

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1150

CLOSED-END DROP WIRES
(ELECTRICAL AND MECHANICAL)
FOR AUTOMATIC DRAWING-IN MACHINES

1st EDITION

November 1969

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BRIEF HISTORY

The ISO Recommendation R 1150, *Closed-end drop wires (electrical and mechanical) for automatic drawing-in machines*, was drawn up by Technical Committee ISO/TC 72, *Textile machinery and accessories*, the Secretariat of which is held by the Association Suisse de Normalisation (SNV).

Work on this question led to the adoption of a Draft ISO Recommendation.

In July 1968, this Draft ISO Recommendation (No. 1665) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Greece	Spain
Brazil	India	Switzerland
Czechoslovakia	Israel	Turkey
Denmark	Italy	U.A.R.
France	Netherlands	United Kingdom
Germany	Poland	U.S.S.R.

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1969, to accept it as an ISO RECOMMENDATION.

CLOSED-END DROP WIRES **(ELECTRICAL AND MECHANICAL)** **FOR AUTOMATIC DRAWING-IN MACHINES**

1. SCOPE

This ISO Recommendation specifies the principal dimensions and tolerances of four types of closed-end drop wires for automatic drawing-in machines.

2. FIELD OF APPLICATION

This ISO Recommendation applies to closed-end drop wires of the following types :

2.1 For electrical warp stop motion :

2.1.1 Drop wires with lower cut-out (Type A)*

2.1.2 Drop wires with hole in upper slot (Type B)*.

2.2 For mechanical warp stop motion :

2.2.1 Drop wires with lower cut-out or with hole in upper slot (Type C)*.

2.2.2 Drop wires with chamfered top (Type D)**.

3. DIMENSIONS

The dimensions of all four types of drop wire are given in the relevant tables and figures. The principal dimensions are based on ISO Recommendation R 441, *Drop wires for mechanical and electrical warp stop motions*.

The dimensions in the drawings are given in millimetres. The dimensions in inches, shown in brackets, are given for information.

* These drop wires are suitable for use with Barber and Colman machines.

** These drop wires are suitable for use with Zellweger machines.

3.1 Drop wires for electrical warp stop motions

3.1.1 Drop wires with lower cut-out (Type A)

Closed-end drop wires for electrical warp stop motions for automatic drawing-in machines.

Type A Drop Wires with preselection by means of lower cut-out.

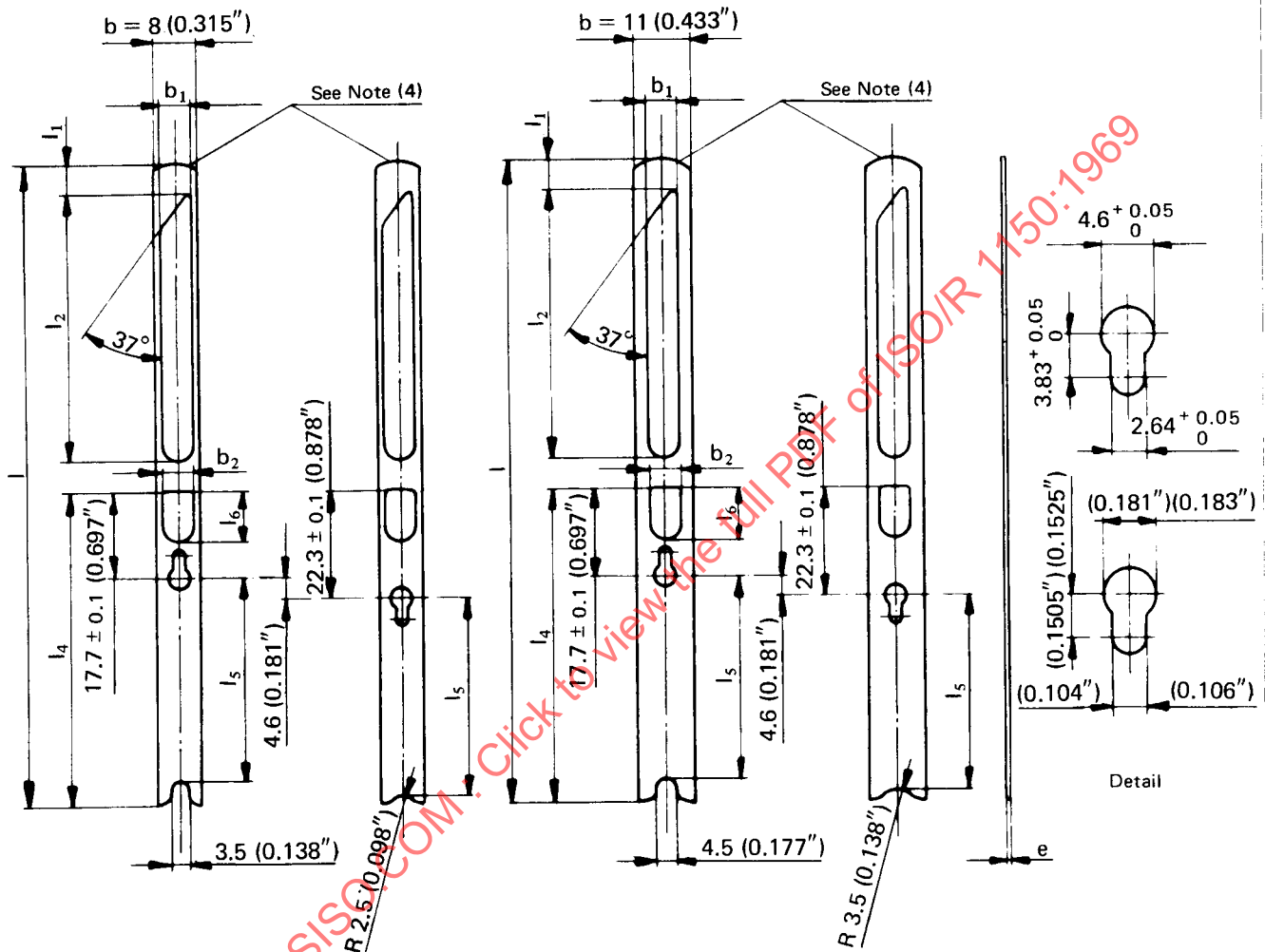


FIG. 1 – Drop wires, type A

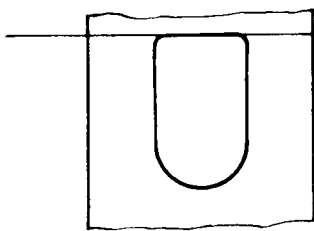


FIG. 2 – U-shaped eye

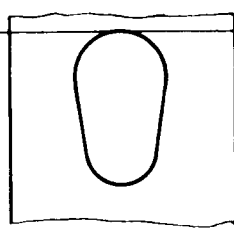


FIG. 3 – Drop-shaped eye

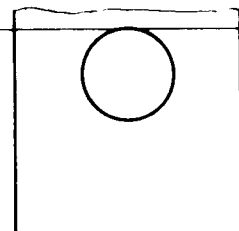


FIG. 4 – Round eye

Enlarged view of differently shaped eyes

TABLE 1 — Drop wires, Type A — Dimensions

Length		Width		Thickness		Position and dimensions of upper slot (2)						Position of keyhole (2) (3)				Yarn eye (1) (2)				Mass approx.	
l		b		e		b ₁		l ₁		l ₂		l ₄		l ₅		b ₂		l ₆			
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	g	
125 to 128	4.921 to 5.039	8 ⁰ _{-0.1}	0.315 ⁰ _{-0.004}	0.2	0.008	0.1875 or $\frac{3}{16}$	4.75 to 5	52 to 53.5	2.063 to 2.125	62 ± 0.125	2.441 ± 0.005	37.95 ± 0.1	1.494 ± 0.004	5.25 ± 0.25	0.207 ± 0.010	6 ± 0.5	0.207 ± 0.010	5.25 ± 0.25	0.207 ± 0.010	0.250 to 0.400	1.1
				0.3	0.012																1.7
		0.2	0.008	1.7																	
		0.3	0.012	2.5																	
		0.4	0.016	3.3																	
145	5.709	8 ⁰ _{-0.1}	0.315 ⁰ _{-0.004}	0.2	0.008	0.203 or $\frac{13}{64}$	0.1968	64 to 65.5	2.519 to 2.850	70 ± 0.125	2.756 ± 0.005	45.95 ± 0.1	1.809 ± 0.004	5.25 ± 0.25	0.207 ± 0.010	6 ± 0.5	0.207 ± 0.010	5.25 ± 0.25	0.207 ± 0.010	0.250 to 0.400	1.2
				0.3	0.012																1.9
		0.2	0.008	1.9																	
		0.3	0.012	2.9																	
		0.4	0.016	3.9																	
165	6.496	11 ⁰ _{-0.1}	0.433 ⁰ _{-0.004}	0.2	0.008	0.203 or $\frac{13}{64}$	0.1968	64 to 65.5	2.519 to 2.850	90 ± 0.125	3.543 ± 0.005	65.95 ± 0.1	2.596 ± 0.004	6 ± 0.5	0.236 ± 0.020	6 ± 0.5	0.236 ± 0.020	6 ± 0.5	0.236 ± 0.020	0.236 ± 0.020	2.2
				0.3	0.012																3.3
				0.4	0.016																4.4

NOTES

- (1) The eye may be U-shaped (Fig. 2), drop-shaped (Fig. 3) or round (Fig. 4). A drop-shaped eye is acceptable with 8 mm (0.315 in) and 11 mm (0.433 in) wide drop wires. The round eye is only acceptable with 11 mm (0.433 in) wide drop wires. The upper edge of the drop-shaped or round eye should correspond with the upper edge of the U-shaped eye. The minimum diameter of the round eye should be 6.35 mm (0.250 in).
- (2) The maximum by which the openings may be off-centre should be 0.125 mm (0.005 in).
- (3) Half of the drop wires in any delivery should have keyways pointing upwards and the other half pointing downwards. If so requested by the purchaser the drop wires should be supplied with the keyholes alternating.
- (4) The top end of the drop wire may be chamfered at the option of the manufacturer.

3.1.2 Drop wires with hole in upper slot (Type B)

Closed-end drop wires for electrical warp stop motions for automatic drawing-in machines.

Type B Drop Wires with preselection by means of hole in the upper slot.

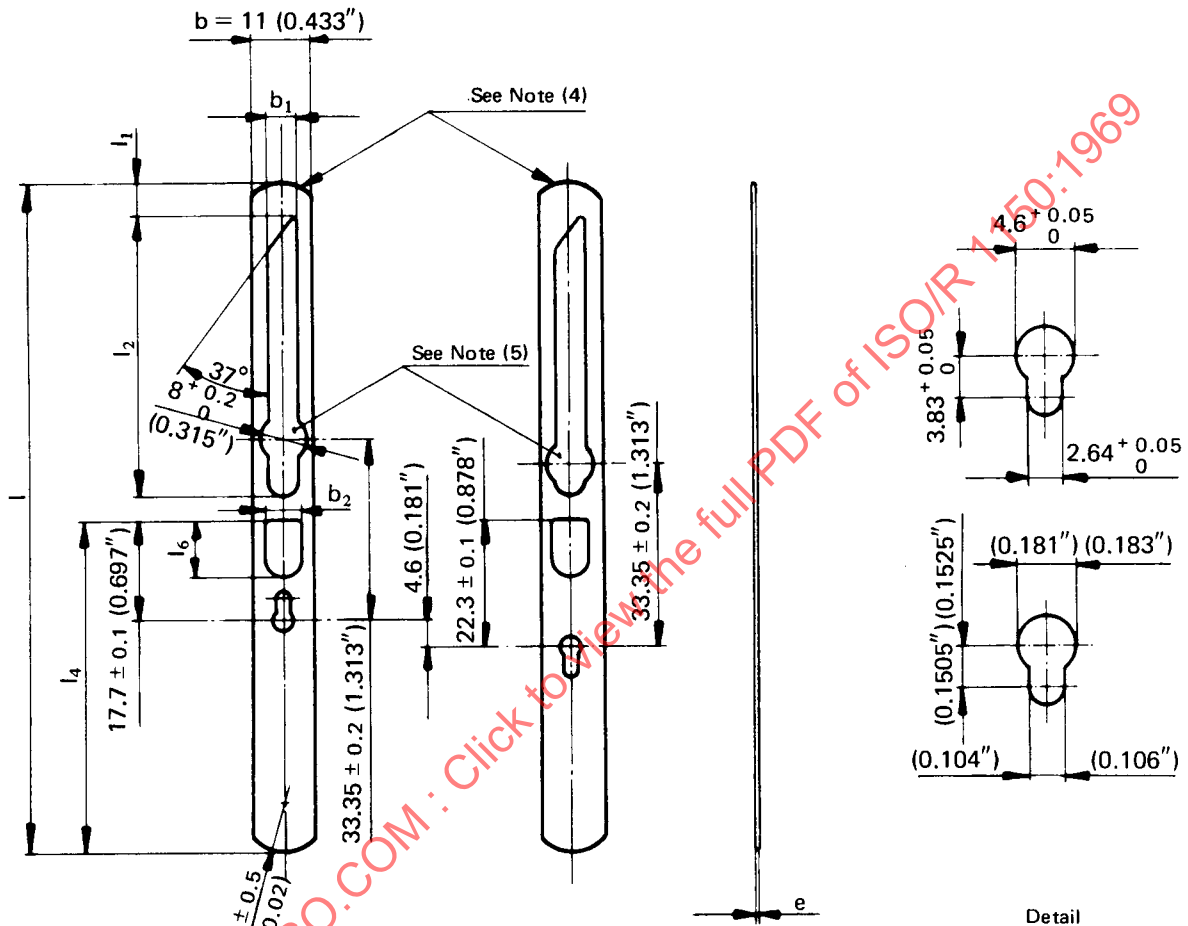
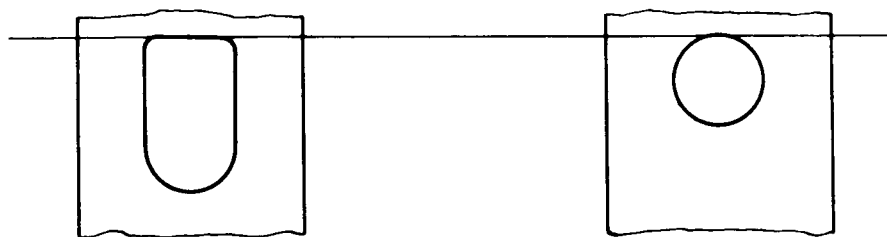


FIG. 5 – Drop wires, type B



Enlarged view of differently shaped eyes

FIG. 6 – U-shaped eye

FIG. 7 – Round eye

TABLE 2 - Drop wires, type B - Dimensions

Length <i>l</i>	Width <i>b</i>		Thickness <i>e</i>		Position and dimensions of upper slot ⁽²⁾				Position of keyhole ^{(2) (3)}		Yarn eye ^{(1) (2)}			Mass approx.
	mm	in	mm	in	<i>b</i> ₁	<i>l</i> ₁	<i>l</i> ₂	<i>l</i> ₄	<i>b</i> ₂	<i>l</i> ₆				
125 4.921 to 128 5.039			0.2	0.008	0.1875 or $\frac{3}{16}$	4.75 to 5	52 to 53.5	62 ± 0.125	6 ± 0.5	6.35 to 10	0.250 to 0.400			1.7
			0.3	0.012										
			0.4	0.016										
			0.2	0.008										
145 5.709	11 $\frac{0}{-0.1}$ 0.433 $\frac{0}{-0.004}$		0.3	0.012	0.203 or $\frac{13}{64}$	0.1968	64 to 65.5	70 ± 0.125	6 ± 0.5	6.35 to 10	0.250 to 0.400			1.9
			0.4	0.016										
			0.2	0.008										
			0.3	0.012										
165 6.496			0.4	0.016				90 ± 0.125	6 ± 0.5	6.35 to 10	0.250 to 0.400			2.2
			0.3	0.012										
			0.4	0.016				90 ± 0.125	6 ± 0.5	6.35 to 10	0.250 to 0.400			3.3
			0.4	0.016										

NOTES

- (1) The eye may be U-shaped (Fig. 6) or round (Fig. 7). The round eye is only acceptable with a minimum diameter of 6.35 mm (0.250 in). The upper edge of the round eye should correspond with the upper edge of the U-shaped eye.
- (2) The maximum by which the openings may be off-centre should be 0.125 mm (0.005 in).
- (3) Half of the drop wires in any delivery should have keyways pointing upwards and the other half pointing downwards. If so requested by the purchaser, the drop wires should be supplied with the key-holes alternating.
- (4) The top end of the drop wire may be chamfered at the option of the manufacturer.
- (5) When drop wires with preselection by means of a hole in the upper slot are employed, it is essential that attention should be given to keeping the drop wires approximately vertical in the warp stop motion; the drop wires must not be allowed to tilt to such an angle that the warp stop motion is inadvertently operated.

3.2 Drop wires for mechanical warp stop motions

3.2.1 Drop wires with lower cut-out or with hole in upper slot (Type C)

Closed-end drop wires for mechanical warp stop motions for automatic drawing-in machines.

Type C Drop Wires with preselection by means of lower cut-out or hole in upper slot.

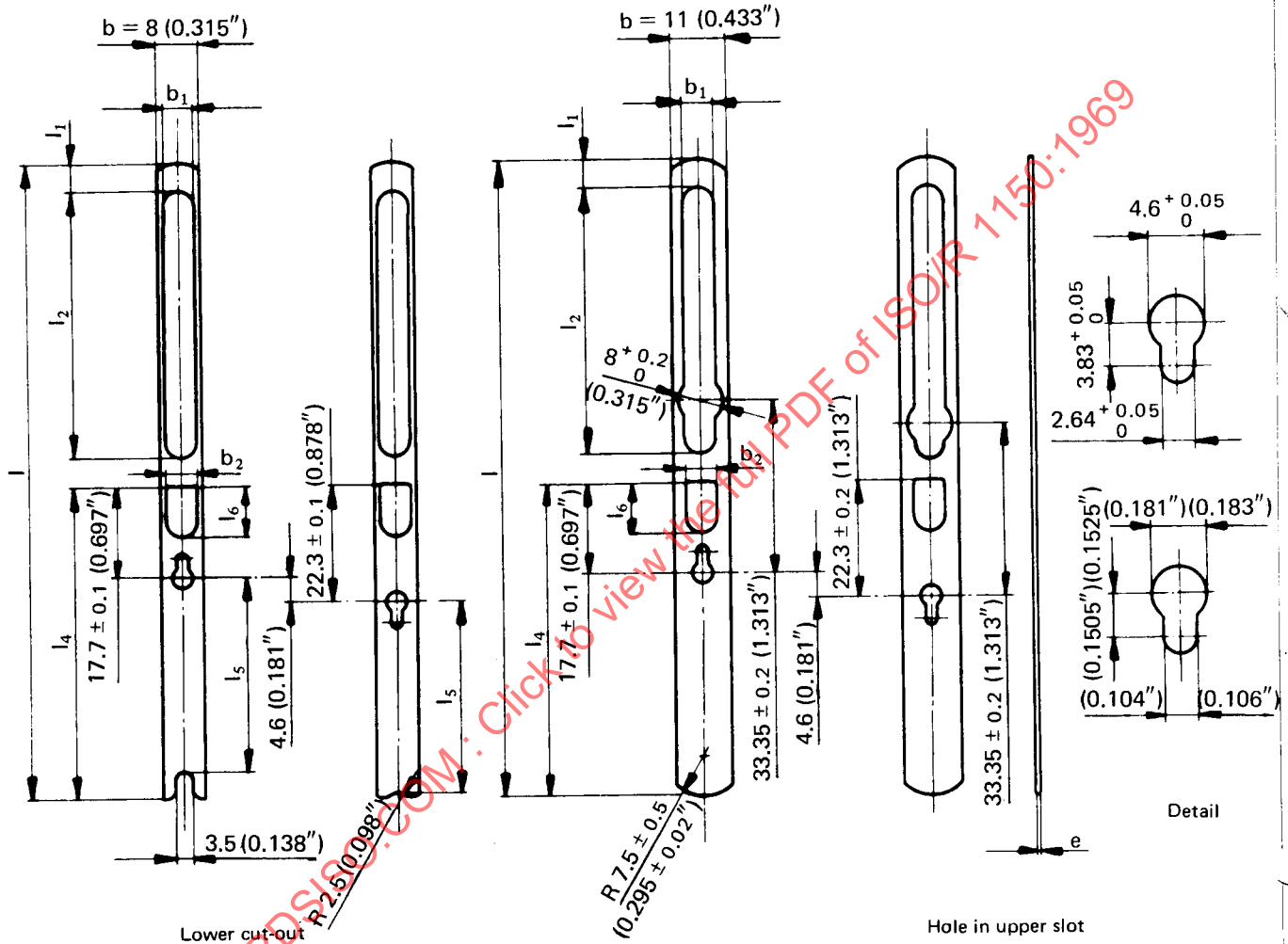


FIG. 8 – Drop wires, type C

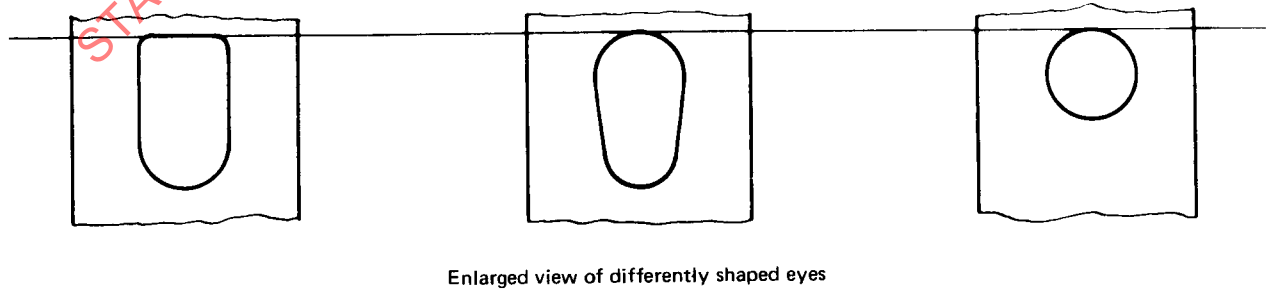


FIG. 9 – U-shaped eye

FIG. 10 – Drop-shaped eye

FIG. 11 – Round eye

TABLE 3 - Drop wires, type C - Dimensions

Length		Width		Thickness		Position and dimensions of upper slot ⁽²⁾						Position of keyhole ⁽²⁾ ⁽³⁾				Yarn eye ⁽¹⁾ ⁽²⁾				Mass approx.															
<i>l</i>		<i>b</i>		<i>e</i>		<i>b</i> ₁		<i>l</i> ₁		<i>l</i> ₂		<i>l</i> ₄		<i>l</i> ₅		<i>b</i> ₂		<i>l</i> ₆																	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	g															
125 to 128	4.921 to 5.039	8 ⁰ _{-0.1}	0.315 ⁰ _{-0.004}	0.2	0.008	52 to 53.5	2.063 to 2.125	62 ± 0.125	2.441 ± 0.005	37.95 ± 0.1	1.494 ± 0.004	5.25 ± 0.25	0.207 ± 0.010	6.35 to 10	0.250 to 0.400					1.1															
				0.3	0.012															1.7															
		11 ⁰ _{-0.1}	0.433 ⁰ _{-0.004}	0.2	0.008															0.1875 or $\frac{3}{16}$	0.203 or $\frac{13}{64}$	64 to 65.5	2.519 to 2.850	70 ± 0.125	2.756 ± 0.005	45.95 ± 0.1	1.809 ± 0.004	6 ± 0.5	0.236 ± 0.020					1.7	
				0.3	0.012																													2.5	
145	5.709	8 ⁰ _{-0.1}	0.315 ⁰ _{-0.004}	0.2	0.008	4.75 to 5.16	4.75 to 5	0.1875 or $\frac{3}{16}$	0.1968 or $\frac{3}{16}$			5.25 ± 0.25	0.207 ± 0.010																					3.3	
				0.3	0.012																													1.2	
		11 ⁰ _{-0.1}	0.433 ⁰ _{-0.004}	0.2	0.008																														1.9
				0.3	0.012																														1.9
165	6.496	11 ⁰ _{-0.1}	0.433 ⁰ _{-0.004}	0.2	0.008																														2.9
				0.3	0.012																														3.9
		11 ⁰ _{-0.1}	0.433 ⁰ _{-0.004}	0.4	0.016																														2.2
				0.4	0.016																														3.3
																																			4.4

NOTES

- (1) The eye may be U-shaped (Fig. 9), drop-shaped (Fig. 10) or round (Fig. 11). A drop-shaped eye is acceptable with 8 mm (0.315 in) and 11 mm (0.433 in) wide drop wires. The round eye is only acceptable with 11 mm (0.433 in) wide drop wires. The upper edge of the drop-shaped or round eye should correspond with the upper edge of the U-shaped eye. The minimum diameter of the round eye should be 6.35 mm (0.250 in).
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