

# Six-row linear recirculating ball bearing and guideway assemblies

Standard and L carriages



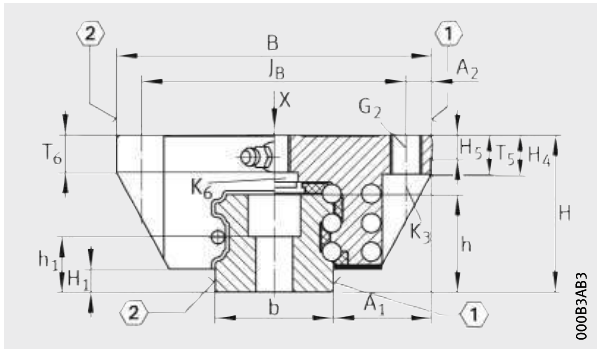
**Dimension table** · Dimensions in mm

Designation	Dimensions				Mounting dimensions									
	$l_{\max}^{2)}$	H	B	$L^{3)}$	$A_1$	$J_B$	b	$A_2$	$L_1$	$J_L$	$J_{LZ}$	$j_L$	$a_L, a_R^{4)}$	
							$_{-0,005}^{-0,03}$						min.	max.
<b>KUSE20</b>	3 900	30	63	71,4	21,5	53	20	5	52,4	40	35	60	20	53
<b>KUSE20-L</b>				91,9										
<b>KUSE25</b>	5 880	36	70	81,8	23,5	57	23	6,5	60,9	45	40	60	20	53
<b>KUSE25-L</b>				104,3										
<b>KUSE30</b>	5 860	42	90	91,6	31	72	28	9	67,6	52	44	80	20	71
<b>KUSE30-L</b>				119,3										
<b>KUSE35</b>	5 860	48	100	107,2	33	82	34	9	78,3	62	52	80	20	71
<b>KUSE35-L</b>				138,9										
<b>KUSE45</b>	5 835	60	120	138,7	37,5	100	45	10	103,1	80	60	105	20	94
<b>KUSE45-L</b>				174,3										

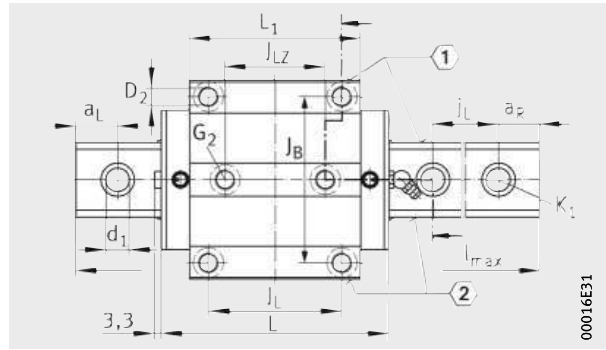
For further table values, see page 232 and page 233.

① Locating face. ② Marking.

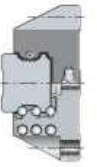
- 1) The stated torques represent maximum values for the secure transmission of forces in vibration-free, quasistatic applications ( $S_0 = 1$ ). We recommend that the tightening torques for the screw connection of the adjacent construction should be determined at the customer under the conditions specific to the application and operation, observing the information in VDI Guideline 2230 Part 1 (2015) and the information in this description, see page 69 and page 26.
- 2) Maximum length of single-piece guideways.  
Permissible number of guideway segments, see page 227.
- 3) Minimum covered length for sealing the upper lubrication connectors  $N_2$ .
- 4)  $a_L$  and  $a_R$  are dependent on the guideway length.
- 5) For location from above:  
the maximum screw depth for two central threaded holes is  $T_6 + 3$  mm.



KUSE, KUSE...-L



KUSE, KUSE...-L  
View X rotated 90°

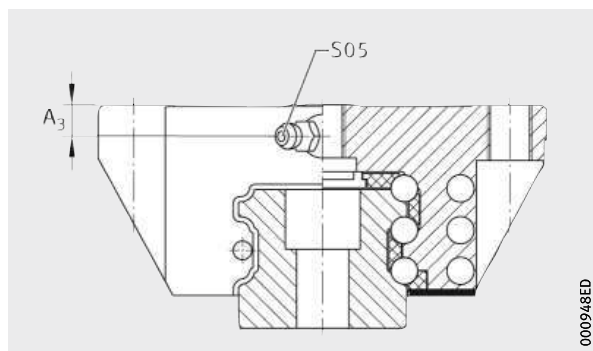


							Fixing screws <sup>1)</sup>									
H <sub>1</sub>	H <sub>5</sub>	H <sub>4</sub>	T <sub>5</sub>	T <sub>6</sub> <sup>5)</sup>	h	h <sub>1</sub>	DIN ISO 4762-12.9			DIN 7984-8.8				d <sub>1</sub>	D <sub>2</sub>	
							G <sub>2</sub>	K <sub>1</sub>		K <sub>3</sub>		K <sub>6</sub>				
							M <sub>A</sub> Nm	M <sub>A</sub> Nm	M <sub>A</sub> Nm	M <sub>A</sub> Nm	M <sub>A</sub> Nm	M <sub>A</sub> Nm				
4,6	5	10,6	10	7,2	18	9,8	M6	10	M5	10	M5	10	M5	5,8	5,8	5,5
5,2	5	9,8	10	9,5	21,7	12,4	M8	24	M6	17	M6	17	M6	10	6,8	6,7
5,4	6	13,2	12	10	25	13,5	M10	41	M8	41	M8	41	M8	24	9	8,6
6,6	6,5	13,3	13	12	29,7	18,2	M10	41	M8	41	M8	41	M8	24	9	8,6
8,6	9	17,7	15	15	37,2	21,7	M12	83	M12	140	M10	83	M10	48	13,4	10,6

# Six-row linear recirculating ball bearing and guideway assemblies

Standard and L carriages

**X-life**



Lubrication connector on end face

**Dimension table** (continued) · Dimensions in mm

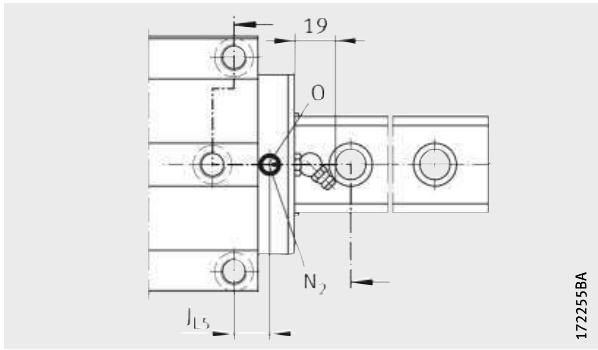
Designation	Carriage		Guideway		Lubrication connectors			
	Designation	Mass m ≈ kg	Designation	Mass m ≈ kg/m	N <sub>2</sub> <sup>2)</sup> max.	J <sub>L5</sub> <sup>3)</sup>	A <sub>3</sub> <sup>4)</sup>	O DIN 3771
<b>KUSE20</b>	KWSE20	0,43	TKSD20	2,3	3	9,95	5,8	3×1,5
<b>KUSE20-L</b>	KWSE20-L	0,6				20,19		
<b>KUSE25</b>	KWSE25	0,6	TKSD25	3,1	3	12,94	6	3×1,5
<b>KUSE25-L</b>	KWSE25-L	0,82				24,19		
<b>KUSE30</b>	KWSE30	1,2	TKSD30	4,4	4,5	12,80	6,5	4,5×1,5
<b>KUSE30-L</b>	KWSE30-L	1,6				26,65		
<b>KUSE35</b>	KWSE35	1,5	TKSD35	6,5	4,5	11,93	7,2	4,5×1,5
<b>KUSE35-L</b>	KWSE35-L	2,1				27,75		
<b>KUSE45</b>	KWSE45	3,15	TKSD45	11,3	6	15,65	8,5	7×1,5
<b>KUSE45-L</b>	KWSE45-L	4,2				33,45		

1) The basic load rating can only be transmitted fully if the whole thread length is used and the adjacent construction is dimensioned appropriately.

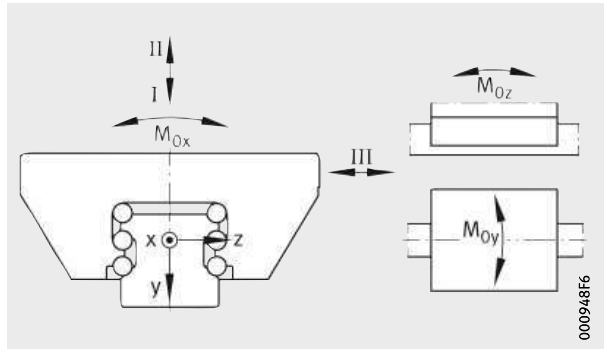
2) Maximum diameter of lubrication hole in adjacent construction.

3) Position of lubrication hole in adjacent construction.

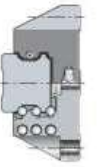
4) Maximum screw depth in end piece 7 mm.



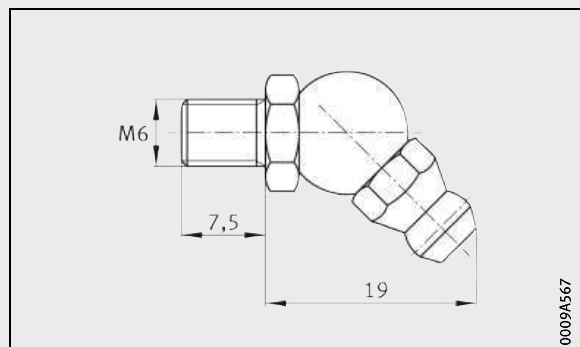
Lubrication connector on top face



Load directions



Basic load ratings <sup>1)</sup>						Moment ratings		
Load direction I Compressive load		Load direction II Tensile load		Load direction III Lateral load		$M_{0x}$ Nm	$M_{0y}$ Nm	$M_{0z}$ Nm
dyn. C N	stat. $C_0$ N	dyn. C N	stat. $C_0$ N	dyn. C N	stat. $C_0$ N			
25 500	61 000	21 300	35 300	21 000	35 000	530	350	305
35 000	83 000	25 000	47 000	26 000	48 000	730	640	570
38 000	81 000	26 000	45 000	28 000	47 000	840	510	450
47 000	112 000	33 000	62 000	35 000	65 000	1 160	930	830
54 000	108 000	37 800	60 000	40 000	62 000	1 350	800	710
68 000	152 000	48 000	85 000	50 000	88 000	1 920	1 540	1 360
76 100	150 000	53 300	82 400	56 600	89 150	2 300	1 300	1 140
96 000	214 000	67 500	119 000	71 000	125 000	3 300	2 480	2 190
103 000	212 000	72 300	117 400	76 900	121 800	4 500	2 280	2 050
128 000	291 500	89 000	159 000	93 400	168 000	6 200	4 050	3 650



Lubrication connector S05

# Six-row linear recirculating ball bearing and guideway assemblies

H and HL carriages

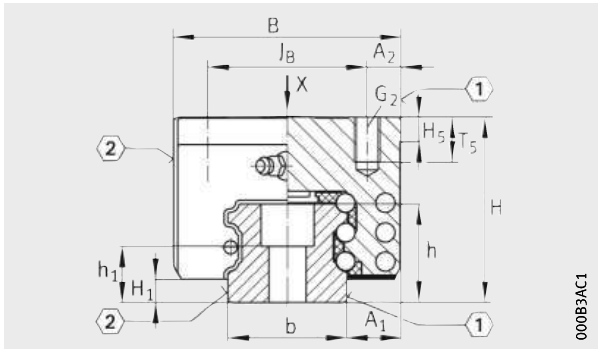


Dimension table · Dimensions in mm												
Designation	Dimensions				Mounting dimensions							
	$l_{\max}^{2)}$	H	B	$L^{3)}$	$A_1$	$J_B$	b -0,005 -0,03	$A_2$	$L_1$	$J_L$	$j_L$	
<b>KUSE20-H</b>	3 900	30	44	71,4	12	32	20	6	52,4	36	60	
<b>KUSE20-HL</b>				91,9						50		
<b>KUSE25-H</b>	5 880	40	48	81,8	12,5	35	23	6,5	60,9	35	60	
<b>KUSE25-HL</b>				104,3					50			
<b>KUSE30-H</b>	5 860	45	60	91,6	16	40	28	10	67,6	40	80	
<b>KUSE30-HL</b>				119,3					60			

For further table values, see page 236 and page 237.

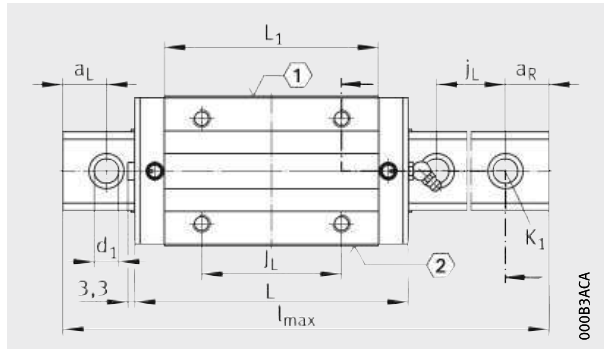
① Locating face. ② Marking.

- 1) The stated torques represent maximum values for the secure transmission of forces in vibration-free, quasistatic applications ( $S_0 = 1$ ). We recommend that the tightening torques for the screw connection of the adjacent construction should be determined at the customer under the conditions specific to the application and operation, observing the information in VDI Guideline 2230 Part 1 (2015) and the information in this description, see page 69 and page 26.
- 2) Maximum length of single-piece guideways.  
Permissible number of guideway segments, see page 219.
- 3) Minimum covered length for sealing the upper lubrication connectors  $N_2$ .
- 4)  $a_L$  and  $a_R$  are dependent on the guideway length.



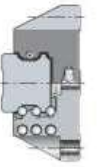
KUSE...-H, KUSE...-HL

000B3AC1



KUSE...-H, KUSE...-HL  
View X rotated 90°

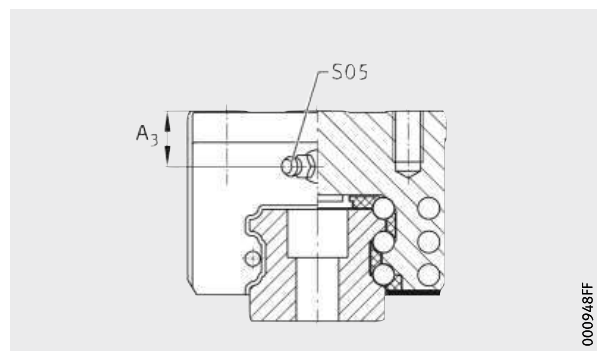
000B3ACA



							Fixing screws <sup>1)</sup>				
a <sub>L</sub> , a <sub>R</sub> <sup>4)</sup>		H <sub>1</sub>	H <sub>5</sub>	T <sub>5</sub>	h	h <sub>1</sub>	G <sub>2</sub>		K <sub>1</sub>		d <sub>1</sub>
							DIN ISO 4762-12.9				
min.	max.						Nm		Nm		
20	53	4,6	5	6	18	9,8	M5	10	M5	10	5,8
20	53	5,2	5	10	21,7	12,4	M6	17	M6	17	6,8
20	71	5,4	6	11	25	13,5	M8	41	M8	41	9

# Six-row linear recirculating ball bearing and guideway assemblies

H and HL carriages



Lubrication connector on end face

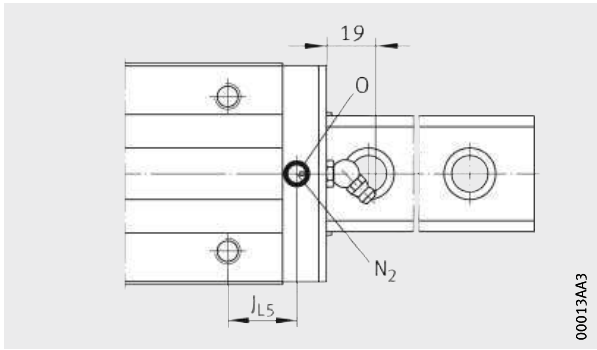
X-life

000948FF

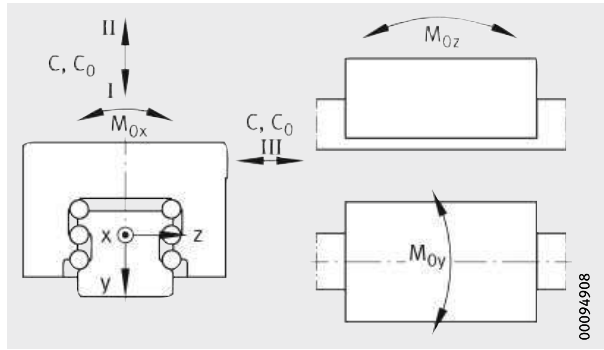
Dimension table (continued) · Dimensions in mm

Designation	Carriage		Guideway		Lubrication connectors			
	Designation	Mass m ≈ kg	Designation	Mass m ≈ kg/m	N <sub>2</sub> <sup>2)</sup> max.	J <sub>L5</sub> <sup>3)</sup>	A <sub>3</sub> <sup>4)</sup>	O DIN 3771
<b>KUSE20-H</b>	KWSE20-H	0,32	TKSD20	2,3	3	11,95	5,8	3×1,5
<b>KUSE20-HL</b>	KWSE20-HL	0,44				15,19		
<b>KUSE25-H</b>	KWSE25-H	0,5	TKSD25	3,1	3	17,94	10	3×1,5
<b>KUSE25-HL</b>	KWSE25-HL	0,7				21,69		
<b>KUSE30-H</b>	KWSE30-H	0,9	TKSD30	4,4	4,5	18,80	9,5	4,5×1,5
<b>KUSE30-HL</b>	KWSE30-HL	1,2				22,65		

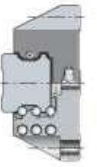
- 1) The basic load rating can only be transmitted fully if the whole thread length is used and the adjacent construction is dimensioned appropriately.
- 2) Maximum diameter of lubrication hole in adjacent construction.
- 3) Position of lubrication hole in adjacent construction.
- 4) Maximum screw depth in end piece 7 mm.



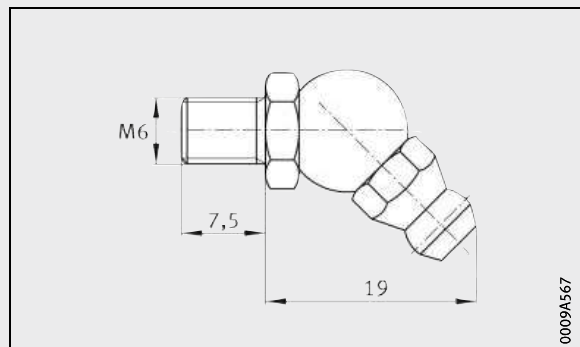
Lubrication connector on top face



Load directions



Basic load ratings <sup>1)</sup>						Moment ratings		
Load direction I Compressive load		Load direction II Tensile load		Load direction III Lateral load		M <sub>0x</sub> Nm	M <sub>0y</sub> Nm	M <sub>0z</sub> Nm
dyn. C N	stat. C <sub>0</sub> N	dyn. C N	stat. C <sub>0</sub> N	dyn. C N	stat. C <sub>0</sub> N			
25 500	61 000	21 300	35 300	21 000	35 000	530	350	305
35 000	83 000	25 000	47 000	26 000	48 000	730	640	570
38 000	81 000	26 000	45 000	28 000	47 000	840	510	450
47 000	112 000	33 000	62 000	35 000	65 000	1 160	930	830
54 000	108 000	37 800	60 000	40 000	62 000	1 350	800	710
68 000	152 000	48 000	85 000	50 000	88 000	1 920	1 540	1 360

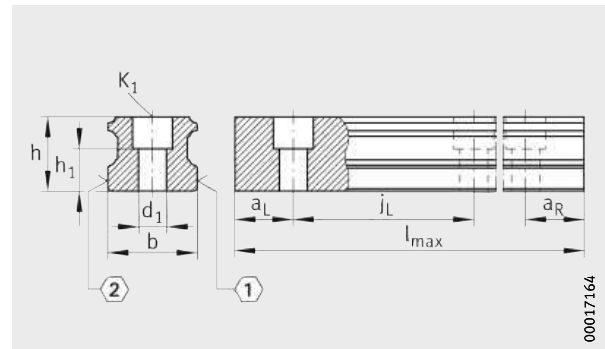


Lubrication connector S05



# Six-row linear recirculating ball bearing and guideway assemblies

Guideways and closing methods



TKSD

**Dimension table** · Dimensions in mm

Designation	For linear guidance system	Mass m ≈ kg/m	Closing plug <sup>1)</sup>		Covering strip <sup>2)</sup>		
			Plastic <sup>4)</sup> one-piece	Brass one-piece	Adhesive bonded	Clip fit	Retaining plate
<b>TKSD20</b>	KUSE20	2,3	KA10-TN	KA10-M	–	–	–
<b>TKSD20-U</b>			–	–	–	–	–
<b>TKSD20-ADB</b>			–	–	ADB13	–	–
<b>TKSD20-ADK</b>			–	–	–	ADK12	HPL.ADB9-B
<b>TKSD25</b>	KUSE25	3,1	KA11-TN	KA11-M	–	–	–
<b>TKSD25-U</b>			–	–	–	–	–
<b>TKSD25-ADB</b>			–	–	ADB13	–	–
<b>TKSD25-ADK</b>			–	–	–	ADK12	HPL.ADB9-B
<b>TKSD30</b>	KUSE30	4,4	KA15-TN	KA15-M	–	–	–
<b>TKSD30-ADB</b>			–	–	ADB18	–	–
<b>TKSD30-ADK</b>			–	–	–	ADK16	HPL.ADB17-B
<b>TKSD35</b>	KUSE35	6,5	KA15-TN	KA15-M	–	–	–
<b>TKSD35-ADB</b>			–	–	ADB18	–	–
<b>TKSD35-ADK</b>			–	–	–	ADK16	HPL.ADB17-B
<b>TKSD45</b>	KUSE45	11,3	KA20-TN	KA20-M	–	–	–
<b>TKSD45-ADB</b>			–	–	ADB23	–	–
<b>TKSD45-ADK</b>			–	–	–	ADK21	HPL.ADB17-B

① Locating face. ② Marking.

<sup>1)</sup> Closing plugs, see page 261.

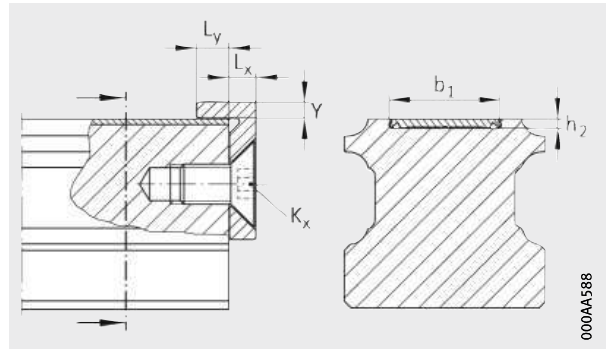
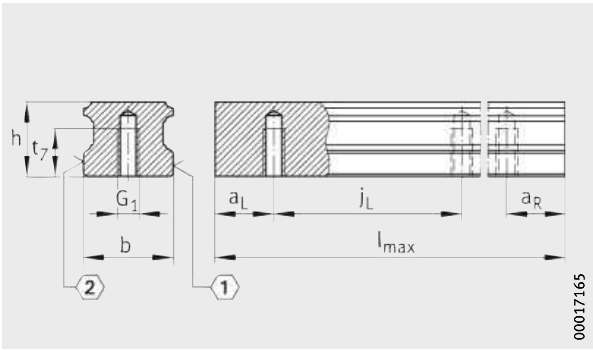
<sup>2)</sup> Covering strips, see page 262.

<sup>3)</sup> The stated torques represent maximum values for the secure transmission of forces in vibration-free, quasistatic applications ( $S_0 = 1$ ). We recommend that the tightening torques for the screw connection of the adjacent construction should be determined at the customer under the conditions specific to the application and operation, observing the information in VDI Guideline 2230 Part 1 (2015) and the information in this description, see page 69 and page 26.

<sup>4)</sup> Standard.

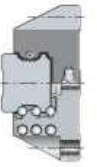
<sup>5)</sup> Maximum length of single-piece guideways.  
Permissible number of guideway segments, see page 227.

<sup>6)</sup>  $a_L$  and  $a_R$  are dependent on the guideway length.

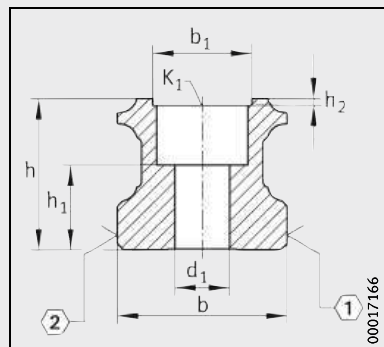


TKSD..-U

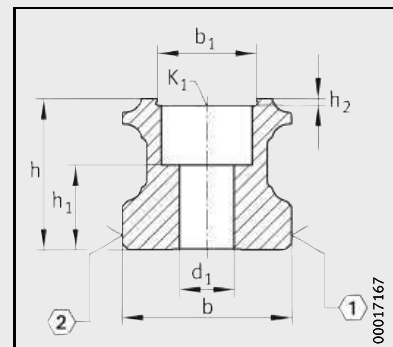
Retaining plate and covering strip



Dimensions													Fixing screws <sup>3)</sup>					
K <sub>x</sub>	L <sub>x</sub>	L <sub>y</sub>	Y	l <sub>max</sub> <sup>5)</sup>	h	b	a <sub>L</sub> , a <sub>R</sub> <sup>6)</sup>		j <sub>L</sub>	h <sub>1</sub>	h <sub>2</sub>	t <sub>7</sub>	b <sub>1</sub>	G <sub>1</sub>		K <sub>1</sub>		d <sub>1</sub>
							min.	max.						DIN ISO 4762-12.9		M <sub>A</sub>	M <sub>A</sub>	
						-0,005 -0,035									Nm	Nm		
-	-	-	-	3900	18	20	20	53	60	9,8	-	-	-	-	M5	10	5,8	
															10	-	M6	17
M5	4	5	2							0,5	-	13	-	M5	10	5,8		
										1,1	-	12,6	-	-	-	-		
-	-	-	-	5880	21,7	23	20	53	60	12,4	-	-	-	-	M6	17	6,8	
															12	-	M6	17
M5	4	5	2							0,5	-	13	-	M6	17	6,8		
										1,1	-	12,6	-	-	-	-		
-	-	-	-	5860	25	28	20	71	80	13,5	-	-	-	-	M8	41	9	
															0,5	-	18	-
M6	4	5	2,5							1,1	-	16,6	-	-	-	-		
-	-	-	-	5860	29,7	34	20	71	80	18,2	-	-	-	-	M8	41	9	
															0,5	-	18	-
M6	4	5	2,5							1,1	-	16,6	-	-	-	-		
-	-	-	-	5835	37,2	45	20	94	105	21,7	-	-	-	-	M12	140	13,4	
															0,5	-	23	-
M6	4	5	2,5							1,1	-	21,7	-	-	-	-		



TKSD..-ADB



TKSD..-ADK