

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-14/0324
of 26 June 2017

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Multi-axis concealed hinge assemblies TECTUS TE ...

Product family
to which the construction product belongs

Multi-axis concealed hinge assemblies
TECTUS TE 645 3D, TECTUS TE 303 3D, TECTUS TE
311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS
TE 380 3D, TECTUS TE 526 3D, TECTUS TE 526 3D
V4A, TECTUS TE 527 3D, TECTUS TE 528 3D, TECTUS
TE 541 3D FVZ

Manufacturer

SIMONSWERK GmbH
Bosfelder Weg 5
33378 Rheda-Wiedenbrück
DEUTSCHLAND

Manufacturing plant

SIMONSWERK GmbH
Bosfelder Weg 5
33378 Rheda-Wiedenbrück
DEUTSCHLAND

This European Technical Assessment
contains

16 pages including 11 annexes which form an integral
part of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

European Assessment Document (EAD)
020001-01-0405

This version replaces

ETA-14/0324 issued on 28 August 2014

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Specific Part

1 Technical description of the product

This European Technical Assessment applies to the variable concealed multi-axis hinges made of aluminium and zinc diecasting with the designation "TECTUS TE 645 3D, TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D, TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D, TECTUS TE 541 3D FVZ".

Each product consists of three parts, one part a mounting plate for the door frame, one part a mounting plate for the door leaf with segmented plates connected laterally in such a way as to allow the door to swing freely and to maintain the leaf in the same horizontal and vertical plane during the full operational cycle. Between the two mounting plates provide a variable geometry moving axis within a concealed unsprung hinge assembly.

The system setup of the product is given in Annexes 1 to 10.

The further labelling of some hinges is according to Annex 11.

2 Specification of the intended use in accordance with the applicable European assessment Document

The hinges are intended for use on doors of timber and metal. The doors could be made of synthetic materials if there is no requirement on resistance to fire.

They are invisible (concealed) hinges to allow single and double swing door leaves to be mounted flush to its door leaf and frame, forming a flush panel surface when the door is closed, and allowing the door to open to 180°.

The hinges are available for use on doors with door mass up to 160 kg (TECTUS TE 645 3D), 120 kg (TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D), 100 kg (TECTUS TE 541 3D FVZ) or 60 kg (TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D) each door leaf.

The verifications and assessment methods on which this European Technical Assessment is based lead the assumption of working life of the hinges of 10 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Not applicable

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Resistance to fire	Performance class A1
Reaction to fire	EI ₂ 30

3.3 Hygiene, health and the environment (BWR 3)

Not applicable

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3.4 Safety and accessibility (BWR 4)

Not applicable

3.5 Protection against noise (BWR 5)

Not applicable

3.6 Energy economy and heat retention (BWR 6)

Not applicable

3.7 Sustainable use of natural resources (BWR 7)

For the sustainable use of natural resources no performance was investigated for this product.

3.8 General aspects

The verification of durability is part of testing the essential characteristics.

Essential characteristic	Performance
Category of use	Grade 4 - TECTUS TE 645 3D, TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D, TECTUS TE 541 3D FVZ Grade 2 - TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D
Durability	Grade 7 - 200.000 Zyklen
Test door mass	Grade 7 - TECTUS TE 645 3D Grade 6 - TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D Grade 5 - TECTUS TE 541 3D FVZ Grade 3 - TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D
Fire resistance	Grade 1
Safety	Grade 1
Corrosion resistance	Grade 4 - very high resistance
Security	Grade 1 - TECTUS TE 645 3D Grade 0 - TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D, TECTUS TE 541 3D FVZ, TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D
Hinge grade	Grade 14 - TECTUS TE 645 3D Grade 13 - TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D Grade 12 - TECTUS TE 541 3D FVZ Grade 10 - TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D

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4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

According to Decision of the Commission 1999/93/EC (OJ L 29/51 of 26.01.1999 p. 51), as amended by Decision of the Commission 2011/246/EU (Letter of the European commission of 15/10/2004), the system of assessment and verification of constancy of performance (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

Product	Intended use	Level or class	System
"TECTUS TE 645 3D, TECTUS TE 303 3D, TECTUS TE 311 3D FVZ 40, TECTUS TE 311 3D FVZ 44, TECTUS TE 380 3D, TECTUS TE 526 3D, TECTUS TE 526 3D V4A, TECTUS TE 527 3D, TECTUS TE 528 3D, TECTUS TE 541 3D FVZ"	fire/smoke compartmentation and on escape routes		1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

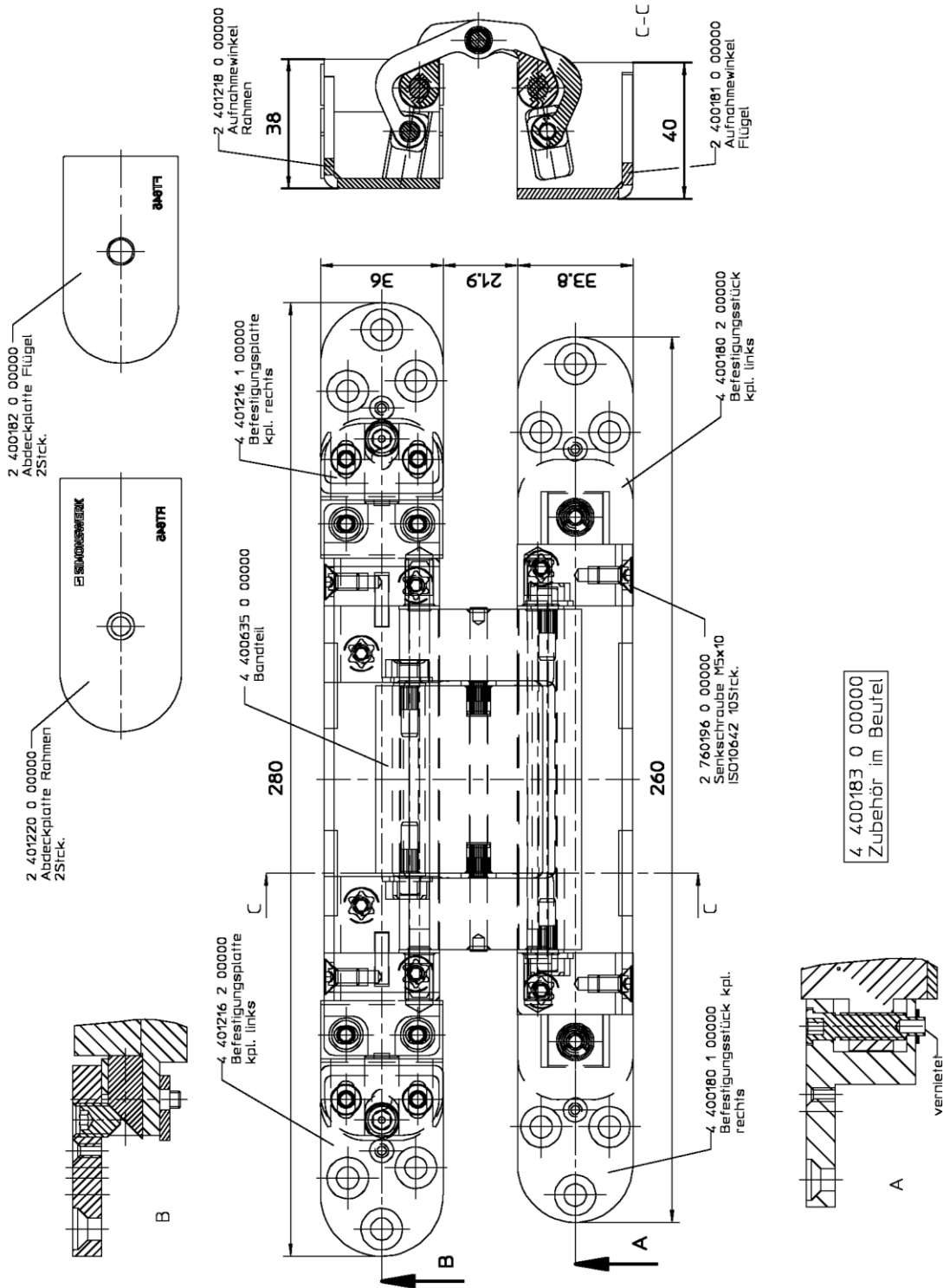
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 26 June 2017 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of department

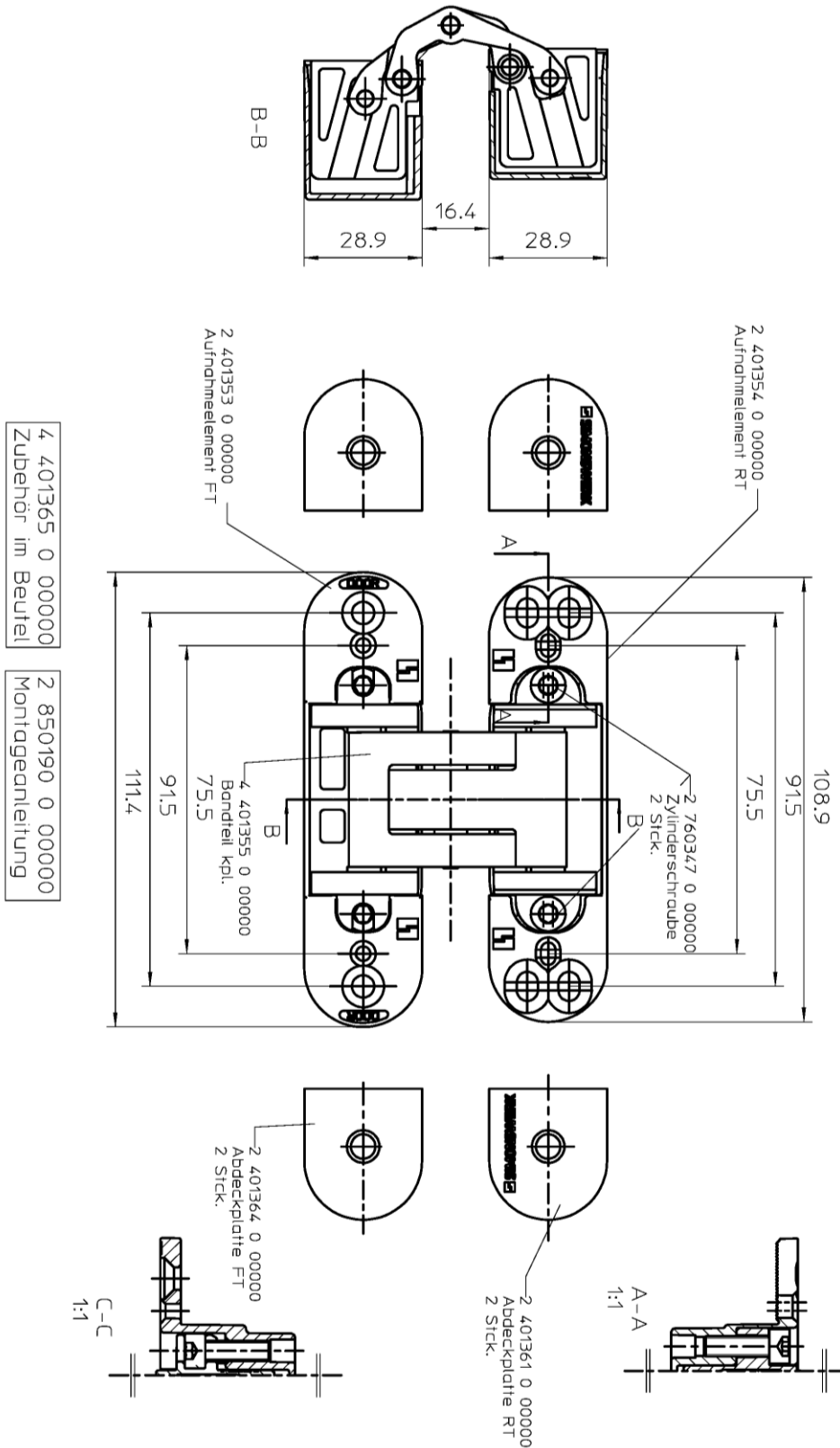
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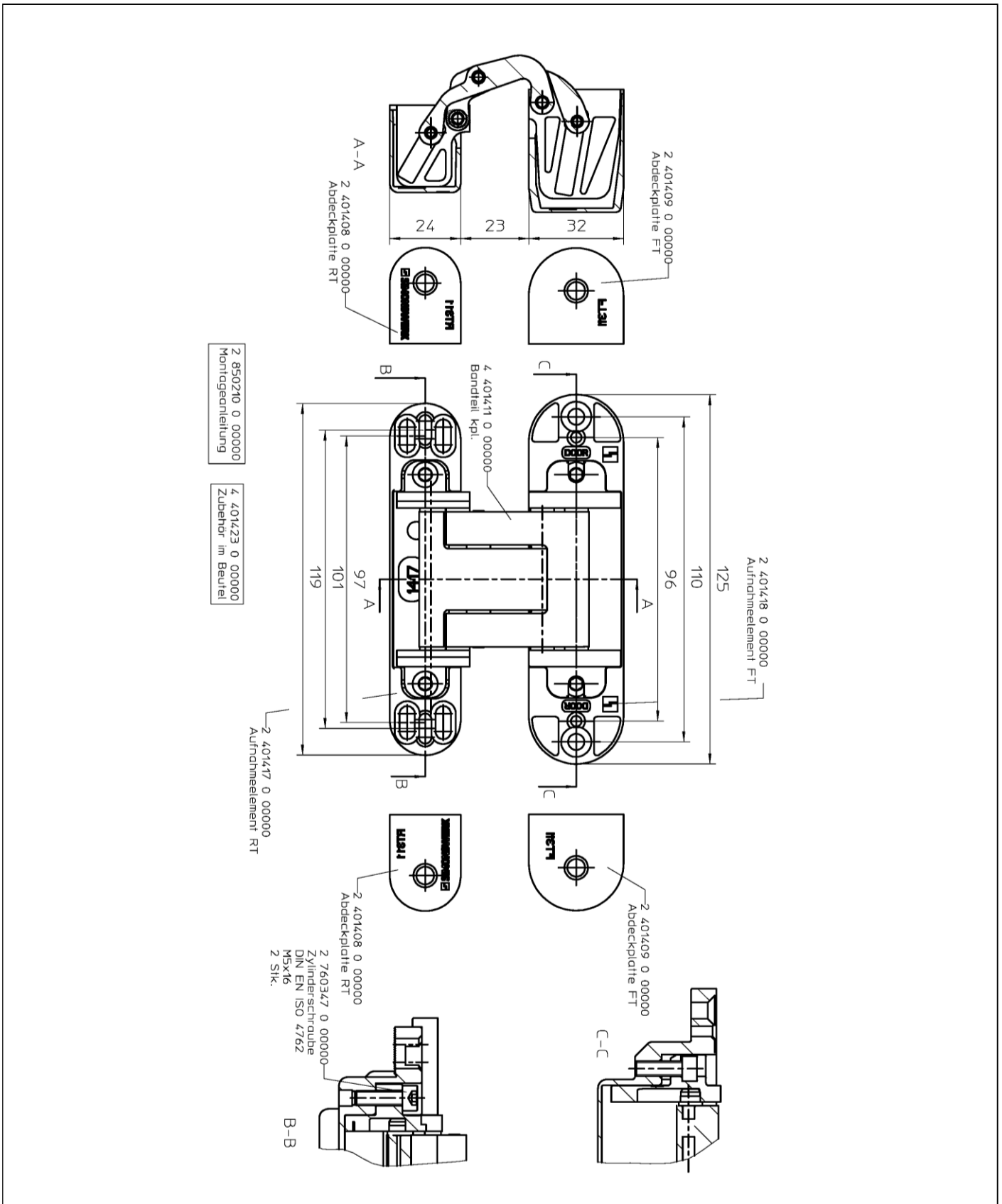
Multi-axis concealed hinge assemblies TECTUS TE 645 3D	Annex 1
Construction	



Multi-axis concealed hinge assemblies
TECTUS TE 303 3D

Construction

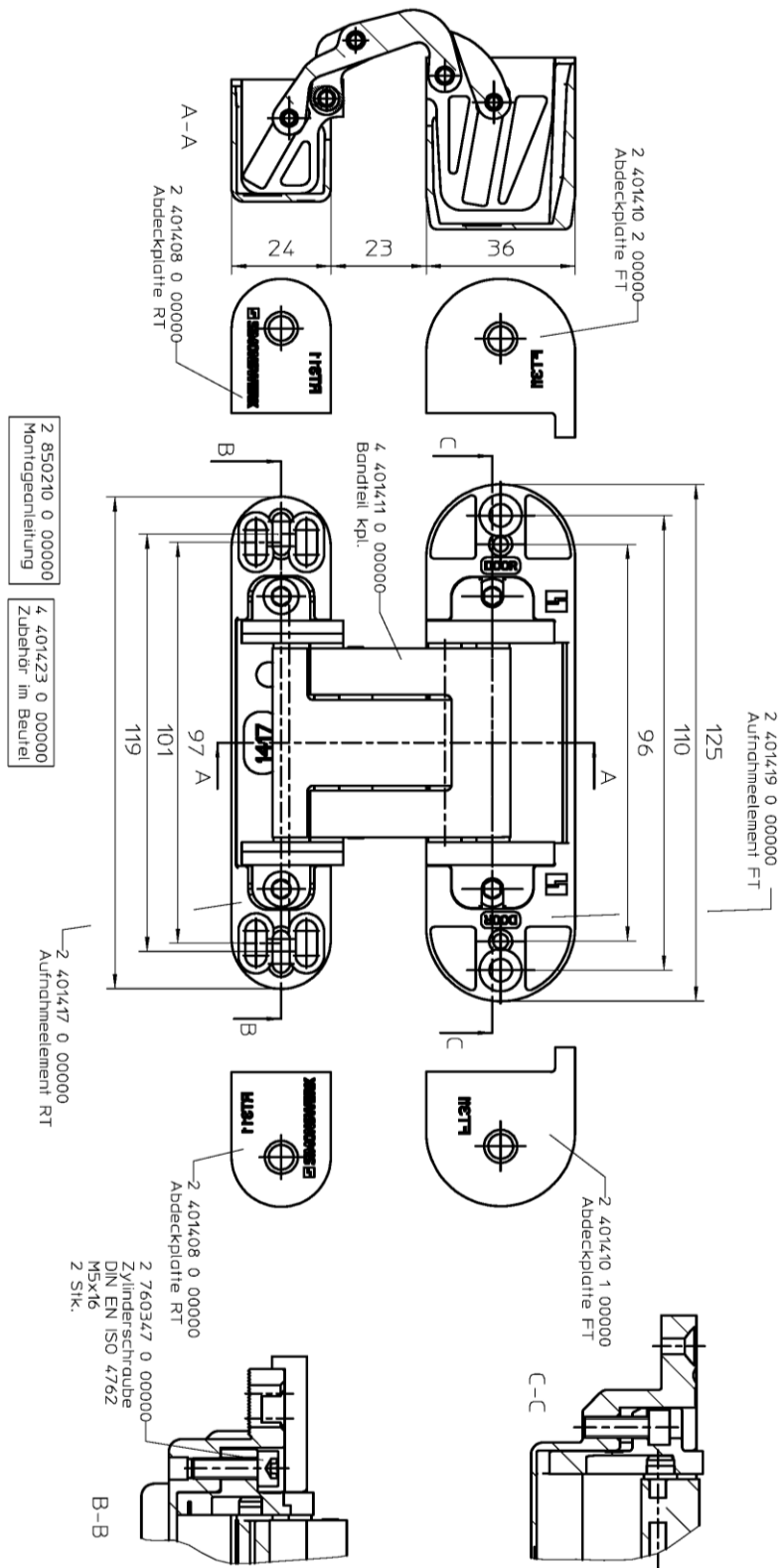
Annex 2



Multi-axis concealed hinge assemblies
TECTUS TE 311 3D FVZ 40

Construction

Annex 3

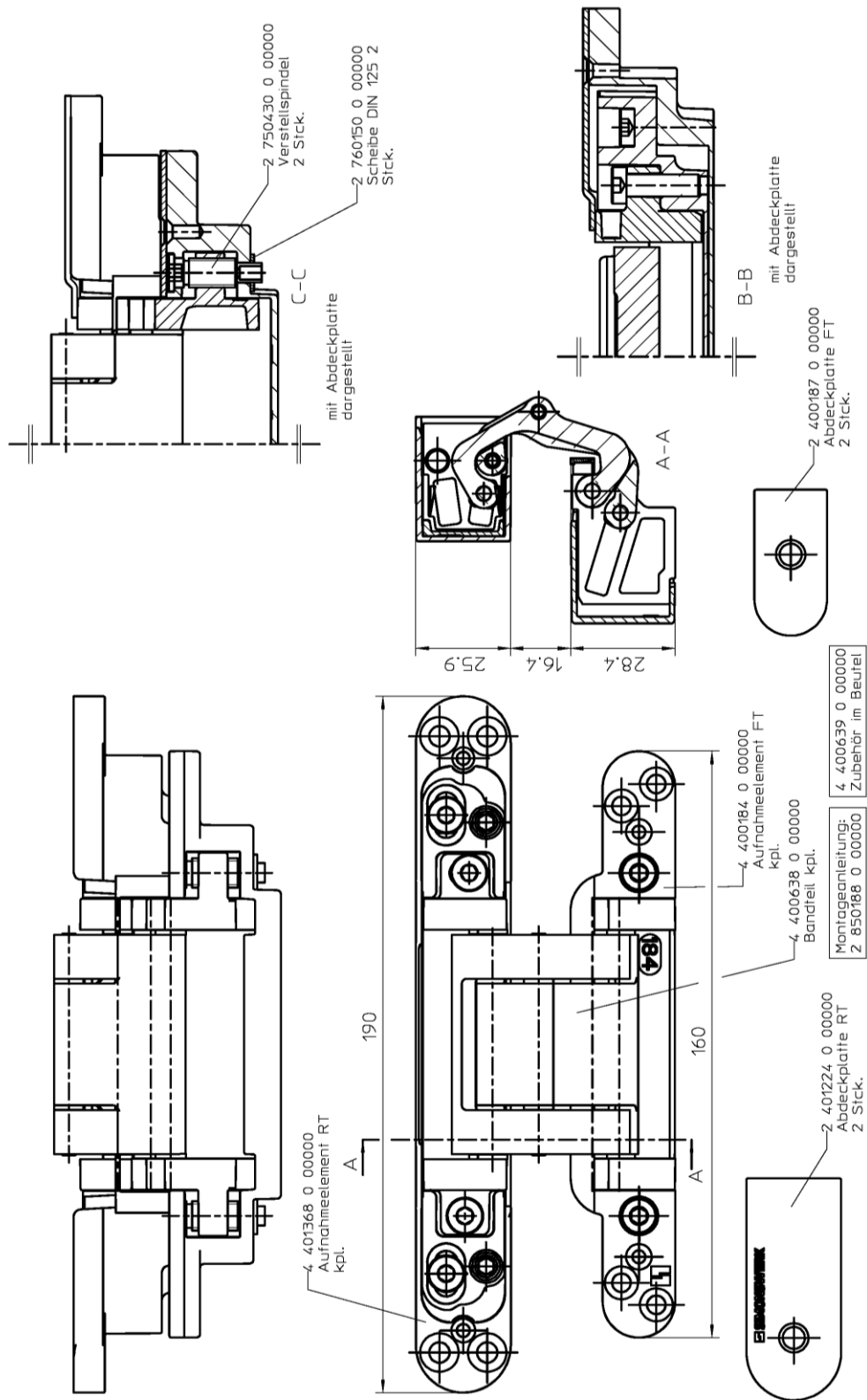


Multi-axis concealed hinge assemblies
TECTUS TE 311 3D FVZ 44

Construction

Annex 4

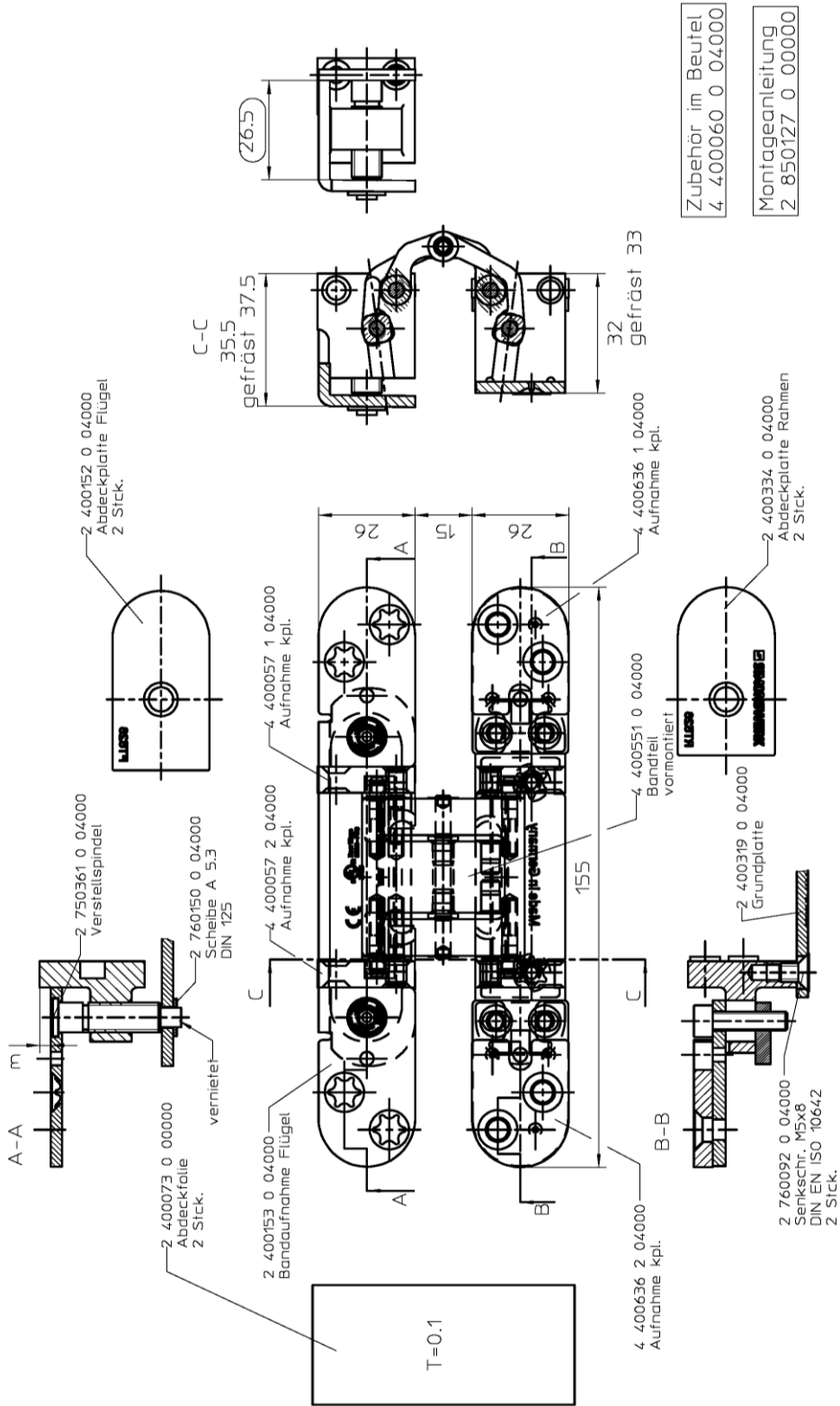
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Multi-axis concealed hinge assemblies
TECTUS TE 380 3D

Construction

Annex 5

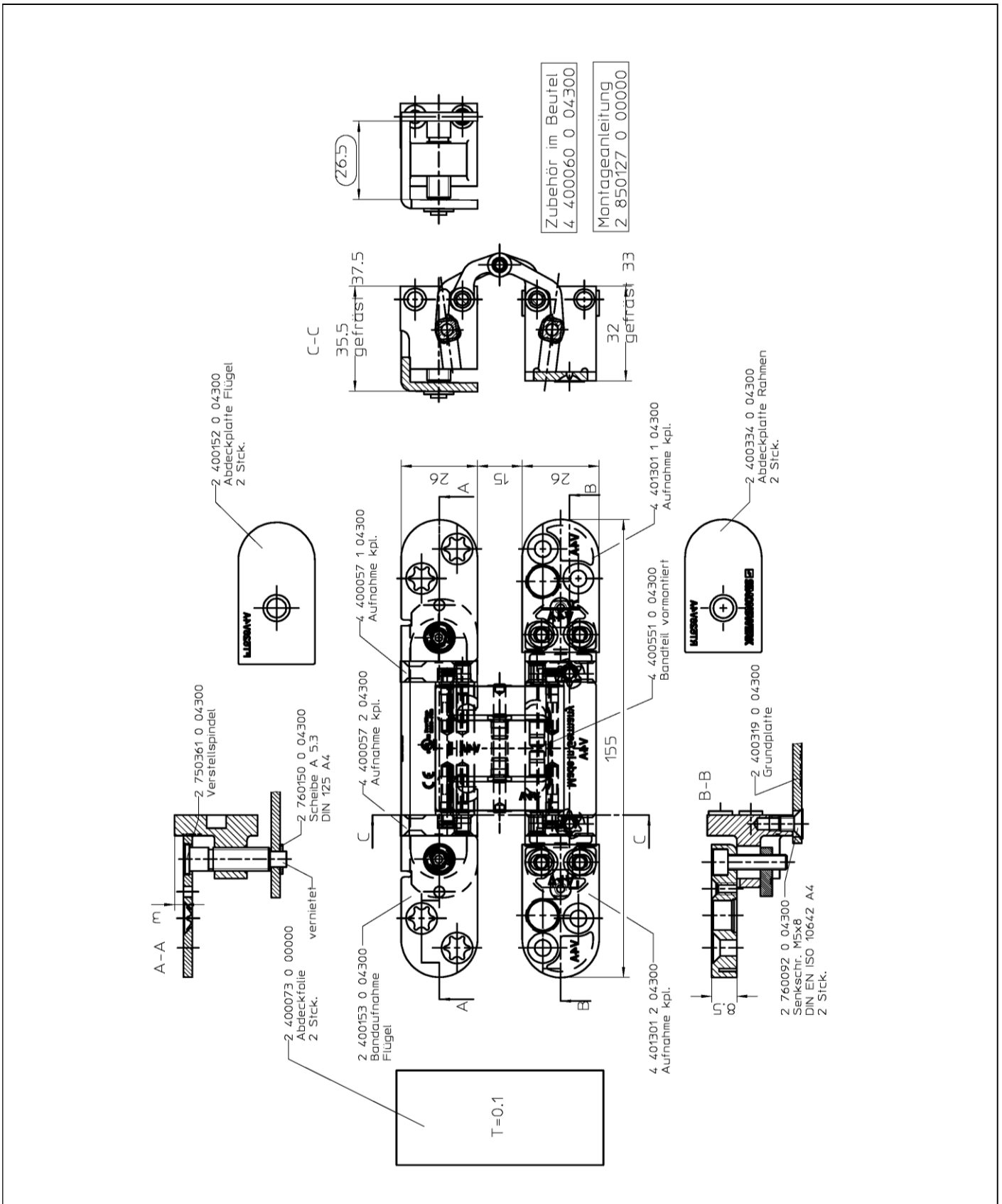


Multi-axis concealed hinge assemblies
TECTUS TE 526 3D

Construction

Annex 6

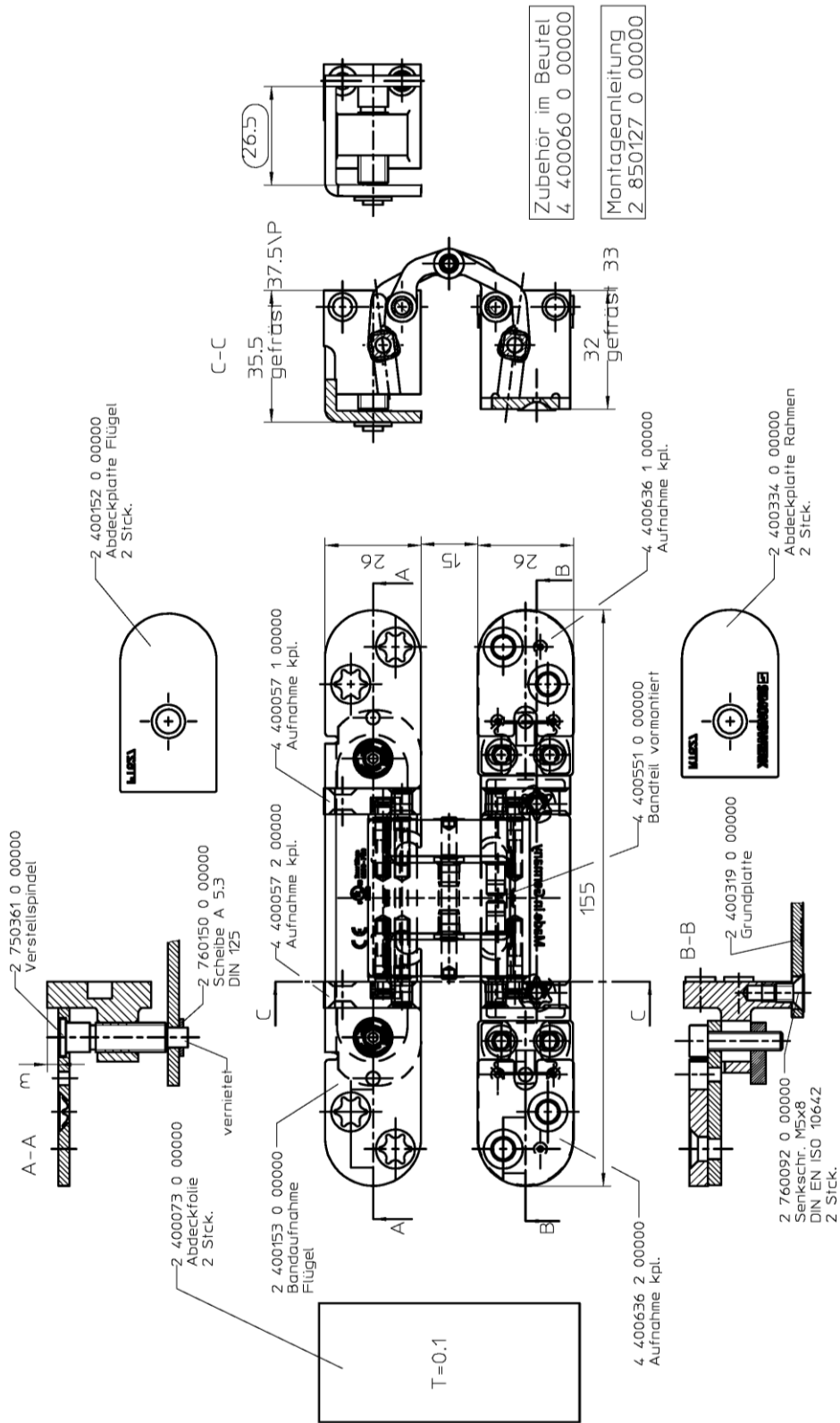
English translation prepared by DIBt



7 Multi-axis concealed hinge assemblies
TECTUS TE 526 3D V4A

Construction

Annex 7

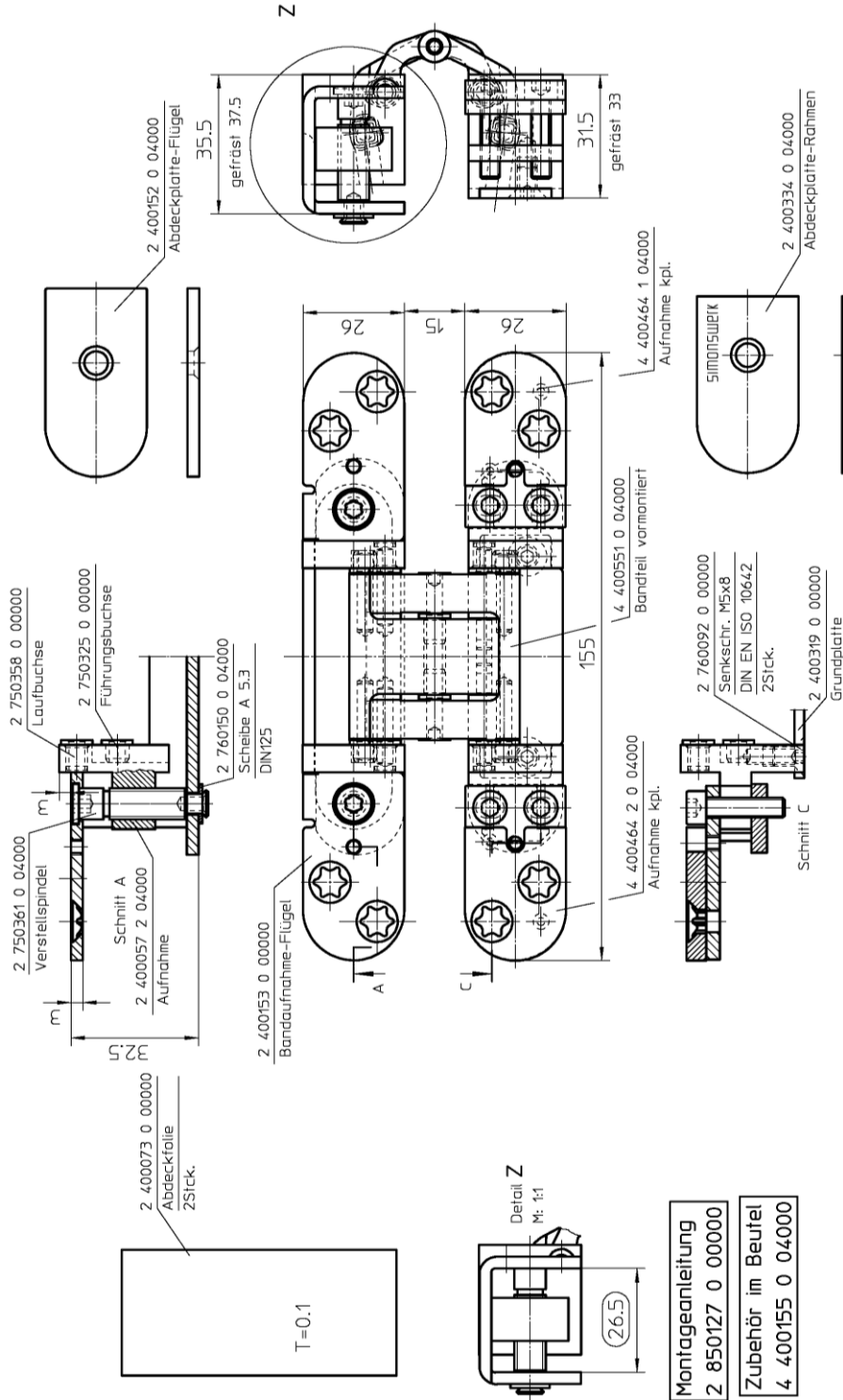


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Multi-axis concealed hinge assemblies
TECTUS TE 527 3D

Construction

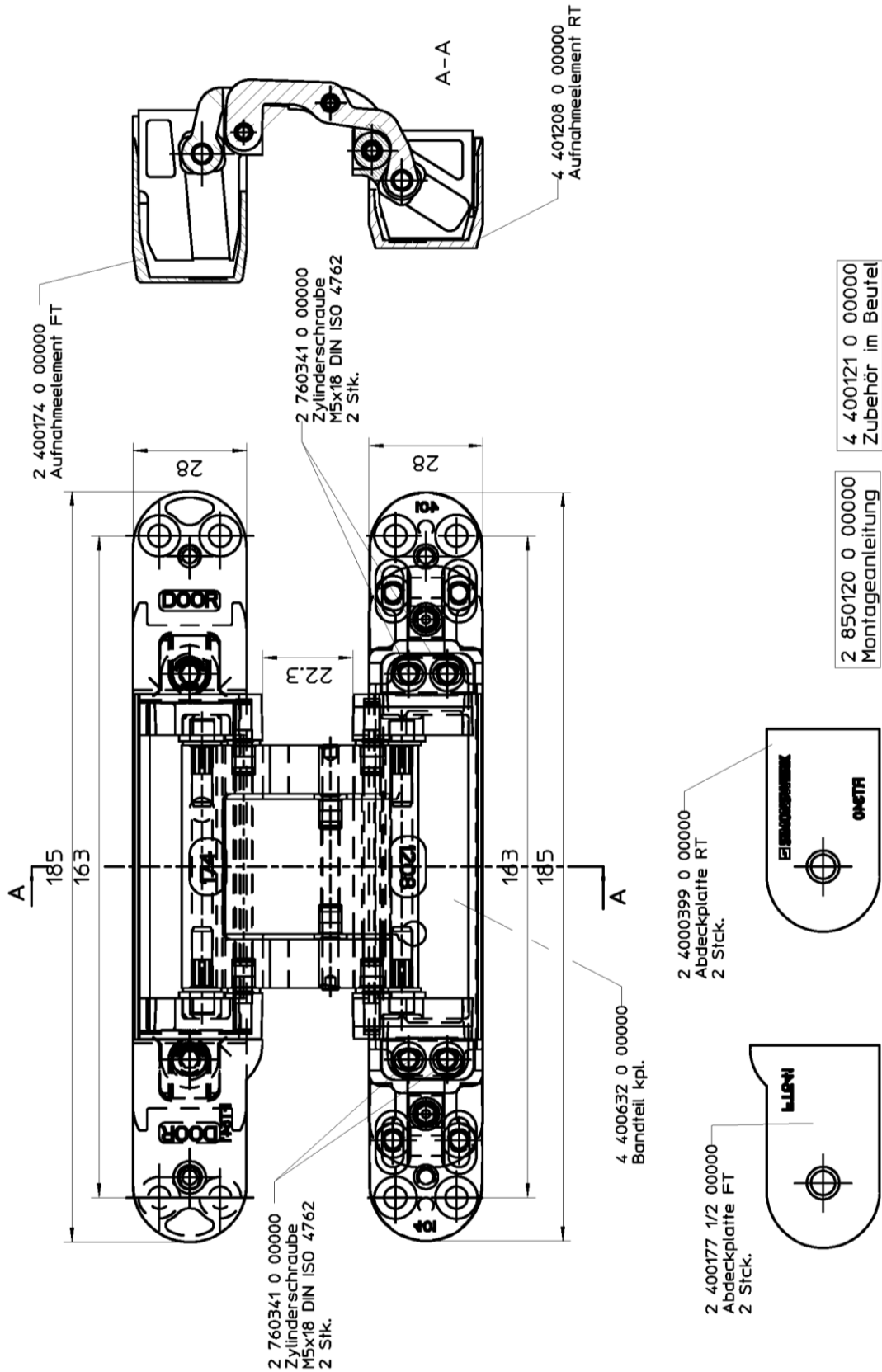
Annex 8



Multi-axis concealed hinge assemblies
TECTUS TE 528 3D

Construction

Annex 9



Multi-axis concealed hinge assemblies
TECTUS TE 541 3D FVZ

Construction

Annex 10

Hinge	Designation	Model number
TECTUS TE 645 3D	TECTUS TE 645 3D Energy	400664
TECTUS TE 303 3D	TECTUS TE 303 3D V 13-02	401352
	TECTUS TE 303 3D OS	400718
TECTUS TE 526 3D	TECTUS TE 526 3D Energy	400665
TECTUS TE 527 3D	TECTUS TE 527 3D Energy	400666
TECTUS TE 541 3D FVZ	TECTUS TE 541 3D FVZ J9-10	400673
	TECTUS TE 541 3D FVZ V8-13	400693

Multi-axis concealed hinge assemblies TECTUS TE 645 3D, TECTUS TE303 3D,
TECTUS TE 526 3 D, TECTUS TE 527 3D, TECTUS TE 541 3D FVZ

Further labelling of some hinges according to applicants information

Annex 11