

THE WORLD OF CRANE COMPONENTS



KARL GEORG

CRANE WHEELS

And Accessories



GENERAL CATALOGUE

Product overview

Description	Karl Georg Standard	DIN* Standard	Nominal- Ø	Page
Crane wheels with smooth bore/feather keyway	KG 010.1	DIN 15 049	160- 630	4
Crane wheels with slide bearing	KG 010.2	DIN 15 049	160- 630	8
Wearing washers	KG 010.3	DIN 15 069	40- 80	10
Wheelaxles with lubrication bore	KG 010.4		40- 80	11
Pinions	KG 010.5			12
Wheel axles without lubrication bore	KG 010.6		40- 60	13
Axle mounting		DIN 15 058		15
Wheels with slide bearing for use in old Demag type of cranes	KG 012		300- 630	16
Wheels for rotating shafts for use in old Demag type of cranes	KG 013		200- 250	18
Wheels with grooved ball bearing	KG 014	DIN 15049	200- 400	20
Wheels with precision-cylindrical roller bearing	KG 015	DIN 15049	160- 630	22
Wheels with single wheel flange	KG 020	DIN EN 10 024 DIN EN 10 034	130- 300	24
Wheel axle	KG 020.1		30- 65	27
Wheels with anti friction bearing and bush.....	KG 030	DIN 15 049	200- 630	28
Internal bushing for crane wheels	KG 030	DIN 15 049	200- 630	31
Wheels with slide bearing without gear ring		DIN 15 074	200- 1250	32
Wheels with slide bearing with gear ring		DIN 15 075	200- 1250	34
Wheels with self-aligning roller bearing without gear ring		DIN 15 078	200- 1250	36
Wheels with self-aligning roller bearing with gear ring		DIN 15 079	200- 1250	38
Gear rings, screwed-on		DIN 15 082-1	200- 1250	40
Gear rings, pressed-on		DIN 15 082-2	315- 500	42
Bandages, machined		DIN 15 083	400- 1250	44
Covers		DIN 15 084		46
Internal bushing and spacer rings		DIN 15 086		48
Driven- and nondriven wheelsets		DIN 15 090	315- 1000	50
Crane wheels for driven and non driven wheelsets.....		DIN 15 093	315- 1000	56
Connection flanges for articulated shaft		DIN 15 452	150- 435	58
Crane wheels for half-shaft without gear ring		TGL 34 964	200- 1000	60
Crane wheels for half-shaft with gear ring		TGL 34 965	200- 1000	62
Gear rings for crane wheels		TGL 34 966	140- 800	64
Crane wheels with corner support (driven/non driven wheelsets)		TGL 34 968	320- 900	66
Crane wheels		TGL 34 968	320- 900	72
Basis of calculation for crane wheels		DIN 15070		74
Correlation running surface profiles and crane rail/wheel-Ø.....		DIN 15072		77
Crane rails				78

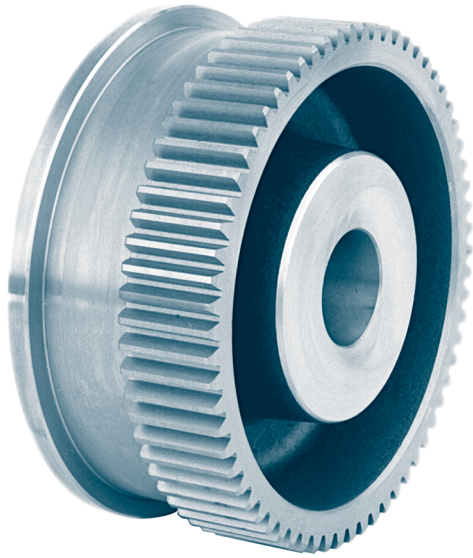
* DIN = German Institute for Standardization

Crane wheels with smooth bore

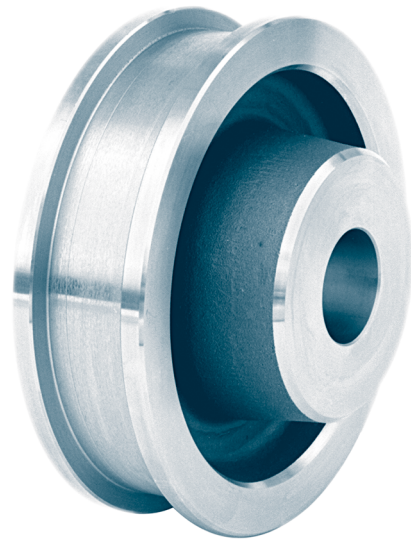
or with feather keyway to DIN 6885-1

DIN 15 049

KG 010.1



form A with gear ring



form B without gear ring

Designation of a crane wheel form A with gear ring,
nominal diameter $d_1 = 300$ mm, gauge $b_1 = 50$ mm,
bore diameter $d_4 = 80$ mm H7,
module 3 and number of teeth 110:

Crane wheel A 300 × 50 × 80 H7 – 3 × 110 KG 010.1

Form A with gear ring

Form B without gear ring

Material:

Wheel body- $\varnothing 160-500$ C45 drop forged

Wheel body- $\varnothing 630$ GE420 (GS-70) with ribs

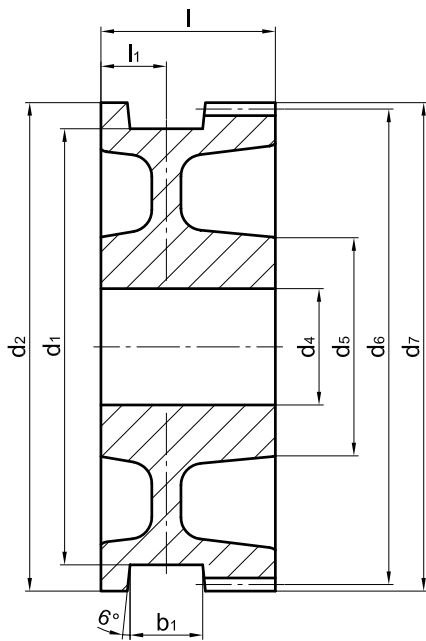
Other material and dimensions on request.

Crane wheels with smooth bore

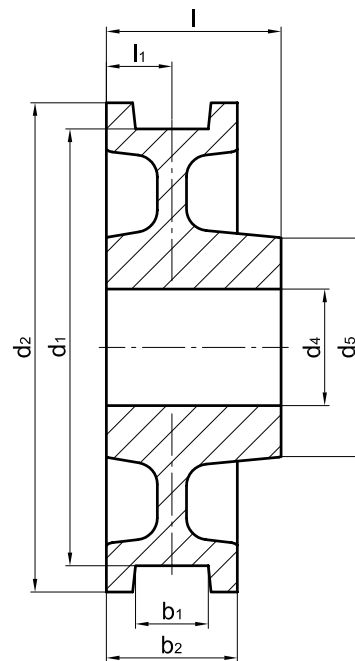
or with feather keyway according to DIN 6885-1

DIN 15 049

KG 010.1



Form A with gear ring



Form B without gear ring

wheel-Ø d1	b1 ¹⁾	b2	d2	d4 ¹⁾	d5	l	l1	gear ring ²⁾ (Form A)				unit weight ≈ [kg]		wheel load [kg] ³⁾
								mo- dule	num- ber of teeth	d6	d7	Form A	Form B	
h11				H7										
160	30-60	80	186	30-65	85	95	40	2,5	72	180	185	10	8,5	3 300
								3	60		186			
200	30-60	80	232	30-90	117	95	40	3	75	225	231	17,5	16	4 300
								4	56		224			
250	30-60	80	274	40-110	142	120	40	3	88	264	270	30	25	5 600
								4	66		272			
300	35-65	90	336	40-120	152	120	45	3	110	330	336	43	37	7 250
								4	82					
315	40-75	100	348	50-130	167	140	50	4	85	340	348	54	48	9 000
400	40-75	100	432	50-160	197	140	50	4	106	424	432	86	71	11 900
500	50-85	110	540	60-180	230	170	55	6	88	528	540	156	125	17 000
630	55-95	120	680	80-130	180	200	60	8	83	664	680	235	181	22 100

- 1) The dimension of the gauge recess b1 and bore diameter d4 to be stated with order.
- 2) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without profile correction.
Pressure angle 20 degree.
- 3) The wheel loads stated are obtained from the maximum permissible pressure between wheel and rail with maximum possible rail head width of the corresponding wheel and $v \approx 40$ m/min.

Wheels with smooth bore

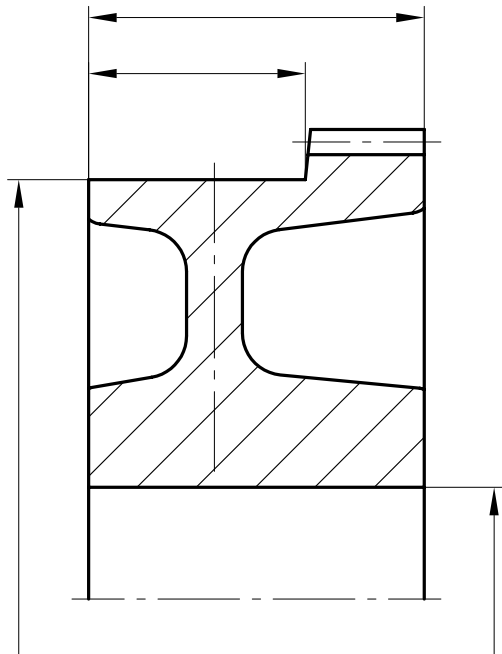
or with feather keyway according to DIN 6885-1

DIN 15 049

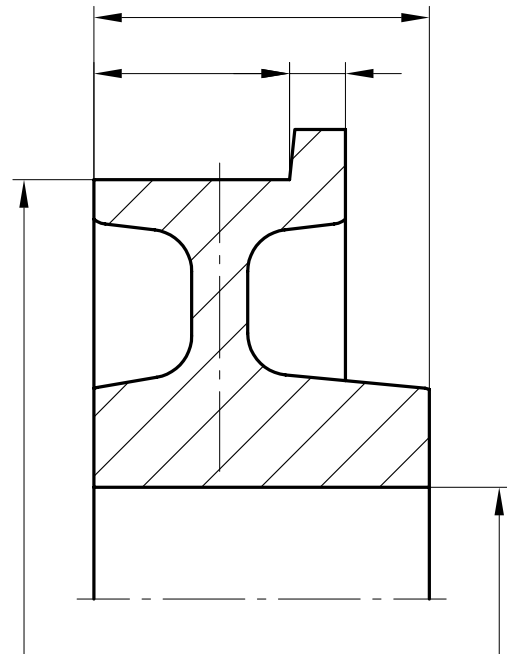
KG 010.1

Examples of possible types of the running surface and of the crane wheels.

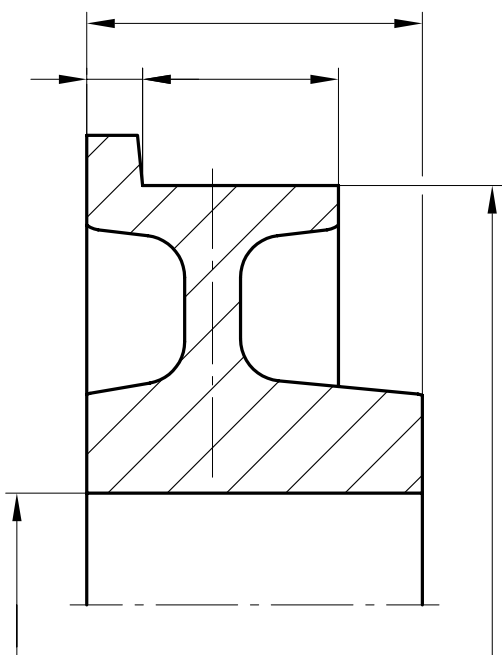
Desired type and dimensions to be stated with order.



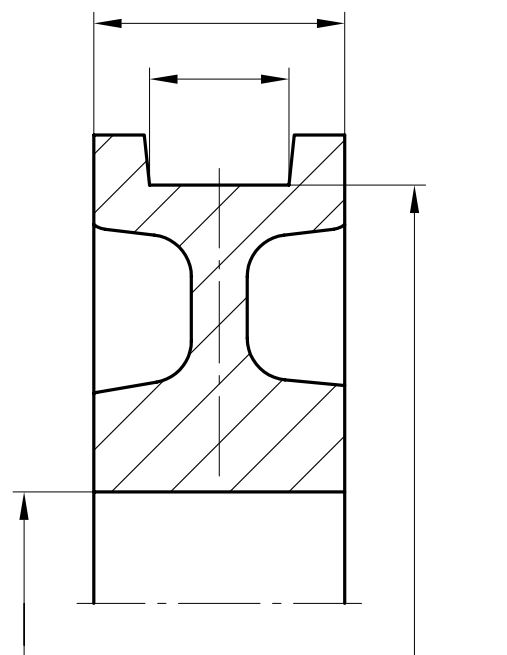
Type 1
Travel wheel form A
without wheel flanges, with gearing



Type 2
Travel wheel form B
with single wheel flange on overhanging hub



Type 3
Travel wheel form B
with single wheel flange on flush hub



Type 4
Travel wheel form B
with shortened hub

Crane wheels with smooth bore

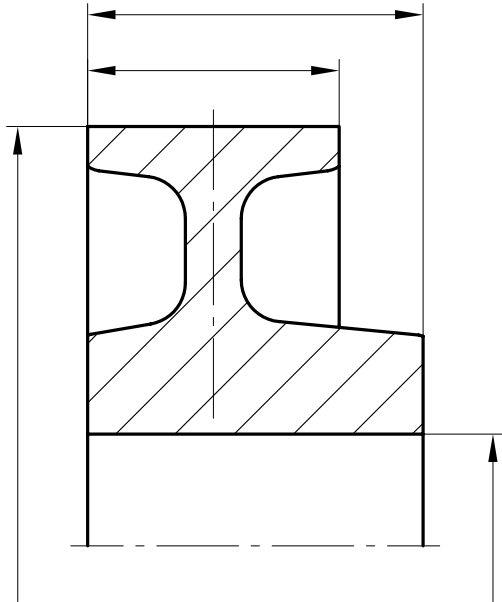
or with feather keyway according to DIN 6885-1

DIN 15 049

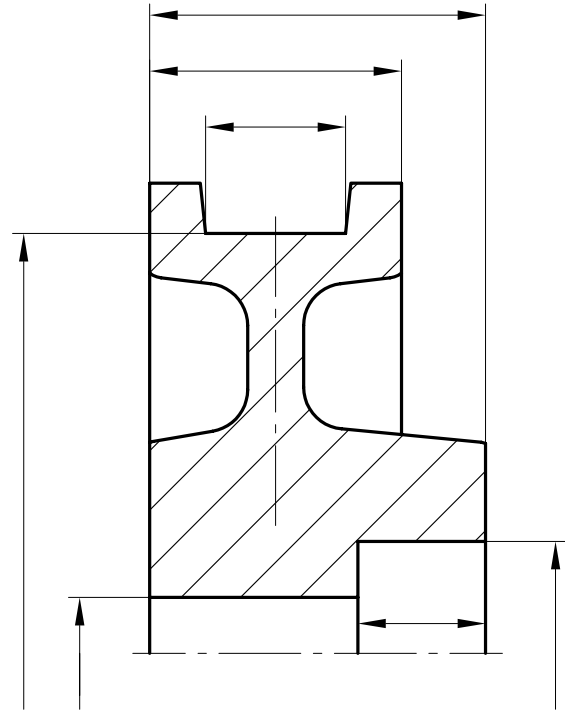
KG 010.1

Examples of possible types of the running surface and of the crane wheels.

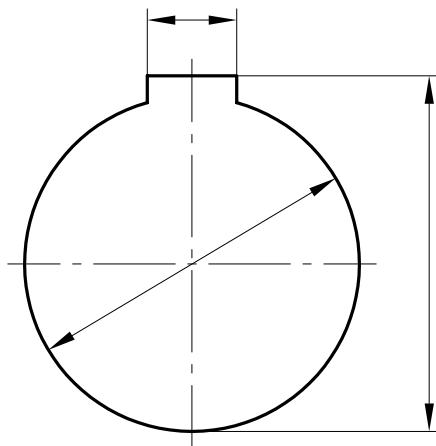
Desired type and dimensions to be stated with order.



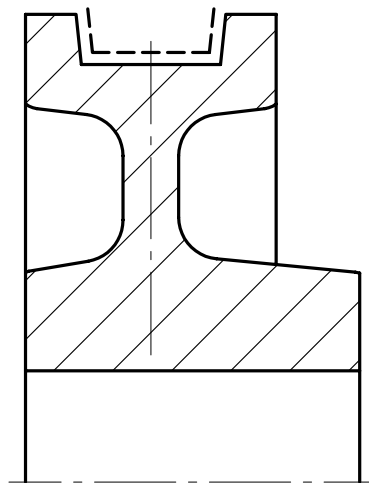
Type 5
Travel wheel form B
without wheel flanges



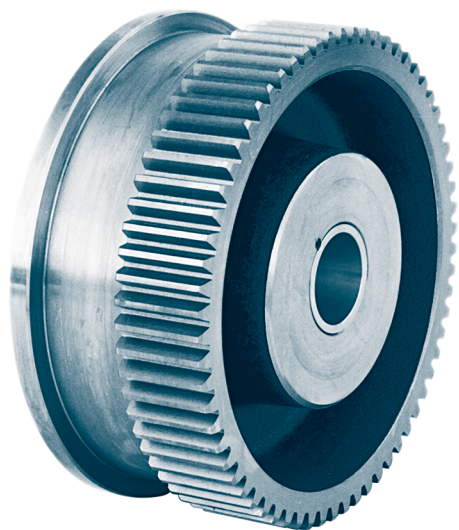
Type 6
Travel wheel form B
with bore for locking elements



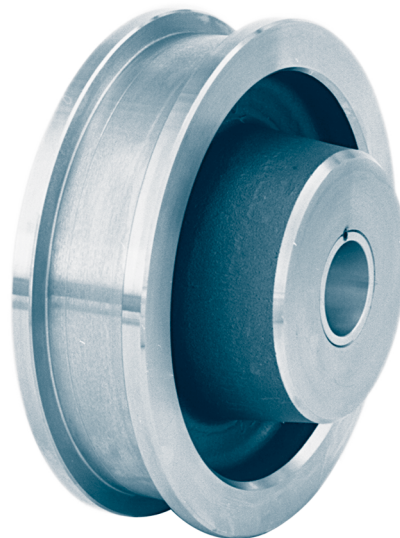
Bore with feather keyway according to DIN 6885-1



Running surface and wheel flange surfaces
hardened free of slip (e.g. for material C45
HRc 38-46, hardening depth 3-4 mm)



Form A with gear ring



Form B without gear ring

Designation of a travel wheel form A with gear ring, nominal- \varnothing d1 = 300 mm, gauge b1 = 50 mm, with slide bearing \varnothing 60/50 of G-CuSn7ZnPb, module 3 and number of teeth 110:

Crane wheel A 300 × 50 × 60/50 – 3 × 110 KG 010.2

Form A with gear ring

Form B without gear ring

Other types of the running surface see KG 010.1.

The slide bearings are secured with setcrews towards twisting and dislocation.

Material:

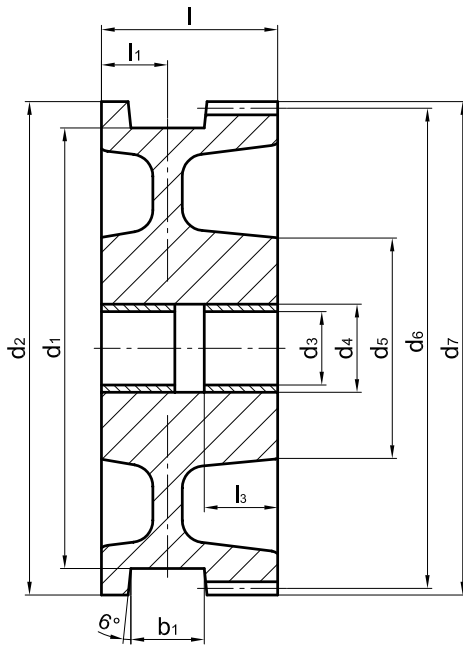
Wheel body- \varnothing 160-500 C45 drop forged

Wheel body- \varnothing 630 GE420 (GS-70) with ribs

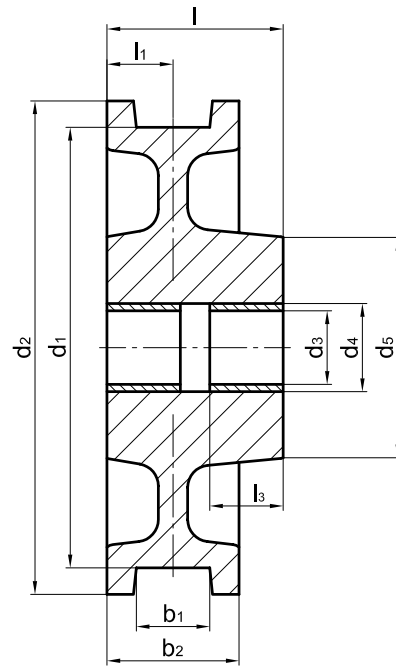
Slide bearings G-CuSn7ZnPb (Rg 7)

Other materials and dimensions on request.

Suitable wheel axles see KG 010.4.



Form A with gear ring



Form B without gear ring

wheel-Ø d1	b1 ¹⁾	b2	d2	d3	d4 ¹⁾	d5	l	l1	l3	gear ring ²⁾ (Form A)				unit weight ≈[kg]		wheel load [kg] ³⁾
										mo- dule	number of teeth	d6	d7	Form A	Form B	
h11				E9	H7											
160	30-60	80	186	40	50	85	95	40	33	2,5	72	180	185	10	8,5	2 000
										3	60		186			
200	30-60	80	232	40	50	117	95	40	33	3	75	225	231	17,5	16	2 300
										4	56		232			
250	30-60	80	274	50	60	142	120	40	50	3	88	264	270	30	25	3 800
										4	66		272			
300	35-65	90	336	50	60	152	120	45	50	3	110	330	336	43	37	4 500
										4	82		328			
315	40-75	100	348	55	65	167	140	50	56	4	85	340	348	54	48	5 400
400	40-75	100	432	60	72	197	140	50	63	4	106	424	432	86	71	6 700
500	50-85	110	540	70	82	230	170	55	70	6	88	528	540	156	125	9 500
630	55-95	120	680	80	95	180	200	60	80	8	83	664	680	235	181	12 800

1) The dimension of the gauge recess b1 and bore diameter d4 to be stated with order.

2) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without profile correction.
Pressure angle 20 degree.

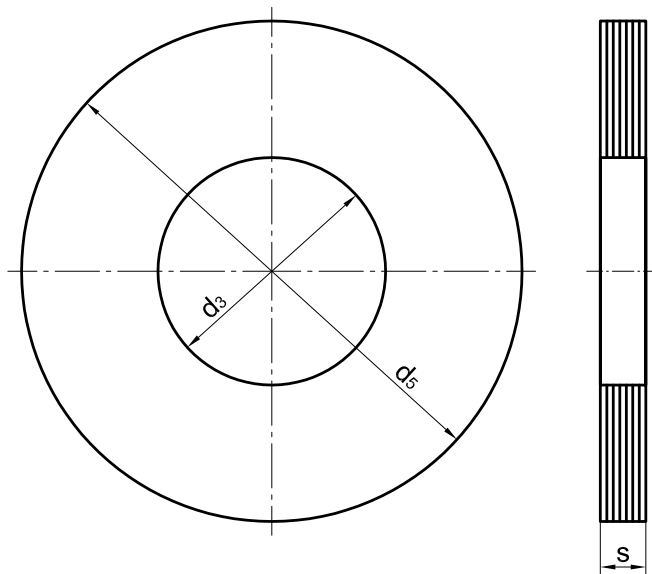
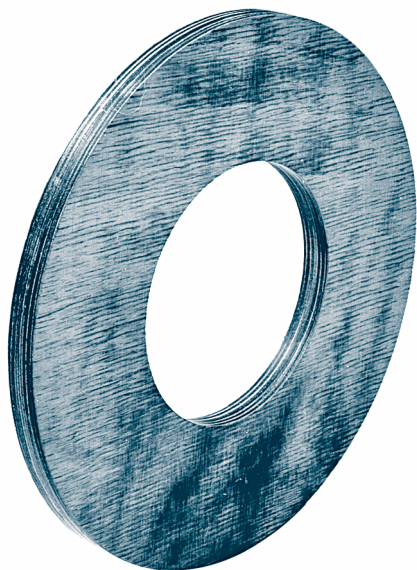
3) The wheel loads stated are obtained from the maximum permissible pressure between plain bearing and axle for v = 40 m/min and an operating period up to 40%.

Wearing washers

fitting to travel wheels according to KG 010.2, KG 014 and KG 015

similar to DIN 15 069

KG 010.3



Designation of a wearing washer for wheel- \varnothing $d_1 = 300$ mm,
axle- \varnothing $d_3 = 50$ mm, thickness of the washer $s = 10$ mm:

Wearing washer 50 × 10 KG 010.3

Material:

Laminated wood bound with synthetic resin
(unsuitable for wet environment)

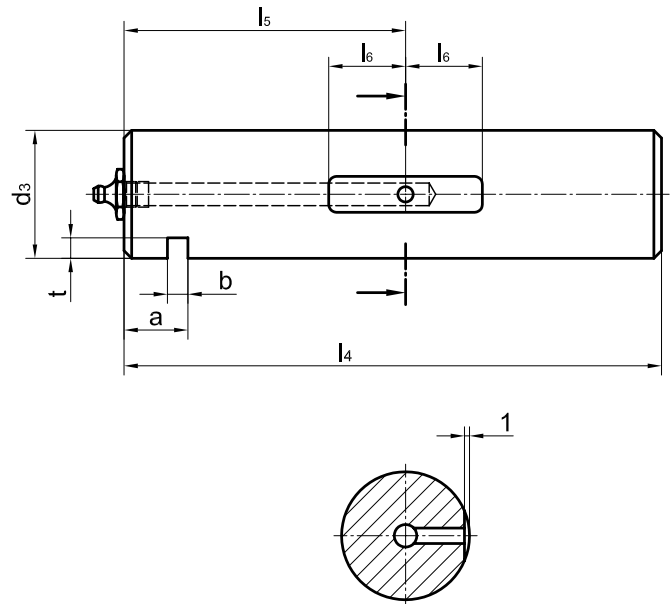
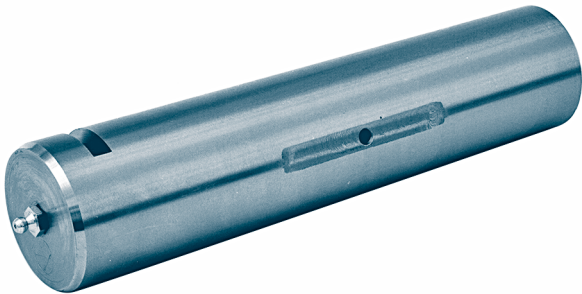
Other material and dimensions on request.

for wheel- \varnothing d_1	d_3 +1,0 +0,5	s +0,2 -0,2	d_5
160 200	40	5	90
		10	
250 300	50	5	110
		10	
315	55	5	120
		10	
400	60	5	140
		10	
500	70	5	160
		10	
630	80	5	170
		10	

Wheel axles with lubrication bore

fitting to wheels according to KG 010.2 and KG 030

KG 010.4



Designation of an axle for travel wheel - $\varnothing d1 = 300$ mm,
axle- $\varnothing d3 = 50$ mm, length 210 mm:

Axle 50 × 210 KG 010.4

Supplied with spherical grease nipple
AM 10 × 1 DIN 71412.

Material: 42CrMo4+QT or C45

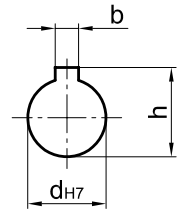
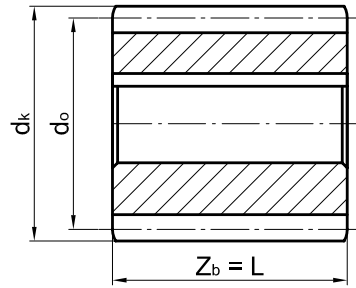
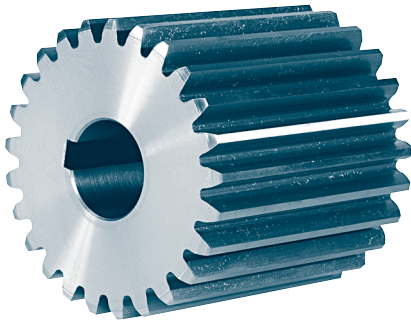
Other material and dimensions on request.

for wheel- \varnothing d1	d3 f7	l4	l5	l6	a	b +0,5	t +0,5	unit weight ≈[kg]
160 200	40	190	100	30	25	8	7	1,8
250 300	50	210	110	30	25	8	8	3,1
315	55	265	135	40	25	8	9	4,8
400	60	265	135	40	25	8	9	5,7
500	70	285	150	50	25	10	10	8,5
630	80	335	170	50	25	10	10	13

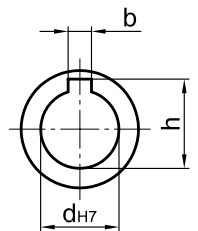
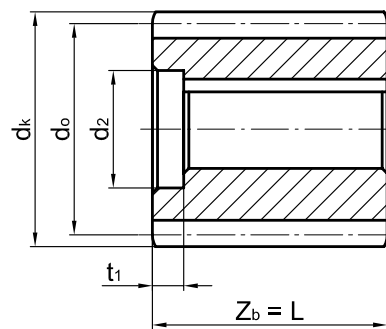
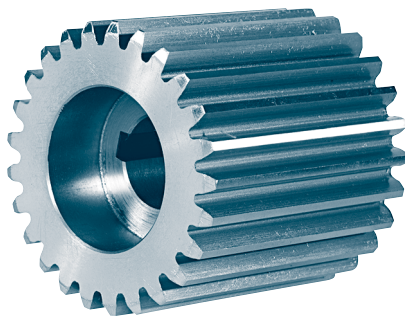
Pinions

KG 010.5

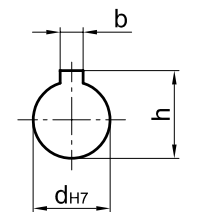
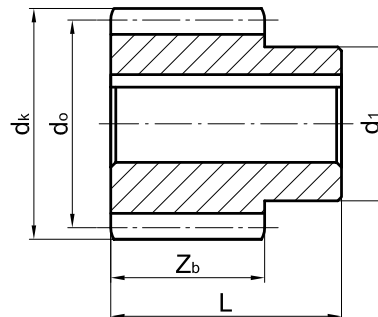
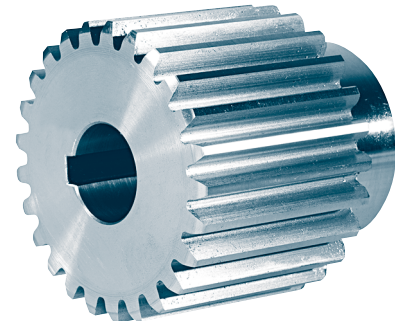
Form 1



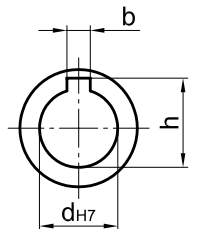
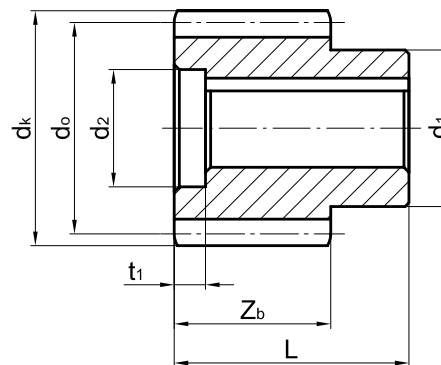
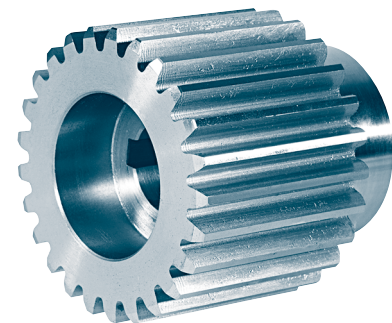
Form 2



Form 3



Form 4



Designation of a pinion form 1, module 3, number of teeth 18, length L = 60 mm, bore-Ø d = 20 H7 with feather keyway according to DIN 6885-1:

Module: 2-15
Minimum number of teeth: 12
 $d_{min} =$ 16 H7
Material: C45 or 42CrMo4+QT

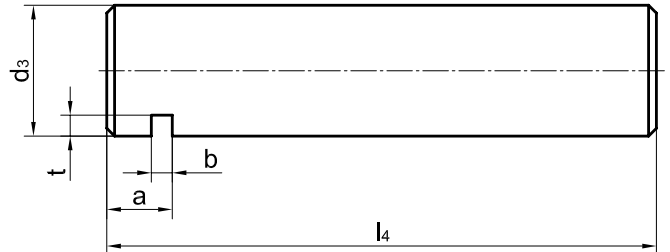
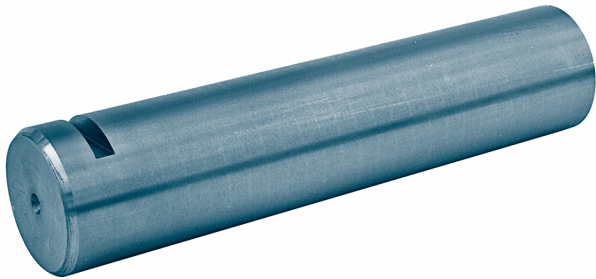
Pinions 3 × 18 × 60 × 20 H7 KG 10.5 form 1

All dimensions and material to be stated with order.

Wheel axle without lubrication bore

fitting to travel wheels according to KG 014

KG 010.6



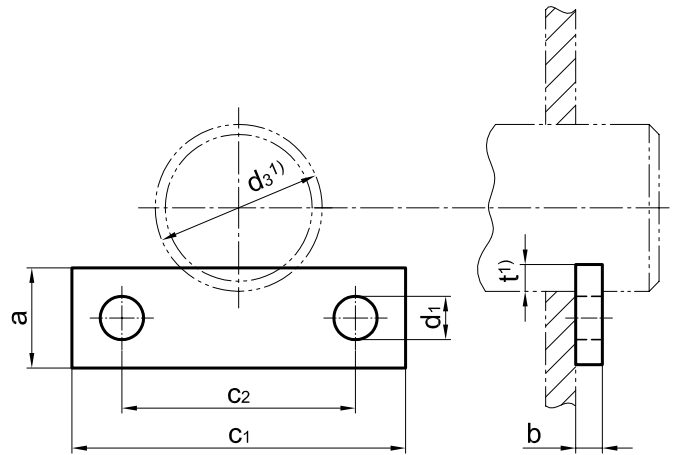
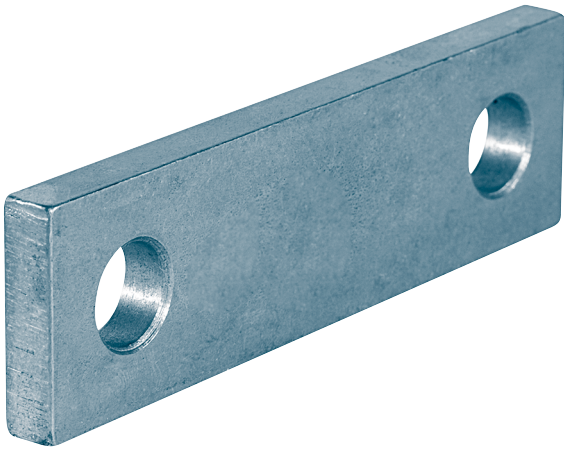
Designation of an axle for travel wheel - $\varnothing d1 = 300$ mm,
axle - $\varnothing d3 = 50$ mm, length 210 mm:

Axle 50 × 210 KG 010.6

Material: 42CrMo4+QT or C45

Other material and dimensions on request.

for wheel - \varnothing d1	d3 f7	l4	a	b +0,5	t +0,5	unit weight ≈[kg]
200	40	190	25	8	7	1,8
250 300	50	210	25	8	8	3,1
315	55	265	25	8	9	4,8
400	60	265	25	8	9	5,7



The axle brackets have to be placed in way, that the fastening screws are not stressed by the pressure of the axle.

Designation of an axle bracket width $a = 30$ mm, thickness $b = 8$ mm:

Axle bracket 30 × 8 DIN 15 058

Material: S235JR (St 37)

Other material and dimensions on request.

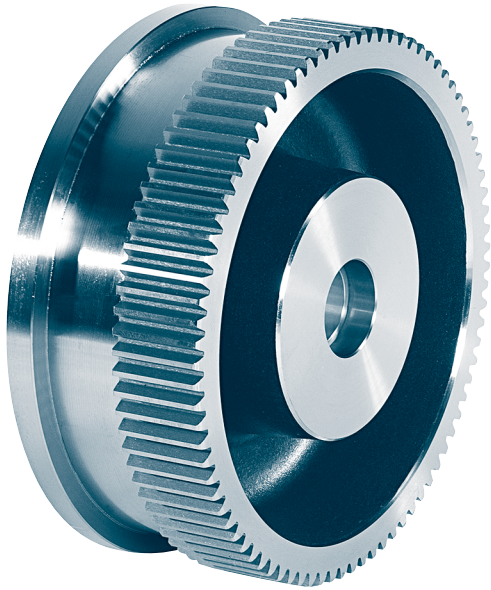
a	b	c1	c2	d1
20	5	60	36	9
25	6	80	50	11
30	8	100	70	13
40	10	140	100	17
50	12	190	140	21
60	16	250	200	25

1) Dimensions see wheel axles KG 010.4, KG 010.6 and KG 015.

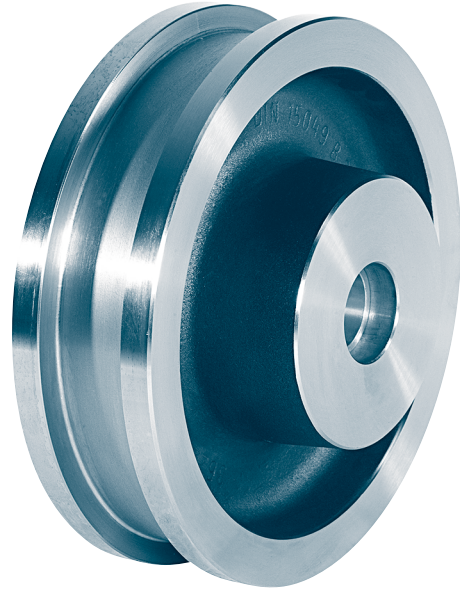
Crane wheels with slide bearing

suitable for older travelling devices Demag brand

KG 012



Form A with gear ring



Form B without gear ring

Designation of a travel wheel form A with gear ring,
nominal- \varnothing d1 = 300 mm, gauge b1 = 55 mm,
with plain bearing \varnothing 60/50 of Rg 7,
module 3 and number of teeth 110:

Crane wheel A 300 × 55 × 60 – 3 × 110 KG 012

Form A with gear ring

Form B without gear ring

Other types of the running surface see KG 010.1.

The plain bearings are secured with setscrews towards twisting and dislocation.

Material:

Wheel body- \varnothing 300-500 C45 drop forged

Wheel body- \varnothing 630 GE420 (GS-70) with Ribs

Plain bearings G-CuSn7ZnPb (Rg 7)

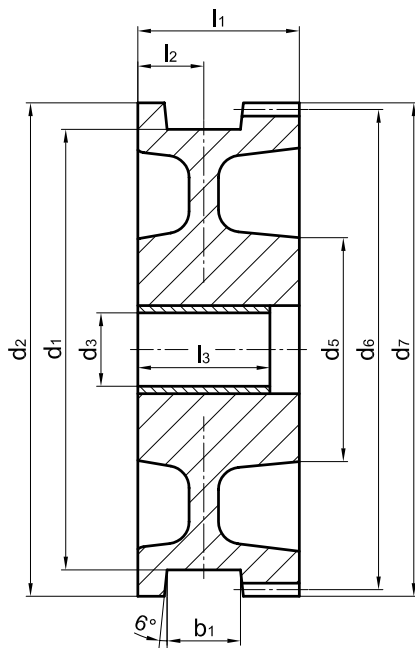
Other material and dimensions on request.

Suitable wheel axles see KG 010.4.

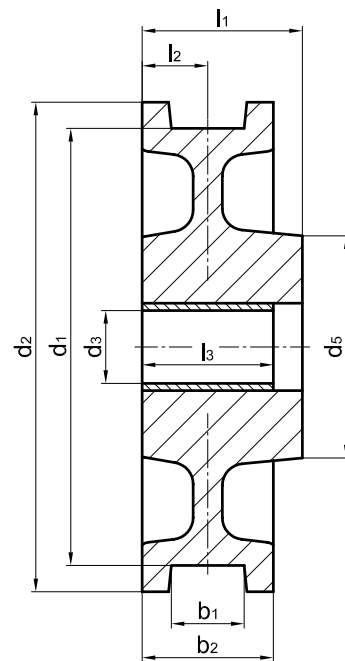
Crane wheels with slide bearing

suitable for older travelling devices Demag brand

KG 012



Form A with gear ring



Form B without gear ring

wheel- Ø d1	b1	b2	d2	d3	d5	l1	l2	l3	gear ring ²⁾ (form A)				unit weight ≈[kg]		Demag Spare no.		
									modu- lel	no. of teeth	d6	d7	form A	form B	form A	form B	
h11				E9													
300	55	90	330	50	152	110 ²⁾ 90	45	90	3	110	330	336	43	37	963 617 44	-	963 619 44
320	55	98	348	50	167	138	49	100	4	85	340	348	55	49	963 333 44	963 338 44	
400	55	98	432	60	197	138	49	100	4	106	424	432	86	71	963 433 44	963 438 44	
	65														963 453 44	963 458 44	
500	70	105	540	70	230	166	52,5	110	6	88	528	540	156	125	963 535 44	963 528 44	
630	75/85 ¹⁾	120	680	80	180	200	60	120	8	83	664	680	235	181	-	-	
									6	111	666	678					

1) The dimension of the gauge recess b1 to be stated with order.

2) Overall width 110 mm, Hub length 90 mm.

3) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without appending modification, pressure angle 20 degree.

Crane wheels for rotating shafts

with feather keyway according to DIN 6885-1

suitable for older types of the trolley traveling winches Demag brand

KG 013



Form A with gear ring



Form B without gear ring

Designation of a travel wheel form A with gear ring,
nominal- \varnothing d1 = 200 mm,
gauge b1 = 55 mm, bore- \varnothing d2 = 45 mm H7,
module 4 and number of teeth 58:

Crane wheel A 200 × 55 × 45 H7 – 4 × 58 KG 013

Form A with gear ring

Form B without gear ring

Material: C45

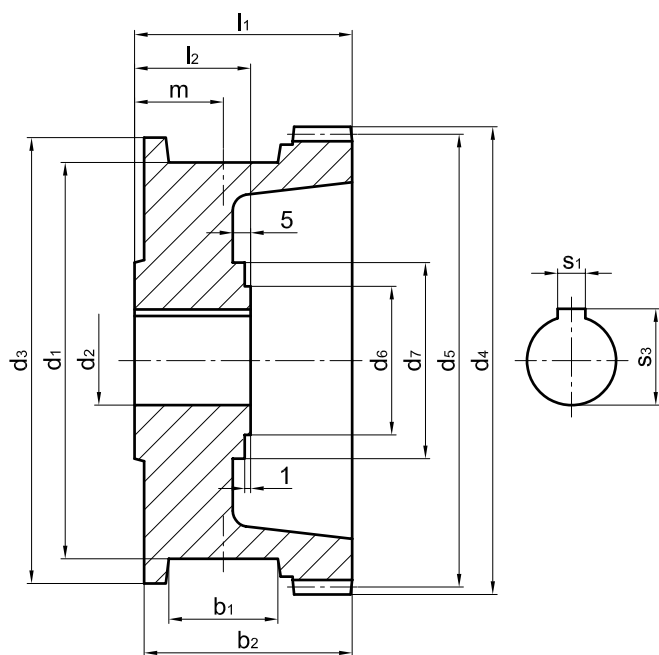
Other material and dimensions on request.

Crane wheels for rotating shafts

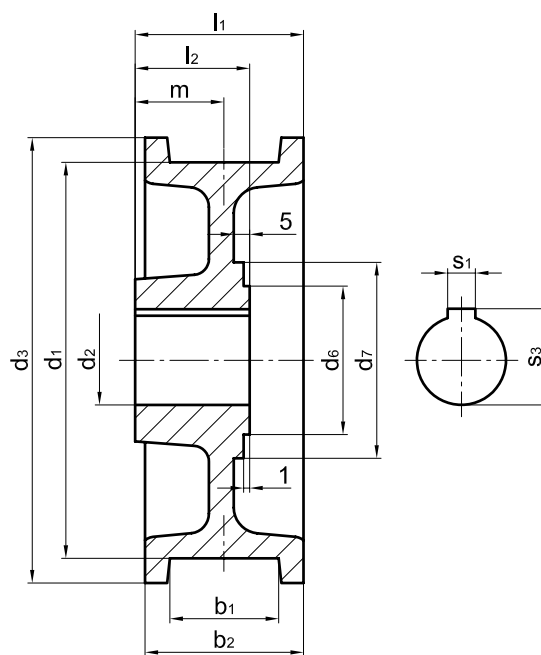
with feather keyway according to DIN 6885-1

suitable for older types of the trolley traveling winches Demag brand

KG 013



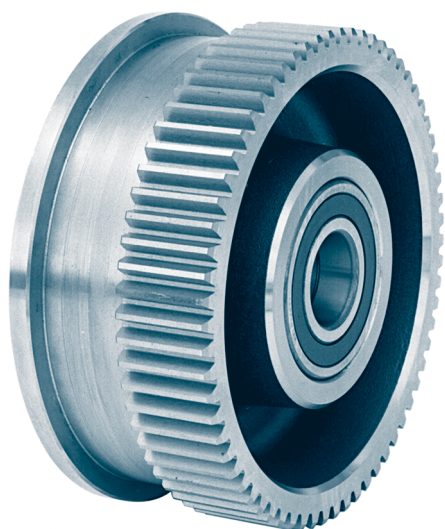
Form A with gear ring



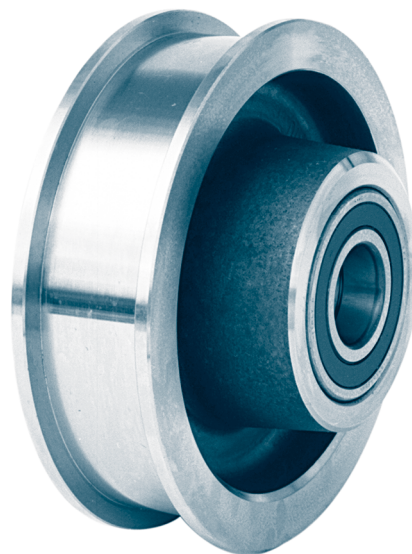
Form B without gear ring

wheel- Ø d1	b1		b2		d2	d3	d6	d7	l1		l2	m	s1	s3	gear ring ¹⁾ (form A)				unit weight ≈[kg]		Demag spare no.		
	form A	form B	form A	form B					form A	form B					mo- dule	no. of teeth	d4	d5	form A	form B	form A	form B	
h11					H7																		
200	55	105	80		45										4	58						598 456 44	598 458 44
					60																	598 344 44	598 346 44
250	55	105	80		50										4	71						598 856 44	598 858 44
					65																	598 876 44	598 878 44

1) Gearing corrected, addendum modification coefficient $x = -0,5$.
Pressure angle 20 degree.



Form A with gear ring



Form B without gear ring

Designation of a wheel form A with gear ring, nominal- \varnothing d1 = 300 mm, gauge b1 = 50 mm, complete with grooved ball bearings, module 3 and number of teeth 110:

Crane wheel A 300 × 50 – 3 × 110 KG 014

Form A with gear ring

Form B without gear ring

Other types of the running surface see KG 010.1.

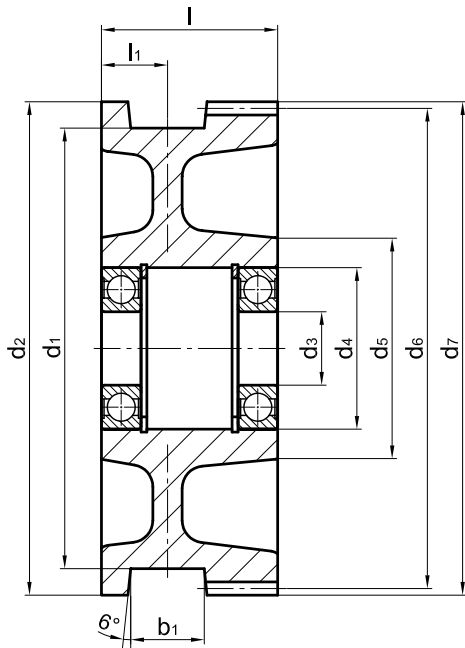
The rolling bearings are lubricated for life.

Material:

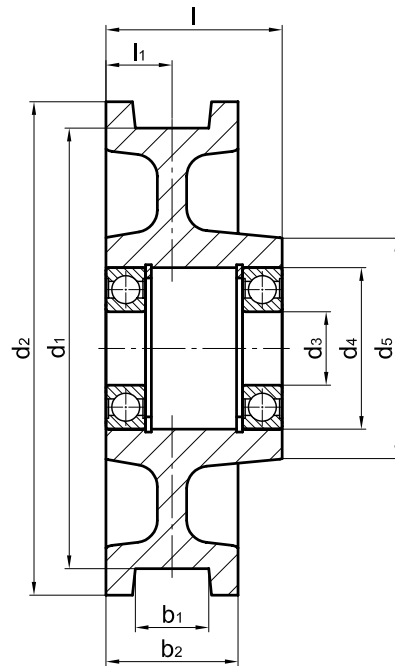
Wheel body- \varnothing 200-400 C45 drop forged

Other material and dimensions on request.

Suitable wheel axles see KG 010.6.



Form A with gear ring



Form B without gear ring

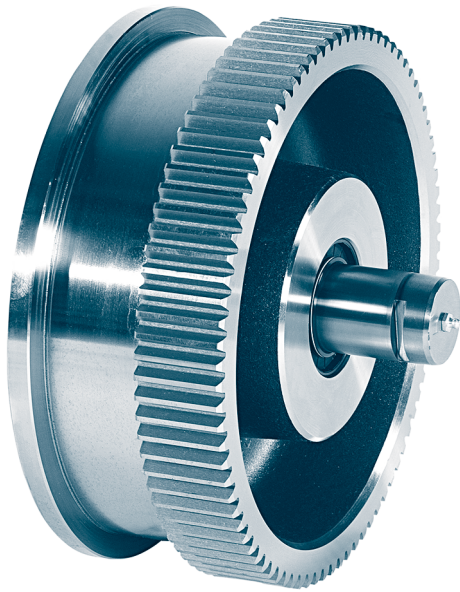
wheel- Ø d1	b1 ¹⁾	b2	d2	d3	d4	d5	l	l1	bearing type	gear ring ²⁾ (form A)				unit weight ≈[kg]		wheel load [kg] ³⁾
										module	no. of teeth	d6	d7	form A	form B	
h11					M7											
200	30-60	80	232	40	90	117	95	40	6308-2RS	3	75	225	231	14,5	13	2 800
										4	56	224	232			
250	30-60	80	274	50	110	142	120	40	6310-2RS	3	88	264	270	27	22	4 600
									4	66	272					
300	35-65	90	336	50	110	152	120	45	6310-2RS	3	110	330	336	40	34	4 800
									4	82	328					
315	40-75	100	348	55	120	167	140	50	6311-2RS	4	85	340	348	50	44	5 800
400	40-75	100	432	60	130	197	140	50	6312-2RS	4	106	424	432	81	66	7 000

- 1) The dimension of the gauge recess b1 to be stated with order.
- 2) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without appending modification, pressure angle 20 degree.
- 3) The wheel loads stated are valid for v ≈ 40 m/min with an endurance of approximately 5000 hours and with maximum possible rail head width of the corresponding wheel.

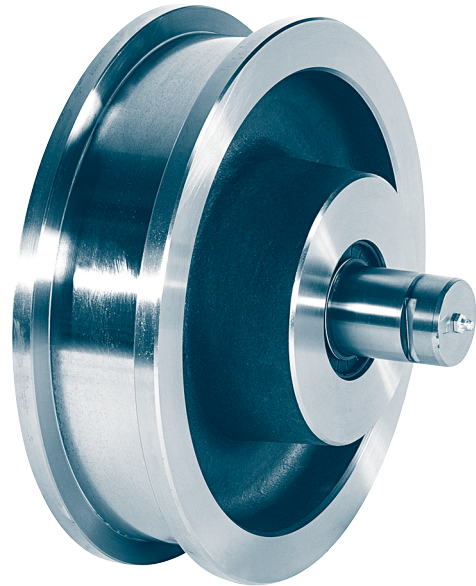
Crane wheels with precision cylindrical roller bearings

similar to DIN 15 049

KG 015



Form A with gear ring



Form B without gear ring

Description of a travel wheel form A with gear ring, nominal- \varnothing d1 = 300 mm, gauge b1 = 50 mm, complete with cylindrical roller bearings, radial shaft seal rings and hardened axle with \varnothing d3 = 50 mm, module 3 and number of teeth 110:

Crane wheel A 300 x 50 - 3 x 110 KG 015

Form A with gear ring

Form B without gear ring

Other types of the running surfaces see KG 010.1.

The roller bearings are sealed with radial shaft seal rings on both sides and not greased

Material:

Wheel body- \varnothing 160-500 C45 drop forged

Wheel body- \varnothing 630 GE420 (GS-70) with ribs

Wheel axle 42CrMo4+QT

Surfaces hardened to HRC 56-59

Other material and dimensions on request.

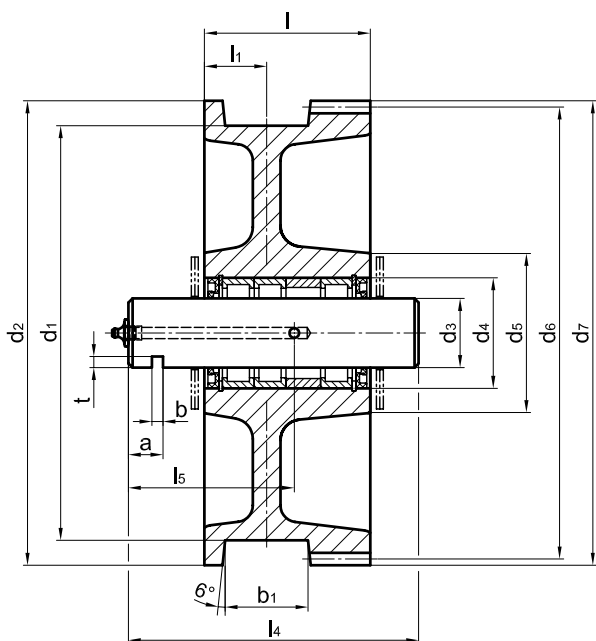
Dimensions of the appropriate wheel axle

for wheel- \varnothing d ₁	d ₃ f7	l ₄	l ₅	a	b +0,5	t +0,5	unit weight ≈[kg]
160 200	40	190	110	25	8	7	1,8
250 300	50	210	120	25	8	8	3,1
315	55	265	140	25	8	9	4,8
400	60	265	140	25	8	9	5,7
500	70	285	150	25	10	10	8,5
630	80	335	160	25	10	10	13,0

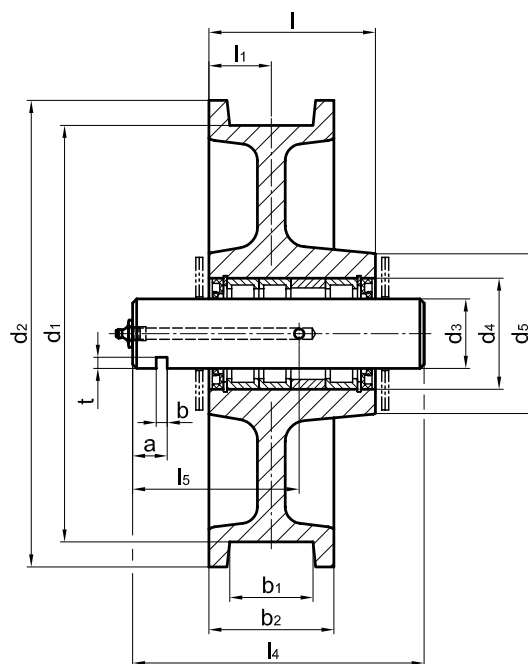
Crane wheels with precision cylindrical roller bearings

similar to DIN 15 049

KG 015



Form A with gear ring



Form B without gear ring

wheel-Ø d1	b1 ¹⁾	b2	d2	d3	d4	d5	l	l1	number of bea- rings	gear ring ²⁾ (Form A)		unit weight ≈[kg]		wheel load [kg] ³⁾		
										Mo- dule	Number of teeth	d6	d7		Form A	Form B
h11					M7											
160	30-60	80	186	40	62	85	95	40	2	2,5	72	180	185	11	9,5	2 600
										3	60	180	186			
200	30-60	80	232	40	62	117	95	40	3	3	75	225	231	18,5	17	4 000
										4	56	224	232			
250	30-60	80	274	50	80	142	120	40	3	3	88	264	270	31	26	5 600
										4	66	264	272			
300	35-65	90	336	50	80	152	120	45	3	3	110	330	336	44	38	6 750
										4	82	328	336			
315	40-75	100	348	55	85	167	140	50	3	4	85	340	348	56	50	7 100
400	40-75	100	432	60	90	197	140	50	4	4	106	424	432	88	73	9 700
500	50-85	110	540	70	110	230	170	55	4	6	88	528	540	160	129	17 000
630	55-95	120	680	80	120	180	200	60	4	8	83	664	680	240	186	21 000

1) The dimension of the gauge recess b1 to be stated with order.

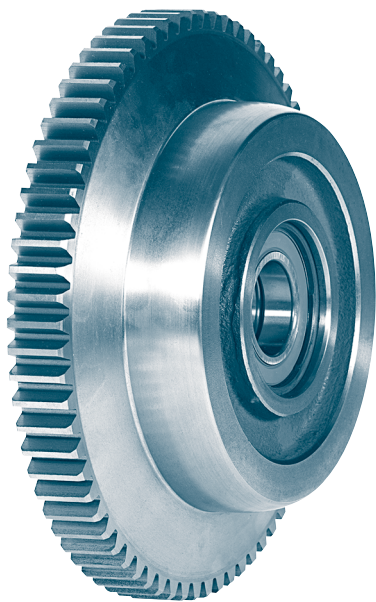
2) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without profile correction.
Pressure angle 20 degree.

3) The wheel loads stated are valid for $v \approx 40$ m/min with an endurance of approximately 10 000 hours and with maximum possible rail head width of the corresponding wheel.

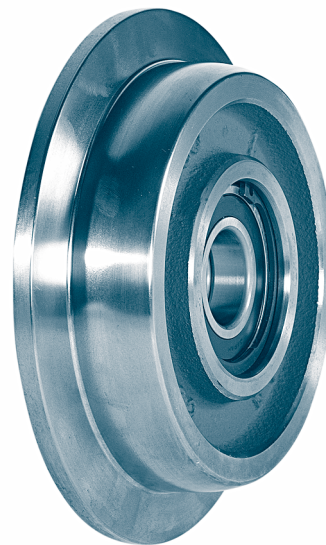
Crane wheels with single wheel flange

for I- and IPE girder (DIN 1025)

KG 020



Form A with gear ring



Form B without gear ring

Designation of a wheel with single wheel flange, form A with gear ring, nominal- \varnothing d1 = 300 mm, complete with anti friction bearings:

Crane wheel A 300 KG 020

Form A with gear ring

Form B without gear ring

The running surface width b1 is one half each cylindric/spheric.

The rolling bearings are lubricated for life.

Material:

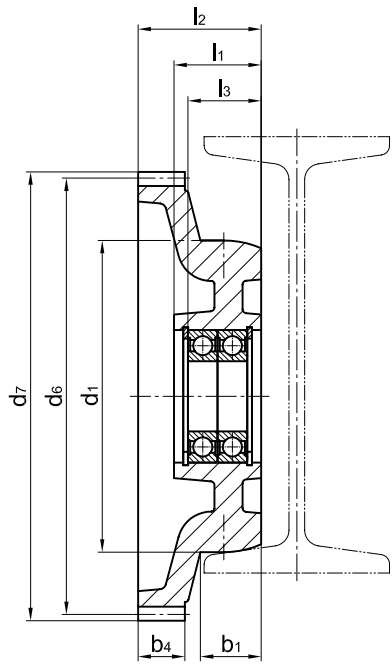
Wheel body EN-GJS-600-3 (GGG-60)

Other materials and dimensions on request.

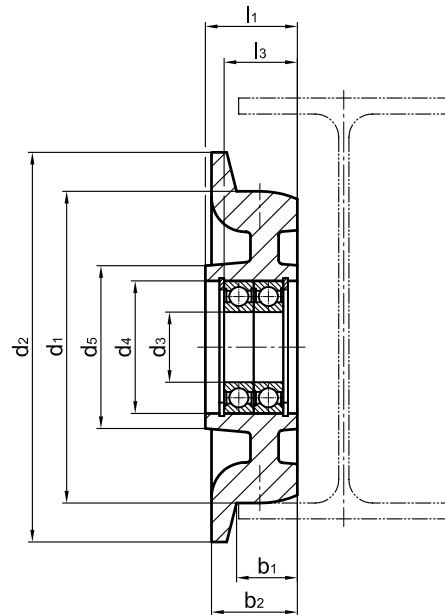
Crane wheels with single wheel flange

for I-girder from I-and IPE-series according to DIN 1025

KG 020



Form A with gear ring



Form B without gear ring

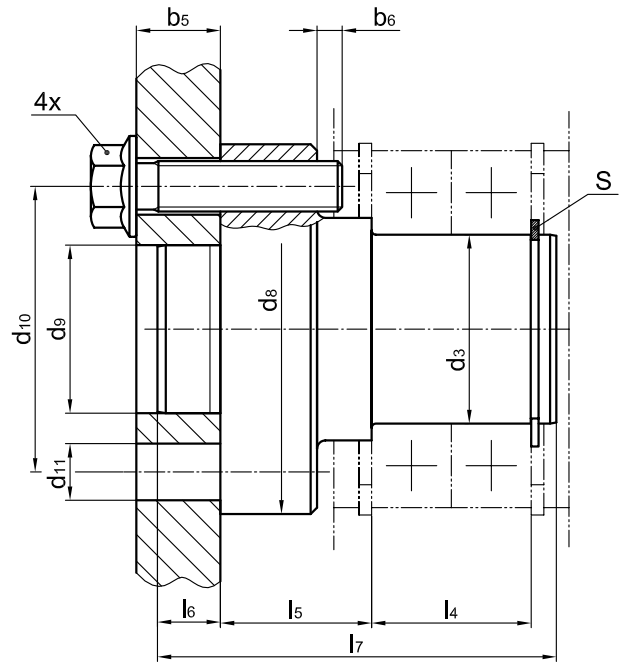
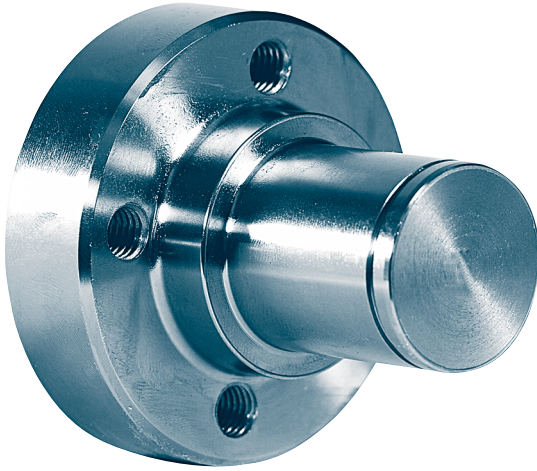
wheel-Ø d1	b1	b2	b4	d2	d3	d4	d5	l1	l2	l3	rolling bearingsr	gear ring ¹⁾ (form A)				unit weight ≈[kg]		wheel load [kg] ²⁾
												mo- dule	no. of teeth	d6	d7	Form A	Form B	
h11						M7												
130	26	38	25	160	30	62	80	46	58	39	6206-2RS	3	52	156	162	3	2,5	1900
160	31,5	44	30	200	35	72	90	49	69	41,5	6207-2RS	4	53	212	220	6	5	2500
200	39	55	30	250	45	85	105	56	79	47	6209-2RS	4	70	280	288	13,5	9,5	3300
300	56	73	30	340	65	120	150	73	100	59,5	6213-2RS	4	100	400	408	37	28	5500

- 1) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without profile correction.
Pressure angle 20 degree.
- 2) The wheel loads stated are valid for $v \approx 10$ m/min with an endurance of approximately 3600 hours.

Wheel axles

fitting to travel wheels according to KG 020
for an easy assembly into steel structures

KG 020.1



Designation of an axle for travel wheel - $\varnothing d1 = 200$ mm:

Axle 200 KG 020.1

The supply takes place supplied fully machined,
including circlip and 4 locking screws.

Material: 42CrMo4+QT

**Other materials, dimensions or wheel axle for welding on
Request.**

for wheel- \varnothing d1	d3	d8	d9	d10	d11	l4	l5	l6	l7	locking screws (included)	b5 ¹⁾	b6 max.	S circlip DIN 471
130	30	67	25	48	4x $\varnothing 11$	32	23	10	70	M10x30 10.9	12-16	5	30x1,5
160	35	77	35	58	4x $\varnothing 11$	34	31,5	11	82	M10x35 10.9	12-20	6	35x1,5
200	45	88	40	68	4x $\varnothing 13,5$	38	36	12	92	M12x40 10.9	12-25	7	45x1,75
300	65	127	50	98	4x $\varnothing 17,5$	46	44,5	16	114	M16x50 10.9	16-30	11	65x2,5

1) For different metal gauge b5 other lengths of the screws are required.

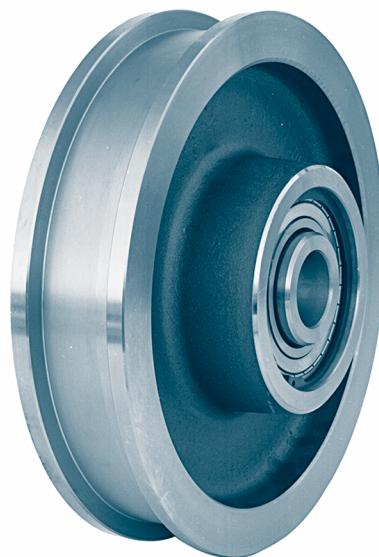
Crane wheels with anti-friction bearings and bush

similar DIN 15 049

KG 030



Form A with gear ring



Form B without gear ring

Designation of a travel wheel form A with gear ring, nominal- \varnothing d1 = 300 mm, gauge b1 = 50 mm, complete with grooved ball bearing, self aligning roller bearing and bush type 1, module 3 and number of teeth 110:

Crane wheel A 300 × 50 – 3 × 110 KG 030.1

Form A with gear ring

Form B without gear ring

Other types of the running surface see KG 010.1.

The self aligning roller bearings are covered by nilos sealing-rings. Grooved ball bearings have one-sided seal discs. The roller bearings are greased.

Material:

Wheel body- \varnothing 200-500 C45 drop forged

Wheel body- \varnothing 630 GE420 (GS-70) with ribs

Bush S355JR (St 52)

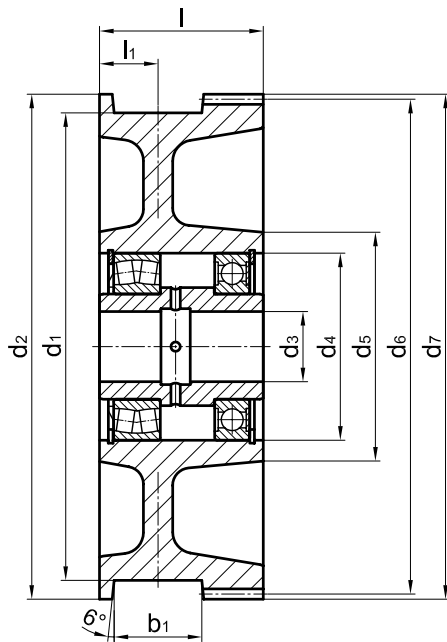
Other materials and dimensions on request.

Suitable wheel axles see KG 010.4

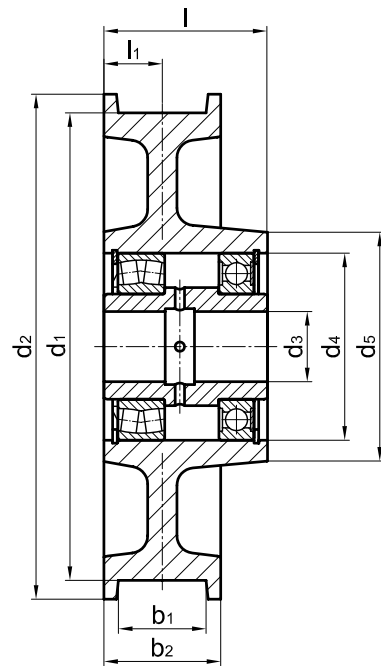
Crane wheels with anti-friction bearings and bush

similar DIN 15 049

KG 030



Form A with gear ring



Form B without gear ring

wheel-Ø d1	b1 ¹⁾	b2	d2	d3	d4	d5	l	l1	bearing type	gear ring ²⁾ (form A)				unit weight ≈[kg]		wheel load [kg] ³⁾
										mo- dule	no. of teeth	d6	d7	Form A	Form B	
h11				E9	M7		-0,5									
200	30-60	80	232	40	90	117	95	40	62 10Z 222 10	3	75	225	231	17,5	16	3 800
										4	56	224	232			
250	30-60	80	274	50	110	142	120	40	62 12Z 222 12	3	88	264	270	30	25	5 600
										4	66	264	272			
300	35-65	90	336	50	120	152	120	45	62 13Z 222 13	3	110	330	336	43	37	7 300
										4	82	328	336			
315	40-75	100	348	55	130	167	140	50	62 15Z 222 15	4	85	340	348	54	48	8 500
400	40-75	100	432	60	160	197	140	50	62 18Z 222 18	4	106	424	432	81	73	11 900
500	50-85	110	540	70	180	230	170	55	62 20Z 222 20	6	88	528	540	150	112	17 500
630	55-95	120	680	80	200	250	200	60	62 22Z 222 22	8	83	664	680	260	190	22 100

- 1) The dimension of the gauge recess b1 to be stated with order.
- 2) Module and number of teeth to be stated with order.
Tooth form according to DIN 867 without appending modification.
Pressure angle 20 degree.
- 3) The wheel loads stated are valid for $v \approx 40$ m/min with an endurance of approximately 10 000 hours and with maximum possible rail head width of the corresponding wheel.

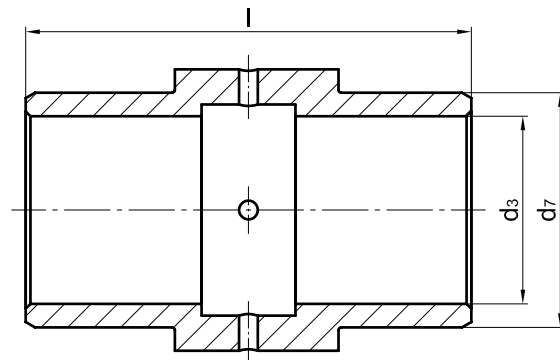
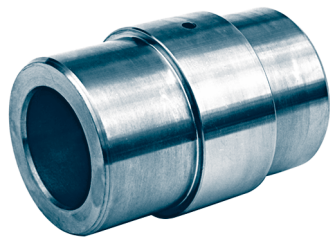
Bushing for crane wheels KG 030

similar DIN 15 049

KG 030

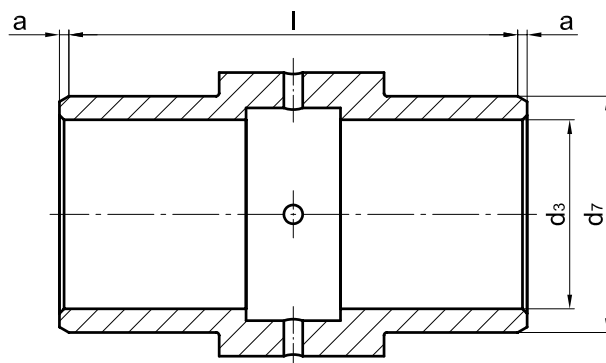
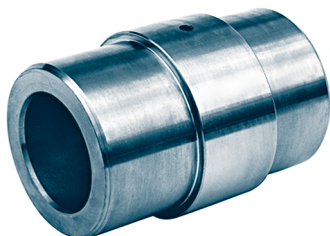
Design 1

length of the bush correlates with the width of the wheel



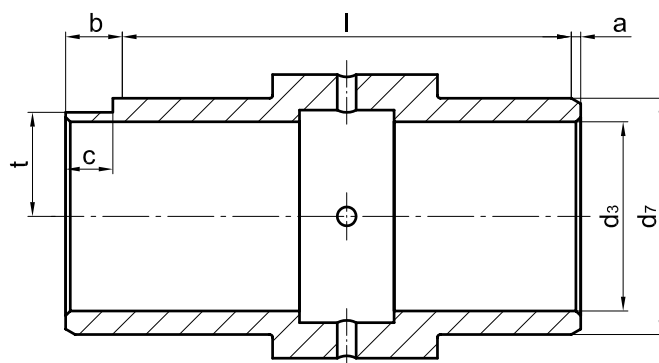
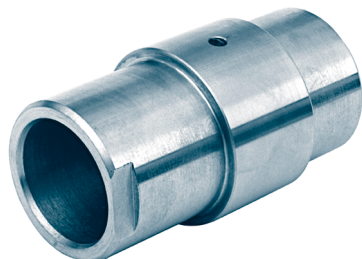
Design 2

bush both-sided overlaying at gauge, against wheelbody



Design 3

bush both-sided overlaying against wheel body and with flattening against rotation (mounted on flush hub side resp. opposite gear ring)

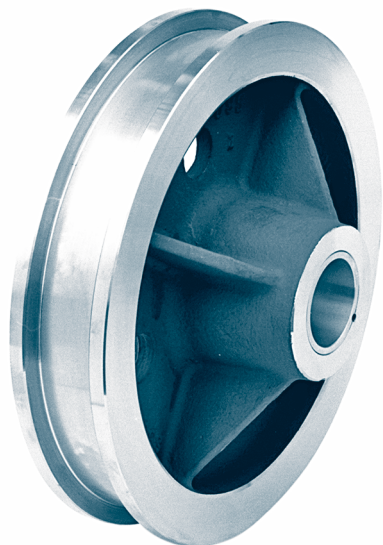


dimensions of the bushing

for Rad-Ø d1	d3 E9	d7 g6	a	b	c	t	l -0,5
200	40	50	2	12	10	22	95
250	50	60	2	12	10	27,5	120
300	50	65	3	13	10	29	120
315	55	75	3	13	10	32,5	140
400	60	90	5	15	10	40	140
500	70	100	5	15	10	45	170
630	80	110	5	15	10	50	200

Crane wheels with slide bearing without gear ring

DIN 15 074



Designation of a crane wheel form B with nominal- $\varnothing d_1 = 630$ mm,
gauge $b_1 = 100$ mm, hub symmetric ($l_1 = l_2 = 185$ mm):

Crane wheel B 630 × 100 DIN 15 074

Form S narrow crane wheel

Form B broad crane wheel

The slide bearings are secured with setscrews towards twisting and dislocation.

Material:

Wheel body- $\varnothing 200 - 250$ C45 machined from solid

Wheel body- $\varnothing 315 - 1250$ GE420 (GS-70) or

G42CrMo4+QT (GS-42CrMo4V)

Bearings

G-CuSn7ZnPb (Rg 7)

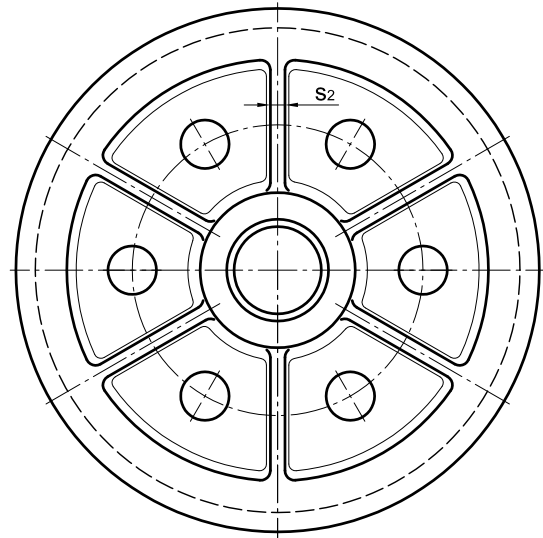
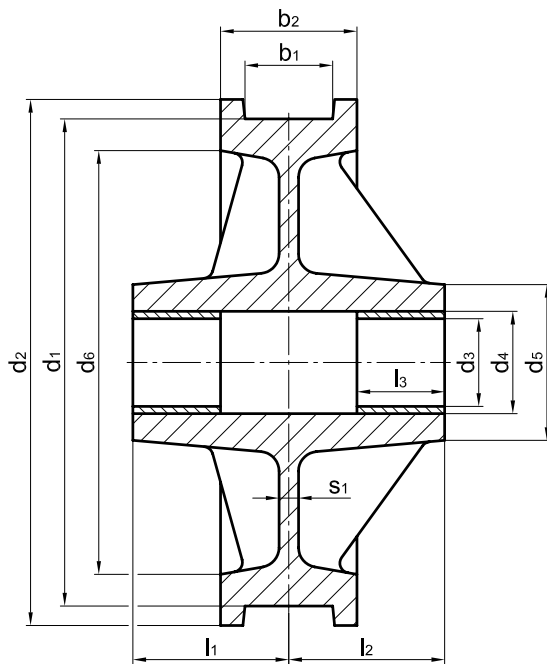
Other materials and dimensions on request.

Crane wheels with gear ring see DIN 15075.

See DIN 15070 for basis of calculation for crane wheels.

Crane wheels with slide bearing without gear ring

DIN 15 074



Form	d1	b1 ¹⁾	b2	l ²⁾		l2	d2	d3	d4	d5	d6	l3	s1	s2	No. of ribs	unit weight	
				symetric	asymmetric												
	h9						D10	H7								≈[kg]	
S	200	40-55	90	105	80	60	105	230	45	55	85	170	45	18	-	-	30
S	250	40-55	90	115	85	60	115	280	50	60	100	210	50	18	-	-	48
S	315	45-55	90	125	95	65	125	350	60	75	120	270	63	18	-	-	60
B		60-65	110	135	105	75	135										68
S	400	55-65	110	140	105	75	140	440	80	95	140	345	80	20	-	-	90
B		70-90	140	155	120	90	155										105
S	500	55-65	110	145	110	75	145	540	90	105	160	435	90	20	15	4	130
B		70-90	140	160	125	90	160										150
S	630	65-75	120	165	120	80	165	680	100	120	180	560	100	20	15	6	210
B		80-110	160	185	140	100	185										250
S	710	75-90	140	185	135	90	185	760	110	130	200	630	110	25	18	6	280
B		95-160	210	220	170	125	220										390
S	800	75-90	140	195	140	90	195	850	125	145	220	710	125	25	18	6	350
B		95-160	210	230	175	125	230										470
S	900	75-90	140	205	145	90	205	950	140	160	240	805	150	25	18	6	400
B		95-160	210	240	180	125	240										540
S	1000	75-90	140	205	145	90	205	1050	160	180	270	900	150 ³⁾	30	20	6	525
B		95-160	210	240	180	125	240										680
B	1120	95-160	220	260	190	125	260	1180	180	200	300	1010	180	30	20	8	880
B	1250	95-160	220	260	190	125	260	1310	200	220	330	1140	200 ⁴⁾	30	20	8	1040

1) The dimension of the gauge recess b1 to be stated with order.
For running surface profiles and correspondence of crane rails to running wheel diameter see DIN 15072.

2) Asymmetric hubs (diameter l1) as per agreement.

3) For l1 = 90 mm is a slide bearing length of l3 = 120 mm to use.

4) For l1 = 125 mm is a slide bearing length of l3 = 180 mm to use.

Crane wheels with plain bearing with gear ring

DIN 15 075



Designation of a travel wheel form BG with nominal-
 $\varnothing d1 = 630$ mm,
 gauge $b1 = 100$ mm, hub symmetric ($l1 = l2 = 185$ mm):

Crane wheel BG 630 × 100 DIN 15 075

Form SK narrow crane wheel (S) with small gear ring (K)

Form SG narrow crane wheel (S) with large gear ring (G)

Form BK broad crane wheel (B) with small gear ring (K)

Form BG broad crane wheel (B) with large gear ring (G)

The plain bearings are secured with setscrews toward twisting and dislocation.

Gear rings see DIN 15 082 part 1.

Material:

Wheel body- $\varnothing 200 - 250$ C45 machined from solid

Wheel body- $\varnothing 315 - 1250$ GE420 (GS-70) or

G42CrMo4+QT (GS-42CrMo4V)

Bearing G-CuSn7ZnPb (Rg 7)

Gear ring GE300 (GS-60) or C45

Other material and dimensions on request.

Crane wheels without gear ring see DIN 15 074.

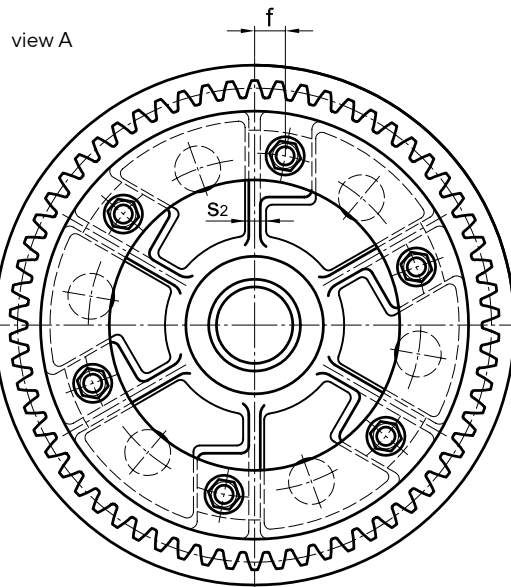
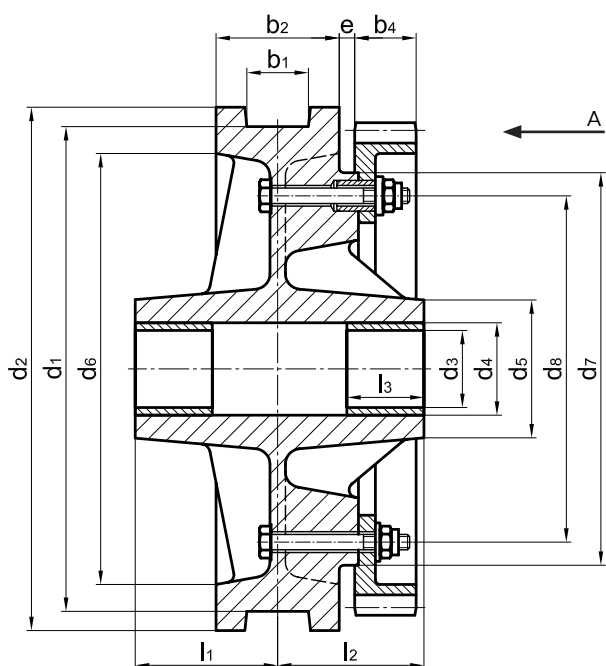
See DIN 15070 for basis of calculation for crane wheels.

Remarks to the following table:

- 1) The dimension of the gauge recess $b1$ to be stated with order. For running surface profiles and correspondence of crane rails to running wheel diameter see DIN 15072.
- 2) Asymmetric hubs (diameter l_1) as per agreement.
- 3) For $l1 = 90$ mm is a slide bearing length of $l3 = 120$ mm to use.
- 4) For $l1 = 125$ mm is a slide bearing length of $l3 = 180$ mm to use.

Crane wheels with plain bearing with gear ring

DIN 15 075



Form	d1	b1 ¹⁾	b2	l1 ²⁾		l2	d2	d3 D10	d4 H7	d5	d6	d7	d8	gear ring (form A)			e	f	l3	s1	s2	no. of ribs and cams	unit weight ^t ≈[kg]	
				sym- me- tric	asymme- tric									Mo- dule	no of teeth	b4								
SG	200	40-55	90	105	80	60	105	230	45	55	85	170	160	125	5	40	40			45				35
SG	250	40-55	90	115	85	60	115	280	50	60	100	210	200	155	5	50	50	15	-	50	18	-	without Ribs 4	58
SG	315	45-55	90	125	95	65	125	350	60	75	120	270	260	200	6	52	60			63				76
BG		55-65	110	135	105	75	135																	
SK	400	55-65	110	140	105	75	140	440	80	95	140	345	270	210	8	40	65	15	-	80	20	-	without Ribs 4	92
SG													300	240		50								102
BK													270	210		40								146
BG													300	240		50								156
SK	500	55-65	110	145	110	75	145	540	90	105	160	435	350	290	10	42	70	15	35	90	20	15	4	163
SG													390	330		49								173
BK													350	290		42								202
BG													390	330		49								212
SK	630	65-75	120	165	120	80	165	680	100	120	180	560	460	400	10	54	80	20	40	100	20	15	6	300
SG													510	450		62								315
BK													460	400		54								342
BG													510	450		62								357
SK	710	75-90	140	185	135	90	185	760	110	130	200	630	510	450	12	50	90	20	40	110	25	18	6	412
SG													580	520		58								437
BK													510	450		50								519
BG													580	520		58								544
SK	800	75-90	140	195	140	90	195	850	125	145	220	710	610	550	12	58	100	20	40	125	25	18	6	523
SG													660	600		66								543
BK													610	550		58								658
BG													660	600		66								678
SK	900	75-90	140	205	145	90	205	950	140	160	240	805	680	620	14	56	110	20	40	150	25	18	6	550
SG													750	690		63								580
BK													680	620		56								700
BG													750	690		63								730
SK	1000	75-90	140	205	145	90	205	1050	160	180	270	900	790	710	14	64	110	20	50	150 ³⁾	30	20	6	725
SG													840	760		70								750
BK													790	710		64								885
BG													840	760		70								910
BK	1120	95-160	220	260	190	125	260	1180	180	200	300	1010	880	800	16	62	125	20	50	180	30	20	8	1170
BG													950	870		68								1220
BK	1250	95-160	220	260	190	125	260	1310	200	220	330	1140	1000	920	16	70	125	20	50	200 ⁴⁾	30	20	8	1360
BG													1080	1000		76								1400

footnote see page 34

Crane wheels with self aligning roller bearings, without gear ring

self aligning roller bearings series 222

DIN 15 078



Designation of a travel wheel form B with nominal- \emptyset
d1 = 630 mm, gauge b1 = 100 mm,
including self aligning roller bearings 222 26,
cover with labyrinth gland:

Crane wheel B 630 × 100 DIN 15 078

Form S narrow crane wheel

Form B broad crane wheel

The bearings are lubricated.

The bushing are supplied with lubricating hole and flattening
against rotation (design see DIN 15 086).

Design of the covers see DIN 15 084.

Without certain agreement covers form A will be mounted.

Material:

Wheel body	GE420 (GS-70) or G42CrMo4+QT (GS-42CrMo4V)
Inner bush	S355 (St 52)
Spacer	S355 (St 52) or EN-GJS-400-15 (GGG-40)
Cover	S355J2G3 (St 52-3)

Other materials and dimensions (e. g. with self aligning roller bearings series 223) on request.

Crane wheels without gear ring see DIN 15 074.

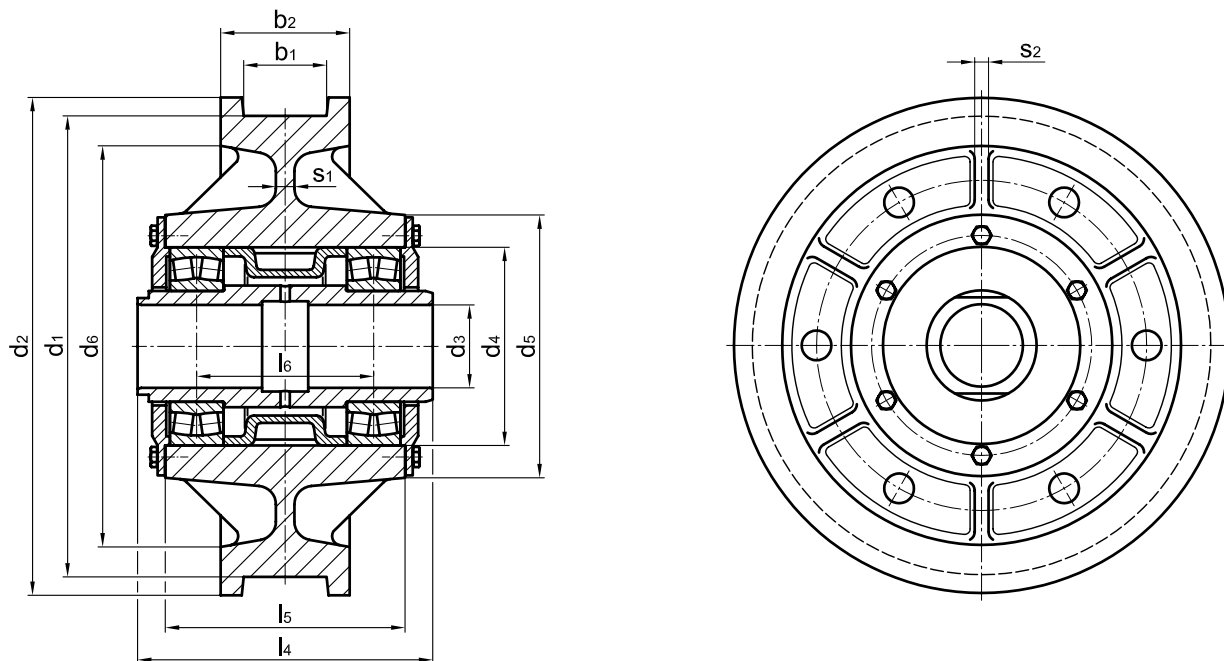
See DIN 15070 for basis of calculation for crane wheels.

Calculation of bearing load of wheels for service life calculation of anti-friction bearing see DIN 15 071.

Crane wheels with self aligning roller bearings, without gear ring

DIN 15078

self aligning roller bearings series 222



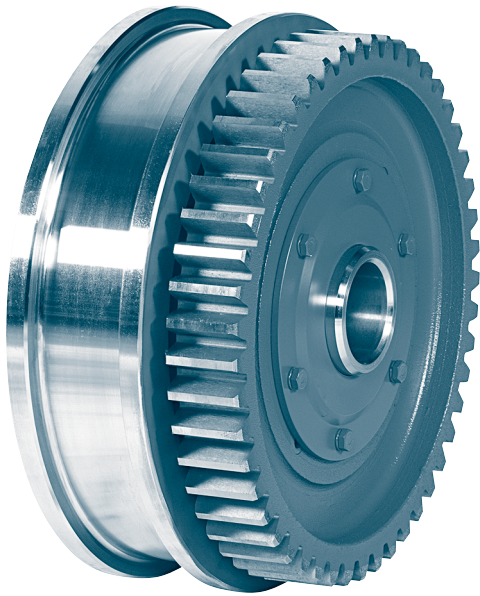
form	d1 h9	b1 ¹⁾	b2	d2	d3 D10	d4 M7	d5	d6	l4 -0,5	l5	l6	s1 min.	s2 min.	no. of ribs	bearing DIN 635-2	unit weight ≈[kg]
S	315	45-55	90	350	60	160	220	270	250	190	140	18	-	-	22218	80
B		55-65	110													270
S	400	55-65	110	440	80	180	240	345	280	220	164	20	-	-	22220	120
B		70-90	140													310
S	500	55-65	110	540	90	215	285	435	290	230	162	20	15	4	22224	180
B		70-90	140													320
S	630	65-75	120	680	100	230	300	560	330	260	186	20	15	6	22226	235
B		80-110	160													370
S	710	75-90	140	760	110	270	340	630	370	300	217	25	18	6	22230	370
B		95-160	210													440
S	800	75-90	140	850	125	290	360	710	390	320	230	25	18	6	22232	425
B		95-160	210													460
S	900	75-90	140	950	140	320	390	805	410	340	244	25	18	6	22236	570
B		95-160	210													480
S	1000	75-90	140	1050	160	360	450	900	410	330	222	30	20	6	22240	750
B		95-160	210													480
B	1120	95-160	220	1180	180	400	490	1010	520	440	322	30	20	8	22244	1190
B	1250	95-160	220	1310	200	440	530	1140	520	440	310	30	20	8	22248	1400

1) The dimension of the gauge recess b1 to be stated with order. For running surface profiles and correspondence of crane rails to running wheel diameter see DIN 15072.

Crane wheels with self aligning roller bearings, with gear ring

DIN 15 079

self aligning roller bearings series 222



Form BG broad crane wheel with large gear ring
(running surface-Ø d1 ≤ 500 mm)
gear ring pressed on



Form BG broad crane wheel with large gear ring
(running surface-Ø d1 ≥ 630 mm)
gear ring screwed on

Designation of a travel wheel form BG with nominal-Ø d1 = 630 mm, gauge b1 = 100 mm, including self aligning roller bearings 222 26, covers with labyrinth gland:

Crane wheel BG 630 × 100 DIN 15 079

- Form SK** narrow crane wheel (S) with small gear ring (K)
- Form SG** narrow crane wheel (S) with large gear ring (G)
- Form BK** broad crane wheel (B) with small gear ring (K)
- Form BG** broad crane wheel (B) with large gear ring (G)

The bearings are lubricated.

The bushing are supplied with lubricating hole and flattening against rotation (design see DIN 15 086).

Design of the covers see DIN 15 084.

Without certain agreement covers form A will be mounted.

Material:

Wheel body	GE420 (GS-70) or G42CrMo4+QT (GS-42CrMo4V)
Inner bush	S355 (St 52)
Spacer	S355 (St 52) or EN-GJS-400-15 (GGG-40))
Cover	S355J2G3 (St 52-3)
Gear ring	GE300 (GS-60)

Other material and dimensions (e. g. with self aligning roller bearings series 223) on request.

Appendant gear rings see DIN 15 082 part 1 and part 2.

Appendant travel wheels without gear ring see DIN 15 078.

See DIN 15070 for basis of calculation for crane wheels.

Calculation of bearing load of wheels for service life calculation of anti-friction bearing see DIN 15 071.

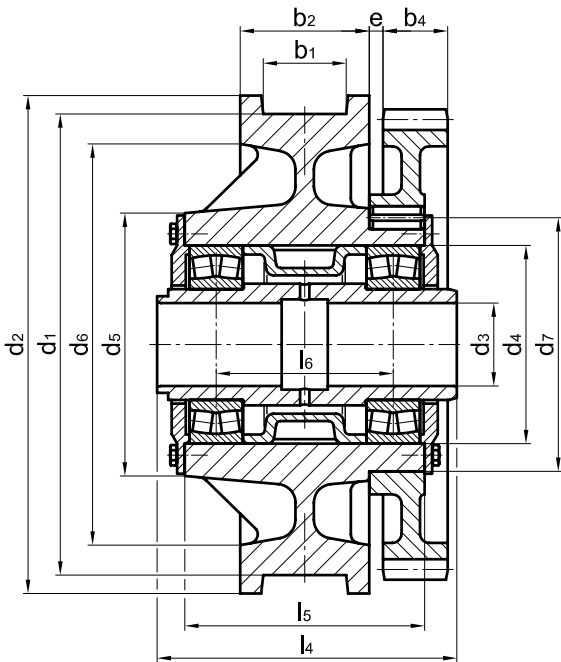
Remarks to the following table:

- 1) The dimension of the gauge recess b1 to be stated with order. For running surface profiles and correspondence of crane rails to running wheel diameter see DIN 15072.
- 2) exposition the dimensions see DIN 15 075

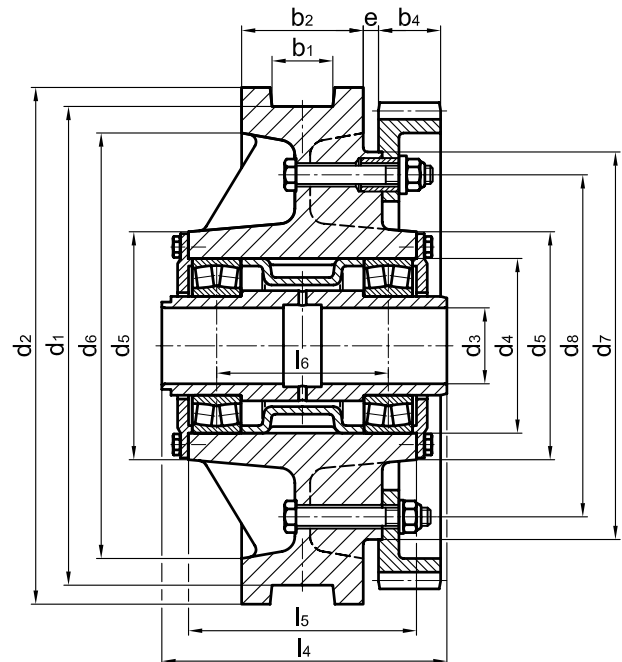
Crane wheels with self aligning roller bearings, with gear ring

DIN 15 079

self aligning roller bearings series 222



Crane wheel with pressed on gear ring
(running surface- \varnothing d1 \leq 500 mm)



Crane wheel with screwd on gear ring
(running surface- \varnothing d1 \geq 630 mm)

form	d1	b1 ¹⁾	b2	d2	d3 D10	d4 M7	d5	d6	d7	d8	gear ring	e	f ²⁾	l4	l5	l6	s1 ²⁾ min.	s2 ²⁾ min.	no. of ribs and cams	bear- ings DIN 635-2	unit weight =[kg]			
	h9								toler- ance zone		mo- du- lel	no. of teeth	b4		-0,5									
SG	315	45-55	90	350	60	160	220	270	210	r6	-	6	52	60	15	-	250	190	140	18	-	-	22218	98
BG		55-65	110														270	210	160					108
SK	400	55-65	110	440	80	180	240	345	230	r6	-	8	40	65	15	-	280	220	164	20	-	-	22220	140
SG		70-90	140														310	250	194					152
BK	500	55-65	110	540	90	215	285	435	275	r6	-	10	42	70	15	35	290	230	162	20	15	4 without Nocken	22224	220
SG		70-90	140														320	260	192					232
BK	630	65-75	120	680	100	230	300	560	460	h9	-	10	54	80	20	40	330	260	186	20	15	6	22226	308
SG		80-110	160														370	300	226					323
BK	710	75-90	140	760	110	270	340	630	510	h9	-	12	58	90	20	40	370	300	217	25	18	6	22230	411
SG		95-160	210														440	370	287					471
BK	800	75-90	140	850	125	290	360	710	580	h9	-	12	58	100	20	40	390	320	230	25	18	6	22232	446
SG		95-160	210														460	390	300					589
BK	900	75-90	140	950	140	320	390	805	660	h9	-	12	58	110	20	40	410	340	244	25	18	6	22236	568
SG		95-160	210														480	410	314					588
BK	1000	75-90	140	1050	160	360	450	900	660	h9	-	14	63	110	20	50	410	330	222	30	20	6	22240	728
SG		95-160	210														480	400	292					728
BK	1120	75-90	140	1050	160	360	450	900	840	h9	-	14	70	110	20	50	480	400	292	30	20	6	22240	1155
SG		95-160	210														480	400	292					1155
BK	1250	95-160	220	1180	180	400	490	1010	880	h9	-	16	68	125	20	50	520	440	322	30	20	8	22244	1480
BG		95-160	220														520	440	310					30
BK	1250	95-160	220	1310	200	440	530	1140	1000	h9	-	16	70	125	20	50	520	440	310	30	20	8	22248	1730
BG		95-160	220														1080	76	125					20

footnote see page 38

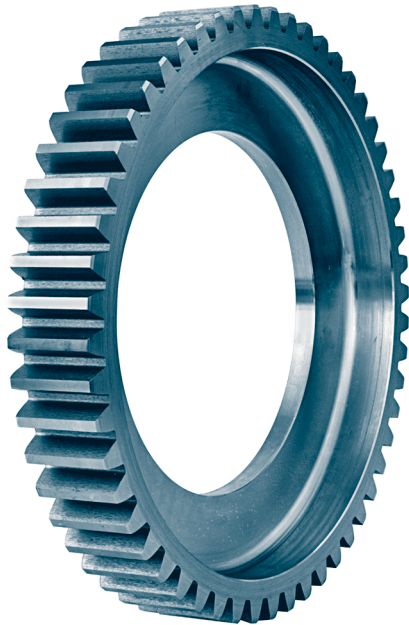
Gear rings, screwed on

for crane wheels with slide bearings acc. to DIN 15 075

for crane wheels with anti friction bearings acc. to DIN 15 079 with wheel- \varnothing $d_1 \geq 630$ mm

DIN 15 082

part 1



Designation of a gear ring for wheel- \varnothing $d_1 = 500$ mm, large gear ring form G:

Gear ring G 500.1 DIN 15 082

Form K small gear ring

Form G large gear ring

Without special agreement the gear rings are delivered without fastening bores. In normal case gear ring and wheel are drilled together during assembly.

material:

Gear ring G 200 – G 250 C45 or
42CrMo4+QT

Gear ring G 315 – G 1250 GE300 (GS-60) or
G42CrMo4+QT

Other material and dimensions on request.

Gear rings for crane wheels with anti friction bearings and wheel- $\varnothing \leq 500$ mm see DIN 15 082 Part 2.

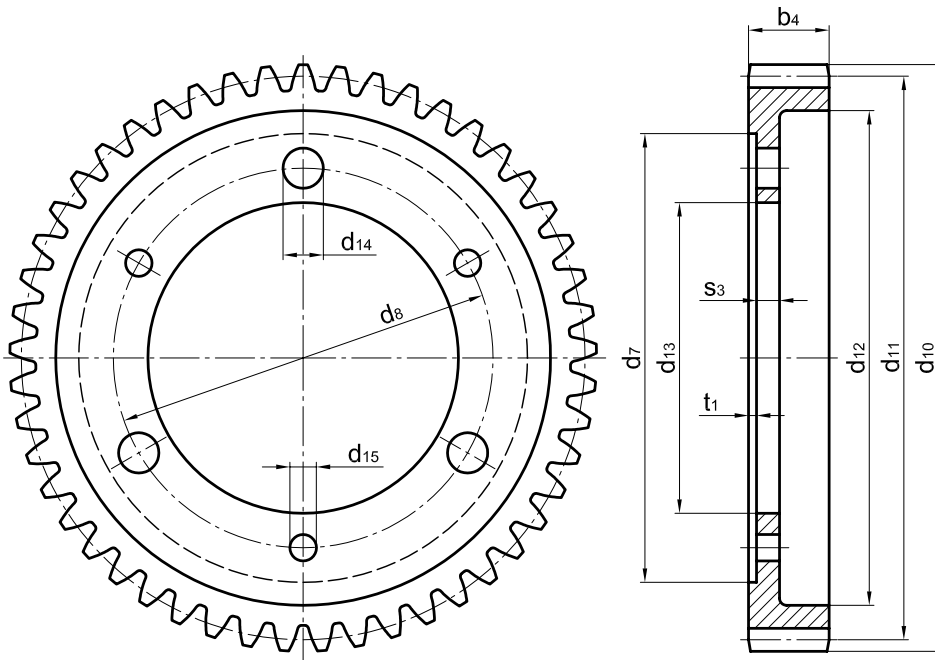
Gear rings, screwed on

for crane wheels with slide bearings acc. to DIN 15 075

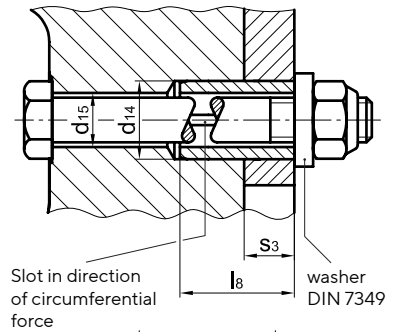
for crane wheels with anti friction bearings acc. to DIN 15 079 with wheel- \varnothing $d_1 \geq 630$ mm

DIN 15082

Part 1



Shear joint with heavy duty clamping sleeve acc. to, DIN EN ISO 8752 (DIN 1481)



for wheel- \varnothing d1	clamping sleeve		for screw
	d14	l8	
200	21	26	M 12
250-315	28	36	M 16
400-500	35	45	M 20
630-900	40	50	M 24
1000-1250	50	55	M 30

for wheel- \varnothing d1	form	number of teeth ¹⁾	module	b4	d7	d8	d10	d11	d12	d13	d14	d15	s3	t1	number of bores d14/d15	unit weight »[kg]
					H7		h11				H13					
200	G	40	5	40	160	125	210	200	165	90	21	14	12	5	2/2	5
250	G	50	5	50	200	155	260	250	210	110	28	18	16	5	2/2	10
315	G	52	6	60	260	200	324	312	270	155	28	18	16	5	2/2	15
400	K	40	8	65	270	210	336	320	270	150	35	23	18	5	2/2	20
	G	50			300	240	416	400	350	180						30
500	K	42	10	70	350	290	440	420	360	230	35	23	20	5	2/2	30
	G	49			390	330	510	490	430	270						40
630	K	54	10	80	460	400	560	540	480	335	40	27	22	5	3/3	50
	G	62			510	450	640	620	560	380						65
710	K	50	12	90	510	450	624	600	525	380	40	27	22	5	3/3	65
	G	58			580	520	720	696	620	450						90
800	K	58	12	100	610	550	720	696	620	480	40	27	22	5	3/3	100
	G	66			660	600	816	792	720	530						120
900	K	56	14	110	680	620	812	784	700	550	40	27	22	5	3/3	115
	G	63			750	690	910	882	800	620						145
1000	K	64	14	110	790	710	924	896	810	620	50	33	25	5	3/3	150
	G	70			840	760	1008	980	895	670						175
1120	K	62	16	125	880	800	1024	992	895	710	50	33	25	10	4/4	200
	G	68			950	870	1120	1088	990	780						250
1250	K	70	16	125	1000	920	1152	1120	1020	830	50	33	25	10	4/4	230
	G	76			1080	1000	1248	1216	1120	910						270

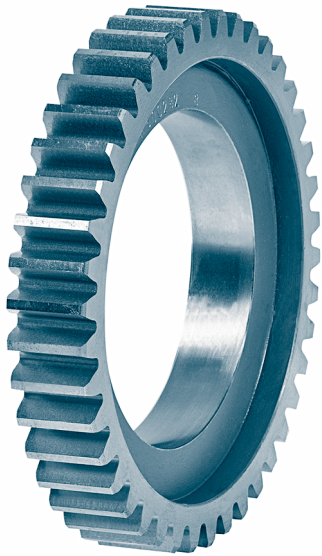
1) Tooth form according to DIN 867 without profile correction, Pressure angle 20 degree.

Gear rings, pressed on

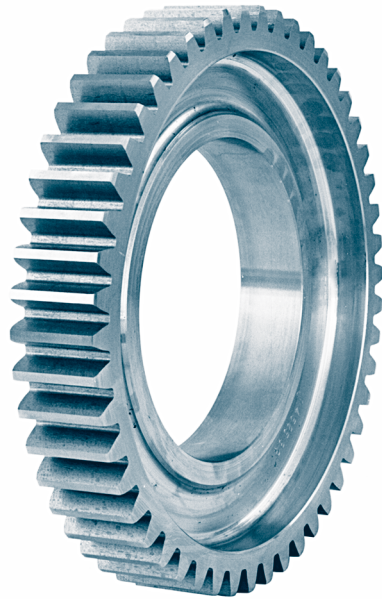
for crane wheels with anti friction bearings acc. to DIN 15 079 with wheel- \varnothing $d_1 \leq 500$ mm
self aligning roller bearings series 222

DIN 15 082

part 2



Form K small gear ring (Photo 1)



Form G large gear ring (Photo 2)

Designation of a gear ring for wheel- \varnothing $d_1 = 500$ mm, large gear ring form G:

Gear ring G 500.2 DIN 15 082

Form K small gear ring

Form G large gear ring

Material: GE300 (GS-60) or
G42CrMo4+QT

Other material and dimensions (e.g. wheels with self aligning roller bearings series 223) on request.

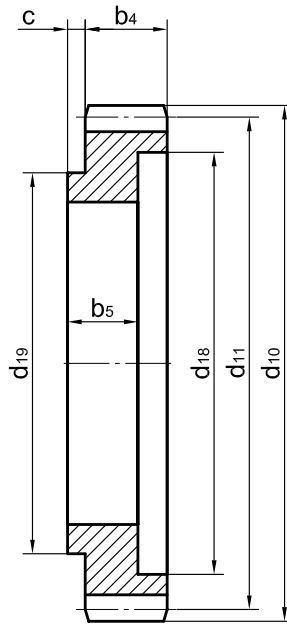
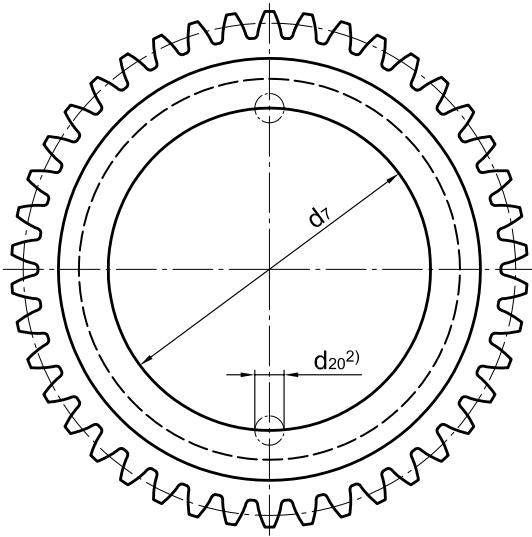
Gear rings for wheels with self-aligning roller bearings of wheel- \varnothing ≥ 630 mm see DIN 15 082 part 1.

Gear rings, pressed on

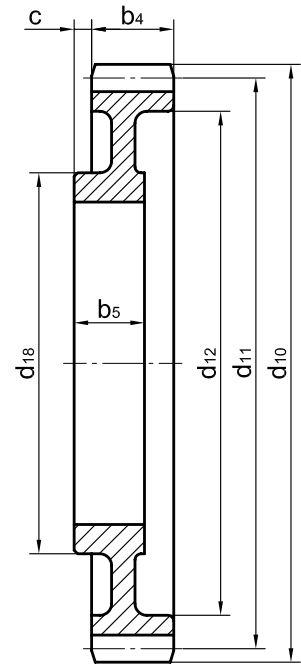
for crane wheels with anti friction bearings acc. to DIN 15 079 with wheel- $\varnothing d1 \leq 500$ mm
Rolling bearings series 222

DIN 15082

Teil 2



drawing 1



drawing 2

wheel- \varnothing d1	draw- ing	form	no. of teeth ¹⁾	mo- dule	b4	b5	c	d7 H7	d10 h11	d11	d12	d18	d19	d20 ¹⁾	for bearings DIN 635-2	unit weight ≈[kg]
315	1	G	52	6	60	45	10	210	324	312	-	270	240	16	22218	18
400	1	K	40	8	65	55	15	230	336	320	-	276	280	16	22220	20
	2	G	50						416	400	350	270	-			32
500	1	K	42	10	70	60	15	275	440	420	-	360	325	25	22224	40
	2	G	49						510	490	430	325	-			52

1) Tooth form according to DIN 867 without appending modification, pressure angle 20 Degree.

2) Shear joint with heavy duty clamping sleeve acc. to DIN EN ISO 8752 (DIN 1481), gear ring drilled together with crane wheel

Bandages, machined

for crane wheels as per DIN

DIN 15 083



Bandage with flanges

Designation of a bandage form B with nominal- \emptyset
d1 = 630 mm, gauge b1 = 100 mm:

Bandages B 630 × 100 DIN 15 083

Form S narrow bandages

Form B broad bandages

This standard refers to bandages with running surface profiles
acc. to DIN 15072 for crane wheels with bandages acc. to DIN.

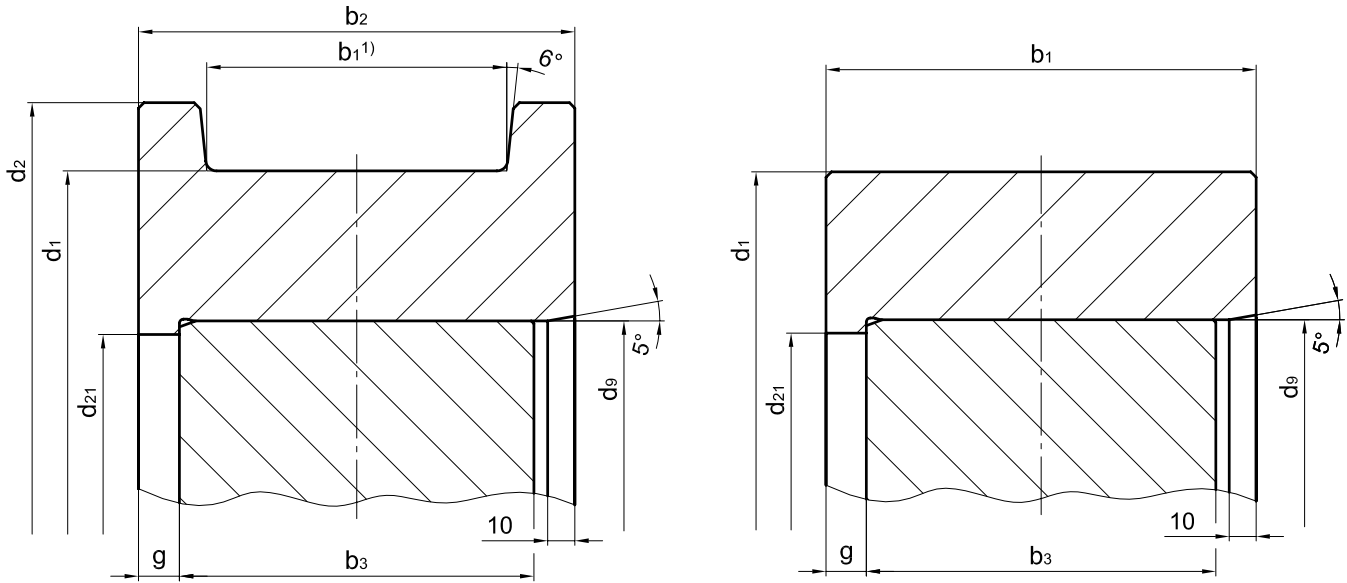
Material: C 60 or
42CrMo4+QT (42CrMo4V) or
34CrNiMo6+QT (34CrNiMo6 V) or
50CrMo4+QT (50CrMo4V)

Other material and dimensions on request.

Bandages, machined

for crane wheels as per DIN

DIN 15 083



Bandage with flange

Bandages without flange

form	d1	b1 ¹⁾	b2	b3	d2	d9 ²⁾		d21	g	unit weight ³⁾ ≈ [kg]		
						bandage	wheel body			with flange	without flange	
S	400	55-65	110	80	440	310	+0,1 0	+0,6 +0,5	300	15	55	45
B		70-90	140	110							70	55
S	500	55-65	110	80	540	400	+0,1 0	+0,7 +0,6	390	15	75	60
B		70-90	140	110							95	80
S	630	65-75	120	90	680	520	+0,2 0	+1,0 +0,8	510	15	115	95
B		80-110	160	130							150	125
S	710	75-90	140	100	760	590	+0,2 0	+1,1 +0,9	580	20	160	135
B		95-160	210	170							230	205
S	800	75-90	140	100	850	670	+0,2 0	+1,2 +1,0	660	20	190	-
B		95-160	210	170							280	250
S	900	75-90	140	100	950	760	+0,2 0	+1,4 +1,2	750	20	230	-
B		95-160	210	170							345	300
S	1000	75-90	140	100	1050	850	+0,2 0	+1,5 +1,3	840	20	265	-
B		95-160	210	170							400	350
B	1120	95-160	220	180	1180	960	+0,2 0	+1,7 +1,5	950	20	500	-
B	1250	95-160	220	180	1310	1090	+0,2 0	+1,9 +1,7	1080	20	580	-

1) The dimension of the gauge recess b1 to be stated with order. For running surface profiles and correspondence of crane rails to running wheel diameter see DIN 15072

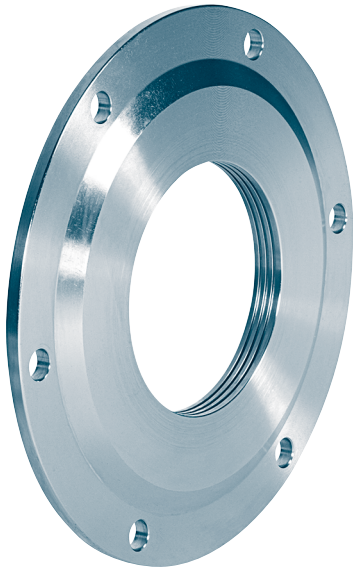
2) Heating temperature of the bandages 250 - 300 °C at 20 °C room temperature. The leading clearance in 40-50 % of the expansion at a heating of the bandage at 230-280 °C.

3) weight refers to max. b1.

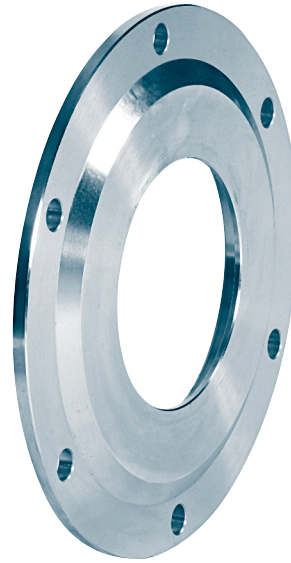
Covers

for wheels acc. to DIN 15 078 and 15 079
Rolling bearings series 222

DIN 15 084



Form A with labyrinth gland



Form B for radial shaft seal rings

Description of a cover form A, for crane wheel- \varnothing d1 = 500 mm:

Covers A 500 DIN 15 084

Form A with labyrinth gland

Form B for radial shaft seal rings

This standard is applicable only for crane wheels acc. to DIN 15078 and DIN 15079 with anti friction bearings series 222.

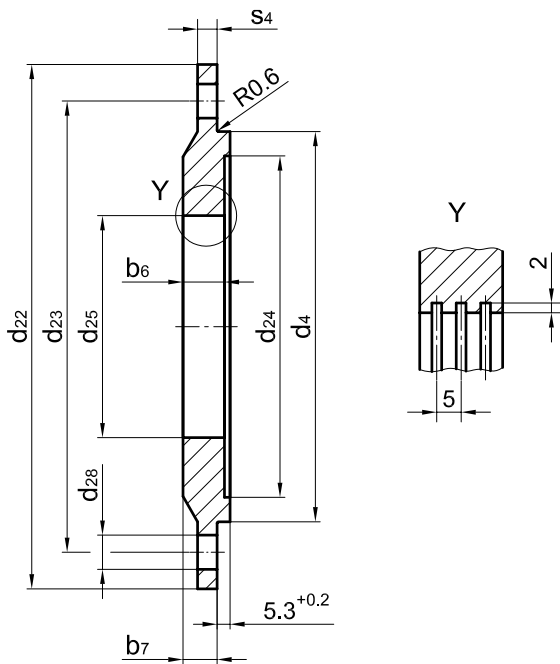
Material: S355J2G3 (St 52-3)

Other material and dimensions (e.g. for crane wheels with anti friction bearings series 223) on request.

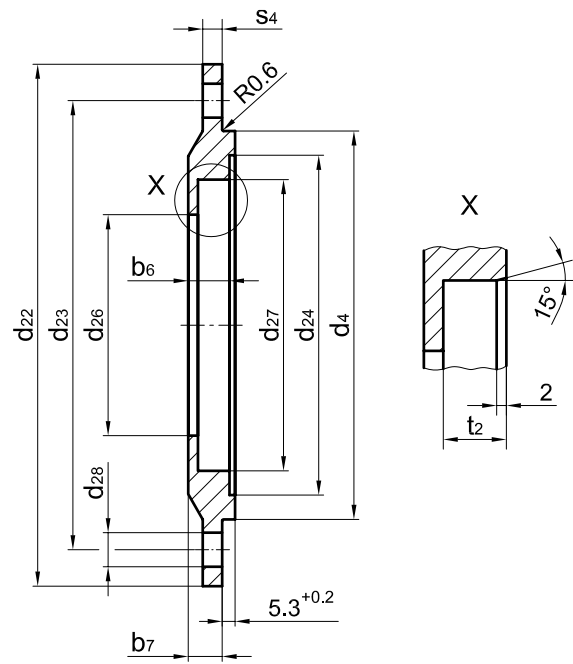
Covers

for wheels acc. to DIN 15 078 and 15 079
Rolling bearings series 222

DIN 15 084



Form A with labyrinth gland¹⁾



Form B for radial shaft seal rings²⁾

for wheel-Ø d1	d4 f8	d22	d23	d24	d25 +0,2	d26	d27 H8	number of bores d28	b6	b7	s4	t2	radial shaft seal rings acc. to DIN 3760	unit weight ≈[kg]
315	160	215	185	140	91	91	120	4 × 14	17	14	8	13	A 90 × 120 × 12	3,0
400	180	235	205	160	101	101	125	4 × 14	17	14	8	13	A 100 × 125 × 12	3,5
500	215	280	240	195	121	121	150	6 × 14	17	14	8	13	A 120 × 150 × 12	5,0
630	230	295	260	210	131	131	160	6 × 18	17	14	10	13	A 130 × 160 × 12	6,0
710	270	335	300	250	151	151	180	6 × 18	21	18	10	16	A 150 × 180 × 15	7,5
800	290	355	320	270	161	161	190	6 × 18	21	18	10	16	A 160 × 190 × 15	9,0
900	320	385	350	295	181	181	210	8 × 18	21	18	10	16	A 180 × 210 × 15	11,5
1000	360	425	390	330	201	201	230	8 × 18	21	18	10	16	A 200 × 230 × 15	15,0
1120	400	485	440	370	221	221	250	8 × 23	22	20	12	16	A 220 × 250 × 15	20,0
1250	440	525	480	410	241	241	270	8 × 23	22	20	12	16	A 240 × 270 × 15	22,0

1) Without certain agreement, covers form A will be installed.

2) Sealing lip mounted in exterior position to allow discharge of grease.

Internal bushing and spacers rings

for crane wheels acc. to DIN 15 078 and 15 079
Rolling bearings series 222

DIN 15 086



Internal bush

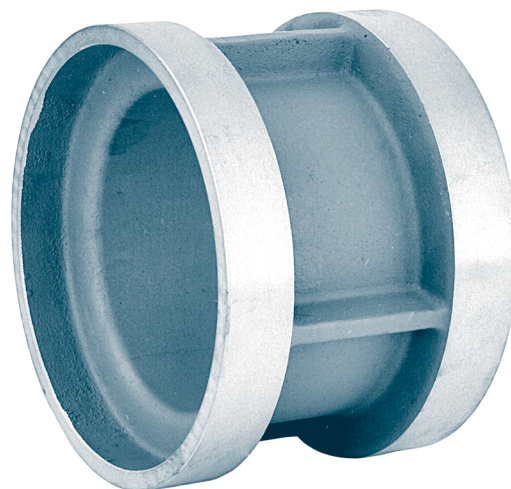
Designation of a internal bush for wheel- \varnothing d1 = 500 mm form B acc. to DIN 15 078 and 15 079:

Internal bush B 500 DIN 15 086

Flattening against rotation mounted on gear ring side.

Material: S355 (St 52)

Other material and dimensions(e.g. for rolling bearings series 223) on request.



Spacer ring

Designation of a spacer ring for wheel- \varnothing d1 = 630 mm form S acc. to DIN 15 078 and 15 079:

Spacer ring S 630 DIN 15 086

Material: S355 (St 52) or
EN-GJS-400-15 (GGG-40)

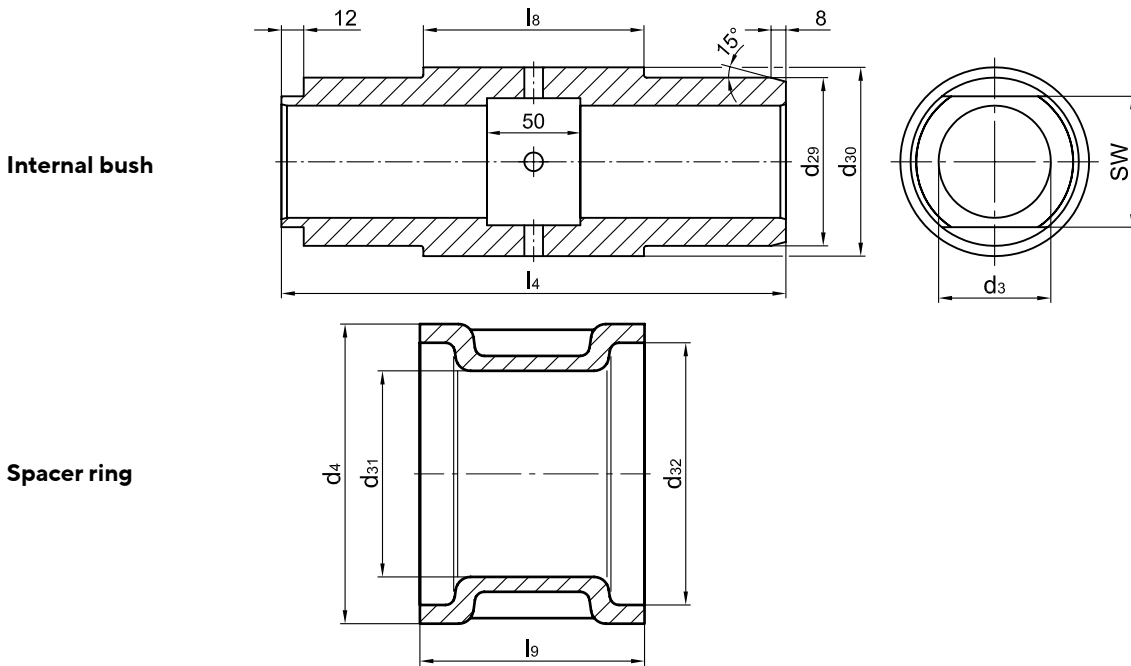
Other material and dimensions(e.g. for rolling bearings series 223) on request.

Internal bushing and spacer rings

for crane wheels acc. to DIN 15 078 and 15 079

Rolling bearings series 222

DIN 15 086

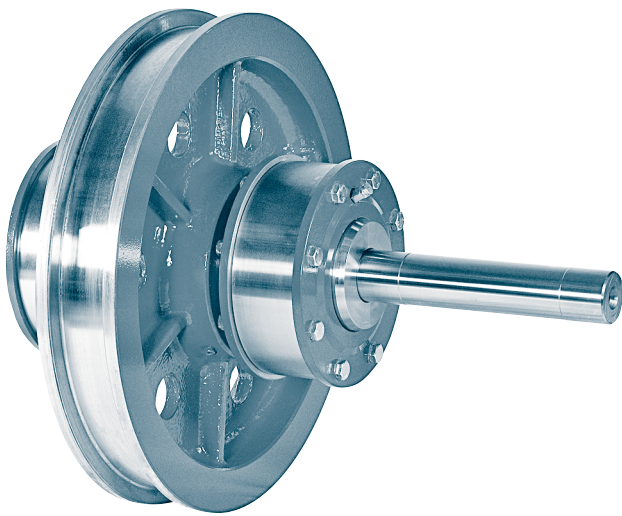


for crane wheel		Rolling bearings		d3	d4	d29	d30	d31	d32	l4	l8	l9	width across flats S
Form	d1	type	width of bearing	D10	-0,2 -0,4	g6				-0,5		+0,2	
S	315	22218	40	60	160	90	101	110	140	250	99,4	100	70
B										270	119,4	120	
S	400	22220	46	80	180	100	113	135	160	280	117,4	118	90
B										310	147,4	148	
S	500	22224	58	90	215	120	132	150	195	290	103,4	104	100
B										320	133,4	134	
S	630	22226	64	100	230	130	145	160	210	330	121,4	122	110
B										370	161,4	162	
S	710	22230	73	110	270	150	164	180	250	370	143,4	144	125
B										440	213,4	214	
S	800	22232	80	125	290	160	175	190	270	390	149,4	150	140
B										460	219,4	220	
S	900	22236	86	140	320	180	214	235	290	410	157,4	158	150
B										480	227,4	228	
S	1000	22240	98	160	360	200	219	275	330	410	123,4	124	175
B										480	193,4	194	
B	1120	22244	108	180	400	220	242	280	380	520	213,4	214	200
B	1250	22248	120	200	440	240	265	320	420	520	189,4	190	220

Driven- and Nondriven wheel sets with self aligning roller bearings

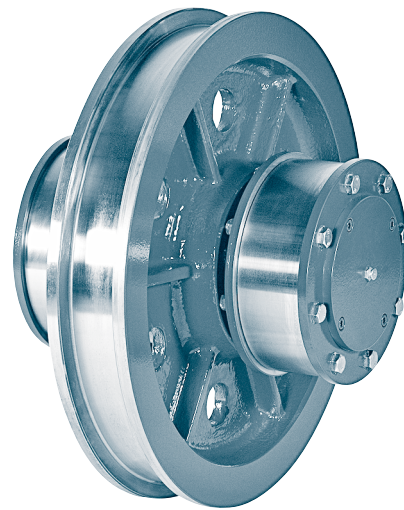
Rolling bearings series 222 and 223

DIN 15 090



Driven wheel set Form SHKE

with casted crane wheel, drive shaft and suitable for gear unit with shrink disc.



Nondriven wheel set Form SHKE

with casted crane wheel

Designation of a driven wheel set with narrow crane wheel (S), with wheel flanges (H), without bandage (K), without pressure oil feeding for the wheel (E), with crane wheel- $\varnothing d_1= 630$ mm and width $b_1= 110$ mm, self aligning roller bearings series 222:

Driven wheel set SHKE 630 × 110 - 222 DIN 15 090

To be stated with order:

- material for crane wheel and shaft
- anti friction bearings series 222 or 223
- design of driveshaft end (driven wheelset)

we deliver driven wheel sets with drive shaft suitable for all drive solutions (with connection flange, with clutch disc, with feather keyway acc. to DIN 6885-1, with splines acc. to DIN 5480 or in extended version for hollow shaft drive units with shrink disc).

Material:

Wheel body	GE420 (GS-70) or G42CrMo4+QT (GS-42CrMo4V)
Drive shaft, shaft	C45 N or C60 N or 42CrMo4+QT

Other material and dimensions on request.

Driven wheel sets with shaft ends suitable for hollow shaft drive units of all manufacturers on request.

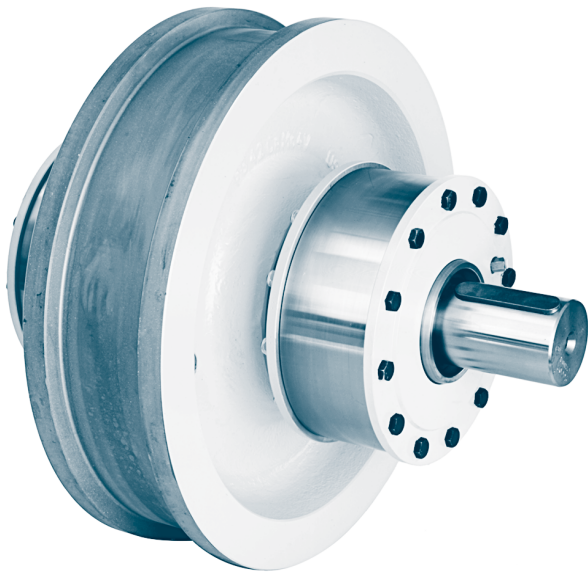
Form coding

coding letter	explanation
S	narrow crane wheel
B	broad crane wheel
H	crane wheel with wheel flanges
G	crane wheel without wheel flanges
M	crane wheel with Bandages
K	crane wheel without bandages
D	with pressure oil connection
E	without pressure oil connection

Driven- and Nondriven wheel sets with self aligning roller bearings

Rolling bearings series 222 and 223

DIN 15 090



Driven wheel set Form BHKE

with drop forged crane wheel, drive shaft end suitable for hollow shaft drive unit with shrink disc.



Driven wheel set Form BHKE

with drop forged crane wheel

Designation of a nondriven wheel set with broad crane wheel (B), without wheel flanges (G), with bandage (M), with pressure oil feeding for the wheel (D), with crane wheel- $\varnothing d_1 = 630$ mm and width $b_1 = 160$ mm, self aligning roller bearings series 222:

Nondriven wheel set BGMD 630 ×160 - 222 DIN 15 090

To be stated with order:

- material for crane wheel and shaft
- anti friction bearings series 222 or 223
- design of driveshaft end (driven wheelset)

we deliver driven wheel sets with drive shaft suitable for all drive solutions (with connection flange, with clutch disc, with feather keyway acc. to DIN 6885-1, with splines acc. to DIN 5480 or in extended version for hollow shaft drive units with shrink disc).

Material:

Wheel body	GE420 (GS-70) or G42CrMo4+QT (GS-42CrMo4V)
Drive shaft, shaft	C45 N or C60 N or 42CrMo4+QT

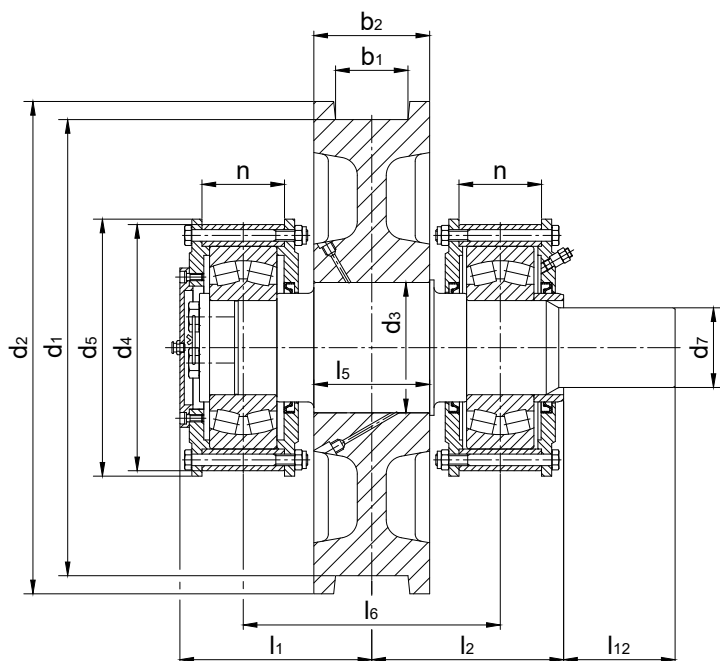
Other material and dimensions on request.

Driven wheel sets with shaft ends suitable for hollow shaft drive units of all manufacturers on request.

Driven- and Nondriven wheel sets with self-aligning roller bearings

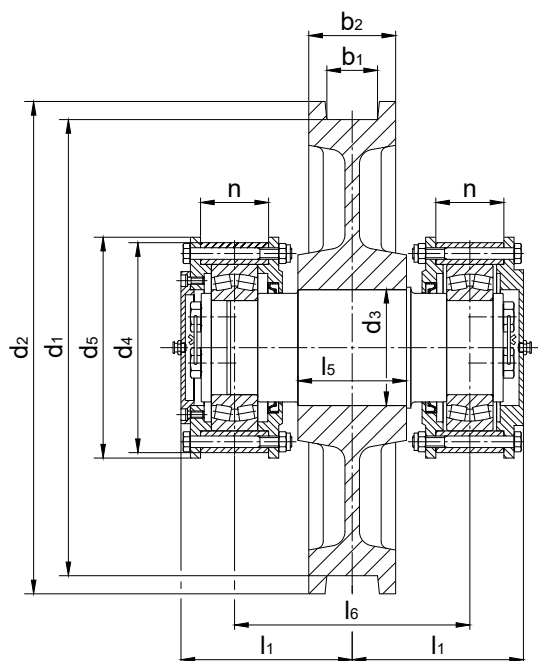
DIN 15 090

Rolling bearings series 222 and 223



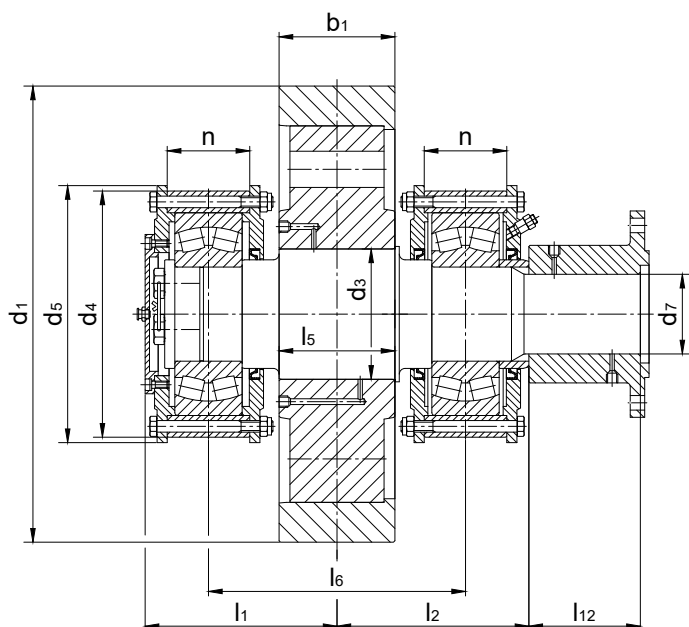
Driven wheel set Form BHKD

Driven wheel set with broad crane wheel, with wheel flanges, without bandage, with pressure oil feeding for the wheel, without connection flange, without shrink disc



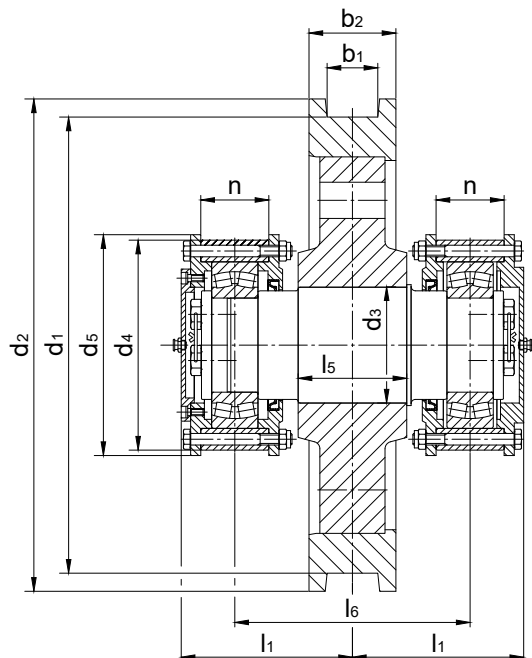
Nondriven wheel set Form SHKE

Nondriven wheel set with narrow crane wheel, with wheel flanges, without bandage, without pressure oil feeding for the wheel



Driven wheel set Form BGMD

Driven wheel set with broad crane wheel, without wheel flanges, with bandage, with pressure oil feeding to the wheel, with connection flange for articulated shaft



Nondriven wheel set Form SHME

Nondriven wheel set with narrow crane wheel, with wheel flanges, with bandage, without pressure oil feeding for the wheel

Driven- and Nondriven wheel sets with self aligning roller bearings

DIN 15 090

Rolling bearings series 222 and 223

Driven- and Nondriven wheel sets with anti friction bearings series 222

d1	dimension and form										bearings acc. to DIN 635-2	dimension (driven wheel sets)						
	Form ¹⁾	b1 ²⁾	b2	d2	d3	d4	d5	d9 ³⁾	l5	l1 =		l6	n +0,15 +0,05	l2	d7 ⁴⁾	l12	d7 ⁴⁾	l12
h9	h7												series 1		series 2 ⁵⁾			
315	S	45-55	90	350	110	210	220	-	110	171	235	62	222 18	185	-	-	70	105
	B	55-65	110		120	230	240			173			222 20	190	70	105	80	120
400	S	55-65	110	440	120	230	240	310	140	188	265	62	222 20	205	70	105	80	120
	B	70-90	140		130	250	260			202			222 22	215	80	120	90	132
500	S	55-65	110	540	130	250	260	400	140	202	280	72	222 22	215	80	120	90	132
	B	70-90	140		140	265	275			210			222 24	225			100	152
630	S	65-75	120	680	160	290	305	520	150	237	325	94	222 26	250	-	-	100	152
	B	80-110	160		180	330	345			245			222 30	265	100	152	110	
710	S	75-90	140	760	170	310	325	590	180	249	350	94	222 28	260	100	152	110	152
	B	95-160	210		190	350	365			210			222 32	300	110		130	172
800	S	75-90	140	850	180	330	345	670	180	255	355	94	222 30	275	110	152	120	172
	B	95-160	210		200	370	385			210			222 34	310	130	172	140	202
900	S	75-90	140	950	190	350	365	760	190	268	375	104	222 32	290	-	-	130	172
	B	95-160	210		230	420	435			210			222 40	335	140	202	160	202
1000	S	75-90	140	1050	200	370	385	850	190	279	385	114	222 34	300	-	-	140	202
	B	95-160	210		250	480	500			210			222 44	355	160	202	180	252

Driven- and Nondriven wheel sets with anti friction bearings series 223

d1	dimension and form										bearings acc. to DIN 635-2	dimension (driven wheel sets)						
	Form ¹⁾	b1 ²⁾	b2	d2	d3 ³⁾	d4	d5	d9 ⁴⁾	l5	l1 =		l6	n +0,15 +0,05	l2	d7 ⁴⁾	l12	d7 ⁴⁾	l12
h9	h7												series 1		series 2 ⁵⁾			
315	S	45-55	90	350	110	220	230	-	110	183	245	72	223 16	185	-	-	70	105
	B	55-65	110		120	240	250			191			223 18	190	70	105	80	120
400	S	55-65	110	440	120	240	250	310	140	206	285	82	223 18	205	70	105	80	120
	B	70-90	140		130	265	275			216			223 20	215	80	120	90	132
500	S	55-65	110	540	130	265	275	400	140	216	295	92	223 20	215	80	120	90	132
	B	70-90	140		140	300	315			242			223 22	245			100	152
630	S	65-75	120	680	160	300	315	520	150	247	335	104	223 22	250	-	-	100	152
	B	80-110	160		180	340	355			160			223 26	265	100	152	110	
710	S	75-90	140	760	170	320	335	590	180	259	360	104	223 24	260	100	152	110	152
	B	95-160	210		190	360	375			210			223 28	300	110	152	130	172
800	S	75-90	140	850	180	340	355	670	180	275	375	114	223 26	275	110	152	120	172
	B	95-160	210		200	380	395			210			223 30	310	130	172	140	202
900	S	75-90	140	950	190	360	375	760	190	290	395	124	223 28	290	-	-	130	172
	B	95-160	210		230	420	435			210			223 34	325	140	202	160	202
1000	S	75-90	140	1050	200	380	395	850	190	298	405	132	223 30	300	-	-	140	202
	B	95-160	210		250	480	500			210			223 38	355	160	202	180	252

- 1) S = narrow crane wheel B = broad crane wheel.
- 2) The dimension of the gauge recess b1 to be stated with order.
- 3) Bandages and shrink-joint acc. to DIN 15 083.
- 4) Tolerance for d7 acc. to DIN 15 091
- 5) Series 2 conform with the correlation of the articulated shafts acc. to DIN 15 450

Driven- and Nondriven wheel sets with self aligning roller bearings

DIN 15 090

Rolling bearings series 222 and 223

Weight of the wheel sets, driven and nondriven with self aligning roller bearings series 222

d1 h9	crane wheel	weight ²⁾ in kg							
	form ¹⁾	driven wheel set ³⁾				nondriven wheel set ³⁾			
		HK	HM	GK	GM	HK	HM	GK	GM
315	S	100	-	-	-	95	-	-	-
	B	123	-	-	-	117	-	-	-
400	S	153	172	-	-	147	166	-	-
	B	192	221	182	206	183	212	173	197
500	S	212	237	-	-	203	228	-	-
	B	263	303	251	288	253	293	241	278
630	S	356	398	-	-	344	386	-	-
	B	465	537	449	612	450	522	434	497
710	S	474	522	-	-	459	507	-	-
	B	683	791	661	766	658	766	636	741
800	S	579	633	-	-	559	613	-	-
	B	841	974	815	944	809	942	783	912
900	S	693	780	-	-	668	755	-	-
	B	1094	1265	1065	1220	1055	1223	1023	1181
1000	S	865	936	-	-	832	903	-	-
	B	1399	1602	1373	1552	1345	1542	1313	1492

Weight of the wheel sets, driven and nondriven with self aligning roller bearings series 223

d1 h9	crane wheel	weight ²⁾ in kg							
	form ¹⁾	driven wheel set ³⁾				nondriven wheel set ³⁾			
		HK	HM	GK	GM	HK	HM	GK	GM
315	S	107	-	-	-	105	-	-	-
	B	137	-	-	-	132	-	-	-
400	S	166	185	-	-	161	180	-	-
	B	214	243	174	228	207	236	197	221
500	S	234	259	-	-	227	252	-	-
	B	311	351	299	236	301	341	259	326
630	S	369	411	-	-	359	401	-	-
	B	490	562	474	537	479	551	463	526
710	S	490	538	-	-	478	526	-	-
	B	695	803	673	778	675	783	653	758
800	S	606	660	-	-	576	670	-	-
	B	866	949	840	969	838	971	812	941
900	S	705	792	-	-	685	772	-	-
	B	1128	1299	1099	1254	1091	1262	1062	1217
1000	S	889	960	-	-	861	932	-	-
	B	1454	1651	1422	1601	1403	1600	1371	1550

1) S = narrow crane wheel B = broad crane wheel.

2) The weight calculation is based on row 2 of the shaft ends, without connecting flange or coupling disc. They are based on b1 max. and 50% or 70% of the full cross-section of the wheel body for crane wheels without or with bandages. The weight specifications are approximate values; they are for guidance only and depend on the respective type and the manufacturing process used for the crane wheels.

3) see form coding (S. 50)

Driven- and Nondriven wheel sets with self aligning roller bearings

DIN 15 090

Rolling bearings series 222 and 223

Bill of material

Lfd. Nr.	name	quantities for crane wheel-Ø d1																acc. to DIN resp. SEB ¹⁾																
		driven wheel set								nondriven wheel set																								
		315		400		500		630		710		800		900		1000			315		400		500		630		710		800		900		1000	
S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B			
1	crane wheel							1																									DIN 15 093	
2	shaft							1																									DIN 15 091	
3	covers form A resp. B							1																									DIN 15 092	
4	covers form C							-																									DIN 15 092	
5	covers form D with short centering							1																									DIN 15 092	
6	covers form D with short centering							1																									DIN 15 092	
7	covers form E							1																									DIN 15 092	
8	covers form F							1																									DIN 15 092	
9	radial shaft seal rings A							3																									DIN 3760	
10	bearing support							2																									DIN 15 094	
11	self aligning roller bearings							2																									DIN 635-2	
12	bush							1																									DIN 15 095	
13	safety disc							1																									DIN 15 095	
14	hexagonal screw							3																									DIN EN ISO 4017 (DIN 933)	
15	safety wire							1																										
16	hexagonal screw	16	16	16	16	24	24	24	24	24	24	16	16	16	16	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24		DIN EN ISO 4014 (DIN 931)	
17	hexagonal nut	16	16	16	16	24	24	24	24	24	24	16	16	16	16	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24		DIN EN ISO 4032 (DIN 934)
18	safety	32	32	32	32	48	48	48	48	48	48	32	32	32	32	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48		(DIN 93)
19	cylinder screw	4	4	4	4	4	4	4	6	4	6	6	4	4	4	4	4	4	4	6	4	6	6	6	6	6	6	6	6	6	6	6		DIN 6912
20	spring washer	4	4	4	4	4	4	4	6	4	6	6	4	4	4	4	4	4	6	4	6	6	6	6	6	6	6	6	6	6	6	6		DIN 7980
21	screw plug G ¼"	number of press oil-connections acc. to DIN 15 055 minus 1 (no screw plug for shaft on locating bearing)																											DIN 906					
22	connection nipple							1																										DIN 15 095
23	connection flange or shrink disc							1																										DIN 15 452 SEB 601431

1) Stahl-Eisen-Betriebsblätter of the Association of German Ironworkers

Crane wheels

for driven- and nondriven wheel sets acc. to DIN 15 090

DIN 15 093



Form S narrow crane wheel



Form B broad crane wheel

Designation of a wheel form B with nominal- \varnothing d1 = 630 mm, gauge b1 = 100 mm, bore- \varnothing d3 = 180 mm H7:

Crane wheel B 630 × 100 × 180 H7 DIN 15 093

Form S narrow crane wheel

Form B broad crane wheel

All wheels on demand with oil pressure connection acc. to DIN 15 055.

Material: GE420 (GS-70) or
G42CrMo4+QT (GS-42CrMo4V) or
42CrMo4+QT (42CrMo4V) drop forged

Other material and dimensions on request.

All functional dimensions are binding. The design of the wheel depends on the manufacturer.

Basis for calculation for crane wheels see DIN 15 070.

Our high resilient, forged crane wheels are available in the following alternatives:

42CrMo5-04 quenched and tempered to 850-1000 N/mm² or higher

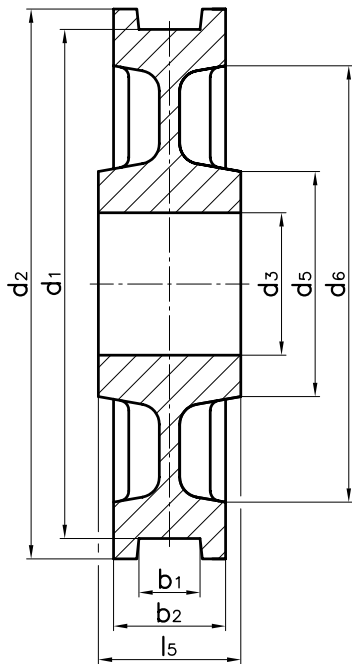
42CrMo5-04 quenched and tempered tread - and inner wheel flanges non-slip hardened to HRc 48-54, hardening depth min. 10 mm

42CrMo-04 quenched and tempered tread and inner wheel flanges deep hardened to 450-500 HB, hardening depth 18-20 mm

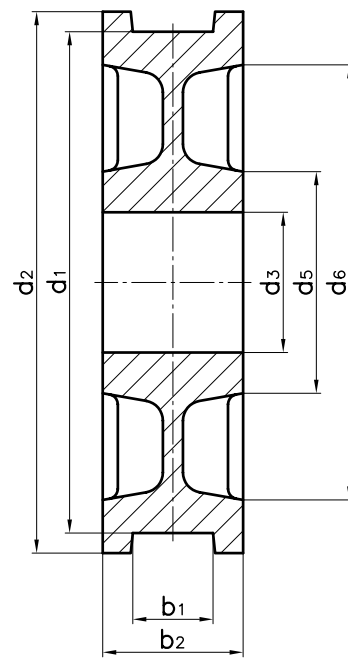
Crane wheels

for driven and non driven wheel sets acc. to DIN 15 090

DIN 15 093



Form S narrow crane wheel



Form B broad crane wheel

form	d1 h9	b1 ¹⁾	b2	d2	d3 ²⁾ H7	d5	d6	l5	no.of ribs	unit weight ≈[kg]
S	315	45-55	90	350	70-110	175	270	110	-	51
B		55-65	110		80-120	190				65
S	400	55-65	110	440	80-120	190	345	140	-	82
B		70-90	140		90-130	205				105
S	500	55-65	110	540	90-130	205	435	140	6	120
B		70-90	140		100-140	220				138
S	630	65-75	120	680	100-160	255	560	150	6	190
B		80-110	160		120-180	285		235		
S	710	75-90	140	760	120-170	270	630	180	6	255
B		95-160	210		140-190	300		358		
S	800	75-90	140	850	140-180	285	710	180	6	315
B		95-160	210		160-200	320		450		
S	900	75-90	140	950	140-190	300	805	190	6	375
B		95-160	210		180-230	365		600		
S	1000	75-90	140	1050	160-200	320	900	190	6	490
B		95-160	210		200-250	395		750		

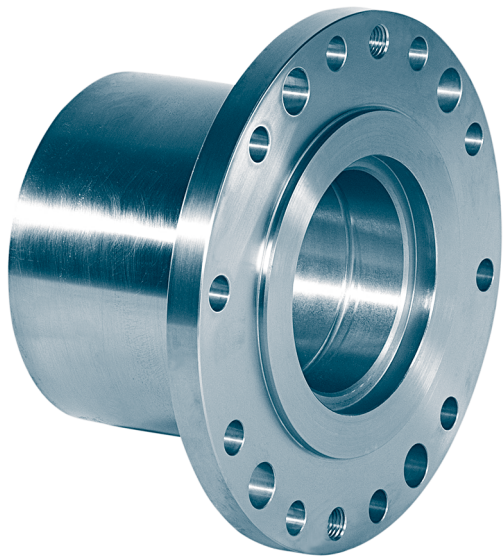
1) The dimension of the gauge recess b1 to be stated with order. For running surface profiles and correspondence of crane rails to running wheel diameter see DIN 15072.

2) Bore dimensions-Ø d3 to be stated with order.

Connection flanges for articulated shafts

for driven wheel sets acc. to DIN 15 090

DIN 15452



Form B with bore d5

Designation of a connection flange form B for articulated shaft size 285 with bore d7 = 120 mm:

Anschlussflansch DIN 15452 – B 285 × 120

Form A without bore d5

Form B with bore d5

The connection flanges as per this standard are to use for the connection of articulated shafts as per DIN 15 451 to the driven wheel sets as per DIN 15 090. The use is in cranes to apply the torque from the gear unit to the crane wheel.

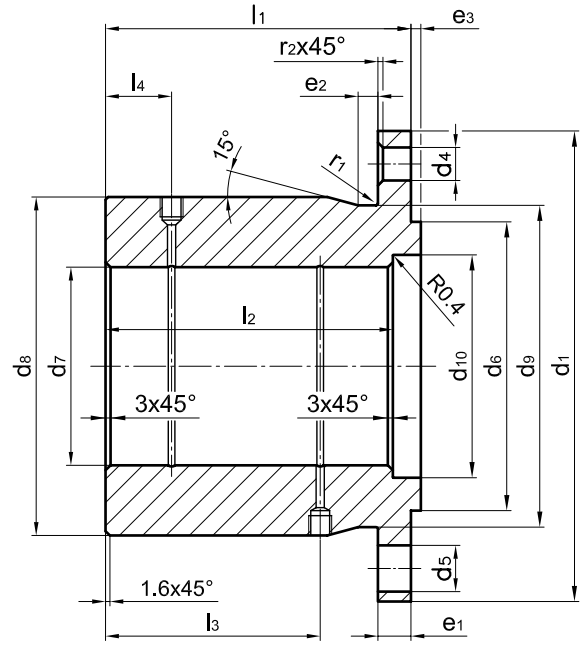
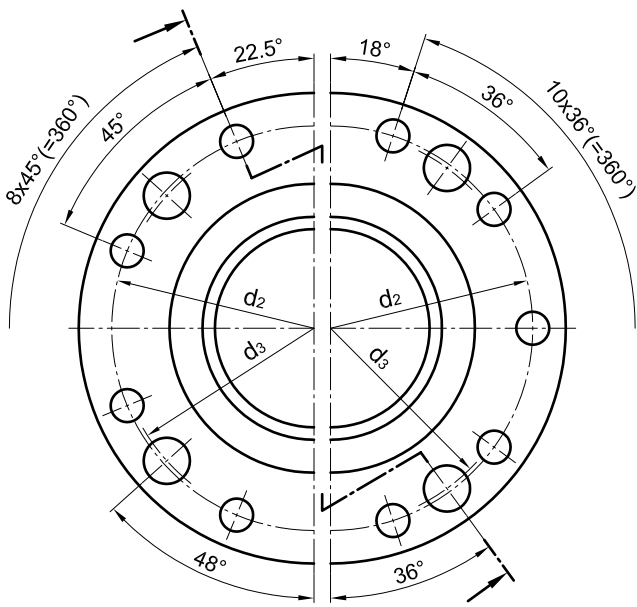
Material: C45 or
C60 or
42CrMo4+QT (42CrMo4V)

Other material and dimensions on request.

Connection flanges for articulated shafts

for driven wheel sets as per DIN 15090

DIN 15452



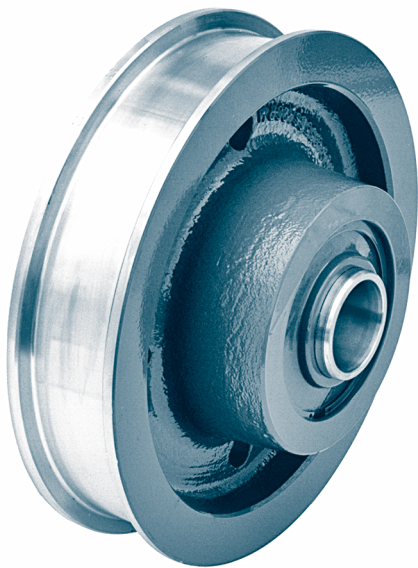
view left side
size of articulated shaft 150 – 315

view right side
size of articulated shaft 350 – 435

size of articulated shaft d1	d7	d2	d3	d4	d5	d6	d8	d9	d10	e1	e2	e3	l1	l2	l3	l4	r1	r2	weight ≈[kg]	
	H7	±0,1	±0,1	tolerance	H12	h9			+0,5 0											
150	70	130	126	12	+0,4 +0,1	16	90	108	100	82	10	8	2	115	106	74	25	1	1	4,8
180	80	155,5	152	14	+0,4 +0,1	20	110	130	122	97	12	8	2	130	121	85	30	1	1	8,6
	90	196	192	16	+0,4 +0,1	21	140	165	157	120	15	12	4	140	134	90	30	1,2	1	16,6
225	100													160	154	110	35			20
	100	218	214	18	+0,4 +0,1	25	140	175	173	128	18	12	5	160	154	115	35	1,2	1	23
250	110																			20
	100						190	190	135					160	154	115	35	1,6		34
285	110	245	240	20	+0,5 +0,1	28	175				20		6					1		32
	120						205	195	135			12		185	174	130	40	1,2		38
	130																			35
315	110																			39
	120	280	270	22	+0,5 +0,1	30	175	210	210	155	22		6	185	174	130	40	4	1	41
	130							225	223	162				215	204	155	50	1,6		38
	140						210	210	155					185	174	130	40	6		48
350	130						210	210	155					185	174	130	40	6		44
	140	310	300	22	+0,5 +0,1	32	220	260	249	185	25	16	7	215	204	145	50	1,6	1,6	72
	160							260	260	185				215	204	155	50	6		64
390	140							260	260	185				215	204	155	50	6		78
	160	345	340	24	+0,6 +0,1	32	250	290	287	210	23		7	215	204	155	50	6	1,6	70
435	180							290	287	210		16		265	254	190	60	2,5		94
	180	385	378	27	+0,6 +0,1	35	280	310	310	225	32		9	265	254	190	60	6	1,6	125

Crane wheels for axle without gear ring

TGL 34964



Form B2 symmetrical hub
covers with radial shaft sealings

Designation of a wheel form B2 with nominal- \varnothing d1 = 630 mm,
gauge b2 = 100 mm, incl. self aligning roller bearing 22224,
covers with radial shaft seal rings:

Crane wheel B2 – 630 × 100 TGL 34964

- Form A1** unsymmetrical hub,
covers with gap-sealing
- Form A2** unsymmetrical hub,
covers with radial shaft sealing
- Form B1** symmetrical hub,
covers with gap sealing
- Form B2** symmetrical hub,
covers with radial shaft sealing

The anti friction bearings are lubricated.

Without certain agreement crane wheels with \varnothing d1 \geq 320 mm
internal bushing with lubrication bore and covers with radial
shaft seal ring.

Material:

Wheel body- \varnothing 200–250 C45

Wheel body- \varnothing 320–1000 GE420 (GS-70) or
G42CrMo4+QT (GS-42CrMo4V)

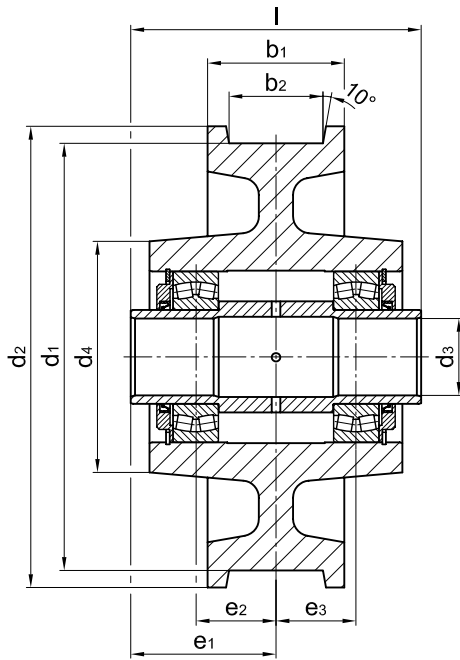
Internal bush S355 (St 52)

Other materials and dimensions as well as axles on request.

Crane wheels with gear ring see TGL 34965.

Crane wheels for axle without gear ring

TGL 34964

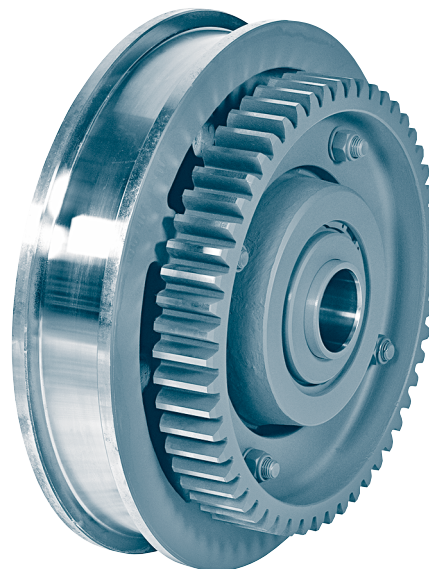
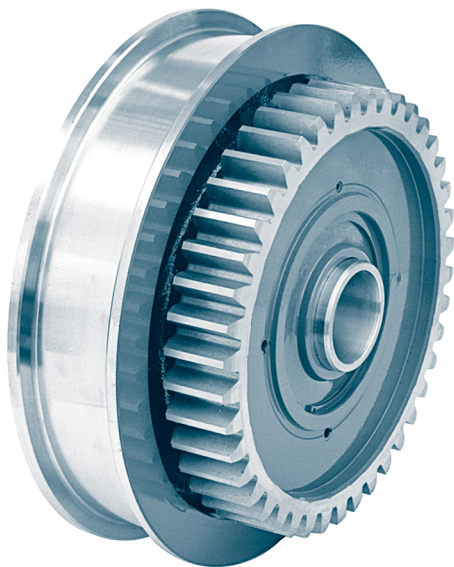


Form B2 symmetrical hub covers with radial shaft seal ring

form	d1 h9	b2 ¹⁾	b1	d2	d3 D10	d4	e1	e2	e3	l -0,5	bearings	unit weight ≈[kg]
200		40-75	105									
250		40-80	110									
320		40-80	110									
400		40-90	125									
		90-100	140									
500		40-90	125									
		100-120	160									
630		60-90	140									
		100-120	180									
710		60-90	140									
		100-130	180									
800		80-110	160									
		120-130	200									
1000		100-150	210									

Dimensions on request

1) The dimensions of the gauge recess b2 to be stated with order.



Form B2 symmetrical hub, covers with radial shaft seal ring,
nominal- \varnothing d1 \leq 500 mm

Form B2 symmetrical hub, covers with radial shaft seal ring,
nominal- \varnothing d1 \geq 630 mm

Designation of a crane wheel form B2 with nominal- \varnothing d1 = 630 mm, gauge b2 = 100 mm, incl. self aligning roller bearings 222 24, covers with radial shaft seal ring, with large gearing (Zentrier- \varnothing d5= 530 and number of teeth 62):

Crane wheel B2 – 630 × 100 – 530 × 62 TGL 34 965

- Form A1** unsymmetrical hub,
covers with gap sealing
- Form A2** unsymmetrical hub,
covers with radial shaft seal ring
- Form B1** symmetrical hub,
covers with gap sealing
- Form B2** symmetrical hub,
covers with radial shaft seal ring

The rolling bearings are lubricated.

Without certain agreement crane wheels with \varnothing d1 \geq 320 mm internal bushing with lubrication bore and covers with radial shaft seal ring.

Material:

Wheel body- \varnothing 200 – 250 C45

Wheel body- \varnothing 320 – 1000 GE420 (GS-70) or
G42CrMo4+QT (GS-42CrMo4V)

Internal bush S355 (St 52)

Gear ring C45 or GE300 (GS-60)

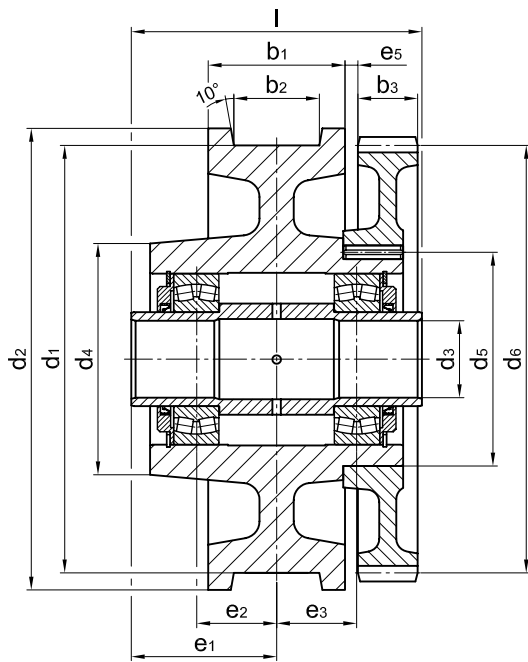
Other material and dimensions as well as axles on request.

Gear rings see TGL 34 966

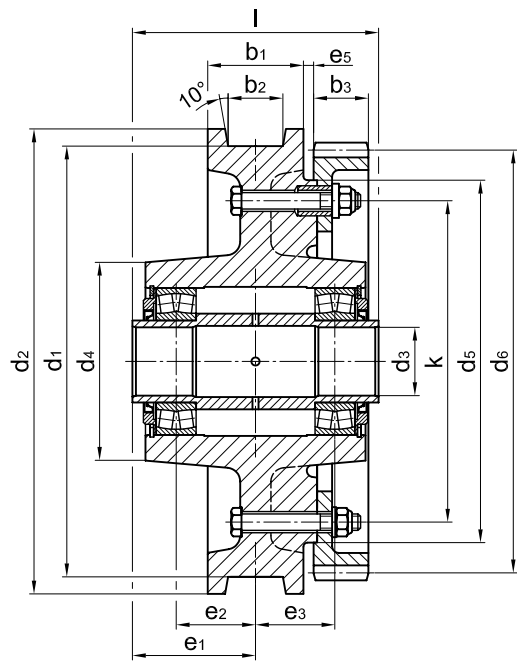
Crane wheels without gear ring see TGL 34 964.

Crane wheels for axle with gear ring

TGL 34965



Form B2 symmetrical hub, covers with radial shaft seal ring, nominal- \varnothing d1 \leq 500 mm

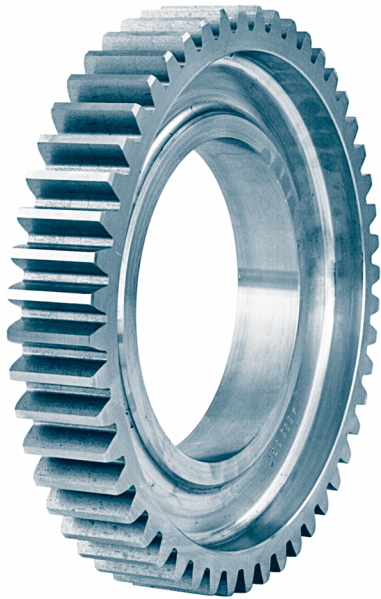


Form B2 symmetrical hub, covers with radial shaft seal ring, nominal- \varnothing d1 \geq 630 mm

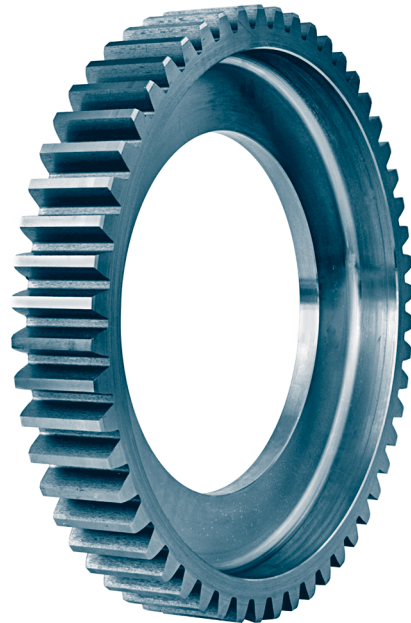
form	d1	b2 ¹⁾	b1	d2	d3	d4	d5	gear ring ²⁾				e1	e2	e3	e5	k	l -0,5	bearings	unit weight
	h9				D10		Toleranzfeld	b3	d6	m	z								≈[kg]
200		40-75	105																
250		40-80	110																
320		40-80	110																
400		40-90	125																
		90-100	140																
500		40-90	125																
		100-120	160																
630		60-90	140																
		100-120	180																
710		60-90	140																
		100-130	180																
800		80-110	160																
		120-130	200																
1000		100-150	210																

Dimensions on request

1) The dimension of the gauge recess b2 to be stated with order.
 2) Tooth form acc. to DIN 867 without appending modification. Pressure angle 20 degree.



centering - $\varnothing d1 \leq 250$ mm



centering - $\varnothing d1 \geq 470$ mm

Designation of a gear ring with Zentrier- $\varnothing d1 = 530$ mm,
number of teeth 62:

Gearingz 530 × 62 TGL 34 966

Without special agreement the gear rings are delivered without fastening bores. In normal case gear ring and wheel are drilled together during assembly.

Material:

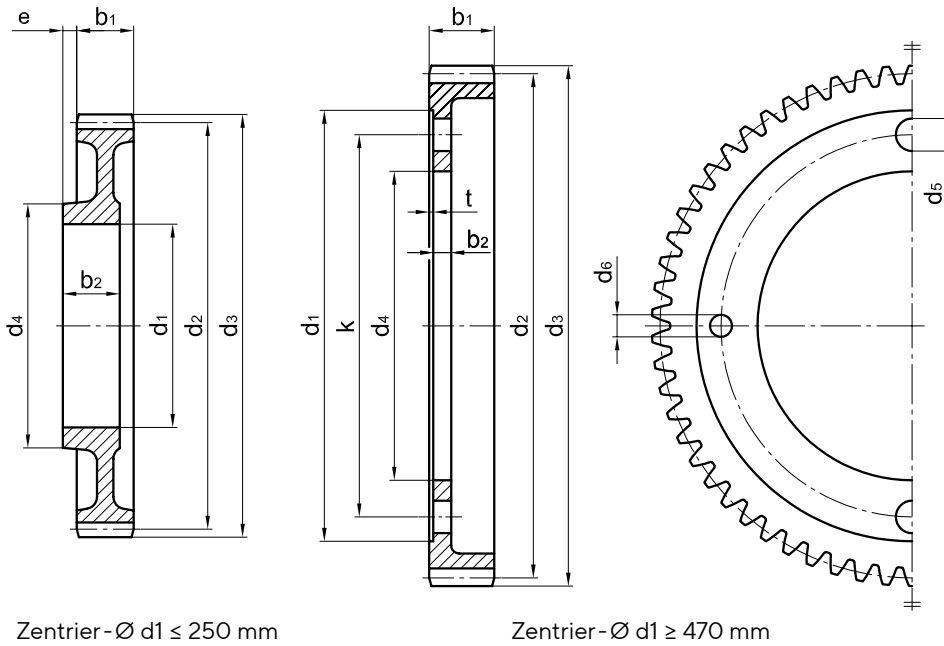
Gear ring 140 - 165	C45 or 42CrMo4+QT (42CrMo4V)
Gear ring 180 - 800	GE300 (GS-60) or GE420 (GS-70) or G42CrMo4+QT (G42CrMo4V)

Other material and dimensions on request.

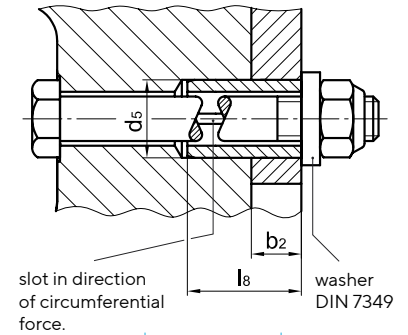
Gear rings for crane wheels

with rolling bearings acc. to TGL 34 965

TGL 34966



shear joint with heavy duty clamping sleeve acc. to DIN EN ISO 8752 (DIN 1481)



for centering-Ø d1	clamping sleeve		for screw
	d5	l8	
470-680	40	50	M 24
800	50	55	M 30

Zentrier-Ø d1 ≤ 250 mm

Zentrier-Ø d1 ≥ 470 mm

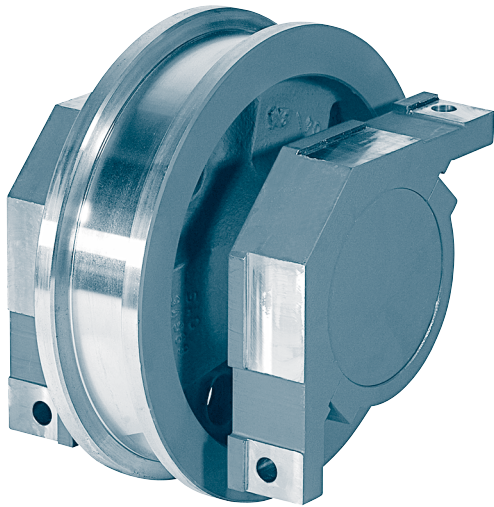
Zentrier-Ø d1	tolerance zone	no. of teeth ¹⁾	module	b1	b2	d2	d3	d4	d5	d6	no. of bores	e	k	t	unit weight
							h11				d5 / d6				≈[kg]
140	G7	43	5												
165	G7	50	5												
180	H7	52	6												
225	H7	50	8												
250	H7	42	10												
		50													
470	H7	54	10												
510	H7	50	12												
530	H7	62	10												
600	H7	58	12												
610	H7	58	12												
680	H7	66	12												
800	H7	64	14												

Dimensions on request

1) Tooth form acc. to DIN 867 without profile correction, pressure angle 20 degree

Wheel sets with corner support (driven and nondriven)

TGL 34968



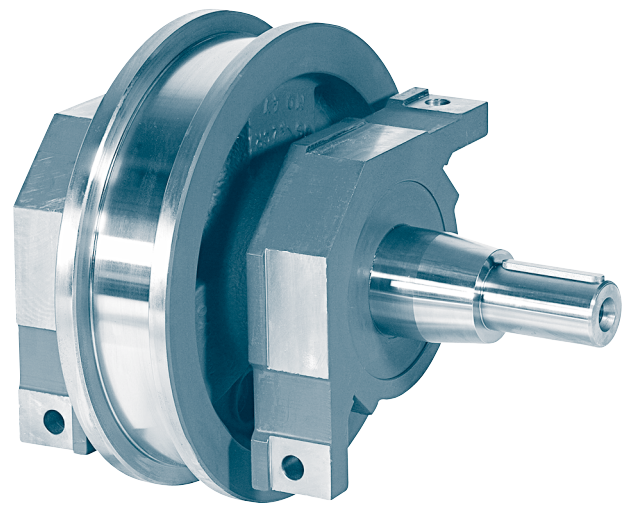
Form A1 Crane wheel with idle shaft
(nondriven wheel set)

Designation of a crane wheel form A1 (nondriven wheel set) with corner support, nominal- \varnothing d1 = 400 mm, gauge b2 = 80 mm, incl. self aligning roller bearings 222 20:

Crane wheel A1 – 400 × 80 TGL 34968

Designation of a crane wheel form B3 (driven wheel set) without corner support, nominal- \varnothing d1 = 400 mm, gauge b2 = 100 mm, shaft- \varnothing d5 = 70 mm, Wellenmaß e6 = 635 mm, incl. self aligning roller bearings 222 20:

Crane wheel B3 – 400 × 100 – 70 × 635 TGL 34968



Form A3 Crane wheel with drive shaft (driven wheel set)

Other material and dimensions on request.

Type with shaft ends suitable for hollow shaft drive units of all manufacturers on request.

- Form A** crane wheels with corner support
Form B crane wheels without corner support and covers
- Form A1, B1** nondriven wheel set with idle shaft
Form A2, B2 driven wheel set with drive shaft for coupling
Form A3, B3 driven wheel set with drive shaft for hollow shaft gear unit
Form A4, B4 driven wheel set with drive shaft for coupling and hollow shaft gear unit
- Form A5, B5** driven wheel set with drive shaft for hollow shaft gear unit

The anti friction bearings are lubricated. Re-lubrication by using the lubrication nipple in the corner support or in the outer covers.

Material:

Wheel body GE420 (GS-70) or G42CrMo4+QT
(GS-42CrMo4-V)

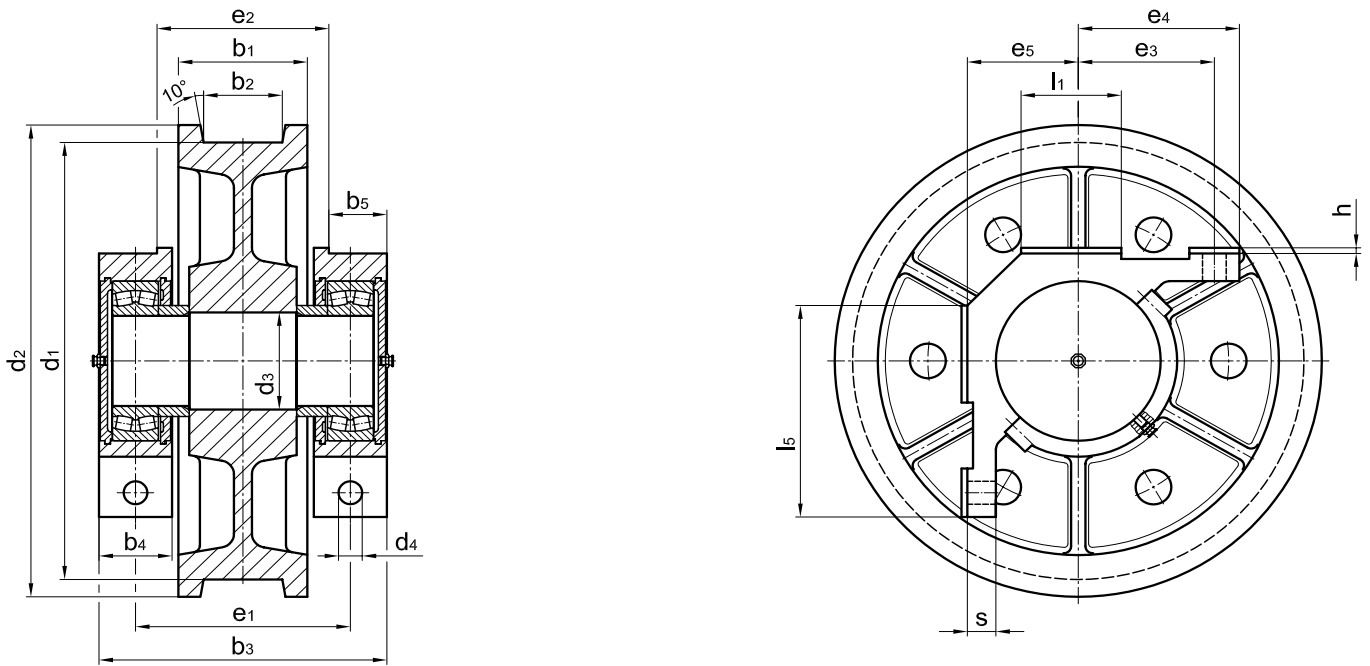
drive shaft 42CrMo4QT

idle shaft C45

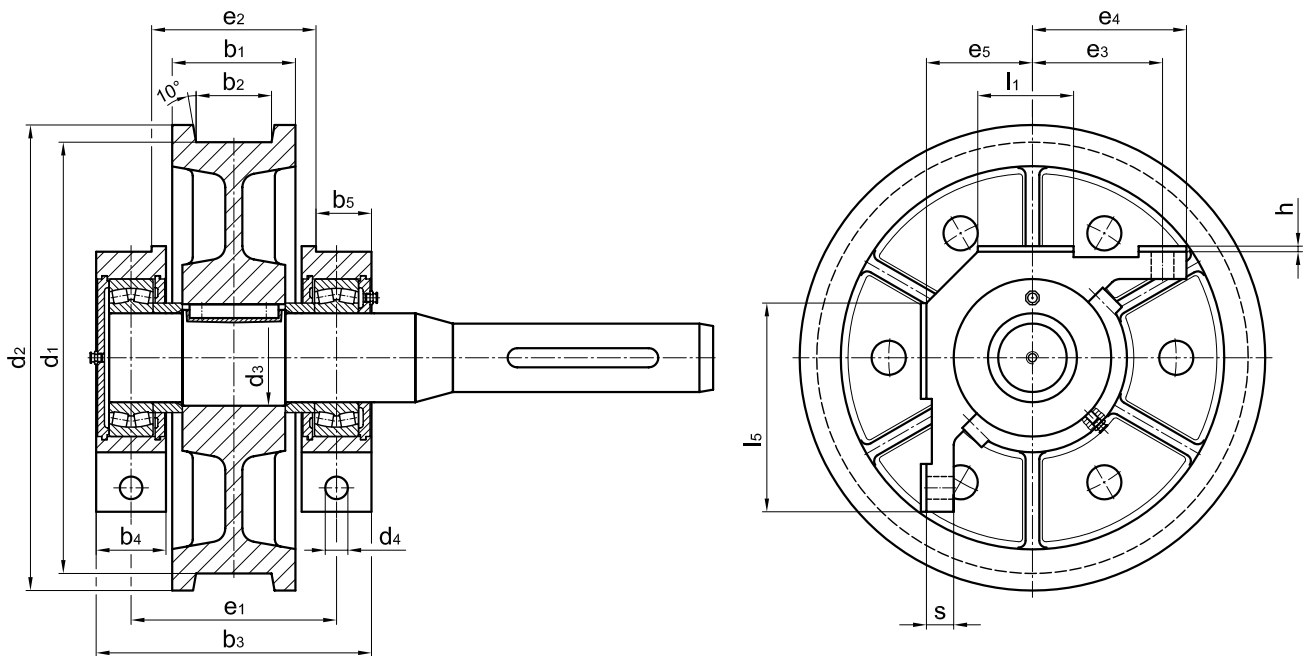
corner support S355J2 G3 (St 52-3)

Wheel sets with corner support (driven and nondriven)

TGL 34968



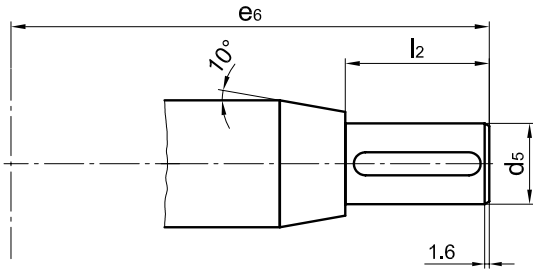
Form A1 crane wheel with shaft (nondriven wheel set)



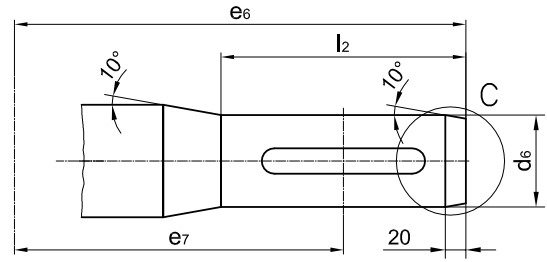
Form A3 crane wheel with drive shaft (driven wheel set)

Wheel sets with corner support (driven and nondriven)

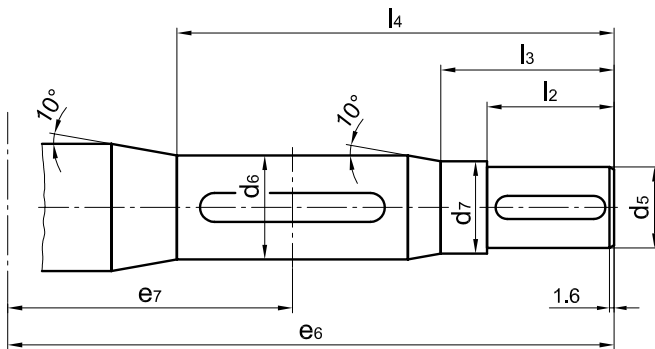
TGL 34968



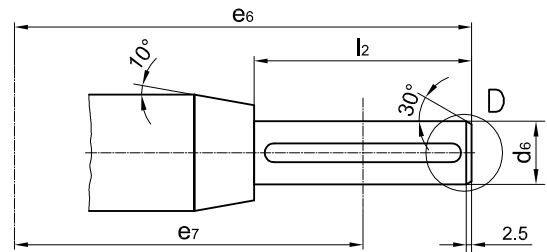
Form A2, B2 for coupling



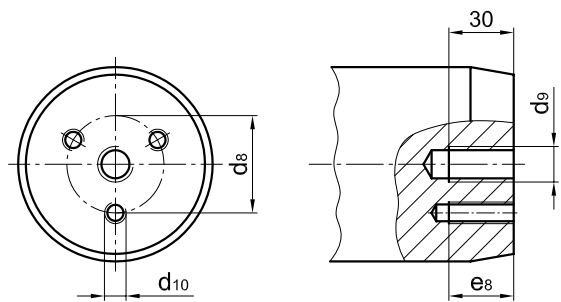
Form A3, B3 for hollow shaft gear unit



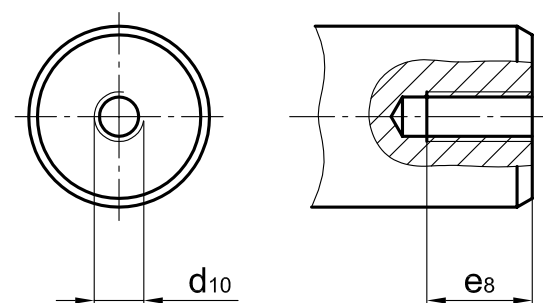
Form A4, B4 for coupling and hollow shaft gear unit



Form A5, B5 for hollow shaft gear unit



view C



view D

Wheel sets with corner support (driven and nondriven)

TGL 34968

Dimensions

nominal-Ø d1	form	b2	b1	b3	b4	b5	d2	d3	d4	e1	e2	e3	e4	e5 -0,15	h	l1	l5	s	bearings		
h9								m6			tolerance										
320	all	40-70	100																		
		80-90	130																		
400	all	50-80	120																		
		90-120	160																		
500	all	50-80	120																		
		90-120	160																		
630	all	60-90	140																		
		100-130	180																		
710	all	60-80	140																		
		90-130	180																		
800	all	80-90	160																		
		100-130	200																		
900	all	90-110	190																		
		120-150	210																		

Dimensions on request

Wheel sets with corner support (driven and nondriven)

TGL 34968

Dimensions of drive shaft ends

nominal-Ø d1	form	d5 m6	d6 g6	d7 -0,1	d8	d9	d10	e ₆	e7	e8	l2	l3	l4	key
320	A2, B2	45	-	-										
		60												
		70												
	A3, B3	-	55	-										
		-	70	-										
	A4, B4	60	70	65										
	A5, B5	-	40	-										
		-	50											
		-	60											
400	A2, B2	50	-	-	Dimensions on request									
		60												
		70												
	A3, B3	-	55	-										
		-	70	-										
	A4, B4	60	70	65										
		70	90	80										
	A5, B5	-	40	-										
		-	50											
		-	60											
	A2, B2	60	-	-										
		70												
80														
A3, B3	-	70	-											
	-	90	-											
500	A4, B4	70	90	80										
		80	100	90										
	A5, B5	-	50	-										
		60												

Wheel sets with corner support (driven and nondriven)

TGL 34968

dimensions of drive shaft ends (continuance)

nominal-Ø d1	Form	d5 m6	d6 g6	d7 -0,1	d8	d9	d10	e6	e7	e8	l2	l3	l4	key	
630	A2, B2	60													
		70	-	-											
		80													
	A3, B3		70												
			90												
			100												
	A4, B4	70	90	80											
		80	100	90											
	A5, B5		50												
			60												
710	A2, B2	70													
		80	-	-											
		90													
	A3, B3		90												
		100													
800	A2, B2	110	-	-											
	A3, B3		90												
			100												
900	A2, B2	100													
		110	-	-											
		130													

Dimensions on request

Crane wheels

for driven and nondriven wheel sets acc. to TGL 34968

TGL 34968



Crane wheel body A 630 × 90
(narrow type)



Crane wheel body A 630 × 110
(broad type)

Designation of a wheel with nominal- \varnothing d1 = 400 mm,
gauge b2 = 80 mm, bores- \varnothing d3 = 105 H7,
with feather keyway acc. to DIN 6885-1:

Crane wheel body A 400 × 80 × 105 H7 TGL 34968

Form A with feather keyway acc. to DIN 6885-1

Form B without feather keyway

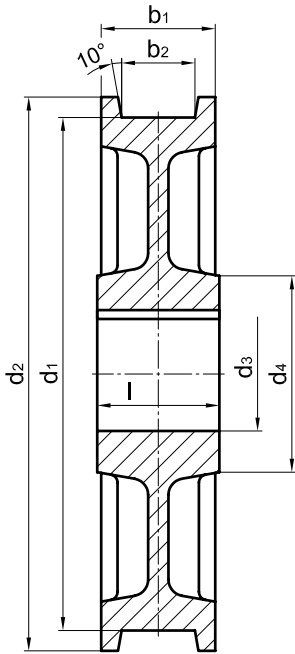
Material: GE420 (GS-70) or
G42CrMo4+QT (GS-42CrMo4V)

Other material and dimensions on request.

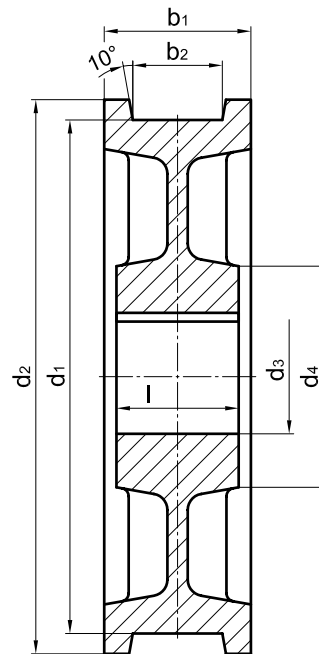
Crane wheels

for driven and nondriven wheel sets acc. to TGL 34968

TGL 34968



Crane wheel body A 630 × 90
(narrow type)

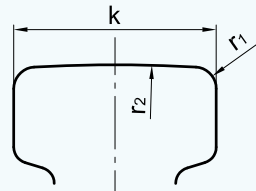


Crane wheel body A 630 × 110
(broad type)

form	nominal-Ø d1 h9	b2 ¹⁾	b1	d2	d3 H7	d4	l +0,2	unit weight ≈[kg]
A; B	320	40-70	100	Dimensions on request				
		80-90	130					
A; B	400	50-80	120					
		90-120	160					
A; B	500	50-80	120					
		90-120	160					
A; B	630	60-90	140					
		100-130	180					
A; B	710	60-80	140					
		90-130	180					
A; B	800	80-90	160					
		100-130	200					
A; B	900	90-110	190					
		120-150	210					

1) The dimension of the gauge recess b2 to be stated with order.

Table 1. **Symbol and unit**

symbol	unit	description	explanation
c1	-	material coefficient	Values in accordance with table 2
c2	-	speed coefficient	Values in accordance with table 3a and 3b
c3	-	operating time coefficient	Values in accordance with table 4
d1	mm	Travelling wheel diameter	Running surface diameter
n	min ⁻¹	Speed of crane wheel	Values in accordance with table 3b
p	N/mm ²	pressure	$p = \frac{R}{c_2 \cdot c_3 \cdot d_1 (k - 2r_1)}$
p _{zul}	N/mm ²	Permissible pressure between crane wheel and rail	p _{zul} = 5,6 c ₁
k	mm	Rail head width	 <p>For cambered crane rails the ideal effective rail head width will be k - 2r₁.</p>
r1	mm	Radius of curvature of rail head	
r2	mm	Radius of camber of rail head	
k - 2r ₁	mm	Ideal effective rail head width	Values for crane rails in accordance with table 5
v	m/min	Speed of crane wheel	
R	N	Wheel force	For crane travelling wheels $R = \frac{R_{\min} + 2R_{\max}}{3}$ For trolley travelling wheels R = R _{max}
R _{max}	N	Maximum wheel force	R _{max} and R _{min} should be determined from the most frequent operating positions of the loaded trolley
R _{min}	N	Minimum wheel force	
R ₀	N	Characteristic wheel force	Values in accordance with table 6

Calculation of crane rail wheels

The wheel force is calculated using the formula:

$$R \leq p_{zul} \cdot c_2 \cdot c_3 \cdot d_1 \cdot (k - 2r_1) \quad (1)$$

From the above is obtained the crane wheel diameter

$$d_1 \geq \frac{R}{p_{zul} \cdot c_2 \cdot c_3 \cdot (k - 2r_1)} \quad (2)$$

The characteristic wheel force R₀ is obtained from equation (1), where:

$$\begin{aligned} p_{zul} &= 5,6 \text{ N/mm}^2 \\ c_2 &= 1 \\ c_3 &= 1 \end{aligned}$$

are applied for R₀ = 5,6 · d₁ · (k - 2r₁) (3)

When using the characteristic wheel force the permissible wheel force can be calculated in simplified fashion using the formula:

$$R \leq R_0 \cdot c_1 \cdot c_2 \cdot c_3 \quad (4)$$

Rail/crane wheel material matching

Table 2. **Permissible pressure p_{zul} and material coefficient c₁**

rail	material minimum tensile strength [N/mm ²]		p _{zul} [N/mm ²]	c ₁
	rail	wheel		
590	≤ 330	≤ 330	2,8	0,50
	410	410	3,6	0,63
	490	490	4,5	0,80
	590	590	5,6	1,00
	≥ 740	≥ 740	7,0	1,25
≥ 690	≥ 800	≥ 800	7,2	1,29
	≥ 900	≥ 900	7,8	1,39
≥ 700	≥ 1000	≥ 1000	8,5	1,52

The hardening of the running surfaces with a depth of 0,01·diameter can be considered selecting p_{zul}.

Basis of calculation for crane rail wheels

DIN 15 070
FEM 1.001

Table 3a. **speed coefficient c2**

wheel-Ø	c2															
	for v in m/min															
	d1	10	12,5	16	20	25	31,5	40	50	63	80	100	125	160	200	250
200	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	0,77	0,72	0,66	-	-	-	
250	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	0,77	0,72	0,66	-	-	
315	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	0,77	0,72	0,66	-	
400	1,14	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	0,77	0,72	0,66	
500	1,15	1,14	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	0,77	0,72	
630	1,17	1,15	1,14	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	0,77	
710	-	1,16	1,14	1,13	1,12	1,1	1,07	1,04	1,02	0,99	0,96	0,92	0,89	0,84	0,79	
800	-	1,16	1,15	1,14	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	0,82	
900	-	-	1,16	1,14	1,13	1,12	1,1	1,07	1,04	1,02	0,99	0,96	0,92	0,89	0,84	
1000	-	-	1,17	1,15	1,14	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	0,87	
1100	-	-	-	1,16	1,14	1,13	1,12	1,1	1,07	1,04	1,02	0,99	0,96	0,92	0,89	
1250	-	-	-	1,17	1,15	1,14	1,13	1,11	1,09	1,06	1,03	1	0,97	0,94	0,91	

Tabelle 3b.

wheel speed n from speed coefficient c2	
c2	n≈ [min ⁻¹]
0,66	200
0,72	160
0,77	125
0,79	112
0,82	100
0,84	90
0,87	80
0,89	71
0,91	63
0,92	56
0,94	50
0,96	45
0,97	40
0,99	35,5
1	31,5
1,02	28
1,03	25
1,04	22,4
1,06	20
1,07	18
1,09	16
1,1	14
1,11	12,5
1,12	11,2
1,13	10
1,14	8
1,15	6,3
1,16	5,6
1,17	5

Table 4. **operating time coefficient c3**

operating time of travelling gear (referred to 1 hour)	c3
bis 16%	1,25
über 16 bis 25%	1,12
über 25 bis 40%	1
über 40 bis 63%	0,9
über 63%	0,8

Tabelle 5. **ideal effective rail head width (k-2r1)**

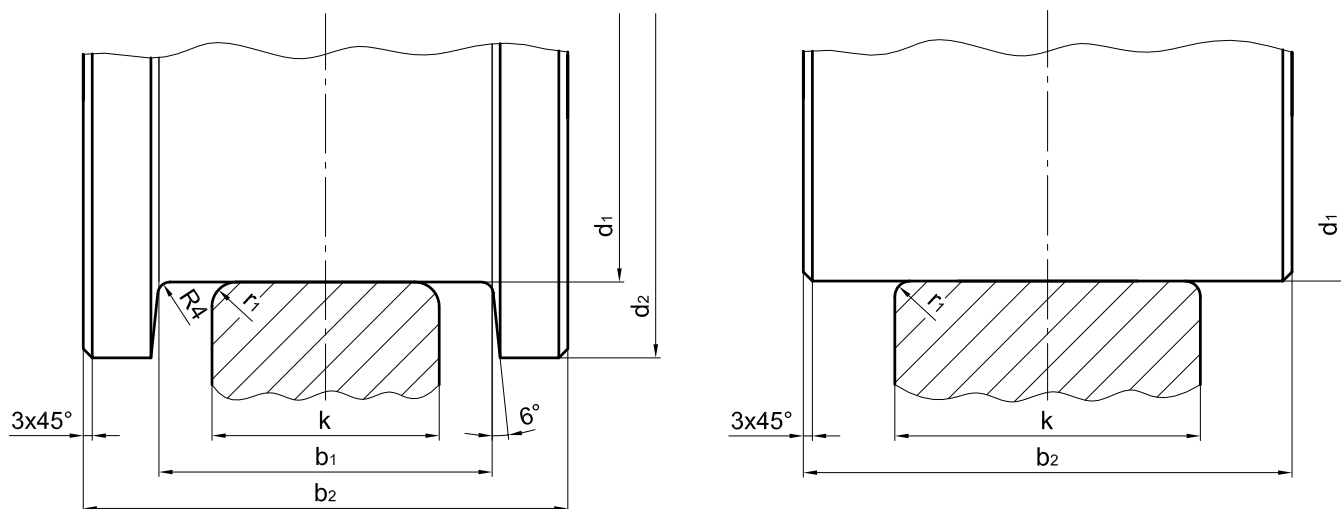
as per	crane rails		r1	k-2r1
	designation			
	DIN	new	previous	mm
536 Teil 1	A 45	KS 22	4	37
	A 55	KS 32	5	45
	A 65	KS 43	6	53
	A 75	KS 56	8	59
	A 100	KS 75	10	80
	A 120	KS 101	10	100
536 Teil 2	F 100	-	5	90
	F 120	-	5	110

Tabelle 6. **characteristic wheel force R₀**

wheel-Ø	R ₀ in N for narrow wheels				R ₀ in N for broad wheels					R ₀ in N for wheels without wheelflange		
	for crane rail				for crane rail					for crane rail		
	d1	A 45	A 55	A 65	A 75	A 55	A 65	A 75	A 100	A 120	F 100	F 120
200	41000	50000	-	-	-	-	-	-	-	-	-	-
250	52000	63000	-	-	-	-	-	-	-	-	-	-
315	65000	79000	-	-	79000	93000	-	-	-	-	-	-
400	83000	101000	-	-	101000	119000	132000	-	-	202000	-	-
500	104000	126000	-	-	126000	148000	165000	-	-	252000	-	-
630	-	159000	187000	-	-	187000	208000	282000	-	318000	388000	-
710	-	178000	211000	235000	-	-	235000	318000	398000	358000	437000	-
800	-	201000	237000	264000	-	-	264000	358000	448000	403000	493000	-
900	-	-	267000	297000	-	-	297000	403000	504000	454000	554000	-
1000	-	-	297000	330000	-	-	330000	448000	560000	504000	616000	-
1120	-	-	-	-	-	-	-	502000	627000	-	-	-
1250	-	-	-	-	-	-	-	560000	700000	-	-	-

Running surface profiles of crane wheels and correlation of crane rails to wheel-diameter

DIN 15 072



Crane wheels with wheel flange

Crane wheels without wheel flange

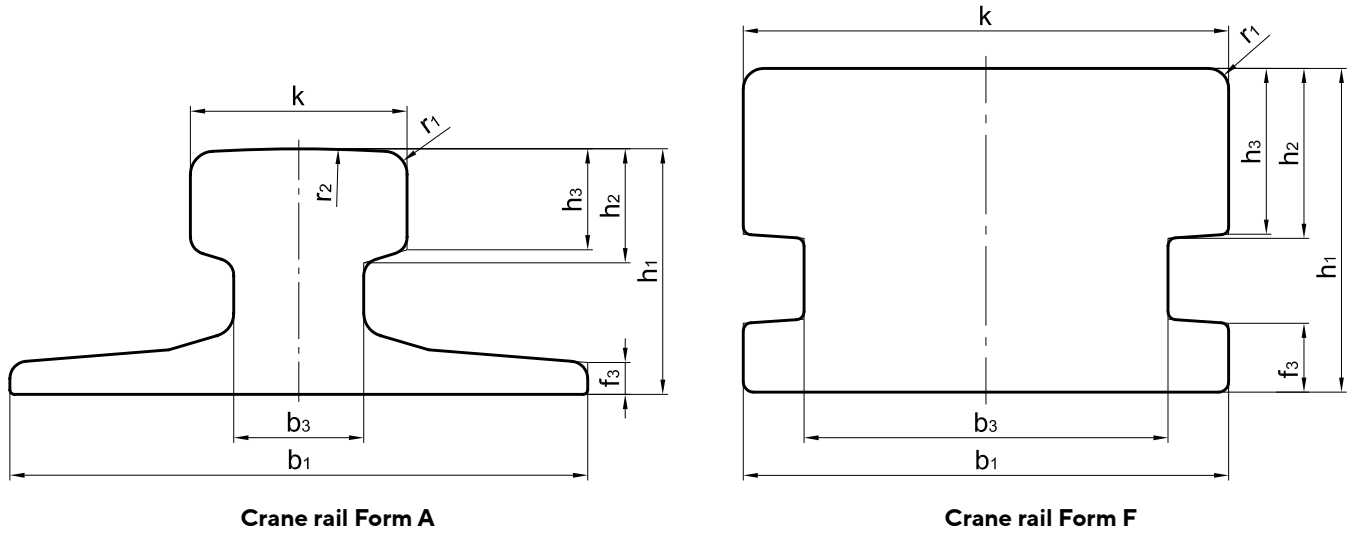
Crane wheel-Ø d1	d2	for crane wheels with narrow wheel flange						for crane wheels with broad wheel flange						for crane wheels without wheel flange			
		for crane rail ¹⁾				b1	b2	for crane rail ¹⁾				b1	b2	for crane rail ²⁾		b2	
		A 45	A 55	A 65	A 75			A 55	A 65	A 75	A 100			A 120	F 100		F 120
h9	k				max.	k				max.	k						
200	230	45	-	-	-	55	90	-	-	-	-	-	-	-	-	-	-
250	280	45	-	-	-	55	90	-	-	-	-	-	-	-	-	-	-
315	350	45	-	-	-	55	90	55	-	-	-	-	65	110	-	-	-
400	440	45	55	-	-	65	110	55	65	75	-	-	90	140	100	-	140
500	540	45	55	-	-	65	110	55	65	75	-	-	90	140	100	-	140
630	680	-	55	65	-	75	120	-	65	75	100	-	110	160	100	120	160
710	760	-	-	65	75	90	140	-	-	75	100	120	160	210	100	120	210
800	850	-	-	65	75	90	140	-	-	75	100	120	160	210	100	120	210
900	950	-	-	65	75	90	140	-	-	75	100	120	160	210	-	120	210
1000	1050	-	-	65	75	90	140	-	-	75	100	120	160	210	-	120	210
1120	1180	-	-	-	-	-	-	-	-	-	100	120	160	220	-	-	-
1250	1310	-	-	-	-	-	-	-	-	-	100	120	160	220	-	-	-
r ₁		4	5	6	8	-	-	5	6	8	10	10	-	-	5	5	-

1) Crane rail acc. to DIN 536-1.

2) Crane rail acc. to DIN 536-2.

Champignon rail acc. to DIN 536

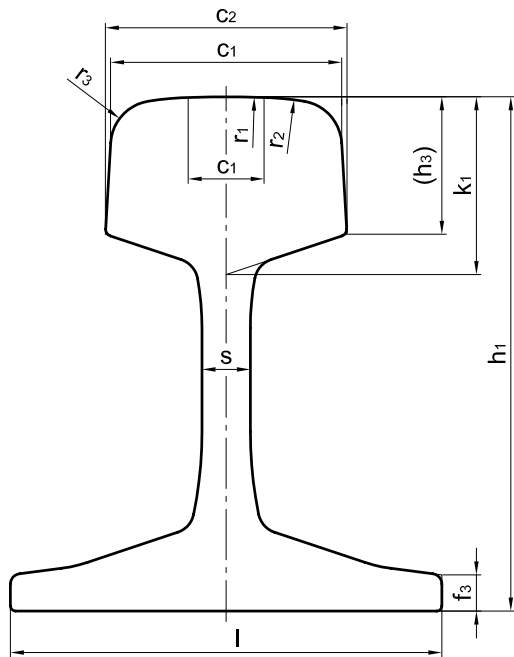
main dimensions for information, dimensions can vary depending on the producer



nominal size	k	b1	b3	h1	h2	h3	f3	r1	r2	ideal effective rail head width $k - 2r_1$ (acc. to DIN 15070)
A 45	45	125	24	55	24	20	8	4	400	37
A 55	55	150	31	65	28,5	25	9	5	400	45
A 65	65	175	38	75	34	30	10	6	400	53
A 75	75	200	45	85	39,5	35	11	8	500	59
A 100	100	200	60	95	45,5	40	12	10	500	80
A 120	120	220	72	105	55,5	47,5	14	10	600	100
A 150	150	220	80	150	64,5	50	14	10	800	130
F 100	100	100	70	80	42	41	17	5	-	90
F 120	120	120	90	80	42	41	17	5	-	110

Championn rail acc. to DIN EN 13 674-1 (DIN 5901) and UIC

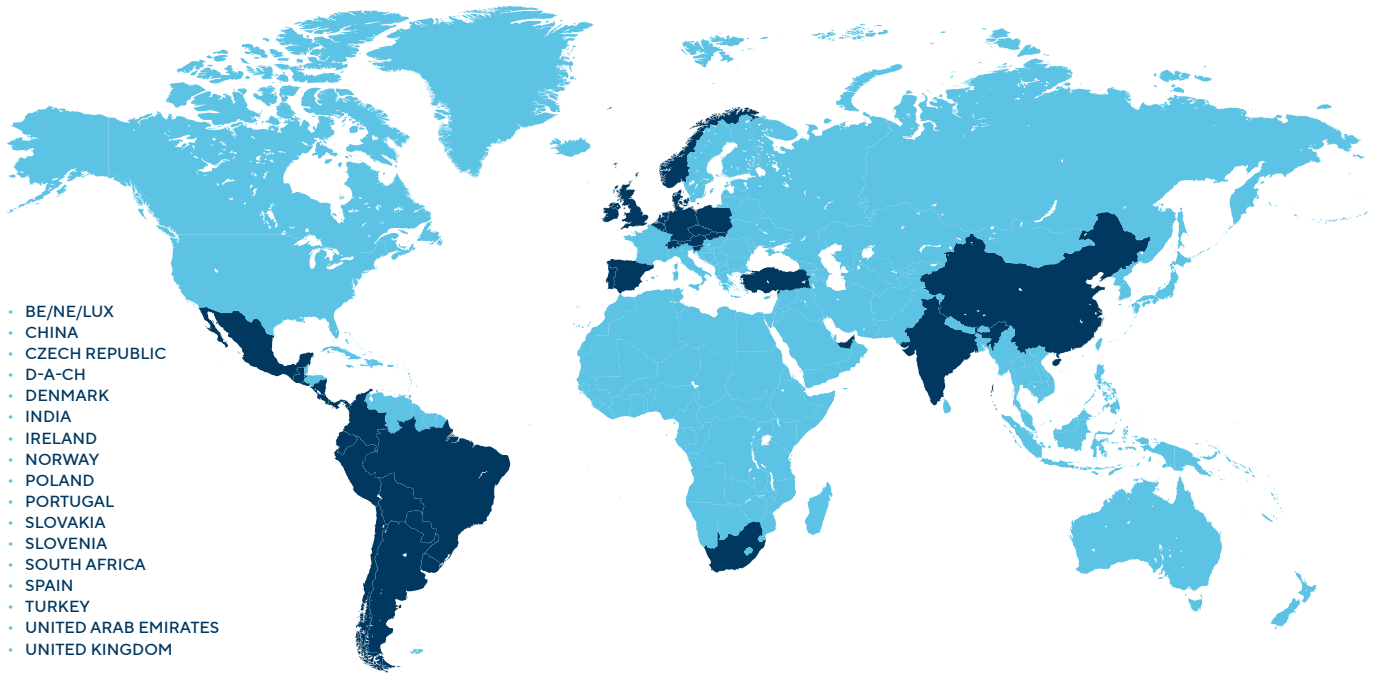
main dimensions for information, dimensions can vary depending on the producer



Championn rail (Form S and UIC)

nominal size	c1	c2	c3	l	s	h1	k1	(h3)	f3	r1	r2	r3
S 30	60,3	1)	1)	108	12,3	108	31	24	7	305	1)	8
S 33	58	1)	1)	105	11	134	39	31,75	9,5	225	1)	14
S 41 R 10	67	1)	1)	125	12	138	43	31,83	9,5	400	1)	10
S 41 R 14	67	1)	1)	125	12	138	43	31,83	9,5	400	1)	14
S 49	67	70	19	125	14	149	51,5	39,80	10,5	300	80	13
S 54	67	70	16,703	125	16	154	55	43,30	12	300	80	13
UIC 50	70	72,2	20,025	125	15	152	49,4	36,30	10	300	80	13
UIC 54	70	72,2	20,024	140	16	159	49,4	36,30	11	300	80	13
UIC 60	72	74,3	20,456	150	16,5	172	51	37,50	11,5	300	80	13

1) Dimensions undetermined



- BE/NE/LUX
- CHINA
- CZECH REPUBLIC
- D-A-CH
- DENMARK
- INDIA
- IRELAND
- NORWAY
- POLAND
- PORTUGAL
- SLOVAKIA
- SLOVENIA
- SOUTH AFRICA
- SPAIN
- TURKEY
- UNITED ARAB EMIRATES
- UNITED KINGDOM

MORE INFORMATION



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Subject to alterations by the manufacturer for the purposes of further technical development!

No claims can be derived from the information, figures and descriptions given in these operating instructions.

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