Product Reference Guide

INA USA CORPORATION

CATALOG PRG

MONORAIL GUIDANCE SYSTEMS

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This product section has been excerpted from our full Product Reference Guide to reduce download time. Our complete Product Reference Guide is available in print and on CD-ROM. To receive the full version, please contact your nearest INA Sales Office listed on the last page of this file.

FOREWORD

This publication was designed to serve as a quick reference to the standard product series offered by INA USA Corporation (INA) for its domestic market. The guide provides a current overview of INA products, including basic envelope dimensions and capacities, in one publication – it is not an engineering design guide intended to replace INA engineering catalogs. Consequently, the metric and inch conversions are listed to 3 decimal places for easy reference and rapid identification of correct replacement part(s), not 4 decimal places as necessary for quality control purposes.

This publication can be used to narrow the choices between the many different INA product lines and series for new designs. Detailed engineering information for new designs can be found in our traditional catalogs or by contacting the INA Engineering Department.

A significant portion of INA sales are special production sizes. The identification of those parts is sometimes difficult since a comprehensive listing is beyond the intent of this publication. Special part numbers take as many different forms as the series listed here, but the basic system is to use sequential numbers for each new design. Usually the prefix is F or FC but can include VH, INA or the bearing type such as NA. INA maintains a technical help desk to identify sizes not known or to match competitors' parts.

The toll free 800 numbers listed will give you access to INA Customer Service representatives. These representatives can tap into INA Worldwide resources to provide the bearings you need.

Storage Life

Lubricants age naturally due to environmental influences. It is therefore the user's responsibility to follow the directions given by the lubricant manufacturer.

The greases used in INA rolling bearings have a mineral oil base and experience shows that they can be stored for up to 3 years without deteriorating providing the following important conditions are met.

- Closed storage room
- Temperature between 0°C and 40°C
- Relative atmospheric humidity 65% or less
- Security from chemical agents (vapors, gases, fluids)
- Sealed rolling bearings

The frictional torque can be considerably higher after linger storage periods than in freshly greased bearings and the lubricity of the grease can also have deteriorated.

INA bearings have many optional features available including:

- ISO series of bearings generally include the standard clearance options CN, C2, C3 and C4.
- ISO bearing series include PN, P6 and P5 precision classes.
- Corrotect™ plating is available for most bearing designs. Corrotect is a patented process for zinc–iron and zinc–iron–cobalt plating in a thin layer which can be applied to standard components. The protection exceeds stainless steel and the cost is half. Add suffix RR.
- All sealed bearings are supplied pregreased. In most cases the standard lubricant is Shell Retinax LX 2 or equivalent. Other greases are available, some at extra cost.
- Unsealed bearings may not be greased when shipped.
- Speed limits as published, are based on oil lubrication for open bearings or grease lubrication for sealed bearings. The speed limits are calculated based on a nominal load and heat balance equation. Higher speeds may be allowed depending on the application.
- Dynamic capacities are published based on INA standard usage of ISO and ABMA formulas. New life theory threshold values are published in other INA publications.
- Life calculations and evaluations can be made from INA engineering based catalogs which are available from your INA Sales Representative.
- Other features are available based on current production volumes including heat stabilization of the rings, matched bearing sets, with oil holes and grooves, etc.

ABMA	American Bearing Manufacturers Association
ASTM	American Society Of Testing And Materials
DIN	Deutsches Institut für Normung e.V.
ISO	International Standards Organization

Use of INA Part Numbers & Suffixes

INA has extra options to give you the maximum flexibility in answering customer needs.
Cage styles, seal types, internal clearances, and needle sorts are available to help you select the right part for your customers.

UG - Shell type open bearings come standard without grease (Example: SCE87 UG)
AA040 - Shell type sealed bearings come standard with 40% Retinax LX2 (Example: SCE8799 AA040)
0-7 - Radial needle roller & cage assemblies come standard with 0-7 Micron Needle Sorts
(Example: NRA5X49.8G2 0-7, K25X33X24B 0-7)

The table below provides a quick reference regarding our part numbers and integral suffixes. See each part section for part number schematics.

PART / SUFFIX	DEFINITION	EXAMPLE
HK1010, SCE86PP	INA Part Number	SCE87, PASE1-1/2, RA100RR
2RS	2 Lip Seals	62032RS, 3200J2RS
2Z	2 Gap Shields	62032Z, 3300J2Z
J	Steel Cage	52100J, 3200J
KDD, KDDU	2 Gap Shields	LR5208KDD, LR5307KDDU
M	Bronze Cage	930M, 89460M
NPP, NPPU	2 Lip Seals	GRA100NPPB, LR5202NPPU
PP	2 Lip Seals	SCE87PP
RR	2 Land Riding Seals	G1103KRRB, RA100RR
TN	Plastic Cage	81102TN, 87410TN
X	Cylindrical OD for Track Rollers	NATV20PPX, NUTR20X
-	Normal Clearance	6203, 62032RS
C2	C2 Clearance	6302 C2, 63022Z C2
C3	C3 Clearance	6205 C3, 62052RS C3
C4	C4 Clearance	5305J C4, 6210 C4
AA040	40% - Shell Retinax LX2	HK1010 AA040
UG	Ungreased / Corrosion Protected	HK1010 UG
0-7	0-7 Micron - Needle Sort	NRA5X49.8G2 0-7, K25X33X24B 0-7
0-10	0-10 Micron - Needle Sort	AXK6590 0-10

Linear Recirculating Roller Bearing And Guideway Assemblies

RUE..D, RUE..DL, RUE 65 L SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

Linear roller bearing and guideway assembly Grease Lubrication PART NUMBER	Linear roller bearing and guideway assembly Oil Lubrication PART NUMBER	CARRIAGE [1] PART NUMBER	CARRIAGE MASS kg	GUIDEWAY PART NUMBER	GUIDEWAY MASS kg/m	GUIDEWAY Closing Plugs [2]	COVERING STRIP	L [3] mm	H mm	A mm	C [4] mm
RUE 35 D FE	RUE 35 D OE	RWU 35 D	2.0	TSX 35 D	5.9	KA 15	ADB 18	2960	48	100	120
RUE 35 D L FE	RUE 35 D L OE	RWU 35 D L	2.7	TSX 35 D	5.9	KA 15	ADB 18	2960	48	100	143
RUE 45 D FE	RUE 45 D OE	RWU 45 D	3.3	TSX 45 D	9.4	KA 20	ADB 23	2940	60	120	141
RUE 45 D L FE	RUE 45 D L OE	RWU 45 D L	4.4	TSX 45 D	9.4	KA 20	ADB 23	2940	60	120	175
RUE 55 D FE	RUE 55 D OE	RWU 55 D	5.6	TSX 55 D	13.3	KA 24	ADB 27	2520	70	140	170
RUE 55 D L FE	RUE 55 D L OE	RWU 55 D L	7.5	TSX 55 D	13.3	KA 24	ADB 27	2520	70	140	210
RUE 65 D L FE	RUE 65 D L OE	RWU 65 D L	14.4	TSX 65 D	21.5	KA 26	ADB 29	2520	90	170	252.8

RUE..D FE has lubrication nipple to DIN 71 412-A M8 ± 1.
RUE..D OE has connector with union nut similar to DIN 3 871-A.
RUE 25 available on request.
RUE..U: Linear roller bearing and guideway assembly with guideway for fixing from below, available on request.

1) Suffix FE for grease lubrication, suffix OE for oil lubrication.

2) Closing plugs KA..TN are included with the delivery.

3) Maximum length L of single-piece guideways, longer guideways are supplied as multi-piece guideways and are marked accordingly.

4) Minimum covered length for sealing the lubrication connections.

5) Dimensions C_5 and C_6 are dependent on the guideway length L.

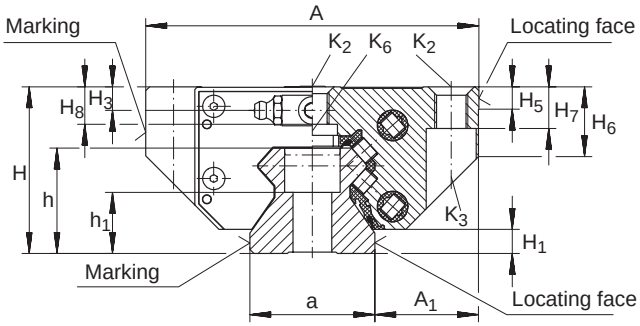
6) Position of the lubrication hole in the adjacent construction.

7) Maximum diameter of the lubrication hole in the adjacent construction.

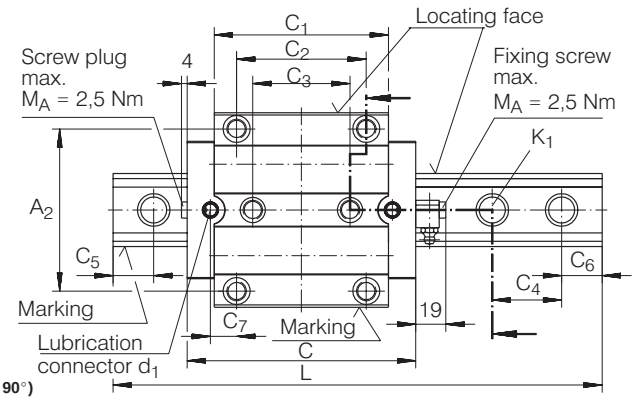
8) Maximum length of fixing screw: H_8 +3 mm.

9) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS [9]								
PART NUMBER	K_1 For screws to DIN 912-12.9		K_2 For screws to DIN 912-12.9		K_3 Through holes for screws to DIN 912-12.9		K_6 Through holes for screws to DIN 7 984-8.8	
		Nm max.		Nm max.		Nm max.		Nm max.
RUE 35 D	M8	41	M10	41	M8	41	M8	24
RUE 35 D L	M8	41	M10	41	M8	41	M8	24
RUE 45 D	M12	140	M12	83	M10	83	M10	48
RUE 45 D L	M12	140	M12	83	M10	83	M10	48
RUE 55 D	M14	220	M14	140	M12	140	M12	83
RUE 55 D L	M14	220	M14	140	M12	140	M12	83
RUE 65 L	M16	340	M16	220	M14	220	M14	130



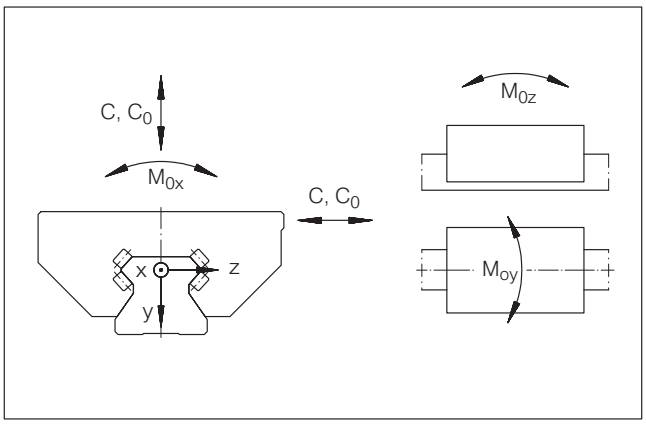
RUE..D



RUE..D
(View rotated through 90°)

A_1	A_2	a $^{-0.005}_{-0.035}$	C_1	C_2	C_3	C_4	C_5 5) min.	C_5 5) max.	C_6 5) min.	C_6 5) max.	C_7 6)	d_1 7) max.	H_1	H_3	H_5	H_6	H_7	H_8 8)	h	h_1
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
33	82	34	91.4	62	52	40	20	31	20	31	14.3	6	6.5	6.6	8	20	12	11.1	30	19
33	82	34	114.4	62	52	40	20	31	20	31	25.8	6	6.5	6.6	8	20	12	11.1	30	19
37.5	100	45	107.5	80	60	52.5	20	41	20	41	16.2	6	8.5	8.5	8	26	15	13.5	38	22
37.5	100	45	141.7	80	60	52.5	20	41	20	41	33.3	6	8.5	8.5	8	26	15	13.5	38	22
43.5	116	53	130.8	95	70	60	20	47	20	47	21.2	6	11	10	12	31	18	15.5	45	28
43.5	116	53	170.5	95	70	60	20	47	20	47	41	6	11	10	12	31	18	15.5	45	28
53.5	142	63	207.6	110	82	75	20	61	20	61	49	6	11	10.2	15	39.2	23	23	53.8	30.3

LOAD CARRYING CAPACITY TABLE					
PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
RUE 35 D	59	134	990	2140	1925
RUE 35 D L	70	169	1255	3370	3035
RUE 45 D	92	205	1805	3870	3485
RUE 45 D L	115	275	2410	6770	6095
RUE 55 D	135	305	3130	7035	6335
RUE 55 D L	167	405	4120	12010	10815
RUE 65 D L	270	640	7600	24000	21500



Load directions

Linear Recirculating Roller Bearing And Guideway Assemblies
RUE..D H, RUE..D HL SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

Linear roller bearing and guideway assembly Grease Lubrication PART NUMBER	Linear roller bearing and guideway assembly Oil Lubrication PART NUMBER	CARRIAGE [1] PART NUMBER	CARRIAGE MASS kg	GUIDEWAY PART NUMBER	GUIDEWAY MASS kg/m	GUIDEWAY Closing Plugs [2]	COVERING STRIP	L [3] mm	H mm	A mm	C [4] mm
RUE 35 D H FE	RUE 35 D H OE	RWU 35 D H	1.7	TSX 35 D	5.9	KA 15	ADB 18	2960	55	70	120
RUE 35 D HL FE	RUE 35 D HL OE	RWU 35 D HL	2.4	TSX 35 D	5.9	KA 15	ADB 18	2960	55	70	143
RUE 45 D H FE	RUE 45 D H OE	RWU 45 D H	3.1	TSX 45 D	9.4	KA 20	ADB 23	2940	70	86	141
RUE 45 D HL FE	RUE 45 D HL OE	RWU 45 D HL	4.0	TSX 45 D	9.4	KA 20	ADB 23	2940	70	86	175
RUE 55 D H FE	RUE 55 D H OE	RWU 55 D H	5.3	TSX 55 D	13.3	KA 24	ADB 24	2520	80	100	170
RUE 55 D HL FE	RUE 55 D HL OE	RWU 55 D HL	6.7	TSX 55 D	13.3	KA 24	ADB 24	2520	80	100	210
RUE 65 D HL FE	RUE 65 D HL OE	RWU 65 D HL	13.6	TSX 65 D	21.5	KA 26	ADB 26	2 520	100	126	252.8

RUE..D H FE has lubrication nipple to DIN 71 412-A M8 ± 1.
RUE..D H OE has connector with union nut similar to DIN 3 871-A.
RUE..DU: Linear roller bearing and guideway assembly with guideway for fixing from below, available on request.

1) Suffix FE for grease lubrication, suffix OE for oil lubrication.

2) Closing plugs KA..TN are included with the delivery.

3) Maximum length L of single-piece guideways, longer guideways are supplied as multi-piece guideways and are marked accordingly.

4) Minimum covered length for sealing the lubrication connections.

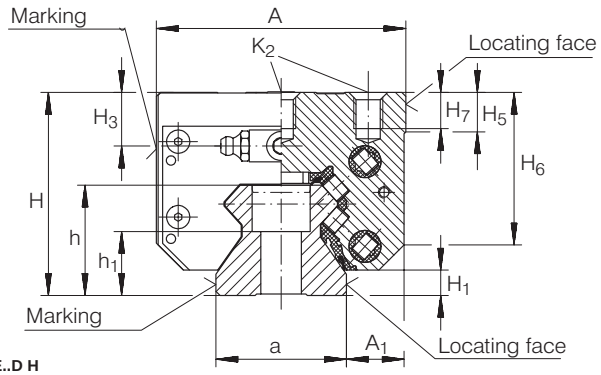
5) Dimensions C_5 and C_6 are dependent on the guideway length L.

6) Position of the lubrication hole in the adjacent construction.

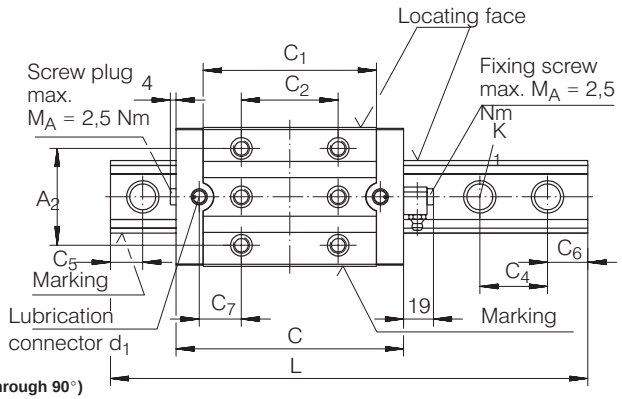
7) Maximum diameter of the lubrication hole in the adjacent construction.

8) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS [8]				
PART NUMBER	K_1 For screws to DIN 912-12.9		K_2 For screws to DIN 912-12.9	
		Nm max.		Nm max.
RUE 35 D H	M8	41	M8	41
RUE 35 D HL	M8	41	M8	41
RUE 45 D H	M12	140	M10	83
RUE 45 D HL	M12	140	M10	83
RUE 55 D H	M14	220	M12	140
RUE 55 D HL	M14	220	M12	140
RUE 65 D HL	M16	340	M14	220



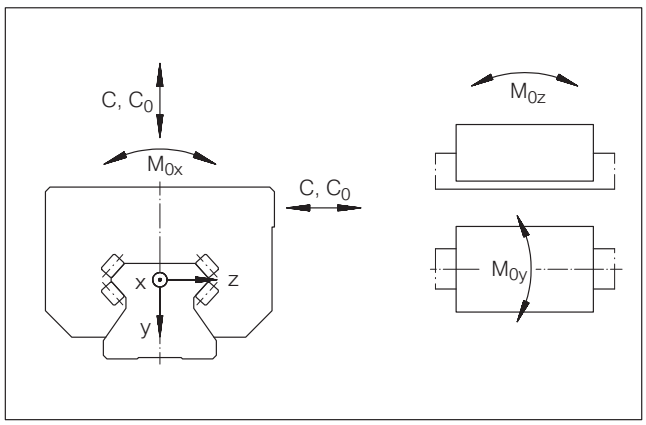
RUE..D H



RUE..D H
(View rotated through 90°)

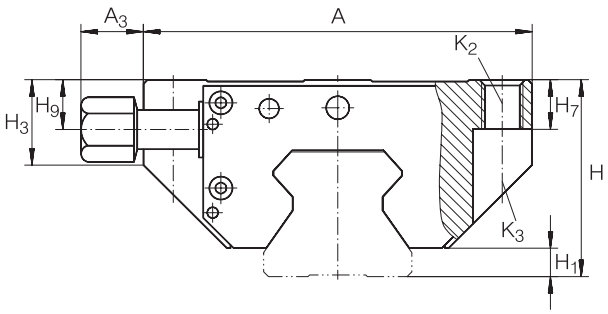
A_1	A_2	a $^{-0.005}_{-0.035}$	C_1	C_2	C_4	C_5 5) min.	C_5 5) max.	C_6 5) min.	C_6 5) max.	C_7 6)	d_1 7) max.	H_1	H_3	H_5	H_6	H_7	h	h_1
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
18	50	34	91.4	50	40	20	31	20	31	20.3	6	6.5	13.6	10.8	41	10	30	19
18	50	34	114.4	72	40	20	31	20	31	20.8	6	6.5	13.6	10.8	41	10	30	19
20.5	60	45	107.5	60	52.5	20	41	20	41	26.2	6	8.5	18.5	13.7	52	12.5	38	22
20.5	60	45	141.7	80	52.5	20	41	20	41	33.3	6	8.5	18.5	13.7	52	12.5	38	22
23.5	75	53	130.8	75	60	20	47	20	47	31.2	6	11	20	16	61	15	45	28
23.5	75	53	170.5	95	60	20	47	20	47	41	6	11	20	16	61	15	45	28
31.5	76	63	207.6	120	75	20	61	20	61	43.8	6	11	20.2	15	71.2	20	53.8	30.3

LOAD CARRYING CAPACITY TABLE					
PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
RUE 35 D H	59	134	990	2140	1925
RUE 35 D HL	70	169	1255	3370	3035
RUE 45 D H	92	205	1805	3870	3485
RUE 45 D HL	115	275	2410	6770	6095
RUE 55 D H	135	305	3130	7035	6335
RUE 55 D HL	167	405	4120	12010	10815
RUE 65 D HL	270	640	7600	24000	21500



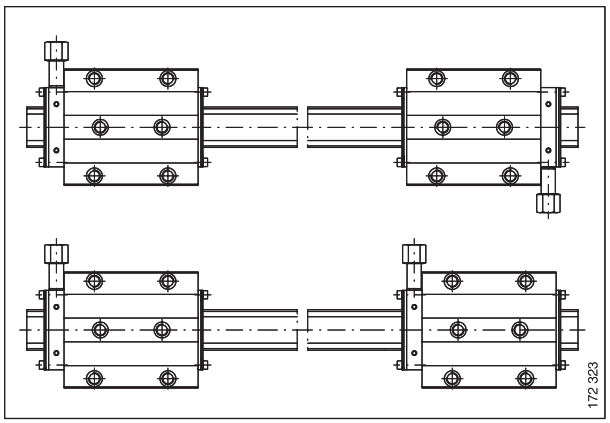
Load directions

Locking Element
RUKS..D SERIES

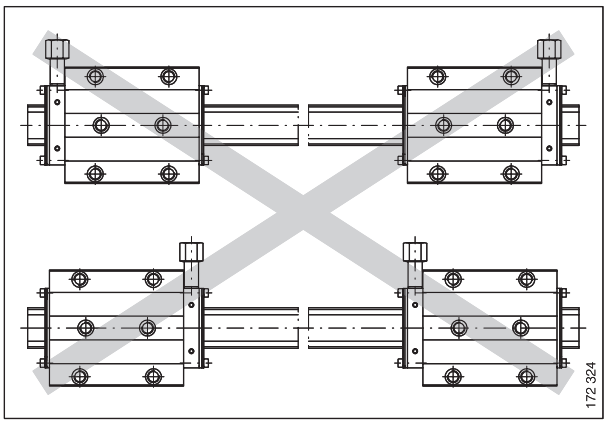


For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

PART NUMBER	MASS	A	H	C	A_2	A_3	C_1	C_2	C_3	C_7
	kg	mm	mm	mm	mm	mm	mm	mm	mm	mm
RUKS 35 D S	2.8	98	48	135	82	24.5	113	62	52	32
RUKS 35 D O	2.8	98	48	135	82	–	113	62	52	32
RUKS 35 DH S	2.8	68	55	135	50	34.5	113	50	–	38
RUKS 35 DH O	2.8	68	55	135	50	–	113	50	–	38
RUKS 45 D S	4.5	118	60	156	100	22	134	80	60	33.5
RUKS 45 D O	4.5	118	60	156	100	–	134	80	60	33.5
RUKS 45 DH S	4.5	84	70	156	60	39	134	60	–	43.5
RUKS 45 DH O	4.5	84	70	156	60	–	134	60	–	43.5
RUKS 55 D S	7.6	138	70	185	116	18.5	163	95	70	40.5
RUKS 55 D O	7.6	138	70	185	116	–	163	95	70	40.5
RUKS 55 DH S	7.6	98	80	185	75	38.5	163	75	–	50.5
RUKS 55 DH O	7.6	98	80	185	75	–	163	75	–	50.5

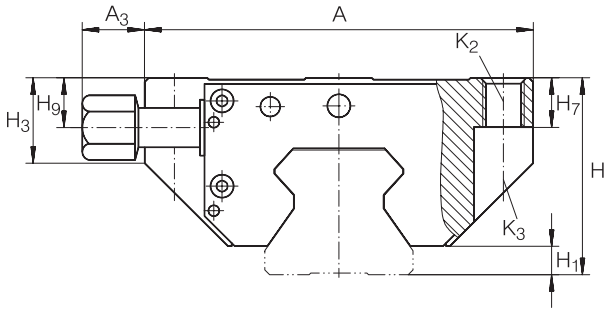


Position of oil connector, possible combinations



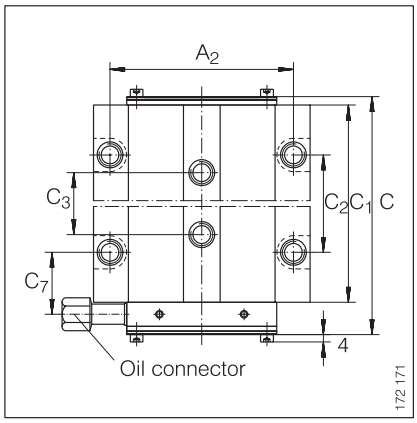
Position of oil connector, impermissible combinations

Locking Element
RUKS..D SERIES

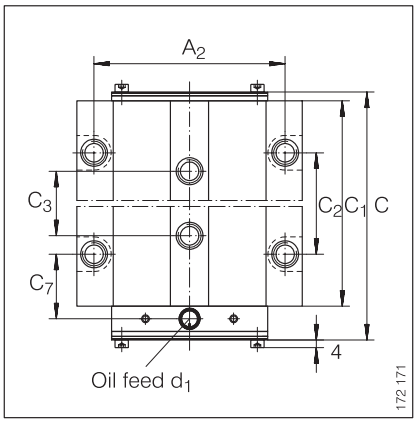


For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

d_1 max. mm	H_1 mm	H_3 mm	H_7 mm	H_9 mm	Suitable for guideway	K_2 For screws to DIN 912-12.9	K_2 max. Nm	K_3 Through hole for screws to DIN 912-12.9	K_3 max. Nm	PART NUMBER
6	6.5	21	12	13.2	TSX 35 D	M10	41	M8	41	RUKS 35 D S
6	6.5	21	12	–	TSX 35 D	M10	41	M8	41	RUKS 35 D O
6	6.5	42	10	20.2	TSX 35 D	M8	41	–	–	RUKS 35 DH S
6	6.5	42	10	–	TSX 35 D	M8	41	–	–	RUKS 35 DH O
6	8,5	27	15	15.6	TSX 45 D	M12	83	M10	83	RUKS 45 D S
6	8.5	27	15	–	TSX 45 D	M12	83	M10	83	RUKS 45 D O
6	8.5	53	10	25.6	TSX 45 D	M10	83	–	–	RUKS 45 DH S
6	8.5	53	10	–	TSX 45 D	M10	83	–	–	RUKS 45 DH O
6	11	32	18	18.8	TSX 55 D	M14	140	M12	140	RUKS 55 D S
6	11	32	18	–	TSX 55 D	M14	140	M12	140	RUKS 55 D O
6	11	62	15	28.8	TSX 55 D	M12	140	–	–	RUKS 55 DH S
6	11	62	15	–	TSX 55 D	M12	140	–	–	RUKS 55 DH O

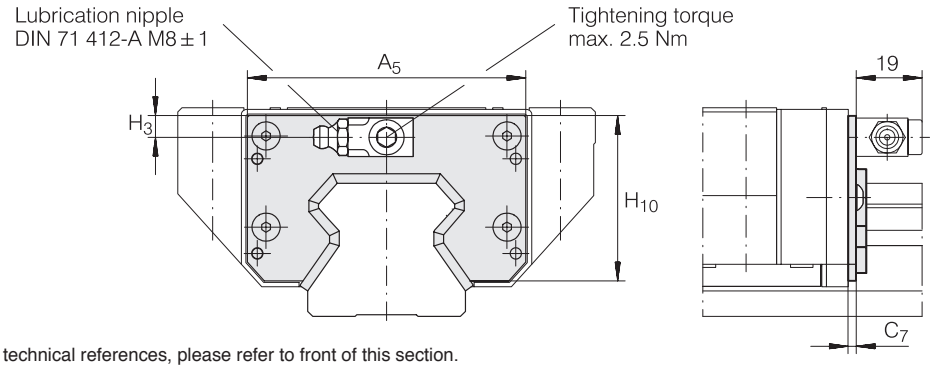


RUKS..D S



RUKS..D O

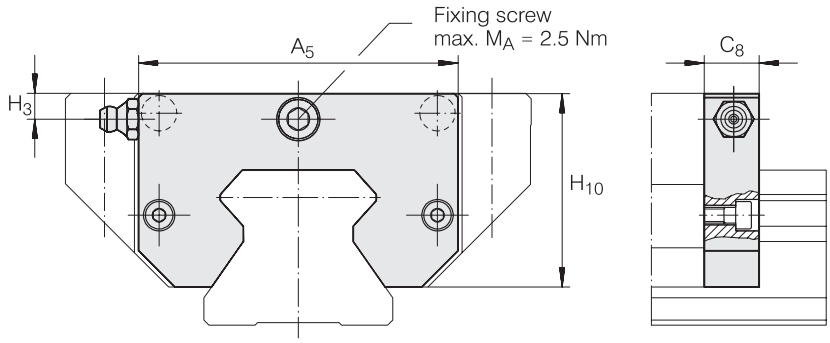
Sheet Steel Wiper
APLU SERIES



For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

PART NUMBER	MASS g	A_5 mm	H_3 mm	H_{10} mm	C_7 mm	Suitable for linear recirculating roller bearing and guideway assembly	
APLU 35 D	60	66.7	6.6	39.7	6.5	RUE 35 D	RUE 35 D L
			13.6			RUE 35 D H	RUE 35 D HL
APLU 45 D	75	81.5	8.5	49.3	6.5	RUE 45 D	RUE 45 D L
			18.5			RUE 45 D H	RUE 45 D HL
APLU 55 D	90	94.8	10	56.8	7.5	RUE 55 D	RUE 55 D L
			20			RUE 55 D H	RUE 55 D HL
APLU 65 D	105	120.3	10.2	76.2	6.3	–	RUE 65 D L
			20.2			–	RUE 65 D HL

Lubrication Adapter Plate
BPLU SERIES



For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

PART NUMBER GREASE LUBRICATION	PART NUMBER OIL LUBRICATION	MASS g	A_5 mm	H_3 mm	H_{10} mm	C_8 mm	Suitable for linear recirculating roller bearing and guideway assembly	
BPLU 35 D FE	BPLU 35 D OE	95	66.7	7.5	39.7	14	RUE 35 D	RUE 35 D L
				11.5			RUE 35 D H	RUE 35 D HL
BPLU 45 D FE	BPLU 45 D OE	120	81.5	8	49.3	14	RUE 45 D	RUE 45 D L
				15			RUE 45 D H	RUE 45 D HL
BPLU 55 D FE	BPLU 55 D OE	150	94.8	10	56.8	14	RUE 55 D	RUE 55 D L
				20			RUE 55 D H	RUE 55 D HL
BPLU 65 D FE	BPLU 65 D OE	190	120.8	10.2	76.2	14	–	RUE 65 D L
				20.2			–	RUE 65 D HL

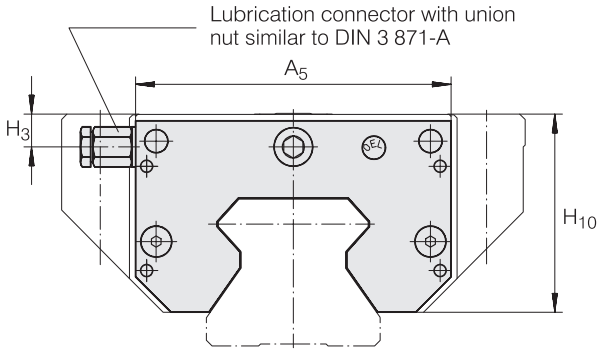
BPLU..D FE has lubrication nipple to DIN 71 412-A M8 ± 1.

BPLU..D OE has connector with union nut similar to DIN 3 871-A.

The lubrication nipple or connector can be replaced by a screw plug M8 ± 1.

In series RUE..D H and RUE..D HL, the lubrication nipple protrudes about 9 mm from the side of the carriage.

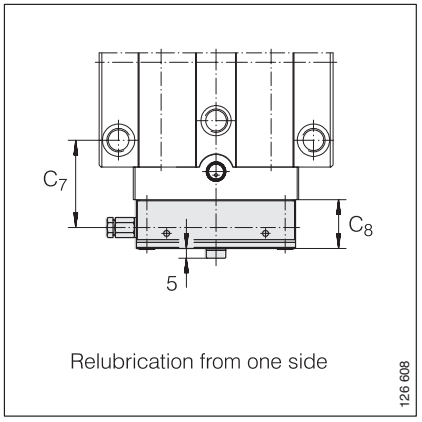
Minimal Quantity Lubricant Metering Unit
SMDE SERIES



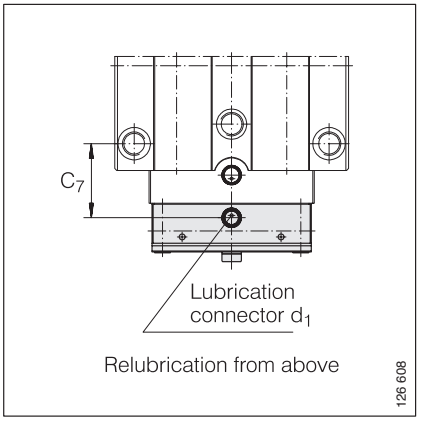
For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

PART NUMBER	MASS	A_5	H_3	H_{10}	C_7 with RUE..D RUE..D H	C_7 with RUE..L RUE..D HL	C_8	d_1 max	Suitable for linear recirculating roller bearing and guideway assembly	
	g	mm	mm	mm	mm	mm	mm	mm		
SMDE 35 D S	170	66.9	6.6	41.1	44	55.5	25	–	RUE 35 D	RUE 35 D L
SMDE 35 D O	170	66.9	–	41.1	37.2	48.7	25	6	RUE 35 D	RUE 35 D L
SMDE 35 D HS	200	66.9	13.6	48.1	50	50.5	25	–	RUE 35 D H	RUE 35 D HL
SMDE 35 D HO	200	66.9	–	48.1	43.2	43.7	25	6	RUE 35 D H	RUE 35 D HL
SMDE 45 D S	200	81.7	8.5	51.2	44.8	61.8	25	–	RUE 45 D	RUE 45 D L
SMDE 45 D O	200	81.7	–	51.2	38	55	25	6	RUE 45 D	RUE 45 D L
SMDE 45 D HS	260	81.7	18.5	61.2	54.8	61.8	25	–	RUE 45 D H	RUE 45 D HL
SMDE 45 D HO	260	81.7	–	61.2	48	55	25	6	RUE 45 D H	RUE 45 D HL
SMDE 55 D S	240	95	10	58.9	51.5	71.5	25	–	RUE 55 D	RUE 55 D L
SMDE 55 D O	240	95	–	58.9	44.7	64.7	25	6	RUE 55 D	RUE 55 D L
SMDE 55 D HS	340	95	20	68.9	61.5	71.5	25	–	RUE 55 D H	RUE 55 D HL
SMDE 55 D HO	340	95	–	68.9	54.7	64.7	25	6	RUE 55 D H	RUE 55 D HL
SMDE 65 D S	500	121	10.2	78.5	–	85	25	–	–	RUE 65 D L
SMDE 65 D O	500	121	10.2	78.5	–	78.2	25	6	–	RUE 65 D L
SMDE 65 D HS	500	121	20.2	88.5	–	80	25	–	–	RUE 65 D HL
SMDE 65 D HO	500	121	20.2	88.5	–	73.2	25	6	–	RUE 65 D HL

In series RUE..D H and RUE..D HL, the lubrication connector protrudes about 9 mm from the side of the carriage.

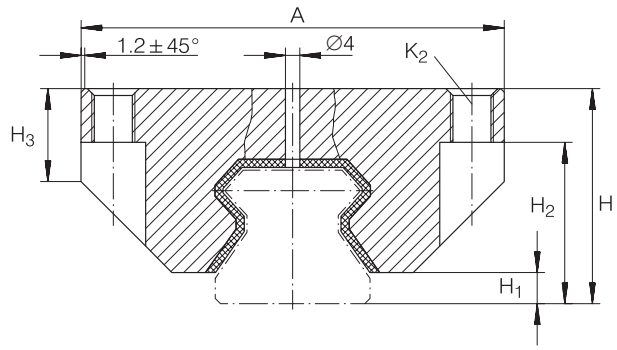


SMDE..D S



SMDE..D O

Damping Carriage
RUDS SERIES



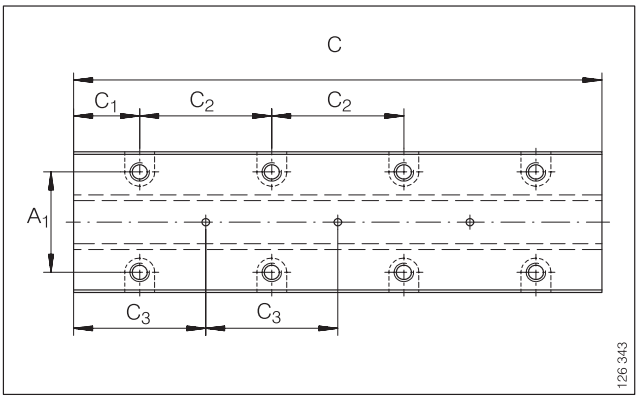
For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

PART NUMBER	MASS kg/100 mm	A mm	H mm	H_1 mm	H_2 mm	H_3 m	A_1 mm	C_1 mm	C_2 mm	C_3 mm	K_2 [2]	[3]	Suitable for linear recirculating roller bearing and guideway assembly	
RUDS 35 D	2.1	98	48	6.5	36	21	82	37.5	75	75	M10	M8	RUE 35 D	RUE 35 D L
RUDS 35 D H	1.8	68	55	6.5	–	42	50	37.5	75	75	M8	–	RUE 35 D H	RUE 35 D HL
RUDS 45 D	3.6	118	60	8.5	45	27	100	37.5	75	75	M12	M10	RUE 45 D	RUE 45 D L
RUDS 45 D H	3	84	70	8.5	–	53	60	37.5	75	75	M10	–	RUE 45 D H	RUE 45 D HL
RUDS 55 D	4.4	138	70	11	52	32	116	37.5	75	75	M14	M12	RUE 55 D	RUE 55 D L
RUDS 55 D H	3.7	98	80	11	–	62	75	37.5	75	75	M12	–	RUE 55 D H	RUE 55 D HL
RUDS 65 D	5	168	90	11	67	40.2	142	37.5	75	75	M16	M14	–	RUE 65 D L
RUDS 65 D H	4.6	124	100	11	–	72.2	76	37.5	75	75	M16	–	–	RUE 65 D HL

[1] Standard lengths:
C = 150 mm, not RUDS 65
C = 225 mm, not RUDS 65
C = 300 mm,

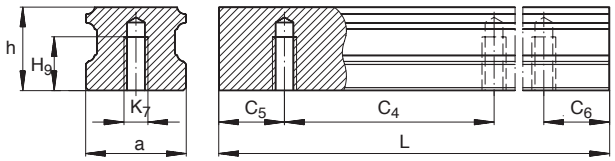
[2] For screws to DIN 912-12.9,
thread length for RUDS..D H: at least 1.25 · K_2

[3] K_2 as through hole for screws to DIN 912-12.9,



RUDS (View rotated through 90°)

Linear Recirculating Ball Bearing And Guideway Assemblies
KUSE SERIES



Guideway TKSD..U for mounting from below, suffix U (example: KUSE..U)

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

UNIT	CARRIAGE		GUIDEWAY				DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	COVERING STRIP	L[1]	H	A	C[2]	A_1	A_2	a –0.005 –0.03	a_3
KUSE 20	KWSE 20	0.43	TKSD 20	2.3	KA 10 TN	ADB 13	1,980	30	63	71	21.5	53	20	5
KUSE 25	KWSE 25	0.6	TKSD 25	3.1	KA 11 TN	ADB 13	1,980	36	70	81.5	23.5	57	23	6.5
KUSE 30	KWSE 30	1.2	TKSD 30	4.4	KA 15 TN	ADB 18	2,000	42	90	91.2	31	72	28	9
KUSE 35	KWSE 35	1.5	TKSD 35	6.5	KA 15 TN	ADB 18	2,960	48	100	106.7	33	82	34	9
KUSE 45	KWSE 45	3.15	TKSD 45	11.3	KA 20 TN	ADB 23	2,940	60	120	136.5	37.5	100	45	10
KUSE 55	KWSE 55	4.9	TKSD 55	15.7	KA 24 TN	ADB 23	2,520	70	140	158	43.5	116	53	12

1) Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

2) Minimum covered length for sealing the lubrication connections.

3) Dimensions C_5 and C_6 are dependent on the guideway length L.

4) Position of the lubrication hole in the adjacent construction.

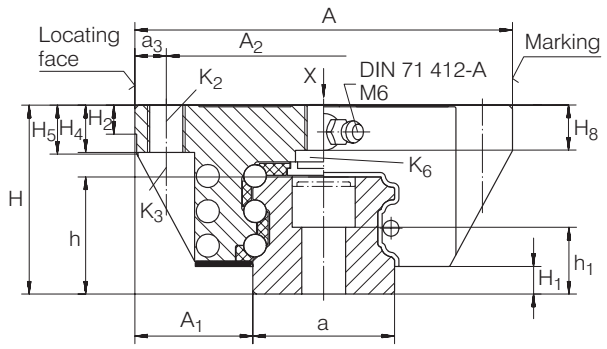
5) Maximum diameter of the lubrication hole in the adjacent construction.

6) When mounting from above: maximum length of fixing screw for the central fixing holes H_8 +3 mm.

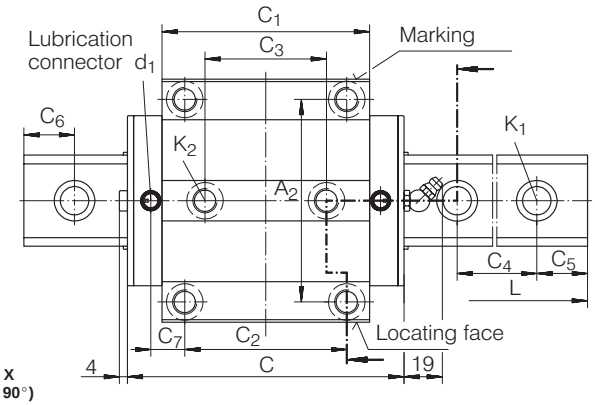
7) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[7]

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_3 Through holes for screws to DIN 912-12.9		K_6 Through holes for screws to DIN 7 984-8.8		K_7 for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.		Nm max.		Nm max.
KUSE 20	M5	10	M6	10	M5	10	M5	5.8	M6	17
KUSE 25	M6	17	M8	24	M6	17	M6	10	M6	17
KUSE 30	M8	41	M10	41	M8	41	M8	24	M8	41
KUSE 35	M8	41	M10	41	M8	41	M8	24	M8	41
KUSE 45	M12	140	M12	83	M10	83	M10	48	M12	140
KUSE 55	M14	220	M14	140	M12	140	M12	83	M14	220

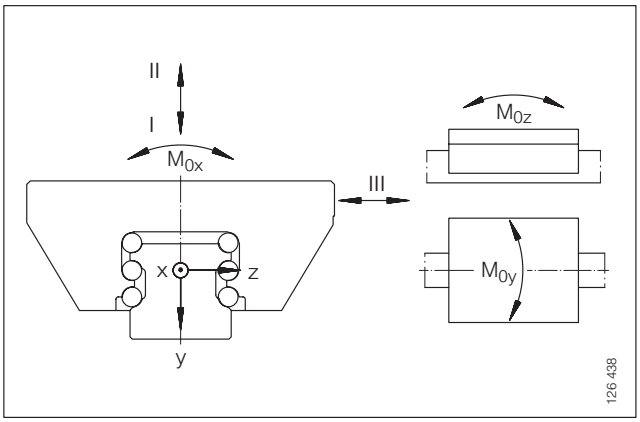


KUSE



KUSE, plan view X (rotated through 90°)

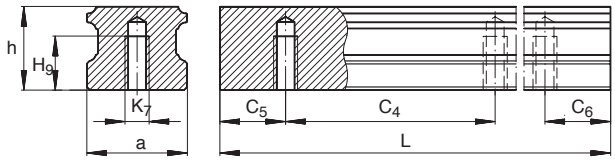
C_1	C_2	C_3	C_4	C_5[3]		C_6[3]		C_7[4]	d_1[5]	H_1	H_2	H_4	H_5	H_8[6]	H_9	h	h_1
				min.	max.	min.	max.		max.								
52	40	35	60	20	53	20	53	9.8	3	4.6	5	10	10.4	7.2	10	18	10.3
60.5	45	40	60	20	53	20	53	12.8	3	5.2	5	10	9.5	9.5	12	21.7	12.7
67.2	52	44	80	20	71	20	71	12.6	4.5	5.5	6	12	11.9	10	15	25	14
77.7	62	52	80	20	71	20	71	11.7	4.5	6.6	6.5	13	13	12	15	29.7	18.7
102.5	80	60	105	20	94	20	94	15.8	6	8.6	9	15	15.5	15	20	37.2	21.2
117.7	95	70	120	20	107	20	107	19.2	6	10.8	12	18	18.6	17	22	44	27



Load directions

LOAD CARRYING CAPACITY TABLE									
PART NUMBER	BASIC LOAD RATINGS						MOMENT RATINGS		
	LOAD DIRECTION I: COMPRESSIVE LOAD		LOAD DIRECTION II: TENSILE LOAD		LOAD DIRECTION III: LATERAL LOAD				
	C kN	C_0 kN	C kN	C_0 kN	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUSE 20	22	52	17.5	33.5	16.3	36	358	333	303
KUSE 25	28	67	22.9	43	21.3	46	535	486	442
KUSE 30	40	80	33	60	30.5	64	896	762	694
KUSE 35	55	102	45	79	42	85	1,454	1,173	1,069
KUSE 45	80	174	65	117	59	126	2,794	2,237	2,037
KUSE 55	102	230	81	147	75	157	4,114	3,141	2,861

Linear Recirculating Ball Bearing And Guideway Assemblies
KUSE..L SERIES



Guideway TKSD..U for mounting from below, suffix U (example: KUSE..U)

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

UNIT	Carriage		GUIDEWAY				DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	COVERING STRIP	L[1]	H	A	C[2]	A_1	A_2	a –0.005 –0.03	a_3
KUSE 20 L	KWSE 20 L	0.6	TKSD 20	2.3	KA 10 TN	ADB 13	1,980	30	63	90.8	21.5	53	20	5
KUSE 25 L	KWSE 25 L	0.82	TKSD 25	3.1	KA 11 TN	ADB 13	1,980	36	70	104	23.5	57	23	6.5
KUSE 30 L	KWSE 30 L	1.6	TKSD 30	4.4	KA 15 TN	ADB 18	2,000	42	90	118.7	31	72	28	9
KUSE 35 L	KWSE 35 L	2.1	TKSD 35	6.5	KA 15 TN	ADB 18	2,960	48	100	138.4	33	82	34	9
KUSE 45 L	KWSE 45 L	4.2	TKSD 45	11.3	KA 20 TN	ADB 23	2,940	60	120	172.2	37.5	100	45	10
KUSE 55 L	KWSE 55 L	6.6	TKSD 55	15.7	KA 24 TN	ADB 23	2,520	70	140	198	43.5	116	53	12

1) Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

2) Minimum covered length for sealing the lubrication connections.

3) Dimensions C_5 and C_6 are dependent on the guideway length L.

4) Position of the lubrication hole in the adjacent construction.

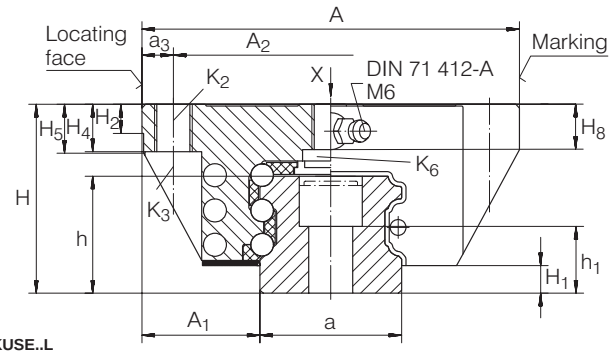
5) Maximum diameter of the lubrication hole in the adjacent construction.

6) When mounting from above: maximum length of fixing screw for the central fixing holes H_8 +3 mm.

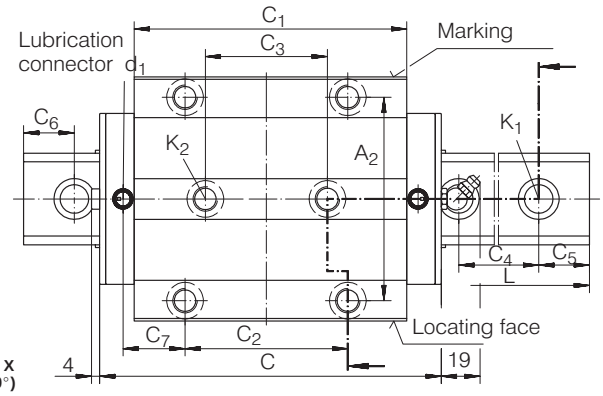
7) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[7]

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912–12.9		K_3 Through holes for screws to DIN 912-12.9		K_6 Through holes for screws to DIN 7 984-8.8		K_7 for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.		Nm max.		Nm max.
KUSE 20 L	M5	10	M6	10	M5	10	M5	5.8	M6	17
KUSE 25 L	M6	17	M8	24	M6	17	M6	10	M6	17
KUSE 30 L	M8	41	M10	41	M8	41	M8	24	M8	41
KUSE 35 L	M8	41	M10	41	M8	41	M8	24	M8	41
KUSE 45 L	M12	140	M12	83	M10	83	M10	48	M12	140
KUSE 55 L	M14	220	M14	140	M12	140	M12	83	M14	220

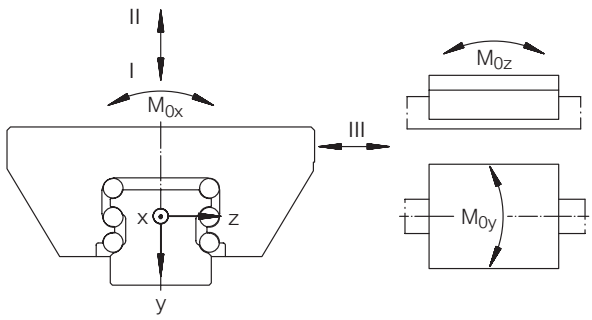


KUSE..L



KUSE..L, plan view X (rotated through 90°)

C_1	C_2	C_3	C_4	C_5[3]		C_6[3]		C_7[4]	d_1[5]	H_1	H_2	H_4	H_5	H_8[6]	H_9	h	h_1
				min.	max.	min	max.		max.								
71.8	40	35	60	20	53	20	53	19.7	3	4.6	5	10	10.4	7.2	10	18	10.3
83	45	40	60	20	53	20	53	24	3	5.2	5	10	9.5	9.5	12	21.7	12.7
94.7	52	44	80	20	71	20	71	26.3	4.5	5.5	6	12	11.9	10	15	25	14
109.4	62	52	80	20	71	20	71	27.5	4.5	6.6	6.5	13	13	12	15	29.7	18.7
138.2	80	60	105	20	94	20	94	33.6	6	8.6	9	15	15.5	15	20	37.2	21.2
157.7	95	70	120	20	107	20	107	39.2	6	10.8	12	18	18.6	17	22	44	27



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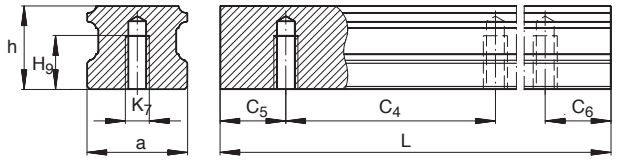
Load directions

LOAD CARRYING CAPACITY TABLE									
PART NUMBER	BASIC LOAD RATINGS						MOMENT RATINGS		
	LOAD DIRECTION I: COMPRESSIVE LOAD		LOAD DIRECTION II: TENSILE LOAD		LOAD DIRECTION III: LATERAL LOAD				
	C kN	C_0 kN	C kN	C_0 kN	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUSE 20 L	28	72	22.2	46.5	18.9	50	494	619	564.6
KUSE 25 L	35.3	93.7	28.9	59.8	24.7	64	736	903	823
KUSE 30 L	51	113	42.4	84.3	36.5	90	1,265	1,478	1,346
KUSE 35 L	70	145	57.3	112.4	49.5	120	2,054	2,275	2,072
KUSE 45 L	98	236	79.3	159	69	170	3,792	4,011	3,654
KUSE 55 L	125.4	312	100.6	199.4	87	214	5,584	5,633	5,132

Linear Recirculating Ball Bearing And Guideway Assemblies
KUSE..H SERIES



Guideway TKSD..U for mounting from below, suffix U (example: KUSE..U)

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

UNIT	CARRIAGE		GUIDEWAY				DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	Mass kg/m	CLOSING PLUGS	COVERING STRIP	L[1]	H	A	C[2]	A_1	A_2	a –0.005 –0.03	a_3
KUSE 20 H	KWSE 20 H	0.32	TKSD 20	2.3	KA 10 TN	ADB 13	1,980	30	44	71	12	32	20	6
KUSE 25 H	KWSE 25 H	0.5	TKSD 25	3.1	KA 11 TN	ADB 13	1,980	40	48	81.5	12.5	35	23	6.5
KUSE 30 H	KWSE 30 H	0.9	TKSD 30	4.4	KA 15 TN	ADB 18	2,000	45	60	91.2	16	40	28	10
KUSE 35 H	KWSE 35 H	1.3	TKSD 35	6.5	KA 15 TN	ADB 18	2,960	55	70	106.7	18	50	34	10
KUSE 45 H	KWSE 45 H	2.75	TKSD 45	11.3	KA 20 TN	ADB 23	2,940	70	86	136.5	20.5	60	45	13
KUSE 55 H	KWSE 55 H	4.5	TKSD 55	15.7	KA 24 TN	ADB 23	2,520	80	100	158	23.5	75	53	12.5

1) Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

2) Minimum covered length for sealing the lubrication connections.

3) Dimensions C_5 and C_6 are dependent on the guideway length L.

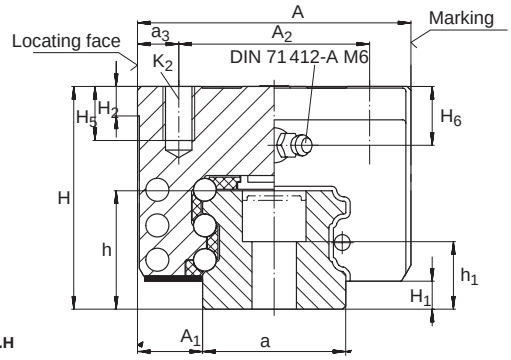
4) Position of the lubrication hole in the adjacent construction.

5) Maximum diameter of the lubrication hole in the adjacent construction.

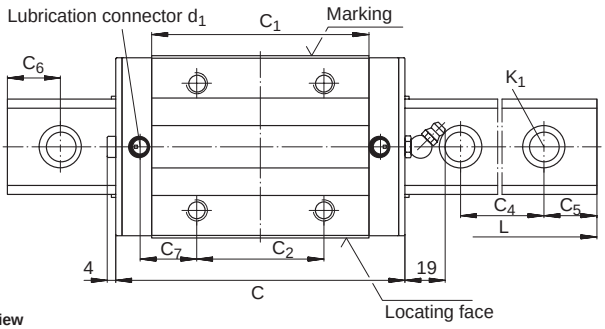
6) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[6]

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_7 for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.
KUSE 20 H	M5	10	M5	10	M6	17
KUSE 25 H	M6	17	M6	17	M6	17
KUSE 30 H	M8	41	M8	41	M8	41
KUSE 35 H	M8	41	M8	41	M8	41
KUSE 45 H	M12	140	M10	83	M12	140
KUSE 55 H	M14	220	M12	140	M14	220

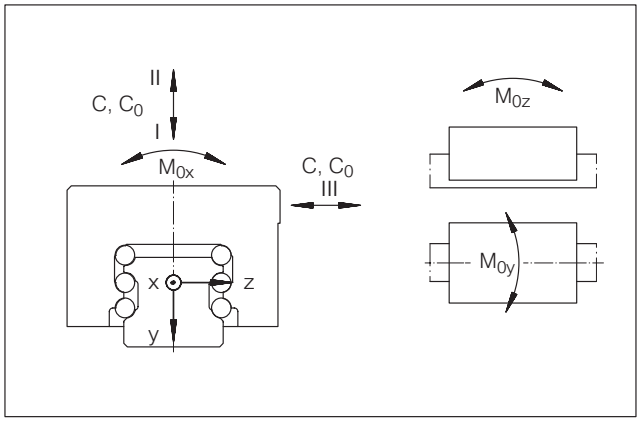


KUSE..H



KUSE..H, plan view (rotated through 90°)

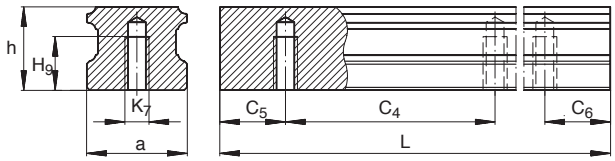
C_1	C_2	C_4	C_5[3]		C_6[3]		C_7[4]	d_1[5]	H_1	H_2	H_5	H_6	H_9	h	h_1
			min.	max.	min.	max.		max.							
52	36	60	20	53	20	53	11.8	3	4.6	5	6.25	5.8	10	18	10.3
60.5	35	60	20	53	20	53	17.8	3	5.2	5	10	10	12	21.7	12.7
67.2	40	80	20	71	20	71	18.6	4.5	5.5	6	11	9.5	15	25	14
77.7	50	80	20	71	20	71	17.7	4.5	6.6	6.5	14	14.2	15	29.7	18.7
102.5	60	105	20	94	20	94	25.8	6	8.6	9	17	18.5	20	37.2	21.2
117.7	75	120	20	107	20	107	29.2	6	10.8	12	19	20	22	44	27



Load directions

LOAD CARRYING CAPACITY TABLE									
PART NUMBER	BASIC LOAD RATINGS						MOMENT RATINGS		
	LOAD DIRECTION I: COMPRESSIVE LOAD		LOAD DIRECTION II: TENSILE LOAD		LOAD DIRECTION III: LATERAL LOAD				
	C kN	C_0 kN	C kN	C_0 kN	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUSE 20 H	22	52	17.5	33.5	16.3	36	358	333	303
KUSE 25 H	28	67	22.9	43	21.3	46	535	486	442
KUSE 30 H	40	80	33	60	30.5	64	896	762	694
KUSE 35 H	55	102	45	79	42	85	1,454	1,173	1,069
KUSE 45 H	80	174	65	117	59	126	2,794	2,237	2,037
KUSE 55 H	102	230	81	147	75	157	4,114	3,141	2,861

Linear Recirculating Ball Bearing And Guideway Assemblies
KUSE..HL SERIES



Guideway TKSD..U for mounting from below, suffix U (example: KUSE..U)

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

UNIT	CARRIAGE		GUIDEWAY				DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	COVERING STRIP	$L^{1)}$	H	A	$C^{2)}$	A_1	A_2	a $^{-0.05}_{-0.03}$	a_3
KUSE 20 HL	KWSE 20 HL	0.44	TKSD 20	2.3	KA 10 TN	ADB 13	1,980	30	44	90.8	12	32	20	6
KUSE 25 HL	KWSE 25 HL	0.7	TKSD 25	3.15	KA 11 TN	ADB 13	1,980	40	48	104	12.5	35	23	6.5
KUSE 30 HL	KWSE 30 HL	1.2	TKSD 30	4.4	KA 15 TN	ADB 18	2,000	45	60	118.7	16	40	28	10
KUSE 35 HL	KWSE 35 HL	1.8	TKSD 35	6.5	KA 15 TN	ADB 18	2,960	55	70	138.4	18	50	34	10
KUSE 45 HL	KWSE 45 HL	3.7	TKSD 45	11.3	KA 20 TN	ADB 23	2,940	70	86	172.2	20.5	60	45	13
KUSE 55 HL	KWSE 55 HL	5.9	TKSD 55	15.7	KA 24 TN	ADB 23	2,520	80	100	198	23.5	75	53	12.5

1) Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

2) Minimum covered length for sealing the lubrication connections.

3) Dimensions C_5 and C_6 are dependent on the guideway length L.

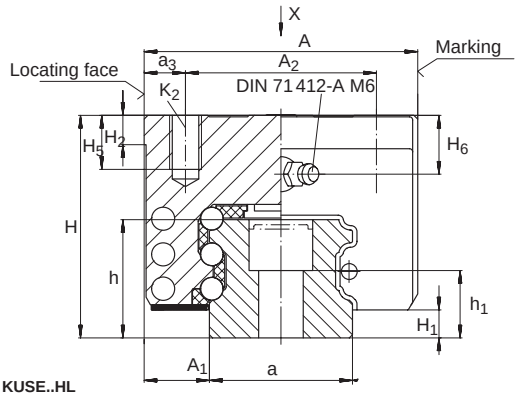
4) Position of the lubrication hole in the adjacent construction.

5) Maximum diameter of the lubrication hole in the adjacent construction.

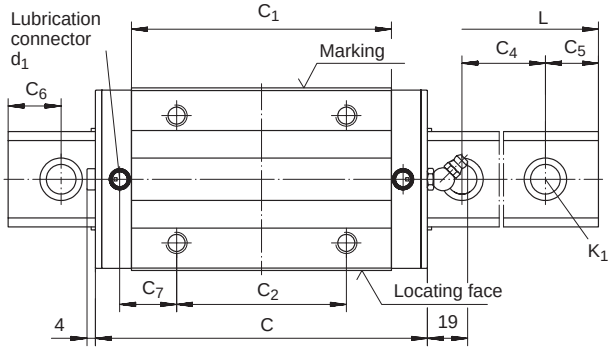
6) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[6)]

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_7 for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.
KUSE 20 HL	M5	10	M5	10	M6	17
KUSE 25 HL	M6	17	M6	17	M6	17
KUSE 30 HL	M8	41	M8	41	M8	41
KUSE 35 HL	M8	41	M8	41	M8	41
KUSE 45 HL	M12	140	M10	83	M12	140
KUSE 55 HL	M14	220	M12	140	M14	220

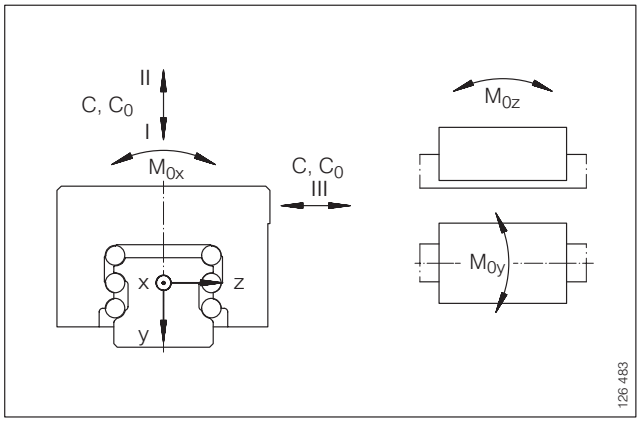


KUSE..HL



KUSE..HL, plan view X (rotated through 90°)

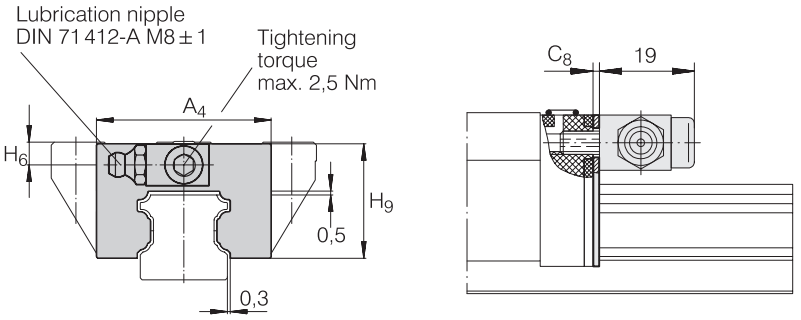
C_1	C_2	C_4	C_5 [3]		C_6 [3]		C_7 [4]	d_1 [5]	H_1	H_2	H_5	H_6	H_9	h	h_1
			min	max.	min.	max.		max.							
71.8	50	60	20	53	20	53	14.7	3	4.6	5	6.25	5.8	10	18	10.3
83	50	60	20	53	20	53	21.5	3	5.2	5	10	10	12	21.7	12.7
94.7	60	80	20	71	20	71	22.3	4.5	5.5	6	11	9.5	15	25	14
109.4	72	80	20	71	20	71	22.5	4.5	6.6	6.5	14	14.2	15	29.7	18.7
138.2	80	105	20	94	20	94	33.6	6	8.6	9	17	18.5	20	37.2	21.2
157.7	95	120	20	107	20	107	39.2	6	10.8	12	19	20	22	44	27



Load directions

LOAD CARRYING CAPACITY TABLE									
PART NUMBER	BASIC LOAD RATINGS						MOMENT RATINGS		
	LOAD DIRECTION I: COMPRESSIVE LOAD		LOAD DIRECTION II: TENSILE LOAD		LOAD DIRECTION III: LATERAL LOAD				
	C kN	C_0 kN	C kN	C_0 kN	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUSE 20 HL	28	72	22.2	46.5	18.9	50	494	619	564
KUSE 25 HL	35.3	93.7	28.9	59.8	24.7	64	736	903	823
KUSE 30 HL	51	113	42.4	84.3	36.5	90	1,265	1,478	1,346
KUSE 35 HL	70	145	57.3	112.4	49.5	120	2,054	2,275	2,072
KUSE 45 HL	98	236	79.3	159	69	170	3,792	4,011	3,654
KUSE 55 HL	125.4	312	100.6	199.4	87	214	5,584	5,633	5,132

Sheet Steel Wiper
APLSE SERIES



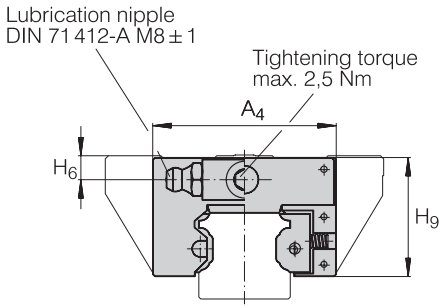
For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

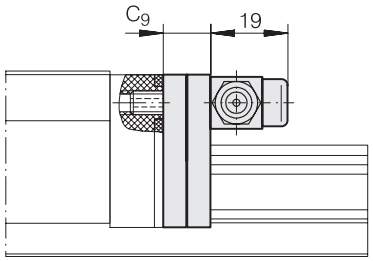
DIMENSION TABLE · Dimensions in mm

PART NUMBER	MASS	DIMENSIONS				SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY	
	g	A_4	H_9	C_8	H_6		
APLSE 20	26	42.8	24.9	0.8	5.8	KUSE 20	KUSE 20 L
					5.8	KUSE 20 H	KUSE 20 HL
APLSE 25	27	46	30.1	0.8	6	KUSE 25	KUSE 25 L
					10	KUSE 25 H	KUSE 25 HL
APLSE 30	31	58	35.8	0.8	6.5	KUSE 30	KUSE 30 L
					9.5	KUSE 30 H	KUSE 30 HL
APLSe 35	34	68	40.7	0.8	7.2	KUSE 35	KUSE 35 L
					14.2	KUSE 35 H	KUSE 35 HL
APLSE 45	40	84	50.7	0.8	8.5	KUSE 45	KUSE 45 L
					8.5	KUSE 45 H	KUSE 45 HL
APLSE 55	46	96.4	58.5	0.8	10	KUSE 55	KUSE 55 L
					20	KUSE 55 H	KUSE 55 HL

When fitting the wiper, it must be ensured that the gap between the guideway and the sheet steel wiper is of the correct size (see figure above).

Collector Wiper
AB KOL KWSE SERIES





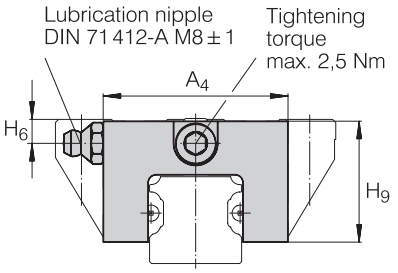
For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

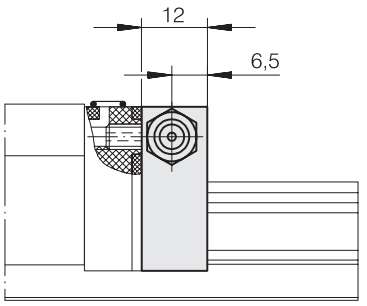
DIMENSION TABLE · Dimensions in mm

PART NUMBER	MASS	DIMENSIONS				SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY	
	g	A_4	H_9	C_9	H_6		
AB KOL KWSE 20	46	42.8	24.9	9	5.8	KUSE 20	KUSE 20 L
					5.8	KUSE 20 H	KUSE 20 HL
AB KOL KWSE 25	51	46	30.1	9	6	KUSE 25	KUSE 25 L
					10	KUSE 25 H	KUSE 25 HL
AB KOL KWSE 30	69	58	35.8	9	6.5	KUSE 30	KUSE 30 L
					9.5	KUSE 30 H	KUSE 30 HL
AB KOL KWSE 35	82	68	40.7	9	7.2	KUSE 35	KUSE 35 L
					14.2	KUSE 35 H	KUSE 35 HL
AB KOL KWSE 45	109	84	50.7	11	8.5	KUSE 45	KUSE 45 L
					18.5	KUSE 45 H	KUSE 45 HL
AB KOL KWSE 55	136	96.4	58.5	11	10	KUSE 55	KUSE 55 L
					20	KUSE 55 H	KUSE 55 HL

If the collector wiper AB KOL KWSE is used,
the covering strip ADBSE or closing plugs KA..M must be used.

Lubrication Adapter Plate
BPLSE SERIES





For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

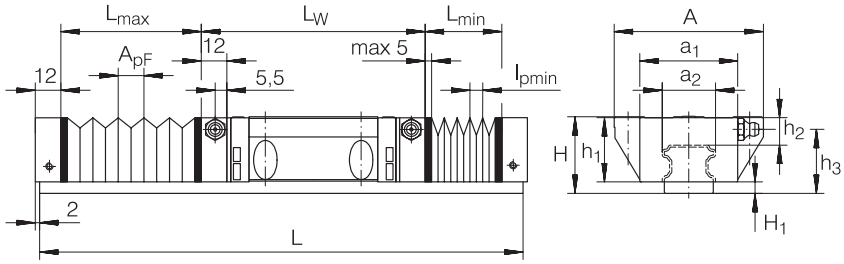
PART NUMBER	Mass	DIMENSIONS			SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY	
	g	A_4	H_9	H_6		
BPLSE 20	29	42.8	24.9	5.8	KUSE 20	KUSE 20 L
				5.8	KUSE 20 H	KUSE 20 HL
BPLSE 25	35	46	30.1	6	KUSE 25	KUSE 25 L
				10	KUSE 25 H	KUSE 25 HL
BPLSE 30	52	58	35.8	6.5	KUSE 30	KUSE 30 L
				9.5	KUSE 30 H	KUSE 30 HL
BPLSE 35	67	68	40.7	7.2	KUSE 35	KUSE 35 L
				14.2	KUSE 35 H	KUSE 35 HL
BPLSE 45	98	84	50.7	8.5	KUSE 45	KUSE 45 L
				18.5	KUSE 45 H	KUSE 45 HL
BPLSE 55	128	96.4	58.5	10	KUSE 55	KUSE 55 L
				20	KUSE 55 H	KUSE 55 HL

The lubrication nipple to DIN 71412-A M8 ± 1 can be replaced by a screw plug M8 ± 1.

Note:

In series KUSE..H and KUSE..HL. the lubrication nipple protrudes about 9 mm from the side of the carriage.

Bellows
FBALG KWSE SERIES



For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

Dimension table · Dimensions in mm

PART NUMBER	DIMENSIONS										SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY	
	A	a_1[1)]	a_2	H	H_1	h_1	h_2	h_3	A_{pF}[2)]	$l_{p\,min}$[3)]		
FBALG KWSE 20	63	42.8	21	30	4.8	24.9	11	24.2	14.5	2.5	KUSE 20	KUSE 20 L
	44			30							KUSE 20 H	KUSE 20 HL
FBALG KWSE 25	70	46	24	36	5.4	30.1	11	30	14.5	2.5	KUSE 25	KUSE 25 L
	48			40							KUSE 25 H	KUSE 25 HL
FBALG KWSE 30	90	58	29	42	5.7	35.8	14	35.5	18	2.5	KUSE 30	KUSE 30 L
	60			45							KUSE 30 H	KUSE 30 HL
FBALG KWSE 35	100	68	35	48	6.8	40.7	16	40.8	22.5	2.5	KUSE 35	KUSE 35 L
	70			55							KUSE 35 H	KUSE 35 HL
FBALG KWSE 45	120	84	46	60	8.8	50.7	19	51.5	27	2.5	KUSE 45	KUSE 45 L
	86			70							KUSE 45 H	KUSE 45 HL
FBALG KWSE 55	140	96.4	56	70	11	58.5	21	60	31.5	2.5	KUSE 55	KUSE 55 L
	100			80							KUSE 55 H	KUSE 55 HL

1) Maximum width of bellows in end gauge.
2) Expansion per pleat.
3) Compression per pleat.

Four-Row
Linear Recirculating Ball Bearing
And Guideway Assembly
KUVE, KUVE..L, KUVE..N SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

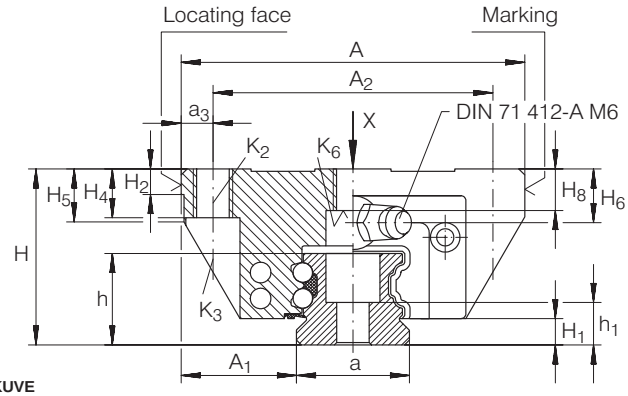
DIMENSION TABLE • Dimensions in mm

UNIT	CARRIAGE		GUIDEWAYS			DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	L[1]	H	A	C	A_1	A_2	a -0.005 -0.03	a_3
KUVE 15	KWVE 15	0.25	TKVD 15	1.5	KA 08 TN A	1200	24	47	55.6	16	38	15	4.5
KUVE 20	KWVE 20	0.58	TKVD 20	2.2	KA 10 TN A	1980	30	63	69.8	21.5	53	20	5
KUVE 20 L	KWVE 20 L	0.8	TKVD 20	2.2	KA 10 TN A	1980	30	63	87.3	21.5	53	20	5
KUVE 20 N	KWVE 20 N	0.47	TKVD 20	2.2	KA 10 TN A	1980	27	63	69.8	21.5	53	20	5
KUVE 25	KWVE 25	0.71	TKVD 25	2.7	KA 11 TN A	1980	36	70	81.7	23.5	57	23	6.5
KUVE 25 L	KWVE 25 L	1	TKVD 25	2.7	KA 11 TN A	1980	36	70	107.5	23.5	57	23	6.5
KUVE 25 N	KWVE 25 N	0.57	TKVD 25	2.7	KA 11 TN A	1980	31	70	81.7	23.5	57	23	6.5
KUVE 30	KWVE 30	1.4	TKVD 30	4.3	KA 15 TN A	2000	42	90	97.6	31	72	28	9
KUVE 30 L	KWVE 30 L	1.83	TKVD 30	4.3	KA 15 TN A	2000	42	90	122.6	31	72	28	9
KUVE 30 N	KWVE 30 N	1.12	TKVD 30	4.3	KA 15 TN A	2000	38	90	97.6	31	72	28	9
KUVE 35	KWVE 35	2.02	TKVD 35	5.7	KA 15 TN A	2960	48	100	110.4	33	82	34	9
KUVE 35 L	KWVE 35 L	2.71	TKVD 35	5.7	KA 15 TN A	2960	48	100	140.2	33	82	34	9
KUVE 35 N	KWVE 35 N	1.62	TKVD 35	5.7	KA 15 TN A	2960	44	100	110.4	33	82	34	9
KUVE 45	KWVE 45	3.75	TKVD 45	9.2	KA 20 TN A	2940	60	120	139	37.5	100	45	10
KUVE 45 L	KWVE 45 L	4.7	TKVD 45	9.2	KA 20 TN A	2940	60	120	167.5	37.5	100	45	10
KUVE 45 N	KWVE 45 N	3	TKVD 45	9.2	KA 20 TN A	2940	52	120	139	37.5	100	45	10

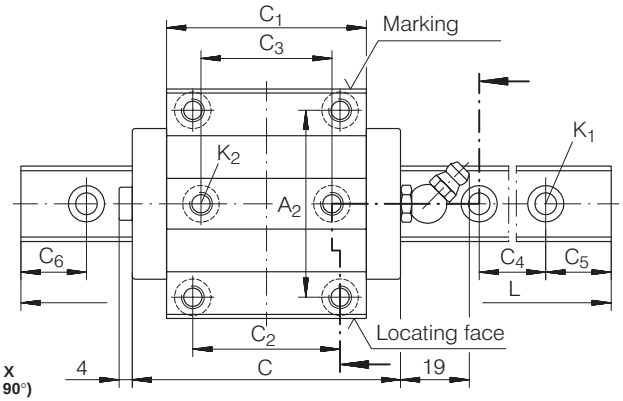
[1] Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.
[2] Dimensions C_5 and C_5 are dependent on the guideway length L; see page NO TAG for calculation method.
[3] When mounting from above: maximum length of fixing screw for the central fixing holes H_8 +3mm.
[4] If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[4]

PART NUMBER	K_1 For screws to DIN 912-12.9		K_2 For screws to DIN 912-12.9		K_3 Through holes for screws to DIN 912-12.9		K_6 Through holes for screws to DIN 7 984-8.8		K_6 Through holes for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.		Nm max.		Nm max.
KUVE 15	M4	5	M5	5.8	M4	5	M4	2.8	–	–
KUVE 20	M5	10	M6	10	M5	10	–	–	M5	10
KUVE 20 L	M5	10	M6	10	M5	10	–	–	M5	10
KUVE 20 N	M5	10	M6	10	M5	10	M5	5.8	–	–
KUVE 25	M6	17	M8	24	M6	17	–	–	M6	17
KUVE 25 L	M6	17	M8	24	M6	17	–	–	M6	17
KUVE 25 N	M6	17	M8	24	M6	17	M6	10	–	–
KUVE 30	M8	41	M10	41	M8	41	M8	24	–	–
KUVE 30 L	M8	41	M10	41	M8	41	M8	24	–	–
KUVE 30 N	M8	41	M10	41	M8	41	M8	24	–	–
KUVE 35	M8	41	M10	41	M8	41	–	–	M8	41
KUVE 35 L	M8	41	M10	41	M8	41	–	–	M8	41
KUVE 35 N	M8	41	M10	41	M8	41	M8	24	–	–
KUVE 45	M12	140	M12	83	M10	83	–	–	M10	83
KUVE 45 L	M12	140	M12	83	M10	83	–	–	M10	83
KUVE 45 N	M12	140	M12	83	M10	83	M10	48	–	–



KUVE



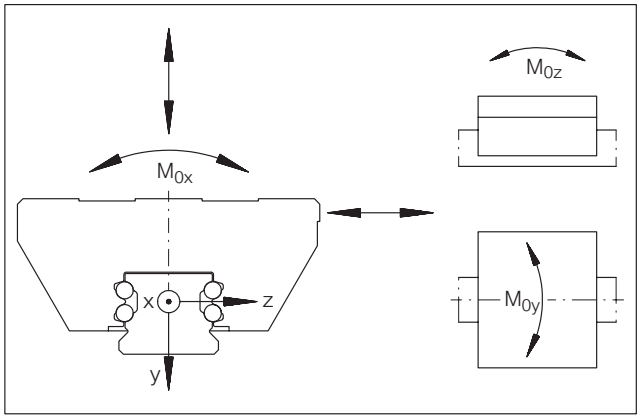
KUVE, plan view X
(rotated through 90°)

DIMENSION TABLE • Dimensions in mm

MOUNTING DIMENSIONS															
C_1	C_2	C_3	C_4	C_5 [2] min.	C_5 [2] max.	C_6 [2] min.	C_6 [2] max.	H_1	H_2	H_4	H_5	H_6	H_8 [3]	h	h_1
39.8	30	26	60	20	53	20	53	4.5	4.5	7.6	7.6	4	5.8	15.1	8.2
50.4	40	35	60	20	53	20	53	4.8	5	10	11	4.8	7.5	17	9.1
67.9	40	35	60	20	53	20	53	4.8	5	10	11	4.8	7.5	17	9.1
50.4	40	35	60	20	53	20	53	4.8	5	8	8.6	4.8	6	17	9.1
60.7	45	40	60	20	53	20	53	5.4	5	10	10,9	4.8	10	18.7	8.7
86.5	45	40	60	20	53	20	53	5.4	5	10	10.9	4.8	10	18.7	8.7
60.7	45	40	60	20	53	20	53	5.4	5	10	9.3	4.8	8	18.7	8.7
72	52	44	80	20	71	20	71	6.2	6	12	13.8	4.8	12	23.5	11.5
97	52	44	80	20	71	20	71	6.2	6	12	13.8	4.8	12	23.5	11.5
72	52	44	80	20	71	20	71	6.2	6	12	9.8	4.8	9	23.5	11.5
80	62	52	80	20	71	20	71	7	6.5	13	14.3	4.8	12	27	15
109.8	62	52	80	20	71	20	71	7	6.5	13	14.3	4.8	12	27	15
80	62	52	80	20	71	20	71	7	6.5	13	10.3	4.8	11.7	27	15
102.5	80	60	105	20	94	20	94	10	9	15	19.8	4.8	15	34.2	16.2
131.1	80	60	105	20	94	20	94	10	9	15	19.8	4.8	15	34.2	16.2
102.5	80	60	105	20	94	20	94	10	9	15	17.2	4.8	11	34.2	16.2

LOAD CARRYING CAPACITY TABLE

PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUVE 15	7.2	14.5	150	100	100
KUVE 20	13.1	27	332	240	240
KUVE 20 L	16.2	36.5	452	430	430
KUVE 20 N	13.1	27	332	240	240
KUVE 25	17.9	37	510	395	395
KUVE 25 L	23.4	54	745	825	825
KUVE 25 N	17.9	37	510	395	395
KUVE 30	27.5	55	970	700	700
KUVE 30 L	34.5	74	1310	1240	1240
KUVE 30 N	27.5	55	970	700	700
KUVE 35	38	72	1465	1020	1020
KUVE 35 L	47.5	100	2025	1890	1890
KUVE 35 N	38	72	1465	1020	1020
KUVE 45	69	141	3610	2485	2485
KUVE 45 L	82	181	4635	4000	4000
KUVE 45 N	69	141	3610	2485	2485



Load directions

Four-Row
Linear Recirculating Ball Bearing
And Guideway Assembly
KUVE..S, KUVE..SN, KUVE..H SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE • Dimensions in mm

UNIT	CARRIAGE		GUIDEWAYS			DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	L[1]	H	A	C	A_1	A_2	a -0.005 -0.03	a_3
KUVE 15 S	KWVE 15 S	0.19	TKVD 15	1.5	KA 08 TN A	1200	24	34	55.6	9.5	26	15	4
KUVE 15 H	KWVE 15 H	0.23	TKVD 15	1.5	KA 08 TN A	1200	28	34	55.6	9.5	26	15	4
KUVE 20 S	KWVE 20 S	0.46	TKVD 20	2.2	KA 10 TN A	1980	30	44	69.8	12	32	20	6
KUVE 20 SN	KWVE 20 SN	0.36	TKVD 20	2.2	KA 10 TN A	1980	27	44	69.8	12	32	20	6
KUVE 25 S	KWVE 25 S	0.56	TKVD 25	2.7	KA 11 TN A	1980	36	48	81.7	12.5	35	23	6.5
KUVE 25 SN	KWVE 25 SN	0.45	TKVD 25	2.7	KA 11 TN A	1980	31	48	81.7	12.5	35	23	6.5
KUVE 25 H	KWVE 25 H	0.65	TKVD 25	2.7	KA 11 TN A	1980	40	48	81.7	12.5	35	23	6.5
KUVE 30 S	KWVE 30 S	1.09	TKVD 30	4.3	KA 15 TN A	2000	42	60	97.6	16	40	28	10
KUVE 30 SN	KWVE 30 SN	0.87	TKVD 30	4.3	KA 15 TN A	2000	38	60	97.6	16	40	28	10
KUVE 30 H	KWVE 30 H	1.27	TKVD 30	4.3	KA 15 TN A	2000	45	60	97.6	16	40	28	10
KUVE 35 S	KWVE 35 S	1.6	TKVD 35	5.7	KA 15 TN A	2960	48	70	110.4	18	50	34	10
KUVE 35 SN	KWVE 35 SN	1.27	TKVD 35	5.7	KA 15 TN A	2960	44	70	110.4	18	50	34	10
KUVE 35 H	KWVE 35 H	1.84	TKVD 35	5.7	KA 15 TN A	2960	55	70	110.4	18	50	34	10
KUVE 45 S	KWVE 45 S	2.8	TKVD 45	9.2	KA 20 TN A	2940	60	86	139	20.5	60	45	13
KUVE 45 SN	KWVE 45 SN	2.3	TKVD 45	9.2	KA 20 TN A	2940	52	86	139	20.5	60	45	13
KUVE 45 H	KWVE 45 H	3.5	TKVD 45	9.2	KA 20 TN A	2940	70	86	139	20.5	60	45	13

[1] Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

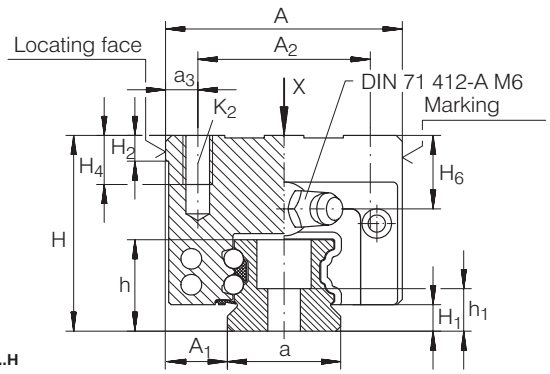
[2] Dimensions C_5 and C_5 are dependent on the guideway length L; see page NO TAG for calculation method.

[3] When mounting from above: maximum length of fixing screw for the central fixing holes H_8 +3mm.

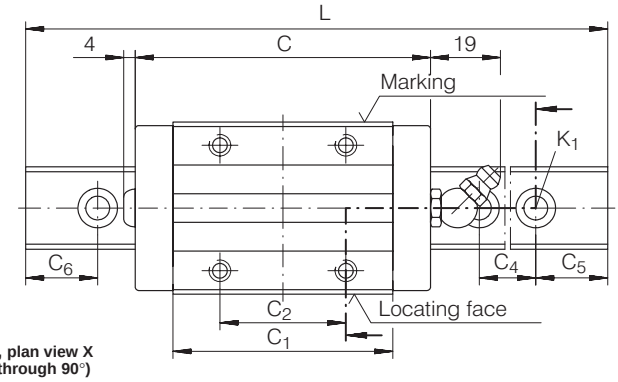
[4] If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[4]

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9	
		Nm max.		Nm max.
KUVE 15 S	M4	5	M4	5
KUVE 15 H	M4	5	M4	5
KUVE 20 S	M5	10	M5	10
KUVE 20 SN	M5	10	M5	10
KUVE 25 S	M6	17	M6	17
KUVE 25 SN	M6	17	M6	17
KUVE 25 H	M6	17	M6	17
KUVE 30 S	M8	41	M8	41
KUVE 30 SN	M8	41	M8	41
KUVE 30 H	M8	41	M8	41
KUVE 35 S	M8	41	M8	41
KUVE 35 SN	M8	41	M8	41
KUVE 35 H	M8	41	M8	41
KUVE 45 S	M12	140	M10	83
KUVE 45 SN	M12	140	M10	83
KUVE 45 H	M12	140	M10	83



KUVE..H



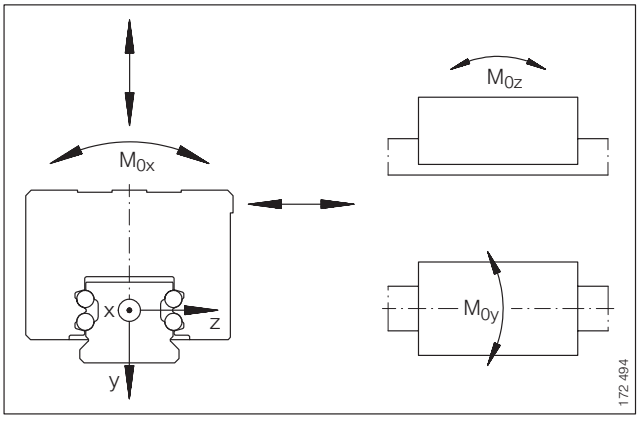
KUVE..H, plan view X (rotated through 90°)

DIMENSION TABLE • Dimensions in mm

MOUNTING DIMENSIONS												
C_1	C_2	C_4	C_5 [2] min.	C_5 [2] max.	C_6 [2] min.	C_6 [2] max.	H_1	H_2	H_4	H_6	h	h_1
39.8	26	60	20	53	20	53	4.5	4.5	6	4	15.1	8.2
39.8	26	60	20	53	20	53	4.5	4.5	6	8	15.1	8.2
50.4	36	60	20	53	20	53	4.8	5	7.5	8	17	9.1
50.4	36	60	20	53	20	53	4.8	5	7.5	5	17	9.1
60.7	35	60	20	53	20	53	5.4	5	10	11	18.7	8.7
60.7	35	60	20	53	20	53	5.4	5	8	6	18.7	8.7
60.7	35	60	20	53	20	53	5.4	5	10	15	18.7	8.7
72	40	80	20	71	20	71	6.2	6	13.5	11.25	23.5	11.5
72	40	80	20	71	20	71	6.2	6	11	7.25	23.5	11.5
72	40	80	20	71	20	71	6.2	6	13.5	14.25	23.5	11.5
80	50	80	20	71	20	71	7	6.5	13.5	12.3	27	15
80	50	80	20	71	20	71	7	6.5	13.5	8.3	27	15
80	50	80	20	71	20	71	7	6.5	13.5	19.3	27	15
102.5	60	105	20	94	20	94	10	9	17	16.5	34.2	16.2
102.5	60	105	20	94	20	94	10	9	16.5	8.5	34.2	16.2
102.5	60	105	20	94	20	94	10	9	17	26.5	34.2	16.2

LOAD CARRYING CAPACITY TABLE

PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUVE 15 S	7.2	14.5	150	100	100
KUVE 15 H	7.2	14.5	150	100	100
KUVE 20 S	13.1	27	332	240	240
KUVE 20 SN	13.1	27	332	240	240
KUVE 25 S	17.9	37	510	395	395
KUVE 25 SN	17.9	37	510	395	395
KUVE 25 H	17.9	37	510	395	395
KUVE 30 S	27.5	55	970	700	700
KUVE 30 SN	27,5	55	970	700	700
KUVE 30 H	27,5	55	970	700	700
KUVE 35 S	38	72	1465	1020	1020
KUVE 35 SN	38	72	1465	1020	1020
KUVE 35 H	38	72	1465	1020	1020
KUVE 45 S	69	141	3610	2485	2485
KUVE 45 SN	69	141	3610	2485	2485
KUVE 45 H	69	141	3610	2485	2485



Load directions

Four-row Linear Recirculating Ball Bearing And Guideway Assembly
KUVE..W, KUVE..WL SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

UNIT	CARRIAGE		GUIDEWAY			DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	L[1])	H	A	C	A_1	A_2	A_4	A_5
KUVE 20 W	KWVE 20 W	0.56	TKVD 20 W	5	KA 08..A	1,500	27	80	69.8	19	70	24	9
KUVE 25 WL	KWVE 25 WL	1.46	TKVD 25 W	9.4	KA 11..A	1,980	35	120	107.8	25.5	107	40	14.5
KUVE 30 W	KWVE 30 W	1.95	TKVD 30 W	13.6	KA 15..A	2,000	42	142	97.6	31	124	50	15
KUVE 35 WL	KWVE 35 WL	4.11	TKVD 35 W	17.4	KA 15..A	2,960	50	162	140.2	36	144	60	15

1) Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

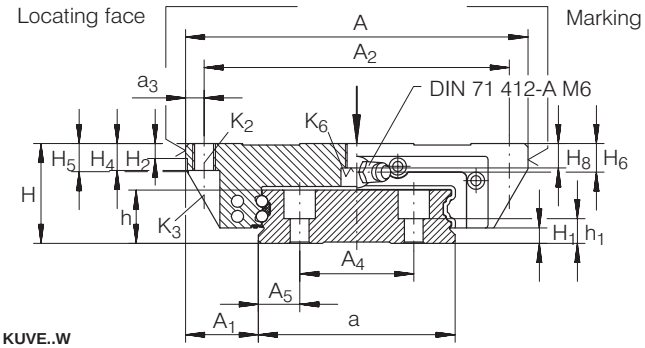
2) Dimensions C_5 and C_6 are dependent on the guideway length L.

3) When mounting from above: maximum length of fixing screw for the central fixing holes H_8 +3 mm.

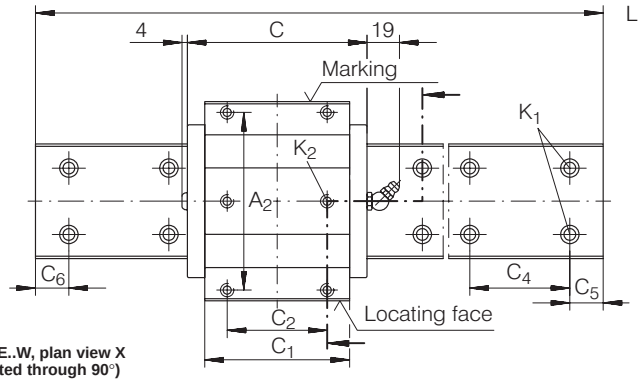
4) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[5])

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_3 for screws to DIN 912-12.9		K_6 for screws to DIN 7984–8.8		K_6 for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.		Nm max.		Nm max.
KUVE 20 W	M4	5	M6	10	M5	10	M5	5.8	–	–
KUVE 25 WL	M6	17	M8	24	M6	17	–	–	M6	17
KUVE 30 W	M8	41	M10	41	M8	41	M8	24	–	–
KUVE 35 WL	M8	41	M10	41	M8	41	–	–	M8	41



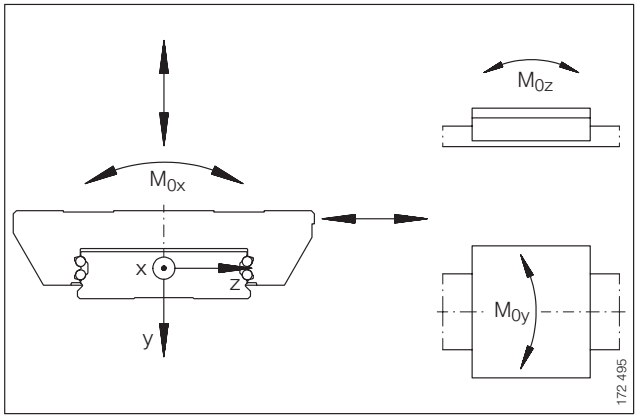
KUVE..W



KUVE..W, plan view X (rotated through 90°)

a −0.005 −0.030	a_3	C_1	C_2	C_4	C_5 [2] min.	C_5 [2] max.	C_6 [2] min.	C_6 [2] max.	H_1	H_2	H_4	H_5	H_6	H_8 [3]	h	h_1
42	5	50.4	40	60	20	53	20	53	4.6	5	10	10.6	5	6	17	10
69	6.5	86.5	60	80	20	71	20	71	5.2	5	10	9.9	10	10	18.7	8.7
80	9	72	52	80	20	71	20	71	6	6	12	13.8	11.25	12	23.5	11.5
90	9	109.8	80	80	20	71	20	71	6.8	6.5	13	16.3	14.3	13	27	15

LOAD CARRYING CAPACITY TABLE					
PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	C kN	C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUVE 20 W	13.1	26.9	687	240	240
KUVE 25 WL	23.4	54	2,225	825	825
KUVE 30 W	27.5	55	2,660	700	700
KUVE 35 WL	47.5	100	5,550	1,890	1,890



Load directions

Linear Recirculating Ball Bearing And Guideway Assemblies
KUE SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm												
UNIT	CARRIAGE		GUIDEWAY		DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	L[1]	H	A	C	A_1	A_2	a –0,004 –0,05	a_3
KUE 15	KWE 15	0.17	TKD 15	1.5	1,200	24	47	54.5	16	38	15	4.5
KUE 20	KWE 20	0.45	TKD 20	2.2	1,980	30	63	70.5	21.5	53	20	5
KUE 25	KWE 25	0.65	TKD 25	2.8	1,980	36	70	80.7	23.5	57	23	6.5
KUE 30	KWE 30	1.2	TKD 30	4.2	2,000	42	90	93	31	72	28	9
KUE 35	KWE 35	1.7	TKD 35	5.6	2,960	48	100	106.4	33	82	34	9

1) Maximum length L of single piece guideway; longer guideways are supplied as multi-piece guideways.

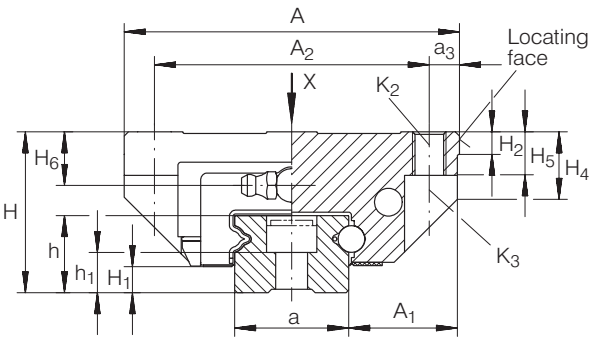
2) Dimensions C_5 and C_6 are dependent on the guideway length L.

3) Lubrication nipple with tapered head to DIN 71 412, except for KUE 15 (drive fit lubrication nipple).

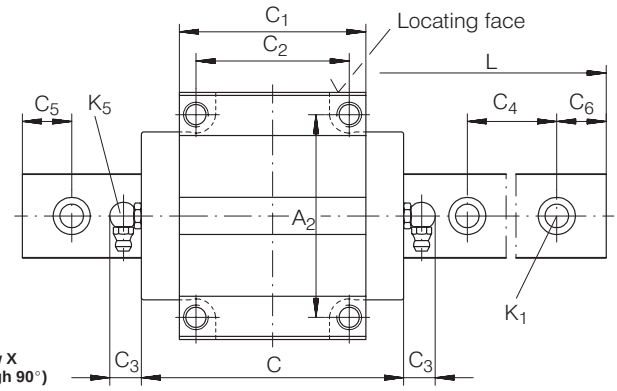
4) A drive fit lubrication nipple and closing plug are supplied loose with the carriage.

5) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[5]							
PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_3 Through holes for screws to DIN 912-12.9		K_5[3] Lubrication connector
		Nm max.		Nm max.		Nm max.	
KUE 15	M4	5	M5	5.8	M4	5	NIP A1[4]
KUE 20	M5	10	M6	10	M5	10	NIP KE M6
KUE 25	M6	17	M8	24	M6	17	NIP KE M6
KUE 30	M8	41	M10	41	M8	41	NIP KE M6
KuE 35	M8	41	M10	41	M8	41	NIP KE M6



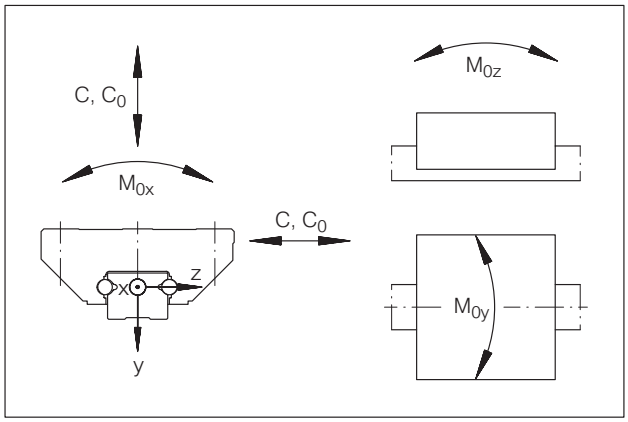
KUE



KUE, plan view X
(rotated through 90°)

															ACCESSORIES
C_1	C_2	C_3	C_4	C_5 [2]		C_6 [2]		H_1	H_2	H_4	H_5	H_6	h	h_1	CLOSING PLUGS
				min.	max.	min.	max.								
38.6	30	1.5	60	20	53	20	53	4.8	4.5	7.5	7	4	15	7.7	KA 08 TN
49.3	40	14	60	20	53	20	53	5	5	11.6	10	6.5	16.5	8.3	KA 10 TN
56.5	45	14	60	20	53	20	53	6.5	5	11.5	10	10	18	8.7	KA 11 TN
65.7	52	14	80	20	71	20	71	7	6	14.6	10	13	21.5	10	KA 15 TN
75.5	62	14	80	20	71	20	71	8	6.5	20.1	13	16	23	11.5	KA 15 TN

LOAD CARRYING CAPACITY TABLE					
PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	dyn. C kN	stat. C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUE 15	6,5	9.2	73	56	56
KUE 20	13.3	18	190	154	154
KUE 25	16.2	20.9	253	185	185
KUE 30	22.5	29.7	437	335	335
KUE 35	28	37	658	450	450



Load directions

Linear Recirculating Ball Bearing And Guideway Assemblies
KUE..H SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

Unit	CARRIAGE		GUIDEWAY		DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	L[1]	H	A	C	A_1	A_2	a –0.004 –0.05	a_3
KUE 15 H	KWE 15 H	0.17	TKD 15	1.5	1,200	28	34	54.5	9.5	26	15	4
KUE 20 H	KWE 20 H	0.35	TKD 20	2.2	1,980	30	44	70.5	12	32	20	6
KUE 25 H	KWE 25 H	0.55	TKD 25	2.8	1,980	40	48	80.7	12.5	35	23	6.5
KUE 30 H	KWE 30 H	0.9	TKD 30	4.2	2,000	45	60	93	16	40	28	10
KUE 35 H	KWE 35 H	1.46	TKD 35	5.6	2,960	55	70	106.4	18	50	34	10

[1]) Maximum length L of single piece guideway; longer guideways are supplied as multi-piece guideways.

[2]) Dimensions C_5 and C_6 are dependent on the guideway length L.

[3]) Maximum length of fixing screw.

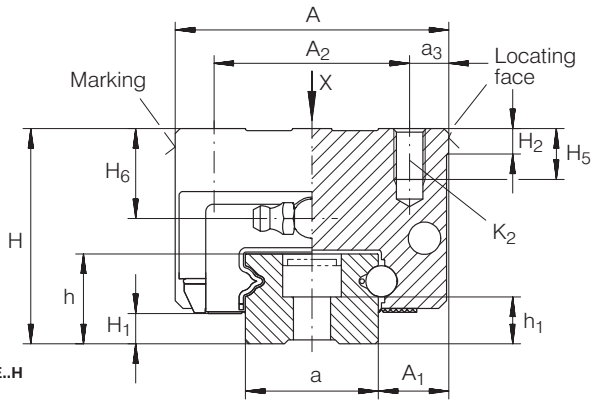
[4]) Lubrication nipple with tapered head to DIN 71 412, except for KUE 15 H (drive fit lubrication nipple).

[5]) A drive fit lubrication nipple and closing plug are supplied loose with the carriage.

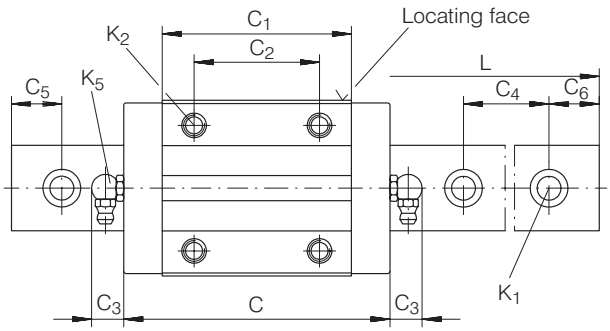
[6]) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENINGTORQUES FOR THREADS AND SCREWS[6])

PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_5[4]) Lubrication connector
		Nm max.		Nm max.	
KUE 15 H	M4	5	M4	5	NIP A1[5])
KUE 20 H	M5	10	M5	10	NIP KE M6
KUE 25 H	M6	17	M6	17	NIP KE M6
KUE 30 H	M8	41	M8	41	NIP KE M6
KuE 35 H	M8	41	M8	41	NIP KE M6



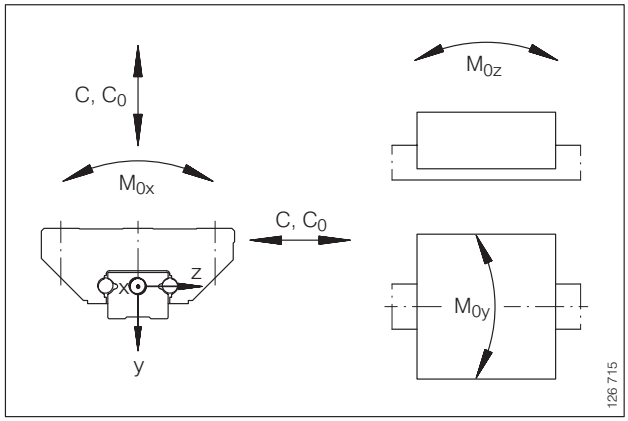
KUE..H



KUE, plan view X
(rotated through 90°)

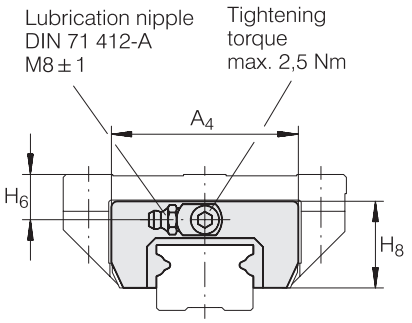
														ACCESSORIES
C_1	C_2	C_3	C_4	C_5[2]		C_6[2]		H_1	H_2	H_5[3]	H_6	h	h_1	CLOSING PLUGS
				min.	max.	min.	max.							
38.6	26	1.5	60	20	53	20	53	4.8	4.5	5	8	15	7.7	KA 08 TN
49.3	36	14	60	20	53	20	53	5	5	6.25	6.5	16.5	8.3	KA 10 TN
56.5	35	14	60	20	53	20	53	6.5	5	8	14	18	8.7	KA 11 TN
65.7	40	14	80	20	71	20	71	7	6	10	16	21.5	10	KA 15 TN
75.5	50	14	80	20	71	20	71	8	6.5	12	23	23	11.5	KA 15 TN

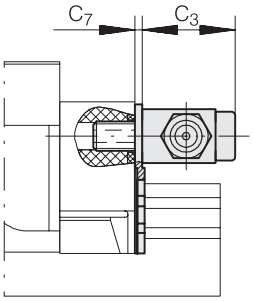
LOAD CARRYING CAPACITY TABLE					
PART NUMBER	BASIC LOAD RATINGS		MOMENT RATINGS		
	dyn. C kN	stat. C_0 kN	M_{0x} Nm	M_{0y} Nm	M_{0z} Nm
KUE 15 H	6.5	9.2	73	56	56
KUE 20 H	13.3	18	190	154	154
KUE 25 H	16.2	20.9	253	185	185
KUE 30 H	22.5	29.7	437	335	335
KUE 35 H	28	37	658	450	450



Load directions

Sheet Steel Wiper
APLE SERIES





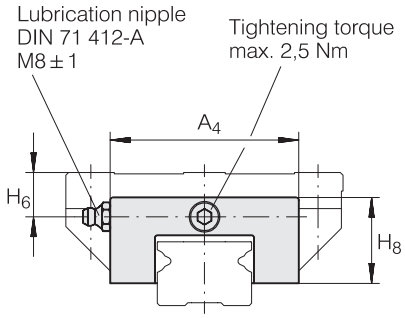
For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

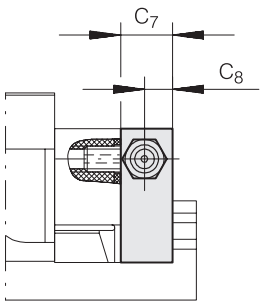
DIMENSION TABLE · Dimensions in mm

PART NUMBER	MASS	DIMENSIONS					SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY
		A_4	H_8	C_3	C_7	H_6	
	g						
APLE 20	35	40	24	19	1.2	6.5	KUE 20
						6.5	KUE 20 H
APLE 25	39	44	25.3	19	1.2	10	KUE 25
						14	KUE 25 H
APLE 30	43	55	28	19	1.2	13	KUE 30
						16	KUE 30 H
APLE 35	47	66	30.5	19	1.5	16	KUE 35
						23	KUE 35 H

[1]) When fitting the sheet steel wiper, it must be ensured that there is an even gap of ca. 0.1 mm between the guideway and the wiper.

Lubrication Adapter Plate
BPLE SERIES





For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

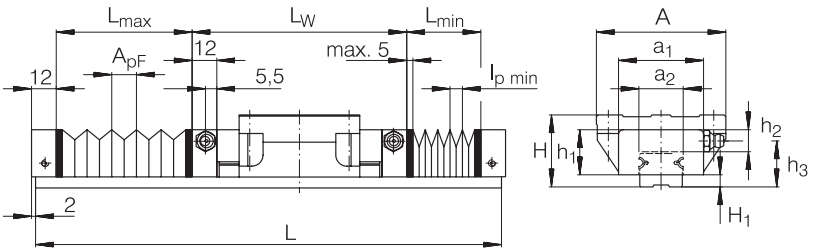
DIMENSION TABLE · Dimensions in mm

PART NUMBER	MASS	DIMENSIONS					SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY
		A_4	H_8	C_7	C_8	H_6	
	g						
BPLE 20	25	42	23.5	12	6.5	6.5	KUE 20
						6.5	KUE 20 H
BPLE 25	34	46.5	26	12	6.5	10	KUE 25
						14	KUE 25 H
BPLE 30	44	58	28	12	6.5	13	KUE 30
						16	KUE 30 H
BPLE 35	54	68	31	12	6.5	16	KUE 35
						23	KUE 35 H

The lubrication nipple to DIN 71 412-A M8 ± 1 can be replaced by a screw plug M8 ± 1.

Note:
In series KUE..H. the lubrication nipple protrudes about 9 mm from the side of the carriage.

Bellows
FBALG KWE SERIES



For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

PART NUMBER	DIMENSIONS										SUITABLE FOR LINEAR RECIRCULATING BALL BEARING AND GUIDEWAY ASSEMBLY
	A	a_1 [1)]	a_2	H	H_1	h_1	h_2	h_3	A_{pF} [2)]	$l_{p\ min}$ [3)]	
FBALG KWE 20	63	42	21	30	5.5	23.5	12	23.5	13	2.5	KUE 20
	44	42	21	30	5.5	23.5	12	23.5	13	2.5	KUE 20 H
FBALG KWE 25	70	46.5	24	36	6.5	26	14	26	13	2.5	KUE 25
	48	46.5	24	40	6.5	26	14	26	13	2.5	KUE 25 H
FBALG KWE 30	90	58	29	42	7.5	28	13.5	29	15.5	2.5	KUE 30
	60	58	29	45	7.5	28	13.5	29	15.5	2.5	KUE 30 H
FBALG KWE 35	100	68	35	48	8	31	15.5	32	19	2.5	KUE 35
	70	68	35	55	8	31	15.5	32	19	2.5	KUE 35 H

1) Maximum width of bellows in end gauge.
2) Expansion per pleat.
3) Compression per pleat.

Linear Ball Bearing Units
KUVS SERIES
Guideways
TKVD SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

LINEAR RECIRCULATING BALL BEARING UNITS		GUIDEWAYS			DIMENSIONS						MOUNTING DIMENSIONS				
PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	H	A	C	h	a	L[3])	A_1	A_2	A_3	A_4	A_5
KUVS 32	0.025	TKVD 32	2.3	KA 8 TN	11	51.6	47	10	31.8	2,000	9.9	5.5	40.6	18	6.9
KUVS 42	0.085	TKVD 42	5.54	KA 8 TN	19	75	71	18	42	2,000	16.5	10	55	24	9
KUVS 42	0.085	TKVD 14	1.45	KA 8 TN	15	30	71	14	13.5	1,500	16.5	10	16.2	6	–
KUVS 69	0.2	TKVD 69	12.42	KA 11 TN	25	114	96	24	69	2,000	22.5	13	88	40	14.5
KUVS 69	0.2	TKVD 19	2.66	KA 11 TN	20	42	96	19	19.5	2,000	22.5	13	22.2	8	–

1) For two linear ball bearing units with TKVD 32, TKVD 42 and TKVD 69 and for one linear ball bearing unit with TKVD 14 and TKVD 19.

2) The usable load carrying capacity is influenced by the connections between the guidance elements and the adjacent construction.

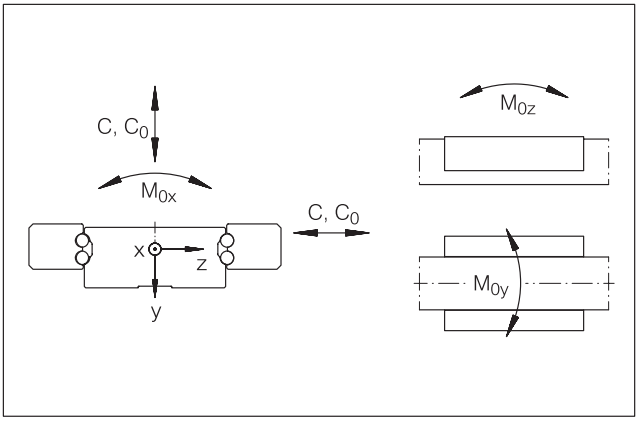
3) Maximum length L of a single piece guideway; longer guideways are supplied as multi-piece guideways and are marked accordingly.

4) Dimensions C_5 and C_6 are dependent on the length of the guideway;

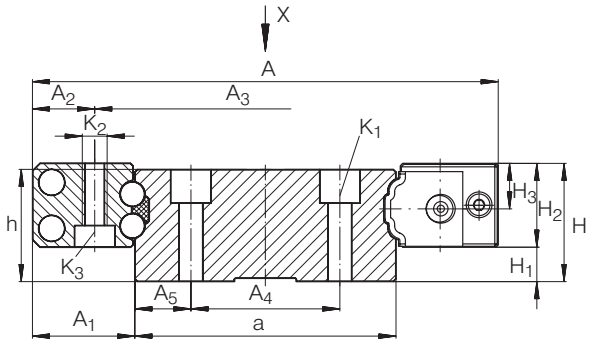
5) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[5])

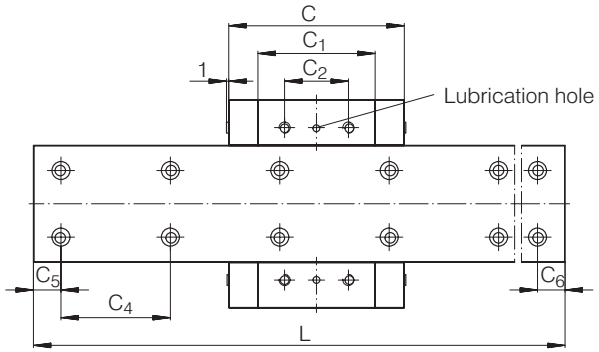
PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9		K_3 for screws to DIN 912-12.9	
		Nm max.		Nm max.		Nm max.
KUVS 32	M3	2.5	M3	1.5	–	–
KUVS 42	M3	2.5	M4	3	M3	2.5
KUVS 69	M5	10	M6	10	M5	10
KUVS 69	M5	10	M6	10	M5	10



Load directions

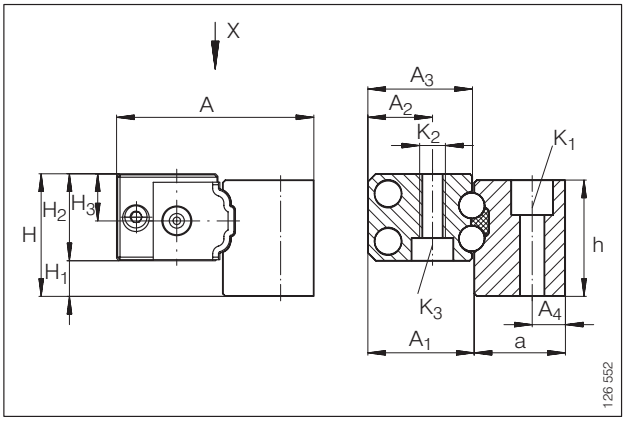


Two KUVS with TKVD 32, TKVD 42 and TKVD 69

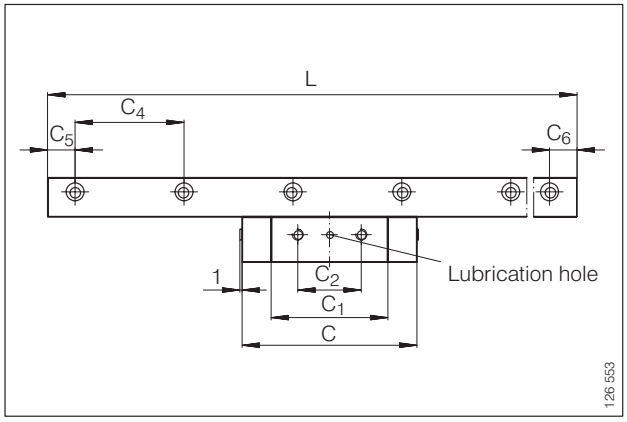


Plan view X (rotated through 90°)

											LOAD CARRYING CAPACITY[1)2)]				
											BASIC LOAD RATINGS		MOMENT RATINGS		
C_1	C_2	C_4	C_5[4)]		C_6[4)]		H_1	H_2	H_3		C	C_0	M_{0x}	M_{0y}	M_{0z}
			min.	max.	min.	max.					kN	kN	Nm	Nm	Nm
29.8	15	40	5	35	5	35	0.5	10.5	6		5.7	10.6	203	51	51
48.5	20	60	5	55	5	55	5.5	13.5	7.3		13.5	26	648	211	211
48.5	20	60	5	55	5	55	1.5	13.5	7.3		6.75	13	–	–	–
64	35	60	7	53	7	53	7.5	17.5	9.5		26	46.5	1,872	492	492
64	35	60	7	53	7	53	2.5	17.5	9.5		13	23.25	–	–	–



KUVS with TKVD 14. TKVD 19 (end view and cross section)



Plan view X (rotated through 90°)

Carriages
KWVK..AL SERIES
Guideways
TKVD SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

CARRIAGES		GUIDEWAYS			DIMENSIONS						MOUNTING DIMENSIONS							
PART NUMBER	MASS kg	PART NUMBER	MASS kg/m	CLOSING PLUGS	H	A	C	h	a	L[2]	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8
KWVK 32 AL	0.17	TKVD 32	2.3	KA 8 TN	26	62	50	10	31.8	2,000	15.1	10.7	40.6	18	6.9	51.6	–	–
KWVK 42 AL	0.45	TKVD 42	5.54	KA 8 TN	35	87	75	18	42	2,000	22.5	16	55	24	9	75	31	25
KWVK 69 AL	1.1	TKVD 69	12.42	KA 11 TN	47	130	100	24	69	2,000	30.5	21	88	40	14.5	114	42.5	45

1) The usable load carrying capacity is influenced by the connections between the guidance elements and the adjacent construction.

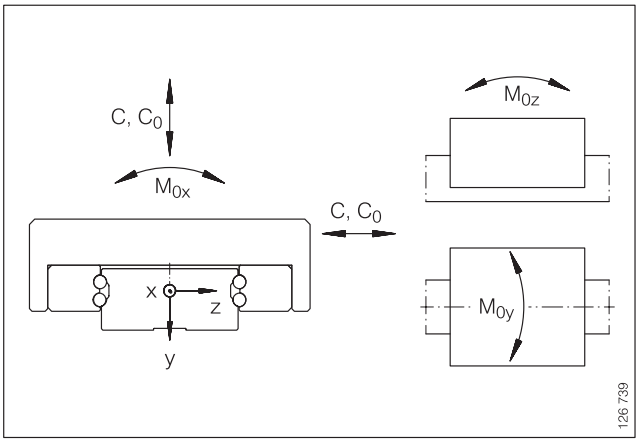
2) Maximum length L of a single piece guideway; longer guideways are supplied as multi-piece guideways and are marked accordingly.

3) Dimensions C_5 and C_6 are dependent on the length of the guideway.

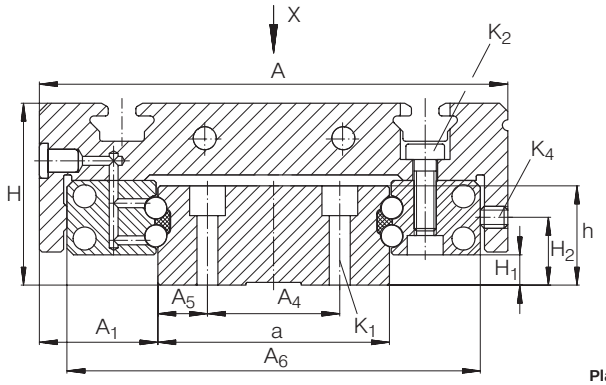
4) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[4])

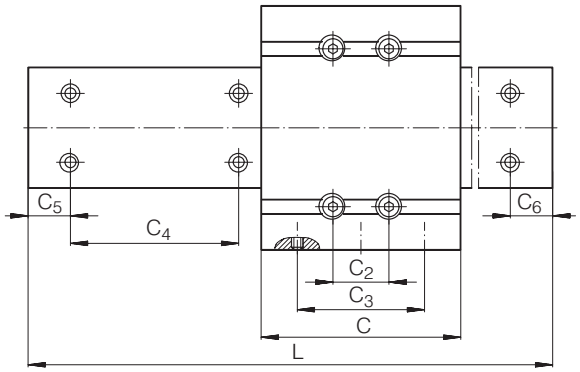
PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 7 984-8.8		K_4 for screws to DIN 913
		Nm max.		Nm max.	
KWVK 32 AL	M3	2.5	M3	0.6	M3
KWVK 42 AL	M3	2.5	M4	2.1	M4
KWVK 69 AL	M5	10	M6	4.8	M6



Load directions

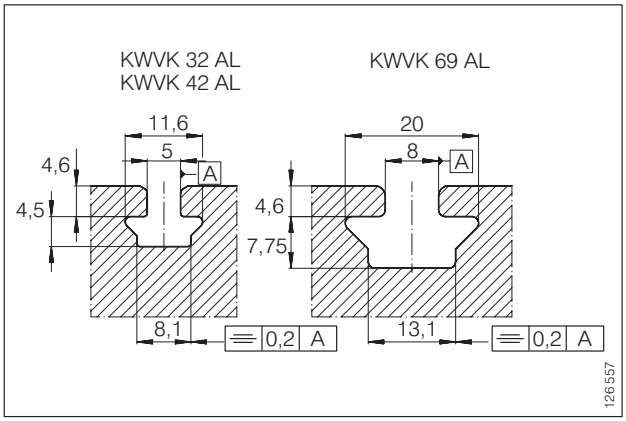


KWVK..AL on TKVD



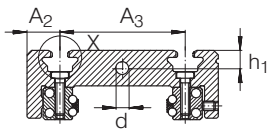
Plan view X
(rotated through 90°)

											LOAD CARRYING CAPACITY[1]				
											BASIC LOAD RATINGS		MOMENT RATINGS		
C_2	C_3	C_4	C_5[3]		C_6[3]		d	H_1	H_2	h_1	C	C_0	M_{0x}	M_{0y}	M_{0z}
			min.	max.	min.	max.					kN	kN	kN	kN	kN
15	25	40	5	35	5	35	4.2	0.5	6	7.5	5.7	10.6	203	51	51
20	40	60	5	55	5	55	4.2	5.5	12	8	13.5	26	648	211	211
35	55	60	7	53	7	53	4.2	7.5	17	11	26	46.5	1872	412	492

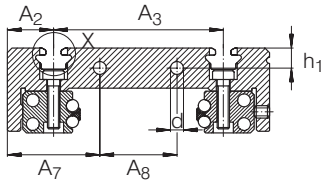


Detail X

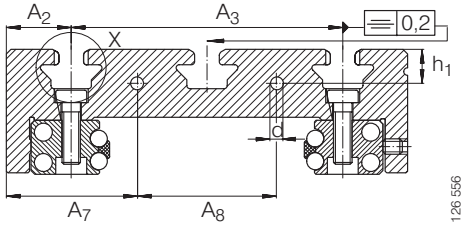
KWVK 32 AL



KWVK 42 AL



KWVK 69 AL



Cross-section of carriages KWVK..AL

Miniature Linear Recirculating Ball Bearing And Guideway Assemblies
KUME SERIES

For details on part numbers, descriptive suffixes and various technical references, please refer to front of this section.

DIMENSION TABLE · Dimensions in mm

UNIT	CARRIAGE		GUIDEWAY		CLOSING PLUG	DIMENSIONS				MOUNTING DIMENSIONS			
PART NUMBER	PART NUMBER	MASS kg	PART NUMBER	MASS kg/m		L[1]	H	A	C	A_1	A_2	a $^{-0.005}_{-0.05}$	a_3
KUME 9	KWME 9	0.016	TKMD 9	0.31	–	280	10	20	29.15	5.5	15	9	2.5
KUME 12	KWME 12	0.036	TKMD 12	0.56	–	470	13	27	34.3	7.5	20	12	3.5
KUME 15	KWME 15	0.06	TKMD 15	1.1	KA 8 TN	1200	16	32	42	8.5	25	15	3.5

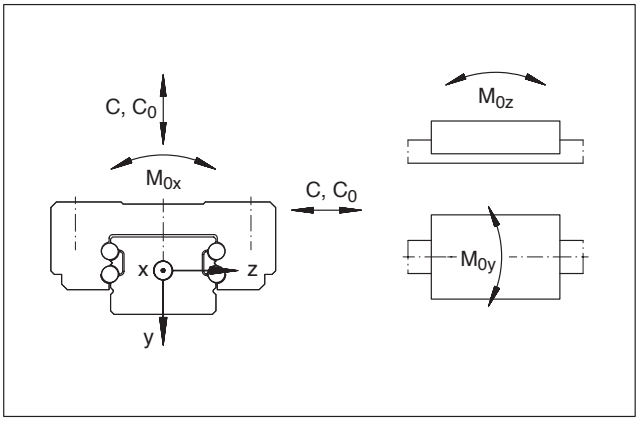
[1]) Maximum length L of single piece guideway;
longer guideways are supplied as multi-piece guideways and are marked accordingly.

[2]) Dimensions C_5 and C_6 are dependent on the guideway length.

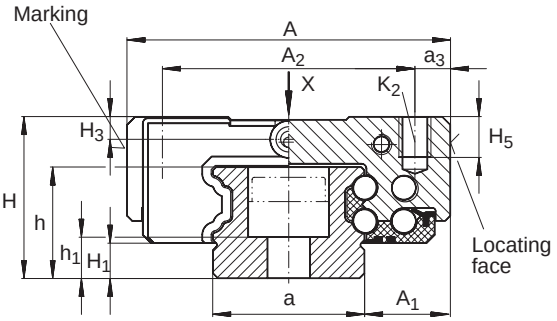
[3]) If there is a possibility of settling, the fixing screws should be secured against rotation.

DIAMETERS AND TIGHTENING TORQUES FOR THREADS AND SCREWS[3])

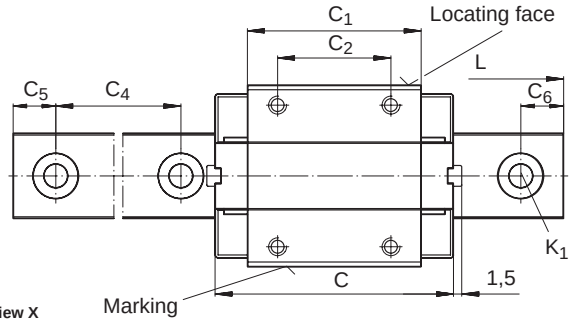
PART NUMBER	K_1 for screws to DIN 912-12.9		K_2 for screws to DIN 912-12.9	
		Nm max.		Nm max.
KUME 9	M2	1	M2	0.5
KUME 12	M3	2.5	M3	1.5
KUME 15	M3	2.5	M3	1.5



Load directions

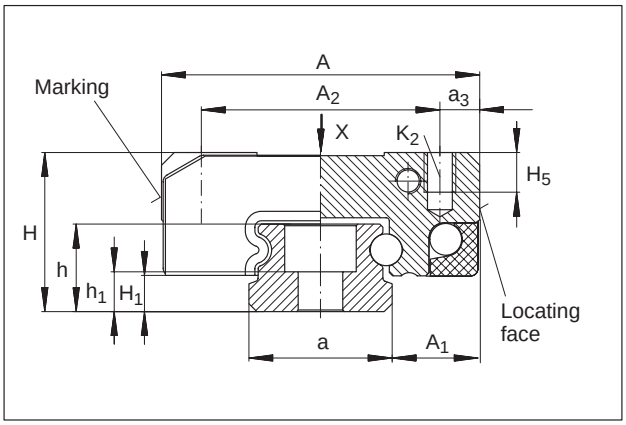


KUME 15

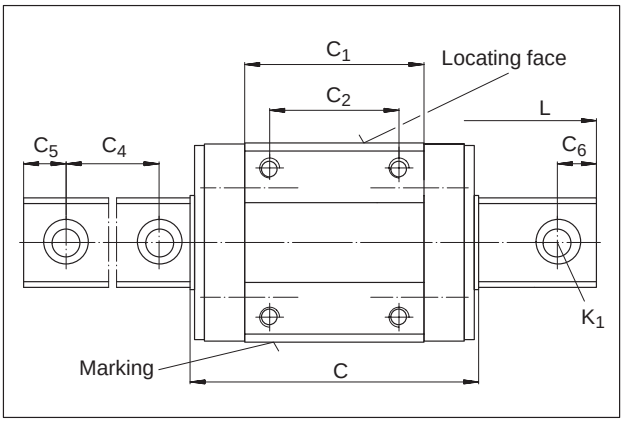


KUME 15, plan view X (rotated through 90°)

											LOAD CARRYING CAPACITY				
											BASIC LOAD RATINGS		MOMENT RATINGS		
C_1	C_2	C_4	C_5 [2]		C_6 [2]		H_1	H_5	h	h_1	C	C_0	M_{0x}	M_{0y}	M_{0z}
			min.	max.	min.	max.					N	N	Nm	Nm	Nm
18.35	13	20	5	15	5	15	2.25	2.5	5.5	2.5	1,340	2,060	8.8	5.8	5.8
22	15	25	5	20	5	20	3.05	3.5	7.5	3	2,150	3,200	20.8	11.3	11.3
30.6	20	40	6	34	6	34	3.5	4.0	11	4.1	3,750	6,800	65	33	33



KUME 9, KUME 12



KUME 9, KUME 12, plan view X (rotated through 90°)