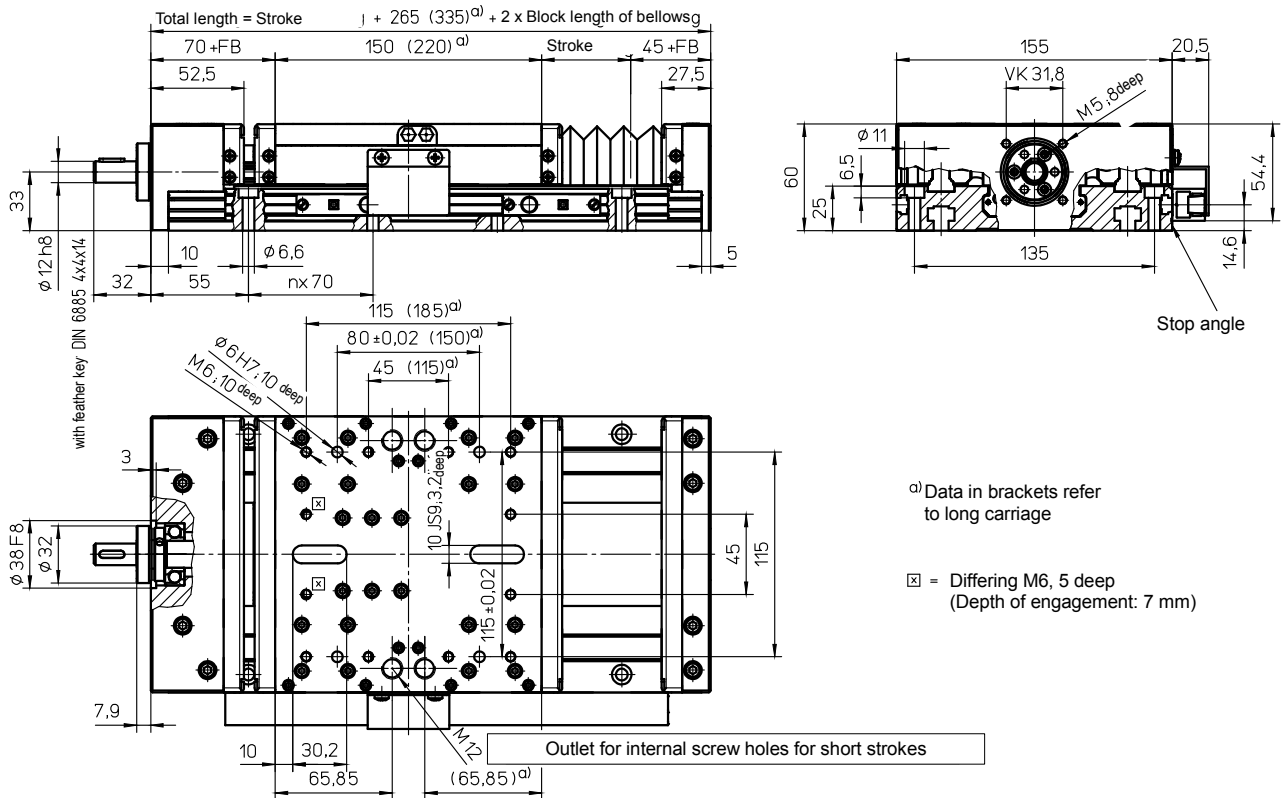


Chapter A

Linear Table

HSB-alpha[®]

with ball screw (KGT) and double linear guide (SSS)



Weights

SSS

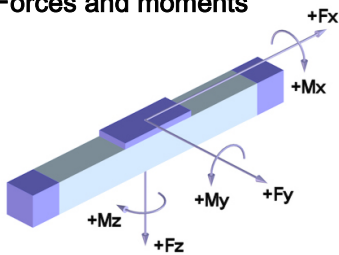
Basic length without stroke:	7.80 kg
100 mm stroke:	0.95 kg
Entire carriage 150 mm:	2.80 kg
Entire carriage 220 mm:	4.10 kg
Max. total length:	1500 mm

Technical Data

SSS

Max. total speed:	2.50 m/s
Max. acceleration:	20 m/s ²
Repeat accuracy:	± 0.03 mm (KGT)
Idle torque:	0.35 Nm

Forces and moments



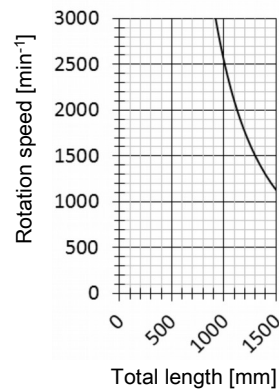
SSS	
Forces	Dynamic [N]
F _x	4000
F _y	2000
F _z	20000
-F _z	15000
Moments	Dynamic [Nm]
M _x	1000
M _y	900 (1300)
M _z	400 (580)

Data in brackets refer to long carriage (220)

Drive element

KGT

Max. rotation speed:	3000 min ⁻¹
Diameter:	20 mm
Pitch:	5 / 10 / 20 / 50 mm
Moment of inertia:	8.50 · 10 ⁻⁵ kgm ² /m



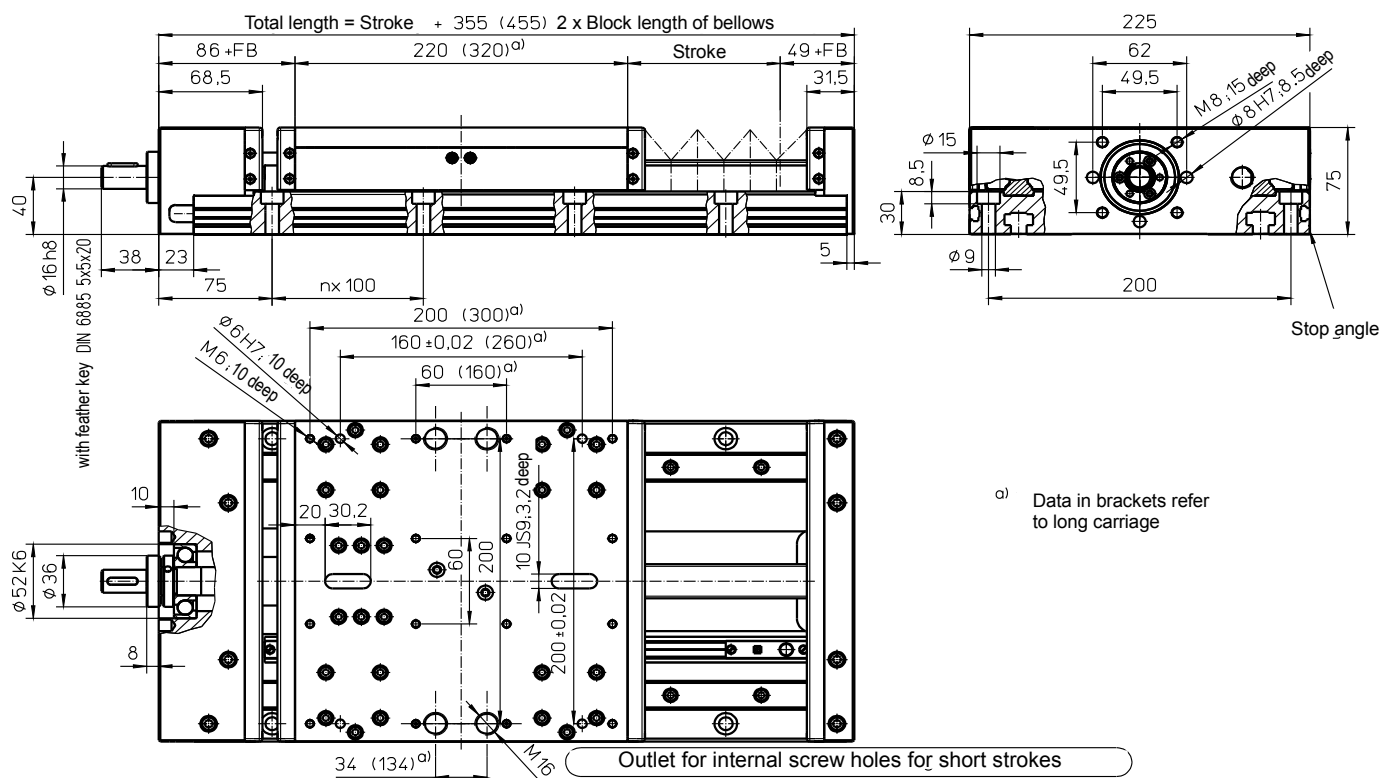
Calculation of block length of bellows (FB)

(Stroke + 17) / 19 = Number of pleats
 Number of pleats · 3.8 – 17 = Block length of bellows (FB)

Example for stroke of 550 mm:

(550 mm + 17) / 19 = 29.84 => 30 pleats (rounded up)
 30 · 3.8 – 17 = 97 mm simple block length (FB)

with ball screw (KGT) and double linear guide (SSS)



^{a)} Data in brackets refer to long carriage

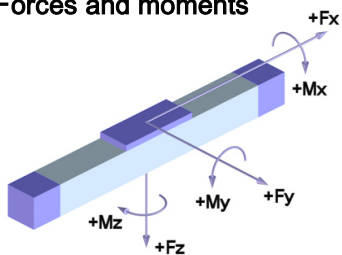
Weights

	SSS
Basic length without stroke:	17.60 kg
100 mm stroke:	2.70 kg
Entire carriage 220 mm:	6.20 kg
Entire carriage 320 mm:	9.00 kg
Max. total length:	2000 mm

Technical Data

	SSS
Max. total speed:	2.50 m/s
Max. acceleration:	20 m/s ²
Repeat accuracy:	± 0.03 mm (KGT)
Idle torque:	1.20 Nm

Forces and moments

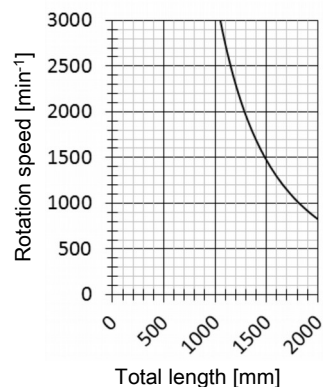


SSS	
Forces	Dynamic [N]
F _X	6000
F _Y	5000
F _Z	58000
-F _Z	40000
Moments	Dynamic [Nm]
M _X	4000
M _Y	3000 (4000)
M _Z	1200 (1700)

Data in brackets refer to long carriage (320)

Drive element

	KGT
Max. rotation speed:	3000 min ⁻¹
Diameter:	25 mm
Pitch:	5 / 10 / 25 / 50 mm
Moment of inertia:	2.25 · 10 ⁻⁴ kgm ² /m



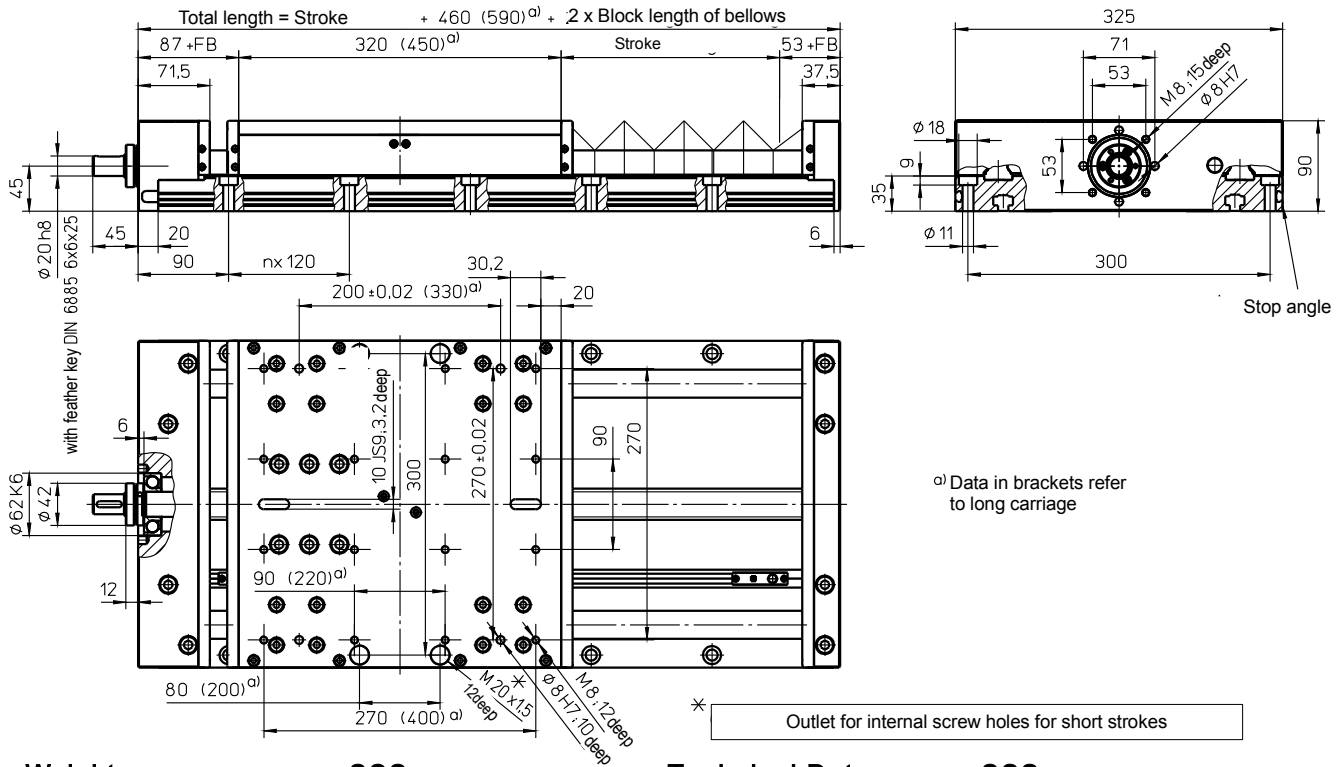
Calculation of block length of bellows (FB)

(Stroke + 17) / 28 = Number of pleats
 Number of pleats · 4 - 17 = Block length of bellows (FB)
 (Number of pleats · 4 - 10 with stroke < 250 mm)

Example for stroke of 550 mm:

(550 mm + 17) / 28 = 20.25 => 21 pleats (rounded up)
 21 · 4 - 17 = 67 mm simple block length (FB)

with ball screw (KGT) and double linear guide (SSS)



^{o1} Data in brackets refer to long carriage

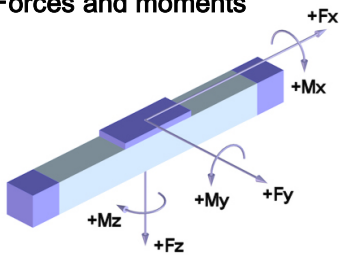
Weights SSS

Basic length without stroke:	37.00 kg
100 mm stroke:	3.80 kg
Entire carriage 320 mm:	13.40 kg
Entire carriage 450 mm:	18.80 kg
Max. total length:	3000 mm

Technical Data SSS

Max. total speed:	2.00 m/s
Max. acceleration:	20 m/s ²
Repeat accuracy:	± 0.03 mm (KGT)
Idle torque:	1.60 Nm

Forces and moments

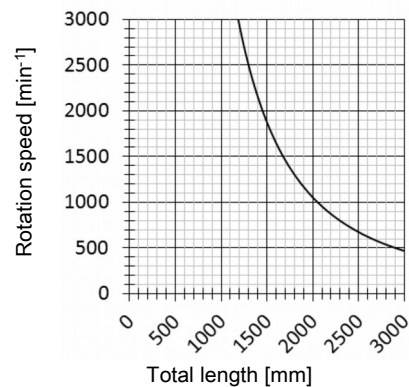


SSS	
Forces	Dynamic [N]
F _x	12000
F _y	11000
F _z	95000
-F _z	63000
Moments	Dynamic [Nm]
M _x	6300
M _y	7500 (9500)
M _z	3750 (5000)

Data in brackets refer to long carriage (450)

Drive element KGT

Max. rotation speed:	3000 min ⁻¹
Diameter:	32 mm
Pitch:	5 / 10 / 20 / 40 mm
Moment of inertia:	6.45 · 10 ⁻⁴ kgm ² /m



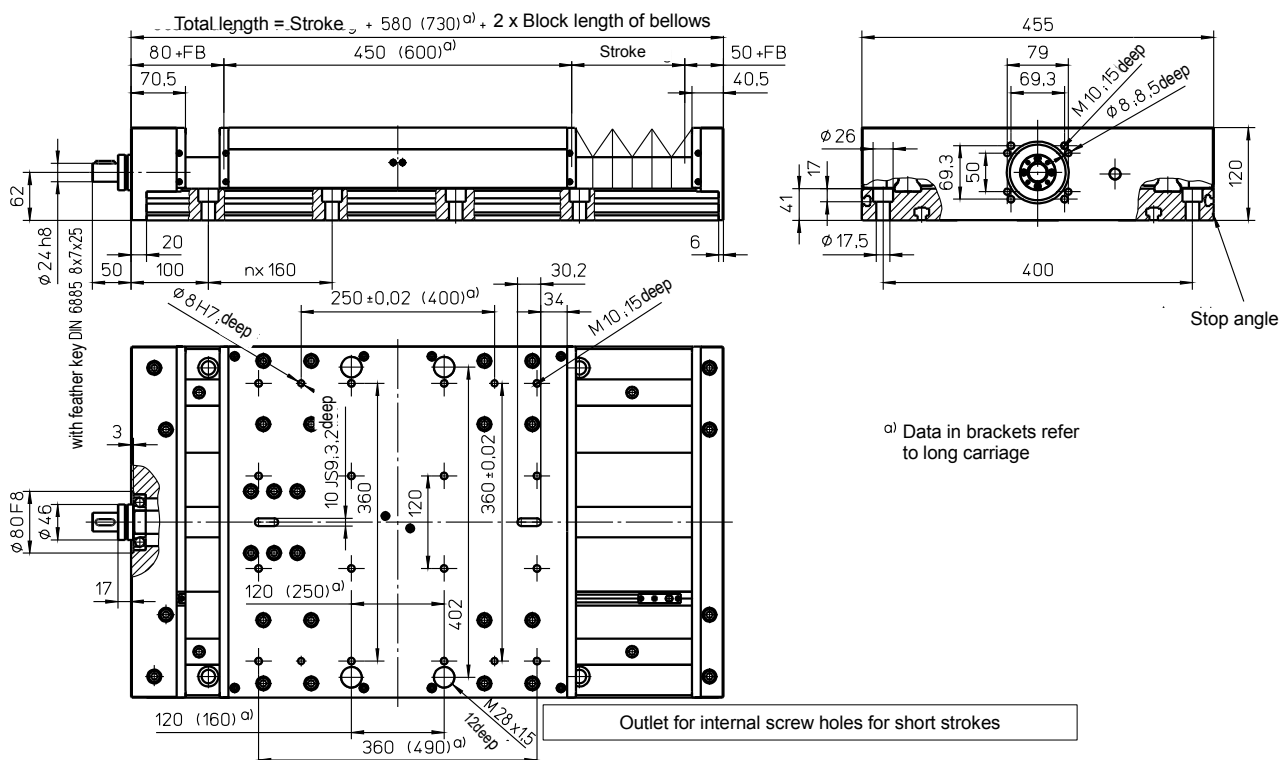
Calculation of block length of bellows (FB)

(Stroke + 15) / 33 = Number of pleats
 Number of pleats · 4.8 - 15 = Block length of bellows (FB)

Example for stroke of 550 mm:

(550 mm + 15) / 33 = 17.12 => 18 pleats (rounded up)
 18 · 4.8 - 15 = 72 mm simple block length (FB)

with ball screw (KGT) and double linear guide (SSS)



Weights

SSS

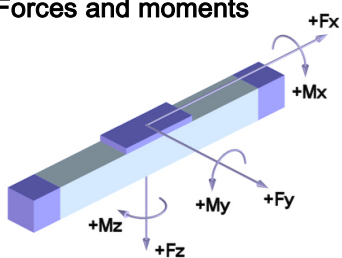
Basic length without stroke:	65.20 kg
100 mm stroke:	5.20 kg
Entire carriage 450 mm:	26.20 kg
Entire carriage 600 mm:	33.80 kg
Max. total length:	3000 mm

Technical Data

SSS

Max. total speed:	2.00 m/s
Max. acceleration:	20 m/s ²
Repeat accuracy:	± 0.03 mm (KGT)
Idle torque:	2.50 Nm

Forces and moments



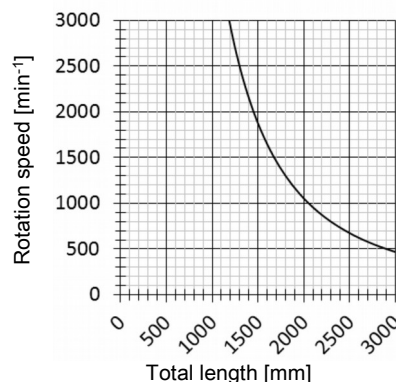
SSS	
Forces	Dynamic [N]
F_x	18000
F_y	14000
F_z	120000
$-F_z$	80000
Moments	Dynamic [Nm]
M_x	12000
M_y	10000 (13000)
M_z	5000 (6000)

Data in brackets refer to long carriage (600)

Drive element

KGT

Max. rotation speed:	3000 min ⁻¹
Diameter:	40 mm
Pitch:	5 / 10 / 20 / 40 mm
Moment of inertia:	1.65 · 10 ⁻³ kgm ² /m



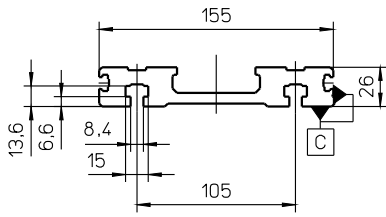
Calculation of block length of bellows (FB)

$(\text{Stroke} + 15) / 47 = \text{Number of pleats}$
 $\text{Number of pleats} \cdot 5.5 - 15 = \text{Block length of bellows (FB)}$

Example for stroke of 500 mm:

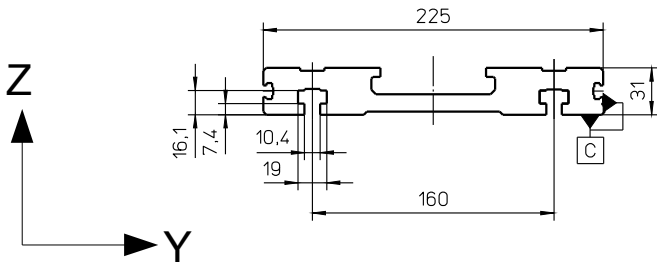
$(500 \text{ mm} + 15) / 47 = 10.96 \Rightarrow 11 \text{ pleats (rounded up)}$
 $11 \cdot 5.5 - 15 = 46 \text{ mm simple block length (FB)}$

Profile Alpha-15-B-155



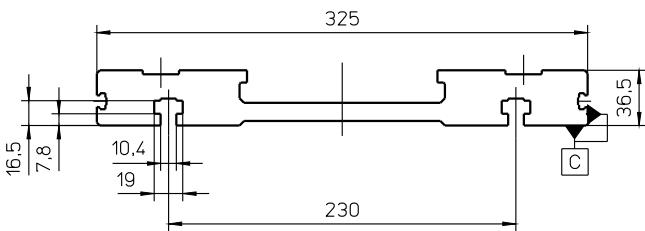
Specific mass [kg/m]	6.6
Surface measure [mm ²]	2446
Geometrical moment of inertia I _y [mm ⁴]	143666
Geometrical moment of inertia I _z [mm ⁴]	60433952
Section modulus W _y [mm ³]	10413
Section modulus W _z [mm ³]	77156

Profile Alpha-20-B-225



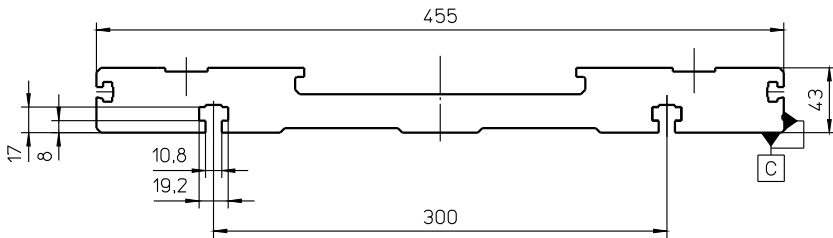
Specific mass [kg/m]	12.84
Surface measure [mm ²]	4756
Geometrical moment of inertia I _y [mm ⁴]	382465
Geometrical moment of inertia I _z [mm ⁴]	23549293
Section modulus W _y [mm ³]	23316
Section modulus W _z [mm ³]	207803

Profile Alpha-30-B-325



Specific mass [kg/m]	21.24
Surface measure [mm ²]	7868
Geometrical moment of inertia I _y [mm ⁴]	841240
Geometrical moment of inertia I _z [mm ⁴]	88022524
Section modulus W _y [mm ³]	42594
Section modulus W _z [mm ³]	538754

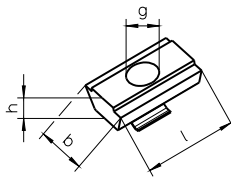
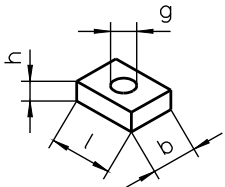
Profile Alpha-35-B-455



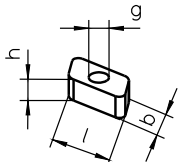
Specific mass [kg/m]	40.21
Surface measure [mm ²]	14892
Geometrical moment of inertia I _y [mm ⁴]	2003907
Geometrical moment of inertia I _z [mm ⁴]	297691553
Section modulus W _y [mm ³]	85106
Section modulus W _z [mm ³]	1300745

Stop angle standard page C

NS 3 / 4 / 6 / 11 NS 4.1 / 10



RM 4 / 6



Linear unit	Page	NS	ID No.	l [mm]	b [mm]	h [mm]	g
Alpha 15-B-155	E	4	10559	18	14	6	M8
		4.1	16552	20	13	6	M8
		10	16499	20	13	6	M6
		RM4	15371	13	8	6	M5
	C and D	11	13510	12	10	3,5	M4
Alpha 20-B-225	E	15	19211	25	18	8	M8
		RM6	15372	18	10	8	M6
	C and D	11	13510	12	10	3,5	M4
Alpha 30-B-325	E	6	10561	25	18	8	M10
		RM6	15372	18	10	8	M6
	C and D	11	13510	12	10	3,5	M4
Alpha 35-B-455	E	6	10561	25	18	8	M10
		RM6	15372	18	10	8	M6
	C and D	3	10558	20	12	5	M6

Example: **Alpha 20-B-225-SSS-M-2505-1000-1660-FB-2EMS-0**

Product _____

Size (version) _____

Drive _____

S = Spindle

Guide system _____

S = Rail guide

Model _____

S = Standard

Type of drive _____

M = Single nut (ball screw)

MM = Double nut (ball screw)

(TR = Trapezoidal screw - optional)

Drive specifications _____

Diameter and pitch (ball screw)

(Diameter x pitch (trapezoidal screw) - optional)

Stroke _____

Total length _____

Cover _____

FB = Bellows

Accessories _____

EMS / EMB = Mechanical limit switch (S = Siemens, B = Balluff) fitted

EO2 / EO10 = Inductive limit switch NC with 2m / 10m cable fitted

ES2 / ES10 = Inductive limit switch NO with 2m / 10m cable fitted

NS ① .. ⑪ = Sliding block ① .. ⑪ (see Table on **page A5**)

Special design _____

0 = Standard

1 = Special (add specification description)

Additional accessories (separate position)

MGK = Motor mounting and coupling (according to dimension sheet)

URT = Deflection belt drive (according to dimension sheet)

Further drives available on request:

MK or TK (= single nut made of plastic), KK (= double nut made of plastic)