SLOVENSKI STANDARD

SIST EN 2608:2006

01-september-2006

Aeronavtika ï Zahteve za namestitev in odstranitev adapterjev 8Á30', z navojem, z zaklepnim obroļ kom

Aerospace series - Installation and removal requirements for 8° 30' adaptors, threaded, with lockring

Luft- und Raumfahrt - Ein- und Ausbaubedingungen für gerade Einschraubverschraubungen 8° 30' mit Sicherungsring

Série aérospatiale - Spécification de montage et de démontage des raccords a implanter a 8° 30 ', filetés, avec bague de sécurité

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English Version

Aerospace series - Installation and removal requirements for 8° 30' adaptors, threaded, with lockring

Série aérospatiale - Spécification de montage et de démontage des raccords à implanter à 8° 30' à bague de sécurité

Luft- und Raumfahrt - Ein- und Ausbaubedingungen für gerade Einschraubverschraubungen 8° 30' mit Sicherungsring

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard (EN 2608:2005) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 AECMA, prior to its presentation to CEN.

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of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

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1 Scope

This standard specifies the installation and removal requirements for adaptors, threaded, with lockring for pipe couplings 8°30' according to EN 2603.

This standard establishes an accurate procedure of adaptor installation, removal and reinstallation to ensure the repeatability of the installation operation and to ensure the effective compliance to sealing and locking requirements.

The adaptor shown on all figures of this standard is given as an example for the 8°30' interface according to EN 2604.

This procedure is used for adaptors 8°30', for nominal pressure up to 28 000 kPa to install the adapters according to EN 3248, EN 3270 and EN 3566.

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 latest edition of the referenced document (including any amendments) applies.

ISO 5855-1, *Aerospace — MJ threads — Part 1: General requirements*

ISO 5855-3, *Aerospace — MJ threads — Part 3: Limit dimensions for fluid systems*

EN 2435-01, *Aerospace series — Paints and varnishes — Corrosion resistant chromated two component cold curing primer — Part 01: Minimum requirements*

EN 2602, *Aerospace series — Ports for adaptors, threaded, with lockring — Geometric configuration*

EN 2603, *Aerospace series — Port ends for adaptors, threaded, with lockring — Geometric configuration*

EN 2604, *Aerospace series — 8°30' interface for adaptors, threaded, with lockring — Geometric configuration*

EN 2645, *Aerospace series — Lockrings for adaptors, threaded, with lockring — Dimensions*

EN 3248, *Aerospace series — Pipe coupling 8°30' in titanium alloy — Adaptors, reduced pipe end, with lockring*

EN 3270, *Aerospace series — Pipe coupling 8°30' in titanium alloy — Blanking plugs with lockring*

EN 3566, *Aerospace series — Pipe coupling 8°30' in titanium alloy — Adaptors with lockring*

EN 3663, *Aerospace series — Pipe coupling — O-rings in rubber NBR, 75 IRHD — Temperature range: − 55 °C to +135 °C*

MIL-H-5606, *Hydraulic fluid, petroleum base; aircraft, missile and ordnance*[1)]

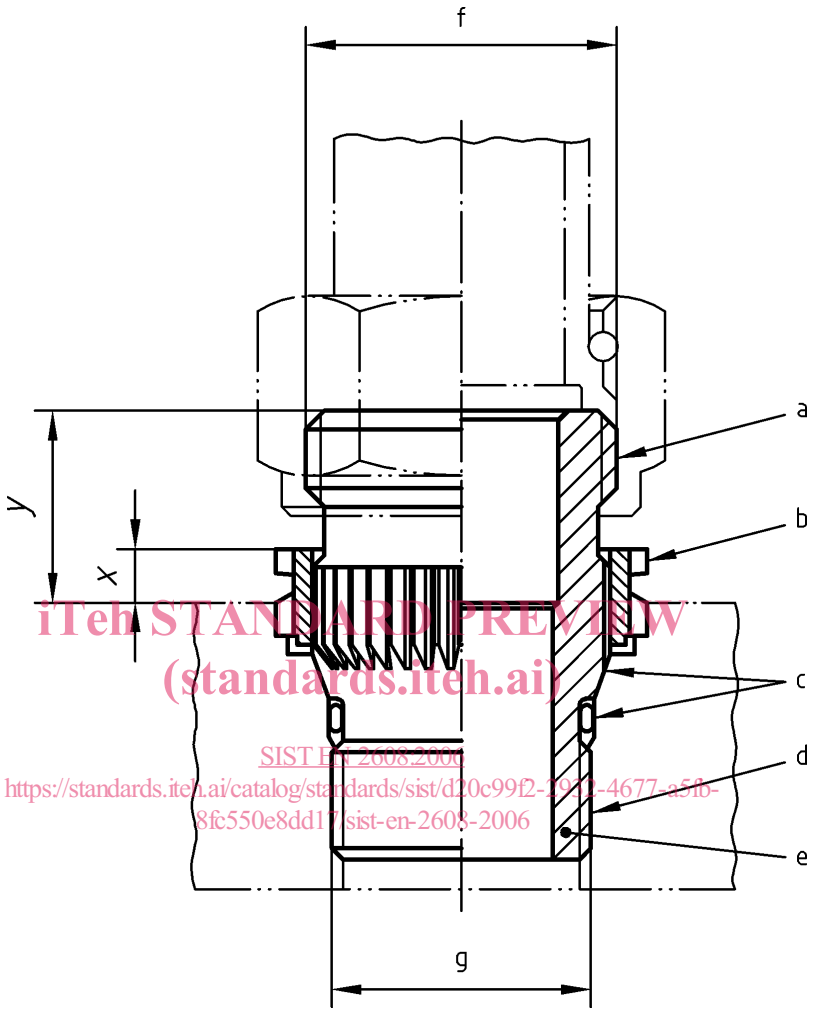
MIL-H-83282, *Hydraulic fluid, fire resistant, synthetic hydrocarbon base, metric, NATO number H-537*[1)]

MIL-H-87257, *Hydraulic fluid, fire resistant, low temperature, synthetic hydrocarbon base, aircraft and missile*[1)]

1) Published by: Department of Defence (DOD), the Pentagon, Washington, D.C. 20301.

3 Installation instructions

3.1 Engineering information



a The adaptor according to EN 3566 is used in the 8°30' coupling system with an interface according to EN 2604.

b The lockring according to EN 2645 prevents the adaptor from rotating in the port and also avoids port damage at tubing installation due to torquing.

c Seal is metal to metal and O-ring according to EN 3663.

NOTE This seal is only compatible with hydraulic fluids such as MIL-H-5606, MIL-H-83282 and MIL-H-87257.

d Tapped hole (boss port side) for the 8°30' adaptor installation according to EN 2602.

e Port side interface of the adaptor according to EN 2603.

f Thread A

g Thread B

Figure 1

Comparison of numbers for Rosan and AECMA parts see Annex A.

Table 1 — General information

Dimensions in millimetres

8°30' coupling Code[a]	Adaptor Part No. EN	Port dimension code	Thread A[b] 4g6g	Thread B[b] 4h6h	O-ring Part No. EN	*x* max.	*y* ± 0,50
05	3566-0605	077	MJ10 × 1	MJ6 × 1	3663A0045	3,2	10,80
06	3566-0806	098	MJ12 × 1,25	MJ8 × 1	3663A0060	3,65	12,75
08	3566-1008	125	MJ14 × 1,5	MJ10 × 1	3663A0080	4,10	15,00
10	3566-1210	136	MJ16 × 1,5	MJ12 × 1,25	3663A0095	4,10	15,00
12	3566-1412	153	MJ18 × 1,5	MJ14 × 1,5	3663A0112	4,10	15,00
14	3566-1614	170	MJ20 × 1,5	MJ16 × 1,5	3663A0132	4,10	15,20
16	3566-1816	192	MJ22 × 1,5	MJ18 × 1,5	3663A0150	4,10	15,20
18	3566-2018	214	MJ24 × 1,5	MJ20 × 1,5	3663A0170	4,10	15,00
20	3566-2220	231	MJ27 × 1,5	MJ22 × 1,5	3663A0190	4,10	15,60
22	3566-2422	253	MJ30 × 1,5	MJ24 × 1,5	3663A0212	4,10	15,60
25	3566-2725	295	MJ33 × 1,5	MJ27 × 1,5	3663A0236	4,10	16,00
28	3566-3028	320	MJ36 × 1,5	MJ30 × 1,5	3663A0265	4,10	16,00
32	3566-3332	350	MJ39 × 1,5	MJ33 × 1,5	3663A0300	4,10	16,00

[a] Corresponds to the pipe nominal outside diameter.

[b] According to ISO 5855-3, except MJ6 × 1, MJ6 × 1 according to ISO 5855-1.

3.2 Port preparation

The manufacturing sequence of port preparation is for information only.

Qualification of the assembly is required for each manufacturing sequence and type of tool for a given port material installation method and nominal pressure.

The hole shall conform to EN 2602, using the applicable tools for

— tap drilling

— port machining

— serration broaching

— thread cutting

NOTE The design office may specify a hole without serration pre-broaching, when low resistance material is used.

3.2.1 Tap drilling

See Figure 2.

Drill through or to a depth as required in Table 2.

Table 2 — Port drilling

Dimensions in millimetres

8°30' coupling Code[a]	Port dimension code	d_1 $^{+0,076}_{0}$	d_2 min.	d_3 min.	l_1[b]	l_2[c]
05	077	5,065	17,05	2,5	17,00	19,00
06	098	7,065	19,05	4,4	18,10	20,10
08	125	9,065	21,60	6,1	19,40	21,40
10	136	10,821	24,15	7,7	20,725	23,225
12	153	12,576	26,55	9,0	21,95	24,95
14	170	14,576	27,95	10,7	22,65	25,65
16	192	16,576	29,85	12,5	23,25	26,25
18	214	18,576	33,05	14,2	24,95	27,95
20	231	20,576	36,60	15,9	25,65	28,65
22	253	22,576	38,85	17,6	26,45	29,45
25	295	25,576	42,45	20,2	27,45	30,45
28	320	28,576	46,00	22,8	28,45	31,45
32	350	31,576	48,25	25,4	29,45	32,45

[a] Corresponds to the pipe nominal outside diameter.

[b] $l_1 = l_6 + 2,5 \cdot$ pitch (for hand tap)

[c] $l_2 = l_6 + 4,5 \cdot$ pitch (for machining tap)

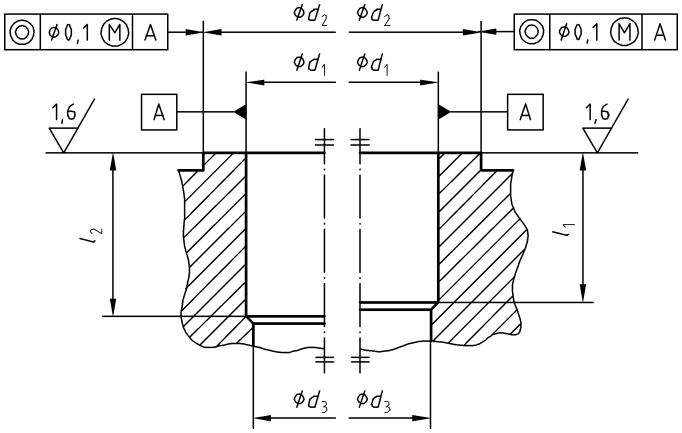


Figure 2

3.2.2 Port machining

The port machining shall be made in accordance with EN 2602.

Special porting tools may be used as shown in Figure 3 and Table 3.

Table 3 — Porting tool

Dimensions in millimetres

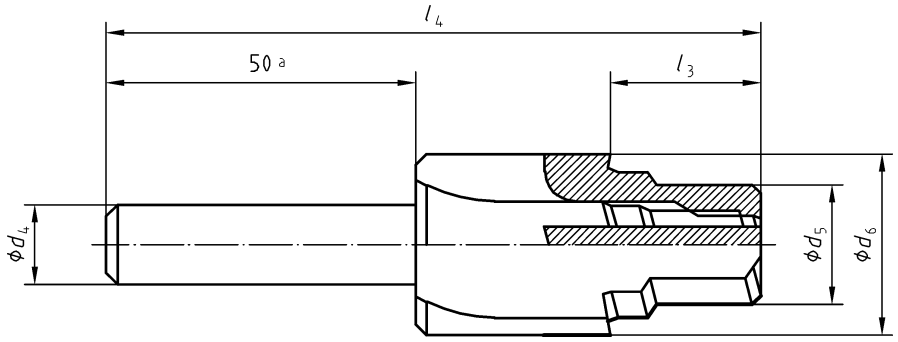
8°30' coupling Code[a]	Port dimension code	Tool Part No.[b] EN	d_4[c] $^{0}_{-0,008}$	d_5 ± 0,013	d_6 ± 0,008	l_3 ± 0,15	l_4[c] ± 0,75
05	077	2608PT077	9,995	5,103	12,030	16,13	101,6
06	098	2608PT098	9,995	7,103	14,040	16,93	86,8
08	125	2608PT125	9,995	9,103	17,060	17,68	87,5
10	136	2608PT136	14,995	10,860	18,660	18,38	88,2
12	153	2608PT153	14,995	12,614	20,240	19,03	94,6
14	170	2608PT170	14,995	14,614	21,840	19,68	95,6
16	192	2608PT192	14,995	16,614	25,420	21,09	97,3
18	214	2608PT214	24,995	18,614	27,070	22,79	105,3
20	231	2608PT231	24,995	20,614	29,380	23,49	106,0
22	253	2608PT253	24,995	22,614	32,560	25,67	108,2
25	295	2608PT295	24,995	25,614	36,060	26,72	109,3
28	320	2608PT320	24,995	28,614	39,690	27,72	116,6
32	350	2608PT350	24,995	31,614	42,080	28,72	117,6

[a] Corresponds to the pipe nominal outside diameter.

[b] PT: Porting Tool. This tool counterbores, countersinks, provides a radius and produces a tap drill diameter in one pass. Contours are ground to ensure concentricity. Cutter geometry and material permit the use of this tool with most common materials.

[c] For information only

Dimensions in millimetres



[a] For information only

Figure 3

3.2.3 Serration broaching

Broaching shall be made according to EN 2602. Special broaching tool can be used as shown in Figure 4 and Table 4. In this case the following procedure shall apply:

1) Prior to broaching, the cutter teeth will rest on the surface of the boss and the body of the tool will be free to move up and down. Note that the nut should be backed away from the body of the tool.
2) The tool may be hand-held or used under a press.
3) Locate broaching tool pilot into the port.
4) Slowly apply a force to the mandrel while holding the body to allow the teeth to broach into the parent material counterbore.
5) Broaching is complete when the external shoulder of the mandrel contacts the internal shoulder in the body.
6) The installation force is then relieved and the tool is ready for removal.
7) To remove the tool from the boss, turn the nut in clockwise direction against the body and the mandrel will move the cutter up, away from the port counterbore.

Table 4 — Serration tool

Dimensions in millimetres

8°30' coupling Code[a]	Port dimension code	Tool Part No.[b] EN	d_7[c] ± 0,4	d_8 Ref.	l_5[c] Ref.	s_1[c,d] h13	t_1[c] $^{+0,40}_{0}$
05	077	2608BT077	21,3	5,04	136,0	22	1,95
06	098	2608BT098	21,3	7,04	137,3	22	2,35
08	125	2608BT125	23,3	9,04	140,6	24	2,75
10	136	2608BT136	26,3	10,80	140,9	27	2,75
12	153	2608BT153	29,3	12,55	140,9	30	2,75
14	170	2608BT170	29,3	14,55	141,6	30	2,75
16	192	2608BT192	35,2	16,55	142,1	36	2,75
18	214	2608BT214	35,2	18,55	142,4	36	2,75
20	231	2608BT231	40,2	20,55	143,4	41	2,75
22	253	2608BT253	40,2	22,55	143,4	41	2,75
25	295	2608BT295	45,2	25,55	143,4	46	2,75
28	320	2608BT320	49,2	28,55	143,4	50	2,75
32	350	2608BT350	54,2	31,55	143,4	55	2,75

[a] Corresponds to the pipe nominal outside diameter.

[b] BT: Broaching Tool, cutter geometry and material permit the use of the most common materials with a maximum hardness of 32 HRC. Replacement or spare cutters may be purchased individually.

[c] For information only

[d] Across flats