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Aerospace series
Pin - 100 ° intermediate CSK head for shear/tension metallic applications, swage locking, 6Al-4V titanium (95 KSI shear)

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Contents

1 Scope

This standard specifies the dimensions, tolerances, required characteristics and the mass of a pin, 100 ° intermediate CSK head for shear/tension metallic applications, standard and pull-in pintails, swage locking, 6Al-4V titanium (95 KSI shear).

2 Normative references

This Airbus Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Airbus Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ISO 8080	Aerospace - Anodic treatment of titanium alloys - Sulfuric acid process.
EN 2424	Aerospace series - Marking of aerospace products. [1]
EN 4473	Aerospace series - Aluminium pigmented coatings - Technical specification. [1]
EN 6117	Aerospace series - Specification for lubrication of bolts with cetyl alcohol. [1]
EN 6118	Aerospace series - Process specification - Aluminium base protection for fasteners. [1]
AMS 4967	Titanium alloy bars, wire, forgings and rings 6.0Al-4.0V annealed, heat treatable. [2]
ANSI/ASME B46.1	Surface texture (surface roughness waviness and lay).
C2031	Manufacturer's specification.

3 Requirements

3.1 Configuration, dimensions, tolerances and mass

The configuration, dimensions, tolerances and mass shall conform with Figure 1, Figure 2, Table 3, Table 4 and Table 5.
Concentricity : conical surface of countersunk head to "A" diameter to be within .005 inch (0,127 mm) TIR.
Shank straightness : within "S" values TIR per inch of shank length.
Drill center dimple in top of head .035 inch (0,889 mm) max. dia., .010 inch (0,254 mm) max. depth and concentric to "A" within .008 inch (0,203 mm).
Surface texture : Ra max. as per ANSI/ASME B46.1 before coating, conical surface of head.
Head to shank fillet radius, shank and transition radius, -32, other surfaces -125.
Dimensions are expressed in inch (millimetres).

[1] Published as AECMA Standard at the date of publication of this standard
[2] Published by: Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096-0001, USA

3.2 Material, finish and lubricant

Table 1 : Material, finish and lubricant

Material	Finish code	Finish	Lubricant
Titanium alloy 6Al-4V as per AMS 4967 (Min. shear strength : 95 KSI (655 MPa))	T	Sulfuric-acid anodizing (blue) as per ISO 8080	Cetyl alcohol as per EN 6117
	V	IVD as per EN 6118	
	K	Aluminium coating as per EN 4473	

3.3 Mechanical characteristics

Table 2 : Mechanical characteristics

Item code No.	Pin nom. size	Shear/Tension metallic applications		Collar part number	Pin position swage gage
		Min. double Shear Lbf (N)	Min. ultimate tensile with listed collar Lbf (N)		
2	.1640 (4,166)	4 010 (17 837)	1 700 (7 562)	ABS1505-2	HG164-05
3	.1900 (4,826)	5 380 (23 931)	2 400 (10 676)	ABS1505-3	HG164-06
3A	.2187 (5,555)	7 200 (32 027)	3 450 (15 346)	ABS1505-3A	HG164-07
4	.2500 (6,350)	9 300 (41 368)	4 500 (20 017)	ABS1505-4	HG164-08
5	.3125 (7,938)	14 600 (64 943)	6 850 (30 470)	ABS1505-5	HG164-10
6	.3750 (9,525)	21 000 (93 411)	10 200 (45 371)	ABS1505-6	HG164-12
7	.4375 (11,113)	28 600 (127 217)	13 100 (58 271)	ABS1505-7	HG164-14
8	.5000 (12,700)	37 300 (165 915)	18 000 (80 066)	ABS1505-8	HG164-16
9	.5625 (14,288)	47 200 (209 952)	22 500 (100 083)	ABS1505-9	HG164-18
10	.6250 (15,875)	58 300 (259 326)	29 200 (129 885)	ABS1505-10	HG164-20

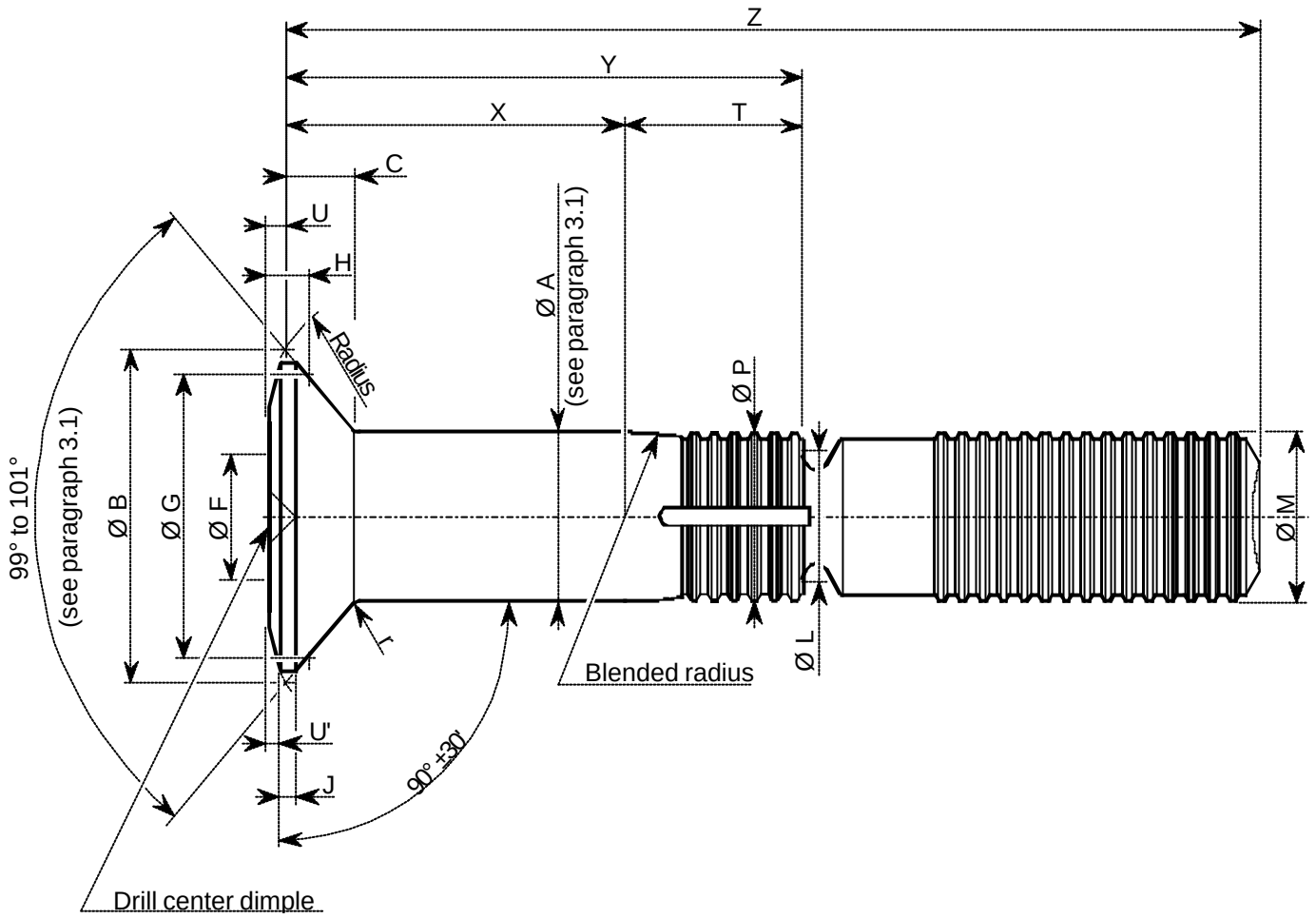


Figure 1 : Configuration and dimensions of style 1

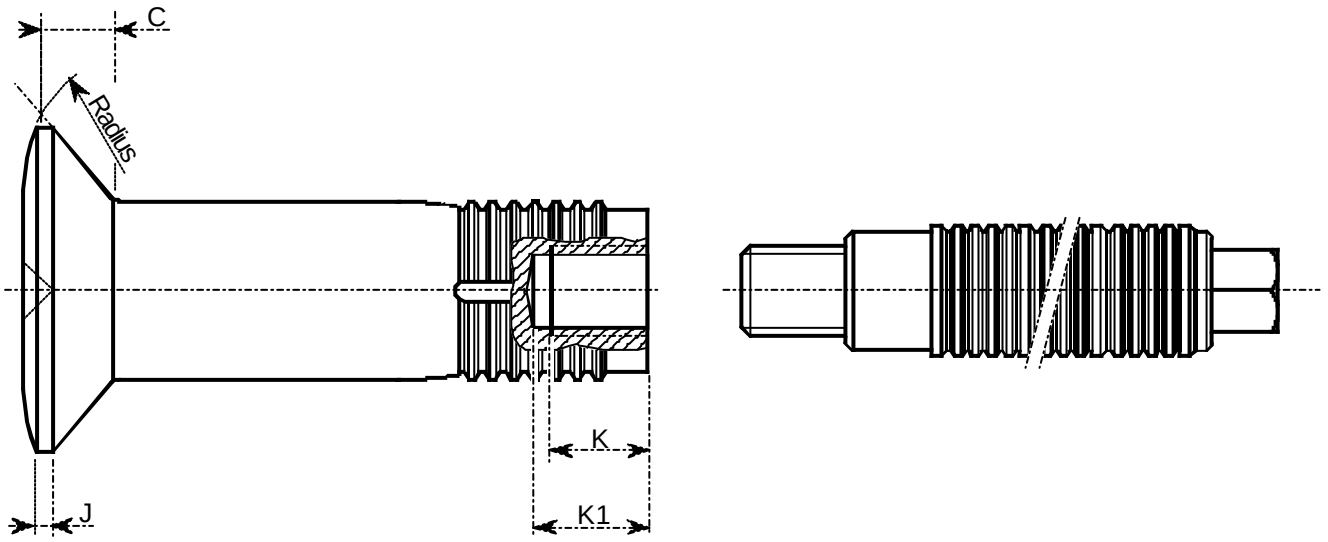


Figure 2 : Configuration and dimensions of style 2

Table 3 : Dimensions, tolerances and mass

(continued)

Item code No.	Nom. size	Style 1 and style 2								
		Ø A shank $^{+.0005}_{0}$ $\left(^{+0,0127}_{0}\right)$	Ø A shank coated ± .0005 (± 0,0127)	Ø B theo. Nom.	C head height Nom.	Ø F flat ± .005 (± 0,127)	Ø G gage ± .0001 (± 0,0025)	H gage height Max.	H gage height Min.	J Max.
2	.1640 (4,166)	.1630 (4,140)	.1630 (4,140)	.2765 (7,023)	.0476 (1,209)	.1250 (3,175)	.2027 (5,149)	.0350 (0,889)	.0318 (0,808)	.0100 (0,254)
3	.1900 (4,826)	.1890 (4,801)	.1890 (4,801)	.3210 (8,153)	.0554 (1,407)	.1560 (3,962)	.2440 (6,198)	.0365 (0,927)	.0333 (0,846)	.0150 (0,381)
3A	.2187 (5,555)	.2177 (5,530)	.2177 (5,530)	.3707 (9,416)	.0642 (1,631)	.1720 (4,369)	.2981 (7,572)	.0343 (0,871)	.0313 (0,795)	.0100 (0,254)
4	.2500 (6,350)	.2490 (6,325)	.2490 (6,325)	.4224 (10,729)	.0728 (1,849)	.1900 (4,826)	.3314 (8,418)	.0422 (1,072)	.0390 (0,991)	.0150 (0,381)
5	.3125 (7,938)	.3115 (7,912)	.3115 (7,912)	.5296 (13,452)	.0915 (2,324)	.2500 (6,350)	.4319 (10,970)	.0457 (1,161)	.0421 (1,069)	.0150 (0,381)
6	.3750 (9,525)	.3740 (9,500)	.3740 (9,500)	.6347 (16,121)	.1094 (2,779)	.3120 (7,925)	.4853 (12,327)	.0679 (1,725)	.0643 (1,633)	.0150 (0,381)
7	.4375 (11,113)	.4365 (11,087)	.4365 (11,087)	.7345 (18,656)	.1250 (3,175)	.3750 (9,525)	.6581 (16,716)	.0382 (0,970)	.0342 (0,869)	.0220 (0,559)
8	.5000 (12,700)	.4990 (12,675)	.4990 (12,675)	.8337 (21,176)	.1404 (3,566)	.4380 (11,125)	.7199 (18,285)	.0544 (1,382)	.0504 (1,280)	.0220 (0,559)
9	.5625 (14,288)	.5610 (14,249)	.5610 (14,249)	.9208 (23,388)	.1510 (3,835)	.5000 (12,700)	.8011 (20,348)	.0576 (1,463)	.0532 (1,351)	.0220 (0,559)
10	.6250 (15,875)	.6235 (15,837)	.6235 (15,837)	1.0342 (26,269)	.1723 (4,376)	.5620 (14,275)	.8901 (22,609)	.0683 (1,735)	.0639 (1,623)	.0220 (0,559)

Table 3 : Dimensions, tolerances and mass (concluded)

Item code No.	Nom. size	Style 2			Style 1 and style 2							
		Internal thread right hand			Ø L Ref.	Ø M Max.	Ø P Max.	r ± .005 (± 0,127)	S	T Ref.	U ± .0005 (± 0,0127)	U' Ref.
		K thread depth	K1 drill depth max.	Thread type								
2	.1640 (4,166)	-	-	-	.1240 (3,150)	.1560 (3,962)	.1560 (3,962)	.0200 (0,508)	.0045 (0,114)	.1830 (4,648)	.0024 (0,061)	.0020 (0,051)
3	.1900 (4,826)	-	-	-	.1500 (3,810)	.1840 (4,674)	.1840 (4,674)	.0250 (0,635)	.0045 (0,114)	.1780 (4,521)	.0026 (0,066)	.0020 (0,051)
3A	.2187 (5,555)	-	-	-	TBD	.2130 (5,410)	.2130 (5,410)	.0250 (0,635)	.0045 (0,114)	.2150 (5,461)	.0023 (0,058)	.0020 (0,051)
4	.2500 (6,350)	-	-	-	.2000 (5,080)	.2440 (6,198)	.2440 (6,198)	.0250 (0,635)	.0045 (0,114)	.2450 (6,223)	.0024 (0,061)	.0020 (0,051)
5	.3125 (7,938)	-	-	-	.2450 (6,223)	.3060 (7,772)	.3060 (7,772)	.0350 (0,889)	.0045 (0,114)	.3130 (7,950)	.0029 (0,074)	.0025 (0,064)
6	.3750 (9,525)	-	-	-	.3000 (7,620)	.3700 (9,398)	.3700 (9,398)	.0350 (0,889)	.0060 (0,152)	.3720 (9,449)	.0034 (0,086)	.0030 (0,076)
7	.4375 (11,113)	-	-	-	.3430 (8,712)	.4310 (10,947)	.4310 (10,947)	.0450 (1,143)	.0060 (0,152)	.4620 (11,735)	.0041 (0,104)	.0035 (0,089)
8	.5000 (12,700)	-	-	-	.3800 (9,652)	.4920 (12,497)	.4920 (12,497)	.0450 (1,143)	.0060 (0,152)	.5460 (13,868)	.0046 (0,117)	.0040 (0,102)
9	.5625 (14,288)	.2830 (7,188)	.4940 (12,548)	.2875-18 UNS-3B	-	-	.5550 (14,097)	.0450 (1,143)	.0060 (0,152)	.7370 (19,990)	.0052 (0,132)	.0045 (0,114)
10	.6250 (15,875)	.3660 (9,296)	.5770 (14,656)	.3125-18 UNS-3B	-	-	.6180 (15,697)	.0450 (1,143)	.0080 (0,203)	.9060 (23,012)	.0057 (0,145)	.0050 (0,127)

Table 4 : Grip dimensions and tolerances (standard pintail length)

(continued)

Grip dash No.	Permissible grip overlap		Design grip range		X	2		3		3A	
	Min.	Max.	Min.	Max.	± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)
03	.058 (1,473)	.192 (4,877)	.062 (1,575)	.188 (4,775)	.188 (4,775)	.371 (9,423)	.992 (25,197)	.366 (9,296)	1.008 (25,603)	.403 (10,236)	1.067 (27,102)
05	.182 (4,623)	.316 (8,026)	.186 (4,724)	.312 (7,925)	.312 (7,925)	.495 (12,573)	1.116 (28,346)	.490 (12,446)	1.132 (28,753)	.527 (13,386)	1.191 (30,251)
07	.308 (7,823)	.442 (11,227)	.312 (7,925)	.438 (11,125)	.438 (11,125)	.621 (15,773)	1.242 (31,547)	.616 (15,646)	1.258 (31,953)	.653 (16,586)	1.317 (33,452)
09	.432 (10,973)	.566 (14,376)	.436 (11,074)	.562 (14,275)	.562 (14,275)	.745 (18,923)	1.366 (34,696)	.740 (18,796)	1.382 (35,103)	.777 (19,736)	1.441 (36,601)
11	.558 (14,173)	.692 (17,577)	.562 (14,275)	.688 (17,475)	.688 (17,475)	.871 (22,123)	1.492 (37,897)	.866 (21,996)	1.508 (38,303)	.903 (22,936)	1.567 (39,802)
13	.682 (17,323)	.816 (20,726)	.686 (17,424)	.812 (20,625)	.812 (20,625)	.995 (25,273)	1.616 (41,046)	.990 (25,146)	1.632 (41,453)	1.027 (26,086)	1.691 (42,951)
15	.808 (20,523)	.942 (23,927)	.812 (20,625)	.938 (23,825)	.938 (23,825)	1.121 (28,473)	1.742 (44,247)	1.116 (28,346)	1.758 (44,653)	1.153 (29,286)	1.817 (46,152)
17	.932 (23,673)	1.066 (27,076)	.936 (23,774)	1.062 (26,975)	1.062 (26,975)	1.245 (31,623)	1.866 (47,396)	1.240 (31,496)	1.882 (47,803)	1.277 (32,436)	1.941 (49,301)
19	1.058 (26,873)	1.192 (30,277)	1.062 (26,975)	1.188 (30,175)	1.188 (30,175)	1.371 (34,823)	1.992 (50,597)	1.366 (34,696)	2.008 (51,003)	1.403 (35,636)	2.067 (52,502)
21	1.182 (30,023)	1.316 (33,426)	1.186 (30,124)	1.312 (33,325)	1.312 (33,325)	1.495 (37,973)	2.116 (53,746)	1.490 (37,846)	2.132 (54,153)	1.527 (38,786)	2.191 (55,651)
23	1.308 (33,223)	1.442 (36,627)	1.312 (33,325)	1.438 (36,525)	1.438 (36,525)	1.621 (41,173)	2.242 (56,947)	1.616 (41,046)	2.258 (57,353)	1.653 (41,986)	2.317 (58,852)
25	1.432 (36,373)	1.566 (39,776)	1.436 (36,474)	1.562 (39,675)	1.562 (39,675)	1.745 (44,323)	2.366 (60,096)	1.740 (44,196)	2.382 (60,503)	1.777 (45,136)	2.441 (62,001)
27	1.558 (39,573)	1.692 (42,977)	1.562 (39,675)	1.688 (42,875)	1.688 (42,875)	1.871 (47,523)	2.492 (63,297)	1.866 (47,396)	2.508 (63,703)	1.903 (48,336)	2.567 (65,202)
29	1.682 (42,723)	1.816 (46,126)	1.686 (42,824)	1.812 (46,025)	1.812 (46,025)	1.995 (50,673)	2.616 (66,446)	1.990 (50,546)	2.632 (66,853)	2.027 (51,486)	2.691 (68,351)
31	1.808 (45,923)	1.942 (49,327)	1.812 (46,025)	1.938 (49,225)	1.938 (49,225)	2.121 (53,873)	2.742 (69,647)	2.116 (53,746)	2.758 (70,053)	2.153 (54,686)	2.817 (71,552)
33	1.932 (49,073)	2.066 (52,476)	1.936 (49,174)	2.062 (52,375)	2.062 (52,375)	2.245 (57,023)	2.866 (72,796)	2.240 (56,896)	2.882 (73,203)	2.277 (57,836)	2.941 (74,701)
35	2.058 (52,273)	2.192 (55,677)	2.062 (52,375)	2.188 (55,575)	2.188 (55,575)	2.371 (60,223)	2.992 (75,997)	2.366 (60,096)	3.008 (76,403)	2.403 (61,036)	3.067 (77,902)

Table 4 : Grip dimensions and tolerances (standard pintail length) (continued)

Grip dash No.	Permissible grip overlap		Design grip range		X	4		5		6	
					± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)
	Min.	Max.	Min.	Max.							
03	.058 (1,473)	.192 (4,877)	.062 (1,575)	.188 (4,775)	.188 (4,775)	.433 (10,998)	1.125 (28,575)	.501 (12,725)	1.288 (32,715)	-	-
05	.182 (4,623)	.316 (8,026)	.186 (4,724)	.312 (7,925)	.312 (7,925)	.557 (14,148)	1.249 (31,725)	.625 (15,875)	1.412 (35,865)	.684 (17,374)	1.508 (38,303)
07	.308 (7,823)	.442 (11,227)	.312 (7,925)	.438 (11,125)	.438 (11,125)	.683 (17,348)	1.375 (34,925)	.751 (19,075)	1.538 (39,065)	.810 (20,574)	1.634 (41,504)
09	.432 (10,973)	.566 (14,376)	.436 (11,074)	.562 (14,275)	.562 (14,275)	.807 (20,498)	1.499 (38,075)	.875 (22,225)	1.662 (42,215)	.934 (23,724)	1.758 (44,653)
11	.558 (14,173)	.692 (17,577)	.562 (14,275)	.688 (17,475)	.688 (17,475)	.933 (23,698)	1.625 (41,275)	1.001 (25,425)	1.788 (45,415)	1.060 (26,924)	1.884 (47,854)
13	.682 (17,323)	.816 (20,726)	.686 (17,424)	.812 (20,625)	.812 (20,625)	1.057 (26,848)	1.749 (44,425)	1.125 (28,575)	1.912 (48,565)	1.184 (30,074)	2.008 (51,003)
15	.808 (20,523)	.942 (23,927)	.812 (20,625)	.938 (23,825)	.938 (23,825)	1.183 (30,048)	1.875 (47,625)	1.251 (31,775)	2.038 (51,765)	1.310 (33,274)	2.134 (54,204)
17	.932 (23,673)	1.066 (27,076)	.936 (23,774)	1.062 (26,975)	1.062 (26,975)	1.307 (33,198)	1.999 (50,775)	1.375 (34,925)	2.162 (54,915)	1.434 (36,424)	2.258 (57,353)
19	1.058 (26,873)	1.192 (30,277)	1.062 (26,975)	1.188 (30,175)	1.188 (30,175)	1.433 (36,398)	2.125 (53,975)	1.501 (38,125)	2.288 (58,115)	1.560 (39,624)	2.384 (60,554)
21	1.182 (30,023)	1.316 (33,426)	1.186 (30,124)	1.312 (33,325)	1.312 (33,325)	1.557 (39,548)	2.249 (57,125)	1.625 (41,275)	2.412 (61,265)	1.684 (42,774)	2.508 (63,703)
23	1.308 (33,223)	1.442 (36,627)	1.312 (33,325)	1.438 (36,525)	1.438 (36,525)	1.683 (42,748)	2.375 (60,325)	1.751 (44,475)	2.538 (64,465)	1.810 (45,974)	2.634 (66,904)
25	1.432 (36,373)	1.566 (39,776)	1.436 (36,474)	1.562 (39,675)	1.562 (39,675)	1.807 (45,898)	2.499 (63,475)	1.875 (47,625)	2.662 (67,615)	1.934 (49,124)	2.758 (70,053)
27	1.558 (39,573)	1.692 (42,977)	1.562 (39,675)	1.688 (42,875)	1.688 (42,875)	1.933 (49,098)	2.625 (66,675)	2.001 (50,825)	2.788 (70,815)	2.060 (52,324)	2.884 (73,254)
29	1.682 (42,723)	1.816 (46,126)	1.686 (42,824)	1.812 (46,025)	1.812 (46,025)	2.057 (52,248)	2.749 (69,825)	2.125 (53,975)	2.912 (73,965)	2.184 (55,474)	3.008 (76,403)
31	1.808 (45,923)	1.942 (49,327)	1.812 (46,025)	1.938 (49,225)	1.938 (49,225)	2.183 (55,448)	2.875 (73,025)	2.251 (57,175)	3.038 (77,165)	2.310 (58,674)	3.134 (79,604)
33	1.932 (49,073)	2.066 (52,476)	1.936 (49,174)	2.062 (52,375)	2.062 (52,375)	2.307 (58,598)	2.999 (76,175)	2.375 (60,325)	3.162 (80,315)	2.434 (61,824)	3.258 (82,753)
35	2.058 (52,273)	2.192 (55,677)	2.062 (52,375)	2.188 (55,575)	2.188 (55,575)	2.433 (61,798)	3.125 (79,375)	2.501 (63,525)	3.288 (83,515)	2.560 (65,024)	3.384 (85,954)
37	2.182 (55,423)	2.316 (58,826)	2.186 (55,524)	2.312 (58,725)	2.312 (58,725)	-	-	-	-	2.684 (68,174)	3.508 (89,103)
39	2.308 (58,623)	2.442 (62,027)	2.312 (58,725)	2.438 (61,925)	2.438 (61,925)	-	-	-	-	2.810 (71,374)	3.634 (92,304)
41	2.432 (61,773)	2.566 (65,176)	2.436 (61,874)	2.562 (65,075)	2.562 (65,075)	-	-	-	-	2.934 (74,524)	3.758 (95,453)

Table 4 : Grip dimensions and tolerances (standard pintail length) (continued)

Grip dash No.	Permissible grip overlap		Design grip range		X	7		8		9	10
	Min.	Max.	Min.	Max.	± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Y ± .005 (± 0,127)
03	.058 (1,473)	.192 (4,877)	.062 (1,575)	.188 (4,775)	.188 (4,775)	-	-	-	-	-	-
05	.182 (4,623)	.316 (8,026)	.186 (4,724)	.312 (7,925)	.312 (7,925)	.774 (19,660)	1.993 (50,622)	.858 (21,793)	2.153 (54,686)	-	-
07	.308 (7,823)	.442 (11,227)	.312 (7,925)	.438 (11,125)	.438 (11,125)	.900 (22,860)	2.119 (53,823)	.984 (24,994)	2.279 (57,887)	1.175 (29,845)	1.344 (34,138)
09	.432 (10,973)	.566 (14,376)	.436 (11,074)	.562 (14,275)	.562 (14,275)	1.024 (26,010)	2.243 (56,972)	1.108 (28,143)	2.403 (61,036)	1.299 (32,995)	1.468 (37,287)
11	.558 (14,173)	.692 (17,577)	.562 (14,275)	.688 (17,475)	.688 (17,475)	1.150 (29,210)	2.369 (60,173)	1.234 (31,344)	2.529 (64,237)	1.425 (36,195)	1.594 (40,488)
13	.682 (17,323)	.816 (20,726)	.686 (17,424)	.812 (20,625)	.812 (20,625)	1.274 (32,360)	2.493 (63,322)	1.358 (34,493)	2.653 (67,386)	1.549 (39,345)	1.718 (43,637)
15	.808 (20,523)	.942 (23,927)	.812 (20,625)	.938 (23,825)	.938 (23,825)	1.400 (35,560)	2.619 (66,523)	1.484 (37,694)	2.779 (70,587)	1.675 (42,545)	1.844 (46,838)
17	.932 (23,673)	1.066 (27,076)	.936 (23,774)	1.062 (26,975)	1.062 (26,975)	1.524 (38,710)	2.743 (69,672)	1.608 (40,843)	2.903 (73,736)	1.799 (45,695)	1.968 (49,987)
19	1.058 (26,873)	1.192 (30,277)	1.062 (26,975)	1.188 (30,175)	1.188 (30,175)	1.650 (41,910)	2.869 (72,873)	1.734 (44,044)	3.029 (76,937)	1.925 (48,895)	2.094 (53,188)
21	1.182 (30,023)	1.316 (33,426)	1.186 (30,124)	1.312 (33,325)	1.312 (33,325)	1.774 (45,060)	2.993 (76,022)	1.858 (47,193)	3.153 (80,086)	2.049 (52,045)	2.218 (56,337)
23	1.308 (33,223)	1.442 (36,627)	1.312 (33,325)	1.438 (36,525)	1.438 (36,525)	1.900 (48,260)	3.119 (79,223)	1.984 (50,394)	3.279 (83,287)	2.175 (55,245)	2.344 (59,538)
25	1.432 (36,373)	1.566 (39,776)	1.436 (36,474)	1.562 (39,675)	1.562 (39,675)	2.024 (51,410)	3.243 (82,372)	2.108 (53,543)	3.403 (86,436)	2.299 (59,792)	2.468 (62,687)
27	1.558 (39,573)	1.692 (42,977)	1.562 (39,675)	1.688 (42,875)	1.688 (42,875)	2.150 (54,610)	3.369 (85,573)	2.234 (56,744)	3.529 (89,637)	2.425 (61,595)	2.594 (65,888)
29	1.682 (42,723)	1.816 (46,126)	1.686 (42,824)	1.812 (46,025)	1.812 (46,025)	2.274 (57,760)	3.493 (88,722)	2.358 (59,893)	3.653 (92,786)	2.549 (64,745)	2.718 (69,037)
31	1.808 (45,923)	1.942 (49,327)	1.812 (46,025)	1.938 (49,225)	1.938 (49,225)	2.400 (60,960)	3.619 (91,923)	2.484 (63,094)	3.779 (95,987)	2.675 (67,945)	2.844 (72,238)
33	1.932 (49,073)	2.066 (52,476)	1.936 (49,174)	2.062 (52,375)	2.062 (52,375)	2.524 (64,110)	3.743 (95,072)	2.608 (66,243)	3.903 (99,136)	2.799 (71,095)	2.968 (75,387)
35	2.058 (52,273)	2.192 (55,677)	2.062 (52,375)	2.188 (55,575)	2.188 (55,575)	2.650 (67,310)	3.869 (98,273)	2.734 (69,444)	4.029 (102,337)	2.925 (74,295)	3.094 (78,588)

(Continued)

Table 4 : Grip dimensions and tolerances (standard pintail length) (concluded)

Grip dash No.	Permissible grip overlap		Design grip range		X	7		8		9	10
	Min.	Max.	Min.	Max.	± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Y ± .005 (± 0,127)
37	2.182 (55,423)	2.316 (58,826)	2.186 (55,524)	2.312 (58,725)	2.312 (58,725)	2.774 (70,460)	3.993 (101,422)	2.858 (72,593)	4.153 (105,486)	3.049 (77,445)	3.218 (81,737)
39	2.308 (58,623)	2.442 (62,027)	2.312 (58,725)	2.438 (61,925)	2.438 (61,925)	2.900 (73,660)	4.119 (104,623)	2.984 (75,794)	4.279 (108,687)	3.175 (80,645)	3.344 (84,938)
41	2.432 (61,773)	2.566 (65,176)	2.436 (61,874)	2.562 (65,075)	2.562 (65,075)	3.024 (76,810)	4.243 (107,772)	3.108 (78,943)	4.403 (111,836)	3.299 (83,795)	3.468 (88,087)
43	2.559 (64,999)	2.692 (68,377)	2.563 (65,100)	2.688 (68,275)	2.688 (68,275)	-	-	-	-	3.425 (86,995)	3.594 (91,288)
45	2.685 (68,199)	2.816 (71,526)	2.689 (68,301)	2.812 (71,425)	2.812 (71,425)	-	-	-	-	3.549 (90,145)	3.718 (94,437)
47	2.809 (71,349)	2.942 (74,727)	2.813 (71,450)	2.938 (74,625)	2.938 (74,625)	-	-	-	-	3.675 (93,345)	3.844 (97,638)
49	2.935 (74,549)	3.066 (77,876)	2.939 (74,651)	3.062 (77,775)	3.062 (77,775)	-	-	-	-	3.799 (96,495)	3.968 (100,787)
51	3.059 (77,699)	3.192 (81,077)	3.063 (77,800)	3.188 (80,975)	3.188 (80,975)	-	-	-	-	3.925 (99,695)	4.094 (103,988)
53	3.185 (80,899)	3.316 (84,226)	3.189 (81,001)	3.312 (84,125)	3.312 (84,125)	-	-	-	-	4.049 (102,845)	4.218 (107,137)
55	3.309 (84,049)	3.442 (87,427)	3.313 (84,150)	3.438 (87,325)	3.438 (87,325)	-	-	-	-	4.175 (106,045)	4.344 (110,338)

Table 5 : Grip dimensions and tolerances (Long pull-in pintail length)

(continued)

Grip dash No.	Permissible grip overlap		Design grip range		X	2		3		3A	
	Min.	Max.	Min.	Max.	± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)
03	.058 (1,473)	.192 (4,877)	.062 (1,575)	.188 (4,775)	.188 (4,775)	-	-	-	-	-	-
05	.182 (4,623)	.316 (8,026)	.186 (4,724)	.312 (7,925)	.312 (7,925)	-	-	-	-	-	-
07	.308 (7,823)	.442 (11,227)	.312 (7,925)	.438 (11,125)	.438 (11,125)	-	-	-	-	-	-
09	.432 (10,973)	.566 (14,376)	.436 (11,074)	.562 (14,275)	.562 (14,275)	.745 (18,923)	1.464 (37,186)	.740 (18,796)	1.470 (37,338)	.777 (19,736)	1.468 (37,287)
11	.558 (14,173)	.692 (17,577)	.562 (14,275)	.688 (17,475)	.688 (17,475)	.871 (22,123)	1.716 (43,586)	.866 (21,996)	1.772 (45,009)	.903 (22,936)	1.720 (43,688)
13	.682 (17,323)	.816 (20,726)	.686 (17,424)	.812 (20,625)	.812 (20,625)	.995 (25,273)	1.964 (49,886)	.990 (25,146)	1.970 (50,038)	1.027 (26,086)	1.968 (49,987)
15	.808 (20,523)	.942 (23,927)	.812 (20,625)	.938 (23,825)	.938 (23,825)	1.121 (28,473)	2.216 (56,286)	1.116 (28,346)	2.222 (56,439)	1.153 (29,286)	2.220 (56,388)
17	.932 (23,673)	1.066 (27,076)	.936 (23,774)	1.062 (26,975)	1.062 (26,975)	1.245 (31,623)	2.464 (62,586)	1.240 (31,496)	2.470 (62,738)	1.277 (32,436)	2.468 (62,687)
19	1.058 (26,873)	1.192 (30,277)	1.062 (26,975)	1.188 (30,175)	1.188 (30,175)	1.371 (34,823)	2.716 (68,986)	1.366 (34,696)	2.722 (69,139)	1.403 (35,636)	2.720 (69,088)
21	1.182 (30,023)	1.316 (33,426)	1.186 (30,124)	1.312 (33,325)	1.312 (33,325)	1.495 (37,973)	2.964 (75,286)	1.490 (37,846)	2.970 (75,438)	1.527 (38,786)	2.968 (75,387)
23	1.308 (33,223)	1.442 (36,627)	1.312 (33,325)	1.438 (36,525)	1.438 (36,525)	1.621 (41,173)	3.216 (81,686)	1.616 (41,046)	3.222 (81,839)	1.653 (41,986)	3.220 (81,788)
25	1.432 (36,373)	1.566 (39,776)	1.436 (36,474)	1.562 (39,675)	1.562 (39,675)	1.745 (44,323)	3.464 (87,986)	1.740 (44,196)	3.470 (88,138)	1.777 (45,136)	3.468 (88,087)
27	1.558 (39,573)	1.692 (42,977)	1.562 (39,675)	1.688 (42,875)	1.688 (42,875)	1.871 (47,523)	3.716 (94,386)	1.866 (47,396)	3.722 (94,539)	1.903 (48,336)	3.720 (94,488)
29	1.682 (42,723)	1.816 (46,126)	1.686 (42,824)	1.812 (46,025)	1.812 (46,025)	1.995 (50,673)	3.964 (100,686)	1.990 (50,546)	3.970 (100,838)	2.027 (51,486)	3.968 (100,787)
31	1.808 (45,923)	1.942 (49,327)	1.812 (46,025)	1.938 (49,225)	1.938 (49,225)	2.121 (53,873)	4.216 (107,086)	2.116 (53,746)	4.222 (107,239)	2.153 (54,686)	4.220 (107,188)
33	1.932 (49,073)	2.066 (52,476)	1.936 (49,174)	2.062 (52,375)	2.062 (52,375)	2.245 (57,023)	4.464 (113,386)	2.240 (56,896)	4.470 (113,538)	2.277 (57,836)	4.468 (113,487)
35	2.058 (52,273)	2.192 (55,677)	2.062 (52,375)	2.188 (55,575)	2.188 (55,575)	2.371 (60,223)	4.716 (119,786)	2.366 (60,096)	4.722 (119,939)	2.403 (61,036)	4.720 (119,888)

Table 5 : Grip dimensions and tolerances (Long pull-in pintail length) (continued)

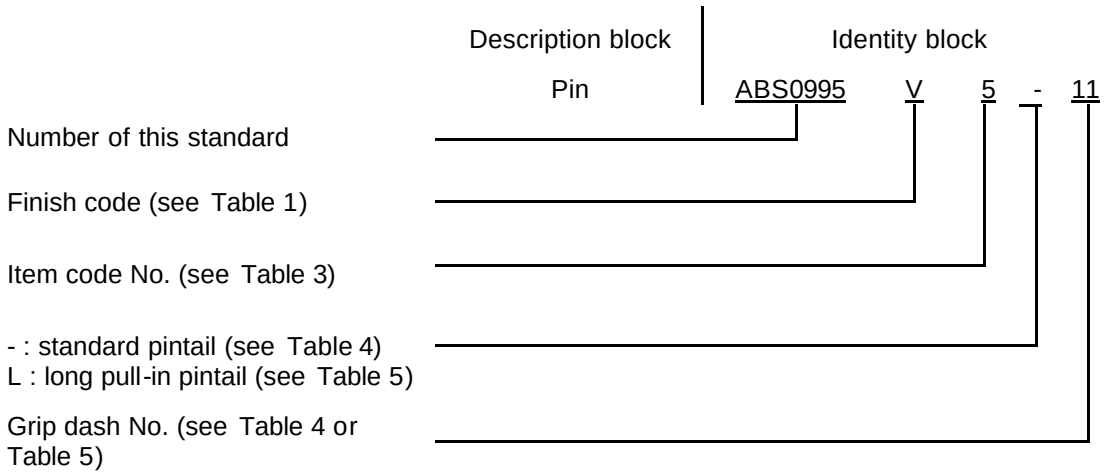
Grip dash No.	Permissible grip overlap		Design grip range		X	4		5		6	
	Min.	Max.	Min.	Max.	± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)
05	.182 (4,623)	.316 (8,026)	.186 (4,724)	.312 (7,925)	.312 (7,925)	-	-	-	-	-	-
07	.308 (7,823)	.442 (11,227)	.312 (7,925)	.438 (11,125)	.438 (11,125)	-	-	-	-	-	-
09	.432 (10,973)	.566 (14,376)	.436 (11,074)	.562 (14,275)	.562 (14,275)	-	-	-	-	-	-
11	.558 (14,173)	.692 (17,577)	.562 (14,275)	.688 (17,475)	.688 (17,475)	.933 (23,698)	1.747 (44,374)	-	-	-	-
13	.682 (17,323)	.816 (20,726)	.686 (17,424)	.812 (20,625)	.812 (20,625)	1.057 (26,848)	1.995 (50,673)	1.125 (28,575)	1.995 (50,673)	-	-
15	.808 (20,523)	.942 (23,927)	.812 (20,625)	.938 (23,825)	.938 (23,825)	1.183 (30,048)	2.247 (57,074)	1.251 (31,775)	2.247 (57,074)	1.310 (33,274)	2.229 (56,617)
17	.932 (23,673)	1.066 (27,076)	.936 (23,774)	1.062 (26,975)	1.062 (26,975)	1.307 (33,198)	2.495 (63,373)	1.375 (34,925)	2.495 (63,373)	1.434 (36,424)	2.477 (62,916)
19	1.058 (26,873)	1.192 (30,277)	1.062 (26,975)	1.188 (30,175)	1.188 (30,175)	1.433 (36,398)	2.747 (69,774)	1.501 (38,125)	2.747 (69,774)	1.560 (39,624)	2.729 (69,317)
21	1.182 (30,023)	1.316 (33,426)	1.186 (30,124)	1.312 (33,325)	1.312 (33,325)	1.557 (39,548)	2.995 (76,073)	1.625 (41,275)	2.995 (76,073)	1.684 (42,774)	2.977 (75,616)
23	1.308 (33,223)	1.442 (36,627)	1.312 (33,325)	1.438 (36,525)	1.438 (36,525)	1.683 (42,748)	3.247 (82,474)	1.751 (44,475)	3.247 (82,474)	1.810 (45,974)	3.229 (82,017)
25	1.432 (36,373)	1.566 (39,776)	1.436 (36,474)	1.562 (39,675)	1.562 (39,675)	1.807 (45,898)	3.495 (88,773)	1.875 (47,625)	3.495 (88,773)	1.934 (49,124)	3.477 (88,316)
27	1.558 (39,573)	1.692 (42,977)	1.562 (39,675)	1.688 (42,875)	1.688 (42,875)	1.933 (49,098)	3.747 (95,174)	2.001 (50,825)	3.747 (95,174)	2.060 (52,324)	3.729 (94,717)
29	1.682 (42,723)	1.816 (46,126)	1.686 (42,824)	1.812 (46,025)	1.812 (46,025)	2.057 (52,248)	3.995 (101,473)	2.125 (53,975)	3.995 (101,473)	2.184 (55,474)	3.977 (101,016)
31	1.808 (45,923)	1.942 (49,327)	1.812 (46,025)	1.938 (49,225)	1.938 (49,225)	2.183 (55,448)	4.247 (107,874)	2.251 (57,175)	4.247 (107,874)	2.310 (58,674)	4.229 (107,417)
33	1.932 (49,073)	2.066 (52,476)	1.936 (49,174)	2.062 (52,375)	2.062 (52,375)	2.307 (58,598)	4.495 (114,173)	2.375 (60,325)	4.495 (114,173)	2.434 (61,824)	4.477 (113,716)
35	2.058 (52,273)	2.192 (55,677)	2.062 (52,375)	2.188 (55,575)	2.188 (55,575)	2.433 (61,798)	4.747 (120,574)	2.501 (63,525)	4.747 (120,574)	2.560 (65,024)	4.729 (120,117)
37	2.182 (55,423)	2.316 (58,826)	2.186 (55,524)	2.312 (58,725)	2.312 (58,725)	-	-	-	-	2.684 (68,174)	4.977 (126,416)
39	2.308 (58,623)	2.442 (62,027)	2.312 (58,725)	2.438 (61,925)	2.438 (61,925)	-	-	-	-	2.810 (71,374)	5.229 (132,817)
41	2.432 (61,773)	2.566 (65,176)	2.436 (61,874)	2.562 (65,075)	2.562 (65,075)	-	-	-	-	2.934 (74,524)	5.477 (139,116)

Table 5 : Grip dimensions and tolerances (Long pull-in pintail length) (concluded)

Grip dash No.	Permissible grip overlap		Design grip range		X	7		8	
	Min.	Max.	Min.	Max.	± .005 (± 0,127)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)	Y ± .005 (± 0,127)	Z +.060 0 (+1,524 0)
05	.182 (4,623)	.316 (8,026)	.186 (4,724)	.312 (7,925)	.312 (7,925)	.774 (19,660)	2.061 (52,349)	-	-
07	.308 (7,823)	.442 (11,227)	.312 (7,925)	.438 (11,125)	.438 (11,125)	.900 (22,860)	2.313 (58,750)	.984 (24,994)	2.298 (58,369)
09	.432 (10,973)	.566 (14,376)	.436 (11,074)	.562 (14,275)	.562 (14,275)	1.024 (26,010)	2.561 (65,049)	1.108 (28,143)	2.546 (64,668)
11	.558 (14,173)	.692 (17,577)	.562 (14,275)	.688 (17,475)	.688 (17,475)	1.150 (29,210)	2.813 (71,450)	1.234 (31,344)	2.798 (71,069)
13	.682 (17,323)	.816 (20,726)	.686 (17,424)	.812 (20,625)	.812 (20,625)	1.274 (32,360)	3.061 (77,749)	1.358 (34,493)	3.046 (77,368)
15	.808 (20,523)	.942 (23,927)	.812 (20,625)	.938 (23,825)	.938 (23,825)	1.400 (35,560)	3.313 (84,150)	1.484 (37,694)	3.298 (83,769)
17	.932 (23,673)	1.066 (27,076)	.936 (23,774)	1.062 (26,975)	1.062 (26,975)	1.524 (38,710)	3.561 (90,449)	1.608 (40,843)	3.546 (90,068)
19	1.058 (26,873)	1.192 (30,277)	1.062 (26,975)	1.188 (30,175)	1.188 (30,175)	1.650 (41,910)	3.813 (96,850)	1.734 (44,044)	3.798 (96,469)
21	1.182 (30,023)	1.316 (33,426)	1.186 (30,124)	1.312 (33,325)	1.312 (33,325)	1.774 (45,060)	4.061 (103,149)	1.858 (47,193)	4.046 (102,768)
23	1.308 (33,223)	1.442 (36,627)	1.312 (33,325)	1.438 (36,525)	1.438 (36,525)	1.900 (48,260)	4.313 (109,550)	1.984 (50,394)	4.298 (109,169)
25	1.432 (36,373)	1.566 (39,776)	1.436 (36,474)	1.562 (39,675)	1.562 (39,675)	2.024 (51,410)	4.561 (115,849)	2.108 (53,543)	4.546 (115,468)
27	1.558 (39,573)	1.692 (42,977)	1.562 (39,675)	1.688 (42,875)	1.688 (42,875)	2.150 (54,610)	4.813 (122,250)	2.234 (56,744)	4.798 (121,869)
29	1.682 (42,723)	1.816 (46,126)	1.686 (42,824)	1.812 (46,025)	1.812 (46,025)	2.274 (57,760)	5.061 (128,549)	2.358 (59,893)	5.046 (128,168)
31	1.808 (45,923)	1.942 (49,327)	1.812 (46,025)	1.938 (49,225)	1.938 (49,225)	2.400 (60,960)	5.313 (134,950)	2.484 (63,094)	5.298 (134,569)
33	1.932 (49,073)	2.066 (52,476)	1.936 (49,174)	2.062 (52,375)	2.062 (52,375)	2.524 (64,110)	5.561 (141,249)	2.608 (66,243)	5.546 (140,868)
35	2.058 (52,273)	2.192 (55,677)	2.062 (52,375)	2.188 (55,575)	2.188 (55,575)	2.650 (67,310)	5.813 (147,650)	2.734 (69,444)	5.798 (147,269)
37	2.182 (55,423)	2.316 (58,826)	2.186 (55,524)	2.312 (58,725)	2.312 (58,725)	2.774 (70,460)	6.061 (153,949)	2.858 (72,593)	6.046 (153,568)
39	2.308 (58,623)	2.442 (62,027)	2.312 (58,725)	2.438 (61,925)	2.438 (61,925)	2.900 (73,660)	6.313 (160,350)	2.984 (75,794)	6.298 (159,969)
41	2.432 (61,773)	2.566 (65,176)	2.436 (61,874)	2.562 (65,075)	2.562 (65,075)	3.024 (76,810)	6.561 (166,649)	3.108 (78,943)	6.546 (166,268)

4 Designation

EXAMPLE:



5 Marking

EN 2424, style B (depressed .006 inch (0,152 mm) max.).

6 Technical specification

As per manufacturer's specification C2031.

RECORD OF REVISIONS

Issue	Clause modified	Description of modification
1 11/04		New Standard.