



BROCHURE

LINEAR COMPONENTS

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SCAN FOR
VCARD



SINCE 1940

Technical supplier



THN is a specialist in technical products, we have divided these products into five product groups: piston rings, Fey laminar rings, plain bearings, sintered filters en linear components.

We can deliver these millions of products superfast thanks to a smart stock, far-reaching IT automation and efficient logistics.



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PRECISION SHAFTS

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Shaft cross-section

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Linear ball bearings

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Linear machining centre

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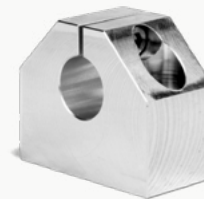
Linear housing units

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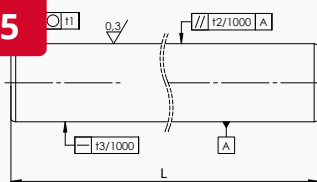
Article code & materials

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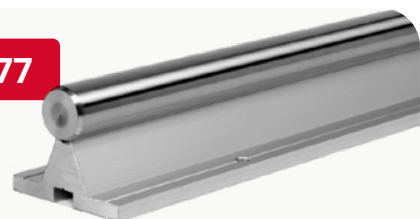
Shaft support blocks

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Shaft program

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Shaft support rails

The complete product line

FIVE PRODUCT GROUPS

Besides linear components, THN also has an extensive range of piston rings, Fey laminar rings, plain bearings and sintered filters.



Piston rings



Fey laminar rings



Plain bearings



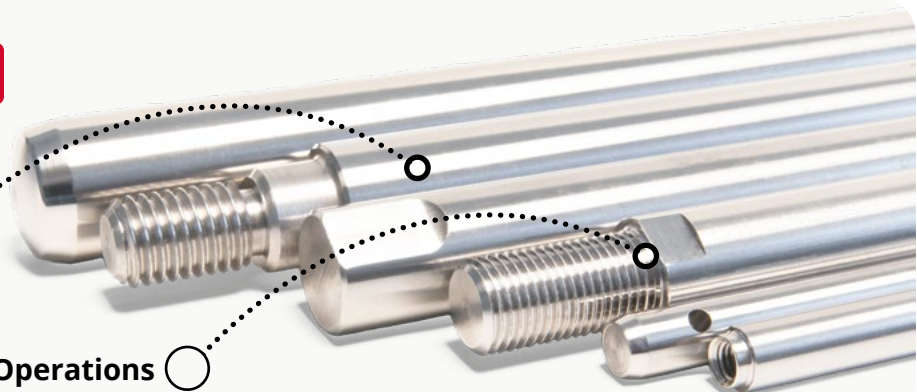
Sintered filters



FEATURED

Precision
shafts

Operations



Precision shafts

STEEL INDUCTION PRECISION SHAFTS

Hardened ground shafts are steel shafts whose outer layer has been induction hardened. They are mainly known for their linear application, and also often called linear shafts or precision shafts.

These shafts are machine parts which are characterized by a high material quality, surface hardness and surface quality. In addition, they have a high precision on dimensions and shapes.

Because of the hardened surface, the shafts are very durable and have an improved resistance against material fatigue, in particular when being alternately bend. The shafts are available in an number of material and can optionally have a hard chrome coating.



APPLICATIONS

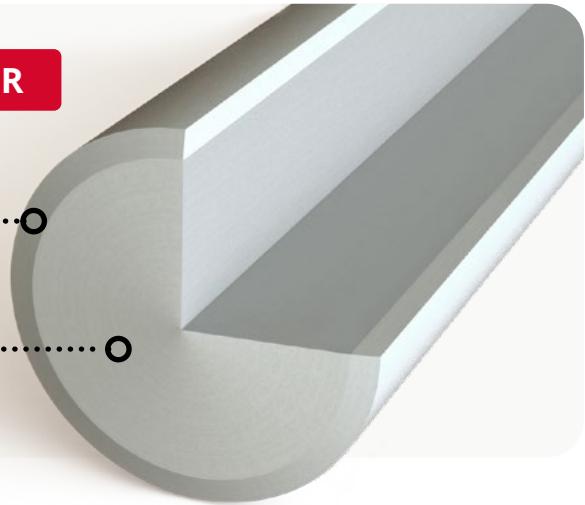
- Linear shafts in combination with linear ball bearings and rollers
- Guide shafts in combination with plain bearings
- Stretch and guide rollers
- Hinge pins
- Shafts and pins for general mechanical applications

Shaft cross-section

TS SHAFT WITH HARDENED LAYER

Induction hardened layer

'Soft' core

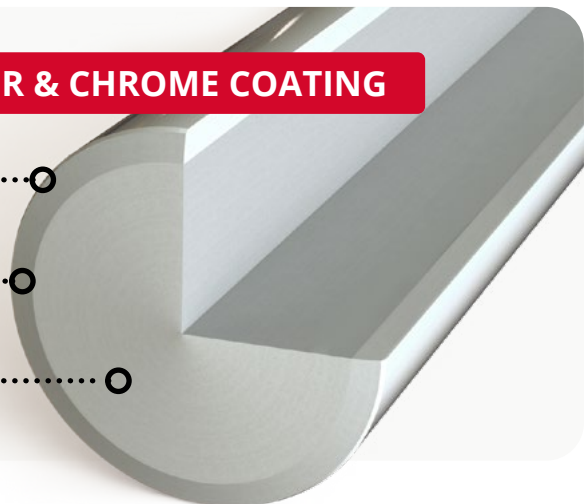


TS SHAFT WITH HARDENED LAYER & CHROME COATING

Chrome layer

Induction hardened layer

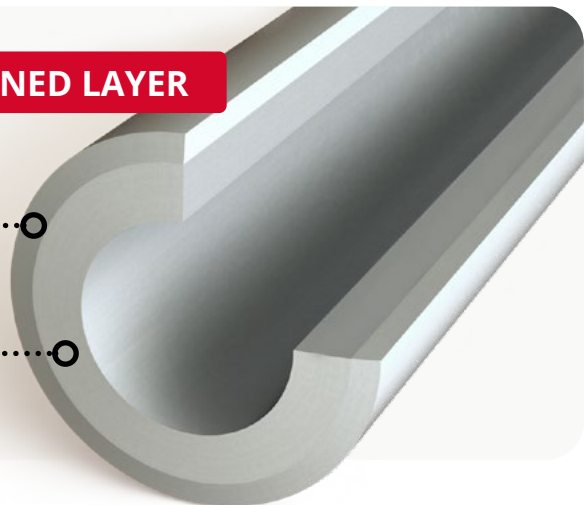
'Soft' core



TT HOLLOW SHAFT WITH HARDENED LAYER

Induction hardened layer

'Soft' core



Shaft properties

CORROSION RESISTANT STEELS

Precision shafts made from X46 or X90 are available for application in e.g. the medical or food industries.

HARD CHROME COATING

Hard chromed precision shafts are very suitable when high wear resistance and corrosion resistance are required.

SPECIAL COATINGS

Other coatings such as Zn-Fe or special chrome coatings are available on demand.

SHAFTS PROPERTIES

Steel type	Surface hardness	Tension strength	Surface roughness
	HRC	N/mm ²	Ra max.
CF53	min. 59	≥ 610	0,30
C60	min. 59	≥ 650	0,30
X46Cr13	min. 52	≥ 650	0,30
X90CrMoV18	min. 54	≥ 750	0,30

* Other materials are available on request.

** Optionally, these precision shafts are also available with a hard chrome layer.

Chrome layer

CHROME LAYER PROPERTIES

Chrome layer thickness	8-15µm
Chrome layer hardness	min. 800HV0.1
Number of layers	1
Corrosion resistance	Good, can be improved with polishing
Free of Cr (VI)	Yes

* Because the chrome layer does not contain Cr (VI), this coating is suitable for use in the food industry, medical technology etc.

** Other coatings such as Zinc-iron galvanization (ZnFe) or special / different chrome coatings are available on request.

CHROME LAYER BENEFITS

The hardened steel precision shafts in quality CF53 are also available with a chrome layer. These shafts are therefore induction hardened and have a hard chrome layer.

Shafts with a chrome layer have the following advantages:

- High wear resistance and low friction coefficient
- Little stick effect due to the low adhesion value
- Good stainless properties on the outside diameter

Linear machining centre

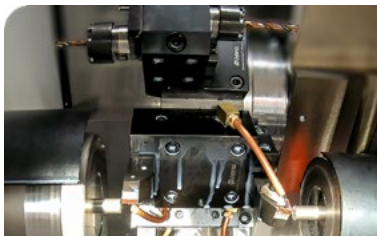
COMMON OPERATIONS

In our machining centre, which consists of several modern CNC lathe and milling machines, we can perform practically all machining operations.

Common machining operations are axial and radial holes, which are often threaded.

COMPLEX MACHINING

In addition to standard operations such as chamfers and holes, many other operations such as holes, flat edges and keyways are also possible. We are happy to advise on the required operations and then also produce the drawings for you.

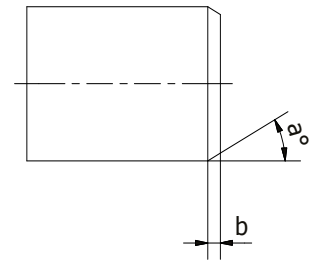


Mechanical operations

LENGTH AND MANUAL CHAMFER

By default, all shafts are cut to length and deburred manually.

Should the length tolerance be more accurate or should the shaft be further machined? Then please contact our technical team, they will gladly assist you.



STANDARD LENGTH TOLERANCES

Length of shafts L_a	Length tolerance
$L_a \leq 400$	$\pm 0,5$
$400 < L_a \leq 1000$	$\pm 0,8$
$1000 < L_a \leq 2000$	$\pm 1,2$
$2000 < L_a \leq 4000$	$\pm 2,0$
$4000 < L_a \leq 6000$	$\pm 3,0$

* Length tolerances according ISO 13012

** Deviating length tolerances possible on request.

Mechanical operations

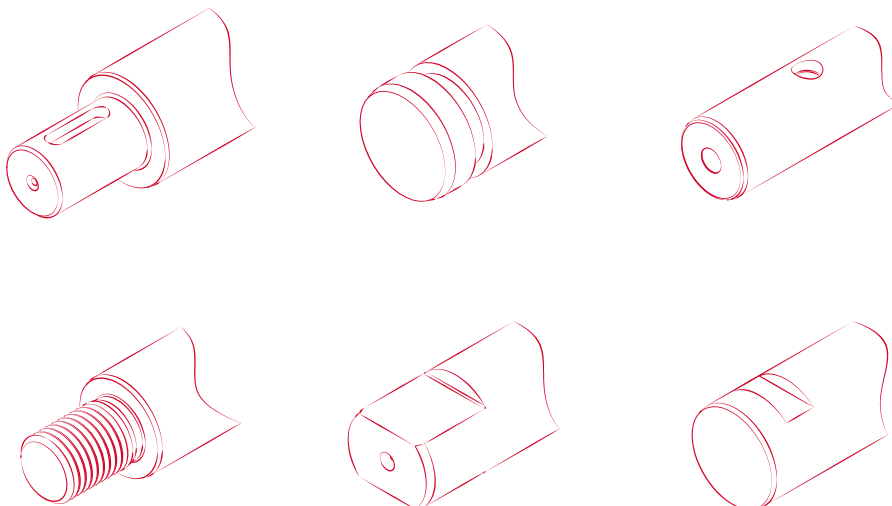
AXIAL AND RADIAL THREADED HOLES

Common operations are axial and / or radial tap holes. For axial threaded holes by default we make the thread length $2,5 \times D$.



OTHER OPERATIONS

In addition to standard operations such as chamfers and holes, many other operations such as holes, flat edges and keyways are also possible. Our linear specialists are happy to advise you on the required operations and then take care of the entire process, from drawing to production and delivery.



Shafts coding

COMPOSITION SHAFTS ARTICLE CODE

The composition of the article code for the type, material and size is as follows: [Type] [Diameter] [Tolerance] [Material] [Extra] X [Length]

Type	TS solid shafts TT Hollow shafts TD Radially pre-drilled shafts
Diameter	Nominal diameter in mm or inch
Tolerance	Diameter tolerance
Material	Material code
Extra	Addition for extra features such as a chrome layer
Length	Length of the shafts in mm

The code of a solid precision shaft in diameter 25mm with an h7 tolerance and a chrome layer in the material CF53 with a length of 1244mm is: TS 025.00 h7 CF53 CHROME X 1244.



Materialoverview

MATERIAL OVERVIEW

Steeltype		Chemical composition (%)									
Steel		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V
CF53	min.	0,50	0,15	0,40	-	-	-	-	-	-	-
W. nr. 1.1213	max.	0,57	0,35	0,70	0,025	0,035	-	-	-	-	-
C60	min.	0,57	-	0,60	-	-	-	-	-	-	-
W. nr. 1.0601	max.	0,65	0,40	0,90	0,045	0,045	0,40	0,10	0,10	-	-
Stainless steel											
X46Cr13	min.	0,42	-	-	-	-	12,5	-	-	-	-
W. nr. 1.4034	max.	0,50	1,00	1,00	0,045	0,030	14,5	-	-	-	-
X90CrMoV18	min.	0,85	-	-	-	-	17,0	0,90	-	-	0,07
W. nr. 1.4112	max.	0,95	1,00	1,00	0,040	0,020	19,0	1,30	-	-	0,12

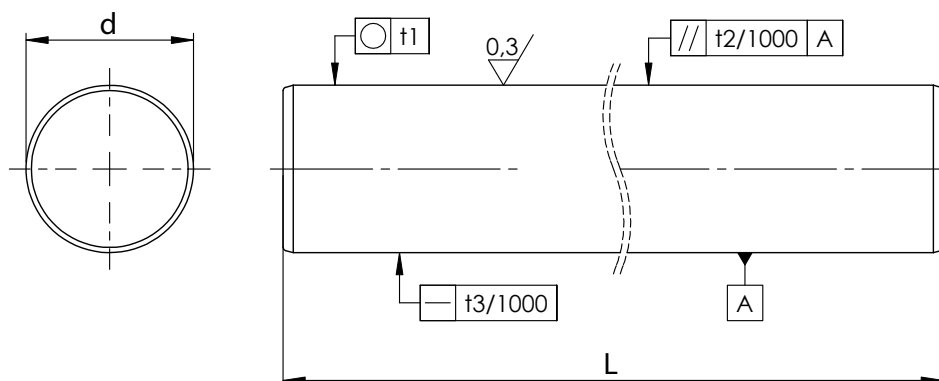
* CF53 is the standard material voor solid linear shafts. For hollow shafts C60 is used.

** X90CrMoV18 is an acid resistant stainless steel.

*** Other materials are available on request.

TS CF53

standard shafts sizes



TS CF53

Shaft diameter d mm	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance ISO h6 μm	Roundness $t1$ μm	Parallelism ²⁾ $t2$ μm	Straightness ³⁾ $t3$ mm	Weight kg/m
3	0,4	0 / -6	3	4	0,3	0,055
4	0,4	0 / -8	4	5	0,3	0,098
5	0,4	0 / -8	4	5	0,2	0,154
6	0,4	0 / -8	4	5	0,2	0,222
7	0,4	0 / -9	4	6	0,2	0,302
8	0,4	0 / -9	4	6	0,2	0,394
9	0,4	0 / -9	4	6	0,2	0,499
10	0,4	0 / -9	4	6	0,1	0,616

TS CF53

standard shafts sizes

TS CF53

Shaft diameter d mm	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance ISO h6 μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
12	0,6	0 / -11	5	8	0,1	0,888
13	0,6	0 / -11	5	8	0,1	1,041
14	0,6	0 / -11	5	8	0,1	1,208
15	0,6	0 / -11	5	8	0,1	1,387
16	0,6	0 / -11	5	8	0,1	1,578
18	0,6	0 / -11	5	8	0,1	1,997
20	0,9	0 / -13	6	9	0,1	2,466
22	0,9	0 / -13	6	9	0,1	2,980
24	0,9	0 / -13	6	9	0,1	3,551
25	0,9	0 / -13	6	9	0,1	3,853
28	0,9	0 / -13	6	9	0,1	4,833
30	0,9	0 / -13	6	9	0,1	5,549
32	1,5	0 / -16	7	11	0,1	6,313
35	1,5	0 / -16	7	11	0,1	7,552

TS CF53

standard shafts sizes

TS CF53

Shafts diameter d mm	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance ISO h6 µm	Roundness t1 µm	Parallelism ²⁾ t2 µm	Straightness ³⁾ t3 mm	Weight kg/m
40	1,5	0 / -16	7	11	0,1	9,864
45	1,5	0 / -16	7	11	0,1	12,520
50	1,5	0 / -16	7	11	0,1	15,413
55	2,2	0 / -19	8	13	0,1	18,640
60	2,2	0 / -19	8	13	0,1	22,195
70	2,2	0 / -19	8	13	0,1	30,210
80	2,2	0 / -19	8	13	0,1	39,458
90	2,2	0 / -22	10	15	0,2	49,920
100	2,2	0 / -22	10	15	0,2	61,620
120	2,6	0 / -22	10	15	0,2	88,740

* Material: CF53 / 1.1213

** Deviating tolerances, hardening depths and diameters are available on request

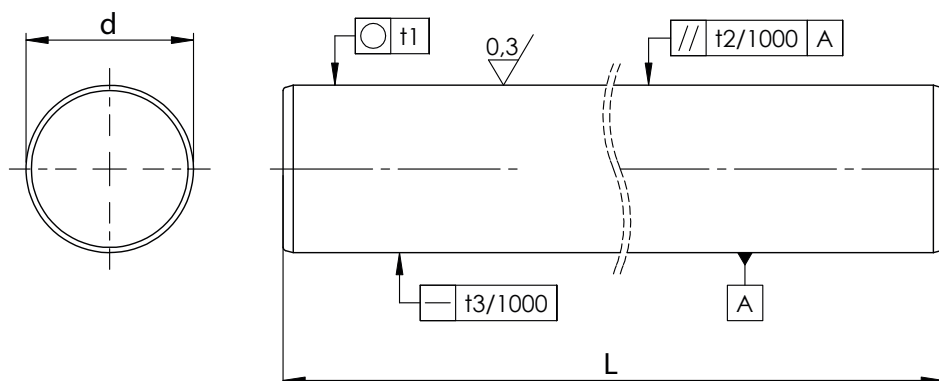
¹⁾ Surface hardening depth according DIN ISO 13012

²⁾ Diameter differential measurement

³⁾ Measurement according DIN ISO 13012

TS RVS X46

standard shafts sizes



TS RVS X46

Shaft diameter d mm	Hardening- depth ¹⁾ (min.) mm	Standard Tolerance ISO h6 μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
5	0,4	0 / -8	4	5	0,2	0,154
6	0,4	0 / -8	4	5	0,2	0,222
8	0,4	0 / -9	4	6	0,2	0,394
10	0,4	0 / -9	4	6	0,1	0,616
12	0,6	0 / -11	5	8	0,1	0,888
14	0,6	0 / -11	5	8	0,1	1,208
15	0,6	0 / -11	5	8	0,1	1,387
16	0,6	0 / -11	5	8	0,1	1,578

TS RVS X46

standard shafts sizes

TS RVS X46

Shaft diameter d mm	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance ISO h6 μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
20	0,9	0 / -13	6	9	0,1	2,466
25	0,9	0 / -13	6	9	0,1	3,853
30	0,9	0 / -13	6	9	0,1	5,549
40	1,5	0 / -16	7	11	0,1	9,864
50	1,5	0 / -16	7	11	0,1	15,413
60	2,2	0 / -19	8	13	0,1	22,195

* Material: X46Cr13 / 1.4034

** Deviating tolerances, hardening depths and diameters are available on request

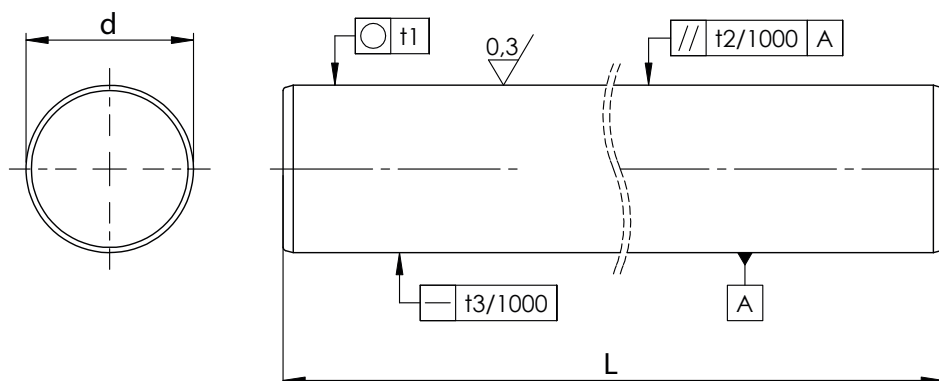
¹⁾ Surface hardening depth according DIN ISO 13012

²⁾ Diameter differential measurement

³⁾ Measurement according DIN ISO 13012

TS RVS X90

standard shafts sizes



TS RVS X90

Shaft diameter d mm	Hardening- depth ¹⁾ (min.) mm	Standard Tolerance ISO h6 μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
4	0,4	0 / -8	4	5	0,3	0,098
5	0,4	0 / -8	4	5	0,2	0,154
6	0,4	0 / -8	4	5	0,2	0,222
8	0,4	0 / -9	4	6	0,2	0,394
10	0,4	0 / -9	4	6	0,1	0,616
12	0,6	0 / -11	5	8	0,1	0,888
14	0,6	0 / -11	5	8	0,1	1,208
15	0,6	0 / -11	5	8	0,1	1,387

TS RVS X90

standard shafts sizes

TS RVS X90

Shaft diameter d mm	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance ISO h6 µm	Roundness t1 µm	Parallelism ²⁾ t2 µm	Straightness ³⁾ t3 mm	Weight kg/m
16	0,6	0 / -11	5	8	0,1	1,578
18	0,6	0 / -11	5	8	0,1	1,997
20	0,9	0 / -13	6	9	0,1	2,466
25	0,9	0 / -13	6	9	0,1	3,853
30	0,9	0 / -13	6	9	0,1	5,549
35	1,5	0 / -16	7	11	0,1	7,552
40	1,5	0 / -16	7	11	0,1	9,864
50	1,5	0 / -16	7	11	0,1	15,413
60	2,2	0 / -19	8	13	0,1	22,195

* Material: X90CrMoV18 / 1.4112

** Deviating tolerances, hardening depths and diameters are available on request

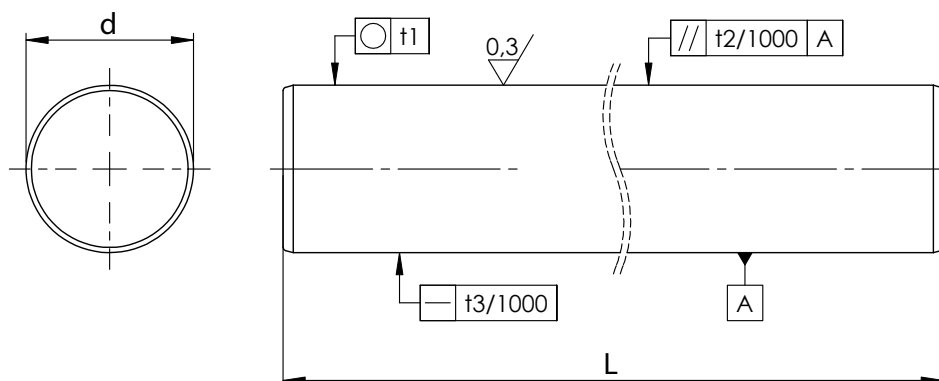
¹⁾ Surface hardening depth according DIN ISO 13012

²⁾ Diameter differential measurement

³⁾ Measurement according DIN ISO 13012

TS CF53 CHROME

standard shafts sizes



TS CF53 CHROME

Shaft diameter d mm	Hardening- depth ¹⁾ (min.) mm	Standard Tolerance ISO h7 μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
5	0,4	0 / -12	5	8	0,2	0,154
6	0,4	0 / -12	5	8	0,2	0,222
8	0,4	0 / -15	6	9	0,2	0,394
10	0,4	0 / -15	6	9	0,1	0,616
12	0,6	0 / -18	8	11	0,1	0,888
14	0,6	0 / -18	8	11	0,1	1,208
15	0,6	0 / -18	8	11	0,1	1,387
16	0,6	0 / -18	8	11	0,1	1,578

TS CF53 CHROME

standard shafts sizes

TS CF53 CHROME

Shaft diameter d mm	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance ISO h7 μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
20	0,9	0 / -21	9	13	0,1	2,466
25	0,9	0 / -21	9	13	0,1	3,853
28	0,9	0 / -21	9	13	0,1	4,833
30	0,9	0 / -21	9	13	0,1	5,549
40	1,5	0 / -25	11	16	0,1	9,864
50	1,5	0 / -25	11	16	0,1	15,413
60	2,2	0 / -30	13	19	0,1	22,195
80	2,2	0 / -30	13	19	0,1	39,458

* Material: CF53 / 1.1213

** Standard chrome layer thickness: ca 10μm

*** Chrome layer hardness $\geq 800\text{HV}$

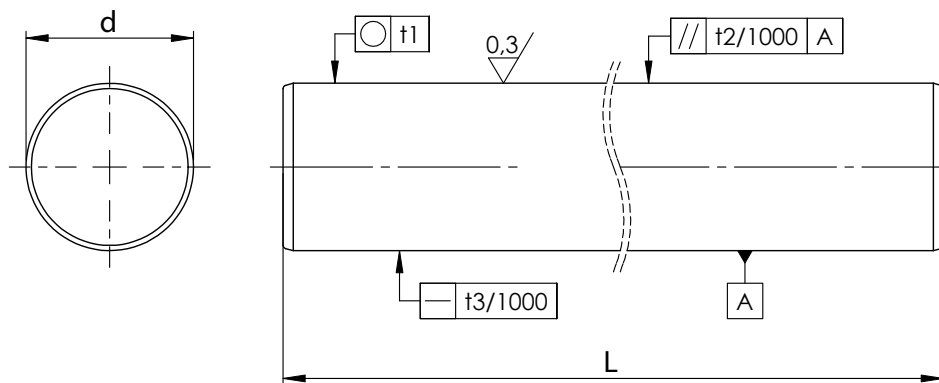
¹⁾ Surface hardening depth according DIN ISO 13012

²⁾ Diameter differential measurement

³⁾ Measurement according DIN ISO 13012

TS

standard shafts sizes (inch)



TS (INCH)

Shaft diameter d mm	Shaft diameter d inch	Hardening- ¹⁾ depth (min.) mm	Standard Tolerance Klasse L μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
6,35	¼	0,4	-13 / -25	4	5	0,2	0,249
9,525	3/8	0,4	-13 / -25	4	6	0,2	0,559
12,7	½	0,6	-13 / -25	5	8	0,1	0,994
15,875	5/8	0,6	-13 / -25	5	8	0,1	1,554
19,05	¾	0,9	-13 / -25	6	9	0,1	2,237
25,4	1	0,9	-13 / -25	6	9	0,1	3,978
31,75	1 ¼	1,5	-13 / -25	7	11	0,1	6,215
38,1	1 ½	1,5	-15 / -28	7	11	0,1	8,950

TS

standard shafts sizes (inch)

TS (INCH)

Shaft diameter d mm	Shaft diameter d inch	Hardening depth ¹⁾ (min.) mm	Standard Tolerance Klasse L μm	Roundness t1 μm	Parallelism ²⁾ t2 μm	Straightness ³⁾ t3 mm	Weight kg/m
50,8	2	1,5	-15 / -33	7	11	0,1	15,911
57,15	2 ¼	2,2	-15 / -33	8	13	0,1	20,130
63,5	2 ½	2,2	-18 / -38	8	13	0,1	24,860
76,2	3	2,2	-20 / -43	8	13	0,1	35,799

* Material: CF53 / 1.1213

** Deviating tolerances, hardening depths and diameters are available on request

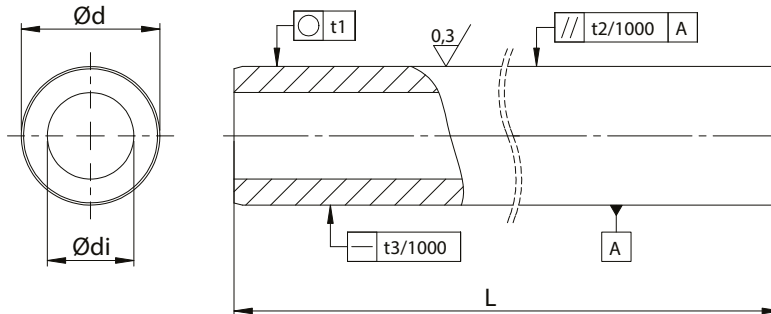
¹⁾ Surface hardening depth according DIN ISO 13012

²⁾ Diameter differential measurement

³⁾ Measurement according DIN ISO 13012

TT

standard shafts sizes (hollow)



TT C60

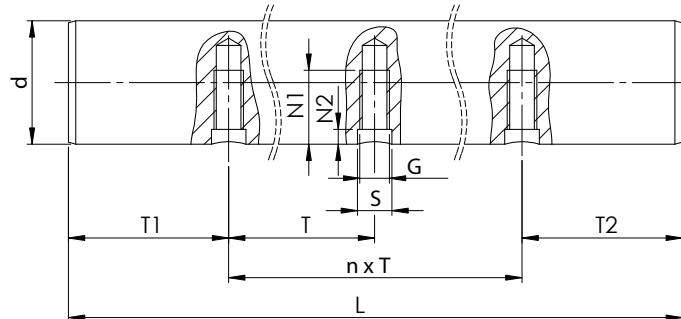
Outer diameter d mm	Inner diameter approx. di mm	Hardening depth ¹⁾ (min.) mm	Standard Tolerance ISO h7 µm	Roundness t1 µm	Parallelism ²⁾ t2 µm	Straightness ³⁾ t3 mm	Weight kg/m
12	4	0,6	0 / -18	8	11	0,3	0,79
16	7	0,6	0 / -18	8	11	0,3	1,28
20	14	0,9	0 / -21	9	13	0,2	1,25
25	15,6	0,9	0 / -21	9	13	0,2	2,35
30	18,3	0,9	0 / -21	9	13	0,2	3,5
40	28	1,5	0 / -25	11	16	0,1	4,99
50	29,7	1,5	0 / -25	11	16	0,1	9,91
60	36	2,2	0 / -30	13	19	0,1	14,2
80	57	2,2	0 / -30	13	19	0,1	19,4

* Material: C60 / 1.0601

** Deviating tolerances, hardening depths and diameters are available on request

TD

standard shafts sizes (pre-drilled)

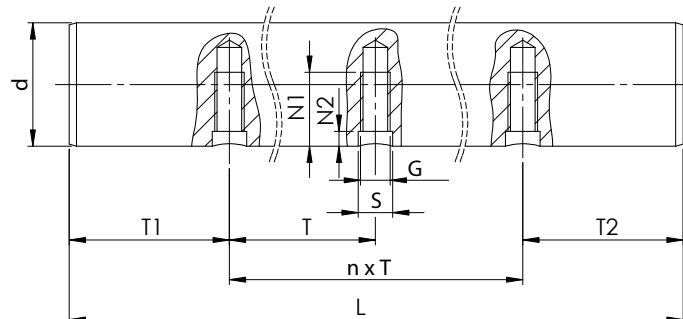


TD CF53

Type	Diameter	Length ¹⁾	Pitch	Distance ²⁾	Thread ³⁾	Thread depth	Counterbore diepte	Counterbore diameter	Nr. threads
	d mm	L mm	T mm	T1 mm	G	N1 mm	N2 mm	S mm	
TD 12 TA	12	6000	75	37,5	M4	7	2	5	79
TD 12 TB	12	6000	120	60	M4	7	2	5	49
TD 16 TA	16	6000	100	50	M5	9	2,5	6	59
TD 16 TB	16	6000	150	75	M5	9	2,5	6	39
TD 16 TU	16	6000	75	37,5	M5	9	2,5	6	79
TD 20 TA	20	6000	100	50	M6	11	3	7	59
TD 20 TB	20	6000	150	75	M6	11	3	7	39
TD 20 TU	20	6000	75	37,5	M6	11	3	7	79
TD 25 TA	25	6000	120	60	M8	15	3	9	49
TD 25 TB	25	6000	200	100	M8	15	3	9	29
TD 25 TU	25	6000	75	37,5	M8	15	3	9	79
TD 30 TA	30	6000	150	75	M10	17	3,5	11	39
TD 30 TB	30	6000	200	100	M10	17	3,5	11	29
TD 30 TU	30	6000	100	50	M10	17	3,5	11	59
TD 40 TA	40	6000	200	100	M10	19	4	11	29
TD 40 TB	40	6000	300	150	M10	19	4	11	19
TD 40 TU	40	6000	100	50	M12	21	4	13	59

TD

standard shafts sizes (pre-drilled)



TD CF53

Type	Diameter	Length ¹⁾	Pitch	Distance ²⁾	Thread ³⁾	Thread depth	Counterbore depth	Counterbore diameter	Nr. threads
	d mm	L mm	T mm	T1 mm	G	N1 mm	N2 mm	S mm	
TD 50 TA	50	6000	200	100	M12	21	4	13	29
TD 50 TB	50	6000	300	150	M12	21	4	13	19

* Above shafts are available CF53 material as standard; other material are available on request

** Different patterns are available on request

¹⁾ Length tolerance: $\pm 3\text{mm}$, cut and deburred

²⁾ Distance tolerance: $\pm 0,2\text{mm}$, $T1 = T2$

³⁾ Position tolerance thread diameter $\varnothing$: $\pm 0,2\text{mm}$

If requested, we can cut the shafts to length. Hereby we always request to mention the T1 / T2 values



NEED TECHNICAL ADVICE?

We are at your service

Are you looking for linear precision shafts and would like to contact one of our specialists directly? Call us at +31 (0) 53 - 432 34 46 or send an e-mail to info@thn.nl. We will be happy to help you.

GET IN TOUCH →

Linear ball bearings

GENERAL

THN has a wide range of linear ball bearings in shaft diameter from 5mm t/m 60mm and from 1/4" t/m 2" in many different types.

32



KH linear ball bearings

35



SSEM linear ball bearings

33



SBE linear ball bearings

36



MM miniature ball bearings

34



SPM linear ball bearings

37



LME linear ball bearings

Linear ball bearings

38



LMEF linear ball bearings

42



VD front wipers

39



LMEF..L linear ball bearings

43



LFR track rollers

40



LMEK linear ball bearings

44



LFZ/LFE bolts

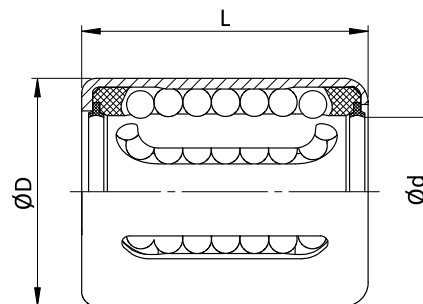
41



LMEK..L linear ball bearings

KH

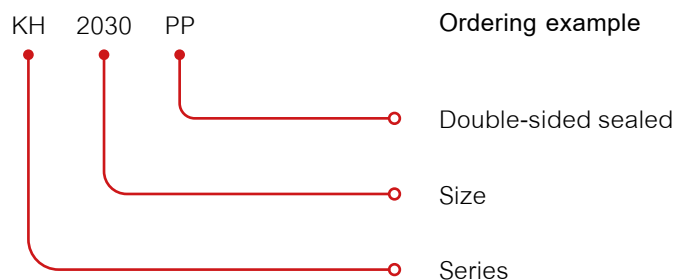
compact series



KH

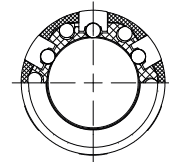
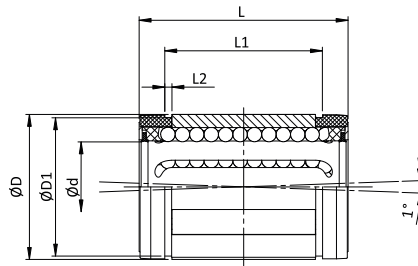
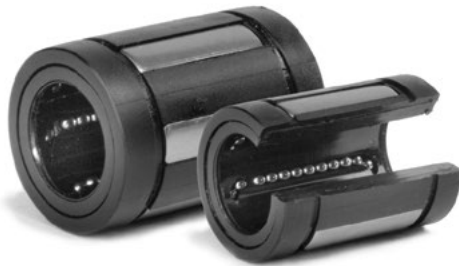
Type	Dimensions (mm)			Load capacity		Weight g
	Ød	ØD	L	dyn. C N	stat. C ₀ N	
KH-0622	6	12	22	400	239	7
KH-0824	8	15	24	435	280	12
KH-1026	10	17	26	500	370	14,5
KH-1228	12	19	28	620	510	18,5
KH-1428	14	21	28	620	520	20,5
KH-1630	16	24	30	800	620	27,5
KH-2030	20	28	30	950	790	32,5
KH-2540	25	35	40	1990	1670	66
KH-3050	30	40	50	2800	2700	95
KH-4060	40	52	60	4400	4450	182
KH-5070	50	62	70	5500	6300	252

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.



SBE

standard series, self-aligning

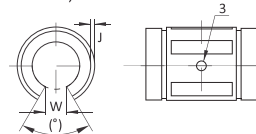


SBE

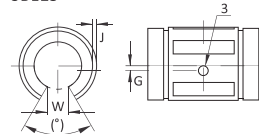
Dimensions (mm)											Load capacity		Weight
Type	Ød	ØD	L	L1	L2	ØD1	W	(°)	G	J	dyn. C N	stat. C ₀ N	g
SBE-16	16	26	36	24,6	1,3	24,9	9	68	0	1,0	1176	607	0,028
SBE-20	20	32	45	31,2	1,6	30,5	9	55	0	1,0	2352	1254	0,061
SBE-25	25	40	58	43,7	1,85	38,5	11,5	57	1,5	1,5	4508	2195	0,122
SBE-30	30	47	68	51,7	1,85	44,5	14	57	2,0	2,2	5586	2959	0,185
SBE-40	40	62	80	60,3	2,15	58,5	19,5	56	1,5	2,7	9310	4312	0,360
SBE-50	50	75	100	77,3	2,65	71,5	22,5	54	2,5	2,3	13720	6762	0,580

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.

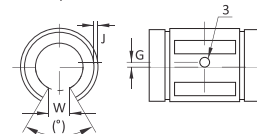
SBE016, SBE020



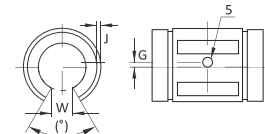
SBE25



SBE30, SBE40

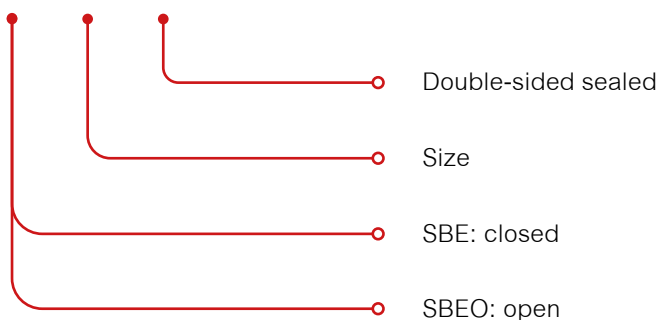


SBE50



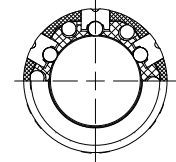
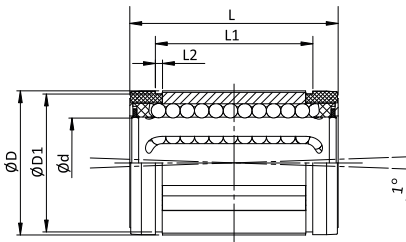
SBE 20 UU

Bestelvoorbeeld



SPM

standard series, self-aligning

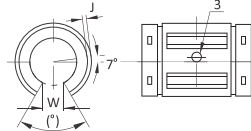


SPM

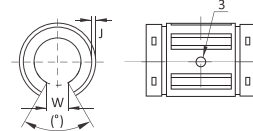
Dimensions (mm)											Load capacity		Weight
Type	Ød	ØD	L	L1	L2	ØD1	W	(°)	G	J	dyn. C N	stat. C ₀ N	g
SPM-12	12	22	32	22,6	1,3	21,0	7,0	70	-	0,7	1060	1170	0,02
SPM-16	16	26	36	24,6	1,3	24,9	9,8	70	-	1,0	1280	1410	0,03
SPM-20	20	32	45	31,2	1,6	30,3	10,5	58	-	1,0	2100	2310	0,06
SPM-25	25	40	58	43,7	1,85	37,5	13	60	1,5	1,5	4130	4540	0,13
SPM-30	30	47	68	51,7	1,85	44,5	15,3	60	2,0	2,2	5020	5520	0,19
SPM-40	40	62	80	60,3	2,15	59,0	21,4	58	1,5	2,7	8620	9480	0,36
SPM-50	50	75	100	77,3	2,65	71,5	24	55	2,5	2,7	12060	13270	0,66

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.

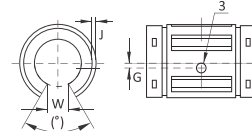
SPM12-OPN



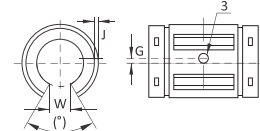
SPM16-OP, SPM20-OP



SPM25-OP

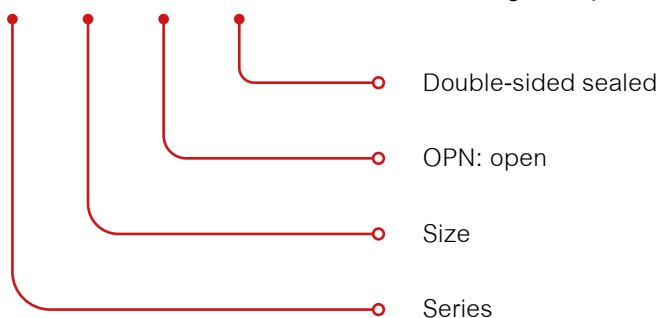


SPM30-OP, SPM40-OP



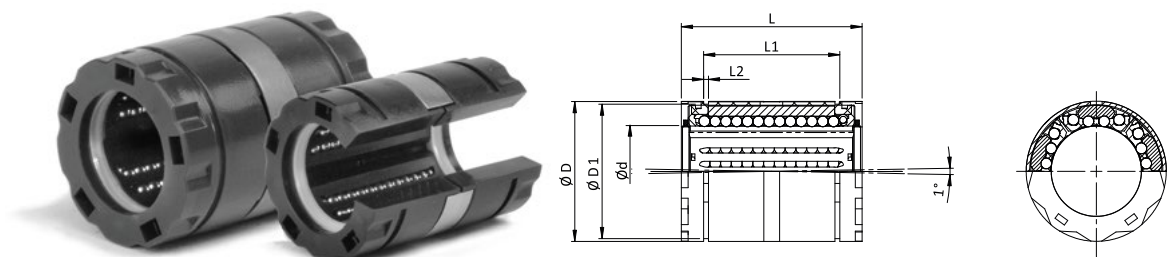
SPM 20 OPN WW

Ordering example



SSEM

self-aligning for high load

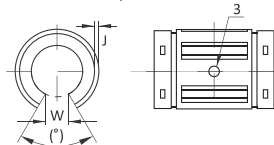


SSEM

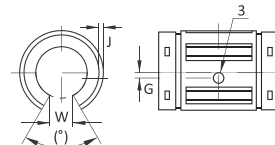
Dimensions (mm)									Load capacity		Weight
Type	Ød	ØD	L	L1	L2	W	(°)	G	dyn. C N	stat. C ₀ N	g
SSEM-16	16	26	36	24,6	1,3	9,0	70	0	2200	2400	0,030
SSEM-20	20	32	45	31,2	1,6	10,0	50	0	4000	4400	0,066
SSEM-25	25	40	58	43,7	1,85	12,5	60	1,5	6700	7300	0,135
SSEM-30	30	47	68	51,7	1,85	13,7	55	2,0	8300	9100	0,206
SSEM-40	40	62	80	60,3	2,15	19,0	54	1,5	13700	15000	0,392

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.

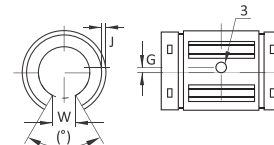
SSEM16-OPN, SSEM20-OPN



SSEM25-OPN

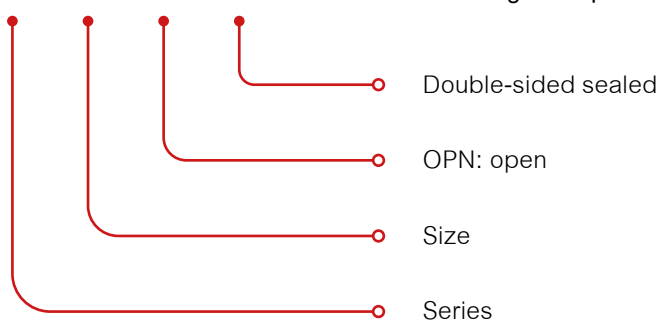


SSEM30-OPN, SSEM40-OPN



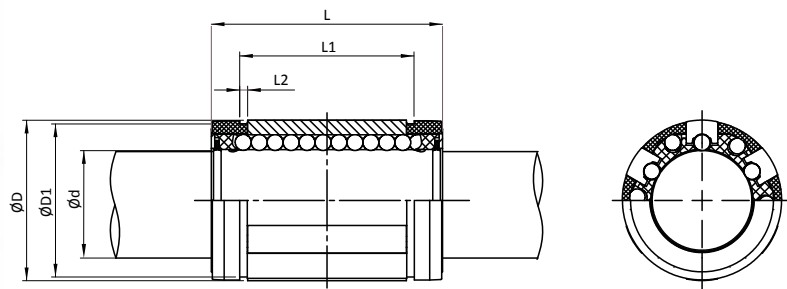
SSEM 20 OPN WW

Ordering example



MM

miniature series



MM

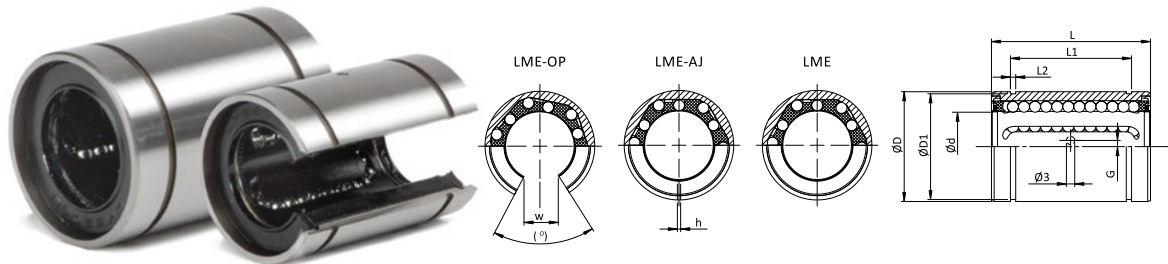
Dimensions							Load capacity		Weight
Type	Ød	ØD	L	L1	L2 min.	n	dyn. C N	stat. C ₀ N	g
MM-03	3	7	10			4	45	50	0,001
MM-05	5	12	22	14,2	1,10	4	170	190	0,010
MM-08	8	16	25	16,2	1,10	4	310	340	0,020
MM-12	12	22	32	22,6	1,30	5	650	715	0,030

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.



LME

standard series, plastic cage



LME

Dimensions											Load capacity		Weight
Type	Ød	ØD	L	L1	L2	ØD1	W	(°)	G	J	dyn. C N	stat. C ₀ N	g
LME-05	6	12	22	14,5	1,1	11,5	1,0	-	-	-	210	270	0,01
LME-08	8	16	25	16,5	1,1	15,2	1,0	-	-	-	270	410	0,02
LME-10	10	19	29	22,0	1,3	18,0	1,0	6,8	80	-	375	470	0,03
LME-12	12	22	32	22,9	1,3	21,0	1,5	7,5	78	0	510	790	0,04
LME-16	16	26	36	24,9	1,3	24,9	1,5	10,0	78	0	580	900	0,06
LME-20	20	32	45	31,5	1,6	30,3	2,0	10,0	60	0	865	1370	0,09
LME-25	25	40	58	44,1	1,85	37,5	2,0	12,5	60	1,5**	980	1570	0,21
LME-30	30	47	68	52,1	1,85	44,5	2,0	12,5	50	2,0	1570	2740	0,32
LME-40	40	62	80	60,6	2,15	59,0	3,0	16,8	50	1,5	2160	4020	0,70
LME-50	50	75	100	77,6	2,65	72,0	3,0	21,0	50	2,5	3820	7940	1,13
LME-60	60	90	125	101,7	3,15	86,5	3,0	27,2	54	0***	4700	9800	2,05

LME **20** **UU** **OP** **Ordering example**

OP: open type
 AJ: adjustable type
 Double-sided sealed
 Size
 Series

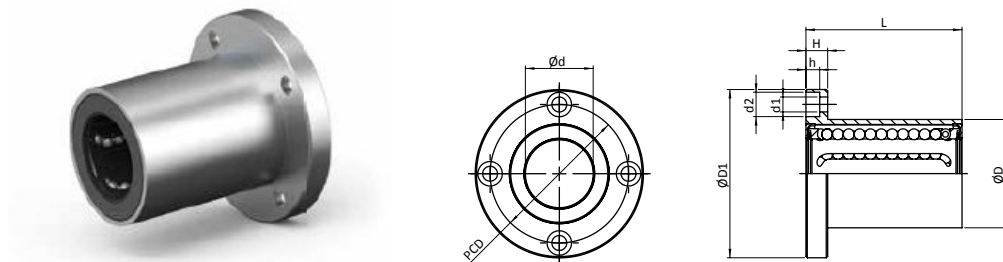
* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.

** The fixing bore Ø3mm is located below the middle line.

*** Fixing bore Ø5mm.

LMEF

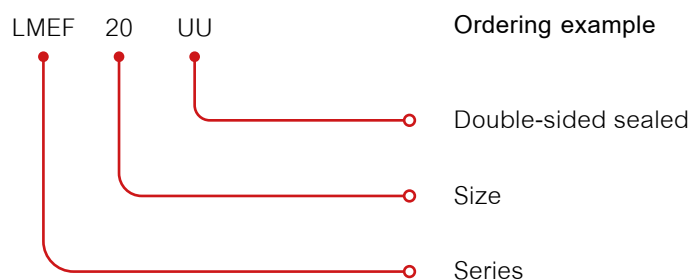
standard series, plastic cage



LMEF

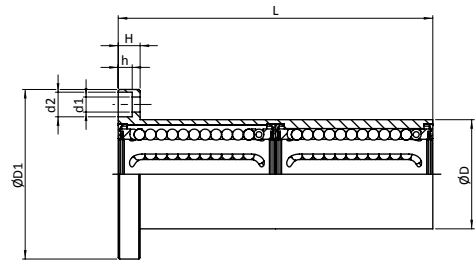
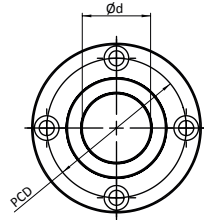
Dimensions								Load capacity		Weight
Type	Ød	ØD	ØD1	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C ₀ N	g
LMEF-08	8	16	32	25	5	24	3,5x6x3,1	265	402	0.05
LMEF-12	12	22	42	32	6	32	4,5x7,5x4,1	510	784	0.08
LMEF-16	16	26	46	36	6	36	4,5x7,5x4,1	578	892	0.11
LMEF-20	20	32	54	45	8	43	5,5x9x5,1	862	1,370	0.19
LMEF-25	25	40	62	58	8	51	5,5x9x5,1	980	1,570	0.34
LMEF-30	30	47	76	68	10	62	6,6x11x6,1	1,570	2,740	0.56
LMEF-40	40	62	98	80	13	80	9x14x8,1	2,160	4,020	1.18
LMEF-50	50	75	112	100	13	94	9x14x8,1	3,820	7,940	1.75
LMEF-60	60	90	134	125	18	112	11x17x11,1	4,700	9,800	3.22

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.



LMEF..L

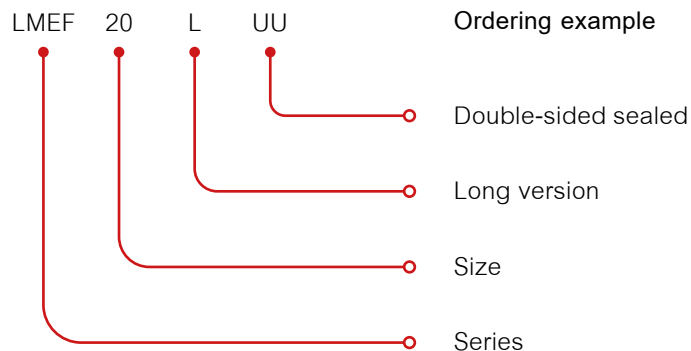
standard series, plastic cage



LMEF..L

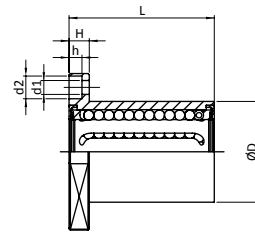
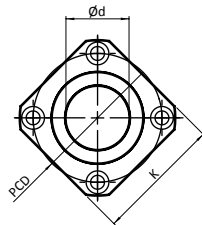
Dimensions								Load capacity		Weight
Type	Ød	ØD	ØD1	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C ₀ N	g
LMEF-08-L	8	16	32	46	5	24	3,5x6x3,1	421	804	0.06
LMEF-12-L	12	22	42	61	6	32	4,5x7,5x4,1	813	1,570	0.11
LMEF-16-L	16	26	46	68	6	36	4,5x7,5x4,1	921	1,780	0.16
LMEF-20-L	20	32	54	80	8	43	5,5x9x5,1	1,370	2,740	0.26
LMEF-25-L	25	40	62	112	8	51	5,5x9x5,1	1,570	3,140	0.54
LMEF-30-L	30	47	76	123	10	62	6,6x11x6,1	2,500	5,490	0.82
LMEF-40-L	40	62	98	151	13	80	9x14x8,1	3,430	8,040	1.81
LMEF-50-L	50	75	112	192	13	94	9x14x8,1	6,080	15,900	2.82
LMEF-60-L	60	90	134	209	18	112	11x17x11,1	7,550	20,000	4.92

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.



LMEK

standard series, plastic cage



LMEK

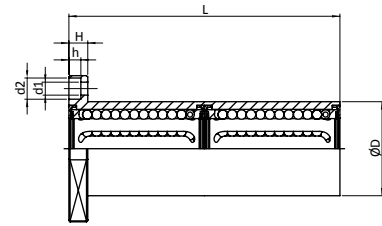
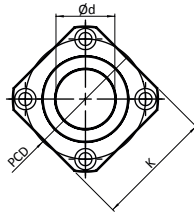
Dimensions								Load capacity		Weight
Type	Ød	ØD	K	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C ₀ N	g
LMEK-08	8	16	25	25	5	24	3,5x6x3,1	265	402	0.05
LMEK-12	12	22	32	32	6	32	4,5x7,5x4,1	510	784	0.08
LMEK-16	16	26	35	36	6	36	4,5x7,5x4,1	578	892	0.11
LMEK-20	20	32	42	45	8	43	5,5x9x5,1	862	1,370	0.19
LMEK-25	25	40	50	58	8	51	5,5x9x5,1	980	1,570	0.34
LMEK-30	30	47	60	68	10	62	6,6x11x6,1	1,570	2,740	0.56
LMEK-40	40	62	75	80	13	80	9x14x8,1	2,160	4,020	1.18
LMEK-50	50	75	88	100	13	94	9x14x8,1	3,820	7,940	1.75
LMEK-60	60	90	106	125	18	112	11x17x11,1	4,700	9,800	3.22

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.



LMEK..L

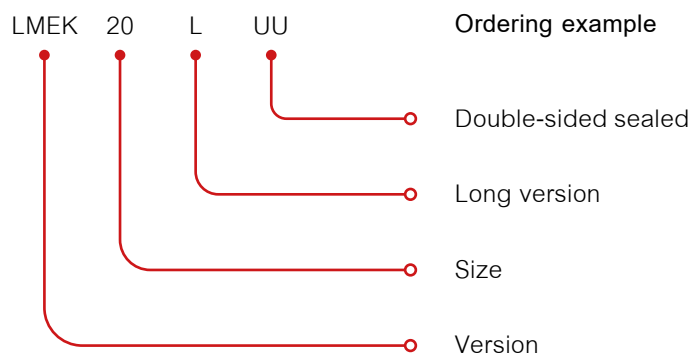
standard series, plastic cage



LMEK..L

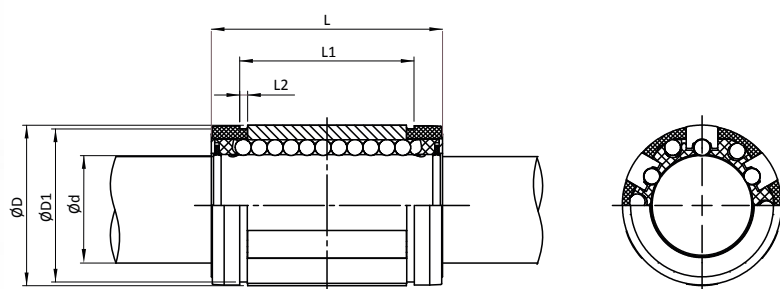
Dimensions								Load capacity		Weight
Type	Ød	ØD	K	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C ₀ N	g
LMEK-08-L	8	16	25	46	5	24	3,5x6x3,1	421	804	0.06
LMEK-12-L	12	22	32	61	6	32	4,5x7,5x4,1	813	1,570	0.11
LMEK-16-L	16	26	35	68	6	36	4,5x7,5x4,1	921	1,780	0.16
LMEK-20-L	20	32	42	80	8	43	5,5x9x5,1	1,370	2,740	0.26
LMEK-25-L	25	40	50	112	8	51	5,5x9x5,1	1,570	3,140	0.54
LMEK-30-L	30	47	60	123	10	62	6,6x11x6,1	2,500	5,490	0.82
LMEK-40-L	40	62	75	151	13	80	9x14x8,1	3,430	8,040	1.81
LMEK-50-L	50	75	88	192	13	94	9x14x8,1	6,080	15,900	2.82
LMEK-60-L	60	90	106	209	18	112	11x17x11,1	7,550	20,000	4.92

* The load capacities are only valid if a hardened (min. 670HV) and ground shaft raceways are used.



VD

front wipers

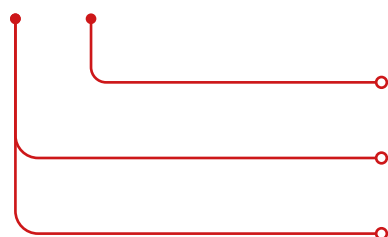


VD

Dimensions				
Type	Ød	ØD	T	(°)
VD-12	12	22	3,0	66
VD-16	16	26	3,0	68
VD-20	20	32	4,0	55
VD-25	25	40	4,0	57
VD-30	30	47	5,0	57
VD-40	40	62	5,0	56
VD-50	50	75	5,0	56

VD 20

Ordering example



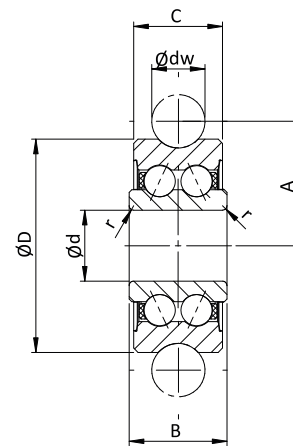
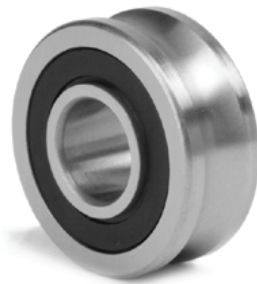
Size

VD: closed

VDO: open

LFR

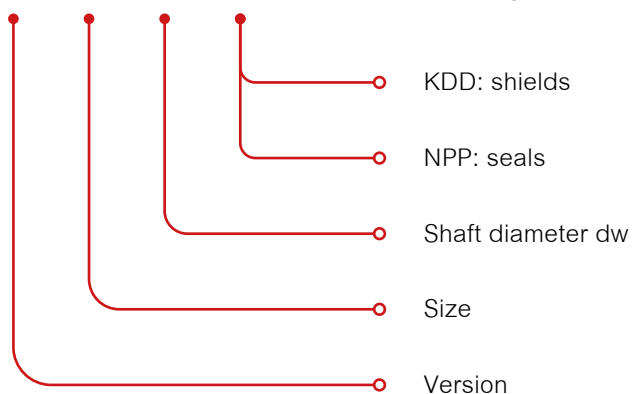
track rollers



LFR

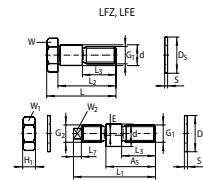
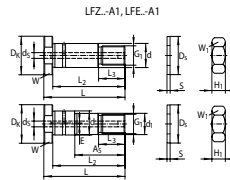
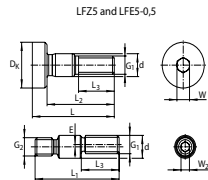
Dimensions								Weight	Load capacity		Limit loads		Suggested bolts
Type	dw	d	D	C	B _{-0,12}	A	r	Gew _g	Cw _N	C0w _N	Frz _N	F0rz _N	
LFR50/5-4-KDD	4	5	16	7	8	9	0,20	9	1.200	860	1.300	1.780	LFZ5, LFE5
LFR50/5-6-KDD	6	5	17	7	8	10,5	0,20	10	1.270	820	1.300	1.780	LFZ5, LFE5
LFR50/8-6-KDD	6	8	24	11	11	14	0,30	20	3.670	2.280	1.300	4.560	LFZ8, LFE8
LFR5201-10-KDD	10	12	35	15,9	15,9	20,65	0,30	66	8.500	5.100	5.100	10.200	LFZ12, LFE12
LFR5301-10-KDD	10	12	42	19	19	24	0,60	135	13.000	7.700	7.500	14.200	LFZ12/M12, LFE12/M12
LFR5302-10-KDD	10	15	47	19	19	26,65	1,00	170	16.200	9.200	6.200	18.400	LFZ15, LFE15
LFR5201-12-KDD	12	12	35	15,9	15,9	21,75	0,30	66	8.400	5.000	5.100	10.000	LFZ12x45A1, LFE12x45A1
LFR5204-16-KDD	16	20	52	20,6	22,6	31,5	0,60	195	16.800	9.500	12.100	16.600	LFZ20x67A1, LFE20x67A1
LFR5206-20-KDD	20	25	72	23,8	25,8	41	0,60	435	29.500	16.600	20.700	33.200	LFZ25x82A1, LFE25x82A1
LFR5206-25-KDD	25	25	72	23,8	25,8	43,5	0,60	425	29.200	16.400	23.100	32.800	LFZ25x82A1, LFE25x82A1
LFR5207-30-KDD	30	30	80	27	29	51	1,00	600	38.000	20.800	21.400	36.200	LFZ30x95A1, LFE30x95A1
LFR5208-40-KDD	40	40	98	36	38	62,5	1,00	1100	54.800	29.000	55.000	58.000	LFZ40x105A1, LFE40x105A1
LFR5308-50-KDD	50	40	110	46	46	72,5	1,10	1250	53.000	39.500	69.000	79.000	LFZ40x115A1, LFE40x115A1

LFR 5201 10 KDD **Ordering example**



LFZ/LFE

concentric en excentric



LFZ/LFE

Dimensions

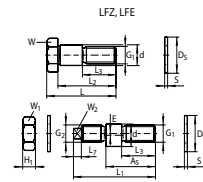
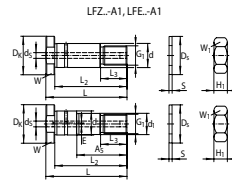
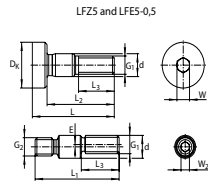
Type	gew kg	d	G ₁	G ₂	L	L ₂	L ₃	L ₁	A ₅	L ₇	D _s	E	H ₁	S	D _K	D _s	d ₁	W	W ₁	W ₂
LFZ5	0,01	5	M4	-	19,5	16	9,5	-	-	-	-	-	-	- ^{*)}	10	-	-	3	-	-
LFE5-0,5				M4	-	-	9	20,5	15			0,5	2,9		-	-	-	7	2	
LFZ8	0,02	8	M8	-	28,3	24,3	15	-	-	-	14	-	-	1	-	-	-	12	-	-
LFE8-1				M8 x 0,75	-	-	13,7	33,2	22	3,5		1	4		-	-	-	-	13	5
LFZ12	0,04	12	M10	-	43	36	22	-	-	-	21	-	-	1,8	-	-	-	17	-	-
LFE12-1				M10	-	-	19,5	50	33,5	5		1	8,4					-	17	6
LFZ12/M12	0,06			-	50,8	43,8	24	-	-	-	-	-	-	17				-	-	
LFE12-1/ M12				M12	-	-		57	41	5	1	6,5	1,5	-				17	6	
LFZ15	0,06	15	M12	-	50,8	43,8	26	-	-	-	21	-	-	2	-	-	-	19	-	-
LFE15-1				M12	-	-	24	57	41	4		1	6,5					-	19	6

* No washer required

** Without lubrication gap

LFZ/LFE

concentric en excentric



LFZ/LFE

Dimensions

Type	gew kg	d	G ₁	G ₂	L	L ₂	L ₃	L ₁	A ₅	L ₇	D _s	E	H ₁	S	D _K	D _s	d ₁	W	W ₁	W ₂
LFZ12X45-A1™ LFE12X45-A1™	0,04	12	M10 X1,5	-	50	45	16	-	- 30	-	21	- 0,75	8	2	20	-	- 10	17	17	-
LFZ20X67-A1 LFE20X67-A1	0,2	20	M16 X1,5	-	75	67	23	-	- 45	-	30	- 1	13	3	30	5,9	- 17	27	24	-
LFZ25X82-A1 LFE25X82-A1	0,4	25	M20 X1,5	-	92	82	30	-	- 57	-	37	- 1	16	3	40	5,9	- 22	36	30	-
LFZ30X95-A1 LFE30X95-A1	0,62	30	M24 X1,5	-	107	95	32	-	- 67	-	44	- 1	19	4	45	5,9	- 27	41	36	-
LFZ40X107-A1 LFE40X107-A1 LFZ40X115-A1 LFE40X115-A1	1,1 1,2	40	M30 X1,5	-	117 125	107 115	42	-	- 72 - 72	-	56	- 1 - 1	24	4	55	5,9	- 36 - 36	46	46	-

* No washer required

** Without lubrication gap

Linear housing units

HOUSING UNITS

Linear housing units ensure proper mounting of the linear ball bearings. For most types of housing units there is also an open type available for use with shaft support.

50



TGC linear housing units

53



TGE linear housing units

51



TTGC linear housing units

54



TGO linear housing units

52



TG linear housing units

55



TGOE linear housing units

Linear housing units

56



TGS linear housing units

59



TTGE linear housing units

57



TGSE linear housing units

60



TTGO linear housing units

58



TTG linear housing units

61



TTGOE linear housing units

Linear housing units

62



TALGS linear housing units

65



TTFG linear housing units

63



TALGSO linear housing units

66



TQSG linear housing units

64



TFG linear housing units

67



TQSO linear housing units



NEED TECHNICAL ADVICE?

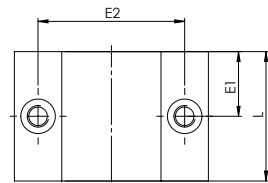
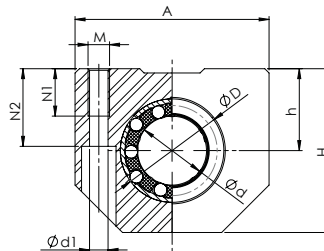
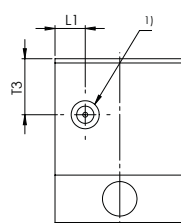
We are at your service

Are you looking for linear precision shafts and would like to contact one of our specialists directly? Call us at +31 (0) 53 - 432 34 46 or send an e-mail to info@thn.nl. We will be happy to help you.

GET IN TOUCH →

TGC

compact series

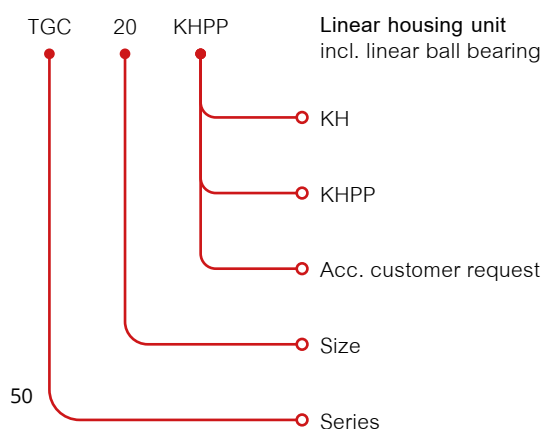


TGC

Type	Ød	ØD	H	h +0,01 -0,02	A	L	L1	T3	E1	E2 ±0,15	N1	N2	Ød1	M	kg
TGC-06-##	6	12	27	13	32	22	4	9	11	23	9	13	3,4	M4	0,04
TGC-08-##	8	15	27	14	32	24	6	9	12	23	9	13	3,4	M4	0,05
TGC-10-##	10	17	33	16	40	26	6	11	13	29	11	16	4,3	M5	0,07
TGC-12-##	12	19	33	17	40	28	6	11	14	29	11	16	4,3	M5	0,09
TGC-14-##	14	21	38	18	43	28	6	13	14	34	11	18	4,3	M5	0,10
TGC-16-##	16	24	38	19	45	30	7	13	15	34	11	18	4,3	M5	0,13
TGC-20-##	20	28	45	23	53	30	7	15	15	40	13	22	5,3	M6	0,15
TGC-25-##	25	35	54	27	62	40	8	17,5	20	48	18	26	6,6	M8	0,30
TGC-30-##	30	40	60	30	67	50	8	18	25	53	18	29	6,6	M8	0,46
TGC-40-##	40	52	76	39	87	60	9	23	30	69	22	38	8,4	M10	0,88
TGC-50-##	50	62	92	47	103	70	9	28	35	82	26	46	10,5	M12	1,25

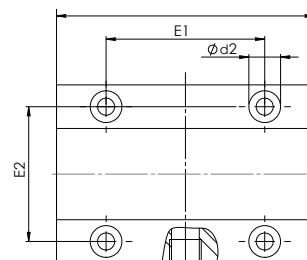
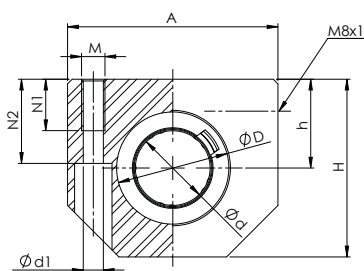
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing
- 1) Grease nipple DIN 3405



TTGC

compact series, tandem

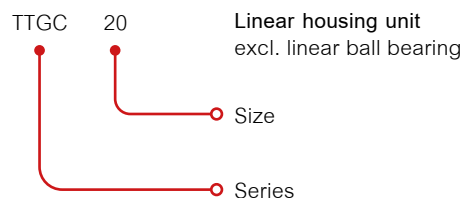
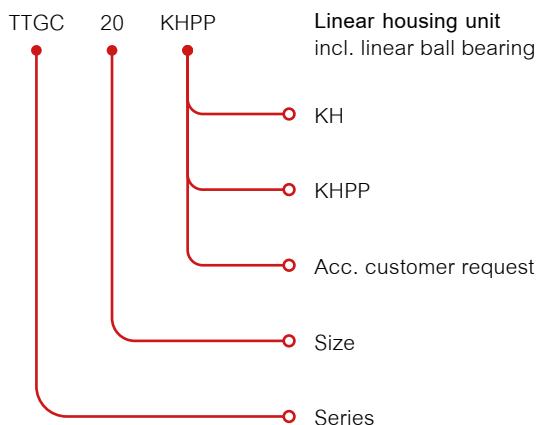


TTGC

Type	Ød	ØD	H	h +0,01 -0,02	A	L	E1 ±0,15	E2 ±0,15	E3	N1	N2	Ød1	M	kg
TTGC-12-##	12	19	33	17	40	60	35	29	30,0	11	16	4,3	M5	0,18
TTGC-16-##	16	24	38	19	45	65	40	34	32,5	11	18	4,3	M5	0,27
TTGC-20-##	20	28	45	23	53	65	45	40	32,5	13	22	5,3	M6	0,32
TTGC-25-##	25	35	54	27	62	85	55	48	42,5	18	26	6,6	M8	0,66
TTGC-30-##	30	40	60	30	67	105	70	53	52,5	18	29	6,6	M8	0,95
TTGC-40-##	40	52	76	39	87	125	85	69	62,5	22	38	8,4	M10	1,82
TTGC-50-##	50	62	92	47	103	145	100	82	72,5	26	46	10,5	M12	2,52

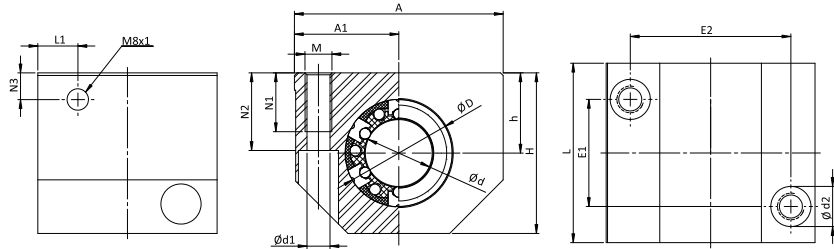
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing



TG

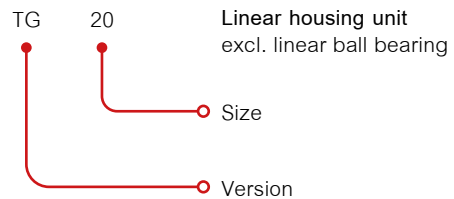
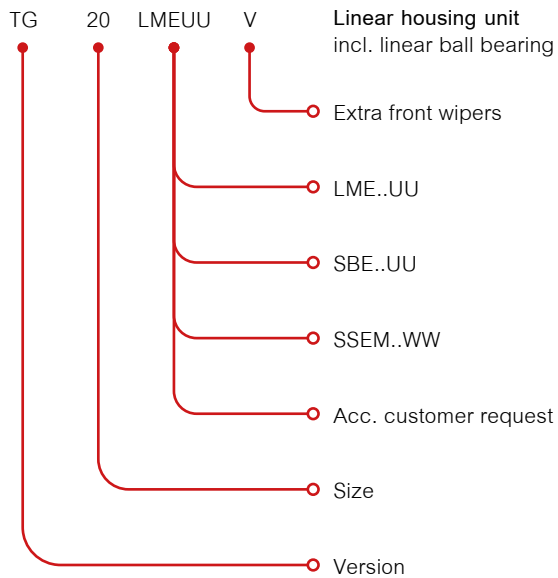
closed type



TG

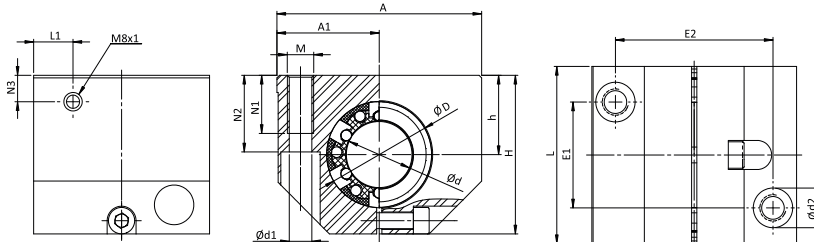
Type	Ød	ØD	H	$h_{+0,01-0,02}$	A	$A1_{\pm 0,02}$	L	N1	N2	N3	L1	$E1_{\pm 0,15}$	$E2_{\pm 0,15}$	Ød1	Ød2	M	kg
TG-12-##	12	22	35	18	43	21,5	39	13	16,5	10	10,5	23	32	4,2	8	M5	0,13
TG-16-##	16	26	42	22	53	26,5	43	13	21	10	11,5	26	40	5,2	10	M6	0,20
TG-20-##	20	32	50	25	60	30	54	18	24	10	13,5	32	45	6,8	11	M8	0,34
TG-25-##	25	40	60	30	78	39	67	22	29	10	15	40	60	8,6	15	M10	0,65
TG-30-##	30	47	70	35	87	43,5	79	22	34	11,5	16	45	68	8,6	15	M10	0,97
TG-40-##	40	62	90	45	108	54	91	26	44	14	18	58	86	10,3	18	M12	1,80
TG-50-##	50	75	105	50	132	66	113	34	49	12,5	22	50	108	14	20	M16	2,40

- Fixing screws acc. DIN 913-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing
- Load ratings according to the specifications of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing



TGE

closed type, adjustable



TGE

Type	Ød	ØD	H	h +0,01 -0,02	A	A1 ±0,02	L	N1	N2	N3	L1	E1 ±0,15	E2 ±0,15	Ød1	Ød2	M	kg
TGE-12-##	12	22	35	18	43	21,5	39	13	16,5	10	10,5	23	32	4,2	8	M5	0,13
TGE-16-##	16	26	42	22	53	26,5	43	13	21	10	11,5	26	40	5,2	10	M6	0,20
TGE-20-##	20	32	50	25	60	30	54	18	24	10	13,5	32	45	6,8	11	M8	0,34
TGE-25-##	25	40	60	30	78	39	67	22	29	10	15	40	60	8,6	15	M10	0,65
TGE-30-##	30	47	70	35	87	43,5	79	22	34	11,5	16	45	68	8,6	15	M10	0,97
TGE-40-##	40	62	90	45	108	54	91	26	44	14	18	58	86	10,3	18	M12	1,80
TGE-50-##	50	75	105	50	132	66	113	34	49	12,5	22	50	108	14	20	M16	2,40

- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according to the specifications of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing

TGE 20 LMEUUAJ V

Linear housing unit
incl. linear ball bearing

Extra front wipers

LME..UUAJ

SBE..UU

SSEM..WW

Acc. customer request

Size

Version

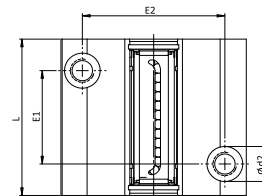
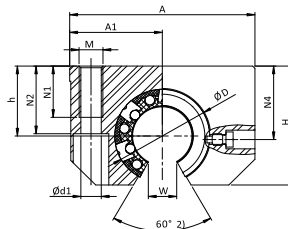
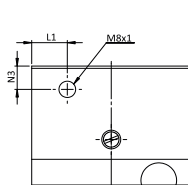
TGE 20

Linear housing unit
excl. linear ball bearing

Size

Version

TGO open

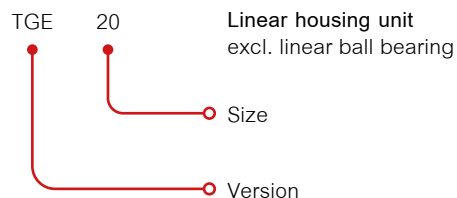
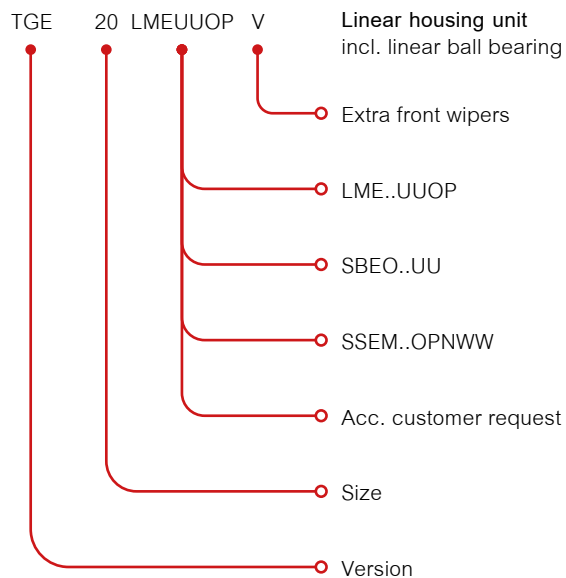


TGO

Type	ød	øD	H	h +0,01 -0,02	A	A1 ±0,02	L	E1 ±0,15	E2 ±0,15	N1	N2	N3	L1	N4	ød1	ød2	M	W ₁	kg
TGO-12-##	12	22	28	18	43	21,5	39	23	32	11	16,5	10	10,5	16,65	4,2	8	M5	7,5	0,11
TGO-16-##	16	26	35	22	53	26,5	43	26	40	13	21	10	11,5	22	5,2	10	M6	10	0,17
TGO-20-##	20	32	42	25	60	30	54	32	45	18	24	10	13,5	25	6,8	11	M8	10	0,30
TGO-25-##	25	40	51	30	78	39	67	40	60	22	29	10	15	31,5	8,6	15	M10	12,5	0,57
TGO-30-##	30	47	60	35	87	43,5	79	45	68	22	34	11,5	16	33	8,6	15	M10	12,5	0,86
TGO-40-##	40	62	77	45	108	54	91	58	86	26	44	14	18	43,5	10,3	18	M12	16,8	1,60
TGO-50-##	50	75	88	50	132	66	113	50	108	34	49	12,5	22	47,5	14	20	M16	21	2,20

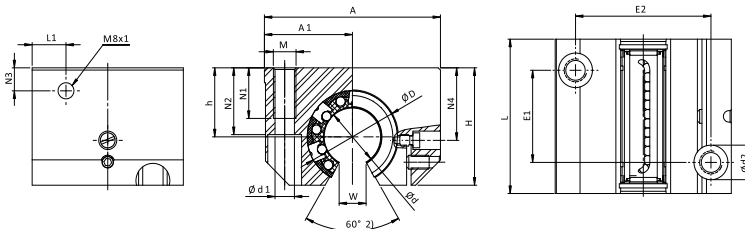
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according to the specifications of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing



TGOE

open, adjustable



TGOE

Type	ød	øD	H	h +0,01 -0,02	A	A1 ±0,02	L	E1 ±0,15	E2 ±0,15	N1	N2	N3	L1	N4	ød1	ød2	M	W ₁₎	kg
TGO-12-##	12	22	28	18	43	21,5	39	23	32	11	16,5	10	10,5	16,65	4,2	8	M5	7,5	0,11
TGO-16-##	16	26	35	22	53	26,5	43	26	40	13	21	10	11,5	22	5,2	10	M6	10	0,17
TGO-20-##	20	32	42	25	60	30	54	32	45	18	24	10	13,5	25	6,8	11	M8	10	0,30
TGO-25-##	25	40	51	30	78	39	67	40	60	22	29	10	15	31,5	8,6	15	M10	12,5	0,57
TGO-30-##	30	47	60	35	87	43,5	79	45	68	22	34	11,5	16	33	8,6	15	M10	12,5	0,86
TGO-40-##	40	62	77	45	108	54	91	58	86	26	44	14	18	43,5	10,3	18	M12	16,8	1,60
TGO-50-##	50	75	88	50	132	66	113	50	108	34	49	12,5	22	47,5	14	20	M16	21	2,20

- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according to the specifications of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing

TGOE 20 LMEUUAJ V

Linear housing unit
incl. linear ball bearing

Extra front wipers

LME..UUAJ

SBE..UU

SSEM..WW

Acc. customer request

Size

Version

TGOE 20

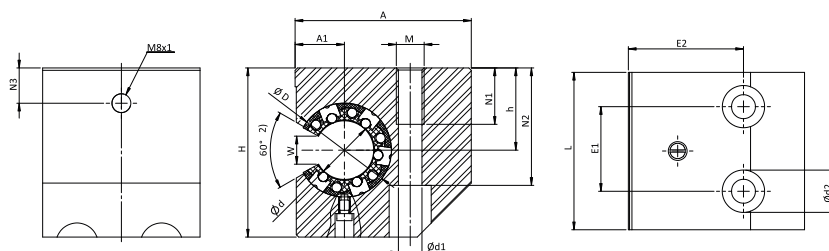
Linear housing unit
excl. linear ball bearing

Size

Version

TGS

side open

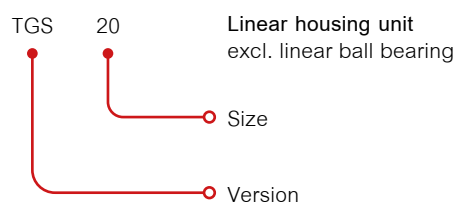
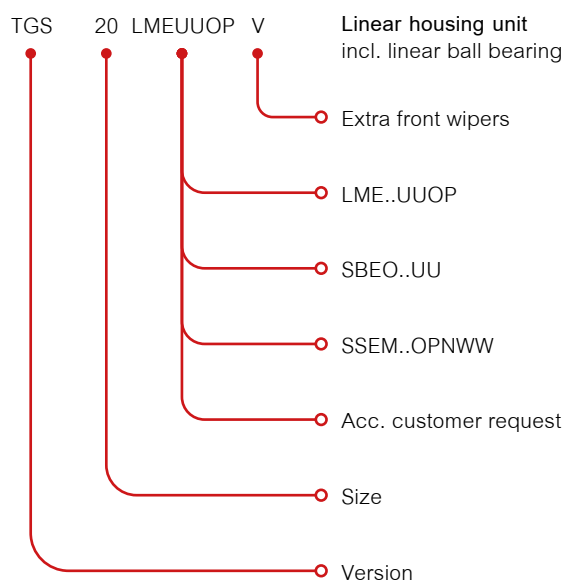


TGS

Type	ød	øD	H	$h_{\pm 0,015}$	A	$A1_{\pm 0,02}$	L	E1	E2	N1	N2	N3	ød1	ød2	M	W_1	kg
TGS-20-##	20	32	60	30	60	17	54	30	39	22	42	30	8,6	15	M10	10	0,42
TGS-25-##	25	40	72	35	75	21	67	36	49	26	50	35	10,3	18	M12	12,5	0,80
TGS-30-##	30	47	82	40	86	25	79	42	59	34	55	40	13,5	20	M16	12,5	1,20
TGS-40-##	40	62	100	45	110	32	91	48	75	43	67	45	17,5	26	M20	16,8	2,00

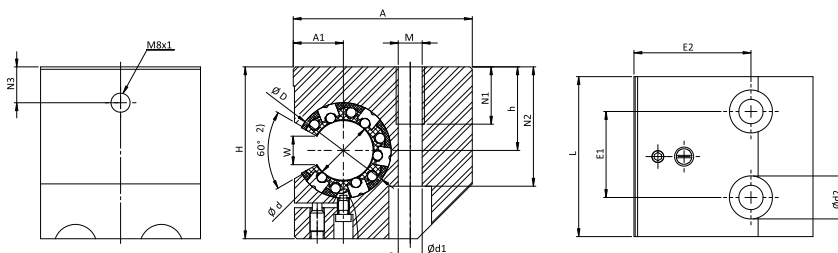
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according to the specifications of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing



TGSE

side open, adjustable

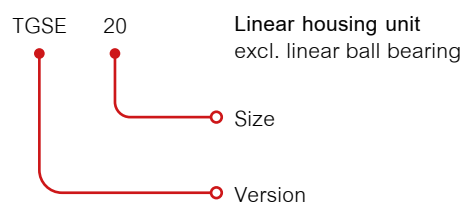
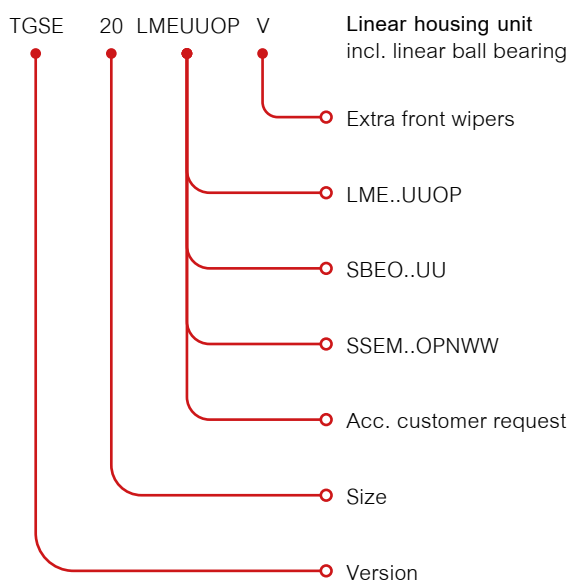


TGSE

Type	ød	øD	H	h ±0,015	A	A1 ±0,01	L	E1	E2	N1	N2	N3	ød1	ød2	M	W ₁₎	kg
TGSE-20-##	20	32	60	30	60	17	54	30	39	22	42	30	8,6	15	M10	10	0,42
TGSE-25-##	25	40	72	35	75	21	67	36	49	26	50	35	10,3	18	M12	12,5	0,80
TGSE-30-##	30	47	82	40	86	25	79	42	59	34	55	40	13,5	20	M16	12,5	1,20
TGSE-40-##	40	62	100	45	110	32	91	48	75	43	67	45	17,5	26	M20	16,8	2,00

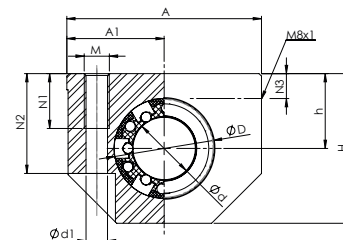
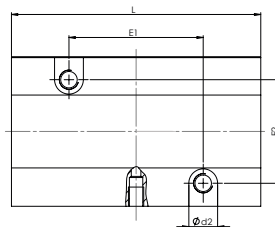
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing
- 1) Values of version LME..UUOP
- 2) Housing angle: observe the angle of the linear ball bearing used



TTG

Closed type, tandem

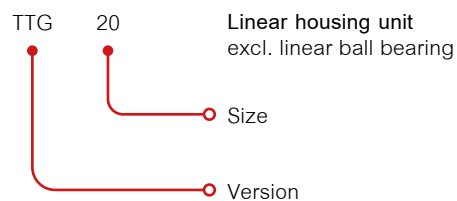
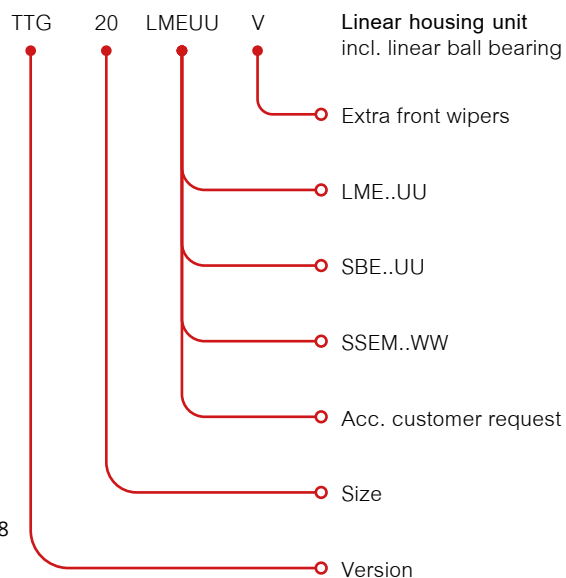


TTG

Type	Ød	ØD	H	h +0,01 -0,02	A	A1 ±0,02	L	E1 ±0,15	E2 ±0,15	N1	N2	N3	Ød1	Ød2	M	kg
TTG-08-##	8	16	28	13	35	17,5	62	35	25	11	19,5	8	4,2	8	M5	0,15
TTG-12-##	12	22	35	18	43	21,5	76	40	30	13	25	10	5,2	10	M6	0,27
TTG-16-##	16	26	42	22	53	26,5	84	45	36	13	30	12	5,2	10	M6	0,41
TTG-20-##	20	32	50	25	60	30	104	55	45	18	34	13	6,8	11	M8	0,72
TTG-25-##	25	40	60	30	78	39	130	70	54	22	40	15	8,6	15	M10	1,35
TTG-30-##	30	47	70	35	87	43,5	152	85	62	26	48	16	10,3	18	M12	2,01
TTG-40-##	40	62	90	45	108	54	176	100	80	34	60	20	14	20	M16	3,67
TTG-50-##	50	75	105	50	132	66	224	125	100	34	49	20	14	20	M16	4,7

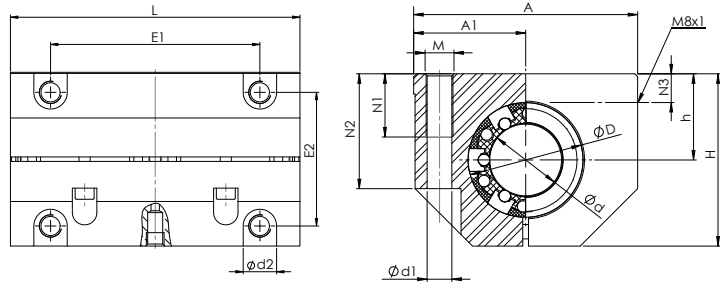
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according the specifications of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing



TTGE

Closed type, tandem, adjustable

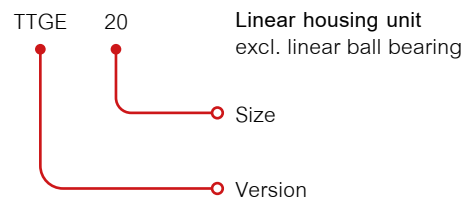
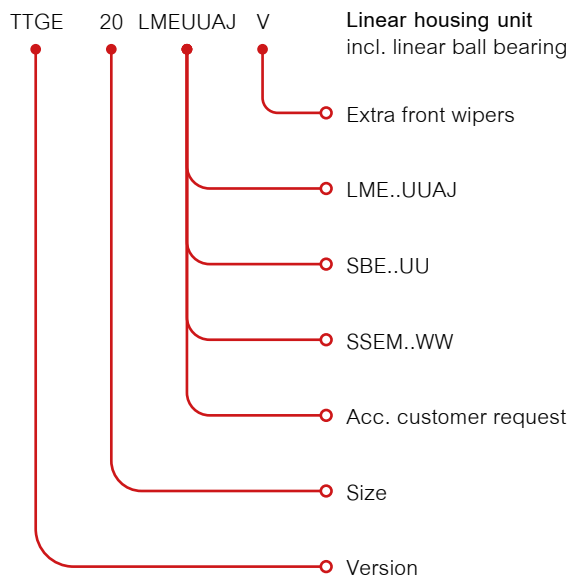


TTGE

Type	ϕd	ϕD	H	$h_{+0,01/-0,01}$	A	$A1_{\pm 0,02}$	L	$E1_{\pm 0,15}$	$E2_{\pm 0,15}$	N1	N2	N3	$\phi d1$	$\phi d2$	M	kg
TTGE-08-##	8	16	28	13	35	17,5	62	50	25	11	19,5	8	4,2	8	M5	0,15
TTGE-12-##	12	22	35	18	43	21,5	76	56	32	11	25	10	4,2	8	M5	0,27
TTGE-16-##	16	26	42	22	53	26,5	84	64	40	13	30	12	5,2	10	M6	0,41
TTGE-20-##	20	32	50	25	60	30	104	76	45	18	34	13	6,8	11	M8	0,72
TTGE-25-##	25	40	60	30	78	39	130	94	60	22	40	15	8,6	15	M10	1,35
TTGE-30-##	30	47	70	35	87	43,5	152	106	68	22	48	16	8,6	15	M10	2,01
TTGE-40-##	40	62	90	45	108	54	176	124	46	26	60	20	10,3	18	M12	3,67
TTGE-50-##	50	75	105	50	132	66	224	160	108	34	49	20	14	20	M16	4,7

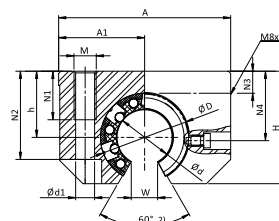
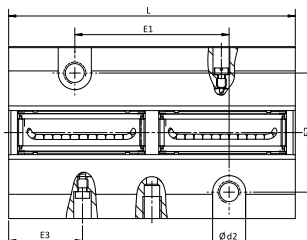
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing
- 1) Values of version LME..UUOP
- 2) Housing angle: observe the angle of the linear ball bearing used



TTGO

Open type, tandem

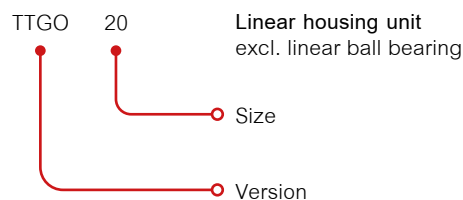
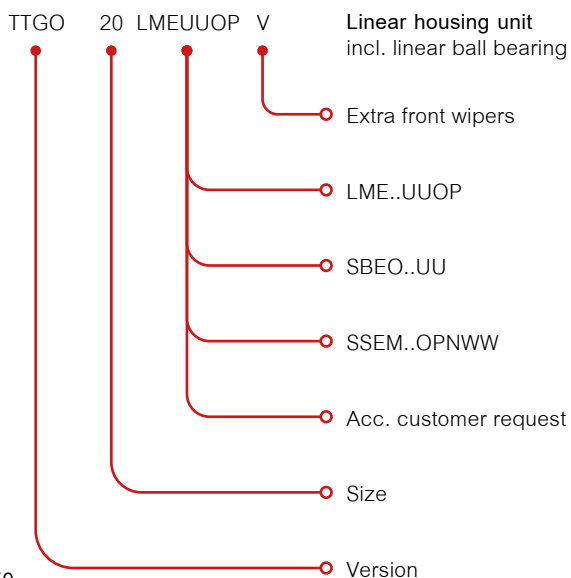


TTGO

Type	ød	øD	H	h +0,01 -0,02	A	A1 ±0,02	L	E1 ±0,15	E2 ±0,15	E3 ±0,2	N1	N2	N3	ød1	ød2	M	W 1)	kg
TTGO-12-##	12	22	30	18	43	21,5	76	40	30	19,5	13	25	10	5,2	10	M6	7,5	0,22
TTGO-16-##	16	26	35	22	53	26,5	84	45	36	21,5	13	30	12	5,2	10	M6	10	0,34
TTGO-20-##	20	32	42	25	60	30	104	55	45	27	18	34	13	6,8	11	M8	10	0,62
TTGO-25-##	25	40	51	30	78	39	130	70	54	33,5	22	40	15	8,6	15	M10	12,5	1,17
TTGO-30-##	30	47	60	35	87	43,5	152	85	62	39,5	26	48	16	10,3	18	M12	12,5	1,68
TTGO-40-##	40	62	77	45	108	54	176	100	80	45	34	60	20	14	20	M16	16,8	3,15
TTGO-50-##	50	75	88	50	132	66	224	125	100	56,5	34	49	20	14	20	M16	21	3,9

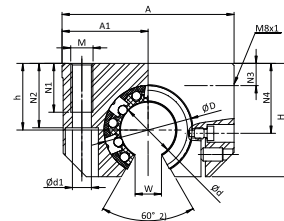
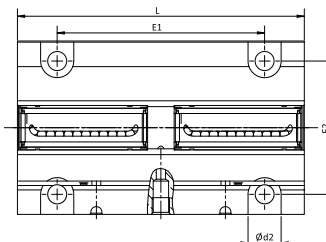
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing
- 1) Values of version LME..UUOP
- 2) Housing angle: observe the angle of the linear ball bearing used



TTGOE

Open type, tandem, adjustable

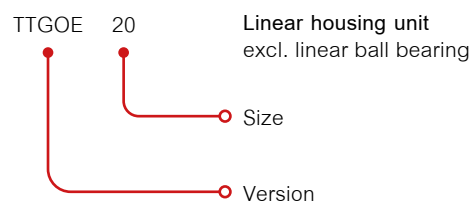
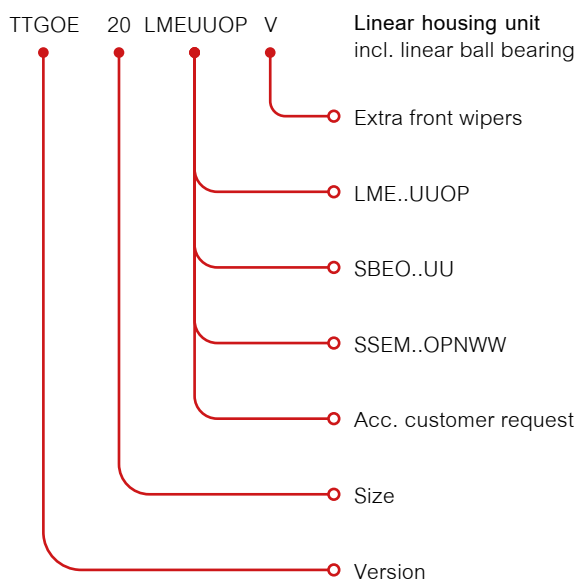


TTGOE

Type	ød	øD	H	h $+0,01$ $-0,01$	A	$A1$ $\pm 0,02$	L	$E1$ $\pm 0,15$	$E2$ $\pm 0,15$	$E3$ $\pm 0,02$	N1	N2	N3	N4	ød1	ød2	M	W_1	kg
TTGOE-12-##	12	22	30	18	43	21,5	76	56	32	19,5	11	25	10	16,7	4,2	8	M5	7,5	0,22
TTGOE-16-##	16	26	35	22	53	26,5	84	64	40	21,5	13	30	12	22	5,2	10	M6	10	0,34
TTGOE-20-##	20	32	42	25	60	30	104	76	45	27	18	34	13	25	6,8	11	M8	10	0,62
TTGOE-25-##	25	40	51	30	78	39	130	94	60	33,5	22	40	15	31,5	8,6	15	M10	12,5	1,17
TTGOE-30-##	30	47	60	35	87	43,5	152	106	68	39,5	22	48	16	33	8,6	15	M10	12,5	1,68
TTGOE-40-##	40	62	77	45	108	54	176	124	86	45,5	26	60	20	43,5	10,3	18	M12	16,8	3,15
TTGOE-50-##	50	75	88	50	132	66	224	160	108	57,5	34	49	20	47,5	14	20	M16	21	3,9

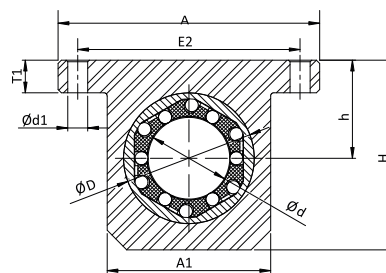
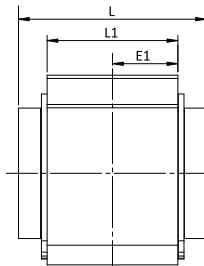
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing
- 1) Values of version LME..UUOP
- 2) Housing angle: observe the angle of the linear ball bearing used



TALGS

Closed type

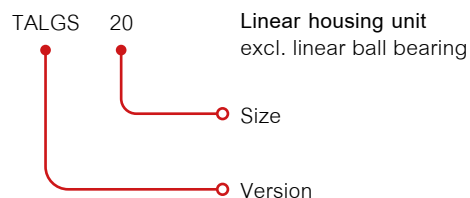
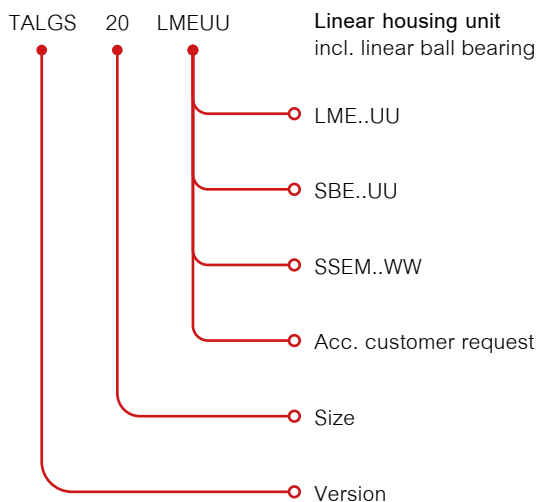


TALGS

Type	Ød	ØD	H	$h_{\pm 0,015}$	A	A1	L	L1	T1	E1	$E2_{\pm 0,15}$	Ød1	kg
TALGS-12-##	12	22	35	18	52	30	32	20	6	10	42	5,3	0,09
TALGS-16-##	16	26	40,5	22	56	34	36	22	7	11	46	5,3	0,12
TALGS-20-##	20	32	48	25	70	40	45	28	8	14	58	6,4	0,25
TALGS-25-##	25	40	58	30	80	50	58	40	10	20	68	6,4	0,49
TALGS-30-##	30	47	67	35	88	58	68	48	10	24	76	6,4	0,78
TALGS-40-##	40	62	85	45	108	74	80	56	12	28	94	8,4	1,28
TALGS-50-##	50	75	100	50	135	96	100	72	12	36	116	10,5	1,70

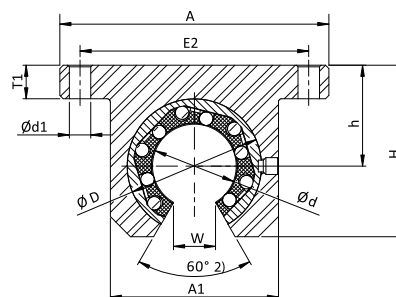
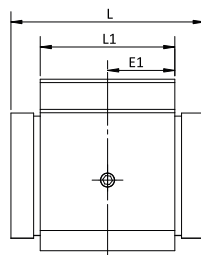
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according to the specifications of the linear ball bearings
- Item can deviate from the image / drawing



TALGSO

Open type

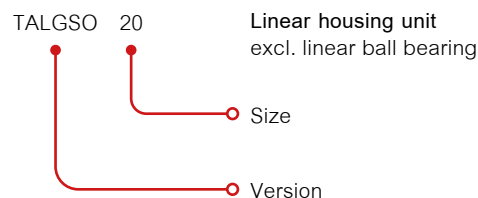
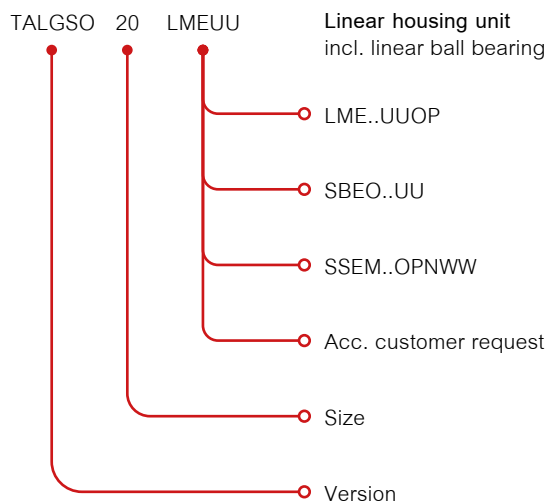


TALGSO

Type	Ød	ØD	H	$h_{\pm 0,015}$	A	A1	L	L1	T1	E1	$E2_{\pm 0,15}$	$W_{1)}$	Ød1	kg
TALGSO-12-##	12	22	28	18	52	30	32	20	6	10	42	7,5	5,3	0,09
TALGSO-16-##	16	26	33,5	22	56	34	36	22	7	11	46	10	5,3	0,12
TALGSO-20-##	20	32	42	25	70	40	45	28	8	14	58	10	6,4	0,25
TALGSO-25-##	25	40	51	30	80	50	58	40	10	20	68	12,5	6,4	0,49
TALGSO-30-##	30	47	60	35	88	58	68	48	10	24	76	12,5	6,4	0,78
TALGSO-40-##	40	62	77	45	108	74	80	56	12	28	94	16,8	8,4	1,28
TALGSO-50-##	50	75	93	50	135	96	100	72	12	36	116	21	10,5	1,70

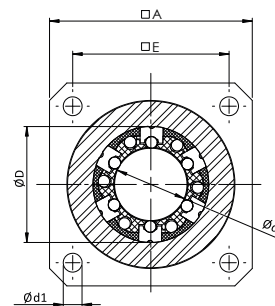
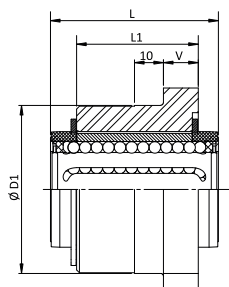
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Item can deviate from the image / drawing
- 1) Values of version LME..UUOP
- 2) Housing angle: observe the angle of the linear ball bearing used



TFG

Flange type

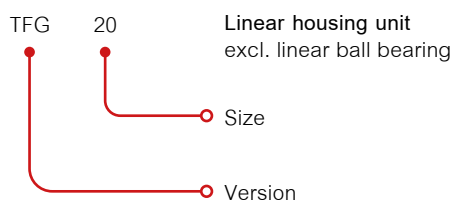
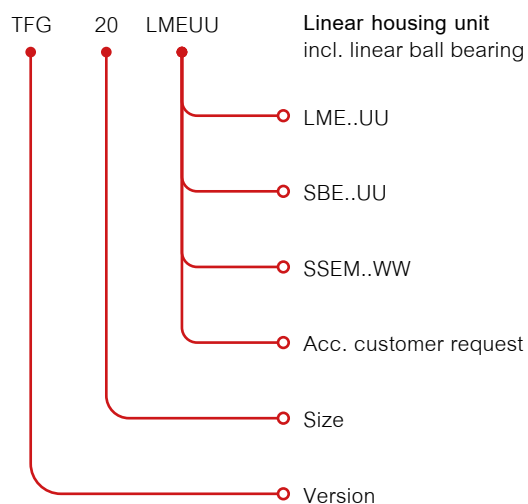


TFG

Type	Ød	ØD	ØD1 _{g7}	A	L	L1	E	V	Ød1	kg
TFG-12-##	12	22	32	40	32	22	30	6	5,5	0,12
TFG-16-##	16	26	38	50	36	24	35	8	5,5	0,17
TFG-20-##	20	32	46	60	45	30	42	10	6,6	0,33
TFG-25-##	25	40	58	70	58	42	54	12	6,6	0,68
TFG-30-##	30	47	66	80	68	50	60	14	9	1,03
TFG-40-##	40	62	90	100	80	59	78	16	11	2,00

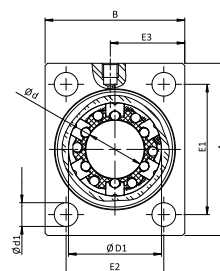
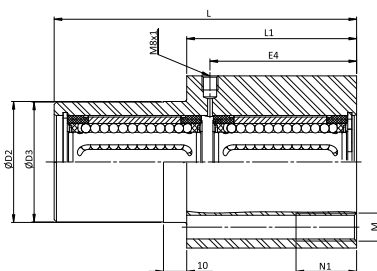
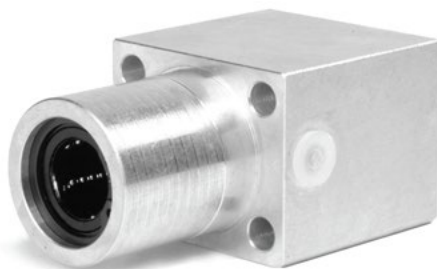
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according the specifications of the linear ball bearings
- Item can deviate from the image / drawing



TTFG

Flange type, tandem

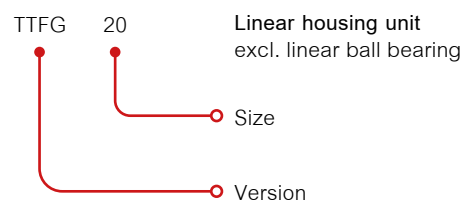
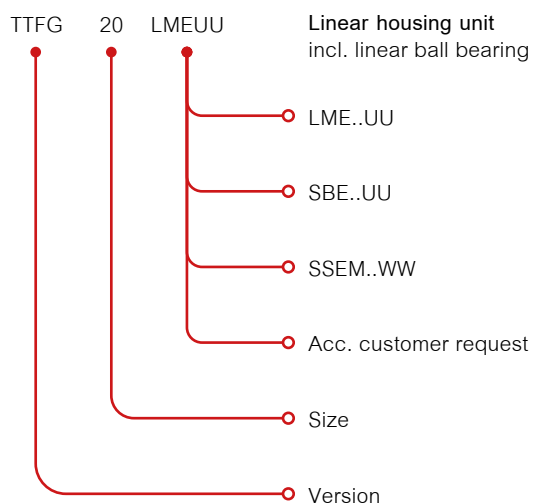


TTFG

Type	Ød	ØD1	ØD2 g7	ØD3 -0,20 -0,50	A	B	E1 ±0,25	E2 ±0,25	E3	E4	L	L1	Ød1	M	N1	kg
TTFG-12-##	12	22	30	30	42	34	32	24	19	36	76	46	5,3	M6	13	0,20
TTFG-16-##	16	26	35	35	50	40	38	28	22	40	84	50	6,6	M8	18	0,32
TTFG-20-##	20	32	42	42	60	50	45	35	27	50	104	60	8,4	M10	22	0,55
TTFG-25-##	25	40	52	52	74	60	56	42	32	63	130	73	10,5	M12	26	1,17
TTFG-30-##	30	47	61	61	84	70	64	50	37	74	152	82	13,5	M16	34	1,50

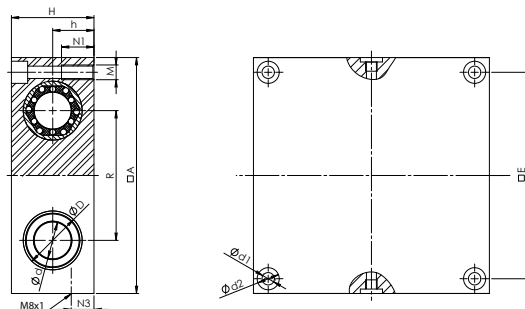
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by circlips acc. DIN 472
- Weight including linear ball bearing

- Load ratings according the specifications of the linear ball bearings
- Item can deviate from the image / drawing



TQSG

Closed type, quattro

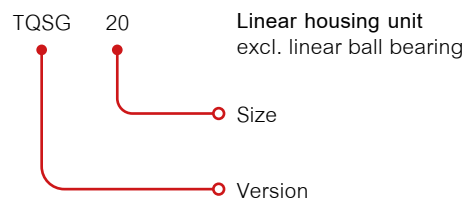
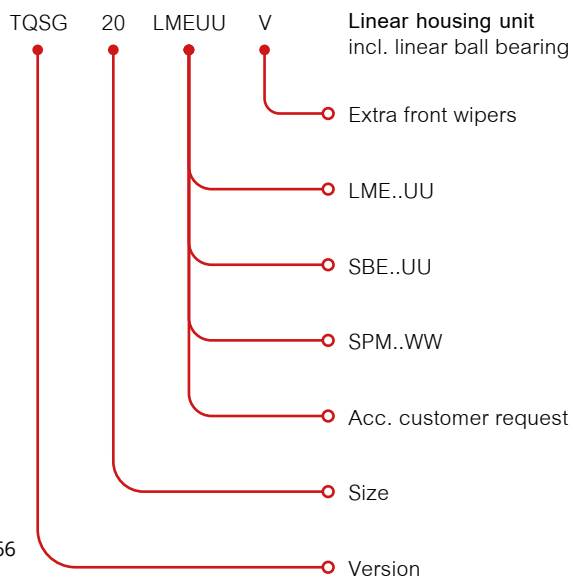


TQSG

Type	ød	øD	H	h ±0,02	A	R ±0,02	E	N1	N3	ød1	ød2	M	kg
TQSG-08-##	8	16	23	11,5	65	32	55	11	19,5	4,2	8	M5	0,18
TQSG-12-##	12	22	32	16	85	42	73	13	27	5,2	10	M6	0,45
TQSG-16-##	16	26	36	18	100	54	88	13	31	5,2	10	M6	0,63
TQSG-20-##	20	32	46	23	130	72	115	18	39	6,8	11	M8	1,45
TQSG-25-##	25	40	56	28	160	88	140	22	48	8,6	15	M10	2,65
TQSG-30-##	30	47	64	32	180	96	158	26	55	10,3	18	M12	3,7
TQSG-40-##	40	62	80	40	230	122	202	34	71	14	20	M16	7,3
TQSG-50-##	50	75	96	48	280	152	250	34	86	14	20	M16	13

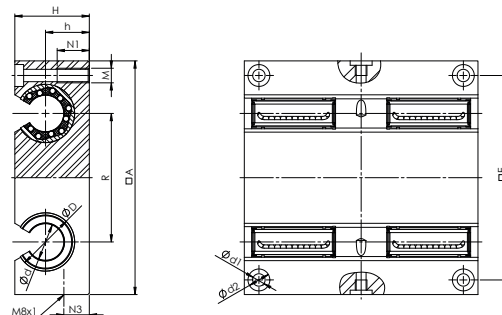
- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing

- Load ratings according the specifactions of the linear ball bearings
- Lubrication bore M8x1
- Item can deviate from the image / drawing



TQSO

Open type, quattro

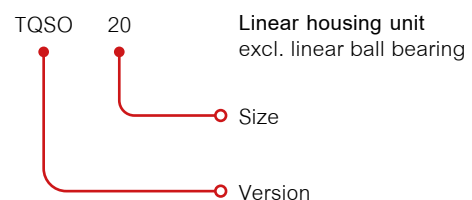
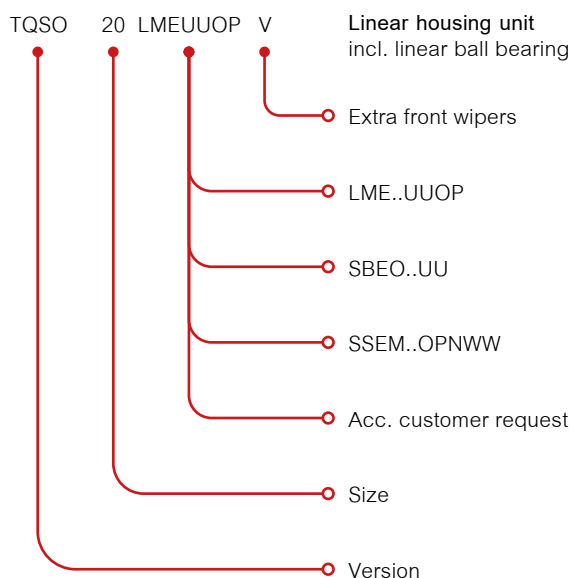


TQSO

Type	ød	øD	H	h ±0,02	A	R ±0,02	E	N1	N3	ød1	ød2	M	kg
TQSO-12-##	12	22	30	18	85	42	73	13	27	5,2	10	M6	0,35
TQSO-16-##	16	26	35	22	100	54	88	13	31	5,2	10	M6	0,6
TQSO-20-##	20	32	42	25	130	72	115	18	39	6,8	11	M8	1,25
TQSO-25-##	25	40	51	30	160	88	140	22	48	8,6	15	M10	2,2
TQSO-30-##	30	47	60	35	180	96	158	26	55	10,3	18	M12	3,2
TQSO-40-##	40	62	77	45	230	122	202	34	71	14	20	M16	6,75
TQSO-50-##	50	75	93	55	280	152	250	34	86	14	20	M16	12,4

- Fixing screws acc DIN 912-8.8, spring washer acc. DIN 7980
- Bearing fixing in the housing by fixing screw
- Weight including linear ball bearing
- Load ratings according the specifactions of the linear ball bearings

- Lubrication bore M8x1
- Item can deviate from the image / drawing
- 1) Values of version LME..UUOP
- 2) Housing angle: observe the angle of the linear ball bearing used



Linear shaft support blocks

SHAFT SUPPORT BLOCKS

Shaft support blocks are used for 'floating' shafts.

The shaft support blocks are easy to assemble whereby the dimensions are according to ISO 13012 - 1.

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TGWH shaft support blocks

74



TTAC shaft support blocks

71



TGWA shaft support blocks

75



TTA shaft support blocks

72



TGWN shaft support blocks

76



TTB shaft support blocks

73



TFWB shaft support blocks

Lineair shaft support rails

SHAFT SUPPORT RAILS

Aluminum shaft support rails are used for securing radial drilled hardened and ground shafts onto the base. Shaft support rails are usually applied in combination with 'open' linear ball bearings.

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TTSN shaft support rails

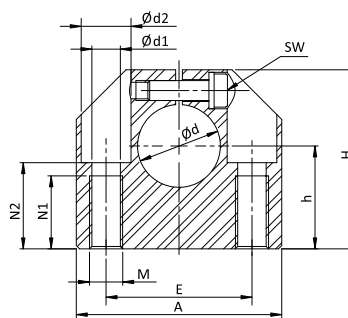
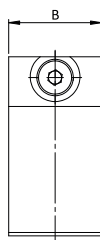
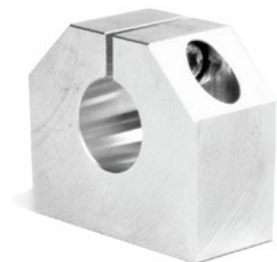
78



TTSU shaft support rails

TGWH

compact series

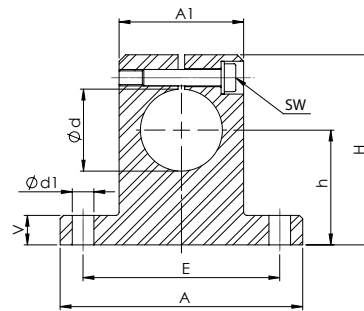
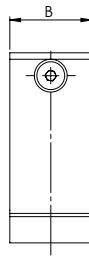


TGWH

Type	ød	A	B	H	h ±0,02	E ±0,12	ød1	ød2	M	N1	N2	SW	kg
TGWH-06	6	32	16	27	15	22	4,2	8	M5	11	13	2,5	0,03
TGWH-08	8	32	16	27	16	22	4,2	8	M5	11	13	2,5	0,03
TGWH-10	10	40	18	33	18	27	5,2	10	M6	13	16	3	0,05
TGWH-12	12	40	18	33	19	27	5,2	10	M6	13	16	3	0,05
TGWH-14	14	45	20	38	20	32	5,2	10	M6	13	18	3	0,07
TGWH-16	16	45	20	38	22	32	5,2	10	M6	13	18	3	0,07
TGWH-20	20	53	24	45	25	39	6,8	11	M8	18	22	4	0,12
TGWH-25	25	62	28	54	31	44	8,6	15	M10	22	26	5	0,17
TGWH-30	30	67	30	60	34	49	8,6	15	M10	22	29	5	0,22
TGWH-40	40	87	40	76	42	66	10,3	18	M12	26	38	6	0,48
TGWH-50	50	103	50	92	50	80	14,25	20	M16	34	46	8	0,82

TGWA

standard series

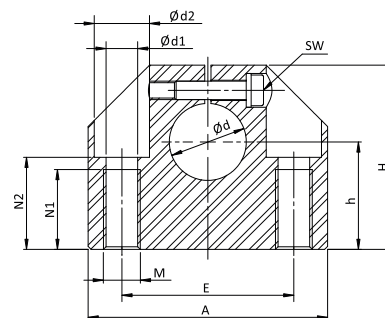
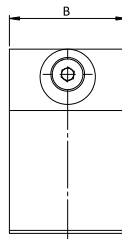
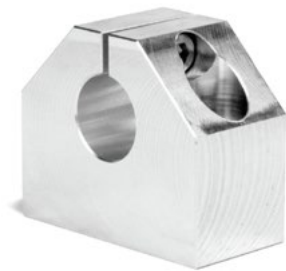


TGWA

Type	$\varnothing d_{H8}$	H	$h_{\pm 0,02}$	A	A1	B	$E_{\pm 0,15}$	$\varnothing d1$	V	SW	kg
TGWA-08	8	27	15	32	16	10	25	4,5	5,0	2,5	0,01
TGWA-12	12	35	20	42	20	12	32	5,5	5,5	3	0,02
TGWA-16	16	42	25	50	26	16	40	5,5	6,5	3	0,03
TGWA-20	20	50	30	60	32	20	45	5,5	8,0	3	0,07
TGWA-25	25	58	35	74	38	25	60	6,6	9,0	4	0,14
TGWA-30	30	68	40	84	45	28	68	9,0	10,0	5	0,20
TGWA-40	40	86	50	108	56	32	86	11,0	12,0	6	0,48
TGWA-50	50	100	60	130	80	40	108	11,0	14,0	6	1,90
TGWA-60	60	124	75	160	100	48	132	13,5	15,0	8	3,60

TGWN

standard series

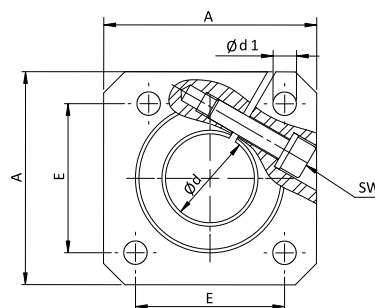
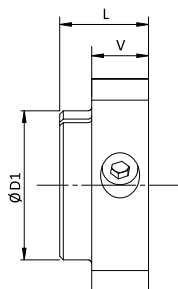


TGWN

Type	Ød	A	B	H	h ±0,02	E ±0,12	Ød1	Ød2	M	N1	N2	SW	kg
TGWN-08	8	32	18	28	15	22	3,3	6	M4	9	13,0	2,5	0,04
TGWN-12	12	43	20	35	20	30	5,2	10	M6	13	16,5	3	0,10
TGWN-16	16	53	24	42	25	38	6,8	11	M8	18	21,0	4	0,15
TGWN-20	20	60	30	50	30	42	8,6	15	M10	22	25,0	5	0,23
TGWN-25	25	78	38	60	35	56	10,3	18	M12	26	30,0	6	0,41
TGWN-30	30	87	40	70	40	64	10,3	18	M12	26	34,0	6	0,53
TGWN-40	40	108	48	90	50	82	14,25	20	M16	34	44,0	8	0,99
TGWN-50	50	132	58	105	60	100	17,5	26	M20	43	49,0	10	1,25

TFWB

Flange type

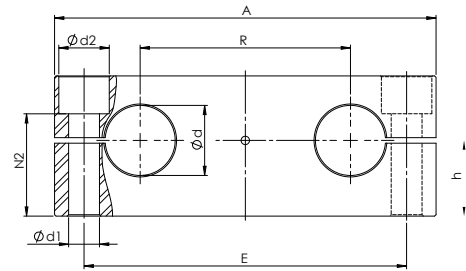
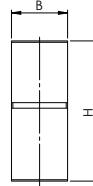


TFWB

Type	Ød	A	L	ØD1	E	V	Ød1	SW	kg
TFWB-12	12	40	20	23,5	30	12	5,5	3	0,06
TFWB-16	16	50	20	27,5	35	12	5,5	3	0,08
TFWB-20	20	50	23	33,5	38	14	6,6	4	0,10
TFWB-25	25	60	25	42,0	42	16	6,6	5	0,15
TFWB-30	30	70	30	49,5	54	19	9	6	0,30
TFWB-40	40	100	40	65,0	68	26	11	8	0,70
TFWB-50	50	100	50	75,0	75	36	11	8	1,20

TTAC

Compact series, tandem

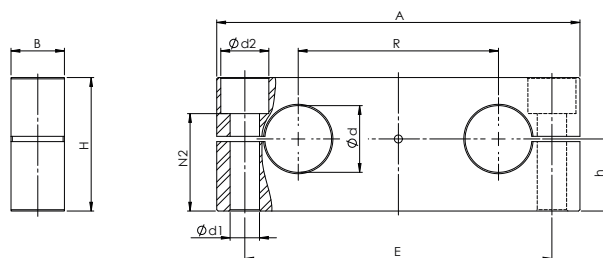


TTAC

Type	ød	A	B	H	$h_{\pm 0,015}$	$R_{\pm 0,02}$	E	ød1	ød2	N2	kg
TTAC-12	12	80	15	30	17	40	64	6,6	11	21,5	0,1
TTAC-16	16	96	15	35	19,5	52	80	6,6	11	26,5	0,15
TTAC-20	20	115	18	40	22	63	97	9	15	28	0,2
TTAC-25	25	136	20	50	27	75	115	11	18	36,5	0,25
TTAC-30	30	146	20	56	31	80	125	11	18	42,5	0,35
TTAC-40	40	184	25	70	38	97	160	13,5	20	54	0,65
TTAC-50	50	210	30	80	43	107	180	17,5	26	59	0,85

TTA

Standard series, tandem, fixed

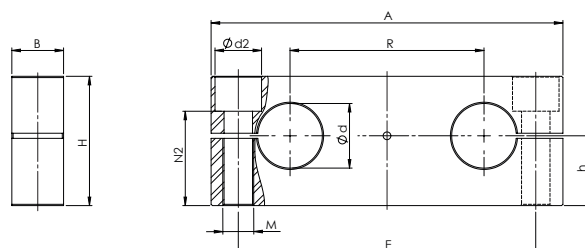


TTA

Type	ød	A	B	H	$h_{\pm 0,015}$	$R_{\pm 0,02}$	E	ød1	ød2	N2	kg
TTA-08	8	65	12	22	12,5	32	52	5,5	10	17,6	0,04
TTA-12	12	85	14	32	18	42	70	6,6	11	25,6	0,09
TTA-16	16	100	18	36	20	54	82	9	15	27,4	0,14
TTA-20	20	130	20	46	25	72	108	11	18	35,4	0,26
TTA-25	25	160	25	56	30	88	132	13,5	20	43,4	0,47
TTA-30	30	180	25	64	35	96	150	13,5	20	51,4	0,63
TTA-40	40	230	30	80	44	122	190	17,5	26	63,4	1,1
TTA-50	50	280	30	96	52	152	240	17,5	26	79,4	1,65

TTB

Standard series, tandem, moveable

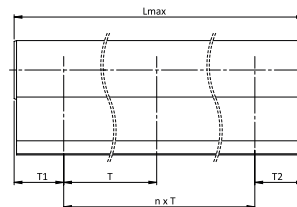
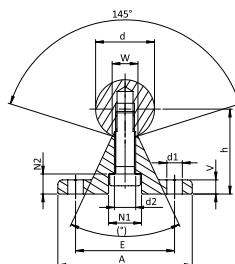


TTB

Type	Ød	A	B	H	$h_{\pm 0,015}$	$R_{\pm 0,02}$	E	M	Ød2	N2	kg
TTB-08	8	65	12	22	11	32	52	M5	10	16,6	0,04
TTB-12	12	85	14	28	14	42	70	M6	11	21,6	0,07
TTB-16	16	100	18	32	16	54	82	M8	15	23,4	0,12
TTB-20	20	130	20	42	21	72	108	M10	18	31,4	0,22
TTB-25	25	160	25	52	26	88	132	M12	20	39,4	0,43
TTB-30	30	180	25	58	29	96	150	M12	20	45,4	0,57
TTB-40	40	230	30	72	36	122	190	M16	26	55,4	0,98
TTB-50	50	280	30	88	44	152	240	M16	26	71,4	1,5

TTSN

standard series

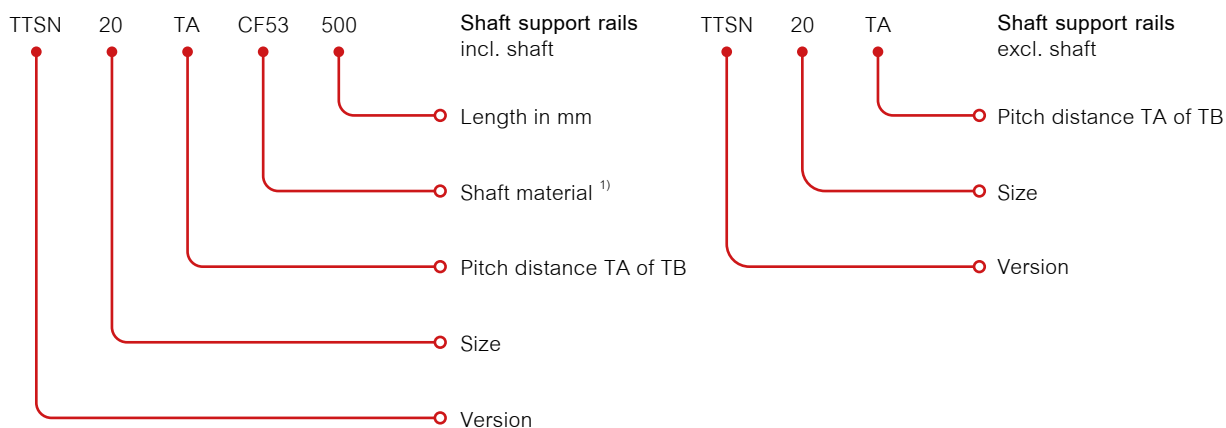


TTSN

Type	ød	A	h	V	N1	N2	ød1	ød2	W	(°)	E	T _A	T _B	kg
TTSN-12-##	12	40	22	5	8,0	5,0	4,5	4,5	5,8	50	29	75	120	0,75
TTSN-16-##	16	45	26	5	9,5	6,0	5,5	5,5	7,0	50	33	100	150	0,91
TTSN-20-##	20	52	32	6	11,0	6,5	6,6	6,6	8,3	50	37	100	150	1,33
TTSN-25-##	25	57	36	6	14,0	8,5	6,6	9,0	10,8	50	42	120	200	1,51
TTSN-30-##	30	69	42	7	17,0	10,5	9,0	11,0	11,0	50	51	150	200	1,91
TTSN-40-##	40	73	50	8	17,0	10,5	9,0	11,0	15,0	50	55	200	300	2,62
TTSN-50-##	50	84	60	9	19,0	12,5	11,0	13,0	19,0	46	63	200	300	3,54

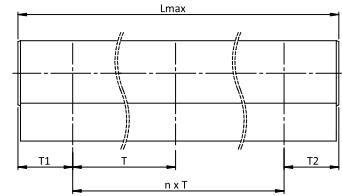
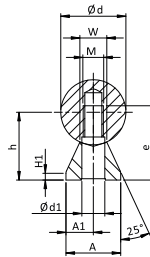
- 1) Other materials only per request
- Weight without shaft

- Depending on the length of the support rail, the rail may be composed of several individual sections
- T1/T2min = 20 mm



TTSU

compact series

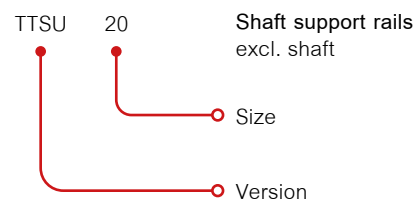
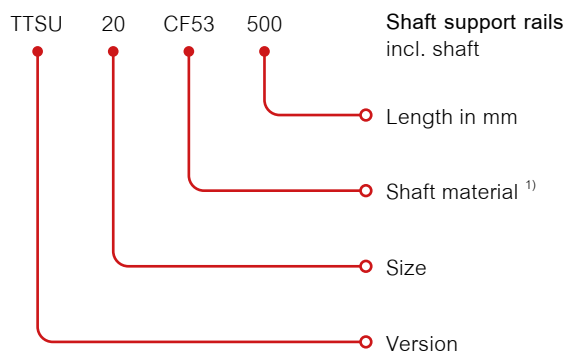


TTSU

Type	ϕd	h	H1	A	A1	W	M	$\phi d1$	e	T	kg	T_A	T_B	kg
TTSU-12-##	12	14,5	3	11	6,0	5,4	M4	4,5	15,5	75	0,20	75	120	0,75
TTSU-16-##	16	18	3	14	7,0	7,0	M5	5,5	16,0	75	0,30	100	150	0,91
TTSU-20-##	20	22	3	17	8,5	8,1	M6	6,6	20,0	75	0,42	100	150	1,33
TTSU-25-##	25	26	3	21	10,5	10,3	M8	9,0	25,0	75	0,58	120	200	1,51
TTSU-30-##	30	30	3	23	11,5	11,0	M10	11,0	30,0	100	0,69	150	200	1,91
TTSU-40-##	40	39	4	30	15,0	15,0	M12	13,5	38,0	100	1,16	200	300	2,62

- 1) Other materials only per request
- Weight without shaft
- $T1/T2_{min} = 20 \text{ mm}$

- Depending on the length of the support rail, the rail may be composed of several individual sections
- TTSU support rails and shaft are always delivered unassembled





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