only display the values of one spindle revolution at a time. But what if several revolutions are to be documented?

This requires a technology, which is inherently simple and robust and has two characteristics:

- a multi-digit display including comma position and fine reader for optimum reading precision
- a custom-designed gear, which "translates" the shaft revolutions into a traceable presentation measure

## Inconspicuous high-tech

Digital position indicators are the clever solution here. They have mechanical driving gears, which require no maintenance and allow flexible configurations, thus enabling adaptation to the most varying production environments. This is the only way to specify at will, which numerical value shall be indicated on the display after the first complete revolution of an axle.

## Electronic displays

For automation, electronic position indicators offer additional advantages compared with mechanical ones. These indicators sense and analyze axle movements capacitively and incrementally. Spindle pitch, sense of rotation and comma position are freely programmable; furthermore, they can be used as absolute indicators thanks to battery operation. Depending on the version ordered, the parameters can be transferred to a computer or control via interface and further processed.

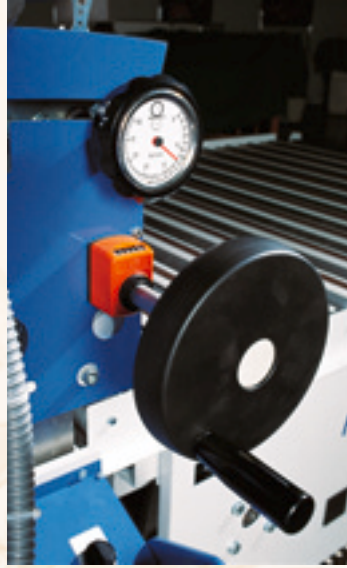
SIKO counters are adaptable series-produced devices which enable a variety of values to be displayed in addition to the standard values. Their easy mechanical mounting to an adjustment spindle renders these indicators retrofittable without problems.



Plain and practical: Variable gear designs, functional overall design with simple plug and lock technique make the DPI line a classic.



In the area of forming technology, variable end stops are equipped with position indicators to ensure correct adjustments.



No matter whether digital position indicators are initially installed or retrofitted: Placed on a shaft they fit ideally to all machines.



Photographs provided by the companies: Dreistern, Hiebrock, BSB, Hymmen, Lelco, Ott (clockwise)



Within the process chain of metal forming, DA's are responsible for aligning the workpieces.

SIKO's position indicators are being used in many industries and production environments. Whether in the metal, plastic or wood processing industries: Guiding elements, material end stops or tools require precise positioning or alignment on nearly all machines or plants. Digital position indicators are indispensable for roll adjustment in sheet bending machines. Under rough conditions,



e.g., with rolling machines, the robust die-casting design of these counters permanently withstands mechanical impacts, thus enabling exact production. Wood processing is an excellent example of the wide variety of applications. Here, several worksteps are frequently performed in a plant: plates are cut, milled and glued with edges and polished. All the adjustment values required for these processes have been successfully balanced by means of SIKO counters for years.



Tools ideally harmonized by means of digital displays ensure perfect surface processing.

# Typical applications

Digital position indicators: robust technology for extended use

Measurement via ...	Functional areas	Advantages
---------------------	------------------	------------



## ... direct rotary movement

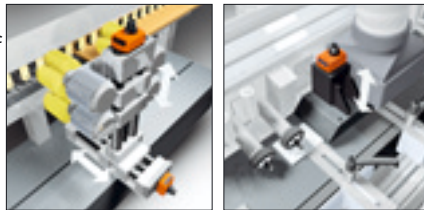
Direct movement via axle or spindle. The principle of action corresponds with that of the compound table or of linear guides, respectively.



Examples: Compound tables, planing machines, pin drilling machines

- direct display with x,y-adjustment
- easy mounting
- precise positioning
- flexible in displayed values
- mm or inch

6



Examples: Tool setting in the wood and metal processing industries



Examples: Rewinding-cutting equipment in the paper / foil industries



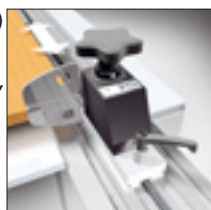
## ... indirect rotary movement

Indirect movement (bent) via toothed wheel or worm gear on racks. Here, electronic position indicators such as the DE09 are preferably used.



Examples: Angle adjusting units on saws, round and milling tables

- precise indication of angles
- variable diameters
- variable mounting positions



Example: End stop systems

# Important information in advance...

## Determination of comma positions

The table on the right side shows the comma principle. For instance, to achieve "10.0", the display should count with comma position 1 after the first "100" revolution. In series production, the comma position is marked by a coloured intermediate ring.

Order digit for comma position	Display e.g., 5-digit	Display representation
0	00000	00000
1	0000.0	0000 0
2	000.00	000 00
3	00.000	00 000
4	0.0000	0 0000

## Background knowledge

The relation between comma position and spindle pitch is the following at SIKO: The pitch of the spindle serves as the reference. If it is 4 mm, then the gear is designed so as to show 4.0 on the display after the first revolution.

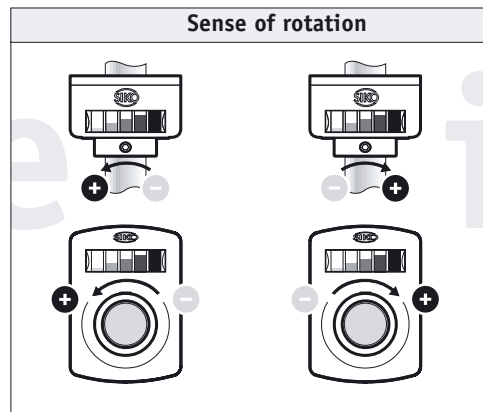
## Sense of rotation

The axle's sense of rotation influences the gears integrated in the digital indicator. Based on the machine axle to be equipped, digital position indicators are available with two senses of rotation:

"i" means clockwise (right-hand rotation)

"e" means counter-clockwise (left-hand rotation)

Depending on the ordering features "i" and "e", ascending values result on the display.



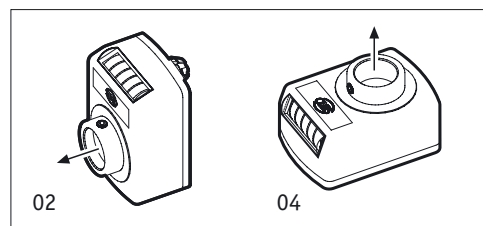
"+" shows the sense of rotation of the machine axle to be equipped. Using the ordering features "e" or "i", respectively, you can determine which sense of rotation shall result in ascending values on the display.

## Mounting position

This ordering feature is determined by two factors:

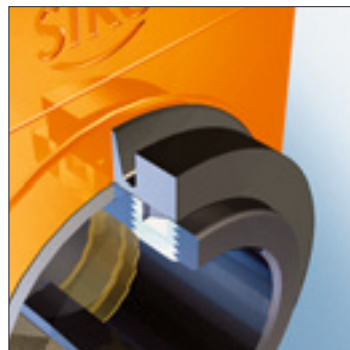
- the alignment of the machine axle
- the viewing direction to the viewing window (decades)

Position and alignment of the digital indicator's window and the decade insertion visible in it are determined via a numerical code (e.g., 02, 04, etc.).



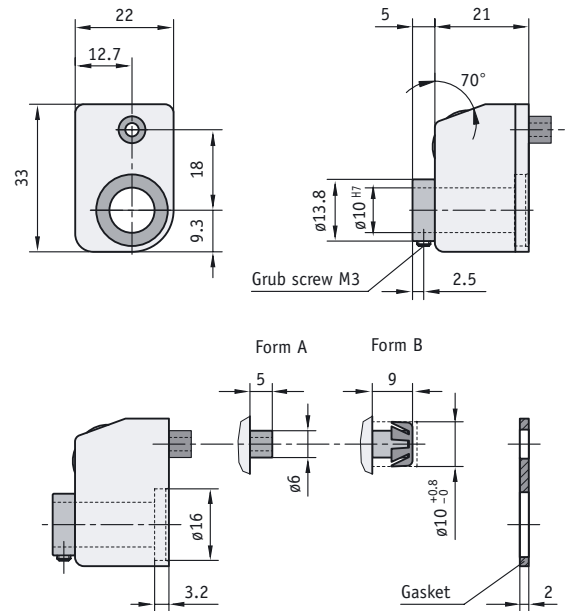
## Axial seal

If axial seals are used, the headless screw must not jut out of the shaft surface. Take care to have it flush-screwed, provide for a recess in the shaft if necessary.



# Digital Position Indicator DA02

DA02 is SIKO's smallest digital indicator. The specially small design of the DA02 is ideal for very restricted space conditions or minimum spindle distances. Technically and qualitatively this small version can take the larger ones on any time.



## Features:

- ultra-small design
- minimum shaft distance 19 mm
- display adjustable for "mm" or "inch"

## Option:

- Nirosta driving shaft
- reduction sleeves for various diameters

## DA02

Display after the first revolution	max. velocity (min <sup>-1</sup> )
010	500 (1.500)
015	500 (1.000)
020	500 (750)
025	500 (600)
030	500
040	375
050	300
060	250
080	180
100	150

**Caution:** Velocities >500 min<sup>-1</sup> must be operated for a short while only.

Formula for max. velocity =  $\frac{15.000}{\text{display after the first revolution}}$

Display	Mounting position				Counting direction
	 02	 04	 06	 07	

For the DA02, suitable reduction sleeves are available (see Accessories)

Feature		Technical data	Additional information
Counting mechanism		3 decades	
Digit height		approx. 4.0 mm	
Housing		polyamide 6, shockproof	
Weight		0.02 kg	
Ambient temperature		max. +80 °C	

#### Ordering data

Version/mounting position	02 04 06 07	<b>A</b>		see the icons on the product page showing the mounting position
Display after the first revolution	...	<b>B</b>	10, 20, 25, 30, 40, 50, 60, 80, 100, 12/5 wide range of other values on request	/5 = arithmetical value not displayed
Comma position	0 1 2	<b>C</b>	0 = 000 1 = 00.0 2 = 0.00	
Counting direct. = ascending values	i e	<b>D</b>	ascending values clockwise ascending values counter-clockwise	
Hollow-shaft diameter in mm		<b>E</b>	10 VA10 RH6, RH7, RH8	stainless steel reduction sleeve
Housing colour	0 S	<b>F</b>	orange RAL 2004 black	<b>standard</b>
Torque pin/form	A B	<b>G</b>	form A form B	<b>standard</b>

Your order:  -  -  -  -  -  -  -



Feature		Technical data	Additional information
Counting mechanism		4 decades, fine reading	
Digit height		approx. 6.0 mm	
Housing		polyamide 6, shockproof	
Weight		0.05 kg	
Ambient temperature		max. +80 °C	
<b>Ordering data</b>			
Version/mounting position	02 04 06 07	<b>A</b>	see the icons on the product page showing the mounting position
Display after the first revolution	...	<b>B</b> 10, 20, 25, 35, 40, 50, 60, 80, 100, 15/75 wide range of other values on request	/75 = arithmetical value not displayed
Comma position	0 1 2 3	<b>C</b> 0 = 0000 1 = 000.0 2 = 00.00 3 = 0.000	
Counting direct. = ascending values	i e	<b>D</b> ascending values clockwise ascending values counter-clockwise	
Hollow-shaft diameter in mm	...	<b>E</b> 14, 12.7, 15, 16 VA5, VA10, VA14, VA15 RH4, RH6, RH8, RH10, RH12	stainless steel reduction sleeve
Housing colour	0 S GR FR	<b>F</b> orange RAL 2004 black RAL 9005 grey RAL 7035 blazing red	<b>standard</b>
Torque pin/form	A B	<b>G</b> form A form B	<b>standard</b>
Viewing window	K M OS	<b>H</b> plastic mineral glass without viewing window	<b>standard</b>
Axial seal	OAD AD	<b>I</b> without axial seal with axial seal	<b>standard</b> see "Important information in advance"
Lock/hollow shaft	OAR AR	<b>K</b> without lock with lock	<b>standard</b> anti-vibration protection M ~ 20 Ncm
Intermediate plate	OZP ZP	<b>L</b> without intermediate plate with intermediate plate	<b>standard</b>
Gasket	BP GK	<b>M</b> enclosed glued	<b>standard</b>
Direction arrow	ORP P/M M/P	<b>N</b> without direction indicating arrow plus/minus minus/plus	<b>standard</b> see annex see annex

Your order:  -  -  -  -  -  -  -  -  -  -

-  -  -



Feature		Technical data	Additional information
Counting mechanism		5 decades, fine reading	
Digit height		approx. 6.0 mm	
Housing		zinc die casting	
Weight		0.5 kg	
Counting direction		adjustable	
Display adjustment		by means of adjusting screw	
Ambient temperature		max. +80 °C, version/mounting position	
<b>Ordering data</b>			
Version/mounting position	02 04	<b>A</b>	see the icons on the product page showing the mounting position
Display after the first revolution	...	<b>B</b>	10, 20, 25, 35, 40, 50, 60, 80, 100, 15/7 /7 = arithmetical value not displayed wide range of other values on request
Comma position	0 1 2 3 4	<b>C</b>	0 = 00000 1 = 0000.0 2 = 000.00 3 = 00.000 4 = 0.0000
Counting direct. = ascending values	i e e/i	<b>D</b>	ascending values clockwise ascending values counter-clockwise adjustable by the customer by opening the housing, see annex
Hollow-shaft diameter in mm	...	<b>E</b>	20, 19.05, 19 RH6, RH8, RH10, RH12, RH14 RH16, RH17.5, RH18 reduction sleeve reduction sleeve
Housing colour	0 S R FR rev	<b>F</b>	orange RAL 2004 black RAL 9005 red RAL 3004 blazing red RAL 3000 unvarnished <b>standard</b>
Calibration screw	FE OFE	<b>G</b>	with calibration screw without calibration screw <b>standard</b>
Slip clutch	RK ORK	<b>H</b>	with slip clutch without slip clutch <b>standard</b>
Torque pin/form	A B	<b>I</b>	form A form B <b>standard</b>
Labyrinth seal	OLD LD	<b>K</b>	without labyrinth seal with labyrinth seal <b>standard</b>

Your order:  -  -  -  -  -  -  -  -  -  -

# Digital Position Indicator DA08

Very robust digital indicator in a metal housing with integrated zeroing functionality. Available for a great variety of special pitches.

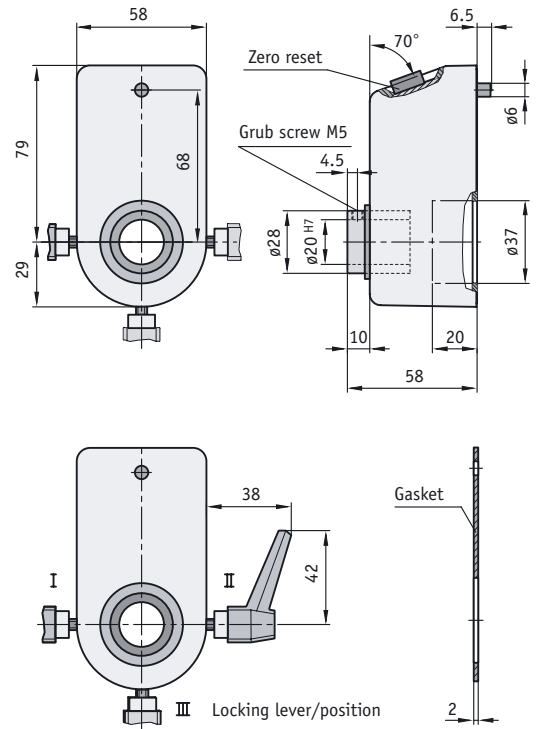


## Features:

- special indicated values
- locking lever as design component
- shaft diameters up to max. 35 mm
- display adjustable for "mm" or "inch"
- counters with 4 or 5 decades

## Option:

- reduction sleeves for various diameters



DA08

Display after the first revolution	max. velocity (min <sup>-1</sup> )	
	with zero position	without zero position
(0)0010	500	1.200
(0)0020	250	600
(0)0025	200	480
(0)0030	165	400
(0)0040	125	300
(0)0050	100	240
(0)0060	85	200
(0)0080	60	150
(0)0100	50	120

**Caution:** velocities >400 min<sup>-1</sup> should be operated for a short while only.

## Formula for

- max. velocity with zero position =  $\frac{5.000}{\text{display after the first revolution}}$
- max. velocity without zero position =  $\frac{12.000}{\text{display after the first revolution}}$

Display	Mounting position with zero reset		Mounting position without zero reset		Counting direction*
 	 <b>01</b>	 <b>03</b>	 <b>02</b>	 <b>04</b>	

For the DA08, suitable reduction sleeves are available (see Accessories), \*individually changeable counting direction

Feature	Ordering data	Technical data	Additional information	
Counting mechanism		4 decades, fine reading		
Digit height		approx. 4.5 mm		
Housing		aluminium die casting		
Weight		0.7 kg		
Counting direction		adjustable		
Zero position		optional		
Ambient temperature		max. +80 °C		
<b>Ordering data</b>				
Version/mounting position	01	<b>A</b> with zero reset	see the icons on the product page showing the mounting position	
	02			without zero reset
	03	with zero reset		
	04	without zero reset		
Counting mechanism/digits	4	<b>B</b> 4 decades	<b>standard</b>	
	5			5 decades
Display after the first revolution	...	<b>C</b> 10, 20, 25, 35, 40, 50, 60, 80, 100, 15/8 wide range of other values on request	/8 = arithmetical value not displayed	
Comma position	0	<b>D</b> 0 = (0)0000		
	1		1 = (0)000.0	
	2		2 = (0)00.00	
	3		3 = (0)0.000	
	4		4 = (0).0000	only with 5 decades
Counting direct. = ascending values	i	<b>E</b> ascending values clockwise		
	e		ascending values counter-clockwise	
	e/i		adjustable by the customer	by opening the housing, see annex
Hollow-shaft diameter	...	<b>F</b> 19, 20, 25, 35 VA20 RH8, RH10, RH12, RH14, RH16, RH18		
			stainless steel	
			reduction sleeve	
Housing colour	0	<b>G</b> orange RAL 2004	<b>standard</b>	
	S			black RAL 9005
	R			red RAL 3004
	rev			unvarnished
Locking lever/position	OKL	<b>H</b> without locking lever	<b>standard</b>	
	I			position I
	II			position II
	III			position III

Your order:

DA08	-	<input type="text" value="A"/>	-	<input type="text" value="B"/>	-	<input type="text" value="C"/>	-	<input type="text" value="D"/>	-	<input type="text" value="E"/>	-	<input type="text" value="F"/>	-	<input type="text" value="G"/>	-	<input type="text" value="H"/>
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# Digital Position Indicator DA09S

The most widely used counter in a compact design. The attenuated counter system for extended service life as well as the magnifying lense in the viewing window with significantly improved readability render this display universally usable.

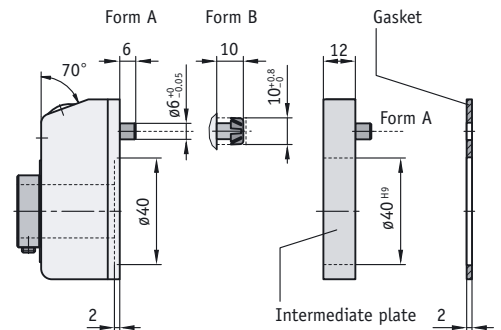
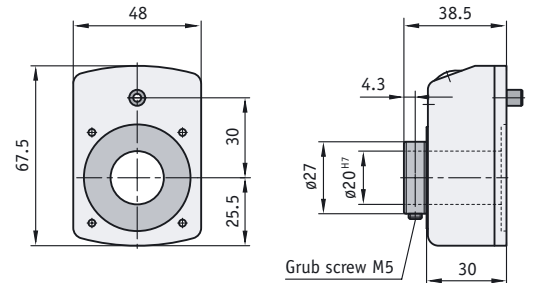


## Features:

- axial seals, dust and hose-proof

## Option:

- Nirosta driving shaft
- counter cover made of mineral glass, solvent-resistant
- reduction sleeves for various diameters



DA09S

Display after the first revolution	max. velocity (min <sup>-1</sup> )
00010	500 (1.500)
00015	500 (1.000)
00020	500 (750)
00025	500 (600)
00030	500
00040	375
00050	300
00060	250
00080	180
00100	150

**Caution:** velocities >500 min<sup>-1</sup> should be operated for a short while only.

$$\text{Formula for max. velocity} = \frac{15.000}{\text{display after the first revolution}}$$

Display	Mounting position				Counting direction
<p>Fine reading</p>	<p>02</p>	<p>04</p>	<p>06</p>	<p>07</p>	

For the DA09S, suitable reduction sleeves, an axial seal and intermediate plate are available (see Accessories)



# Digital Position Indicator DA10

Digital display particularly suited for large shaft diameters. An attenuated counter system ensures increased service life also for this position indicator.



**Features:**

- display adjustable for "mm" or "inch"
- axial seals, dustproof

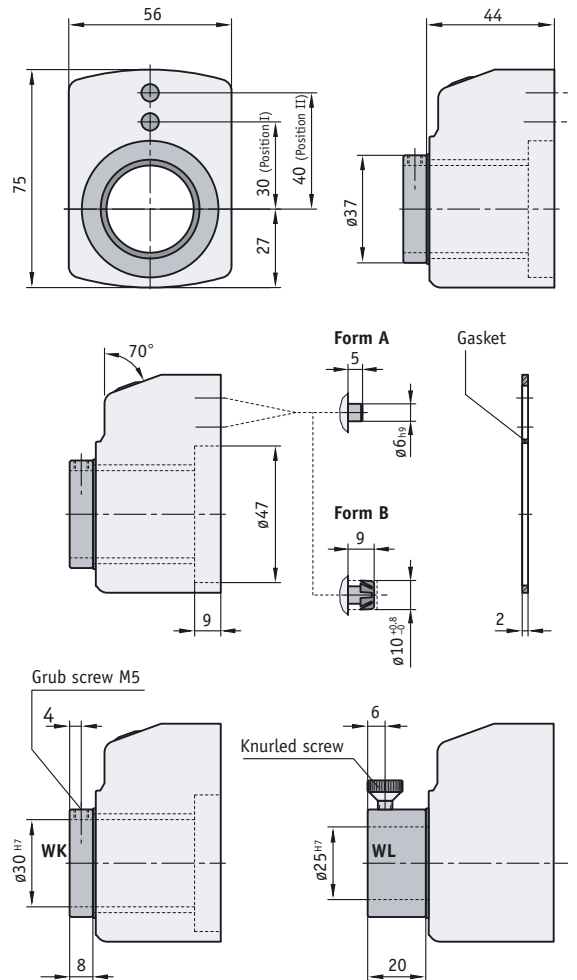
**Option:**

- counter cover made of mineral glass, solvent-resistant
- reduction sleeves for various diameters

DA10	Display after the first revolution	max. velocity (min <sup>-1</sup> )
00010	500	(1.500)
00015	500	(1.000)
00020	500	(750)
00025	500	(600)
00030	500	
00040	375	
00050	300	
00060	250	
00080	180	
00100	150	

**Caution:** velocities >500 min<sup>-1</sup> should be operated for a short while only.

Formula for max. velocity =  $\frac{15.000}{\text{display after the first revolution}}$



Display	Mounting position				Counting direction
	<p>12</p>	<p>14</p>	<p>16</p>	<p>17</p>	

For the DA10, suitable reduction sleeves and an axial seal are available (see Accessories)

Feature	Ordering data	Technical data	Additional information
Counting mechanism		5 decades, fine reading	
Digit height		approx. 6 mm	
Housing		polyamide 6, shockproof	
Weight		0.1 kg	
Ambient temperature		max. +80 °C	
<b>Ordering data</b>			
Version/mounting position	12 14 16 17	<b>A</b>	see the icons on the product page showing the mounting position
Display after the first revolution	...	<b>B</b>	10, 20, 25, 35, 40, 50, 60, 80, 100, 15/748 /7 = arithmetical value not displayed wide range of other values on request
Comma position	0 1 2 3 4	<b>C</b>	0 = 00000 1 = 0000.0 2 = 000.00 3 = 00.000 4 = 0.0000
Counting direct. = ascending values	i e	<b>D</b>	ascending values clockwise ascending values counter-clockwise
Hollow-shaft diameter	...	<b>E</b>	25, 30 VA30 stainless steel RH10, RH12, RH14, RH16, RH20, RH25 reduction sleeve
Hollow shaft/form	WK WL	<b>F</b>	hollow shaft short hollow shaft long
Torque pin/form	A B	<b>G</b>	form A form B
Torque pin/position	I II	<b>H</b>	position I position II
Housing colour	0 S	<b>I</b>	orange RAL 2004 black RAL 9005
Viewing window	K M OS	<b>K</b>	plastic mineral glass without viewing window
Axial seal	OAD AD	<b>L</b>	without axial seal with axial seal
Gasket	BP GK	<b>M</b>	enclosed glued

Your order:  -  -  -  -  -  -  -  -  -  -

-  -

# Digital Position Indicator DA10R/1

Digital indicator, specially designed for large diameters. With its two in-built counters, it is designed for use with wood milling machines.



## Features:

- axial seals, dustproof

## Option:

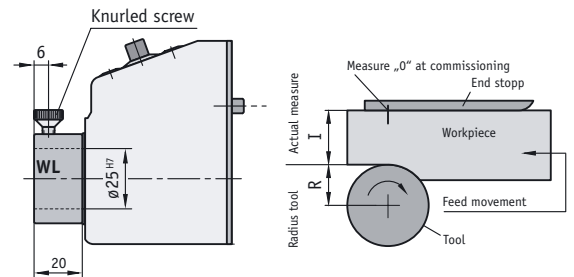
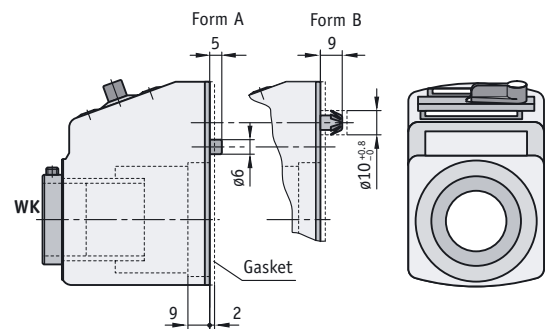
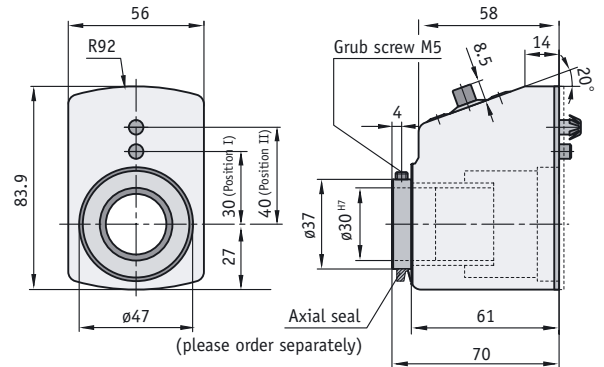
- counter cover made of mineral glass, solvent-resistant
- reduction sleeves for various diameters

## DA10R/1

Display after the first revolution	max. velocity (min <sup>-1</sup> )
00010	500 (1.500)
00015	500 (1.000)
00020	500 (750)
00025	500 (600)
00030	500
00040	375
00050	300
00060	250
00080	180
00100	150

**Caution:** velocities >500 min<sup>-1</sup> should be operated for a short while only.

$$\text{Formula for max. velocity} = \frac{15.000}{\text{display after the first revolution}}$$



## Example of use:

- Counter (1) 5-digit: actual value of workpiece width
- Counter (2) 4-digit: tool radius

A toggle switch between the counters allows for independent adjustment of both counters.

Display	Counting direction
<p>R 1 2 3 4 5 Tool radius „R“</p> <p>1 2 3 4 5 Actual measure „I“</p> <p>Fine reading</p>	

For the DA10R/1, suitable reduction sleeves, an axial seal are available (see Accessories)

Feature	Ordering data	Technical data	Additional information
Counters		5 decades, fine reading	
Digit height		approx. 6 mm	
Housing		polyamide 6, shockproof	
Weight		0.1 kg	
Ambient temperature		max. +80 °C	
<b>Ordering data</b>			
Display after the first revolution	... <b>A</b>	10, 20, 25, 35, 40, 50, 60, 80, 100, 15/747 wide range of other values on request	/7 = arithmetical value not displayed
Comma position	0 <b>B</b>	0 = 0000	
	1 <b>B</b>	1 = 000.0	
	2 <b>B</b>	2 = 00.00	
	3 <b>B</b>	3 = 0.000	
Counting direct. = ascending values	i <b>C</b>	ascending values, clockwise	
	e <b>C</b>	ascending values, counter-clockwise	
	i/e <b>C</b>	actual value counter, clockwise	tool radius counter, counter-clockwise
	e/i <b>C</b>	actual value counter, counter-clockwise	tool radius counter, clockwise
Hollow-shaft diameter	... <b>D</b>	25, 30 RH10, RH20, RH25, RH26	reduction sleeve
Hollow shaft/form	WK <b>E</b>	hollow shaft short	<b>standard</b>
	WL <b>E</b>	hollow shaft long	
Torque pin/form	A <b>F</b>	form A	<b>standard</b>
	B <b>F</b>	form B	
Torque pin/position	I <b>G</b>	position I	<b>standard</b>
	II <b>G</b>	position II	
Housing colour	S <b>H</b>	black RAL 9005	<b>standard</b>
Viewing window	K <b>I</b>	plastic	<b>standard</b>
Axial seal	OAD <b>K</b>	without axial seal	<b>standard</b>
	AD <b>K</b>	with axial seal	see "Important information in advance"

Your order: DA10R/1 - A - B - C - D - E - F - G - H - I - K

# Digital Position Indicator DE09

Freely programmable electronic position indicator for recording absolute values (battery backup). As a consistent further development of the bestselling mechanical position indicator worldwide, the DA09S, it opens up even more variable areas of use.

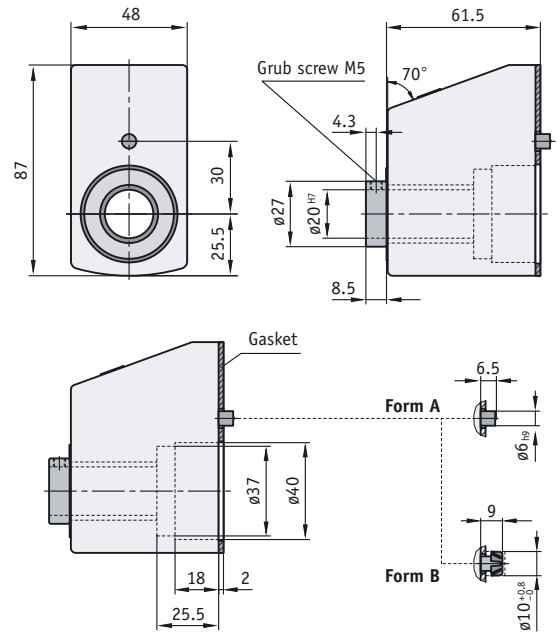


## Features:

- resolution 0.01 mm, pitches up to 10 mm
- absolute display with arithm. sign for negative values
- possible angle display (resolution 0.5°)
- incremental function (relative measurement)
- battery-operated (~6 years)
- through hollow shaft

## Accessories:

- programming software PROSO DE09  
It enables free programming of the parameters for spindle pitch, sense of rotation and comma position.



Display	Mounting position				Counting direction
	 02	 04	 06	 07	

For the DE09, suitable reduction sleeves and an axial seal are available (see Accessories)

Feature	Ordering data	Technical data	Additional information
Counter		LCD, 5-digit (7 mm)	
Display range		-9999 ... 99999 (absolute) -9999 ... 9999 (relative)	
Battery		lithium cylindric cell 3 V, type CR 17335, service life ~6 years plastic, glass-fibre reinforced, PPO GFN 2	
Weight		0.170 kg	
Hollow shaft		20 <sup>H7</sup> , on plain bearing	
Velocity (rev/min)		max. 600 (100 % ED)	
Shaft load		max. 20 N radial, 10 N axial	
Operating temperature		+5 ... +50 °C	
Storage temperature		-20 ... +70 °C	
Vibration resistance		10 g (5 ... 150 Hz) – acc. to DIN IEC 68-2-6 20 g (100 ... 2.000 Hz)	
Shock resistance		30 g (15 ms) – acc. to DIN IEC 68-2-27	
Interference resistance		interference prot. class 3 – acc. to DIN IEC 801-3	
Test mark		CE mark	

#### Ordering data

Version/mounting position	02 04 06 07	<b>A</b>		see the icons on the product page showing the mounting position
Display after the first revolution	5 - 1080 1080 - 2160 3600	<b>B</b>	one digit step by step two digits step by step angle mode, resolution 0.5°	customer-specific programming is indicated by the order character "B"
Comma position	0 1 2 3 4	<b>C</b>	0 = 00000 1 = 0000.0 2 = 000.00 3 = 00.000 4 = 0.0000	
Incremental function	OK K	<b>D</b>	without incremental function with incremental function	
Counting direct. = ascending values	i e	<b>E</b>	ascending values clockwise ascending values counter-clockwise	
Hollow-shaft diameter	...	<b>F</b>	20 RH08, RH10, RH12, RH14, RH18	reduction sleeve
Colour	S R	<b>G</b>	black red	<b>standard</b>
Torque pin/form	A B	<b>H</b>	form A form B	<b>standard</b>
Axial seal	OAD AD	<b>I</b>	without axial seal with axial seal	<b>standard</b> see "Important information in advance"
Front foil	SL	<b>K</b>	front foil with SIKO Logo	<b>standard</b>

Your order:

DE09	-	<b>A</b>	-	<b>B</b>	-	<b>C</b>	-	<b>D</b>	-	<b>E</b>	-	<b>F</b>	-	<b>G</b>	-	<b>H</b>	-	<b>I</b>	-	<b>K</b>
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# Accessories:

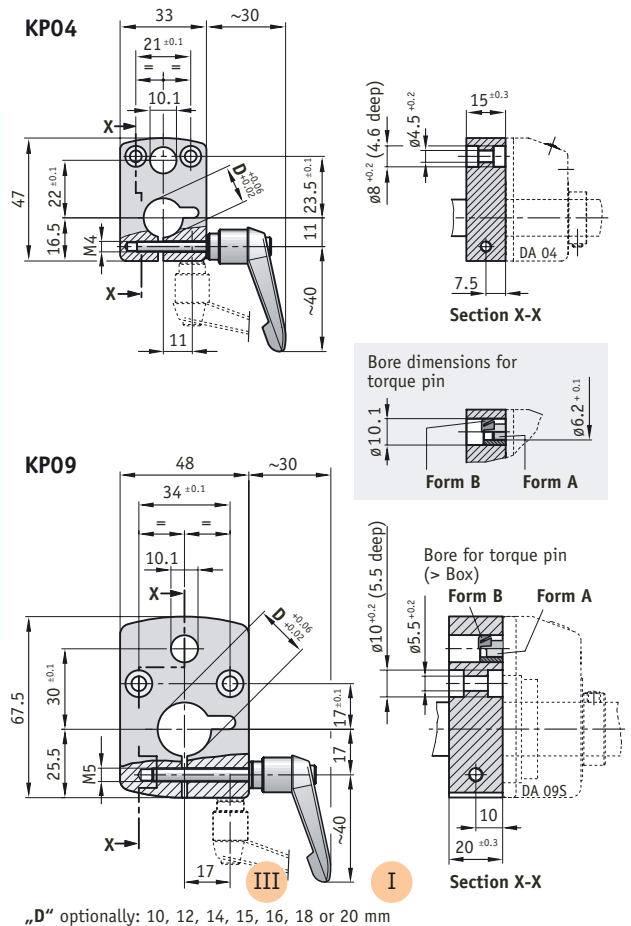
## Clamping plate KP04/KP09

Whether you use it for initial installation or retrofitting: the easy and quick mounting of the clamping plates KP04/KP09 between the position indicator and mounting surface helps avoid uncontrolled spindle movements.



### Features:

- for shaft diameters 8–20 mm
- selectable position of the clamping lever
- easy mounting and retrofitting



„D“ optionally: 10, 12, 14, 15, 16, 18 or 20 mm

Feature	Ordering data	Technical data	Additional information
Housing		aluminium, anodized	
Clamping lever		plastic, engaging	
<b>Ordering data</b>			
Version	KP09	A	
		KP04	
Bore diameter D	...	B	10, 12, 14, 15, 16, 18, 20
		...	8, 10, 12, 14, 15
Locking lever/position	I	I	mounting position I
	III	III	mounting position III
			corresponds to position II by mirroring of I
			corresponds to position IV by mirroring of III
Torque pin/form	A	A	
	B	B	

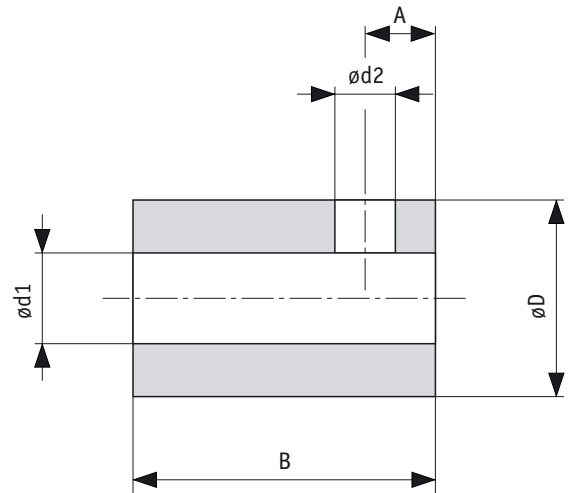
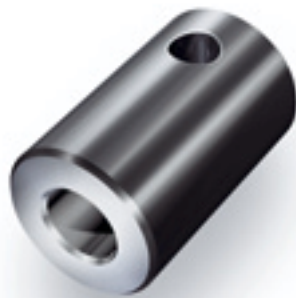
Your order:

KP... -  -  -  -

# Accessories:

## Reduction sleeve RH...

If the diameter of the adjusting spindle is smaller than the opening of the hollow shaft to be used, then this difference can be bridged by means of the reduction sleeves indicated below. The table below serves for a separate order. For new orders of position indicators, the suitable sleeve can also be ordered on request.



### Features:

- easy and quick mounting
- in stainless steel design as an option

Feature	Ordering data	Technical data	Additional information		
Material		steel, blued			
<b>Ordering data</b>					
Version	RH01	A			
	RH02				
	RH03				
	RH04				
	RH07				
Inner diameter d1 <sup>H7</sup>	...	B	see table below		
<b>Type</b>					
Suitable for display	RH01	RH02	RH03	RH04	RH07
	DA05/1	DA10	DA10	DA04	DA02
	DA08	DA10R/1	DA10R/1		
	DA09S	(shaft WK)	(shaft WL)		
	DE09				
ød1 <sup>H7</sup> (steel)*	6; 8; 10; 12; 14; 16; 18	10; 12; 14; 16; 18; 20; 22; 24; 25; 26; 28	18; 20; 22	4; 6; 8; 10; 12	6; 8
ød1 <sup>H7</sup> (stainless steel)*	VA8; VA9.525; VA10; VA12; VA12.7; VA14; VA15; VA15.875; VA16	VA12.7; VA24; VA25; VA25,4		VA9.525; VA10; VA12	
ød2*	5.5	5.5	5.5	4.2	3.2
øD <sub>7</sub> *	20	30	25	14	10
A*	4.5	4.5	4.5	3.5	2.5
B*	20	30	30	17	14

\*Information in mm

Your order:

RH... -

# Annex

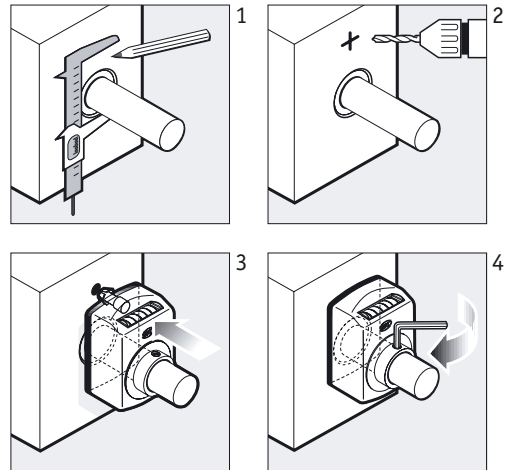
## Mounting help, changing the counting direction

### Mounting the torque support

The shaft radius is added to the distance measure between hollow shaft and torque support axle. This measure is drawn accordingly on the mounting surface using a calliper and plotting needle, then marked and drilled (for the drilling diameter and depth see the technical drawings). Mounting of the position indicator should now be possible without tension if drilling has been performed correctly.

### Lock on the shaft

For locking on the shaft the headless screw is screwed in and tightened. If axial seals are used, the headless screw should be flush-screwed (provide a recess in the shaft, if necessary).



### Torque supports (2 versions)

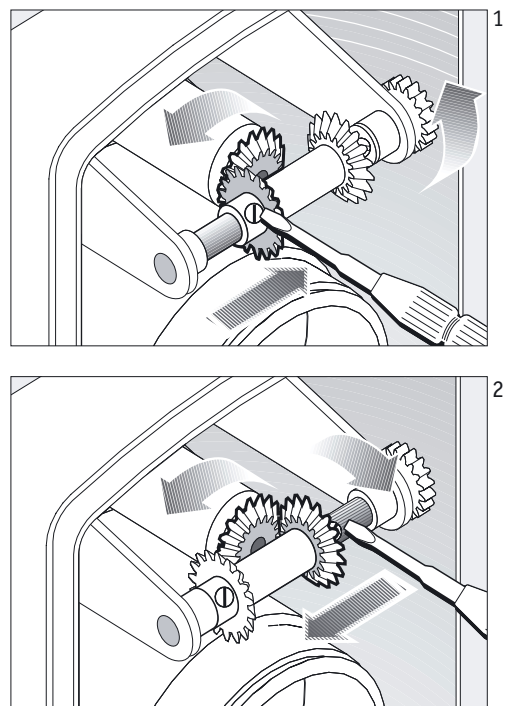
With nearly all position indicators, you may choose between the 2 versions plain pin (A) or umbrella-type pin (B). The umbrella-type pin torque support is the ideal solution for compensating for mounting tolerances.



### Changing the counting direction

The position indicators DA05/1 and DA08 offer the possibility of later changing the counting direction. For this purpose, cautiously open the housing. Loosen the clamping screws of the bevel wheels for being able to shift them on the axle and tighten them again after having done so. When shifting the wheels take care that the tooth play is correct and that they are running smoothly.

For instance, if the left bevel wheel is engaged, (figure 1), this will result in a clockwise positive counting direction. Here the viewing direction from behind is represented.



# Annex

## Arrow symbols, inch measure

### Guide for Counting direction

On the models DA04 and DA09S, the symbol „direction arrow“ can be printed as an option. In connection with a “+“ or “-“ it is easily understandable which sense of rotation of the axle/spindle results in an ascending or descending representation on the decades. The direction indicating arrows will not be printed on black housings.



### Inch representation: the advantages of the analog principle

Whereas digital principles are resolution-dependent, axial rotary movements have an infinitely high resolution. Theoretically, it would be possible to subdivide even the smallest rotary measurements into an arbitrarily high quantity of intermediate steps. This enables loss-free representation of metric pitches also in the inch unit. The gear takes over the conversion.

### An example

4 mm in inch; indicated value =  $4/25.4 = 0.15(748)$ . Although the last three digits, „748“ are not displayed, they are, however, counted as well, due to the analog measuring principle.

mm < > inch

**SIKO GmbH**

Weihermattenweg 2  
79256 Buchenbach  
Germany

**Telephone**

+49 7661 394-0

**Telefax**

+49 7661 394-388

**E-Mail**

info@siko.de

**Internet**

www.siko.de

Looking for a dealer near  
to you?

You can find the complete  
addresses of all SIKO product  
representatives in the support  
section of our website:

[www.siko.de](http://www.siko.de)

**SIKO Products Inc.**

P.O. Box 279  
Dexter, MI 48130  
USA

**Telephone**

+1 734 42 63 476

**Telefax**

+1 734 42 63 453

**E-Mail**

sales@sikoproducts.com

**Internet**

www.sikoproducts.com

**SIKO Ltd.**

Unit 6, Dalton Lane  
Codbeck Estate, Dalton  
Thirsk, North Yorkshire  
YO7 3HR  
United Kingdom

**Telephone**

+44 1845 578845

**Telefax**

+44 1845 577781

**E-Mail**

sales@siko-uk.com

**Internet**

www.siko-uk.com

**SIKO Italia S.r.l.**

Via Borromeo, 4  
I-20017 Rho MI  
Italy

**Telephone**

+39 02 9390 6329

**Telefax**

+39 02 93469532

**E-Mail**

info@siko-italia.com

**Internet**

www.siko-italia.com

**SIKO Mess- und  
Positioniersysteme  
GmbH**

Deisrütistrasse 11  
8472 Seuzach  
Switzerland

**Telephone**

+41 52 317 46 41

**Telefax**

+41 52 317 46 42

**E-Mail**

info@siko-schweiz.ch

**Internet**

www.siko-schweiz.ch

**SIKO International  
Trading (Shanghai)  
Co. Ltd.**

Unit A, 26<sup>th</sup> Floor New  
Rainbow Jie Yun Bldg.,  
2 Lane 600, Tian Shan  
Road, Shanghai/  
China 200051

**Telephone**

+86 21 62 59 47 45

**Telefax**

+86 21 32 11 04 20

**E-Mail**

info@siko.cn

**Internet**

www.siko.cn