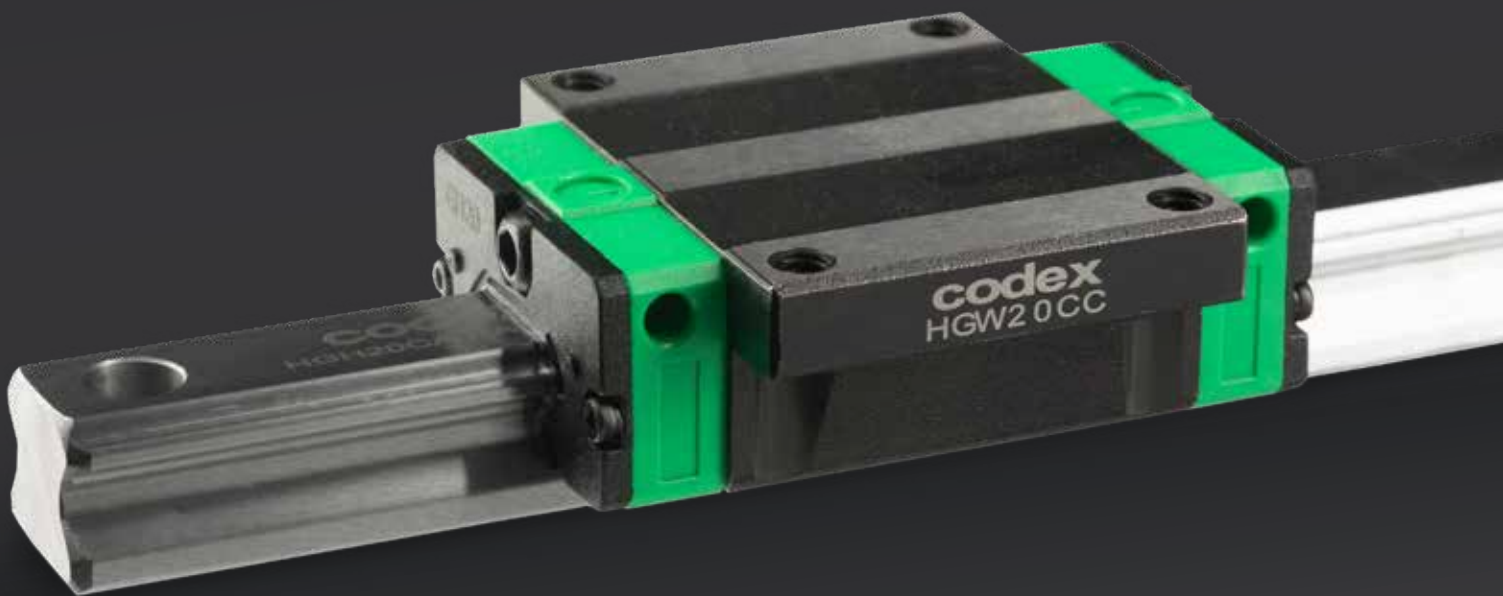


codex

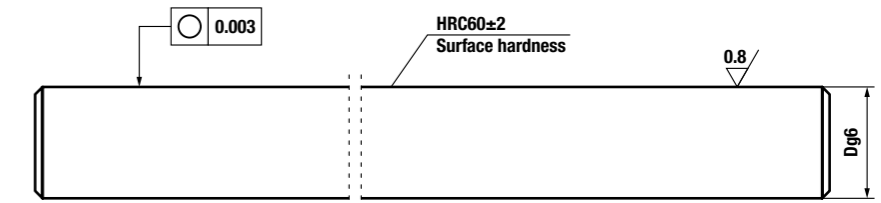
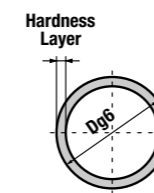
LINEAR MOTION
PRODUCTS



Linear shafts



Linear shafts are widely used in automatic transmissions, such as industrial robots, automatic records, precision printers and other industrial automatic equipment. Precise hardened shafts complete the linear bearing system. Important considerations for linear slide precision include the shaft outside tolerance, the roundness and the straightness. Different shaft materials, designs and coatings are available for respective linear ball bearing diameters. Codex linear shafts are **chromed** and currently available only in 2 m length.



CODEX LINEAR SHAFTS

MATERIAL:	Ck45
HARDNESS:	HRC60 ± 2
TOLERANCES:	g6/h6
ROUGHNESS:	Max. Ra = 0.8 mm
DIAMETER:	8 mm - 30 mm
LENGTH:	2000 mm
STRAIGHTNESS:	Max. 5 µm per 100 mm
ROUNDNESS:	Max. 3 µm
SHAFT DIAMETER:	Ø8 Ø10 Ø12 Ø16 Ø20 Ø25 Ø30

Only available in 2000 mm length.

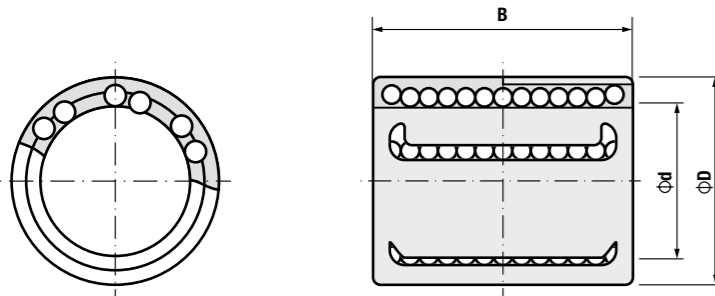
Linear bearings

Linear bush KH type

Linear ball bearings type KH are the most compact design of all available types. Standard CODEX KH linear bearings have seals from both sides. Available for shaft sizes from 8 mm to 50 mm.

International P0 quality.

Products are dimensionally comparable/interchangeable with THK, NTN, HIWIN



PART-NO.	DIMENSIONS (mm)			LOAD CAPACITY		WEIGHT
	d	D	B	Dyn (N)	Stat. (N)	(g)
KH-0824	8	15	24	435	280	12
KH-1026	10	17	26	500	370	14.5
KH-1228	12	19	28	620	510	18.5
KH-1428	14	21	28	620	520	20.5
KH-1630	16	24	30	800	620	27.5
KH-2030	20	28	30	950	790	32.5
KH-2540	25	35	40	1990	1670	65
KH-3050	30	40	50	2800	2700	95
KH-4060	40	52	60	4400	4450	182
KH-5070	50	62	70	6300	6300	252

Linear bush KB, KBS and KBO type

This type of linear bearing is widely used in different linear motion applications and is the most popular linear bearing type in Europe. The steel outer ring has a groove for a circlip and a polyamide ball retainer with 3 to 6 ball circuits. Standard CODEX linear bearings have seals from both sides. The basic characteristics can be summarized as:



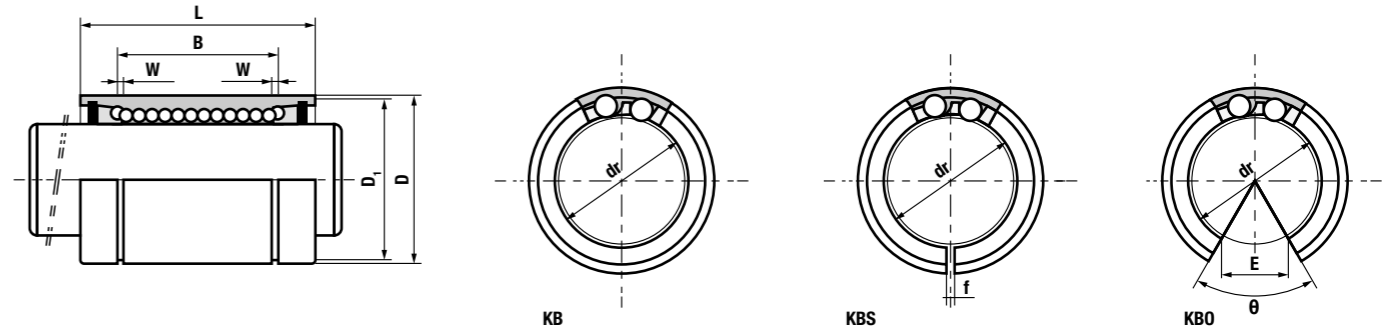
A) CLOSED TYPE KB
standard version



B) ADJUSTABLE TYPE KBS
these units have a longitudinal slot that allows the reduction of the operating clearance and the optimization of the rigidity



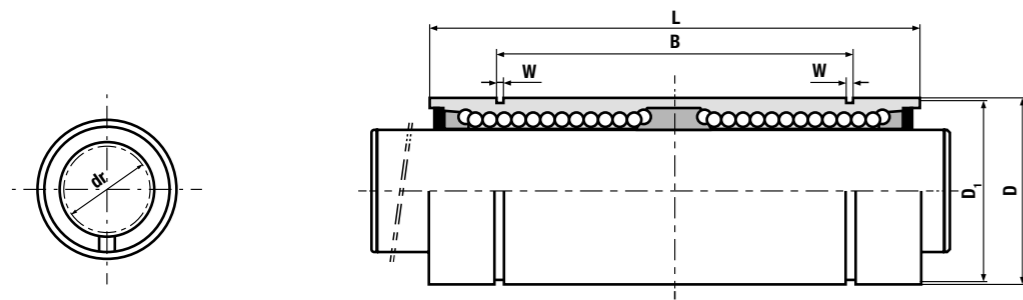
C) OPEN TYPE KBO
these units have an opening that corresponds to a single recirculating channel (50 to 100 deg.) Units are used in conjunction with long shafts that are typically supported along the entire length to reduce the elastic deflection



NOMINAL PART NO.			NOMINAL SHAFT Diameter (mm)	MAJOR DIMENSIONS AND TOLERANCE (mm)							BASIC LOAD RATING		WEIGHT (g)	
Standard	Adjustable	Open		D	L	B	W	D ₁	f	E	θ	C (N)		Co (N)
KB 0825	KBS 0825	KBO 0825	8	16	25	16.5	1.1	11.5	1	7.5	78°	260	410	20
KB 1029	KBS 1029	KBO 1029	10	19	29	22	1.3	18	1	6.8	80°	372	549	29.5
KB 1232	KBS 1232	KBO 1232	12	22	32	22.9	1.3	21	1.5	7.5	78°	260	590	41
KB 1636	KBS 1636	KBO 1636	16	26	36	24.9	1.3	24.9	1.5	10	78°	770	1370	65
KB 2045	KBS 2045	KBO 2045	20	32	45	31.5	1.6	30.3	2	10	60°	1170	960	91
KB 2558	KBS 2558	KBO 2558	25	40	58	44.1	1.85	37.5	2	12.5	60°	860	1560	215
KB 3068	KBS 3068	KBO 3068	30	47	68	52.1	1.85	44.5	2	12.5	50°	1580	4010	325
KB 4080	KBS 4080	KBO 4080	40	62	80	60.6	2.15	59	3	16.8	50°	2740	3820	705
KB 50100	/	KBO 50100	50	75	100	77.6	2.65	72	3	21	50°	3820	7930	1130

Linear bush KBL type

Standard linear bearings, but longer type. Standard CODEX linear bearings have seals from both sides.



NOMINAL PART NO.	NOMINAL SHAFT Diameter (mm)	MAJOR DIMENSIONS AND TOLERANCE (mm)					BASIC LOAD RATING		WEIGHT
STANDARD TYPE		D	L	B	W	D ₁	C (N)	Co (N)	(g)
KBL 08	8	16	46	33	1.1	15.2	421	804	31
KBL 10	10	19	55	44	1.3	18	588	1100	50
KBL 12	12	22	61	45.8	1.3	21	813	1570	80
KBL 16	16	26	68	19.8	1.3	24.9	921	1780	145
KBL 20	20	32	80	61	1.6	30.5	1370	2740	180
KBL 25	25	40	112	82	1.85	37.5	1570	3140	440
KBL 30	30	47	123	104.2	1.85	44.5	2500	5490	580
KBL 40	40	62	151	121.2	2.15	59	3430	8040	1170

Linear ball bushing

Interchangeability List

Ball Bushing - Resin Retainer

CODEX	THK	NB	INA	SKF	IKO	EASE
KB	LME..UU	KB..GUU	KB..PP	LBAR/LBCR..2LS	LBE..UU	SDE..UU
KBS	LME..UUAJ	KB..GUUAJ	KBS..PP	LBAS..2LS	LBE..UUAJ	SDE..UUAJ
KBO	LME..UUOP	KB..GUUOP	KBO..PP	LBAT/LBCT..2LS	LBE..UUOP	SDE..UUOP

Ball Bushing - Compact Type

CODEX	NTN	STAR	INA	SKF	FAG
KH	KH..LL	0658..00	KH..PP (LBBS..2L5)	LBBR..2LS	LNA..2RS (LFA..2RS)

The above types are metric dimensions series generally used in Europe.

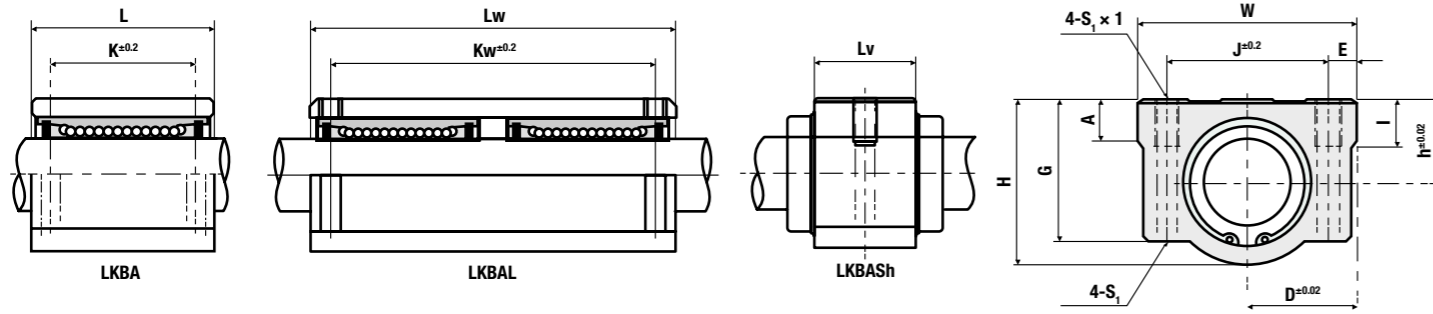


Other series and dimensions available on request:

- Series **KBK** (square flanged ball bushing)
- Series **KBFL** (circular flanged ball bushing-long)
- Series **KBKL** (square flanged ball bushing-long)
- Series **KBFL** (middle flanged circular ball bushing)
- Series **KBKCL** (middle flanged square ball bushing)
- Other

Aluminium housing units and shaft support

Linear bushing with housing type

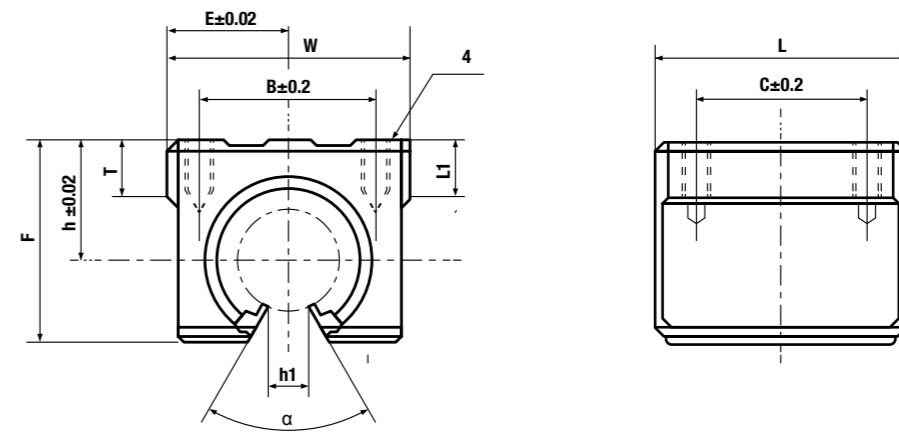


DIMENSIONS (mm)																
Shaft diameter	Common										LKBA		LKBAL		LKBASH	
	h	D	W	H	G	A	J	E	S ₁ *1	S ₂	K	L	Kw	Law	Lv	
Ø8	11	17	34	22	18	6	24	5	M4*8	3.4	18	30	42	58	14.4	
Ø10	13	20	40	26	21	8	28	6	M5*10	4.3	21	35	46	68	19.5	
Ø12	15	22	44	30	24.5	8	33	5.5	M5*10	4.3	26	39	64	77	20.3	
Ø16	19	25	50	38.5	32.5	9	36	7	M5*12	4.3	34	44	79	89	22.3	
Ø20	21	27	54	41	35	11	40	7	M6*12	5.2	40	53	90	106	28.3	
Ø25	26	38	76	51.5	41	12	54	11	M8*18	6.8	50	67	119	136	40.4	
Ø30	30	39	78	59.5	49	15	58	10	M8*18	6.8	58	76	132	154	48.4	
Ø40	40	51	102	78	62	20	80	11	M10*25	8.6	60	90	150	180	56.4	

STANDARD TYPE					LONG TYPE					SHORT TYPE				
PART NUMBER	Installed L/B	Load Ratings		Weight (g)	PART NUMBER	Installed L/B	Load Ratings		Weight (g)	PART NUMBER	Installed L/B	Load ratings		Weight (g)
		C (N)	Co (N)				C (N)	Co (N)				C (N)	Co (N)	
LKBA 08	KB0825	260	400	60	LKBAL 08	2*KB0825	410	800	98	LKBASH 08	KB0825	260	400	40
LKBA 10	KB1029	340	500	92	LKBAL 10	2*KB1029	500	980	180	LKBASH 10	KB1029	372	549	53
LKBA 12	KB1232	410	590	118	LKBAL 12	2*KB1232	650	1180	232	LKBASH 12	KB1232	410	590	82
LKBA 16	KB1636	770	1170	180	LKBAL 16	2*KB1636	1230	2340	360	LKBASH 16	KB1636	770	1170	122
LKBA 20	KB2045	860	1370	245	LKBAL 20	2*KB2045	1370	2740	490	LKBASH 20	KB2045	860	1370	176
LKBA 25	KB2558	980	1560	550	LKBAL 25	2*KB2558	1560	3120	1100	LKBASH 25	KB2558	980	1560	400
LKBA 30	KB3068	1560	2740	760	LKBAL 30	2*KB3068	2490	5480	1525	LKBASH 30	KB3068	1560	2740	570
LKBA 40	KB4080	2150	4010	1700	LKBAL 40	2*KB4080	3440	8020	3400	LKBASH 40	KB4080	2150	4010	1320

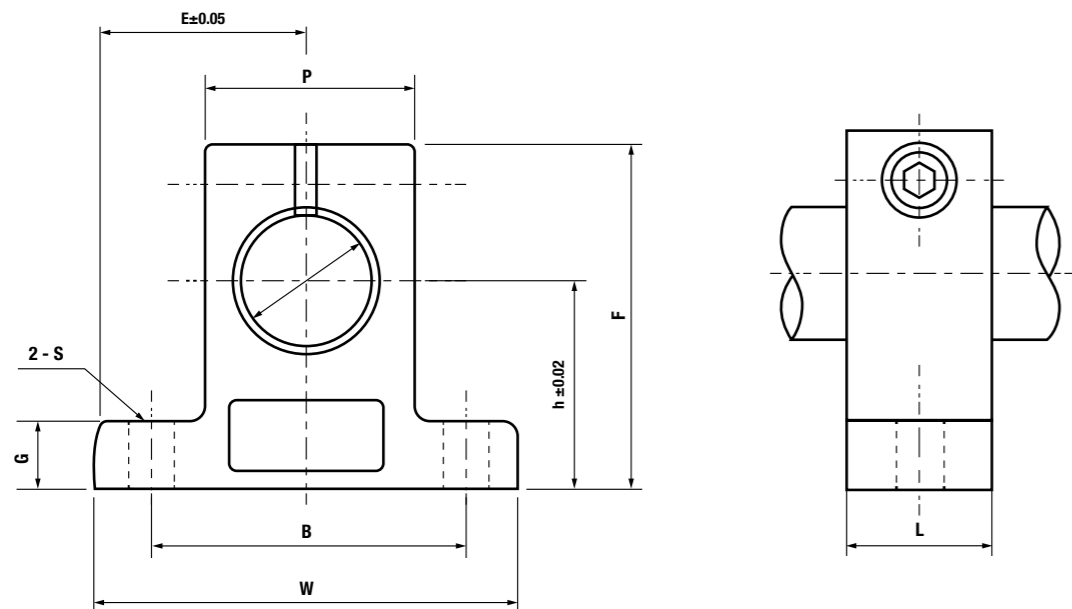
Linear bushing with opened housing type LKBE

LKBE



PART NUMBER	DIMENSIONS (mm)												SLIDE BUSH			
	h	E	W	L	F	h1	α	B	C	S	L1	T	Designation	C (N)	Co (N)	Weight (g)
LKBE 10	15	18	36	32	24	6	80°	25	20	M5	10	7	KBO0825	380	560	65
LKBE 12	17	20	40	39	27.6	8.5	80°	28	26	M5	10	8	KBO1029	520	790	100
LKBE 16	20	22.5	45	45	33	10	80°	32	30	M5	10	9	KBO1232	590	910	150
LKBE 20	23	24	48	50	39	10	60°	35	35	M6	12	11	KBO1636	880	1400	200
LKBE 25	27	30	60	65	47	11.5	60°	40	40	M6	12	14	KBO2045	1000	1600	450
LKBE 30	33	35	70	70	56	14	60°	50	50	M8	18	15	KBO3068	1600	2800	630
LKBE 40	42	45	90	90	72	19	60°	65	65	M10	20	20	KBO4080	2200	4100	1330
LKBE 50	53	60	120	110	92	23	60°	94	80	M10	20	25	KBO50100	3900	8100	3000

Shaft support type LSK



SPEC. TYPE	DIMENSIONS (mm)										CLAMPING BOLT	CLAMPING BOLT	WEIGHT (g)
	Shaft diameter	h	E	W	L	F	G	P	B	S			
LSK8	8	20	21	42	14	32.8	6	18	32	5.5	M4	M5	24
LSK10	10	20	21	42	14	32.8	6	18	32	5.5	M4	M5	24
LSK12	12	23	21	42	14	37.5	6	20	32	5.5	M4	M5	30
LSK16	16	27	24	48	16	44	8	25	38	5.5	M4	M5	40
LSK20	20	31	30	60	20	51	10	30	45	6.6	M5	M6	70
LSK25	25	35	35	70	24	60	12	38	56	6.6	M6	M6	130
LSK30	30	42	42	84	28	70	12	44	64	9	M6	M8	180
LSK40	40	60	57	114	36	96	15	60	90	11	M8	M10	420

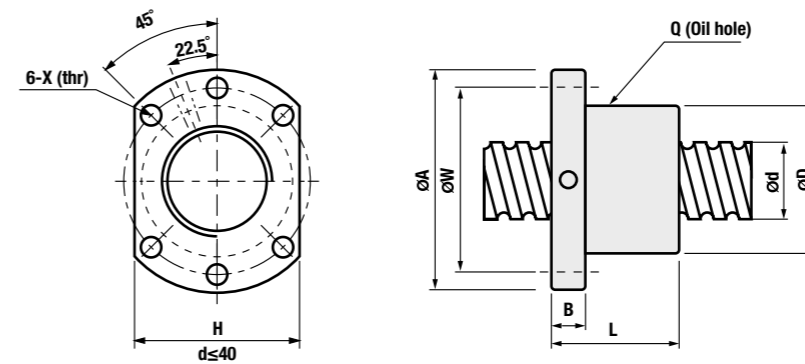
Other series and dimensions available on request:

- Aluminium housing units Series **LKBAS** with longitudinal slot for clearance reduction
- Shaft support **LSHF** series
- Cylinder linear guide support series **LSA**
- Other

Ball screw nuts

Ideal for converting rotary motion into linear motion.

High reliability, smooth operation, high rigidity and preload.



Model no.	DIMENSIONS												Load rating Ca (N)	Load rating Ca (N)
	d	l	Da	D	A	B	L	W	H	X	Q	n		
R 16x05	16	5	3.175	28	48	10	45	38	40	5.5	M6x1	4	9000	17500
R 16x10	16	10	3.175	28	48	10	57	38	40	5.5	M6x1	3	6500	12000
R 16x16	15	16	2.778	28	48	10	45	38	40	5.5	M6x1	1.8x1	5400	11100
R 20x05	20	5	3.175	36	58	10	42	47	44	6.6	M6x1	3	8100	17500
R 20x10	20	10	3.175	36	58	10	60	47	44	6.6	M6x1	3.8x1	14800	37600
R 20x20	20	20	3.175	36	58	10	57	47	44	6.6	M6x1	1.8x1	7500	17200
R 25x05	25	5	3.175	40	62	10	42	51	48	6.6	M6x1	3	9300	23000
R 32x05	32	5	3.175	50	80	12	52	65	62	9	M6x1	4	13000	38000
R 32x10	32	10	6.35	50	80	12	74	65	62	9	M6x1	3	24500	52000
R 32x20	31	32	3.969	50	80	12	80	65	62	9	M6x1	2.8x1	18700	54000

Other series and dimensions available on request!

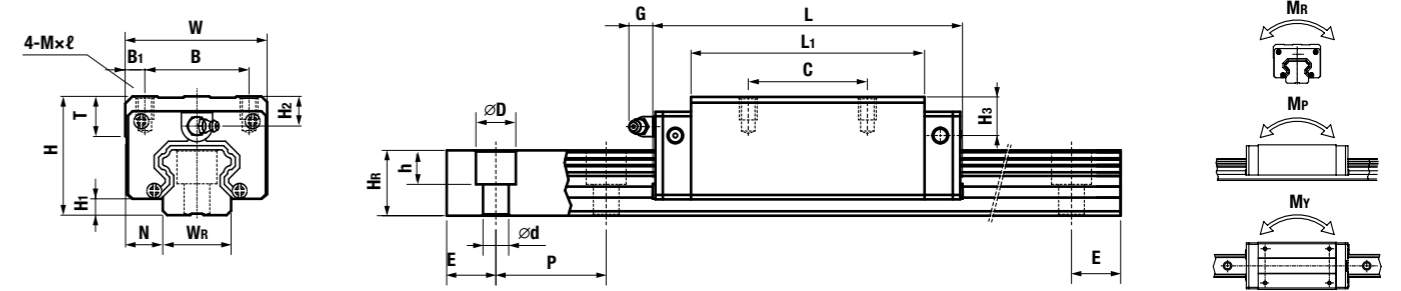
Linear blocks and rails

Linear HGH and HGW guideways

CODEX can offer HGH and HGW series linear guideways that are designed with load capacity higher than other similar products. They have self-aligning capability and can absorb most installation errors.

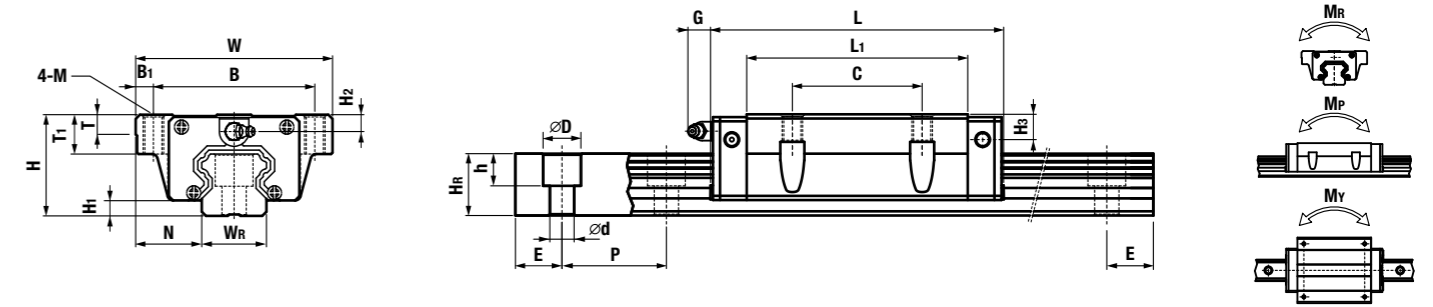
Separately linear rails are available in 2 m length only.

HGH



MODEL NO.	DIMENSIONS OF ASSEMBLY			DIMENSIONS OF BLOCK (mm)									DIMENSIONS OF RAIL										MOUNTING BOLT FOR RAIL		STATIC RATED MOMENT			WEIGHT			
	H	H ₁	N	W	B	B ₁	C	L ₁	L	K ₁	K ₂	G	Mxℓ	T	H ₂	H ₃	W _r	H _r	D	h	d	P	E	mm	C (kN)	Co (kN)	M _r (kN-m)	M _p (kN-m)	M _y (kN-m)	BLOCK (kg)	RAIL (kg/m)
HGH15CA	28	4.3	9.5	34	26	4	26	39.4	61.4	10	4.85	5.3	M4*5	6	7.95	7.7	15	15	7.5	5.3	4.5	60	20	M4*16	14.7	23.47	0.12	0.1	0.1	0.18	1.45
HGH20CA	30	4.6	12	44	32	6	36	50.5	77.5	12.25	6	12	M5*6	8	6	6	20	17.5	9.5	8.5	6	60	20	M5*16	27.1	36.68	0.27	0.2	0.2	0.3	2.21
HGH25CA	40	5.5	12.5	48	35	6.5	35	58	84	15.7	6	12	M6*8	8	10	9	23	22	11	9	7	60	20	M6*20	34.9	52.82	0.42	0.33	0.33	0.51	3.21
HGH30CA	45	6	16	60	40	10	40	70	97.4	20.25	6	12	M8*10	8.5	9.5	13.8	28	26	14	12	9	80	20	M8*25	48.5	71.87	0.66	0.53	0.53	0.88	4.47
HGH35CA	55	7.5	18	70	50	10	50	80	112.4	20.6	7	12	M10*12	10.2	16	19.6	34	29	14	12	9	80	20	M8*25	64.6	93.88	1.16	0.81	0.81	1.45	6.3

HGW



MODEL NO.	DIMENSIONS OF ASSEMBLY (mm)			DIMENSIONS OF BLOCK (mm)									DIMENSIONS OF RAIL										MOUNTING BOLT FOR RAIL		STATIC RATED MOMENT			WEIGHT					
	H	H ₁	N	W	B	B ₁	C	L ₁	L	K ₁	K ₂	G	M	T	T ₁	T ₂	H ₂	H ₃	W _r	H _r	D	h	d	P	E	(mm)	C (kN)	Co (kN)	M _r (kN-m)	M _p (kN-m)	M _y (kN-m)	BLOCK (kg)	RAIL (kg/m)
HGW15CC	24	4.3	16	47	38	4.5	30	39.4	61.4	8	4.85	5.3	M5	6	8.9	6.95	3.95	3.7	15	15	7.5	5.3	4.5	60	20	M4*16	14.7	23.47	0.12	0.1	0.1	0.17	1.45
HGW20CC	30	4.6	21.5	63	53	5	40	50.5	77.5	10.25	6	12	M6	6	10	9.5	6	6	20	17.5	9.5	8.5	6	60	20	M5*16	27.1	36.68	0.27	0.2	0.2	0.4	2.21
HGW25CC	36	5.5	23.5	70	57	6.5	45	58	84	10.7	6	12	M8	8	14	10	6	5	23	22	11	9	7	60	20	M6*20	34.9	52.82	0.42	0.33	0.33	0.59	3.21
HGW30CC	42	6	31	90	72	9	52	70	97.4	14.25	6	12	M10	8.5	16	10	6.5	10.8	28	26	14	12	9	80	20	M8*25	48.5	71.87	0.66	0.53	0.53	1.09	4.47
HGW35CC	48	7.5	33	100	82	9	62	80	112.4	14.6	7	12	M10	10.1	18	13	9	12.6	34	29	14	12	9	80	20	M8*25	64.5	93.86	1.16	0.81	0.81	1.56	6.3

Linear guide

Fully Interchangeable



Type	CODEX	HIWIN	THK	PMI	TBI	ABBA	STAF	CPC
HGH	HGH15CA	HGH15CA	HSR15R	MSA15S	TRH15VL	BRC15RO	BGXH15BN	HRC15MN
	HGH20CA	HGH20CA	HSR20R	MSA20S	TRH20VL	BRC20RO	BGXH20BN	HRC20MN
	HGH25CA	HGH25CA	HSR25R	MSA25S	TRH25VL	BRC25RO	BGXH25BN	HRC25MN
	HGH30CA	HGH30CA	HSR30R	MSA30S	TRH30VL	BRC30RO	BGXH30BN	HRC30MN
	HGH35CA	HGH35CA	HSR35R	MSA35S	TRH35VL	BRC35RO	BGXH35BN	HRC35MN
HGW	HGW15CC	HGW15CA/C	/	MSA15E/A	TRH15FN	BRC15AO	BGXH15FN	HRC15FN
	HGW20CC	HGW20CA/C	HSR20CA	MSA20E/A	TRH20FN	BRC20AO	BGXH20FN	HRC20FN
	HGW25CC	HGW25CA/C	HSR25CA	MSA25E/A	TRH25FN	BRC25AO	BGXH25FN	HRC25FN
	HGW30CC	HGW30CA/C	HSR30CA	MSA30E/A	TRH30FN	BRC30AO	BGXH30FN	HRC30FN
	HGW35CC	HGW35CA/C	HSR35CA	MSA35E/A	TRH35FN	BRC35AO	BGXH35FN	HRC35FN

Other series and dimensions available on request:

- **MGN** Series - Miniature linear Guideway - standard linear block
- **MGW** Series - Miniature linear Guideway - widen linear block
- **WEH** Series - Widen linear Guideway - standard linear block
- **WEW** Series - Widen linear Guideway - widen linear block
- Other



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