LINEAR COMPONENTS

Published by:

Technische Handelsonderneming Nederland B.V. (THN)

Office address:
Hendrik ter Kuilestraat 30
7547 BD Enschede, the Netherlands

Contact:
Tel: +31 (0)53 - 432 34 46
Email: info@thn.nl
Website: www.thn.nl

Version 1.0

THN specializes in technical products which we can deliver rapidly with smart stocks and efficient logistics. Our aim is to score 100% customer satisfaction at all times, and we're improving all the time as we work hard day after day. We can also build on the more than 75 years of experience which THN has accumulated, and on our three pillars: commitment, innovation and delivery.

At THN, it's all about the customer. That is because we get involved, helping each other as colleagues and as a team for our customers. For when developments need change, we will innovate. To serve you - the customer - even better. And so we can deliver what you need.

In front of you is the brochure in which you can find everything about our linear assortment. The linear range consists of hardened ground shafts, linear ball bearings, linear bearing units, shaft support blocks and shaft support rails.

In our own machining center, the shafts are cut to length and various machining operations can be performed, such as axial and radial holes that are often provided with screw thread, but also machining operations such as rejuvenation, flat edges and keyways are possible.

At THN you are at the right place for linear components.

1940

THN is established as a technical wholesaler

1970

THN specializes in piston rings

1974

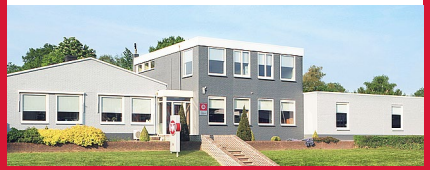
THN adds plain bearings to its range

2007

THN adds linear components to its range

2020

THN celebrates its 80th anniversary



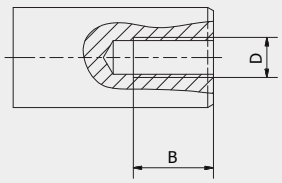
Contents

Hardened ground shafts 05

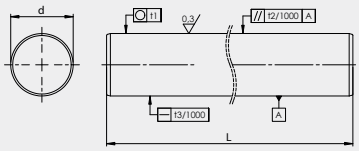
Applications and shaft cut-outs 06

Article code and materials 07

Machining operations 09



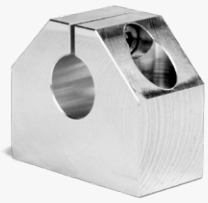
Shaft program 11



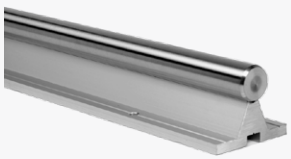
Linear ball bearings 19

Linear housing units 35

Shaft support blocks 53



Shaft support rails 60



THN ensures its product offering is always up-to-date by keeping a keen eye on the market. For as well as linear components, THN can also offer a wide range of plain bearings, piston rings, Fey laminar rings and sintered filters.

How can we assist you with our other products?

Piston rings

- diameters from 10 mm - 3000 mm
- available in many different materials
- bespoke possibilities

Fey laminar rings

- high-quality steel seals
- internal/external clamping or combined
- types available up to +700 °C

Sintered filters

- sintered silencers
- a wide range of products in stainless steel and bronze
- bespoke sintered filters

Plain bearings

- 1 million plain bearings in stock
- over 6,500 sizes and models
- custom plain bearings also available

Hardened Ground Shafts

Steel induction hardened shafts

Hardened ground shafts are steel shafts whose outer layer has been induction hardened. They are mainly known for their linear application and are also often called linear 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 a number of material and can optionally have a hard chrome coating.

THN Has a large stock of hardened ground shafts consisting of shafts in production lengths of 6,000 to 8,000mm.

Linear machining center

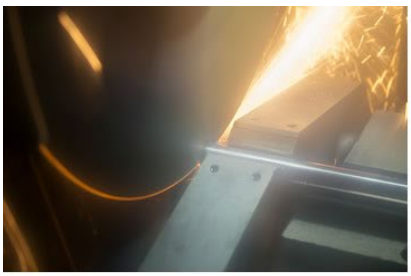
For cutting the shaft to length and adding all required features we have our own linear machining center.

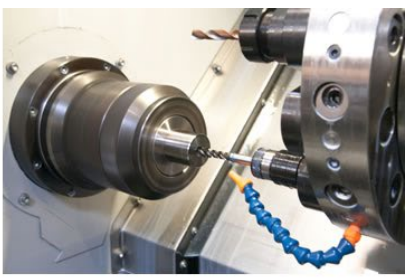
Common operations include axial and radial holes, these are usually provided with thread. In addition most other operations are also possible, such as holes, flat sides and keyways.

We are happy to advise you on the required operations.

Non-standard sizes

In addition to the standard diameters we can, at sufficient quantities, supply special sizes and tolerances for you, and stock them.





Applications

Applications

The properties of hardened ground shafts make them very suitable for applications such as:

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

Properties

Corrosion resistant steels

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

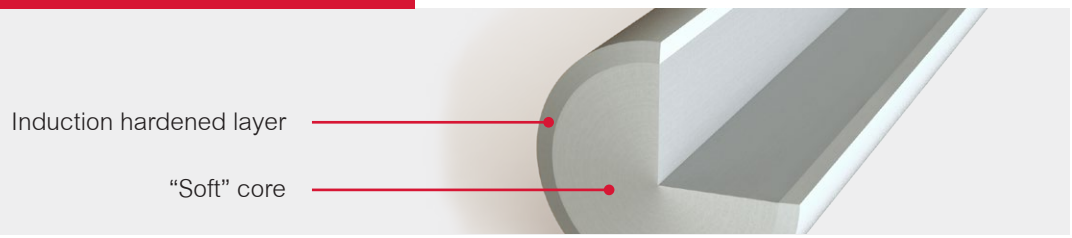
Hard chrome coating

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

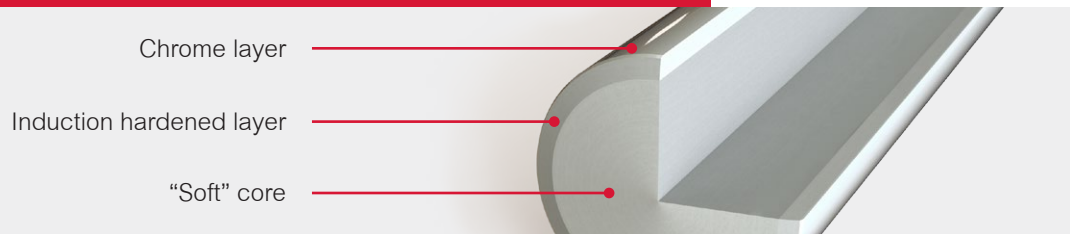
Special coatings

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

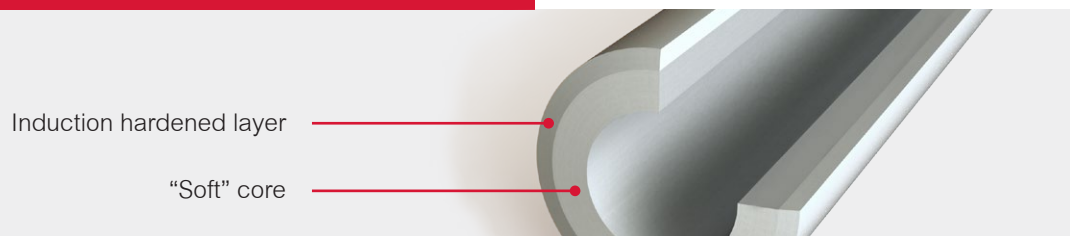
Cross-section TS shaft with hardened layer



Cross-section TS shaft with hardened layer and chrome coating



Cross-section TT hollow shaft with hardened layer



ARTICLE CODE AND MATERIALS

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 shaft in mm

The code of a hardened ground solid 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

MATERIAL OVERVIEW

Steel type		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 for solid linear shafts. For hollow shafts C60 is used.

** X90CrMoV18 is an acid resistant stainless steel

*** Other materials are available on request

Shaft and chrome layer properties

Shaft properties

Steel type	Surface hardness HRC	Tensile strength N/mm2	Surface roughness 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 material are available on request

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

Different materials, properties, dimensions and tolerances

Per request THN can also supply other materials such as 100Cr6, 42CrMo4 or 50CrV4. In consultation, it is also possible to supply special coatings, dimensions or tolerances. This is usually possible with ready-machined shafts or, if there is sufficient demand, in trade length of approx. 6 meters. THN also has a number of specials in stock. Contact us for the possibilities.

Chrome layers 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 chromium 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 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:

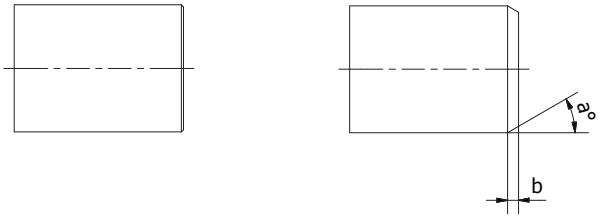
- High wear resistance and low friction coefficient
- Little stick effect due to the low adhesion value
- Good stainless properties on the outside diameter

Machining 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

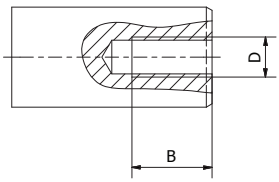
Length of shaft La	Length tolerance
La ≤ 400	± 0,5
400 < La ≤ 1000	± 0,8
1000 < La ≤ 2000	± 1,2
2000 < La ≤ 4000	± 2,0
4000 < La ≤ 6000	± 3,0

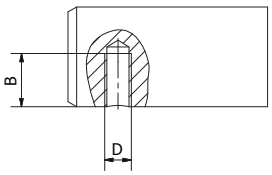
* Length tolerances according ISO 13012

** Deviating length tolerances possible on request

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 x D.

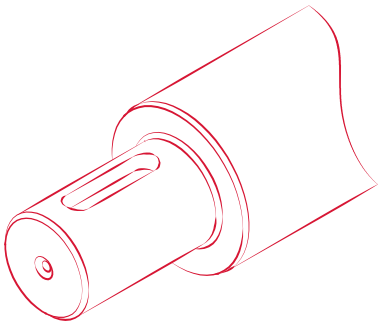


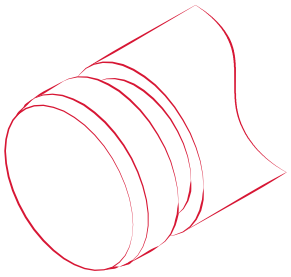


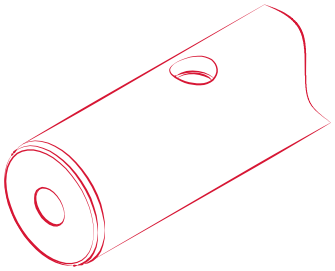
Other operations

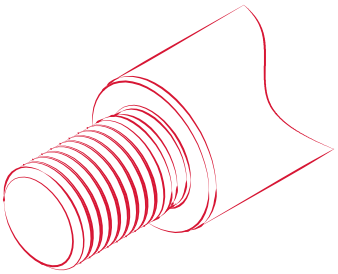
Advice and custom made shafts

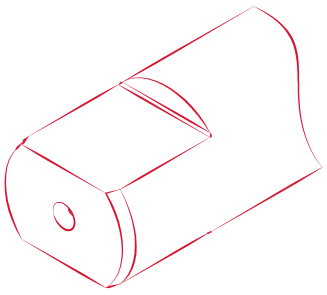
In addition to standard operations such as chamfers and holes, many other operations such as holes, flat edges and keyways are also possible. We are happy to advise on the required operations and then also produce the drawings for you.

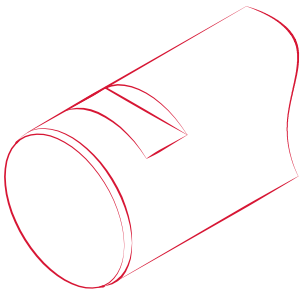




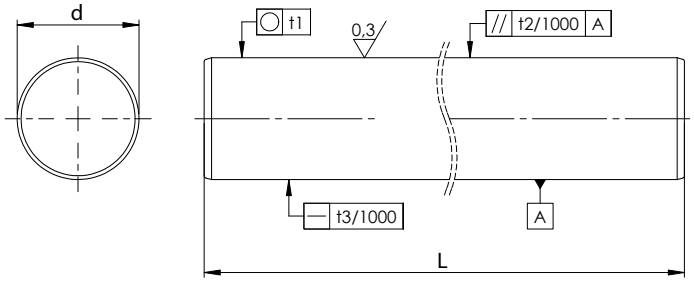






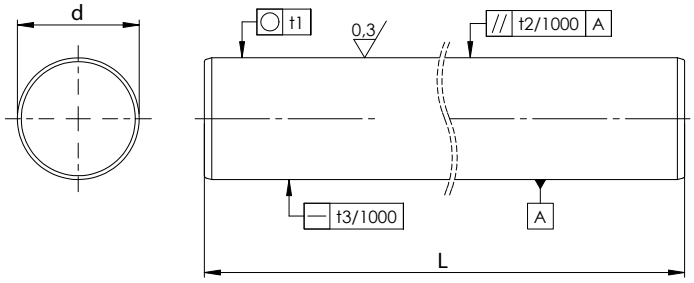


TS CF53 STANDARD SHAFTS SIZES



TS CF53						
Shaft diameter d mm	Hardening depth (min.) mm [1)]	Standard Tolerance ISO h6 µm	Roundness t1 µm	Parallelism t2 µm [2)]	Straightness t3 mm [3)]	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
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
40	1,5	0 / -16	7	11	0,1	9,864
45	1,5	0 / -16	7	11	0,1	12,520

TS CF53 STANDARD SHAFTS SIZES



TS CF53						
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
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

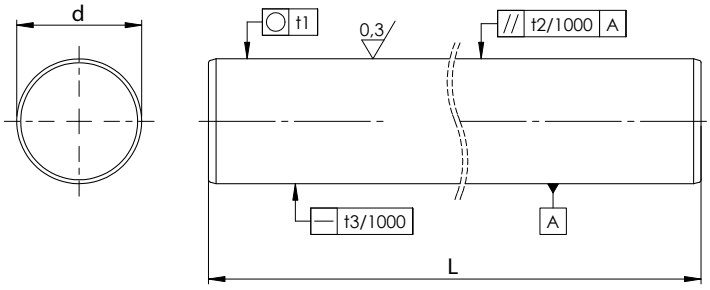
** Deviating tolerances, hardening depths and diameters are available on request

[1] Surface hardening depth according DIN ISO 13012

[2] Diameter differential measurement

[3] Measurement according DIN ISO 13012

TS STAINLESS X46 STANDARD SHAFTS SIZES



TS STAINLESS 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
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
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

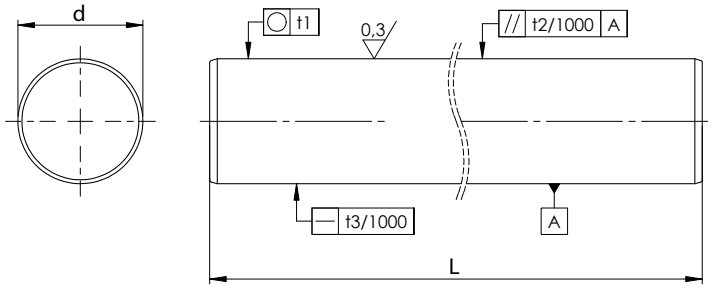
** Deviating tolerances, hardening depths and diameters are available on request

[1)] Surface hardening depth according DIN ISO 13012

[2)] Diameter differential measurement

[3)] Measurement according DIN ISO 13012

TS STAINLESS X90 STANDARD SHAFTS SIZES



TS STAINLESS 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
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

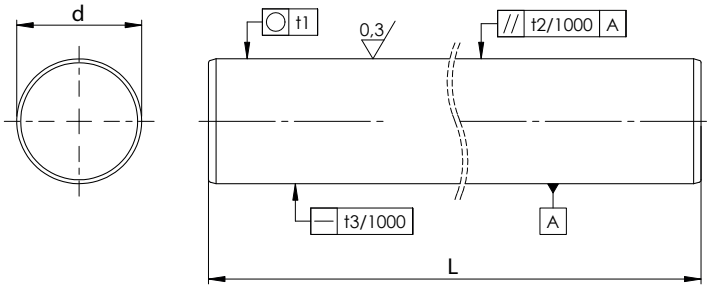
** Deviating tolerances, hardening depths and diameters are available on request

[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
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

** Standaard chroomlaagdikte: ca 10µm

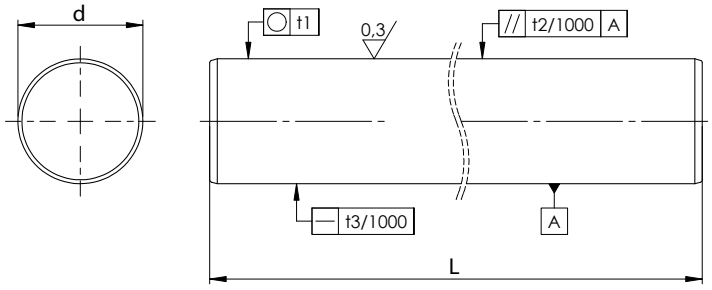
*** Chroomlaag hardheid ≥ 800HV

[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 depth[1] (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	⅜	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	⅝	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
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

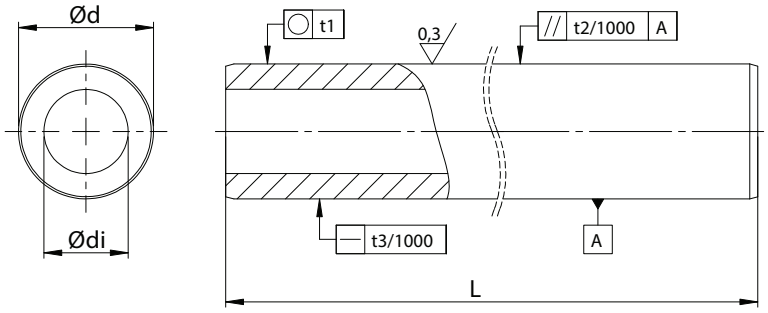
** Deviating tolerances, hardening depths and diameters are available on request

[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

Shaft diameter d mm	Inner diameter approx. di 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
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

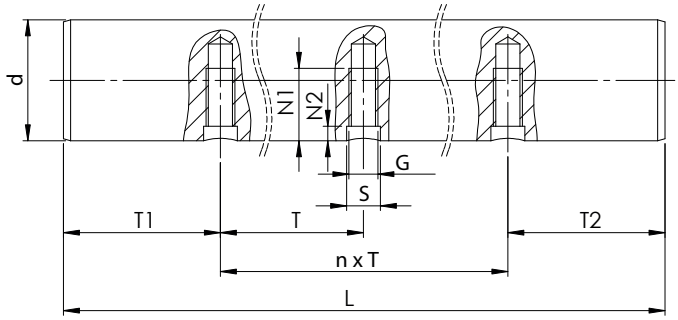
** Deviating tolerances, hardening depths and diameters are available on request

[1] Surface hardening depth according DIN ISO 13012

[2] Diameter differential measurement

[3] Measurement according DIN ISO 13012

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 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 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 in CF53 material as standard; other materials are available on request

** Different patterns are available on request

[1)] Length tolerance: ± 3mm, cut and deburred

[2)] Distance tolerance: ± 0.2 mm, T1 = T2

[3)] Position tolerance thread diameter: ± 0.2 mm

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

Linear ball bearings

General

THN has a wide range of linear ball bearings in shaft diameters from 5 to 60mm and from 1/4” to 2” in many different types.

KH linear ball bearings 20

SBE linear ball bearings 21

SPM linear ball bearings 22

SSEM linear ball bearings 23

MM miniature ball bearings 24

LME linear ball bearings 25

LMEF linear ball bearings 26

LMEF..L linear ball bearings 27

LMEK linear ball bearings 28

LMEK..L linear ball bearings 29

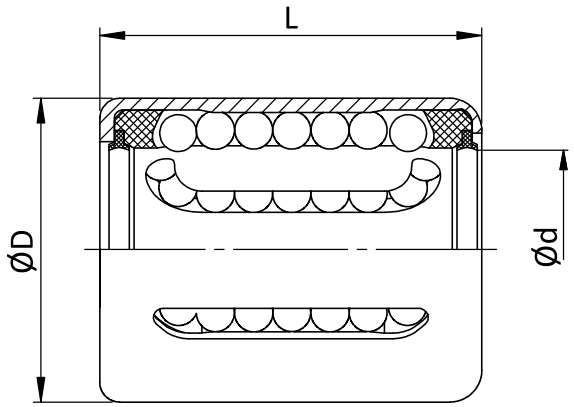
VD front wipers 30

LFR track rollers 31

LFZ/LFE bolts 32

KH LINEAR BALL BEARINGS

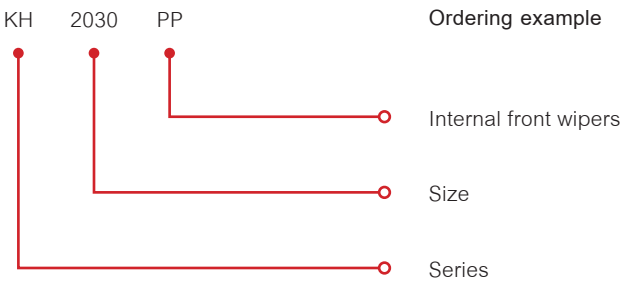
COMPACT SERIES



KH LINEAR BALL BEARINGS

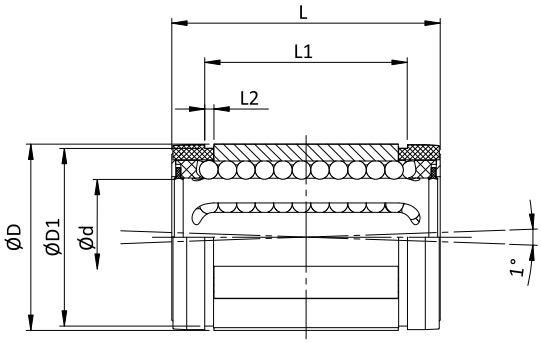
	Dimensions (mm)			Load capacity		Weight
Type	Ød	ØD	L	dyn. C N	stat. C_0 N	g
KH-0622	6	12	22	400	239	7
KH-0824	8	15	24	435	280	12
KH-1026	10	17	26	500	370	14,5
KH-1228	12	19	28	620	510	18,5
KH-1428	14	21	28	620	520	20,5
KH-1630	16	24	30	800	620	27,5
KH-2030	20	28	30	950	790	32,5
KH-2540	25	35	40	1990	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

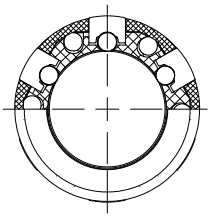
* The load capacities are only valid if a hardened (min. 670 HV) and ground shaft raceways is used.



SBE LINEAR BALL BEARINGS

STANDARD SERIES, SELF-ALIGNING



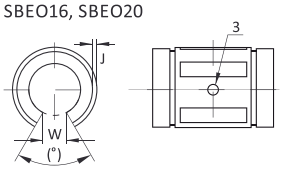


SBE LINEAR BALL BEARINGS

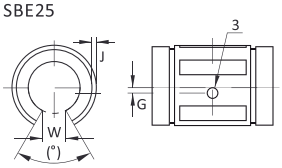
Dimensions (mm)											Load capacity		Weight
Type	Ød	ØD	L	L1	L2	ØD1	W	(°)	G	J	dyn. C N	stat. C_0 N	kg
SBE-16	16	26	36	24,6	1,3	24,9	9	68	0	1,0	1176	607	0,028
SBE-20	20	32	45	31,2	1,6	30,5	9	55	0	1,0	2352	1254	0,061
SBE-25	25	40	58	43,7	1,85	38,5	11,5	57	1,5	1,5	4508	2195	0,122
SBE-30	30	47	68	51,7	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. 670 HV) and ground shaft raceways is used.

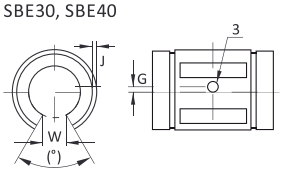
SBEO16, SBEO20



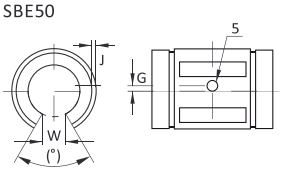
SBE25

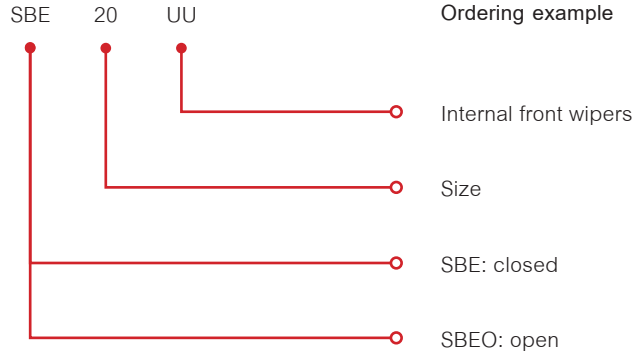


SBE30, SBE40



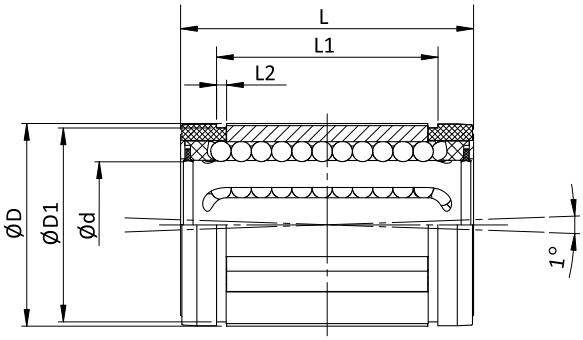
SBE50

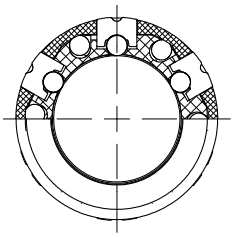




SPM LINEAR BALL BEARINGS

STANDARD SERIES, SELF-ALIGNING



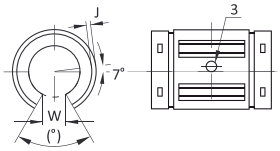


SPM LINEAR BALL BEARINGS

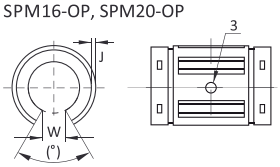
Type	Dimensions (mm)										Load capacity		Weight
	Ød	ØD	L	L1	L2	ØD1	W	(°)	G	J	dyn. C N	stat. C_0 N	kg
SPM-12	12	22	32	22,6	1,3	21,0	7,0	70	-	0,7	1060	1170	0,02
SPM-16	16	26	36	24,6	1,3	24,9	9,8	70	-	1,0	1280	1410	0,03
SPM-20	20	32	45	31,2	1,6	30,3	10,5	58	-	1,0	2100	2310	0,06
SPM-25	25	40	58	43,7	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. 670 HV) and ground shaft raceways is used.

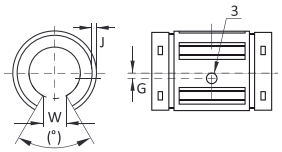
SPM12-OPN



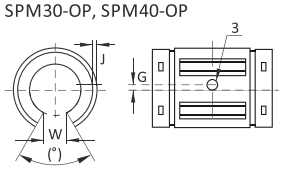
SPM16-OP, SPM20-OP

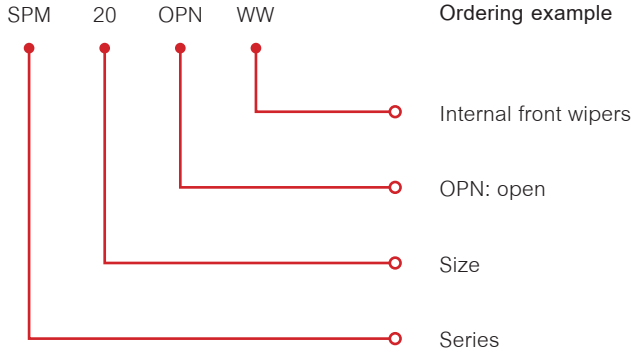


SPM25-OP



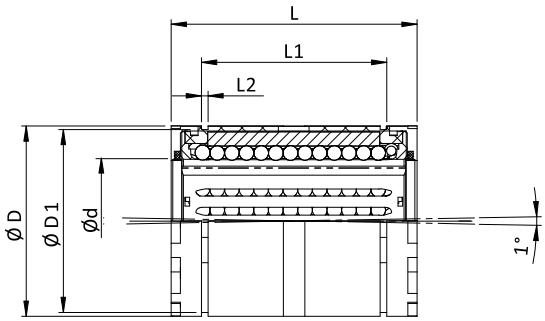
SPM30-OP, SPM40-OP

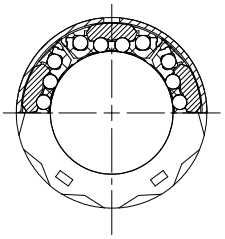




SSEM LINEAR BALL BEARINGS

STANDARD SERIES, SELF-ALIGNING VOOR HOGE BELASTING



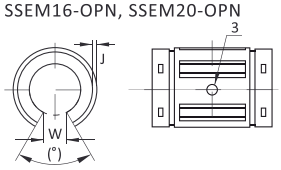


SSEM LINEAR BALL BEARINGS

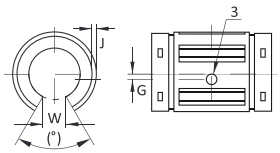
Dimensions (mm)									Load capacity		Weight
Type	Ød	ØD	L	L1	L2	W	(°)	G	dyn. C N	stat. C_0 N	kg
SSEM-16	16	26	36	24,6	1,3	9,0	70	0	2200	2400	0,030
SSEM-20	20	32	45	31,2	1,6	10,0	50	0	4000	4400	0, 066
SSEM-25	25	40	58	43,7	1,85	12,5	60	1,5	6700	7300	0,135
SSEM-30	30	47	68	51,7	1,85	13,7	55	2,0	8300	9100	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. 670 HV) and ground shaft raceways is used.

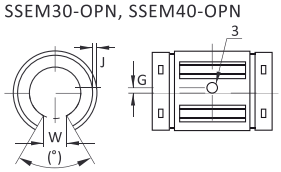
SSEM16-OPN, SSEM20-OPN

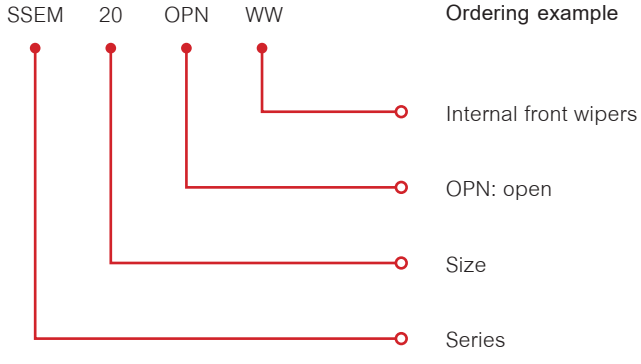


SSEM25-OPN



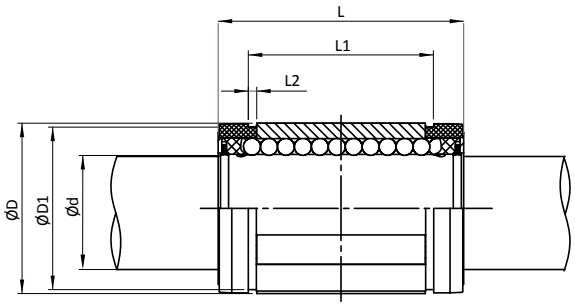
SSEM30-OPN, SSEM40-OPN

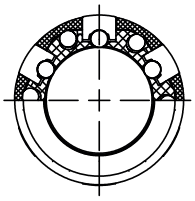




MM LINEAR BALL BEARINGS

MINIATUUR SERIE





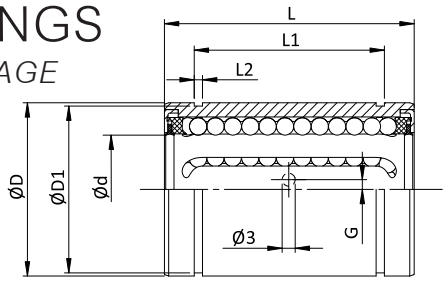
MM LINEAR BALL BEARINGS

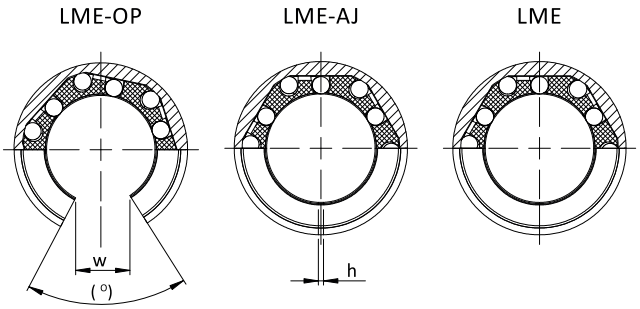
Dimensions (mm)							Load capacity		Weight
Type	Ød	ØD	L	L1	L2 min.	n	dyn. C N	stat. C_0 N	kg
MM-03	3	7	10			4	45	50	0,001
MM-05	5	12	22	14,2	1,10	4	170	190	0,010
MM-08	8	16	25	16,2	1,10	4	310	340	0,020
MM-12	12	22	32	22,6	1,30	5	650	715	0,030

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

LME LINEAR BALL BEARINGS

STANDARD SERIES, PLASTIC CAGE





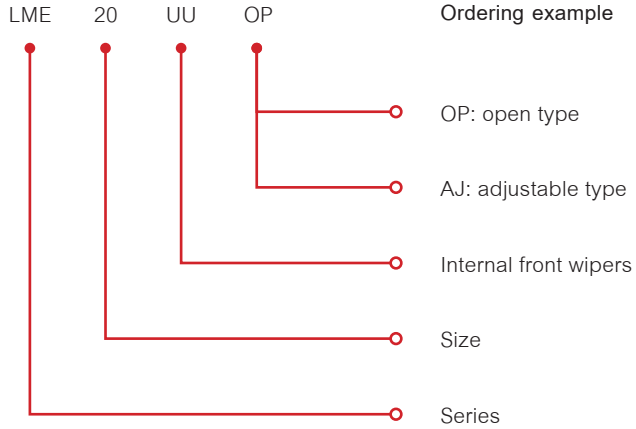
LME LINEAR BALL BEARINGS

Type	Dimensions (mm)										Load capacity		Weight
	Ød	ØD	L	L1	L2	ØD1	h	W	(°)	G	dyn. C N	stat. C_0 N	kg
LME-05	5	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

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

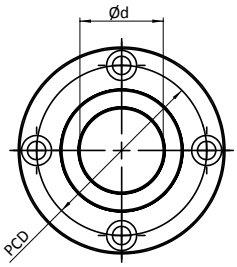
** The fixing bore Ø 3mm is located below the middle line

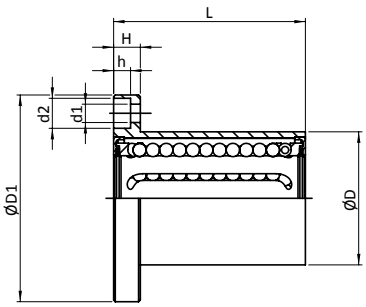
*** Fixing bore Ø5mm



LMEF LINEAR BALL BEARINGS

STANDARD SERIES, PLASTIC CAGE

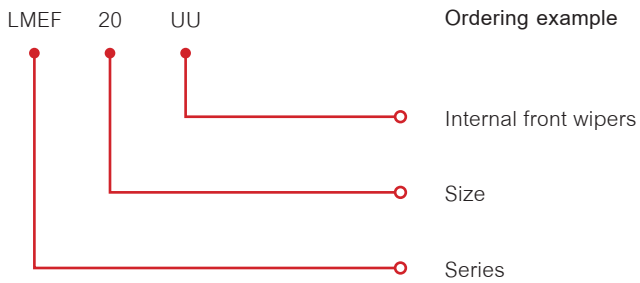




LMEF LINEAR BALL BEARINGS

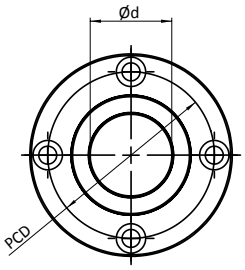
Dimensions (mm)								Load capacity		Weight
Type	Ød	ØD	ØD1	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C_0 N	kg
LMEF-08	8	16	32	25	5	24	3,5x6x3,1	265	402	0.05
LMEF-12	12	22	42	32	6	32	4,5x7,5x4,1	510	784	0.08
LMEF-16	16	26	46	36	6	36	4,5x7,5x4,1	578	892	0.11
LMEF-20	20	32	54	45	8	43	5,5x9x5,1	862	1,370	0.19
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

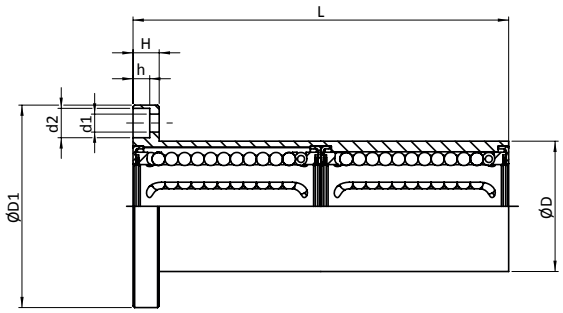
* The load capacities are only valid if a hardened (min. 670 HV) and ground shaft raceways is used.



LMEF..L LINEAR BALL BEARINGS

STANDARD SERIES, PLASTIC CAGE

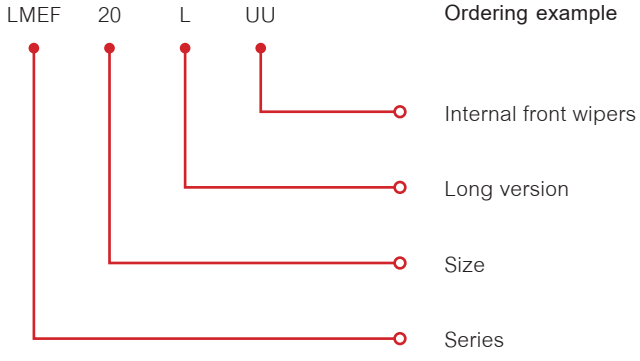




LMEF..L LINEAR BALL BEARINGS

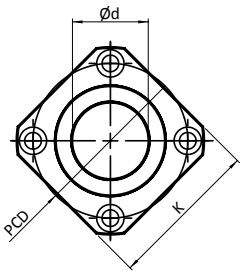
Dimensions (mm)								Load capacity		Weight
Type	Ød	ØD	ØD1	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C_0 N	kg
LMEF-08-L	8	16	32	46	5	24	3,5x6x3,1	421	804	0.06
LMEF-12-L	12	22	42	61	6	32	4,5x7,5x4,1	813	1,570	0.11
LMEF-16-L	16	26	46	68	6	36	4,5x7,5x4,1	921	1,780	0.16
LMEF-20-L	20	32	54	80	8	43	5,5x9x5,1	1,370	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

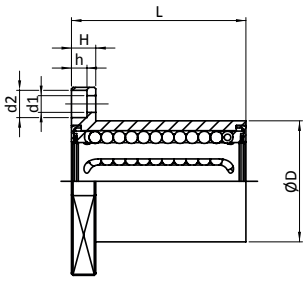
* The load capacities are only valid if a hardened (min. 670 HV) and ground shaft raceways is used.



LMEK LINEAR BALL BEARINGS

STANDARD SERIES, PLASTIC CAGE

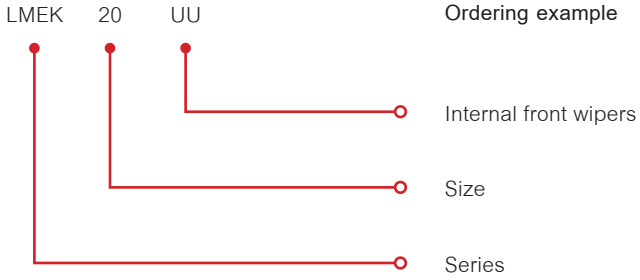




LMEK LINEAR BALL BEARINGS

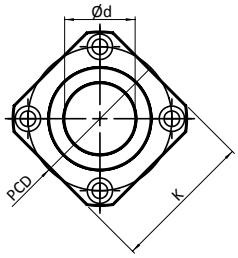
Dimensions (mm)								Load capacity		Weight
Type	Ød	ØD	K	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C_0 N	kg
LMEK-08	8	16	25	25	5	24	3,5x6x3,1	265	402	0.05
LMEK-12	12	22	32	32	6	32	4,5x7,5x4,1	510	784	0.08
LMEK-16	16	26	35	36	6	36	4,5x7,5x4,1	578	892	0.11
LMEK-20	20	32	42	45	8	43	5,5x9x5,1	862	1,370	0.19
LMEK-25	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

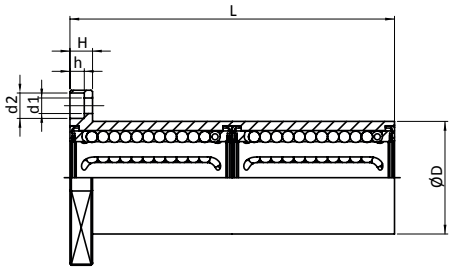
* The load capacities are only valid if a hardened (min. 670 HV) and ground shaft raceways is used.



LMEK..L LINEAR BALL BEARINGS

STANDARD SERIES, PLASTIC CAGE

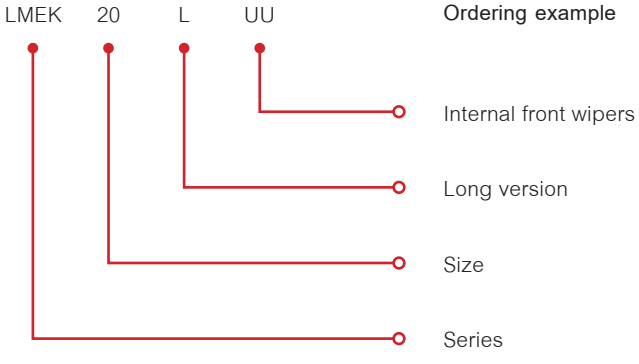




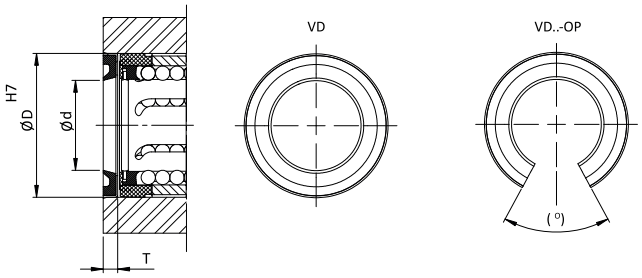
LMEK..L LINEAR BALL BEARINGS

Dimensions (mm)								Load capacity		Weight
Type	Ød	ØD	K	L ±0,3	H	PCD	d1xd2xh	dyn. C N	stat. C_0 N	kg
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. 670 HV) and ground shaft raceways is used.



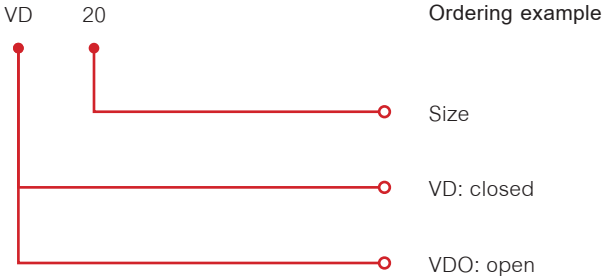
VD FRONT WIPERS



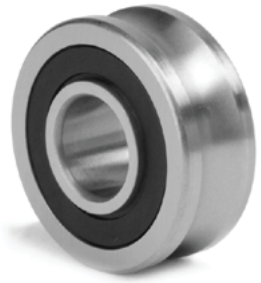
VD FRONT WIPERS

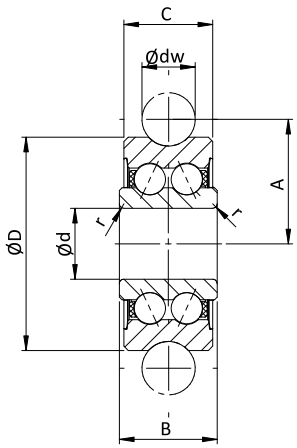
Dimensions (mm)

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



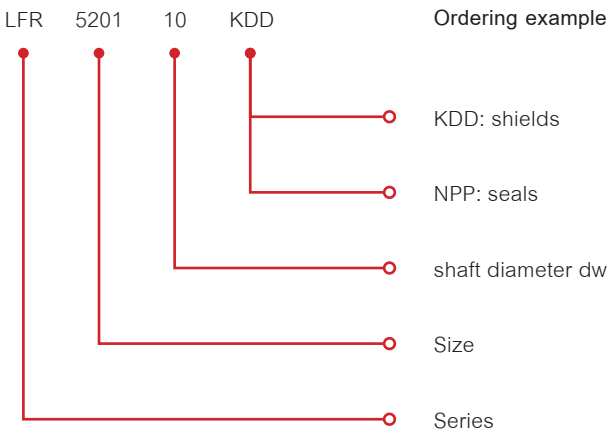
LFR TRACK ROLLERS





LFR TRACK ROLLERS

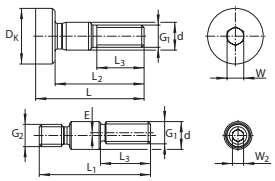
Dimensions (mm)								Weight	Load capacity		Limit loads		Suggested bolts
Type	dw	d	D	C	B -0,12	A	r	Gew g	Cw N	C0w N	Frz N	F0rz N	
LFR50/5-4-KDD	4	5	16	7	8	9	0,20	9	1.200	860	1.300	1.780	LFZ5, LFE5
LFR50/5-6-KDD	6	5	17	7	8	10,5	0,20	10	1.270	820	1.300	1.780	LFZ5, LFE5
LFR50/8-6-KDD	6	8	24	11	11	14	0,30	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



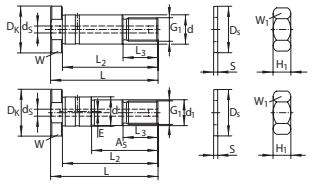
LFZ/LFE BOLTS

CONCENTRISCH EN EXCENTRISCH

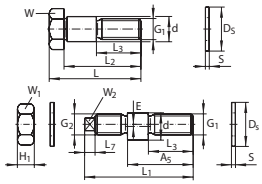
LFZ5 and LFE5-0,5



LFZ..-A1, LFE..-A1



LFZ, LFE



LFZ/LFE BOLTS

Dimensions (mm)

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				M8x0,75	-	-	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	-	-	-	19	-	-					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
LFZ12X45-A1	0,04	12	M10 X1,5	-	50	45	16	-	-	-	21	-	8	2	20	-	-	17	17	-
LFE12X45-A1									30			0,75					10			
LFZ20X67-A1	0,2	20	M16 X1,5	-	75	67	23	-	-	-	30	-	13	3	30	5,9	-	27	24	-
LFE20X67-A1									45			1					17			
LFZ25X82-A1	0,4	25	M20 X1,5	-	92	82	30	-	-	-	37	-	16	3	40	5,9	-	36	30	-
LFE25X82-A1									57			1					22			
LFZ30X95-A1	0,62	30	M24 X1,5	-	107	95	32	-	-	-	44	-	19	4	45	5,9	-	41	36	-
LFE30X95-A1									67			1					27			
LFZ40X107-A1	1,1	40	M30 X1,5	-	117	107	42	-	-	-	56	-	24	4	55	5,9	-	46	46	-
LFE40X107-A1									72			1					36			
LFZ40X115-A1	1,2				125	115			-			-					-			
LFE40X115-A1									72			1					36			

Linear components

Linear 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 supports.

TGC linear housing units 35

TTGC linear housing units 36

TG linear housing units 37

TGE linear housing units 38

TGO linear housing units 39

TGOE linear housing units 40

TGS linear housing units 41

TGSE linear housing units 42

TTG linear housing units 43

TTGE linear housing units 44

TTGO linear housing units 45

TTGOE linear housing units 46

TALGS linear housing units 47

TALGSO linear housing units 48

TFG linear housing units 49

TTFG linear housing units 50

TQSG linear housing units 51

TQSO linear housing units 52

Shaft support blocks

Shaft support blocks are used for fixating ‘floating’ shafts.

The shaft supports are easy to assemble, the dimensions are according to ISO 13012-1

Shaft support rails

Aluminum shaft support rails are used for fixing radially drilled, hardened and ground shafts on a surface. The shaft support rails are usually used in combination with ‘open’ linear ball bearings.

TGWH shaft support blocks 53

TGWA shaft support blocks 54

TGWN shaft support blocks 55

TFWB shaft support blocks 56

TTAC shaft support blocks 57

TTA shaft support blocks 58

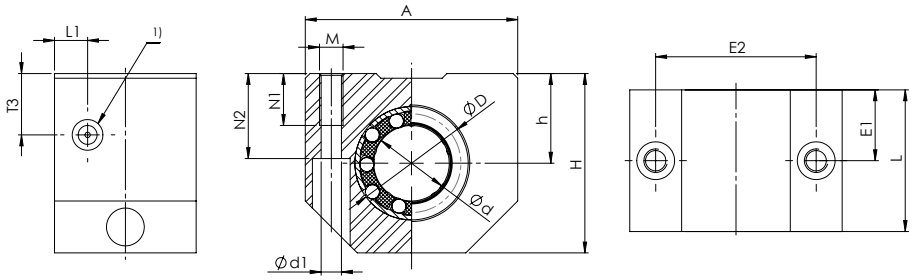
TTB shaft support blocks 59

TTSN shaft support rails 60

TTSU shaft support rails 61

TGC LINEAR HOUSING UNITS

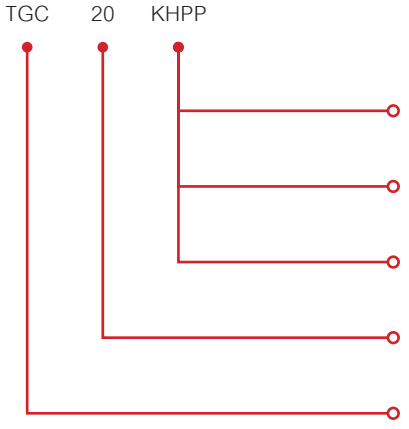
COMPACT SERIES



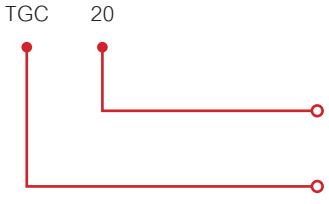
TGC LINEAR HOUSING UNITS

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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image
- 1) Grease nipple DIN 3405



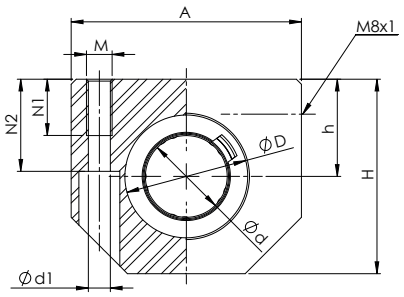
Linear housing unit
incl. linear ball bearing

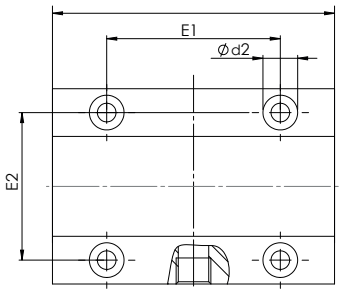


Linear housing unit
excl. linear ball bearing

TTGC LINEAR HOUSING UNITS

COMPACT SERIES, TANDEM





TTGC LINEAR HOUSING UNITS

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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image

TTGC 20 KHPP

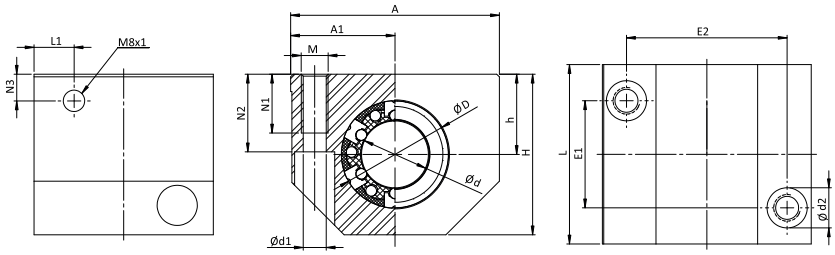
- KH — Linear housing unit *incl. linear ball bearing*
- KHPP
- Acc. customer request
- Size
- Series

TTGC 20

- Size — Linear housing unit *excl. linear ball bearing*
- Series

TG LINEAR HOUSING UNITS

CLOSED TYPE



TG LINEAR HOUSING UNITS

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
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 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 bearing
- Lubrication bore M8x1
- Item can deviate from the image

TG 20 LMEUU V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UU
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

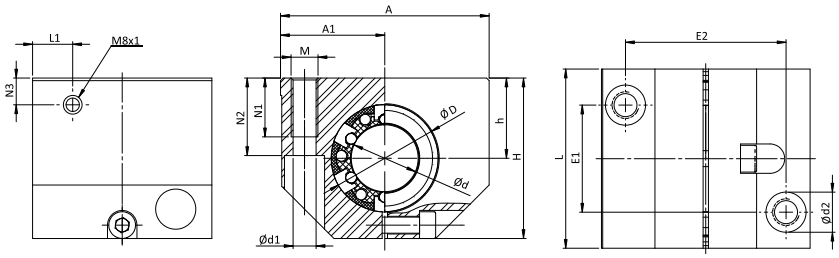
TG 20

Linear housing unit
excl. linear ball bearing

- Size
- Series

TGE LINEAR HOUSING UNITS

CLOSED TYPE, ADJUSTABLE



TGE LINEAR HOUSING UNITS

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 the specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image

TGE 20 LMEUUAJ V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUAJ
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

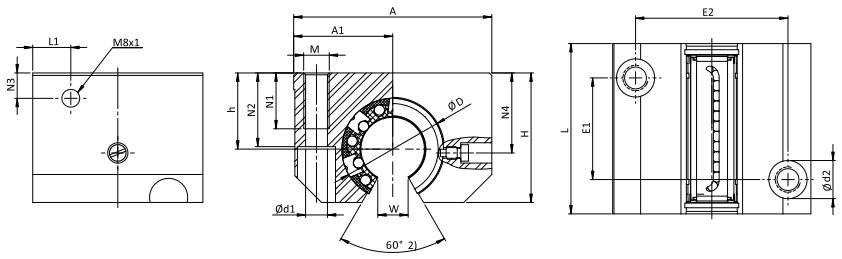
TGE 20

Linear housing unit
excl. linear ball bearing

- Size
- Series

TGO LINEAR HOUSING UNITS

OPEN TYPE



TGO LINEAR HOUSING UNITS

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 fixing screw
- Weight including linear ball bearing
- Load ratings according the specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image

TGO 20 LMEUUOP V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

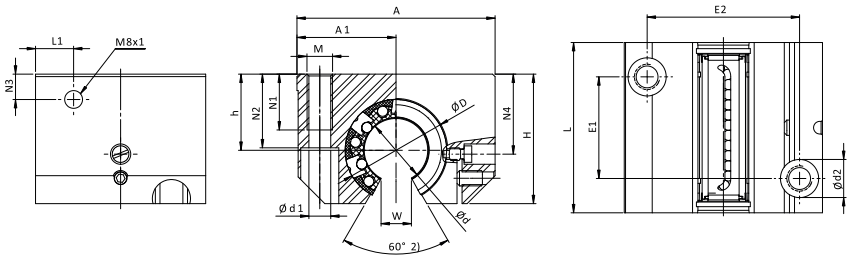
TGO 20

Linear housing unit
excl. linear ball bearing

- Size
- Series

TGOE LINEAR HOUSING UNITS

OPEN TYPE, ADJUSTABLE



TGOE LINEAR HOUSING UNITS

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 fixing screw
- Weight including linear ball bearing
- Load ratings according the specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image

TGOE 20 LMEUUAJ V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUAJ
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

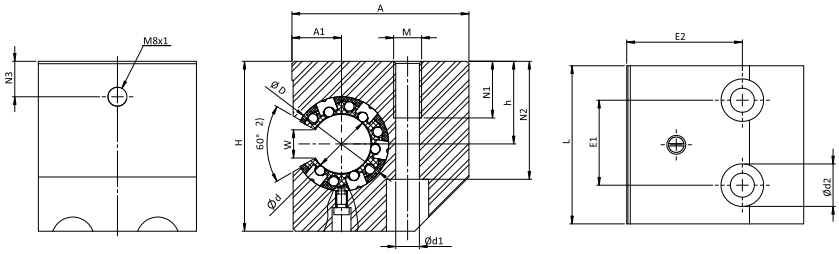
TGOE 20

Linear housing unit
excl. linear ball bearing

- Size
- Series

TGS LINEAR HOUSING UNITS

SIDE OPEN



TGS LINEAR HOUSING UNITS

Type	ød	øD	H	h ±0,015	A	A1 ±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 fixing screw
- Weight including linear ball bearing
- Load ratings according the specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image

TGS 20 LMEUUOP V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

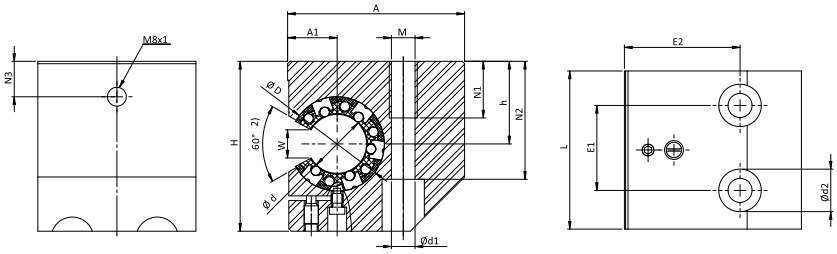
TGS 20

Linear housing unit
excl. linear ball bearing

- Size
- Series

TGSE LINEAR HOUSING UNITS

SIDE OPEN, ADJUSTABLE



TGSE LINEAR HOUSING UNITS

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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image
- 1) Values of series LME...UUOP
  2) Angle of the housing; angle of the used linear ball bearing to be considered

TGSE 20 LMEUUOP V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

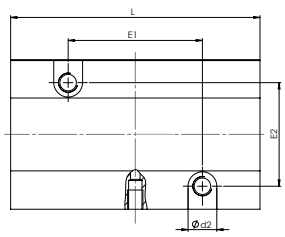
TGSE 20

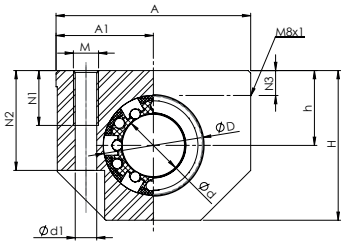
Linear housing unit
excl. linear ball bearing

- Size
- Series

TTG LINEAR HOUSING UNITS

CLOSED TYPE, TANDEM





TTG LINEAR HOUSING UNITS

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 bearing
- Lubrication bore M8x1
- Item can deviate from the image

TTG 20 LMEUU V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UU
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

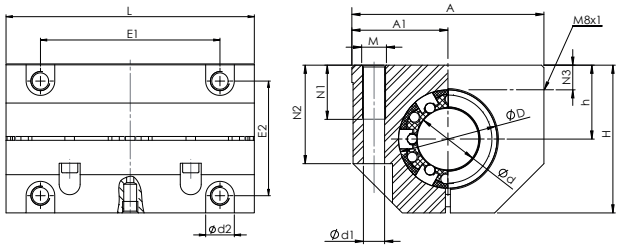
TTG 20

Linear housing unit
excl. linear ball bearing

- Size
- Series

TTGE LINEAR HOUSING UNITS

CLOSED TYPE, TANDEM, ADJUSTABLE



TTGE LINEAR HOUSING UNITS

Type	ød	øD	H	h +0,01 -0,01	A	A1 ±0,02	L	E1 ±0,15	E2 ±0,15	N1	N2	N3	ød1	ød2	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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image
- 1) Values of series LME...UUOP
  2) Angle of the housing; angle of the used linear ball bearing to be considered

TTGE 20 LMEUUAJ V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUAJ
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

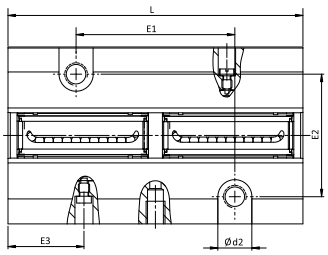
TTGE 20

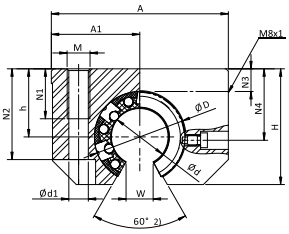
Linear housing unit
excl. linear ball bearing

- Size
- Series

TTGO LINEAR HOUSING UNITS

OPEN TYPE, TANDEM





TTGO LINEAR HOUSING UNITS

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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image
- 1) Values of series LME...UUOP
  2) Hoek van het huis: de hoek van het bruikte lineair kogellager in acht nemen

TTGO 20 LMEUUOP V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

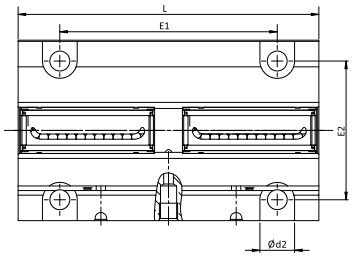
TTGO 20

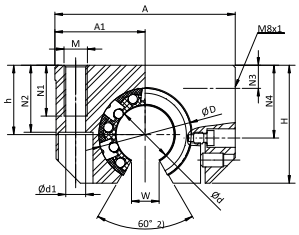
Linear housing unit
excl. linear ball bearing

- Size
- Series

TTGOE LINEAR HOUSING UNITS

OPEN TYPE, TANDEM, ADJUSTABLE





TTGOE LINEAR HOUSING UNITS

Type	ød	øD	H	h +0,01 -0,01	A	A1 ±0,02	L	E1 ±0,15	E2 ±0,15	E3 ±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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image
- 1) Values of series LME...UUOP
  2) Angle of the housing; angle of the used linear ball bearing to be considered

TTGOE 20 LMEUUOP V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

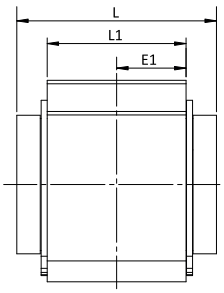
TTGOE 20

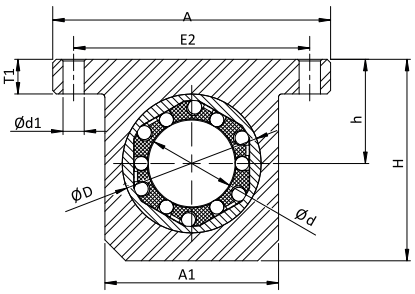
Linear housing unit
excl. linear ball bearing

- Size
- Series

TALGS LINEAR HOUSING UNITS

CLOSED TYPE





TALGS LINEAR HOUSING UNITS

Type	Ød	ØD	H	h ±0,015	A	A1	L	L1	T1	E1	E2 ±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 471
- Weight including linear ball bearing

- Load ratings according the specifications of the linear ball bearing
- Item can deviate from the image

TALGS 20 LMEUU

Linear housing unit
incl. linear ball bearing

- LME..UU
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

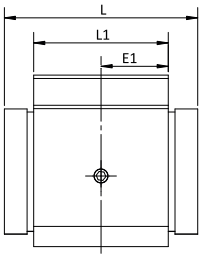
TALGS 20

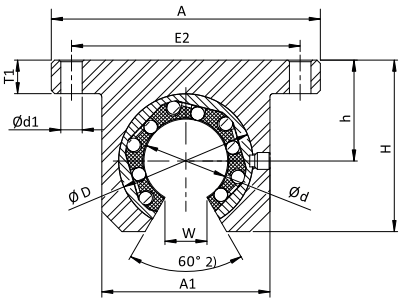
Linear housing unit
excl. linear ball bearing

- Size
- Series

TALGSO LINEAR HOUSING UNITS

OPEN TYPE





TALGSO LINEAR HOUSING UNITS

Type	Ød	ØD	H	h ±0,015	A	A1	L	L1	T1	E1	E2 ±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 specifications of the linear ball bearing

- Item can deviate from the image
- 1) Values of series LME...UUOP
  2) Angle of the housing; angle of the used linear ball bearing to be considered

TALGSO 20 LMEUU

Linear housing unit
incl. linear ball bearing

- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

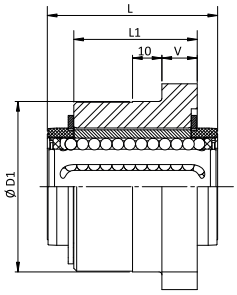
TALGSO 20

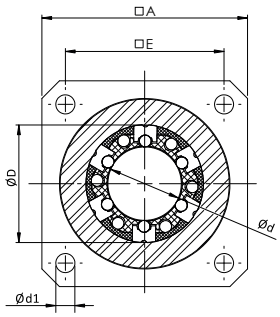
Linear housing unit
excl. linear ball bearing

- Size
- Series

TFG LINEAR HOUSING UNITS

FLANGE TYPE





TFG LINEAR HOUSING UNITS

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 bearing
- Item can deviate from the image

TFG 20 LMEUU

Linear housing unit
incl. linear ball bearing

- LME..UU
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

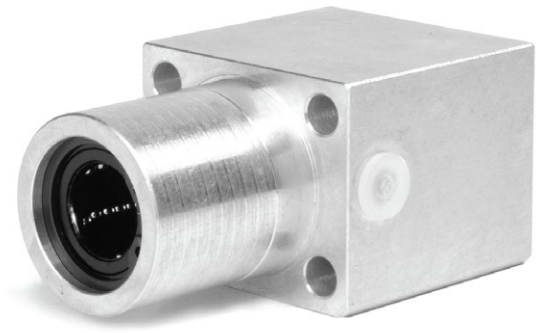
TFG 20

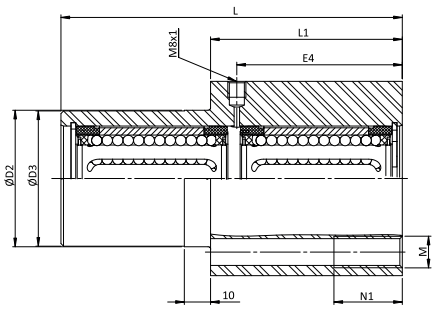
Linear housing unit
excl. linear ball bearing

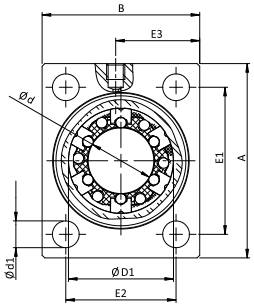
- Size
- Series

TTFG LINEAR HOUSING UNITS

FLANGE TYPE, TANDEM







TTFG LINEAR HOUSING UNITS

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 bearing
- Item can deviate from the image

TTFG 20 LMEUU

Linear housing unit
incl. linear ball bearing

- LME..UU
- SBE..UU
- SSEM..WW
- Acc. customer request
- Size
- Series

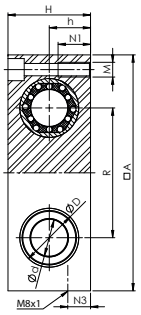
TTFG 20

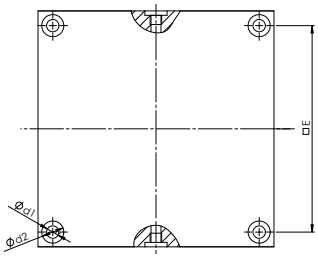
Linear housing unit
excl. linear ball bearing

- Size
- Series

TQSG LINEAR HOUSING UNITS

CLOSED TYPE, QUATTRO





TQSG LINEAR HOUSING UNITS

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 circlips acc. DIN 472
- Weight including linear ball bearing
- Load ratings according the specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image

TQSG 20 LMEUU V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UU
- SBE..UU
- SPM..WW
- Acc. customer request
- Size
- Series

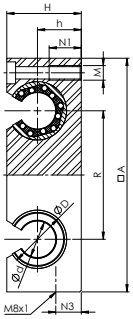
TQSG 20

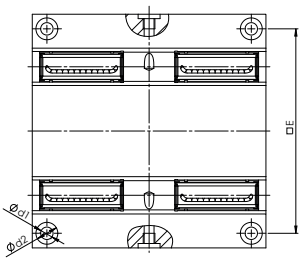
Linear housing unit
excl. linear ball bearing

- Size
- Series

TQSO LINEAR HOUSING UNITS

OPEN TYPE, QUATTRO





TQSO LINEAR HOUSING UNITS

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 specifications of the linear ball bearing
- Lubrication bore M8x1
- Item can deviate from the image
- 1) Values of series LME...UUOP
  2) Angle of the housing; angle of the used linear ball bearing to be considered

TQSO 20 LMEUUOP V

Linear housing unit
incl. linear ball bearing

- Extra front wipers
- LME..UUOP
- SBEO..UU
- SSEM..OPNWW
- Acc. customer request
- Size
- Series

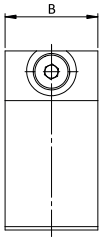
TQSO 20

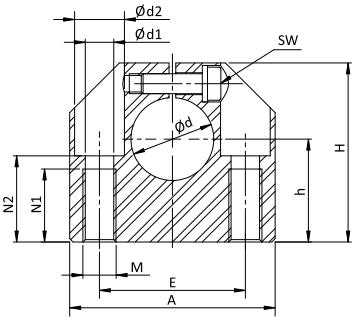
Linear housing unit
excl. linear ball bearing

- Size
- Series

TGWH SHAFT SUPPORT BLOCKS

COMPACT SERIES



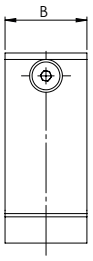


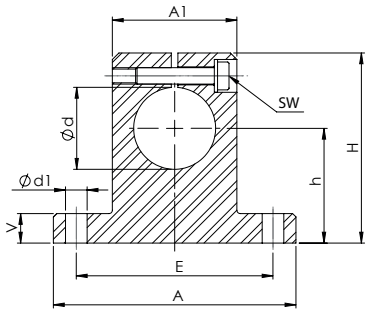
TGWH SHAFT SUPPORT BLOCKS

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 SHAFT SUPPORT BLOCKS

STANDARD SERIES



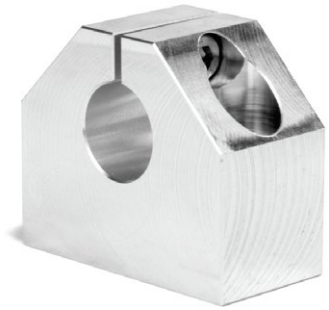


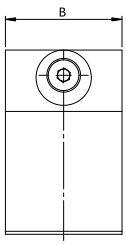
TGWA SHAFT SUPPORT BLOCKS

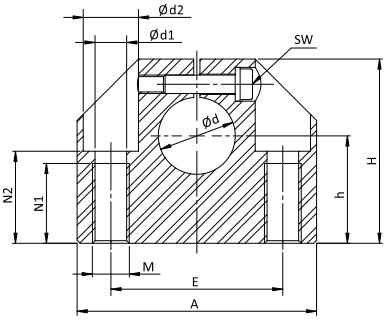
Type	ød H8	H	h ±0,02	A	A1	B	E ±0,15	ød1	V	SW	kg
TGWA-08	8	27	15	32	16	10	25	4,5	5,0	2,5	0,01
TGWA-12	12	35	20	42	20	12	32	5,5	5,5	3	0,02
TGWA-16	16	42	25	50	26	16	40	5,5	6,5	3	0,03
TGWA-20	20	50	30	60	32	20	45	5,5	8,0	3	0,07
TGWA-25	25	58	35	74	38	25	60	6,6	9,0	4	0,14
TGWA-30	30	68	40	84	45	28	68	9,0	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 SHAFT SUPPORT BLOCKS

STANDARD SERIES





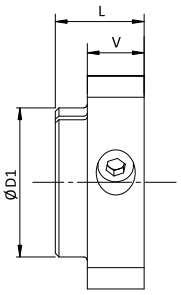


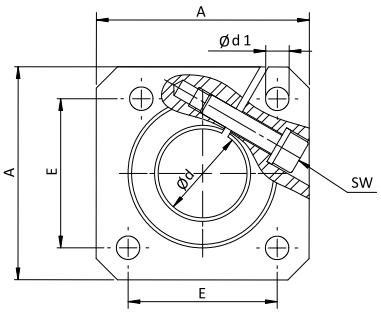
TGWN SHAFT SUPPORT BLOCKS

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 SHAFT SUPPORT BLOCKS

FLANGE TYPE



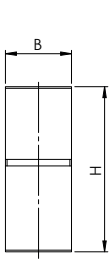


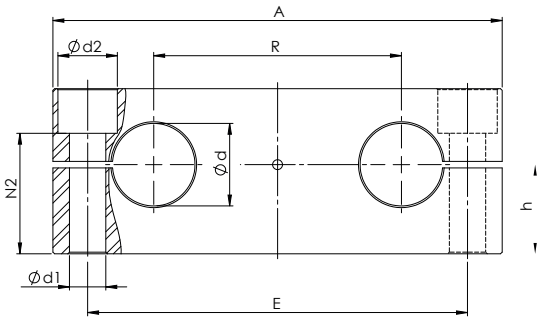
TFWB SHAFT SUPPORT BLOCKS

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 SHAFT SUPPORT BLOCKS

COMPACT SERIES, TANDEM



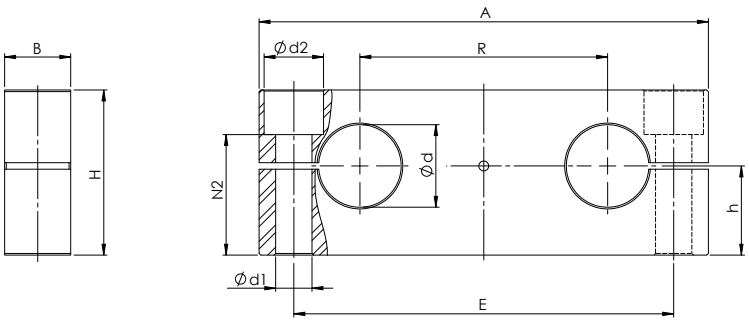


TTAC SHAFT SUPPORT BLOCKS

Type	ød	A	B	H	h ±0,015	R ±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 SHAFT SUPPORT BLOCKS

STANDARD SERIES, TANDEM, FIXED

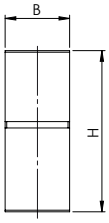


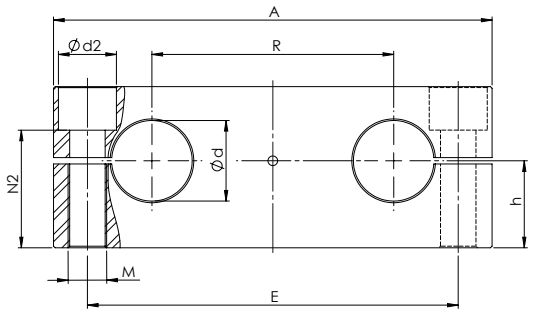
TTA SHAFT SUPPORT BLOCKS

Type	ød	A	B	H	h ±0,015	R ±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 SHAFT SUPPORT BLOCKS

STANDARD SERIES, TANDEM, MOVEABLE

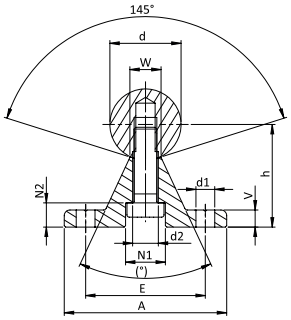


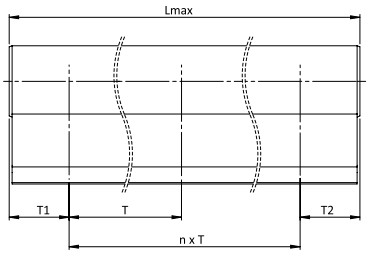


TTB SHAFT SUPPORT BLOCKS

Type	ød	A	B	H	h ±0,015	R ±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 SHAFT SUPPORT RAILS
STANDARD SERIES



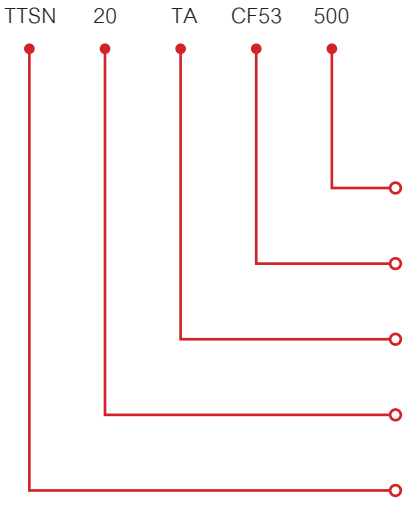


TTSN SHAFT SUPPORT RAILS

Type	ød	A	h	V	N1	N2	ød1	ød2	W	(0)	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 mail be composed of several individual sections
- $T1/T2_{min}$ = 20 mm



Shaft support rail
incl. shaft

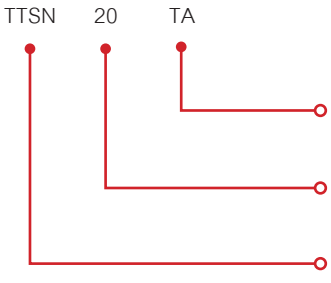
Length in mm

Shaft material [1)]

Pitch distance TA or TB

Size

Series



Shaft support rail
excl. shaft

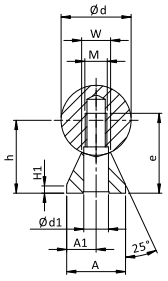
Pitch distance TA or TB

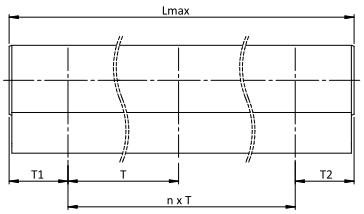
Size

Series

TTSU SHAFT SUPPORT RAILS

COMPACT SERIES



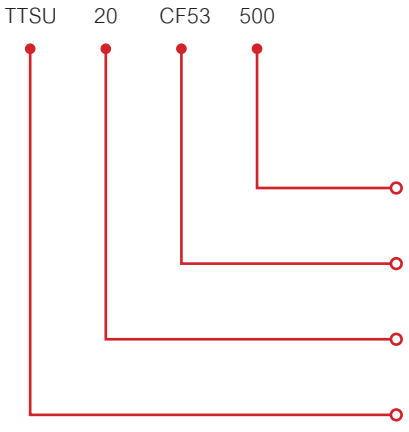


TTSU SHAFT SUPPORT RAILS

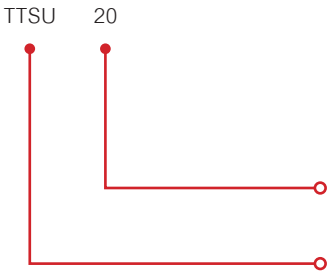
Type	ød	h	H1	A	A1	W	M	ød1	e	T	kg
TTSU-12-##	12	14,5	3	11	6,0	5,4	M4	4,5	15,5	75	0,20
TTSU-16-##	16	18	3	14	7,0	7,0	M5	5,5	16,0	75	0,30
TTSU-20-##	20	22	3	17	8,5	8,1	M6	6,6	20,0	75	0,42
TTSU-25-##	25	26	3	21	10,5	10,3	M8	9,0	25,0	75	0,58
TTSU-30-##	30	30	3	23	11,5	11,0	M10	11,0	30,0	100	0,69
TTSU-40-##	40	39	4	30	15,0	15,0	M12	13,5	38,0	100	1,16

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

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



Shaft support rail
incl. shaft



Shaft support rail
excl. shaft

Notes

Notes

TERMS AND CONDITIONS

GENERAL TERMS AND CONDITIONS OF SALE FOR TECHNISCHE HANDELSONDERNEMING NEDERLAND B.V.

Article 1 Definitions
In these terms and conditions, the terms below have the following meanings, unless specifically stated otherwise:

THN : Technische Handelsonderneming Nederland B.V.;
Buyer : the other party;
Agreement : the agreement between THN and the Buyer;

Article 2 General
2.1 The provisions of these terms and conditions apply to all offers, quotations, agreements and any other legal relationship between THN and the Buyer, insofar as the parties have not agreed to deviate from these terms and conditions explicitly and in writing;
2.2 These terms and conditions also apply to all agreements between THN and the Buyer for the execution of which THN uses the services of third parties;
2.3 These terms and conditions shall always replace those of the Buyer, unless the parties have agreed otherwise in writing;
2.4 If THN and the Buyer enter into more than one agreement, these terms and conditions apply to all subsequent agreements, regardless of whether these have been explicitly declared applicable in writing;
2.5 If one or more of the provisions of these terms and conditions are invalid or should become invalid, the remaining provisions of these terms and conditions will remain in force.

Article 3 Offers, quotations and agreements
3.1 All offers made by THN in any form are without obligation, unless the offer specifies a time scale for acceptance;
3.2 Agreements to which THN is party will only become enforceable:
a) after an agreement drawn up for that purpose has been signed by both parties, or;
b) after receipt of and agreement with the Buyer's written acceptance of an offer made by THN, or;
c) by the actual execution of work or delivery of goods by THN;
3.3 In cases of verbal agreement, the invoice will be deemed to correctly and fully represent the Agreement, unless it is disputed within 14 days of the date of the invoice;
3.4 If a natural person enters into an Agreement on behalf or on account of another natural or legal person, he or she declares to have the authority to do so by signing the Agreement. Any such person, as well as the other natural or legal person, will be held personally liable for any obligations pursuant to the Agreement;
3.5 Prices in the aforementioned offers and quotations are in Euro, and exclusive of VAT and other taxes, as well as of any transportation and packaging costs, unless explicitly stated otherwise;
3.6 If acceptance deviates from the offer stated in a quotation, THN will not be bound by it. The Agreement will not be executed in accordance with any deviations in acceptance, unless THN indicates otherwise;
3.7 The provision of a compound quotation does not oblige THN to fulfil any part of the obligations included in the offer or quotation against a proportion of the price quoted;
3.8 Offers or quotations do not apply to any subsequent orders;
3.9 If a quotation is not accepted, THN has the right to demand fair reimbursement by the party requesting the quotation for any costs related to the production of the quotation.

Article 4 Execution of the Agreement
4.1 THN cannot be held liable for damage of any kind caused by incorrect or incomplete information provided by the Buyer, unless the error or omission should have been recognised by THN;
4.2 THN has the right to deliver quantities that deviate within a margin of 5% either way from the quantities agreed between THN and the Buyer.

Article 5 Supply and completion
5.1 The Buyer is obliged to accept goods and services produced under the Agreement at the moment these are supplied or the order is completed by THN, delivered to the Buyer, or at the moment these are made available to the Buyer pursuant to the Agreement;
5.2 If the Buyer refuses to accept or fails to provide information or instructions required for supply or completion, THN has the right to store the goods at the expense and risk of the Buyer;
5.3 If THN requires information from the Buyer with regard to the execution of the Agreement, the supply or completion term will only commence once this has been provided to THN by the Buyer;
5.4 If THN has set a time scale for supply or completion, it is only indicative. Any supply or completion time scale indicated shall in no case be considered binding. If any such time scale is exceeded, the Buyer must give written notice of default to THN;
5.5 THN has the right to supply or complete work partially, unless the Agreement states otherwise or where partial supply or completion is of no independent value. THN has the right to invoice separately for partial supply or completion.

Article 6 Inspection and defects
6.1 The Buyer must inspect the supplied goods or services at the moment of supply or completion. In doing so, the Buyer should inspect whether the quality and quantity of the goods or services supplied or completed comply with what has been agreed, or with the requirements expected in normal (trading) transactions;
6.2 THN should be notified in writing of any visible defects within 8 days of supply or completion. Invisible defects should be reported in writing within 8 days of discovery but no later than 3 months after supply or completion;
6.3 THN must be allowed to inspect any reported defects;
6.4 If timely notice of defects was given and the defects have been verified by THN, THN will repair the defects or shortcomings within a reasonable time scale, or replace the goods or services that have been supplied or completed. Nonetheless, the Buyer will remain obliged to pay for work carried out and goods delivered;
6.5 If timely notice of any defect was not given or if the Buyer has put to use the goods or services supplied or completed, these will be deemed to have been supplied or completed satisfactorily;
6.6 If the Buyer wishes to return defective goods, this may only be done with the prior written permission of THN and in the manner indicated by THN.

Article 7 Compensation, price and costs
7.1 THN has the right to demand a deposit amount of 10 to 50% of the agreed price before work is commenced;
7.2 If THN has agreed a fixed price with the Buyer, THN reserves the right to increase that price in the cases stated below;
7.3 THN has the right to pass on to the Buyer changes in costs relating to social contributions, turnover taxes, exchange rates, wages, raw materials, semi-products, packaging materials or other costs occurring after the Agreement was made.

Article 8 Changes to the Agreement
8.1 If during the execution of the Agreement it becomes apparent that in order to deliver satisfactory results it is necessary to change or supplement the work being carried out, the parties should amend the Agreement to that effect in a timely and mutually agreed manner;
8.2 If the parties change and/or supplement the Agreement, the time of completion may be affected. THN will notify the Buyer of this as soon as possible;
8.3 If changes and/or additions to the Agreement have financial and/or qualitative consequences, THN will notify the Buyer of this in advance;

Article 9 Payment
9.1 Payment must be made either in cash upon supply or completion, or within 30 days of the date of the invoice, in the manner indicated by THN and in the currency on the invoice. Disagreements about the amount of an invoice do not defer the Buyer's obligation to pay;
9.2 If the Buyer fails to pay within the 30-day term, he or she is considered to be in default in the eyes of the law. The Buyer shall then owe interest of 1% per month or part thereof, unless the statutory interest or the statutory commercial interest (after 30 days) is higher, in which case the higher interest applies. The interest on the outstanding amount will be calculated from the moment the Buyer enters default until the moment the full amount has been received;
9.3 If the Buyer enters into liquidation, petitions for or enters into bankruptcy, requests or is granted debt rescheduling under the Dutch Natural Persons Debt Rescheduling Act, is repossessed or is granted (temporary) suspension of payment, the outstanding sums the Buyer owes THN will become due immediately;

Article 10 Retention of title
10.1 All materials and other goods delivered by THN will remain the property of THN until the Buyer has met all obligations towards THN;
10.2 The Buyer has no authority to sell, provide as security or otherwise encumber goods falling under retention of title rights;
10.3 With immediate effect, the Buyer gives unconditional and irrevocable permission for THN or any third parties it appoints to enter any premises that contain THN's property and to repossess these goods, should THN wish to exercise its retention of title rights as defined in this article.
Article 11 Transfer of risk
11.1 The risk of loss of or damage to goods produced by THN will be transferred to the Buyer from the moment these goods are legally or actually supplied or the order is completed, and thus brought into the ownership of the Buyer or a third party appointed by the Buyer.

Article 12 Collection costs
12.1 If the Buyer defaults on or neglects to fulfil his obligations (in a timely manner), the Buyer will be liable for all reasonable costs incurred in extrajudicial enforcement. In any case, the Buyer must pay collection costs if a monetary demand is made. Collection costs will be calculated in accordance with the collection cost rate recommended for collection cases by the Netherlands Bar, with a minimum cost of EUR 350.
12.2 If THN has incurred higher costs, and these were necessary and reasonable, the Buyer will also be liable for these costs. Any reasonable legal and execution costs incurred will also be charged to the Buyer.

Article 13 Suspension and dissolution
13.1 In addition to the provisions of the law, THN has the authority to defer the fulfilment of its obligations or dissolve the Agreement if it becomes apparent to THN after the Agreement has been made that there are circumstances as a consequence of which THN has good reason to expect that the Buyer will not fulfil, or only partially fulfil his or her obligations, or not fulfil them in a timely manner. If there is good reason to expect that the Buyer will only partially or not satisfactorily fulfil his or her obligations, the dissolution of the Agreement is only permitted if justified by the shortcoming, or if the Buyer was asked to guarantee the fulfilment of his or her obligations at the time the Agreement was made, and this guarantee is not provided or is insufficient.
13.2 In addition, THN has the authority to dissolve or cause the Agreement to be dissolved if circumstances are such that fulfilment of the Agreement is impossible or can reasonably and fairly be deemed to no longer be possible, or if other circumstances mean that fulfilment of the Agreement in its present form cannot reasonably be expected, without THN becoming liable for damages to the Buyer;
13.3 If the Agreement is dissolved, any sums owed to THN by the Buyer will become due immediately. If THN defers the fulfilment of its obligations, it will retain its rights under the law and the Agreement;
13.4 THN reserves the right to demand damage compensation in any case.

Article 14 Liability
14.1 If THN should incur any liability, it will be limited in accordance with the provisions of this article.
14.2 THN can only be held liable for wilful damage or damage resulting from neglect by THN or its subordinates.
14.3 If THN is held liable, liability will be limited to the maximum compensation amount due to be paid by THN's insurer, and liability shall not exceed the invoice amount for the (partial) work concerned.
14.4 THN will not in any case be held liable for damage caused by advice it provides. Any advice will be given based on the facts and circumstances known to THN and in mutual discussion with the Buyer, in which THN will take the Buyer's intentions as a guide and starting point.
14.5 THN will never be held liable for indirect damage, being consequential damage, lost profit, missed savings and damage from business stagnation.
14.6 THN must be notified immediately and in writing of any damage claims and in any case no later than within five working days of the damage occurring.

Article 15 Force majeure
15.1 THN is not bound to the fulfilment of any obligation if it is impeded from doing so by circumstances not caused wilfully or through neglect by THN and not attributable to THN either in the eyes of the law, through a legal exchange or by general accepted industry opinion;
15.2 In addition to the provisions of the law and the courts, in these general terms and conditions force majeure includes any expected or unexpected external causes which THN cannot influence, and which cause THN to be unable to fulfil its obligations. This includes labour strikes at THN, staff illness, theft, traffic delays, frost, rain and failure of suppliers to deliver materials;
15.3 THN also has the right to seek recourse to force majeure if the circumstances that impede (further) fulfilment occur after THN should have fulfilled its obligation;
15.4 THN can defer its obligations for the duration of the force majeure circumstances. If this period is longer than two months, THN has the right to dissolve the Agreement without incurring liability for damages to the Buyer;
15.5 If THN has partially fulfilled or will be able to partially fulfil its obligations under the Agreement at the time of the force majeure circumstances and the fulfilled part or part to be fulfilled respectively is deemed to have independent value, THN has the right to invoice separately for the fulfilled part or part to be fulfilled respectively. The Buyer must pay this invoice as if it were a separate Agreement.

Article 16 Disputes
16.1 The court of law in THN's locality has the exclusive jurisdiction to settle any disputes.

Article 17 Governing law
17.1 The laws of the Netherlands apply to any Agreement between THN and the Buyer..

THN

Hendrik ter Kuilestraat 30
7547 BD Enschede
the Netherlands

+31 (0)53 432 34 46

www.thn.nl