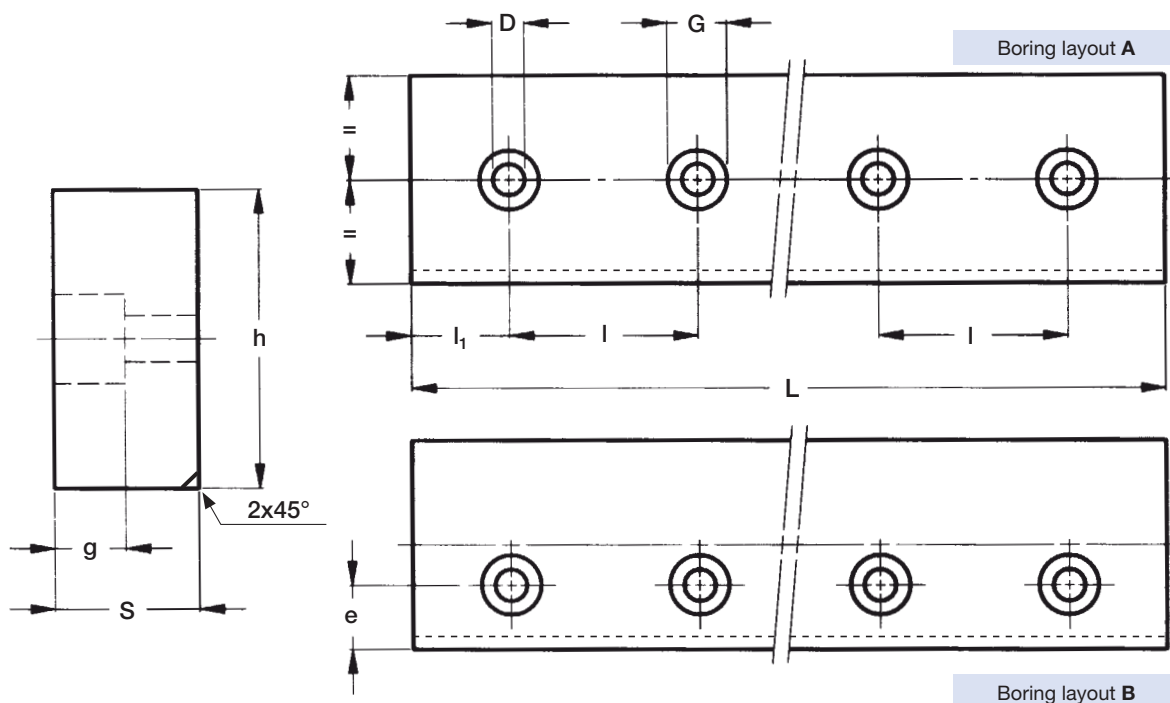


Heavy-Line

GP System





Type	Dimensions (mm)								Weight ⁽²⁾ (kg/m)
	h ± 0.05	S ± 0.05	D	G	g	e	I	I ₁	
GP 2626 MC	26	26	9	15	9	(3)	120	50	5.3
GP 3232 MC	32	32	9	15	9	(3)	150	60	8.1
GP 3617 MC	36	17	6.5	11	6.8	12.5	120	50	4.8
GP 4321 MC	43	21	9	15	9	11.5	150	60	7
GP 5050 MC	50	50	18	26	17	(3)	180	60	19.6
GP 6222 MC	62	22	9	15	9	21	150	60	10.7
GP 7232 MC	72	32	13.5	20	13	24	180	70	18.1
GP 8222 MC	82	22	13.5	20	13	20	180	70	14.2

Max length of single guide element L = 5 800 mm ⁽¹⁾

- 1) Longer rails are supplied in sections with ground butt joints
- 2) Weight without holes
- 3) For boring layout A only

Rails finishing

- material: C60 or C45
- induction hardened on every side
- surface finished by a rough grinding (**MC**)

Hole layout

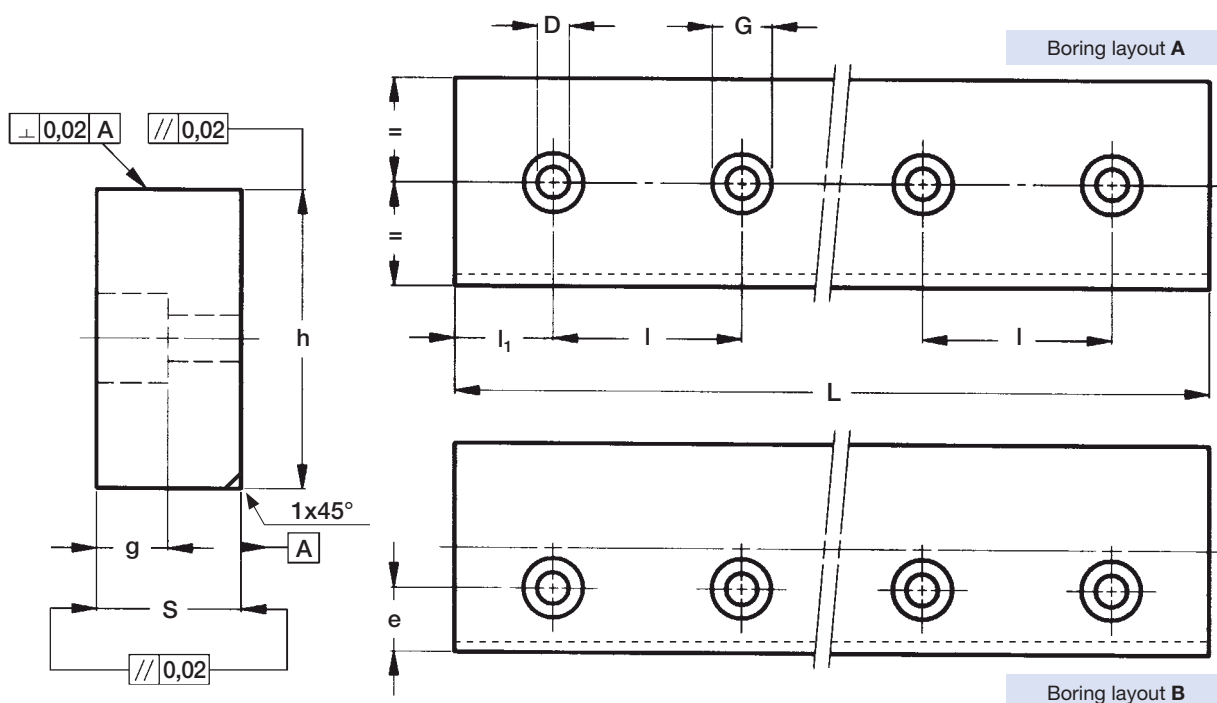
- holes according to catalogue (**A** or **B**)
- finishes to drawing (**NZ**)
- without holes (**NF**)

Optional features

- ground one end (**R**)
- ground both ends (**RR**)
- chemical nickel plating (**NW**)

Example of standard designation: **GP 6222 MC 4300 B**

See page 17 for standard codification



Type	Dimensions (mm)								Weight ⁽²⁾ (kg/m)
	h ± 0.05	S ± 0.05	D	G	g	e	I	I ₁	
GP 2525 M	25	25	9	15	8.5	(3)	120	50	4.9
GP 3131 M	31	31	9	15	8.5	(3)	150	60	7.5
GP 3516 M	35	16	6.5	11	6.8	12	120	50	4.4
GP 4220 M	42	20	9	15	9	11	150	60	6.5
GP 6121 M	61	21	9	15	9	20.5	150	60	10
GP 7131 M	71	31	13.5	20	12.5	23.5	180	70	17.3
GP 8121 M	81	21	13.5	20	13	19.5	180	70	13.4

Max length of single guide element L = 4 020 mm ⁽¹⁾

1) Longer rails are supplied in sections with ground butt joints (max. length with treatment NW on request)

2) Weight without holes

3) Only available according to figure A

Rails finishing

- material: C60 or C45
- induction hardened and ground tracks on every side (M);

Hole layout

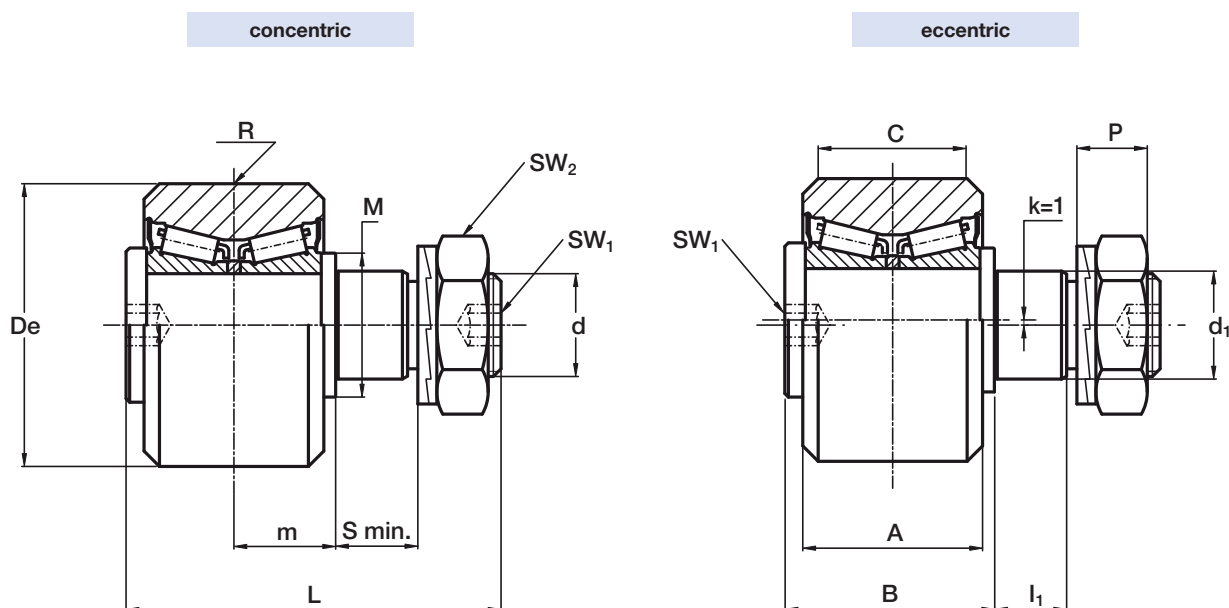
- holes according to catalogue (A or B)
- finishes to drawing (NZ)
- without holes (NF)

Optional features

- ground one end (R)
- ground both ends (RR)
- chemical Nickel-plating (NW)

Example of standard designation: **GP 6121 M 2070 B**

See page 17 for standard codification



Type		Dimensions (mm)																
concentric	eccentric	De	d ₁ ⁽¹⁾	d	m	S min.	P	L	A	B	C	R	l ₁	M	SW ₁	SW ₂	k	
PK 52C	PKR 52C	52	21	M 20 x 1.5	19.8	15	13.4	73	35	41	29	800	14	28	8	30	1	
PK 62C	PKR 62C	62	27	M 24 x 1.5	20.8	19	15.4	83	37	44	29	800	18	35	10	36	1	
PK 72C	PKR 72C	72	36	M 30 x 1.5	27	19	21.6	100	45	55	33	1 200	18	44	12	46	1	
PK 90C	PKR 90C	90	38	M 36 x 1.5	30.8	24	24.6	115	53	56 ⁽⁵⁾	62	45	1 200	23	50	14	55	1
PK 110C	PKR 110C	110	42	M 36 x 1.5	34	33	24.6	135	60	63 ⁽⁵⁾	70	48	1 200	32	56	14	55	1

Type		Dynamic load (N)	Limit load (N)	Torque ⁽²⁾ wrench setting (Nm)	Weight (Kg)
		C _w ⁽⁶⁾	radial F _r		
PK 52C	PKR 52C	42 100	11 900	80	0.6
PK 62C	PKR 62C	47 750	22 100	160	0.9
PK 72C	PKR 72C	67 450	31 300	300	1.6
PK 90C	PKR 90C	118 000	43 700	450	2.8
PK 110C	PKR 110C	185 000	55 600	450	4.9

1) Housing bore tolerance: H7

2) The torque wrench settings are given for non-lubricated threads; for lubricated threads, multiply figure by 0.8

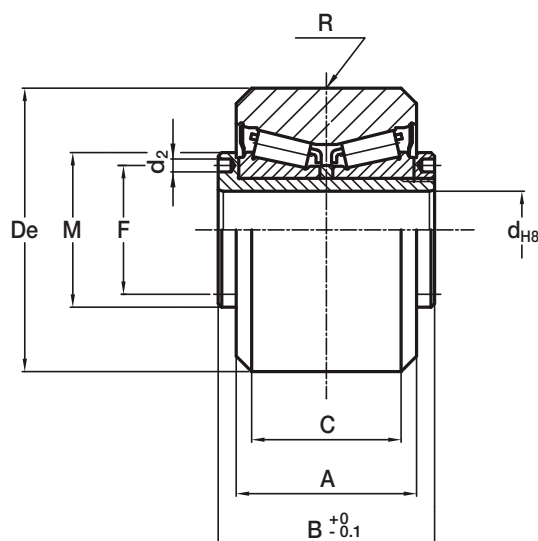
3) Standard seals: material NBR, RS type

4) On request, the guide rollers can be supplied with external parts in stainless steel (suffix **NX**) and with Viton seals for operating temperatures up to 120°C (suffix **V**, up to dimension PK 90 C included). Internal rolling elements in standard bearing steel

5) Dimensions relating to the stainless-steel rollers (suffix **NX**)

6) C_w basic load for 100 km

7) The guide rollers are complete with self-locking washers and hexagonal nut for fitting



Type	Dimensions (mm)								
	De	d	A	B	C	R	F	d ₂	M
FK 52C	52	15	35	42	29	800	25	2.5	30
FK 62C	62	20	37	45	29	800	29	3	35
FK 72C	72	25	45	56	33	1 200	37	4	44
FK 90C	90	28	53 56 ⁽³⁾	64	45	1 200	42	4	49
FK 110C	110	35	60 63 ⁽³⁾	72	48	1 200	52	4	59

Type	Dynamic load (N)	Limit load (N)	Weight (kg)
	C _w ⁽⁴⁾	radial F _r	
FK 52C	42 100	11 900	0.5
FK 62C	47 750	22 100	0.6
FK 72C	67 450	31 300	1.2
FK 90C	118 000	43 700	2.3
FK 110C	185 000	55 600	3.9

1) Standard seals: material NBR, RS type

2) On request, the guide rollers can be supplied with external parts in stainless steel (suffix **NX**) and with Viton seals for operating temperatures up to 120°C (suffix **V**, up to dimension FK 90 C included). Internal rolling elements in standard bearing steel

3) Dimensions relating to the stainless-steel rollers (suffix **NX**)

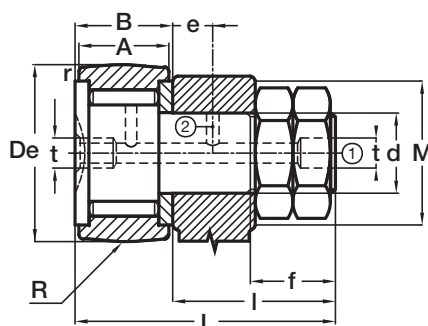
4) C_w basic load for 100 km

5) To prevent rotation between roller and shaft a pin can be fitted in one of the holes “d₂” positioned in the side flange



concentric

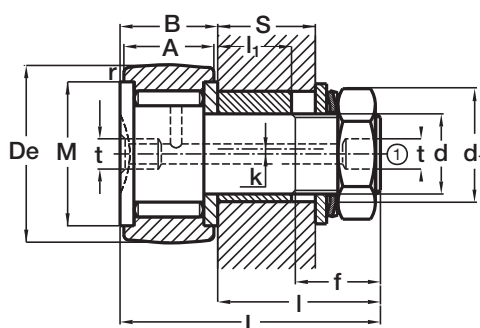
GC
GC...EE with plastic seals
GC...EEM with metal shields



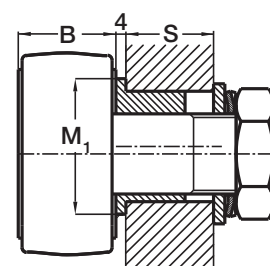
esececution EE, EEM

eccentric

GCR
GCR...EE with plastic seals
GCR...EEM with metal shields



GCR 19 ÷ 52



GCR 62

Holes (1) and (2) beginning from De=30 mm

Type (1)		Dimensions (mm)																
		De	A	B max	d	d ₁ (7)	k	L max	l max	f	pitch	r min	t	e	M (6)	M ₁	P (2)	l ₁
GC 19	GCR 19	19	11	12.2	8	11	0.5	32.7	20.5	10	1.25	0.3	4	-	15.3	-	-	10
GC 22	GCR 22	22	12	13.2	10	14	1	36.7	23.5	12	1.25*	0.3	4	-	18.2	-	-	11
GC 24	GCR 24	24	12	13.2	10	14	1	36.7	23.5	12	1.25*	0.3	4	-	18.2	-	-	11
GC 26	GCR 26	26	12	13.2	10	14	1	36.7	23.5	12	1.25*	0.3	4	-	20.8	-	-	11
GC 28	GCR 28	28	12	13.2	10	14	1	36.7	23.5	12	1.25*	0.3	4	-	20.8	-	-	11
GC 30	GCR 30	30	14	15.2	12	16	1	40.7	25.5	13	1.5	0.6	4	6	24.8	-	8	11
GC 32	GCR 32	32	14	15.2	12	16	1	40.7	25.5	13	1.5	0.6	4	6	24.8	-	8	11
GC 35	GCR 35	35	18	19.6	16	21	1,5	52.6	33	17	1.5	0.6	6	8	28.8	-	10	14
GC 40	GCR 40	40	20	21.6	18	24	1,5	58.6	3	19	1.5	1	6	8	33.8	-	12	16
GC 47	GCR 47	47	24	25.6	20	27	2	66.6	41	21	1.5	1	6	9	38.7	-	14	17.5
GC 52	GCR 52	52	24	25.6	20	27	2	66.6	41	21	1.5	1	6	9	38.7	-	14	17.5
GC 62	GCR 62	62	29	30.6	24	36	3	80.6	50	25	1.5	1	6	11	52	44	12	18

* These threads may be supplied with pitch of 1 mm (clamping torque 13 Nm)

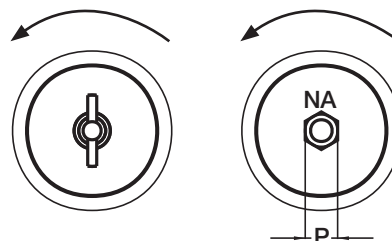
- Housing bore tolerance: H7

- The guide rollers are complete with washers and hexagonal nut for fitting

Guide rollers GC

- 1) Specification for followers with cylindrical outer ring: GCL, GCRL, GCL...EE, GCL...EEM, GCRL...EEM. On request the followers can be supplied possessing a screw driver slot at the threaded end of the stud (suffix **AK**).
- 2) Followers with outer diameter up to 28 mm included possess a screw driver slot on the head. Followers with outer diameter from 30 to 52 mm included can possess the screw driver slot or the hexagonal socket. For outer diameter above 52 mm the followers possess the hexagonal socket.
- 3) The load shown is limited by the strengths of the stud and outer ring.
- 4) With oil lubrication of followers without seals GC, GCR, GCL e GCRL, these speeds can be increased by 30% for continuous rotation or up to 50% momentarily.
- 5) These torques are shown for dry threads. For lubricated threads, take 0,8 of these values.
- 6) Minimum recommended abutment diameter in case of high axial load or in the presence vibrations.
- 7) The eccentric collar is tightly fitted on the follower stud.
- 8) C_w dynamic load for 100 Km

DIRECTION FOR ADJUSTMENT OF THE EXCENTER



			Dynamic load (N)	Limit load (3) (N)				Speed limit grease lubrication r.p.m. (4)	Torque wrench setting (Nm) (5)	
S min max		R		GC...		GCR...			GC...	GCR...
				C _w (8)	Dyn. F _r	Stat. F _{or}	Dyn. F _r			
10.5	13	160	4 900	2 830	5 200	2 830	4 500	7 600	8	5
11.5	14	200	5 600	4 900	8 100	4 900	5 600	6 300	20	16
11.5	14	200	6 300	5 200	9 200	5 200	5 600	6 300	20	16
11.5	14	200	8 400	5 200	9 600	5 200	6 100	5 500	20	16
11.5	14	200	9 200	5 200	9 600	5 200	6 100	5 500	20	16
11.5	14.5	250	12 700	7 700	14 300	7 700	10 400	4 800	26	22
11.5	14.5	250	13 800	7 700	14 300	7 700	10 400	4 800	26	22
14.5	19	320	19 800	11 400	24 000	11 000	11 000	3 850	64	55
16.5	22	400	21 400	14 200	27 000	12 300	12 300	3 150	90	75
18	25	500	31 800	21 400	40 000	21 400	23 700	2 700	120	100
18	25	500	39 400	21 400	40 000	21 400	23 700	2 700	120	100
18.5	25.5	640	51 300	31 000	57 500	28 800	28 800	2 330	220	180

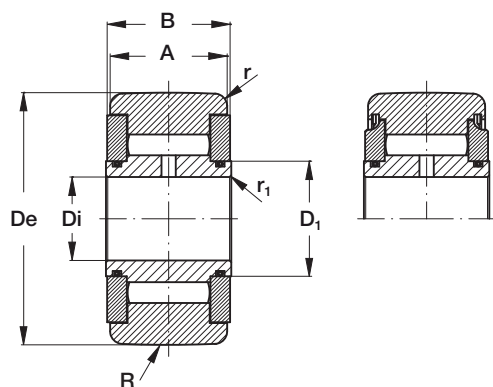
Favourite sizes are: 19/22/26/30/35/40/52/62

Track rollers in stainless steel are available on stock in the following sizes: 19/26/30/35/40 (suffix **NX**). Internal rolling elements in standard bearing steel

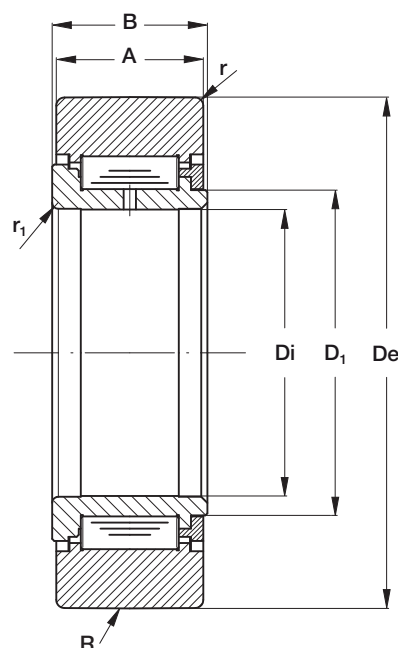
Cam followers FG (needle) and FGU (roller)



FG series without seals
FG...EEM series with metal shields



FGU
FGU...MM series: with metal shields



Type	Dimensions (mm)								
	De	Di	A	B max	D ₁	M (1) min	r min	r ₁ min	R
FG 6 19	19	6	11	12	8.5	12	0.3	0.3	160
FG 10 30	30	10	14	15	13.8	19.5	0.6	0.3	250
FG 12 32	32	12	14	15	16	21.5	0.6	0.3	250
FG 15 35	35	15	18	19	18.7	24	0.6	0.3	320
FG 17 40	40	17	20	21	22	28	0.6	0.3	400
FG 20 47	47	20	24	25	25.7	32.5	1	0.3	500
FG 25 52	52	25	24	25	30.5	37	1	0.3	500
FG 30 62	62	30	28	29	35.2	44	1	0.3	640
FG 35 72	72	35	28	29	41	50	1	0.6	640
FG 40 80	80	40	30	32	46.7	56	1	0.6	800
FG 50 90	90	50	30	32	59.1	69	1	0.6	800
FGU 55 100	100	55	34	36	64	75.8	1.5	0.6	800
FGU 60 110	110	60	34	36	69.5	81.5	1.5	0.6	800
FGU 65 120	120	65	40	42	74.5	86.7	1.5	0.6	900
FGU 75 130	130	75	40	42	84	97	1.5	0.6	900

Heavy-Line

Cam followers FG (needle) and FGU (roller)

1) Minimum recommended abutment diameter.

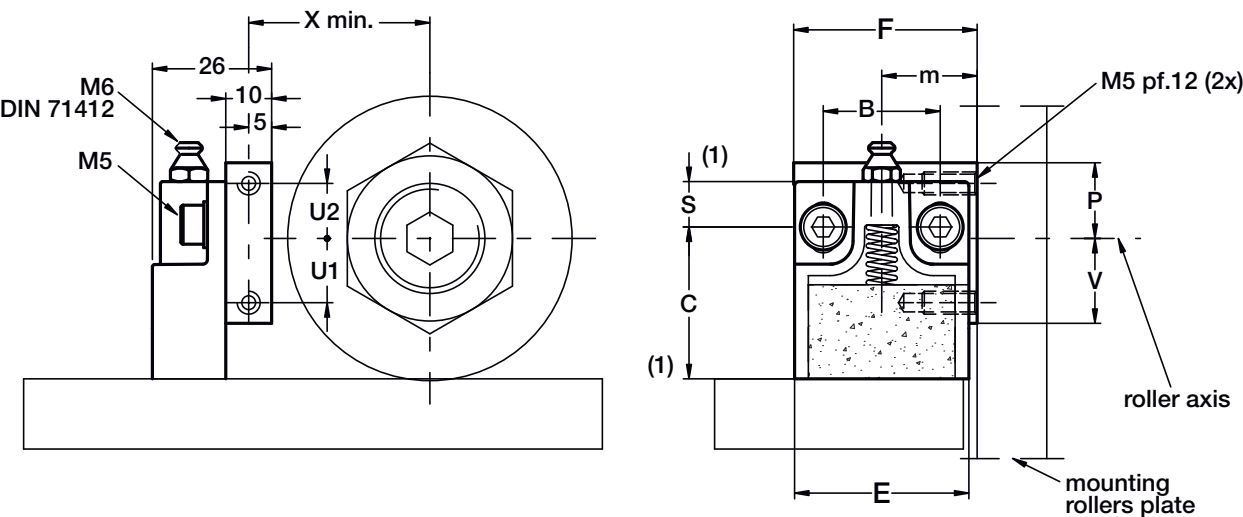
2) Cw dynamic load 100 KM. These capacities are to be used for all types when the convex outer ring rotates directly on a cam. They take account of the repetitive loads on the follower and consequent deformation of the outer ring.

3) The load shown is limited by the strength of the outer ring when mounted in a housing.

4) With oil lubrication of followers without seals FG, FGL types, these speeds can be increased by 30% for continuous rotation or, up to 50% momentarily

Dynamic load (N) (2)	Limit loads (3) (N)		Speed limit grease lubrication (4) r.p.m.
Cw	Dyn. F	Sta. Fo	
4 960	4 050	6 700	7 600
12 670	8 500	15 500	4 800
12 910	8 300	16 200	4 200
18 510	12 200	25 600	3 750
23 870	14 200	31 000	3 150
31 800	21 400	44 500	2 700
33 590	23 600	48 000	2 330
47 000	38 000	73 000	2 050
55 560	49 000	90 000	1 800
71 180	66 000	123 000	1 620
69 650	74 000	123 000	1 300
111 350	53 400	109 000	1 900
127 630	64 000	129 000	1 770
163 760	89 000	174 000	1 650
170 796	97 000	185 000	1 480





Type	Dimensions (mm)											Weight (g)	Suggested combinations
	X	U1	U2	F	m	B	S	C	E	V	P		
LUBP 52	33.5	12	14	40	19.8	25.5	10	32.5	38	16.5	18.5	65	PK 52 C PKR 52 C FK 52 C
LUBP 62	38.5	14	12	40	20.8	25.5	10	32.5	38	18.5	16.5	65	PK 62 C PKR 62 C FK 62 C
LUBP 72	43.5	19	11	50	27	25.5	10	40	44	24	16	85	PK 72 C PKR 72 C FK 72C
LUBP 90	52.5	21	9	60	30	30	16.5	43.5	58	31	19	140	PK 90 C PKR 90 C FK 90 C
LUBP 110	62.5	30	0	63	34	30	16.5	43.5	58	40	10	140	PK 110 C PKR 110 C FK 110 C

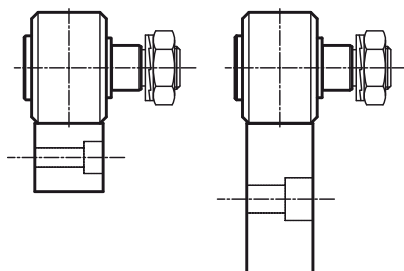
- 1) The dimension of the plastic part refers to the centre of the regulation slot. The regulation slot allows a translation of +/- 3 mm
- 2) The lubricator is supplied with the felt already lubricated. The lubricant has a mineral oil base
- 3) During the mounting fix the aluminium support to the rollers plate, adjust the height of the plastic part in order to put it in contact with the raceways and than block it in that position with the M5 screws.

Optional features

- felt without lubricant (D)

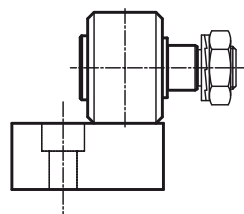
Guide rollers combinations

Layout 1



hole pattern A and B

Layout 2



only hole pattern B

Layout 1	GC												PK/FK				
	19	22	24	26	28	30	32	35	40	47	52	62	52	62	72	90	110
GP2626MC / GP2525M	•	•	•	•	•	•	•	•	•								
GP3232MC / GP3131M										•	•	•	•	•			
GP3617MC / GP3516M	•	•	•	•	•	•	•										
GP4321MC / GP4220M						•	•	•									
GP5050MC															•	•	•
GP6222MC / GP6121M								•	•								
GP7232MC / GP7131M										•	•	•	•	•	•		
GP8222MC / GP8121M																	

Layout 1	FG/FGU														
	6 19	10 30	12 32	15 35	17 40	20 47	25 52	30 62	35 72	40 80	50 90	55 100	65 120	75 130	
GP2626MC / GP2525M	•	•	•	•	•										
GP3232MC / GP3131M						•	•	•	•	•	•				
GP3617MC / GP3516M	•	•	•												
GP4321MC / GP4220M		•	•	•											
GP5050MC												•	•	•	
GP6222MC / GP6121M				•	•										
GP7232MC / GP7131M						•	•	•	•	•	•				
GP8222MC / GP8121M															

Layout 2	GC												PK/FK				
	19	22	24	26	28	30	32	35	40	47	52	62	52	62	72	90	110
GP3617MC / GP3516M	•	•	•	•	•	•	•										
GP4321MC / GP4220M							•	•	•								
GP6222MC / GP6121M								•	•	•	•	•	•	•			
GP7232MC / GP7131M										•	•	•	•	•	•		
GP8222MC / GP8121M															•	•	•

Layout 2	GC														
	6 19	10 30	12 32	15 35	17 40	20 47	25 52	30 62	35 72	40 80	50 90	55 100	60 110	65 120	75 130
GP3617MC / GP3516M	•	•	•												
GP4321MC / GP4220M			•	•	•										
GP6222MC / GP6121M				•	•	•	•	•	•						
GP7232MC / GP7131M						•	•	•	•	•	•	•	•		
GP8222MC / GP8121M												•	•	•	•

In the tables above the suggested combinations. Other combinations are possible but guide rollers must not run over the holes.

Heavy-Line

Mounting examples

MARBLE MACHINERY

Heavy-Line systems

GU and GP

