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Addendum 1

Body text

Section 3.1: The following shall be added to the Terms and Definitions section and other terms renumbered accordingly:

3.1.2
blunt start
A thread with removal of the incomplete thread at the starting end.

NOTE May also be referred to as Higbee or other similar name.

Section 5.1.4: The section shall be replaced with the following:

Shoulder contact faces of rotary shouldered connections shall be plane, and square with the thread axis, within 0.05 mm (0.002 in.). The surface finish of the contact face, before any surface treatment, shall be 0.8 µm (32 µin.) to 3.2 µm (125 µin.) R_a.

NOTE A minimum roughness is required to provide retention of thread compound during makeup; a maximum roughness is needed to ensure adequate sealing.

Section 7.4.2: The second paragraph shall be replaced with the following:

The distance between any two adjacent notches of the template shall be a multiple of the thread lead compensated for taper, L_{ct}, within a tolerance of ±0.003 mm (±0.0001 in.), and between any two non-adjacent notches within a tolerance of ±0.005 mm (±0.0002 in.). The notches shall cover a span of at least 102 mm (4 in.) and shall include at least one interval of 1 inch or nearest odd pitch.

Section 8.2.9.5: The section shall be replaced with the following:

The manufacturer shall assign an identification number to each gauge, unique for that manufacturer. The name or identifying mark of the gauge maker, together with the identification shall be placed on both plug and ring gauge. In the case of certified gauges, the certifying agency shall assign a unique number, and this shall also be marked.

Section 9.3.1.5.2: The section shall be replaced with the following:

Regional and Reference Master gauges shall be retested for mating and interchange standoff at least once each seven years, and certified on a certificate of retest as being acceptable for further use. The certificate of retest shall also report the mating and interchange standoff of the gauges. Regional Master gauges shall be retested against Grand Master gauges at the recognized certifying metrology agency. Reference Master gauges shall be retested against certified Regional Master or Grand Master gauges.

Section 9.3.1.7: The section shall be replaced with the following:

Plug and ring gauges reported as in non-conformance with the standoff requirements of 9.3.1.6, or as otherwise unsuitable for further use, shall be removed from service. Regional Master, Reference Master, and Working gauges found to be in non-conformance may be reconditioned. Grand Master gauges shall

not be reconditioned. Reconditioned Regional Master and reconditioned Reference Master gauges shall be resubmitted for initial certification in accordance with the requirements of 9.4 before returning to service. If working gauges are reconditioned solely by adjustment of the fitting plate, gauges shall comply with the requirements of 8.2.6. In all other cases, they shall be inspected for compliance with all the thread element requirements of 8.2 or otherwise removed from service.

Section 9.4: The section shall be replaced with the following:

New and reconditioned Master gauges, prior to use, shall be submitted to one of the certification agencies for certification to be in accordance with the stipulations given in this standard. These metrology laboratories and accreditation bodies shall operate according with ISO/IEC 17025 or equivalent standards.

Figures and tables

Figure 1: The figure key shall be changed as indicated by the red box below:

Key

1 taper half-angle, φ
2 plane of gauge point
3 connection bevel diameter; see 5.2
4 outside bevel angle optional to manufacturer; blunt start (see 3.1.2) is allowed
5 optional inside bevel (see 6.3.2)
6 location of gauge plane 15.875 mm (0.625 in.) from shoulder
7 pitch diameter at gauge point, C
8 large diameter, D_L
9 small diameter, D_S
10 diameter of optional tapered inside bevel D_{PT} (see 6.3.2)
11 pin length, L_{PC}
12 connection bevel angle

Figure 3: The figure key shall be changed as indicated by the red boxes below:

Key

1 taper half-angle, φ
2 chamfer angle, typically 25° to 45°; blunt start (see 3.1.2) is allowed
3 break edge or radius 0.8 mm (0.031 in.) max
4 25°–31° taper[a]
5 counterbore depth, L_{Qc} +2.4/–0.8 mm (+0.094/–0.031 in.)
6 counterbore diameter, Q_c
7 bevel angle, 45° ±10°
8 depth of box threads, L_{BT}
9 box depth, L_{BC}
10 connection bevel diameter
11 bore detail (see 6.3.3)

[a] 45° maximum is allowed on drill bits and boxes that mate with bits.

Figure 6: The figure key shall be changed as indicated by the red boxes below:

Key

1 taper half-angle, φ
2 face groove depth with stress relief groove, 6.4 mm +1.6/0 mm (0.25 in. +0.063/0 in.)
3 face groove depth with pin cylinder [1.6 mm +0.8/0 mm (0.063 in. +0.031/0 in.)]
4 counterbore depth, 9.5 mm +2.4/-0.86 mm (0.375 in. +0.094/-0.031 in.)
5 groove diameter, D_{FG}
6 45° ±1°
7 face groove radius, R_{FG}
8 stress relief groove diameter, D_{SRG}
9 pin cylinder diameter, D_{LF}
10 radius 6.4 mm ±0.8 (0.25 in. ± 0.031)

Table B.3: The table shall be changed as indicated by the red boxes below:

Connection Style and Size	Ref. ID [d]	Bevel Diameters [a] for Various ODs [b,c]								
...										
$7^5/_8$ REG LT	63.50	OD	—	244.48	247.65	250.82	254.00	—	—	—
		BD	—	234.95	234.95	234.95	234.95	—	—	—
$8^5/_8$ REG FF	76.20	OD	254.00	257.18	260.35	263.52	266.70	269.88	—	—
		BD	246.86 [e]	246.86 [e]	246.86 [e]	246.86 [e]	251.22	251.22	—	—
$8^5/_8$ REG LT	76.20	OD	—	273.05	276.22	279.40	—	—	—	—
		BD	—	266.70	266.70	266.70	—	—	—	—

Table C.3: The table shall be changed as indicated by the red boxes below:

Connection Style and Size	Ref. ID [d]	Bevel Diameters for Various ODs [a,b,c]								
...										
$7^5/_8$ REG LT	2.500	OD	—	9.625	9.750	9.875	10.000	—	—	—
		BD	—	9.250	9.250	9.250	9.250	—	—	—
$8^5/_8$ REG FF	3.000	OD	10.000	10.125	10.250	10.375	10.500	10.625	—	—
		BD	9.719 [e]	9.719 [e]	9.719 [e]	9.719 [e]	9.891	9.891	—	—
$8^5/_8$ REG LT	3.000	OD	—	10.750	10.875	11.000	—	—	—	—
		BD	—	10.500	10.500	10.500	—	—	—	—

Table K.1: The table shall be changed as indicated by the red boxes below:

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Connection Style and Size	**Thread Form**	**Taper [a]**	**Threads per 25.4 mm**	**Pitch Diameter at Gauge Point**	**Large Diameter of Pin**	**Pin Cylinder Diameter**	**Small Diameter of Pin**	**Pin Length [b]**	**Depth of Box Threads**	**Total Box [d] Depth**	**Box c/bore Diameter**	**Depth of Box c/bore**	**Last Full Depth Thread**
		T	n	C	D_L	D_{LF}	D_S	L_{PC}	L_{BT}	L_{BC}	Q_c	L_{Qc}	L_{ft} [c]
		mm/mm			ref	±0.4	ref	0 −318	min	+9 0	+0.8 −0.4	+2.4 −0.8	max
NC10	V-055	1/8	6	27.00	30.23	29.03	25.48	38.11	41.28	53.98	30.58	11.13	10.16
NC12	V-055	1/8	6	32.13	35.36	34.16	29.79	44.45	47.63	60.33	35.71	11.13	10.16
NC13	V-055	1/8	6	35.33	38.56	37.36	32.99	44.45	47.63	60.33	38.91	11.13	10.16
NC16	V-055	1/8	6	40.87	44.09	42.90	38.53	44.45	47.63	60.33	44.48	11.13	10.16
NC77	V-038R	1/4	4	196.62	203.23	198.83	161.95	165.10	168.28	180.98	204.77	15.88	12.70
3 1/2 FH	V-040	1/4	5	94.84	101.45	98.65	77.62	95.25	98.43	111.13	102.79	15.88	12.70
4 1/2 FH	V-040	1/4	5	115.11	121.72	118.92	96.32	101.60	104.78	117.48	123.83	15.88	12.70
5 1/2 IF	V-038R [g]	1/6	4	157.20	162.48	159.31	141.33	127.00	130.18	142.88	163.91	15.88	12.70
6 5/8 IF	V-038R [g]	1/6	4	184.18	189.46	186.28	168.30	127.00	130.18	142.88	190.91	15.88	12.70

2 7/8 row has been deleted

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2 3/8 SH	V-038R [g]	1/6	4	56.64	61.93	58.72	49.76	73.03	79.38	92.08	63.50	15.88	12.70
2 3/8 WO	V-038R [g]	1/6	4	66.19	71.48	68.66	61.42	60.33	63.50	76.20	72.62	15.88	12.70
2 7/8 WO	V-038R [g]	1/6	4	79.27	84.56	81.71	71.86	76.20	79.38	92.08	85.73	15.88	12.70
3 1/2 WO	V-038R [g]	1/6	4	96.72	102.01	99.21	87.20	88.90	92.08	104.78	103.58	15.88	12.70
2 7/8 XH	V-038R [g]	1/6	4	79.22	84.51	81.30	67.56	101.60	104.78	117.48	85.32	15.88	9.65
3 1/2 XH	V-038R [g]	1/6	4	91.54	96.82	93.62	82.02	88.90	92.08	104.78	98.43	15.88	12.70

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8 5/8 H90 FF	90-V-050	1/4	3.5	203.61	209.91	204.77 [f]	167.82	168.28	171.45	184.15	211.53	15.88	12.70
8 5/8 H90 LT	90-V-050	1/4	3.5	203.61	209.91	205.16	167.82	168.28	171.45	184.15	238.25	9.53	12.70
2 3/8 SL H90	90-V-084	5/48	3	65.48	69.22	66.62	61.62	73.03[d]	76.20	88.90	70.26	15.88	12.70
2 7/8 SL H90	90-V-084	5/48	3	77.44	81.18	78.59	73.25	76.20[d]	79.38	92.08	82.14	15.88	12.70
3 1/2 SL H90	90-V-084	5/48	3	93.68	97.41	94.87	88.82	82.55[d]	85.73	98.43	98.43	15.88	12.70
GOST Z-161	V-050	1/6	4	155.96	161.90	159.13	140.74	127.00	130.18	142.88	163.93	15.88	12.70
GOST Z-189	V-050	1/6	4	183.46	189.41	186.61	168.22	127.00	130.18	142.88	191.77	15.88	12.70

NOTE See Figures 1, 2, and 3 for meaning of dimensions.

[a] FOOTNOTE 1 Taper (T) 1/6 mm/m corresponds to a half-angle of $\varphi = 4.764°$.
1/4 mm/mm corresponds to a half-angle of $\varphi = 7.125°$.
1/8 mm/mm corresponds to a half-angle of $\varphi = 3.576°$.
5/48 mm/mm corresponds to a half-angle of $\varphi = 2.981°$.

[b] FOOTNOTE 2 For roller cone drill bits only, the pin length may vary by +0/–5 mm.

[c] FOOTNOTE 3 Length to flank of first full depth pin thread (see Figure 1).

[d] FOOTNOTE 4 Pin Length Tolerance for SL H90 style connections is +0/–1.59 mm.

[e] FOOTNOTE 5 For OH SW and PAC styles, the radius R_{LF} at the pin cylinder is 0.8 mm +0.4/–0 mm (see Figure 2).

[f] FOOTNOTE 6 For the H90 style, the radius R_{LF} at the pin cylinder is 3.18 mm ±0.4 mm (see Figure 2).

[g] FOOTNOTE 7 Prior to 2010, these connections were made with the V-065 thread form, which is interchangeable with V-038R.

[h] FOOTNOTE 8 has been deleted

Table K.4: The table shall be changed as indicated by the red boxes below:

Connection Size and Style	Required for OD Greater Than	Face Groove Diameter
		$D_{FG+0.8/-0.4}$
7 H90 LT	215.90	180.85
7 5/8 H90 LT	244.47	203.20
8 5/8 H90 LT	269.87	238.25

NOTE 1 See Figure 6.
NOTE 2 R_{FG} = 6.25 mm ±0.4 mm

Table K.5: The table shall be changed as indicated by the red boxes below:

1	2	3
Connection Size and Style	**Pin ID Taper Diameter** D_{PT} $^{+0.8}_{-0.8}$ (See Figure 1)	**Pin Benchmark Diameter** D_{PB} $^{+0.4}_{0}$ (See Figure 12)
NC10	—	29.82
NC12	—	34.95
NC13	—	38.15
NC16	—	43.69
NC77	107.95	199.62
3 1/2 FH	60.33	99.44
4 1/2 FH	73.03	119.71
5 1/2 IF	95.25	160.10
6 5/8 IF	101.60	187.07
2 3/8 OH LW	—	68.25
2 3/8 OH SW	—	69.06
2 7/8 OH LW	—	78.18
2 7/8 OH SW	—	79.12
3 1/2 OH LW	—	97.23
3 1/2 OH SW	—	97.23
4 OH LW	—	114.68
4 OH SW	—	114.68
4 1/2 OH LW	—	123.42
4 1/2 OH SW	—	123.42
2 3/8 PAC	—	59.28
2 7/8 PAC	—	63.50
3 1/2 PAC	—	76.99
2 3/8 SH	—	59.54
2 3/8 WO	—	69.47
2 7/8 WO	—	82.50
3 1/2 WO	—	100.00
2 7/8 XH	47.63	82.09

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3 1/2 XH	60.33	94.41
3 1/2 H90	63.50	100.41
4 H90	73.03	109.93
4 1/2 H90	76.20	118.44
5 H90	82.55	125.43
5 1/2 H90	82.55	132.19
6 5/8 H90	88.90	148.06
7 H90	95.25	160.76
7 5/8 H90	104.78	183.34
8 5/8 H90	111.13	205.56
2 3/8 SL H90	—	67.41
2 7/8 SL H90	—	79.38
3 1/2 SL H90	—	95.66
GOST Z-161	—	159.92
GOST Z-189	—	187.40

Table L.1: The table shall be changed as indicated by the red boxes below:

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Connection Style and Size	Thread Form	Taper [a] T in./ft	Threads per Inch n	Pitch Diameter at Gauge Point C	Large Diameter of Pin D_L ref	Pin Cylinder Diameter D_{LF} ±0.016	Small Diameter of Pin D_S ref	Pin Length [b] L_{PC} 0 −0.125	Depth of Box Threads L_{BT} min	Total Box Depth L_{BC} +0.38 0	Box c/bore Diameter Q_c +0.031 −0.016	Depth of Box c/bore L_{Qc} +0.094 −0.031	Last Full Depth Thread L_{FT} [c] max
NC10	V-055	1.5	6	1.06300	1.190	1.143	1.003	1.500	1.625	2.125	1.204	0.438	0.40
NC12	V-055	1.5	6	1.26500	1.392	1.345	1.173	1.750	1.875	2.375	1.406	0.438	0.40
NC13	V-055	1.5	6	1.39100	1.518	1.471	1.299	1.750	1.875	2.375	1.532	0.438	0.40
NC16	V-055	1.5	6	1.60900	1.736	1.689	1.517	1.750	1.875	2.375	1.751	0.438	0.40
NC77	V-038R	3	4	7.74100	8.001	7.828	6.376	6.500	6.625	7.125	8.062	0.625	0.50
3 1/2 FH	V-040	3	5	3.73400	3.994	3.884	3.056	3.750	3.875	4.375	4.047	0.625	0.50
4 1/2 FH	V-040	3	5	4.53200	4.792	4.682	3.792	4.000	4.125	4.625	4.875	0.625	0.50
5 1/2 IF	V-038R [g]	2	4	6.18900	6.397	6.272	5.564	5.000	5.125	5.625	6.453	0.625	0.50

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7 5/8 H90 LT	90-V-050	3	3.5	7.14110	7.389	7.202	5.857	6.125	6.250	6.750	8.000	0.375	0.50
8 5/8 H90 FF	90-V-050	3	3.5	8.01610	8.264	8.062 [f]	6.607	6.625	6.750	7.250	8.328	0.625	0.50
8 5/8 H90 LT	90-V-050	3	3.5	8.01610	8.264	8.077	6.607	6.625	6.750	7.250	9.380	0.375	0.50

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[h] FOOTNOTE 8 has been deleted

[a] FOOTNOTE 1	Taper (T) 2 in./ft corresponds to a half-angle of φ = 4.764°. 3 in./ft corresponds to a half-angle of φ = 7.125°. 1.5 in./ft corresponds to a half-angle of φ = 3.576°. 1.25 in./ft corresponds to a half-angle of φ = 2.981°.
[b] FOOTNOTE 2	For roller cone drill bits only, the pin length may vary by +0/–0.19 in.
[c] FOOTNOTE 3	Length to flank of first full depth pin thread (see Figure 1).
[d] FOOTNOTE 4	Pin Length Tolerance for SL H90 style connections is +0/–0.063 in..
[e] FOOTNOTE 5	For OH SW and PAC styles, the radius R_{LF} at the pin cylinder is 0.031 in. +0.016/−0 in. (see Figure 2).
[f] FOOTNOTE 6	For the H90 style, the radius R_{LF} at the pin cylinder is 0.125 in. ±0.016 in. (see Figure 2).
[g] FOOTNOTE 7	Prior to 2010, these connections were made with the V-065 thread form, which is interchangeable with V-038R.

Table L.4: The table shall be changed as indicated by the red boxes below:

Connection Size and Style	Required for OD Greater Than	Face Groove Diameter $D_{FG+0.032/-0.016}$
7 H90 LT	8.5	7.12
7 5/8 H90 LT	9.625	8.0
8 5/8 H90 LT	10.625	9.38
NOTE 1 See Figure 6. NOTE 2 R_{FG} = 0.25 in. ±0.016 in.		

Table L.5: The table shall be changed as indicated by the red boxes below:

1	2	3
Connection Size and Style	**Pin ID Taper Diameter** D_{PT} ±0.031 (See Figure 1)	**Pin Benchmark Diameter** D_{PB} +0.016/0 (See Figure 12)

...

2 3/8 WO	—	2.735

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GOST Z-161	—	6.296
GOST Z-189	—	7.378