

Measuring wheel systems

System components	Measuring wheels	Different coatings, different circumferences
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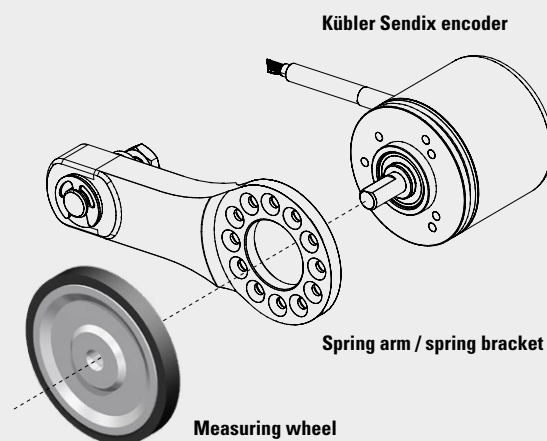
Measuring wheels for measuring the length of products in movement, e.g. in the paper, metal, textile, wood, plastic or food industry.

Different wheel surfaces to meet the requirements of the various surfaces of the product to be measured – different circumferences, designed for use with Kübler encoders, available for metric and imperial systems.

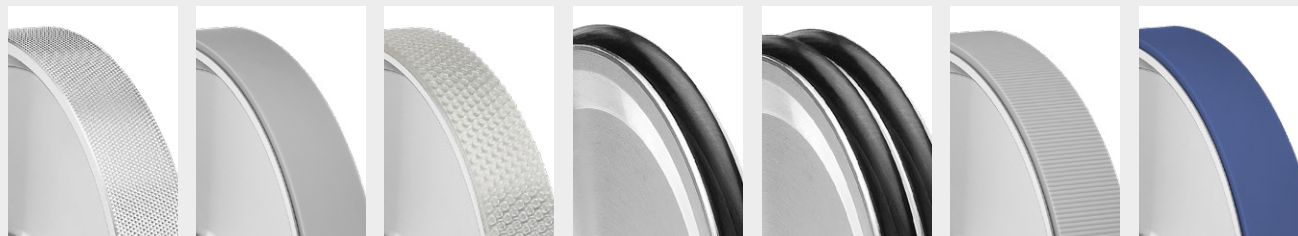
The measuring wheels can be easily combined with Kübler Sendix encoders and suitable encoder brackets.

The brackets are equipped with spring elements to ensure optimum contact pressure of the measuring wheel on the measuring surface and as compensation for unevenness and assembly tolerances in the application.

In addition, the measuring wheels can only be used for in-house purposes which are not subject to the stipulations of the German calibration code.



Measuring wheel coatings



Diamond knurl
(aluminum)

Plastic smooth
(polyurethane)

Tufted rubber
(polyurethane)

O-ring
(NBR70)

Double O-ring
(NBR70)

Plastic corrugated
(polyurethane)

Plastic smooth
FDA-compliant

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Measuring wheel coatings

Selection of the measuring wheel coatings according to the surface of the measured material								
		diamond knurl (aluminum)	rubber / plastic, smooth (polyurethane)	Noppen (polyurethane)	O-Ring (NBR70)	Doppel O-Ring (NBR70)	plastic, corrugated (polyurethane)	plastic, smooth FDA-compl. (polyurethane)
Surface of the measured material:	Profile measuring wheel	1	2 / 4	6	7	8	9	B
Cardboard		✓	✓	✓	✓	✓	✓	✓
Wood		✓	✓	✓	✓	✓	✓	✓
Textile		✓	✓	✓	✓	✓	✓	✓
Plastic (e.g. PVC, PE, ...)		-	✓	✓	✓	✓	✓	✓
Paper		-	✓	✓	✓	✓	✓	✓
Wire, greased metals, steel profiles, leather		-	✓	-	-	-	-	✓
Carpet, cables, nonwoven		-	-	✓	-	-	-	-
Greased metals, glass, floor coverings		-	-	-	-	-	✓	-
Painted surfaces		-	✓	-	✓	✓	✓	✓
Rubber, soft plastic		✓	-	-	-	-	-	-
Surface available for measuring wheel circumference:								
100 mm		✓	✓	-	-	-	-	-
200 mm (tread 5.5 mm)		✓	✓	-	✓	-	-	✓
200 mm (tread 12 mm)		✓	✓	✓	✓	✓	✓	✓
300 mm		✓	✓	✓	✓	✓	✓	✓
500 mm		✓	✓	✓	-	-	✓	✓
6" (tread 5.5 mm)		✓	✓	-	✓	-	-	-
6" (tread 12 mm)		✓	-	-	-	-	-	-
12"		✓	✓	✓	✓	✓	✓	-

Technical specifications of the measuring wheels:

Max. lateral run-out: 0.2 mm
 Max. radial run-out: 0.2 mm
 Material: Aluminum
 Temperature range: -30 °C ... +80 °C [-22 °F ... +176 °F]

Measuring wheel systems

System components		Measuring wheels				Different coatings, different circumferences							
Order code		8.0000		.	3	XXX		.	00	XX			
Measuring wheel						a				b			
Measuring wheel circumference	suitable for measuring wheel /measuring wheel system					Tread width	Profil measuring wheels	Coating	Coating hardness Shore A	Wheel no. a	Weight	Standard bore b ¹⁾	
	MWE11	MWE2x	MWE3x	MWE4x	MWE6x								
100 mm	✓	-	-	-	-	9,5 mm	1	diamond knurl (aluminum)	-	113	15,0 g	06 = 6 mm [0.24"]	
							2	natural rubber	60	123	16,0 g		
200 mm	-	✓	✓	-	-	5,5 mm	1	diamond knurl (aluminum)	-	215	38,5 g	06 = 6 mm [0.24"]	
							4	plastic smooth (polyurethane)	70	245	41,5 g		
							7	O-ring (NBR70)	70	275	36,0 g		
							B	plastic smooth, FDA-compliant	75	2B5	41,5 g		
	-	-	-	✓	✓	12 mm	1	diamond knurl (aluminum)	-	217	60,0 g	06 = 6 mm [0.24"] 10 = 10 mm [0.39"]	
							4	plastic smooth (polyurethane)	90	247	60,0 g		
							6	tufted rubber (polyurethane)	60	267	60,0 g		
							7	O-ring (NBR70)	70	277	60,0 g		
							8	double O-ring (NBR70)	70	287	60,0 g		
							9	plastic corrugated (polyurethane)	90	297	60,0 g		
							B	plastic smooth, FDA-compliant	75	2B7	60,0 g		
300 mm	-	-	-	✓	✓	12 mm	1	diamond knurl (aluminum)	-	317	115,0 g	10 = 10 mm [0.39"]	
							4	plastic smooth (polyurethane)	90	347	115,0 g		
							6	tufted rubber (polyurethane)	60	367	115,0 g		
							7	O-ring (NBR70)	70	377	115,0 g		
							8	double O-ring (NBR70)	70	387	117,0 g		
							9	plastic corrugated (polyurethane)	90	397	115,0 g		
							B	plastic smooth, FDA-compliant	75	3B7	115,0 g		
500 mm	-	-	-	✓	✓	25 mm	1	diamond knurl (aluminum)	-	517	505,0 g	10 = 10 mm [0.39"]	
							4	plastic smooth (polyurethane)	90	547	501,0 g		
							6	tufted rubber (polyurethane)	60	567	483,0 g		
							9	plastic corrugated (polyurethane)	90	597	501,0 g		
							B	plastic smooth, FDA-compliant	75	5B7	501,0 g		
6"	-	✓	-	-	-	5,5 mm	1	diamond knurl (aluminum)	-	615	25,0 g	06 = 6 mm [0.24"]	
							4	plastic smooth (polyurethane)	70	645	23,5 g		
							7	O-ring (NBR70)	70	675	21,5 g		
	-	-	-	-	-	12 mm	1	diamond knurl (aluminum)	-	617	60,0 g		
12"	-	-	-	✓	✓	12 mm	1	diamond knurl (aluminum)	-	717	115,0 g	10 = 10 mm [0.39"]	
							4	plastic smooth (polyurethane)	90	747	115,0 g		
							6	tufted rubber (polyurethane)	60	767	115,0 g		
							7	O-ring (NBR70)	70	777	115,0 g		
							8	double O-ring (NBR70)	70	787	117,0 g		
							9	plastic corrugated (polyurethane)	90	797	115,0 g		
Stock types													
8.0000.3215.0006		8.0000.3275.0006				8.0000.3597.0010							
8.0000.3217.0010		8.0000.3347.0010				8.0000.3615.0006							
8.0000.3245.0006		8.0000.3377.0010				8.0000.3645.0006							
8.0000.3247.0010		8.0000.3547.0010				8.0000.3675.0006							
8.0000.3267.0010		8.0000.3567.0010											

1) Other bore diameters on request

Measuring wheel systems

System components	Measuring wheels	Different coatings, different circumferences
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Dimensions

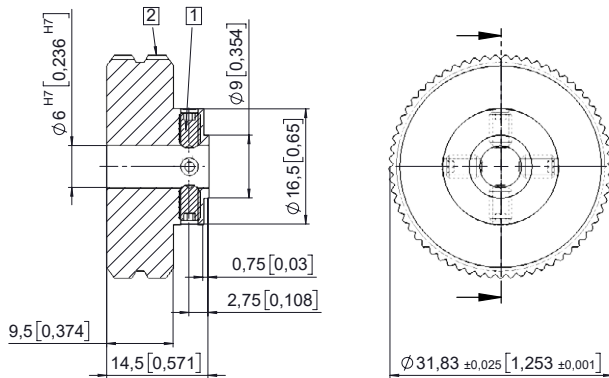
Dimensions in mm [inch]

Measuring wheel circumference 100 mm $\pm 0,1$ mm

Tread width 9,5 mm

No. 113

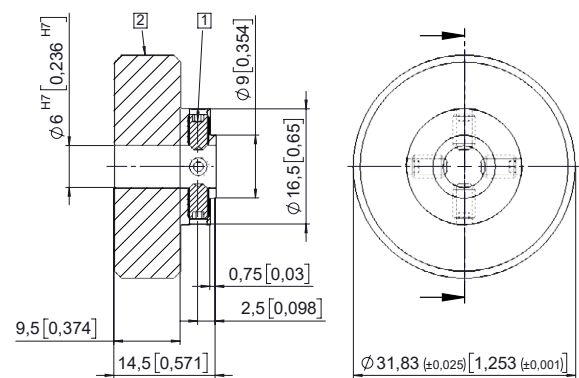
diamond knurl
(aluminum)



- 1 screw M3x5 ISO4029 (4x)
- 2 diamond knurl

No. 123

natural rubber

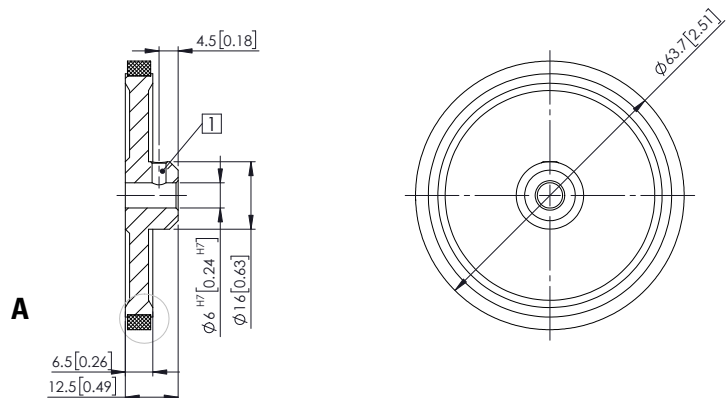


- 1 screw M4x6 ISO4029
- 2 natural rubber, Shore 60

Measuring wheel circumference 200 mm $\pm 0,2$ mm

Tread width 5,5 mm

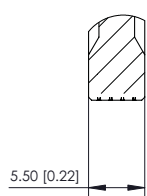
- 1 screw M4x6 ISO4029



A for measuring wheel no. (with coating):

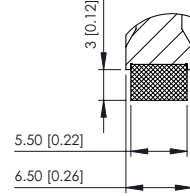
No. 215

diamond knurl
(aluminum)



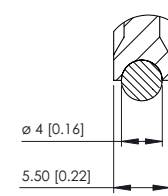
Nr. 245 / 2B5

plastic smooth
(polyurethane)



No. 275

O-ring
(NBR)



Measuring wheel systems

System components	Measuring wheels	Different coatings, different circumferences
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Dimensions

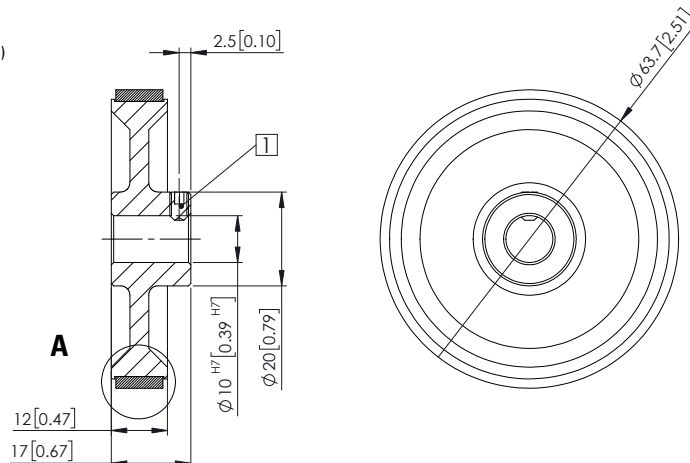
Dimensions in mm [inch]

Measuring wheel circumference 200 mm $\pm 0,2$ mm (with O-ring $\pm 0,5$ mm)

Tread width 12 mm

Bore for shaft 10 mm (also with bore 6 mm)

1 screw M4x6 ISO4029



A for measuring wheel no. (with coating):

No. 217
diamond knurl
(aluminum)

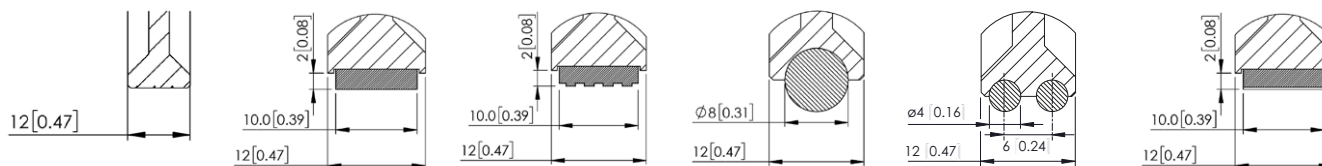
Nr. 247 / 2B7
plastic smooth
(polyurethane)

No. 267
tufted rubber
(polyurethane)

No. 277
O-ring
(NBR)

No. 287
double O-ring
(NBR)

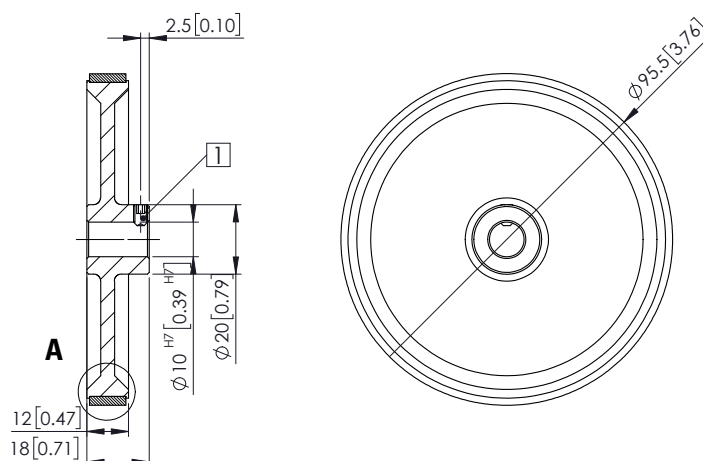
No. 297
plastic corrugated
(polyurethane)



Measuring wheel circumference 300 mm $\pm 0,2$ mm (with O-ring $\pm 0,5$ mm)

Tread width 12 mm

1 screw M4x6 ISO4029



A for measuring wheel no. (with coating):

No. 317
diamond knurl
(aluminum)

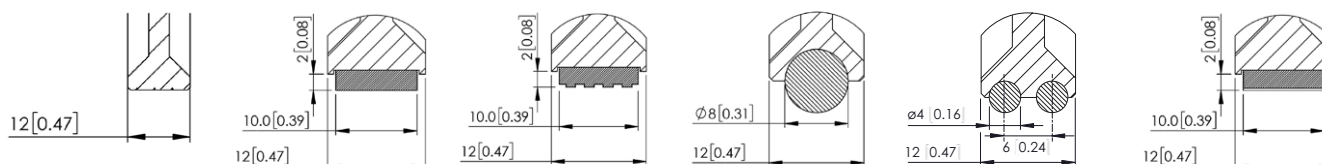
Nr. 347 / 3B7
plastic smooth
(polyurethane)

No. 367
tufted rubber
(polyurethane)

No. 377
O-ring
(NBR)

No. 387
double O-ring
(NBR)

No. 397
plastic corrugated
(polyurethane)



Measuring wheel systems

System components

Measuring wheels

Different coatings, different circumferences

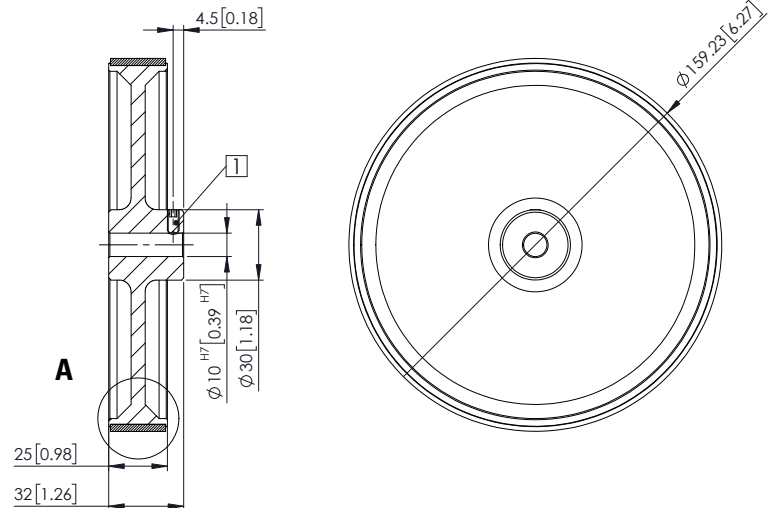
Dimensions

Dimensions in mm [inch]

Measuring wheel circumference 500 mm $\pm 1,0$ mm

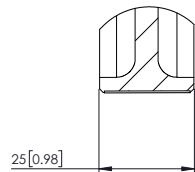
Tread width 25 mm

1 screw M5x10 ISO4029

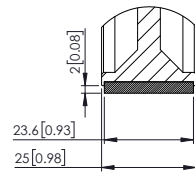


A for measuring wheel no. (with coating):

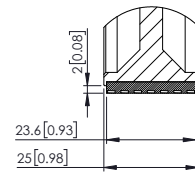
No. 517
diamond knurl
(aluminum)



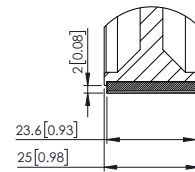
Nr. 547 / 5B7
plastic smooth
(polyurethane)



No. 567
tufted rubber
(polyurethane)



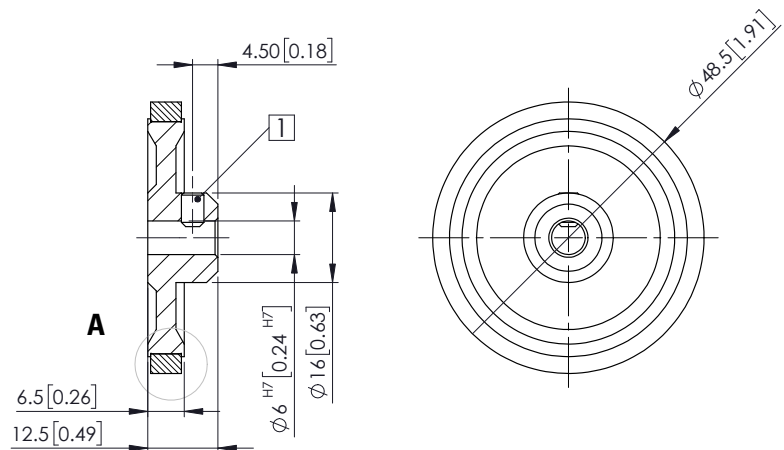
No. 597
plastic corrugated
(polyurethane)



Measuring wheel circumference 6" $\pm 0,2$ mm

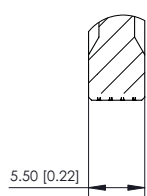
Tread width 5,5 mm

1 screw M4x6 ISO4029

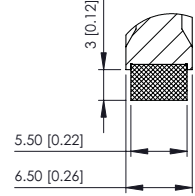


A for measuring wheel no. (with coating):

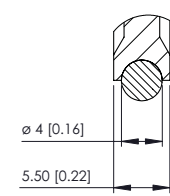
No. 615
diamond knurl
(aluminum)



No. 645
plastic smooth
(polyurethane)



No. 675
O-ring
(NBR)



Measuring wheel systems

System components	Measuring wheels	Different coatings, different circumferences
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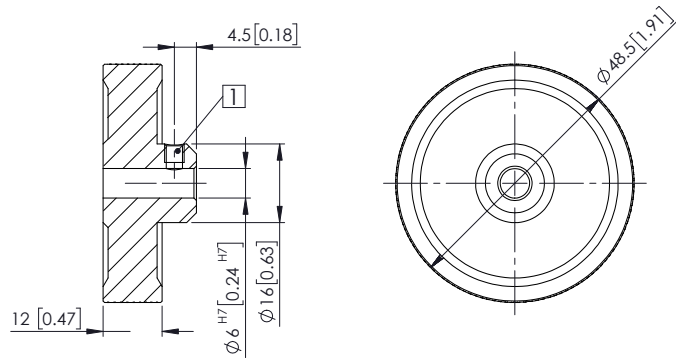
Dimensions

Dimensions in mm [inch]

Measuring wheel circumference 6" $\pm 0,2$ mm

Tread width 12 mm

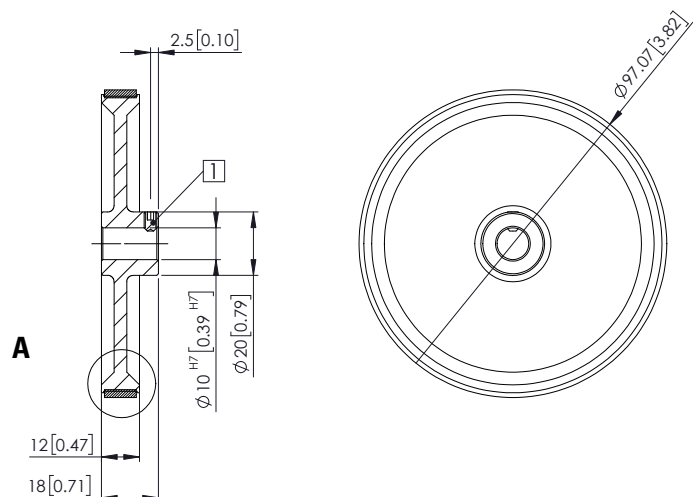
1 screw M4x6 ISO4029



Measuring wheel circumference 12" $\pm 0,2$ mm (with O-ring $\pm 0,5$ mm)

Tread width 12 mm

1 screw M4x6 ISO4029



A for measuring wheel no. (with coating):

No. 717
diamond knurl
(aluminum)

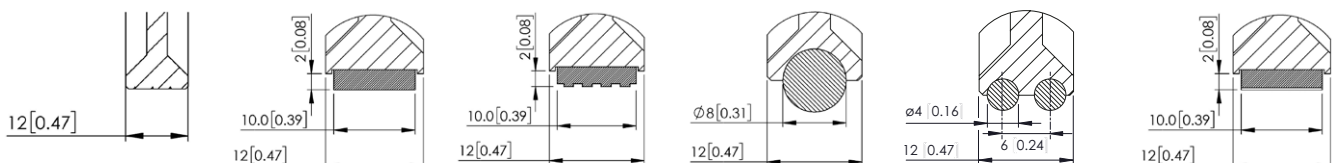
No. 747
plastic smooth
(polyurethane)

No. 767
tufted rubber
(polyurethane)

No. 777
O-ring
(NBR)

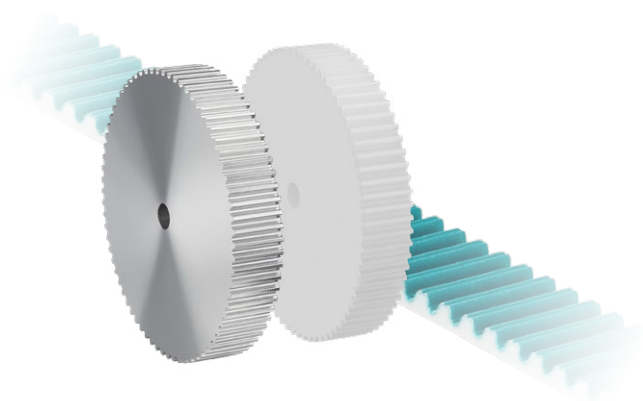
No. 787
double O-ring
(NBR)

No. 797
plastic corrugated
(polyurethane)



Measuring wheel systems

System components	Pulley and toothed belt	For encoders with shaft ø 10 mm
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For 100 % slip-free measurement of linear movements.

Pulleys and toothed belts are optimally matched and can be attached to all encoders with a shaft ø 10 mm.

In combination with a Kübler spring arm or spring bracket, the result is a highly precise and safe measuring system.

Features

• Pulley

Made of aluminum or plastic in various widths and circumferences. Bore diameter 10 mm.

• Toothed belt

The steel-reinforced plastic toothed belt in lengths up to 100 m is quickly and easily glued to the application.

(Recommendation: double-sided adhesive tape e.g. type M3, 9088FL)

Also suitable for curved surfaces.

Order code Pulley

8.0000 . A X X 1 . 0360

Preferred types with short delivery time are shown in **bold underlined**

a Material
1 = aluminum
2 = plastic

b Width
1 = 10 mm [0.39"]
2 = **20 mm [0.79"]**

c Pitch circumference
0360 = **360 mm**

Other pitch circumferences on request
0300 = 300 mm 0150 = 150 mm
0240 = 240 mm 0120 = 120 mm
0220 = 220 mm 0100 = 100 mm

Order code Toothed belt

8.0000 . B 1 X 1 . XXXX

Preferred types with short delivery time are shown in **bold underlined**

a Width
1 = 10 mm
3 = **25 mm**
4 = 50 mm

b Length [in dm]¹⁾, Ex. :
0010 = 1 m
0020 = 2 m
...
1000 = 100 m

Optional on request:
length > 100 m

Technical data

Pulley	
Material	aluminum or plastic (POM-C)
Width	10 / 20 mm
Pitch circumference	100 ... 360 mm
Number of teeth	20 ... 72
Toothing type	HD60 – 5M
Pitch	5 mm

Toothed belt	
Material	steel-reinforced PU with polyamide fabric on the teeth side
Toothing type	RTD 5M
Tooth strength	37,8 N/cm belt width
Bend radius	min. 30 mm
Width	10 mm, 25 mm, 50 mm (others on request)
Height	3,8 mm
Length tolerance	± 0,8 mm/m
Width tolerance	± 0,5 mm
Weight	10 mm width 40 g/m 25 mm width 100 g/m 50 mm width 195 g/m

1) Yard ware (1 m, 2 m, ... 100 m), lengths > 100 m on request.

Measuring wheel systems

System components

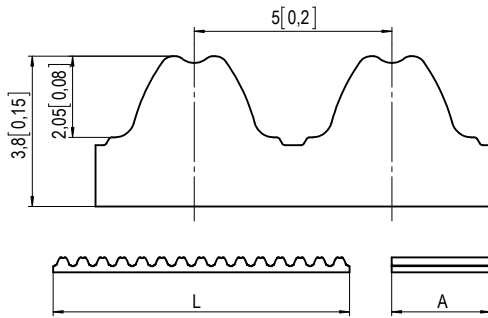
Pulley and toothed belt

For encoders with shaft $\varnothing$ 10 mm

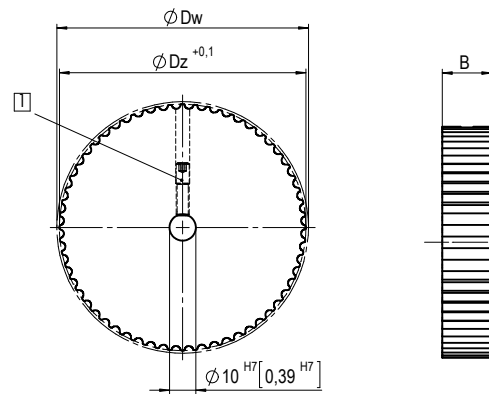
Dimensions

Dimensions in mm [inch]

Toothed belt



Pulley



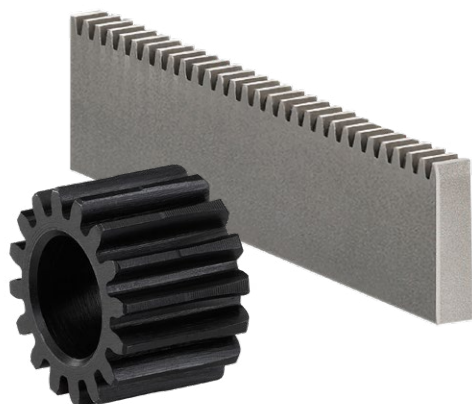
L = yard ware (1 m, 2 m, ... 100 m)
other lengths > 100 m on request

[1] Set screw M5 (SW2,5)
recommended tightening torque 2,0 Nm

Width toothed belt A [mm]	Width pulley B [mm]	No of teeth	Pitch diameter $\varnothing D_w$ [mm]	Tooth geometry $\varnothing D_z^{+0,1}$ [mm]	Distance to toothed belt R ± 1 [mm]
10 [0.39] 25 [0.98] 50 [1.97]	10 [0.39] 20 [0.79]	72	114.59 [4.51]	113.45 [4.47]	58.6 [2.31]
		60	95.49 [3.76]	94.35 [3.71]	49.0 [1.93]
		48	76.39 [3.01]	75.25 [2.96]	40.9 [1.61]
		44	70.03 [2.76]	68.89 [2.71]	36.3 [1.43]
		30	47.75 [1.88]	46.61 [1.84]	25.1 [0.99]
		24	38.19 [1.50]	37.06 [1.46]	20.4 [0.80]
		20	31.83 [1.25]	30.69 [1.21]	17.2 [0.68]

Measuring wheel systems

System components	Pinion and rack	For encoders with shaft ø 6 and 10 mm
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For 100% slip-free measurement of linear movements.

Optimally matched combination of pinion and rack. The pitch of the rack and pinion is selected so that one revolution of the pinion on the rack corresponds to a travel of 50 mm.

Features

• Pinion

With 16 teeth for a travel of 50 mm per revolution. Bore for shafts with 6 mm or 10 mm diameter.

• Rack

1 meter long rack - with an optionally orderable installation aid, it is possible to line up several racks at exact intervals.

Order code Pinion

8.0010	.	7000	.	000	X
					^a

^a Bore diameter
2 = ø 6 mm
6 = ø 10 mm

Rack

8.0010	.	7000	.	0001
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Length 1 meter

Installation aid

8.0010	.	7000	.	0002
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For precise pitch lining up of several racks

Technical data

Pinion

Material	free-cutting steel
Surface	burnished
Number of teeth	16

Rack / Installation aid

Material	S235JR
Surface	uncoated

Measuring wheel systems

System components

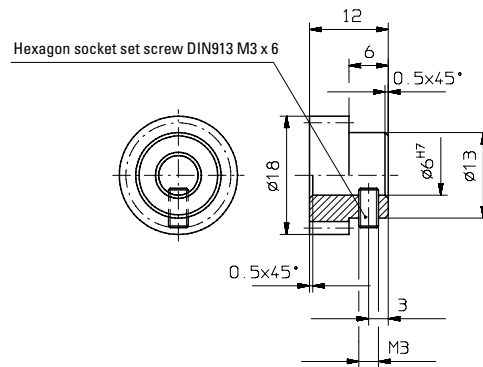
Pinion and rack

For encoders with shaft $\varnothing$ 6 and 10 mm

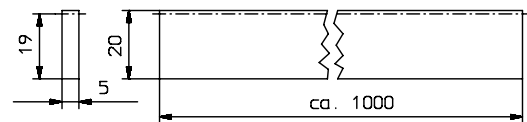
Dimensions

Dimensions in mm [inch]

Pinion



Rack



Installation aid

