

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-08/0209**  
**of 27 June 2018**

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 hinges  
"PIVOTA DX 6x 3-D ...", "PIVOTA DX 10x 3-D ...",  
"PIVOTA DXS 10x 3-D Steel ..." and "PIVOTA DXE 100  
3-D Enox"

Product family  
to which the construction product belongs

Multi-axis concealed hinges  
"PIVOTA DX 6x 3-D ...", "PIVOTA DX 10x 3-D ...",  
"PIVOTA DXS 10x 3-D Steel ..." and "PIVOTA DXE 100  
3-D Enox"

Manufacturer

Bartels Systembeschläge GmbH  
Gewerbegebiet Echternhagen 2  
32689 Kalletal  
DEUTSCHLAND

Manufacturing plant

Bartels Systembeschläge GmbH  
Gewerbegebiet Echternhagen 2  
32689 Kalletal  
DEUTSCHLAND

This European Technical Assessment  
contains

10 pages including 5 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

EAD 020001-01-0405

This version replaces

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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 steel and aluminium with the designation "PIVOTA DX 6x 3-D ...", "PIVOTA DX 10x 3-D ...", "PIVOTA DXS 10x 3-D Steel ..." and "PIVOTA DXE 100 3-D Enox".

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 hinge assembly.

In accordance of geometry and the used materials the hinges are summarised in product/hinge families. The hinge families and the associated hinges are specified in Annex 1. Several hinges have a labelling according to Annex 5.

The system setup of the products is given in Annexes 2 to 4.

### 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 uses on doors with door mass up to 100 kg ("PIVOTA DX 6x 3-D ..."), 120 kg ("PIVOTA DX 10x 3-D ...") and 160 kg ("PIVOTA DXS 10x 3-D Steel ..." and "PIVOTA DXE 100 3-D Enox") 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
Reaction to fire	A1
Resistance to fire	EI2 30

#### 3.3 Hygiene, health and the environment (BWR 3)

Not applicable

#### 3.4 Safety and accessibility in use (BWR 4)

Not applicable

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**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
Durability	Grade 7
Test door mass	Grade 5 - "PIVOTA DX 6x 3-D ..." Grade 6 - "PIVOTA DX 10x 3-D ..." Grade 7 - "PIVOTA DX 10x 3-D Steel ..." "PIVOTA DX 100 3-D Enox"
Fire resistance	Grade 1
Safety	Grade 1
Corrosion resistance	Grade 4
Security	Grade 1
Hinge grade	Grade 12 - "PIVOTA DX 6x 3-D ..." Grade 13 - "PIVOTA DX 10x 3-D ..." Grade 14 - "PIVOTA DX 10x 3-D Steel ..." "PIVOTA DX 100 3-D Enox"

**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
"PIVOTA DX 6x 3-D ..." "PIVOTA DX 10x 3-D ..." "PIVOTA DXS 10x 3-D Steel ..." "PIVOTA DXE 100 3-D Enox"	use doors in fire resisting and/or smoke compartmentation and/or escape routes	1	1

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**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 with Deutsches Institut für Bautechnik.

Issued in Berlin on 27 June 2018 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe  
Head of Department

*beglaubigt:*  
Pritzkow

**Multi-axis concealed hinges**  
"PIVOTA DX 6x 3-D ...", "PIVOTA DX 10x 3-D ...",  
"PIVOTA DXS 10x 3-D Steel ..." and "PIVOTA DXE 100  
3-D Enox"

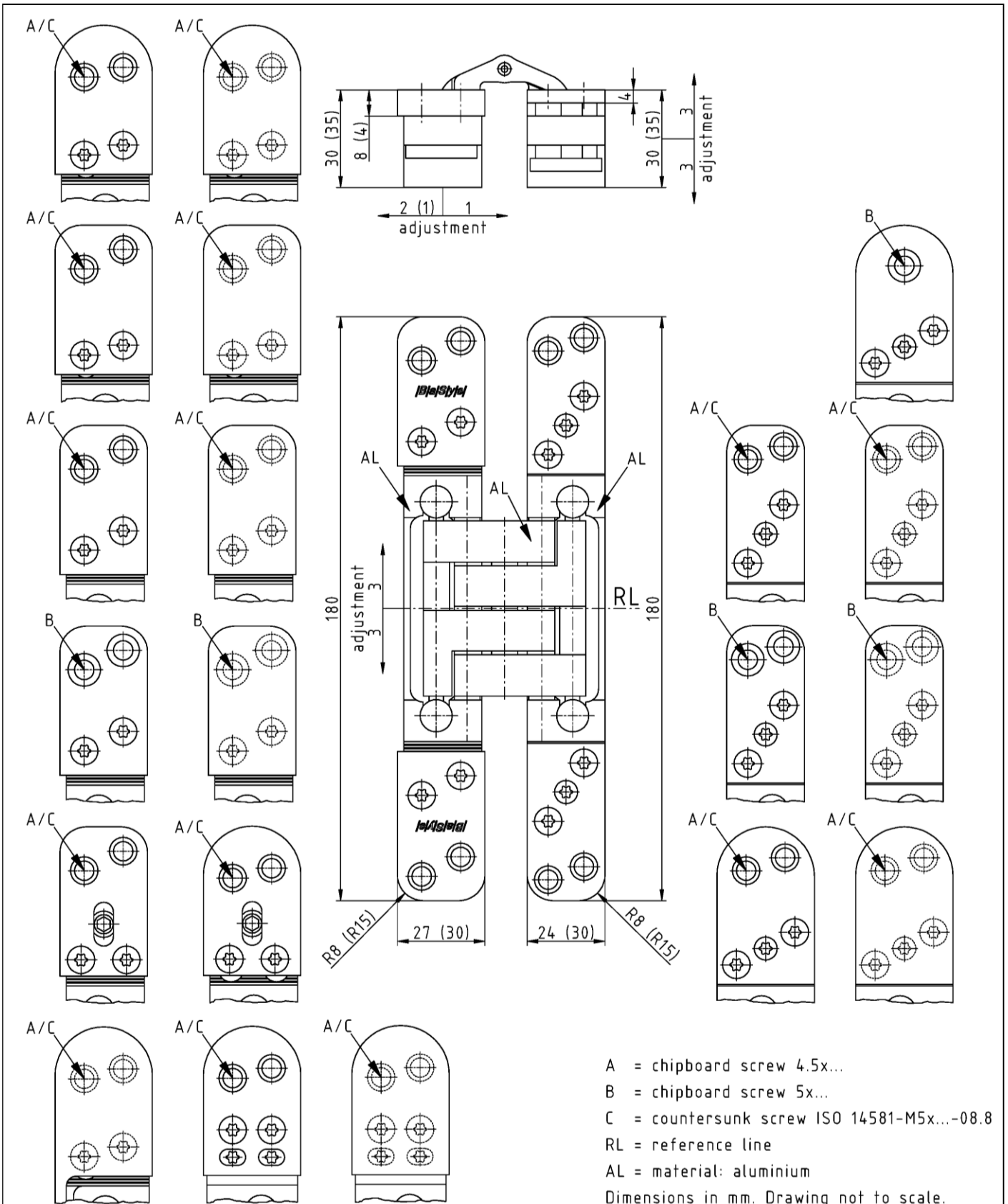
**Annex 1**

Hinges and hinge families:

"PIVOTA DX 6x 3-D ..."	PIVOTA	DX 60 3-D, DX 60 3-D IHA, DX 60 3-D Design
	PIVOTA	DX 61 3-D, DX 61 3-D (neutral), DX 61 3-D IHA, DX 61 3-D Design, DX 61 3-D Design+
	PIVOTA	DX 62 3-D, DX 62 3-D Design
	PIVOTA	DX 63 3-D
	PIVOTA	DX 65 3-D, DX 65 3-D Design
"PIVOTA DX 10x 3-D ..."	PIVOTA	DX 100 3-D, DX 100 3-D IHA, DX 100 3-D Design, DX 100 3-D (SGH), DX 100 3-D ZL (SGH)
	PIVOTA	DX 101 3-D, DX 101 3-D (neutral), DX 100 3-D IHA, DX 100 3-D Design, DX 61 3-D Design+, DX 100 3-D Safe, DX 100 3-D Safe (neutral)
	PIVOTA	DX 102 3-D, DX 102 3-D (neutral)
"PIVOTA DXS 10x 3-D Steel ..."	PIVOTA	DXS 100 3-D Steel
	PIVOTA	DXS 101 3-D Steel, DXS 101 3-D Steel (neutral), DXS 101 3-D Steel Safe, DXS 101 3-D Steel Safe (neutral), DXS 101 3-D Safe RC3
	PIVOTA	DXS 102 3-D Steel
"PIVOTA DXE 100 3-D Enox"		

The several hinges of the product families are only different in front plate geometry and if so in material (Annexes 2 to 4).

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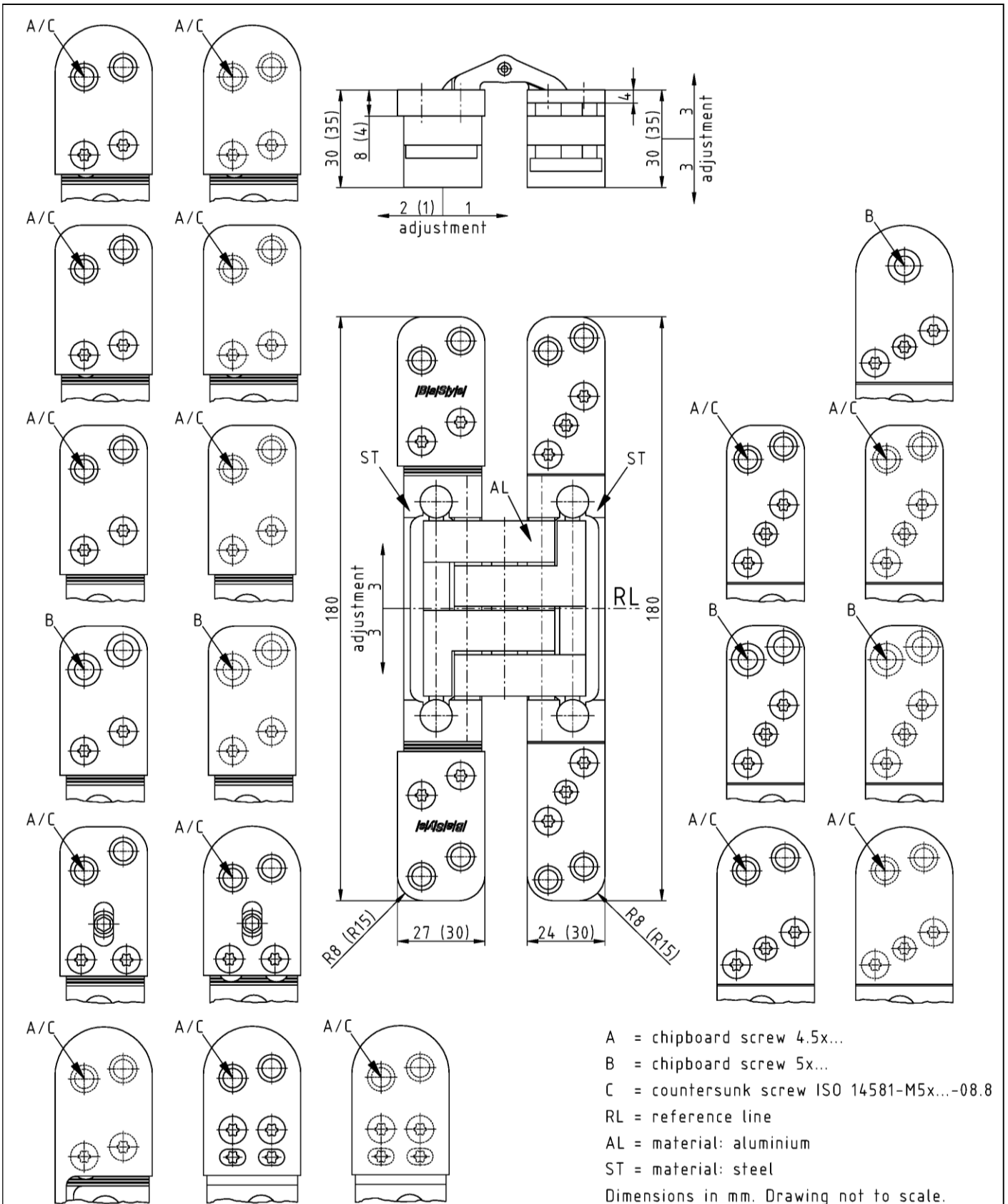
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Multi-axis concealed hinges "PIVOTA DX 6x 3-D..."

Construction

Annex 2

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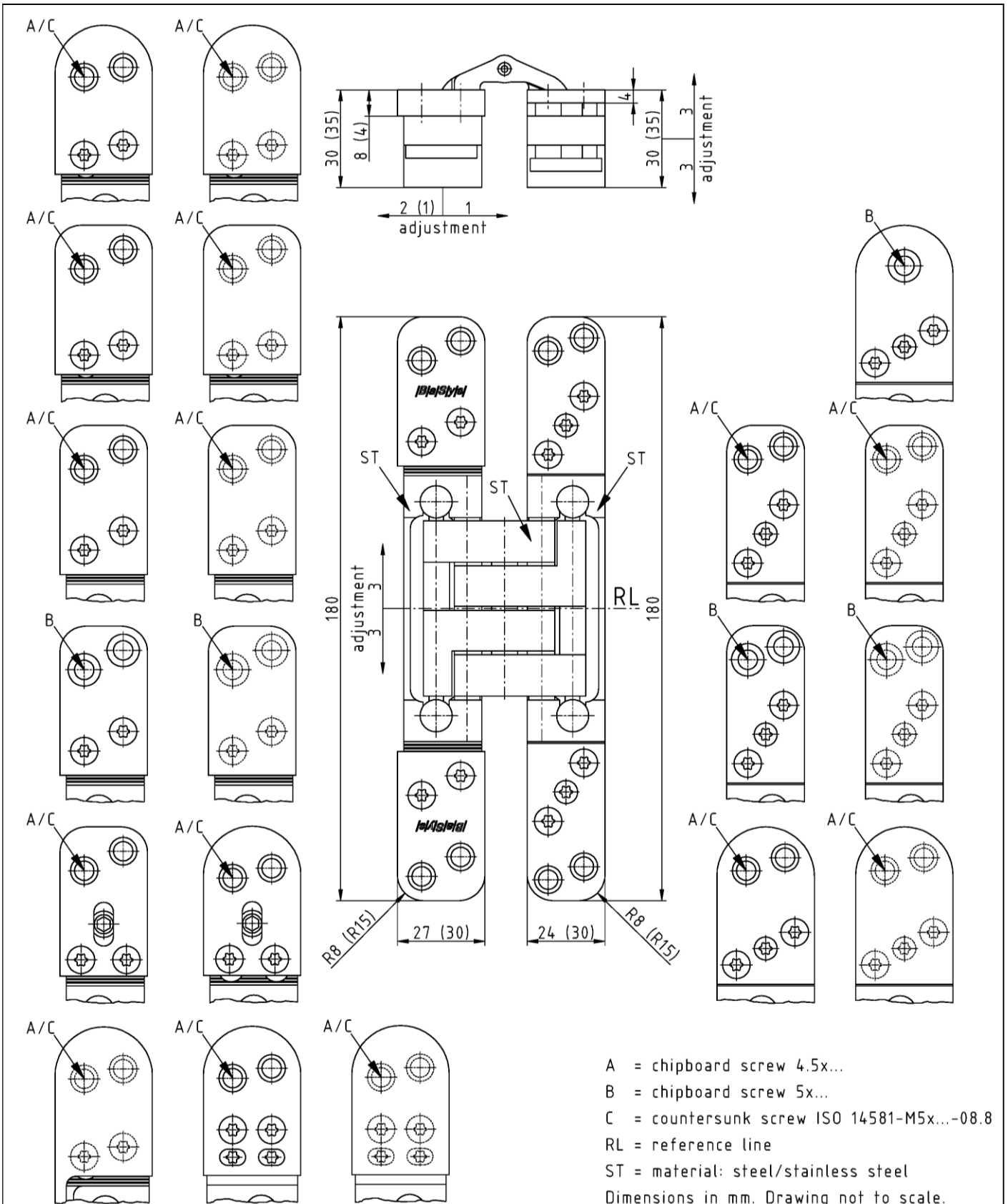


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Multi-axis concealed hinges "PIVOTA DX 10x 3-D..."	
Construction	Annex 3



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Multi-axis concealed hinges "PIVOT DXS 10x 3-D Steel..." and "PIVOTA DXE 100 3-D Enox"	
Construction	Annex 4

**Multi-axis concealed hinges**  
"PIVOTA DX 6x 3-D ...", "PIVOTA DX 10x 3-D ...",  
"PIVOTA DXS 10x 3-D Steel ..." and "PIVOTA DXE 100  
3-D Enox"

**Annex 5**

Further labelling of individual hinges according to the statement of applicant:

DX 61 3-D	VLB 60 3D
DX 61 3-D IHA	VLB 60 3-D IHV
DX 61 3-D Design	VLB 60 3D Design
DX 101 3-D	VLB 100 3D
DX 101 3-D IHA	VLB 100 3-D IHV
DX 101 3-D Design	VLB 100 3D Design
DX 60 3-D Design	Concealeo DA 100 3D
DX 100 3-D Design	Concealeo DH 120 3D
DXS 100 3-D Steel Design	Concealeo DS 120 3D