AIRBUS

SOLID RIVET - ALUMINIUM ALLOY, 100° COUNTERSUNK HEAD

Issue : **P**
Date : **01.13**
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SUMMARY

1 - SCOPE AND FIELD OF APPLICATION

This standard specifies the dimensions, tolerances, required characteristics and the masses of aluminium solid rivet with 100° countersunk head.

2 - NORMATIVE REFERENCES

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the last edition of the referenced document (including any amendments) applies.

EN 2115 : Aerospace series - Aluminium alloy 2117-T42 - Wire for solid rivets D ≤ 10 mm.
EN 2116 : Aerospace series - Aluminium alloy 2017A- T42 - Wire for solid rivets D ≤ 10 mm.
EN 2424 : Aerospace series - Marking of aerospace products.
EN 3115 : Aerospace series - Aluminium alloy 7050- T73 - Wire for solid rivets D ≤ 10 mm.
EN 6104 : Aerospace series - Rivets, solid, in aluminium or aluminium alloy - Inch series - Technical specification.
MIL-DTL-5541:Chemical conversion coatings on aluminium and aluminium alloys.

3 - TERMINOLOGY

Not applicable.

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4 - REQUIRED CHARACTERISTICS

4.1 - Configuration, dimensions, tolerances, solid rivet lengths and mass

4.1.1 - The configuration shall be in accordance with figure 1.

4.1.2 - The dimensions shall be in accordance with figure 1 and table 1.

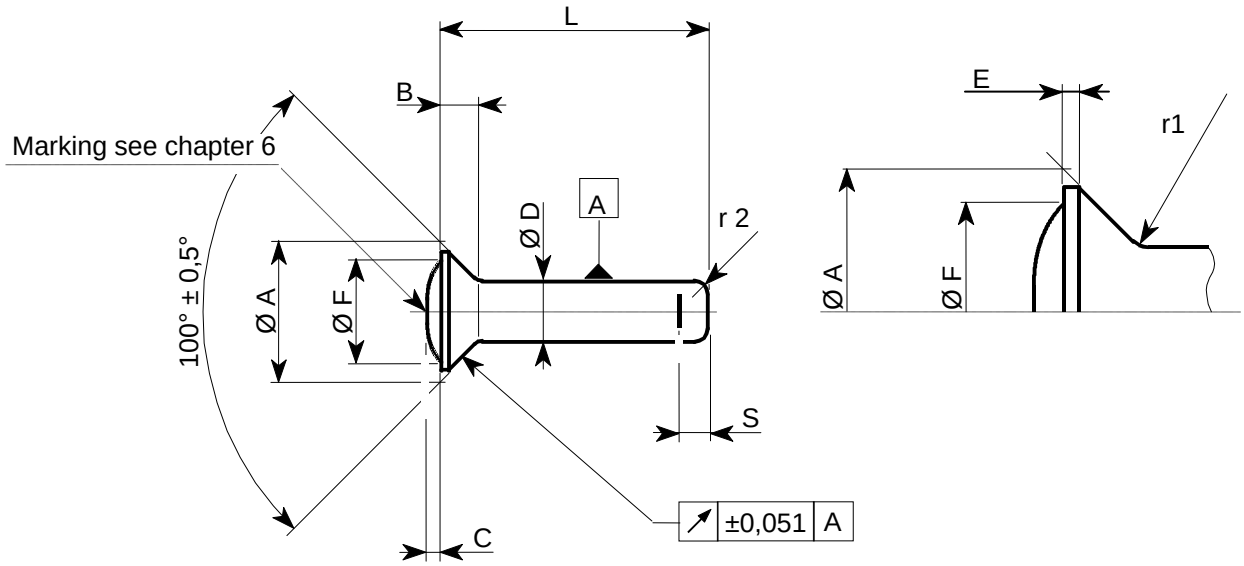
4.1.3 - The tolerances shall be in accordance with figure 1, table 1 and table 2.

4.1.4 - The solid rivet lengths shall be in accordance with table 2.

4.1.5 - The mass shall be in accordance with table 2.

4.2 - Materials, finishes

Materials and finishes shall be in accordance with table 3.



Dimensions in mm.

Figure 1 - Configuration

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Table 1 – Dimensions and tolerances

DIAMETER CODE	NOMINAL DIAMETER	Ø D*		Ø A		B Ref.	C +0,05 0	Ø F ± 0,127	r1	S Ref.	r 2 ±0,25	E
		min	max.	min	max							
16	1,6	1,55	1,64	2,80	3,00	0,6		2,07		0,40	0,48	
24	2,4	2,36	2,42	4,45	4,65	0,9		3,29		0,58	0,73	
32	3,2	3,15	3,21	5,60	5,80	1,1	0,076	4,14		0,78	0,99	
36	3,6	3,55	3,61	6,46	6,66	1,25		4,78	0,10	0,88	1,11	0,05
40	4,0	3,94	4,00	7,15	7,35	1,4		5,29	to	0,99	1,24	to
48	4,8	4,73	4,79	8,85	9,05	1,8		6,55	0,25	1,19	1,50	0,15
56	5,6	5,53	5,59	10,45	10,65	2,1	0,101	7,73		1,37	1,75	
64	6,4	6,33	6,39	12,00	12,20	2,4		8,88		1,57	1,98	
80	8,0	7,90	7,96	14,25	14,45	2,7		10,54		1,98	2,49	

*0,025mm shank diameter increase is permissible within 2,54mm of the base of the head.

Dimensions in mm.

Table 2 – Solid rivet lengths, tolerances and masses

LENGTH CODE L ± 0,254 mm	DIAMETER CODE								
	16	24	32	36	40	48	56	64	80
04	+	+	+						
Mass (g)	0,03	0,08	0,14						
05	+	+	+						
Mass (g)	0,03	0,09	0,16						
06	+	+	+						
Mass (g)	0,04	0,10	0,18						
07	+	+	+	+	+				
Mass (g)	0,05	0,11	0,21	0,27	0,35				
08	+	+	+	+	+				
Mass (g)	0,05	0,13	0,23	0,30	0,38				
09	+	+	+	+	+				
Mass (g)	0,06	0,14	0,25	0,33	0,42				
10	+	+	+	+	+	+	+		
Mass (g)	0,06	0,15	0,28	0,36	0,46	0,71	1,01		

(Length codes continued on page 4)

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Table 2 - (Length codes continued from page 3)

LENGTH CODE L ± 0,254 mm	DIAMETER CODE								
	16	**24**	**32**	**36**	**40**	**48**	**56**	**64**	**80**
11	+	+	+	+	+	+	+		
Mass (g)	0,07	0,16	0,30	0,39	0,49	0,76	1,09		
12	+	+	+	+	+	+	+	+	+
Mass (g)	0,07	0,18	0,32	0,42	0,53	0,81	1,15	1,57	2,48
13			+	+	+	+	+	+	+
Mass(g)			0,35	0,45	0,56	0,86	1,22	1,66	2,63
14			+	+	+	+	+	+	+
Mass (g)			0,37	0,48	0,60	0,91	1,29	1,75	2,77
15			+	+	+	+	+	+	+
Mass (g)			0,39	0,51	0,64	0,96	1,36	1,85	2,91
16				+	+	+	+	+	+
Mass (g)				0,53	0,67	1,02	1,43	1,94	3,06
17				+	+	+	+	+	+
Mass (g)				0,54	0,71	1,07	1,51	2,03	3,20
18				+	+	+	+	+	+
Mass (g)				0,59	0,74	1,12	1,57	2,12	3,35
19				+	+	+	+	+	+
Mass (g)				0,62	0,78	1,17	1,65	2,21	3,49
20				+	+	+	+	+	+
Mass (g)				0,65	0,82	1,22	1,72	2,30	3,63
22						+	+	+	+
Mass (g)						1,33	1,86	2,49	3,92
24						+	+	+	+
Mass (g)						1,43	2,00	2,67	4,21
26						+	+	+	+
Mass (g)						1,53	2,14	2,85	4,49
28						+	+	+	+
Mass (g)						1,63	2,28	3,04	4,78
30							+	+	+
Mass (g)							2,42	3,28	5,06
32							+	+	+
Mass (g)							2,56	3,40	5,35
35							+	+	+
Mass (g)							2,77	3,68	5,78
40							+	+	+
Mass (g)							3,12	4,14	6,50
45								+	+
Mass (g)								4,60	7,21

(Length codes continued on page 5)

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Table 2 - (Length codes continued from page 4)

LENGTH CODE L ± 0,254 mm	DIAMETER CODE								
	16	**24**	**32**	**36**	**40**	**48**	**56**	**64**	**80**
50								+	+
Mass (g)								5,05	7,93
55									+
Mass (g)									8,64
60									+
Mass (g)									9,36

(End)

Lengths missing in table can be created mm by mm, e.g. length code 21 between 20 and 22 mm.

Table 3 – Materials and finishes

DIAMETER CODE	NOMINAL DIAMETER	MATERIAL	MATERIAL CODE	FINISH	FINISH CODE
16 to 40	1,6 to 4,0	Aluminium alloy 2117-T4 as per EN2115	DC	Yellow chromated as per MIL-DTL-5541, class 1A	J
16 to 80	1,6 to 8,0	Aluminium alloy 2017A-T4 as per EN2116	DE *		
			DX		
40 to 80	4,0 to 8,0	Aluminium alloy 7050-T73 as per EN3115	DK		
* Replaced by material code DX.					

Dimensions in mm.

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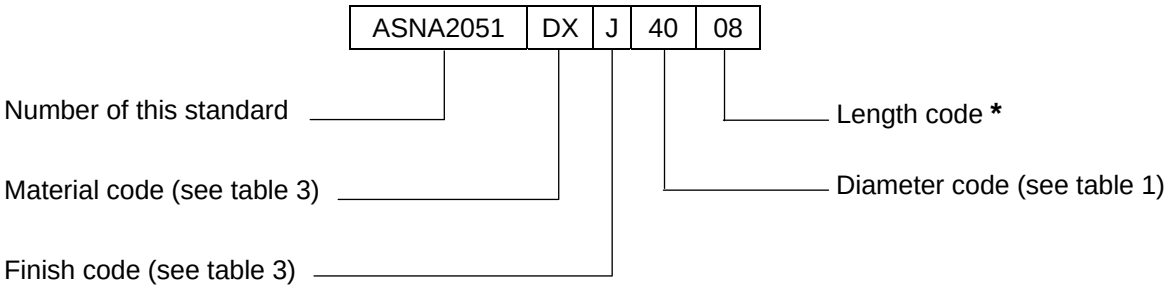
5 - DESIGNATION

Example of part number identification to be used on drawing schedules :

ASNA2051DXJ40 , Solid rivet

Example of part number construction:



* For supplying purpose only.

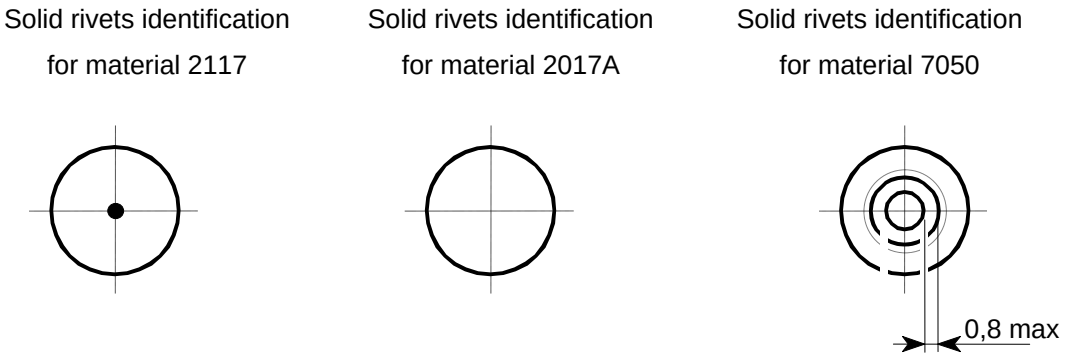
Note: The new designation is interchangeable with the old designation:

- ASNA2051DXJ040-8 (old designation)
- ASNA2051DXJ4008 (new designation)

6 - MARKING

6.1 - Material identification

The symbol on the solid rivet head shall be in accordance with figure 2.



Dimensions in mm.

Figure 2 – Material identification

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6.2 - Manufacturer’s identification

Parts shall be marked as per EN 2424, category F.
Manufacturer’s identification is required on solid rivet heads for diameter code 32 and larger.

7 - TECHNICAL SPECIFICATION

Aluminium solid rivet shall conform with the requirements of EN 6104.

8 - MANUFACTURERS

Refer to the list of qualified manufacturers and products.

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AMENDMENT RECORD SHEET

Issue	Modified paragraph	Modification summary	Justification
A.09.84		New standard.	
B			
C.08.85		Standard fully amended.	
D.01.87		Marking and coded part number modified. Classification page numbering modified.	
E.05.88		Rounded end rivet (optional shape) changed to normal rivet. Note for Procurement Departments deleted.	Ref. 437.056/88
F.11.88		Code "R" restored for Procurement Departments.	CMS
G.04.89		Min. shear strength modified for Ø 4 to 8 : 280 MPa changed to 270 to 310 MPa.	Memo. A/DET/EG-ST of 03.04.89
H.07.89		"Example of designation to be used by Product Support Division only" added.	Ref. 721.313/89/TC
J.04.93		Amended standard. Material modified for Ø 4 to 8 : 2017-T4 changed to 2017A-T4.	Memo. A/DET/CG 531.032/93
K.09.96	Table 1	Finish: Alochrome 1 200 gold color for 2017A and 2117 materials and Alochrome 1 200 light color for 7050 material changed to Alochrome 1 200 gold color or Alochrome 1 200 light color for 2017A, 2117 and 7050 materials.	Request A/BTE/CD/MP
L.11.97		DX code added. Specific requirements for 2017A rivets attached on delivery condition added.	WBI
M.10.04		Chapter TECHNICAL SPECIFICATION updated. I.G.C.04.45.100 deleted.	In accordance with technical specification ASNA2841
N.08.09		“Rivet – Aluminium alloy, head 100°CSK, for automatic or not installation” changed to “Solid rivet – Aluminium alloy, 100° countersunk head”.	
	2	Technical specification ASNA2841 deleted and replaced by EN 6104.	

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AMENDMENT RECORD SHEET

Issue	Modified paragraph	Modification summary	Justification
		References EN 2115, EN 2116, EN 3115 and MIL-DTL-5541 added. Reference ASTM-E-112 deleted and indicated in the technical specification EN 6104. Reference NFL21207 deleted and replaced by EN 2424.	
	Figure 1	Addition of head concentricity tolerance.	
	Table 1	Reference “B” changed to “B Ref.” Reference “S" changed to “S Ref”. Reference “rT” changed to “r2 ± 0,25”.	
	Table 3	Material and finish specifications added. Material code DE replaced by DX. Material code DC, nominal diameter changed from 1,6 - 3,6mm to 1,6 - 4,0mm, Material code DE, DX, DK : 4 - 9,6mm to 4,0 - 8,0mm. Min. shear strength deleted. Installation mode deleted.	
	6	Marking for 7050 aluminium harmonized with EN standard. Marking in accordance with EN 2424 instead of NF L 21207. Squeezing test in chapter 7 has been deleted from the issue M.	
P 01.13	Table 3	Table 3 amended to extend the diameter range for Material and finish code DXJ	Customer services.

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