BS EN 3631:2014

BSI Standards Publication

Aerospace series — Fluid fittings, flanged, 90° elbowed — Sealing by O-ring for 0,8 mm thick tubes

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National foreword

This British Standard is the UK implementation of EN 3631:2014. It supersedes BS EN 3631:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3631

October 2014

ICS 49.080

Supersedes EN 3631:2008

English Version

Aerospace series - Fluid fittings, flanged, 90° elbowed - Sealing by O-ring for 0,8 mm thick tubes

Série aérospatiale - Raccords à bride à 90° - Étanchéité par joint torique pour tubes de 0,8 mm d'épaisseur

Luft- und Raumfahrt - Rohrverbindungen mit Flansch, 90° - O-Ring-Dichtung für Rohre mit einer Dicke von 0,8 mm

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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 3631:2014 E

Contents

Foreword

This document (EN 3631:2014) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This document supersedes EN 3631:2008.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2015, and conflicting national standards shall be withdrawn at the latest by April 2015.

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1 Scope

This European Standard specifies the characteristics of the fluid fittings, flanged, 90° elbowed, sealing by O-ring, for 0,8 mm thick tubes.

NOTE Flanged fitting installation hole and assembly, see EN 3633 and TR 3634.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2157-3*, Aerospace series — Steel — Forging stock and forgings — Technical specification — Part 3: Pre-production and production forgings*

EN 2424, *Aerospace series — Marking of aerospace products*

EN 3482, *Aerospace series — Steel FE-PA13 — Annealed — Reference heat treatment: softened — Forging stock* $D_e \leq 100$ *mm* [1)]

EN 3487, *Aerospace series — Steel FE-PA3601 (X6CrNiTi18-10) — Air melted — Softened — Bar for machining — a or* $D \leq 250$ *mm —* $500\ MPa \leq R_m \leq 700\ MPa$

EN 3633, *Aerospace series — Installation hole for fluid fittings, flanged*

EN 3635, *Aerospace series — Weld lip — Geometrical configuration*

EN 9100*, Quality Management Systems — Requirements for Aviation, Space and Defence Organizations*

TR 3634, *Aerospace series — Fluid fittings, flanged — Assembly recommendations* [2)]

3 Required characteristics

3.1 Configuration, dimensions, tolerances

3.1.1 Configuration

See Figure 1 to Figure 8.

3.1.2 Dimensions and tolerances

See Figure 1 to Figure 8 and Table 1 to Table 5.

3.2 Material

EN 3487 or EN 3482.

Fittings can be machined or forged according to EN 2157-3.

4 Forging flanged fitting, Type A

See Figure 1 and Figure 2 and Table 1 and Table 2.

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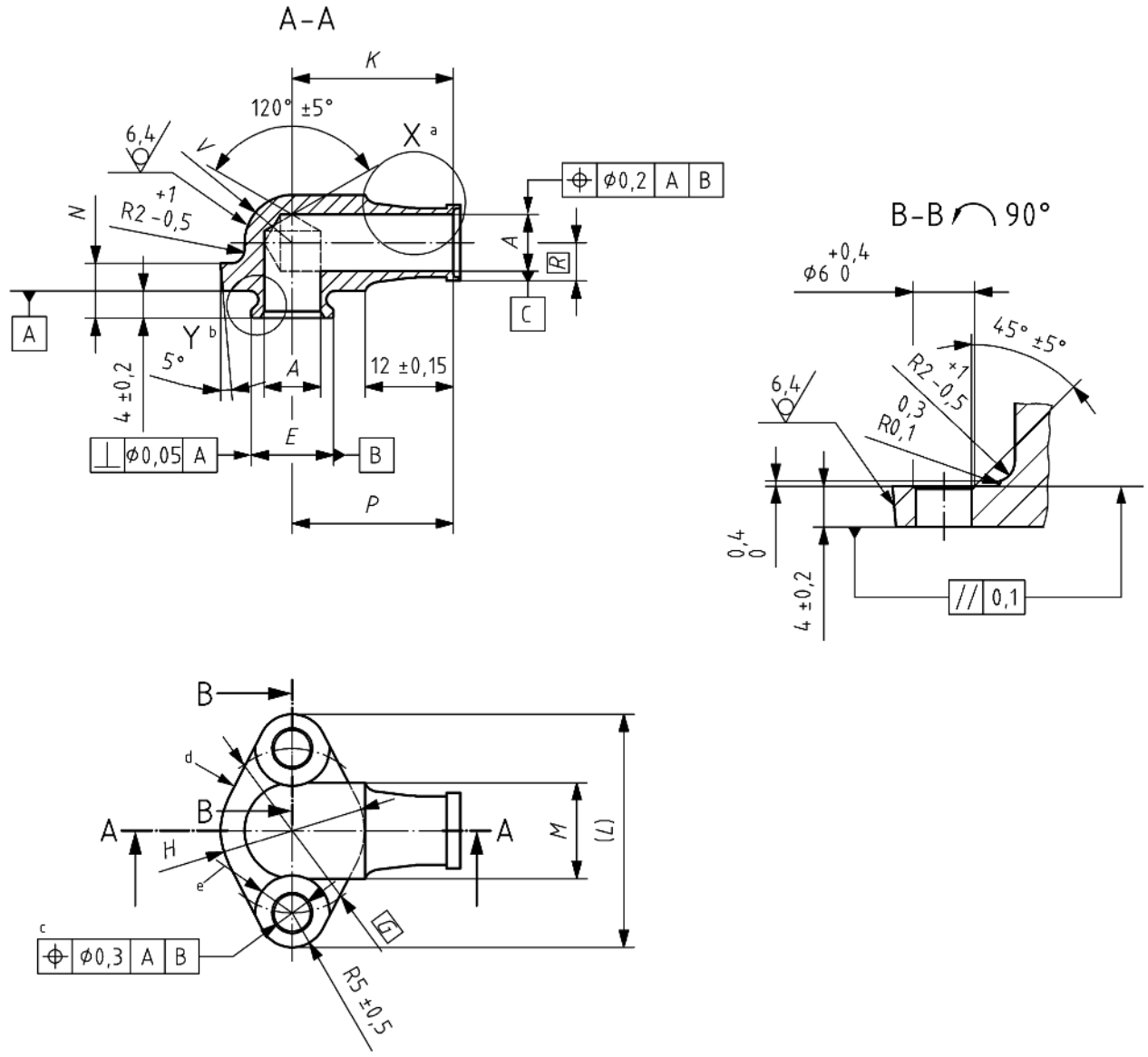
1) Published as ASD-STAN Prestandard at the date of publication of this standard (www.asd-stan.org).

2) Published as ASD-STAN Technical Report at the date of publication of this standard (www.asd-stan.org).

Dimensions in millimetres

3,2 (6,4)

Break sharp edges 0,1 mm to 0,3 mm



Key

a See Figure 8

b See Figure 7

c Two holes ∅ $5,4^{+0,2}_{0}$

d Marking

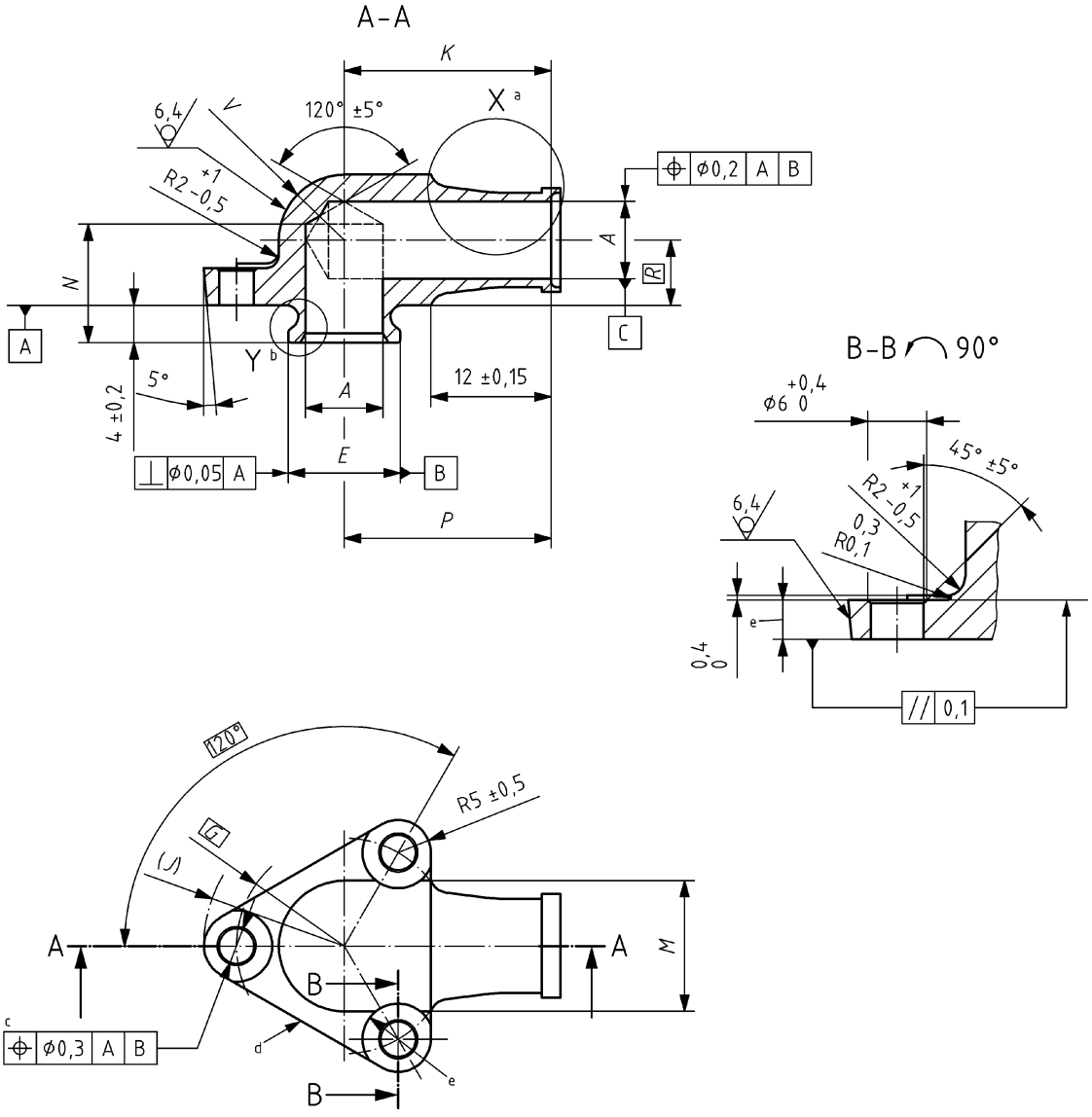
e Two identical ∅ 11 spot facings or straight profile

Figure 1

Dimensions in millimetres

3,2 (6,4)

Break sharp edges 0,1 mm to 0,3 mm



Key

For tube ∅ = 32 these spot facings do not overlap fitting body

a See Figure 8

b See Figure 7

c Three equidistant holes ∅ $5{,}4\ ^{+0{,}2}_{0}$

d Marking

e Three identical ∅ 11 spot facings

Figure 2

Table 1

Dimensions in millimetres

Diameter code	**Hole code**	**Tube** (0,8 thick)	*A*		*E*	*G*	*H*	*K*	*L*	*M*	*N*	*P*	*R*	*V*
			nom.	tol. H11	− 0,05 − 0,15		+ 0,7 − 0,3	0 − 0,5		+ 0,7 − 0,3	0 − 0,5	± 0,15		+ 0,35 − 0,15
040	2	∅ 4	∅ 2,3	+ 0,075 0	∅ 6	∅ 18	∅ 15	20	28	∅ 8	8,4	19,5	4	4
060		∅ 6	∅ 4,3		∅ 8	∅ 20	∅ 17	21,4	30	∅ 10	9,9	20,5	5	5
080		∅ 8	∅ 6,3	+ 0,09 0	∅ 10	∅ 22	∅ 19	22,8	32	∅ 12	11,3	21,5	6	6
100		∅ 10	∅ 8,3		∅ 12	∅ 24	∅ 21	24,2	34	∅ 14	12,7	22,5	7	7
120		∅ 12	∅ 10,3	+ 0,11 0	∅ 14	∅ 26	∅ 23	25,5	36	∅ 16	14	23,5	8	8
140		∅ 14	∅ 12,3		∅ 16	∅ 28	∅ 25	26,5	38	∅ 18	15	24,5	9	9
160		∅ 16	∅ 14,3		∅ 18	∅ 30	∅ 27	27,5	40	∅ 20	16	25,5	10	10

Table 2

Dimensions in millimetres

Diameter code	**Hole code**	**Tube** (0,8 thick)	*A*		*e*	*E*	*G*	*J*	*K*	*M*	*N*	*P*	*R*	*V*
			nom.	tol. H11	± 0,2	− 0,05 − 0,15			0 − 0,5	+ 0,7 − 0,3	0 − 0,5	± 0,15		+ 0,35 − 0,15
140	3	∅ 14	∅ 12,3	+ 0,11 0	4	∅ 16	∅ 31	∅ 41	26,5	∅ 18	15	24,5	9	9
160		∅ 16	∅ 14,3			∅ 18	∅ 33	∅ 43	27,5	∅ 20	16	25,5	10	10
180		∅ 18	∅ 16,3			∅ 20	∅ 36	∅ 46	28,5	∅ 22	17	26	11	11
200		∅ 20	∅ 18,3	+ 0,13 0	5	∅ 22	∅ 38	∅ 48	29	∅ 24	18	26,5	12	12
220		∅ 22	∅ 20,3			∅ 24	∅ 40	∅ 50	30	∅ 26	19,5	27	13	13
250		∅ 25	∅ 23,3			∅ 27	∅ 46	∅ 56	31	∅ 29	21	28,5	14,5	14,5
280		∅ 28	∅ 26,3			∅ 30	∅ 52	∅ 62	32,5	∅ 32	23	30	16	16
320		∅ 32	∅ 30,3	+ 0,16 0		∅ 34	∅ 60	∅ 70	35	∅ 36	25	32	18	18

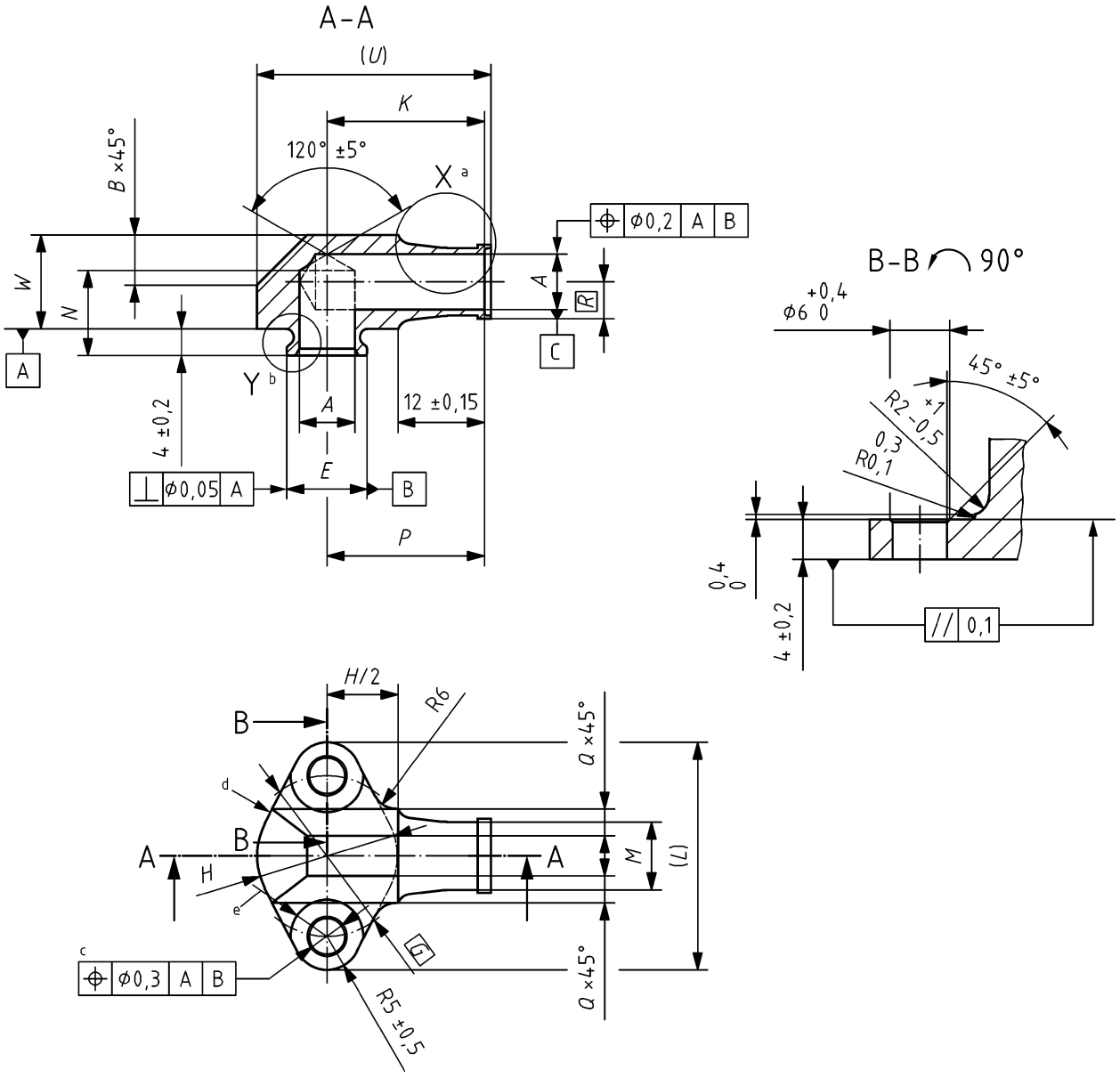
5 Machined flanged fitting, Type B

See Figure3 and Figure 4 and Table 3 and Table 4.

Dimensions in millimetres

3,2

Break sharp edges 0,1 mm to 0,4 mm



Key

a See Figure 8

b See Figure 7

c Two holes ∅ $5{,}4\,^{+0{,}2}_{0}$

d Marking

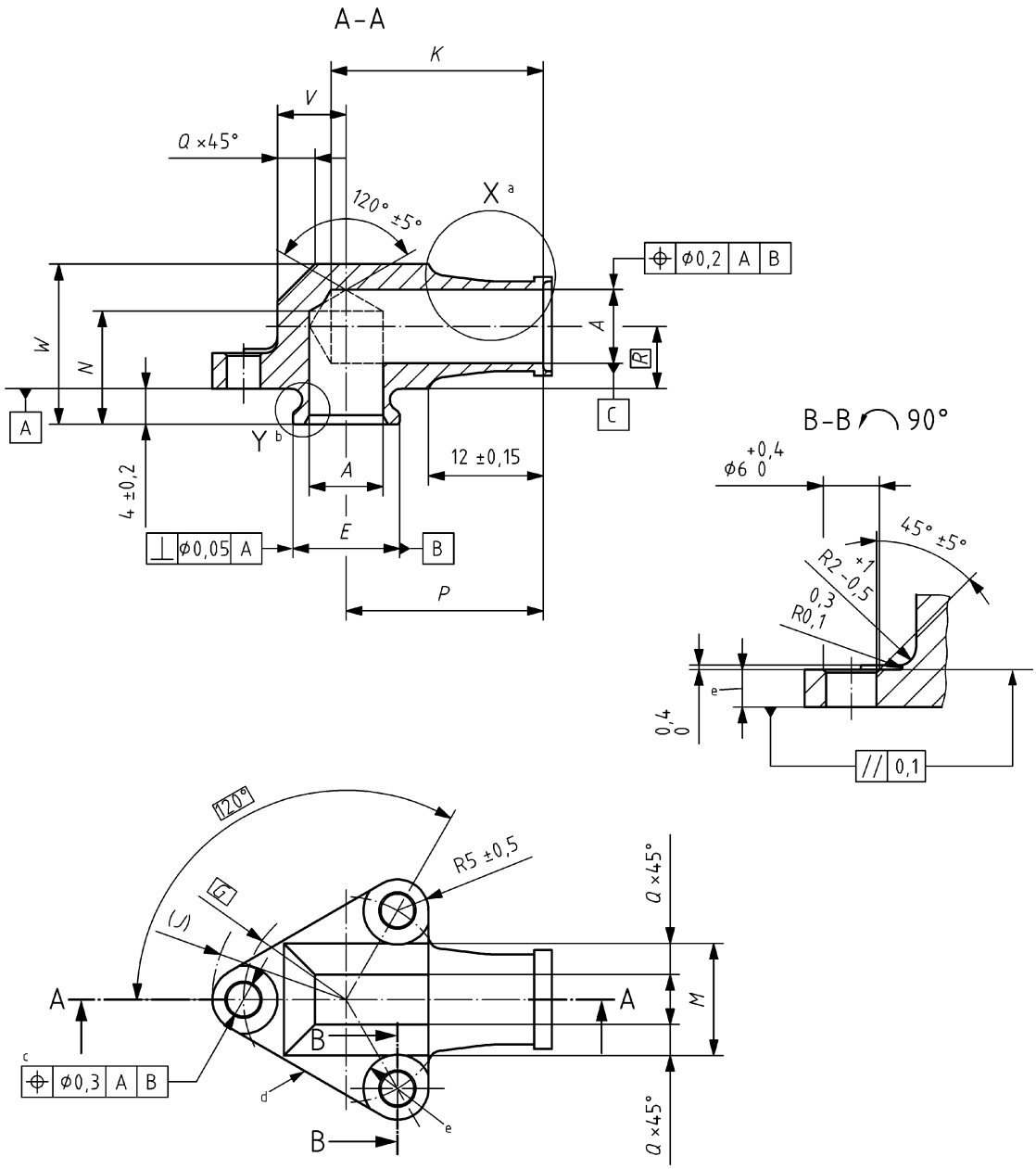
e Two identical ∅ 11 spot facings

Figure 3

3,2

Dimensions in millimetres

Break sharp edges 0,1 mm to 0,3 mm



Key

For tube ∅ = 32 these spot facings do not overlap fitting body

a See Figure 8

b See Figure 7

c Three equidistant holes ∅ $5{,}4^{+0{,}2}_{0}$

d Marking

e Three identical ∅ 11 spot facings

Figure 4

Table 3

Dimensions in millimetres

Diameter code	Hole code	Tube (0,8 thick)	*A*		*B*	*E*	*G*	*H*	*K*	*L*	*M*	*N*	*P*	*Q*	*R*	*U*	*W*
			nom.	tol. H11	± 0,2	− 0,05 − 0,15			0 − 0,5		± 0,2	0 − 0,5	± 0,15	± 0,2			± 0,15
040	2	∅ 4	∅ 2,3	+ 0,075 0	6	∅ 6	∅ 18	∅ 15	20	28	8	8,4	19,5	2,5	4	27,4	08
060		∅ 6	∅ 4,3		6,5	∅ 8	∅ 20	∅ 17	21,4	30	10	9,9	20,5	3	5	29,4	10
080		∅ 8	∅ 6,3	+ 0,09 0	7	∅ 10	∅ 22	∅ 19	22,8	32	12	11,3	21,5	3,5	6	31,6	12
100		∅ 10	∅ 8,3		7,5	∅ 12	∅ 24	∅ 21	24,2	34	14	12,7	22,5	4	7	33,6	14
120		∅ 12	∅ 10,3	+ 0,11 0	8	∅ 14	∅ 26	∅ 23	25,5	36	16	14	23,5	4,5	8	35,6	16
140		∅ 14	∅ 12,3		8,5	∅ 16	∅ 28	∅ 25	26,5	38	18	15	24,5	5	9	37,6	18
160		∅ 16	∅ 14,3		9	∅ 18	∅ 30	∅ 27	27,5	40	20	16	25,5	6	10	39,6	20

Table 4

Dimensions in millimetres

Diameter code	Hole code	Tube (0,8 thick)	*A*		*C*	*e*	*E*	*G*	*J*	*K*	*M*	*N*	*P*	*Q*	*R*	*V*	*W*
			nom.	tol. H11	± 0,2	± 0,2	− 0,05 − 0,15			0 − 0,5	± 0,2	0 − 0,5	± 0,15	± 0,2		± 0,2	± 0,15
140	3	∅ 14	∅ 12,3	+ 0,11 0	–	4	∅ 16	∅ 31	∅ 41	26,5	18	15	24,5	5	9	9	18
160		∅ 16	∅ 14,3				∅ 18	∅ 33	∅ 43	27,5	20	16	25,5	6	10	10	20
180		∅ 18	∅ 16,3		6		∅ 20	∅ 36	∅ 46	28,5	22	17	26	6	11	11	22
200		∅ 20	∅ 18,3	+ 0,13 0	7	5	∅ 22	∅ 38	∅ 48	29	24	18	26,5	7	12	12	24
220		∅ 22	∅ 20,3		8		∅ 24	∅ 40	∅ 50	30	26	19,5	27	8	13	13	26
250		∅ 25	∅ 23,3		9		∅ 27	∅ 46	∅ 56	31	29	21	28,5	9	14,5	14,5	29
280		∅ 28	∅ 26,3		10		∅ 30	∅ 52	∅ 62	32,5	32	23	30	10	16	16	32
320		∅ 32	∅ 30,3	+ 0,16 0	11		∅ 34	∅ 60	∅ 70	35	36	25	32	11	18	18	36

6 Fitting

6.1 Fitting for tubes ∅ ≤ 16

See Figure 5.

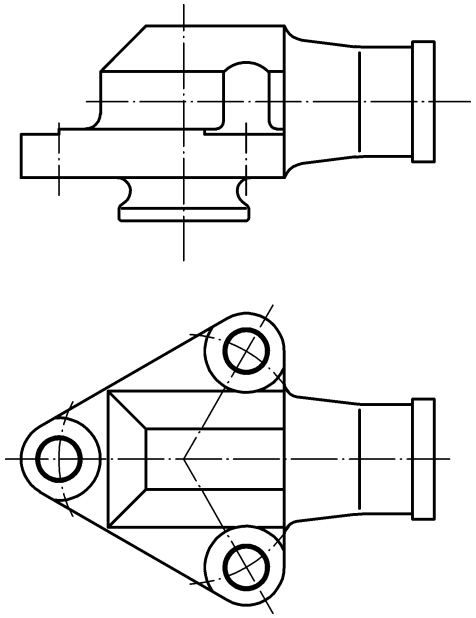


Figure 5

6.2 Fitting for tubes ∅ > 16

See Figure 6 and Table 4.

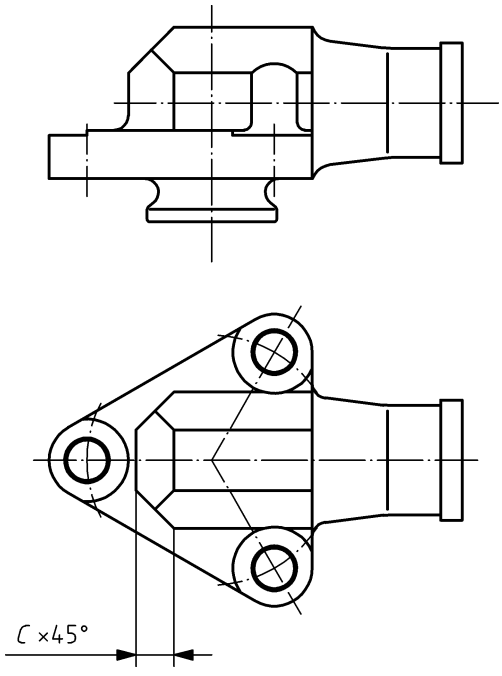
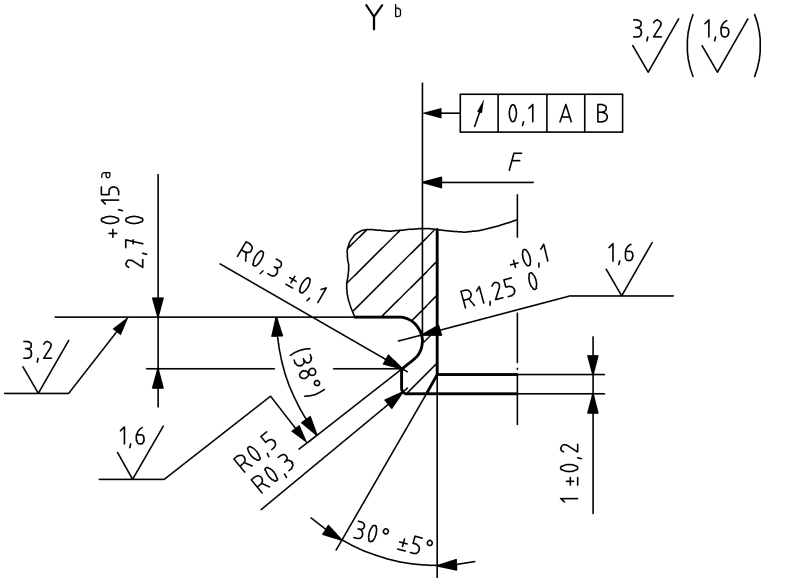


Figure 6

7 Cone and end fitting

See Figure 7 and Figure 8 and Table 5.

Dimensions in millimetres



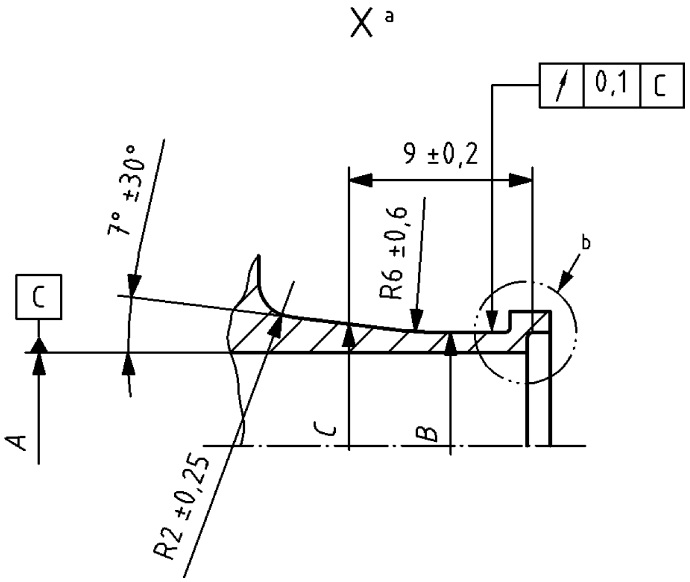
Key

a At intersection

b Enlarged

Figure 7

Dimensions in millimetres



Key

a Enlarged

b Weld lip to EN 3635

Figure 8

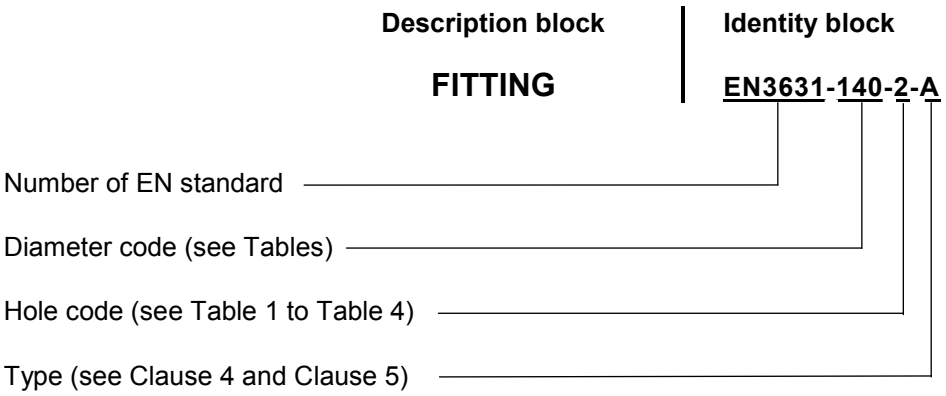
Table 5

Dimensions in millimetres

Diameter code	**Tube** (0,8 thick)	*B* 0 − 0,1	*C* ± 0,15	*F* 0 − 0,1
040	∅ 4	∅ 4,1	∅ 5,1	∅ 3,9
060	∅ 6	∅ 6,1	∅ 7,1	∅ 5,9
080	∅ 8	∅ 8,1	∅ 9,1	∅ 7,9
100	∅ 10	∅ 10,1	∅ 11,1	∅ 9,9
120	∅ 12	∅ 12,1	∅ 13,1	∅ 11,9
140	∅ 14	∅ 14,1	∅ 15,1	∅ 13,9
160	∅ 16	∅ 16,1	∅ 17,1	∅ 15,9
180	∅ 18	∅ 18,1	∅ 19,1	∅ 17,9
200	∅ 20	∅ 20,1	∅ 21,1	∅ 19,9
220	∅ 22	∅ 22,1	∅ 23,1	∅ 21,9
250	∅ 25	∅ 25,1	∅ 26,1	∅ 24,9
280	∅ 28	∅ 28,1	∅ 29,1	∅ 27,9
320	∅ 32	∅ 32,1	∅ 33,1	∅ 31,9

8 Designation

EXAMPLE



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9 Marking

EN 2424, Style A, as indicated in the Figures.

10 Quality assurance

According to EN 9100.

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