ASME B107.20M-1998
(Revision of ASME/ANSI B107.20M-1992)

PLIERS (LINEMAN'S, IRON WORKER'S, GAS, GLASS, FENCE, AND BATTERY)

AN AMERICAN NATIONAL STANDARD

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This Standard will be revised when the Society approves the issuance of a new edition. There will be no addenda or written interpretations of the requirements of this Standard issued to this edition.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

FOREWORD

The American National Standards Committee B107, Socket Wrenches and Drives, under sponsorship of the American Society of Mechanical Engineers, held its organizational meeting on June 28, 1967. Subsequently, the Committee was reorganized as an ASME Standards Committee, and its title was changed to Hand Tools and Accessories.

This Standard is a revision of ASME/ANSI B107.20M-1992 Pliers (Lineman's, Iron Worker's, Gas, Glass, and Fence).

Changes made to the 1998 edition of this Standard consist of the addition of "Battery Type Pliers," as well as the inclusion of "ASME B107.25M-1996, Pliers — Performance Test Methods" in the references.

Suggestions for improvement of this Standards are welcome. They should be sent to The American Society of Mechanical Engineers, Att.: Secretary, ASME B107 Main Committee, Three Park Avenue, New York, NY 10016-5990.

Following approval by the Standards Committee B107 and the sponsor, this Standard was approved as an American National Standard on July 16, 1998.

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Hand Tools and Accessories

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PLIERS (LINEMAN'S, IRON WORKER'S, GAS, GLASS, FENCE, AND BATTERY)

1 SCOPE

This Standard covers the general, dimensional, and functional characteristics for pliers having gripping surfaces and/or cutting edges.

Inclusion of dimensional and functional data in this Standard is not intended to imply that all products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning a list of stock production sizes.

2 CLASSIFICATION

The following types and classes of pliers are covered in this Standard.

Type I — Lineman's
- Class 1 — Square Head
- Class 2 — Round Head
- Class 3 — Square Head with Wire Stripper

Type II — High Leverage Lineman's
- Class 1 — Square Head
- Class 2 — Round Head
- Class 3 — Square Head with Wire Stripper

Type III — Iron Worker's
- Class 1 — Regular Design Square Head
- Class 2 — High Leverage Design Square Head
- Class 3 — High Leverage Design Rounded Head

Type IV — Combination Jaw with Cutters

Type V — Gas

Type VI — Glass

Type VII — Fence, Single Head

Type VIII — Battery

3 NORMATIVE REFERENCES

The following documents form a part of this Standard to the extent specified herein:

ASME B46.1-1995, Surface Texture (Surface Roughness, Waviness, and Lay)

ASME B107.25M-1996, Pliers — Performance Test Methods

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4 REQUIREMENTS

4.1 Illustrations

The illustrations herein are descriptive and not restrictive, and are not intended to preclude the manufacture of pliers which are otherwise in accordance with this Standard. All figures are shown without comfort grips or springs.

4.2 Wire Cutting

All types and classes of pliers with cutting edges covered in this Standard shall cut wire as specified in para. 5.1.1.

4.3 Paper Cutting

Following the wire cut test in para. 5.1.1, all types and classes of pliers with cutting edges (except Types IV and VII) shall pass paper cut test in para. 5.1.2 without any assistance such as bending, pulling, or twisting.

4.4 Materials

The materials used in the manufacture of pliers shall be such as to produce pliers conforming to the requirements herein specified.

4.5 Design

Pliers shall be similar to the figure to which reference is made and shall be proportioned in all parts so as to be strong, durable, and easy to operate. Requirements specified here in accordance with all test specimens shall withstand applicable test procedure requirements without cracking or breaking.

4.6 Handles

4.6.1 Characteristics. Handles of pliers shall be so shaped as to afford a comfortable grip and shall be free from rough edges and sharp corners. Inner handle surfaces shall be well rounded or beveled so as to prevent injury to the hand. Ends of handles shall not touch when jaws are in a closed position. Outer hand gripping sur-

faces shall be smooth, knurled, impressed, or furnished with comfort grips. Handles shall be hardened from 35 to 50 HRC.

4.6.2 Permanent Set. Permanent set of the handles for all types shall not exceed the amount specified in Table 2 for the individual types and sizes of pliers when subjected to the handle load test specified in para. 5.3.

4.6.3 Comfort Grips. When comfort grips are furnished on pliers handles, they shall be made of a polymer of rubber, plastic, or other suitable material capable of withstanding long, hard usage without deteriorating or rubbing off, and meet the solvent resistance test specified in para. 5.4. The comfort grips shall remain permanently attached under normal usage.

WARNING: The comfort grips are not intended to give any degree of protection against electrical shock, and shall not be used on live electrical circuits.

4.7 Joint

Pliers shall be joined in a permanent manner through the use of a fastener. The fastener shall assure uniform smooth movement with minimal looseness and sideplay when opening the jaw as specified in para. 4.8.1 and shall not loosen or require adjustment. Pliers with cutting edges shall have no excessive looseness which would prevent conformance with the cut tests specified in para. 5.1.

The fastener hardness shall be from 25 to 50 HRC for all pliers. When the fastener receives a case hardening treatment in addition to the thorough hardening, a maximum hardness from 60 HRC or equivalent will be permitted.

4.8 Jaws

4.8.1 Jaw Opening. The end of the jaws shall open to the respective minimum jaw opening in a smooth and uniform manner as specified in the applicable tables for the individual types and sizes of pliers. It shall be possible to open the jaws to the minimum jaw opening by the application of a force to the handles of the magnitude specified and in the manner specified in para. 5.5. Beyond the minimum jaw opening, the jaws may be opened at increased loads until the positive stop of the tool is engaged.

4.8.2 Jaw Hardness. The jaw area shall have a hardness from 35 to 65 HRC.

4.8.2.1 Pliers With Cutting Edges. Pliers jaws adjacent to the cutting edge within 0.062 in. (1.57 mm) of the cutting edge shall have a hardness from 55 to 65 HRC.

4.9 Springs

When a spring (or springs) is furnished, it shall be capable of opening the pliers jaws to the minimum jaw opening as specified in the applicable tables for the individual types and sizes of pliers.

4.10 Finish

4.10.1 Appearance. All surfaces shall be essentially free from pits, nodules, burrs, cracks, and other defects which may adversely affect the appearance or performance of the pliers. Polished surfaces shall have a maximum surface roughness of 63 μin. (1.6 μm) with a supplementary rust preventive treatment. R_a arithmetic average, cutoff length of 0.03 in. (0.8 mm). (Refer to ASME B46.1.)

4.10.2 Coating. Coating shall be adherent, smooth, continuous, and free from pits, blisters, nodules, and any other defects that would interfere with their protective value and serviceability.

4.11 Marking

Pliers shall be marked in a plain and permanent manner with the manufacturer's name or with a trademark of such known character that the source of manufacture and country of origin may be readily determined. The marking shall be as permanent as the normal life expectancy of the pliers to which it is applied (provided the surface to which it was applied has not been subjected to a fretting or abrading action) and be capable of withstanding the cleaning procedures normally experienced during its intended use.

5 TESTS

SAFETY WARNING: Many tests required herein are inherently hazardous, and adequate safeguards for personnel and property shall be employed in conducting such tests.

5.1 Cut Test

5.1.1 Steel Wire Cut Test. All pliers with cutting edges shall cut steel wire specified in para. 5.1.1.1. Three cuts shall be made at the joint end of the cutting edges, and shall not exceed the applicable test loads in Table 1 for individual types and sizes of pliers. Wire cut test shall be conducted in accordance with ASME B107.25M para. 5.2.1. Following the completion of the wire cut test, the pliers shall cut bond paper specified in para. 5.1.2.

5.1.1.1 Steel Wire. Steel wire for all cut tests shall have a minimum tensile strength of 180,000 psi (1241 MPa), except Type VII, which shall have a minimum tensile strength of 120,000 psi (827 MPa).

5.1.2 Paper Cut Test. Paper Cut Test shall be conducted in accordance with ASME B107.25M para. 5.2.2.

TABLE 1 STEEL WIRE SIZES AND TEST LOADS FOR WIRE CUT TEST

Nominal Size				Wire Diameter ±0.002 in.	Wire Diameter (±0.05) (mm)	Maximum Test Loads	
Type	in.	(mm)	Number of Cuts			in.-lb	(N·m)
I, II, and III	6	(152)	3	0.080	(2.03)	600	(68)
	7	(178)	3	0.080	(2.03)	875	(99)
	8	(203)	3	0.091	(2.31)	1020	(115)
	9	(229)	3	0.091	(2.31)	1020	(115)
IV	8	(203)	3	0.080	(2.03)	500	(57)
	10½	(267)	3	0.091	(2.31)	500	(57)
VII	10	(254)	3	0.091	(2.31)	1275	(144)

TABLE 2 ALLOWABLE PERMANENT SET FOR PLIERS

Nominal Size			Test Load		Maximum Permanent Set		Thickness of Insert Between Jaws ±0.010 in.	Thickness of Insert Between Jaws (±0.25) (mm)
Type	in.	(mm)	in.-lb	(N·m)	in.	(mm)		
I, II and III	6	(152)	600	(68)	0.03	(0.8)	0.125	(3.18)
	7	(178)	600	(68)	0.03	(0.8)	0.125	(3.18)
	8	(203)	1020	(115)	0.06	(1.5)	0.125	(3.18)
	9	(229)	1020	(115)	0.06	(1.5)	0.125	(3.18)
IV	8	(203)	1275	(144)	0.06	(1.5)	0.125	(3.18)
	10½	(267)	1825	(206)	0.06	(1.5)	0.125	(3.18)
							Dia, in.	Dia, (mm)
V	6	(152)	800	(90)	0.06	(1.5)	0.500	(12.7)
	8	(203)	1020	(115)	0.06	(1.5)	0.750	(19.1)
	10	(254)	1400	(158)	0.06	(1.5)	1.00	(25.4)
VI	8	(203)	750	(85)	0.13	(3.3)	0.437	(11.10)
VII	10	(254)	1275	(144)	0.06	(1.5)	0.125	(3.18)
VIII	7	(178)	200	(23)	0.13	(3.3)	0.50	(12.7)

5.2 Hardness Test

Pliers hardness test shall be conducted in accordance with ASME B107.25M para. 5.3.

5.3 Handle Load Test

Handle load test shall be conducted in accordance with ASME B107.25M para. 5.1 (see Table 2).

5.3.1 Specifications. The pliers shall be tested with the comfort grips removed. The loads shall be applied at the point of maximum handle curvature (normal gripping position). The jaws of the pliers at their outermost end shall grip approximately 0.13 in. (3.2 mm) of a flat steel insert of thickness shown in Table 2, placed between the jaws. The permanent set of the handles shall not exceed the applicable values in Table 2 for individual types and sizes of pliers.

5.4 Solvent Resistance Test

Solvent resistance test for comfort grips on pliers shall be conducted in accordance with ASME B107.25M para. 5.5.1.

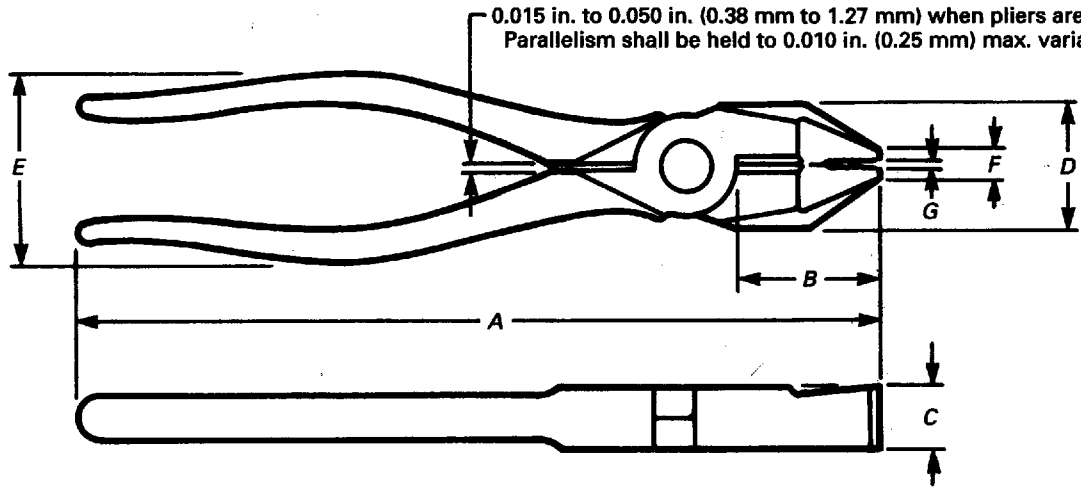

FIG. 1 TYPE I, CLASS 1, LINEMAN'S, SQUARE HEAD

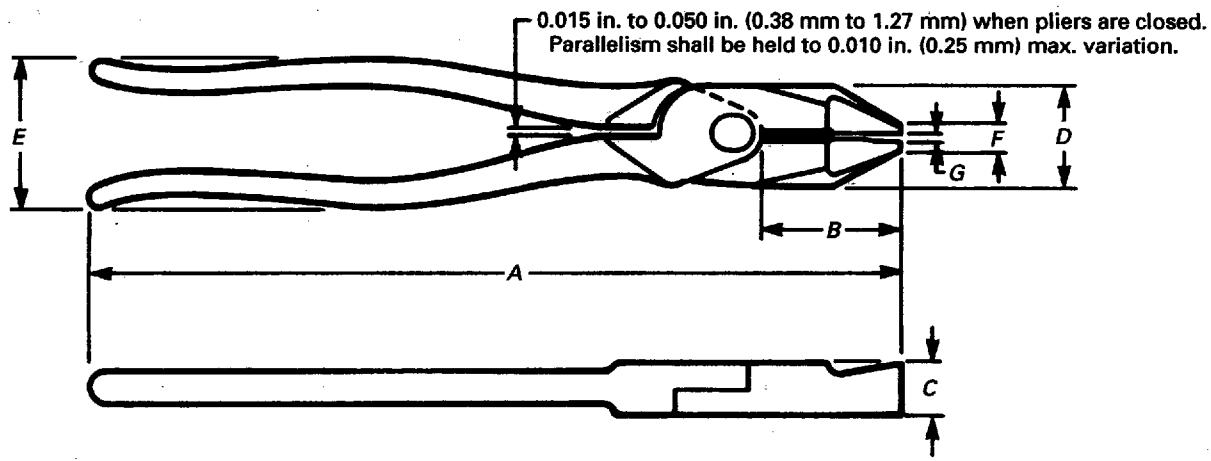

FIG. 2 TYPE II, CLASS 1, HIGH LEVERAGE LINEMAN'S, SQUARE HEAD

5.5 Jaw Opening Test

Jaw opening test shall be conducted in accordance with ASME B107.25M para. 5.4.3.3. The force required to open the jaws of the pliers shall not be greater than 3 lb (1.4 kg) for all pliers.

6 TYPE, CLASS, STYLE, AND PROVISIONS

6.1 Type I, Lineman's Pliers and Type II, High Leverage Lineman's Pliers

Jaws shall have cutting edges on one side near the joint end. The cutting edges shall extend approximately one-half the length of the jaws. The remaining portions of the jaws shall have straight surfaces, scored with a straight or uniform diamond-shaped pattern. There shall be a recess in the jaws behind the side cutter to provide satisfactory cutting clearance. The handles at the joint end may be smooth or with straight serrations for pulling wire or for crushing wire insulation in accordance with the dimensional requirements shown in Figs. 1–6. With the pliers closed, the ends of the jaws shall not touch, but shall leave a clearance which will permit gripping 0.025 in. (0.64 mm) wire firmly on nominal size 6 in. and 7 in. pliers, and 0.040 in. (1.02 mm) wire firmly on nominal size 8 in. and 9 in. pliers.

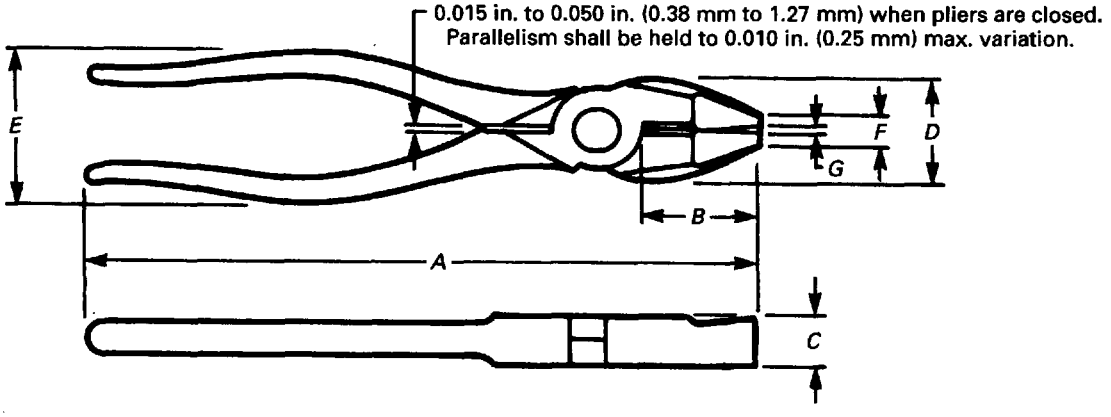

FIG. 3 TYPE I, CLASS 2, LINEMAN'S, ROUND HEAD

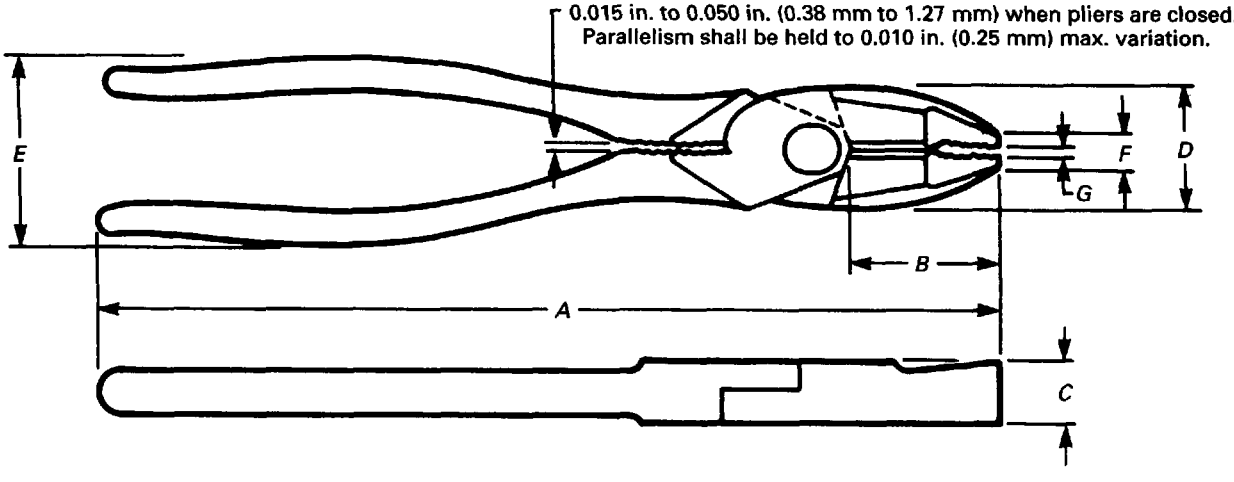

FIG. 4 TYPE II, CLASS 2, HIGH LEVERAGE LINEMAN'S, ROUND HEAD

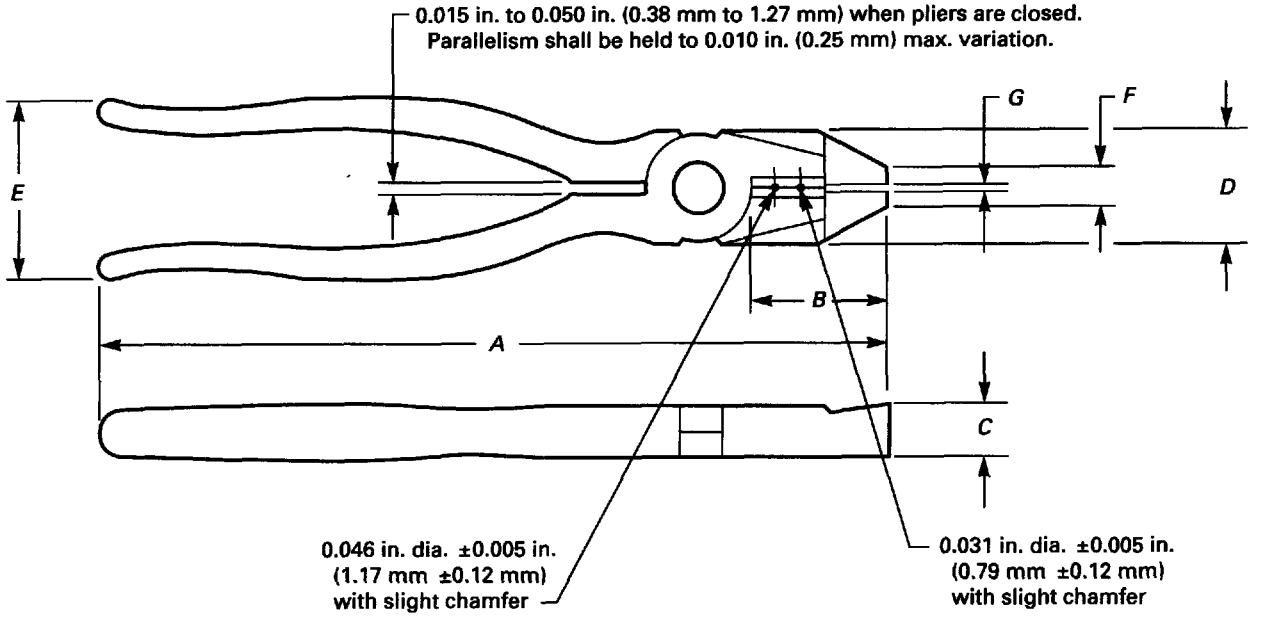

FIG. 5 TYPE I, CLASS 3, LINEMAN'S, SQUARE HEAD WITH WIRE STRIPPER

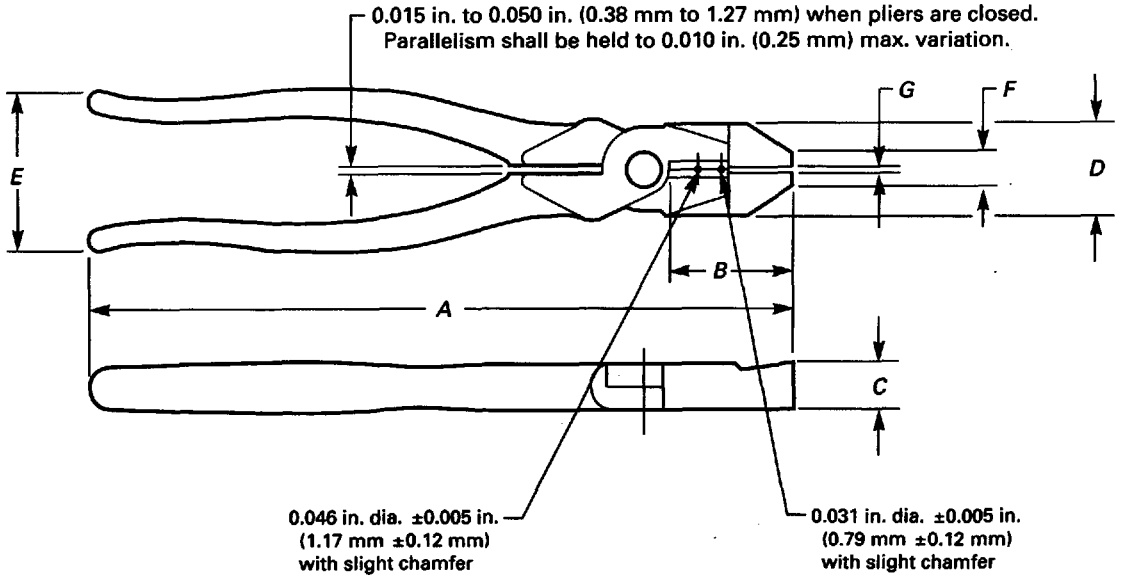

FIG. 6 TYPE II, CLASS 3, HIGH LEVERAGE LINEMAN'S, SQUARE HEAD WITH WIRE STRIPPER

6.1.1 Type I, Class 1, Lineman's, Square Head and Type II, Class 1, High Leverage Lineman's, Square Head. Pliers shall have square heads and shall be similar to Figs. 1 and 2, respectively. They shall conform to dimensions shown in the figures and in Table 3.

6.1.2 Type I, Class 2, Lineman's, Round Head and Type II, Class 2, High Leverage Lineman's, Round Head. Pliers shall have rounded heads and shall be similar to Figs. 3 and 4, respectively. They shall conform to dimensions shown in the figures and in Table 3.

6.1.3 Type I, Class 3, Lineman's, Square Head with Wire Stripper and Type II, Class 3, High Leverage Lineman's, Square Head with Wire Stripper. Pliers shall have squared heads and two insulation stripping holes in the cutting edges; they shall be similar to Figs. 5 and 6, respectively. They shall conform to dimensions shown in the figures and in Table 3.

6.2 Type III Iron Worker's Pliers

Pliers jaws shall have cutting edges on one side near the joint end. The cutting edges shall extend up to a recess in the jaws behind the side cutter to provide satisfactory cutting clearance. The remaining portion of the jaws shall have straight surfaces, scored with a straight or uniform diamond-shaped pattern. The handles at the joint end may be smooth or with straight serrations for pulling wire or for crushing wire insulation. With the pliers closed, the ends of the jaws shall not touch, but shall leave a clearance that will permit gripping 0.025 in. (0.64 mm) wire firmly on nominal size 6 in. and 7 in. pliers, and 0.040 in. (1.02 mm) wire firmly on nominal size 8 in. and 9 in. pliers. One handle end shall be bent so as to prevent the pliers from slipping through the hand during normal usage. Pliers may be supplied with a spring.

6.2.1 Type III, Class 1, Iron Worker's, Regular Design Square Head. Pliers shall be similar to Fig. 7 and shall conform to dimensions shown in figure and in Table 3.

6.2.2 Type III, Class 2, Iron Worker's, High Leverage Design Square Head. Pliers shall be similar to Fig. 8 and shall conform to dimensions shown in figure and in Table 3, (high leverage design for easier cutting).

6.2.3 Type III, Class 3, Iron Worker's, High Leverage Design Rounded Head. Pliers shall be similar to Fig. 9 and shall conform to dimensions shown in figure and in Table 3, (high leverage design for easier cutting and rounded head for easier entry in confined areas).

6.3 Type IV Combination Jaw Pliers With Cutter

Pliers shall conform to the requirements shown in Table 4, and shall be similar to Fig. 10. Pliers shall have combination jaws and at least two wire cutters. Pliers shall be of flat-nose construction. The combination jaws shall have straight or diamond-shaped scored gripping surfaces at the outer end suitable for gripping flat surfaces, and curved gripping surfaces with pointed teeth at the center suitable for securely gripping a 0.25 in. (6.4 mm) diameter rod on 8 inch pliers, and 0.31 in. (7.9 mm) diameter rod on 10 in. pliers, when the outermost end of the jaws is opened not more than 0.10 in. (2.5 mm). The portion of the handles adjoining the joint may be with or without scored faces for gripping wire.

6.4 Type V Gas Pliers

Type V pliers shall conform to the requirements shown in Table 5 and shall be similar to Fig. 11. Jaws of pliers shall be of uniform width, and the outer end or nose shall be rounded. The pliers shall have a central longitudinal grip at the outer end of the jaw, and two different size transverse grips of elliptical shape in the jaw body. The gripping surfaces shall have sharp pointed teeth. The front end of the pliers in conjunction with the longitudinal grip shall be suitable for gripping both flat and round objects. With the outermost ends of the jaws opened not more than 0.18 in. (3.2 mm), the smaller transverse pipe grip shall securely hold a 0.34 in. (8.6 mm) diameter rod, and the larger grip shall securely hold a 0.44 in. (11.2 mm) diameter rod, individually. The larger transverse grip shall have a capacity for holding a rod at least 1.50 in. (38.1 mm) in diameter.

6.5 Type VI Glass Pliers

Type VI pliers shall conform to the requirements shown in Table 6 and shall be similar to Fig. 12. Pliers shall be suitable for firmly grasping plate glass along the full width of the jaw. With the pliers in a closed position, the jaws shall contact each other only at their outermost end. With the jaws of the pliers opened so that the jaw surfaces are parallel, the jaw opening shall not be less than 0.44 in. (11.2 mm) and not more than 0.50 in. (12.7 mm). The gripping surfaces of the jaws shall be smooth and without scoring.

6.6 Type VII Fence Pliers, Single Head

Type VII pliers shall conform to the requirements shown in Table 7 and shall be similar to Fig. 13. Pliers shall be suitable for maintaining and installing wire fence

on metal or wood posts. The head shall have a hammer on one jaw and a starting and pulling point on the other. Pliers shall be provided with two side wire cutters, and two eyes in the end of the head for twisting and splicing wire. The handles shall be provided with a serrated grip adjacent to the joint suitable for wire stretching.

6.7 Type VIII Battery Pliers

Type VIII pliers shall conform to the requirements shown in Table 8 and shall be similar to Fig. 14. The pliers shall be suitable for handling storage battery terminals and connecting lugs. The gripping surfaces shall be deeply scored the full length of the jaws with sharp machined parallel crosswise grooves. The jaws shall open and close in a uniform manner from their minimum opening position to a parallel position. The jaws shall be offset 15 to 40 deg. as measured from the center line of the jaws and the center line of the handles. With the pliers parallel to the longitudinal axis and set in gripping position on a 0.62 in. (15.7 mm) diameter rod, in a manner simulating the gripping of a storage-battery terminal for lifting purposes, the maximum distance between the outsides of the handles at their point of widest separation shall not exceed 4.50 in. (114.3 mm) and the gripping portion shall not exceed 4.0 in. (101.6 mm). (Pliers with a multi-position slip joint which otherwise meets the foregoing requirements are a suitable alternative.)

7 DESIGNATIONS

Purchasers should select the preferred options permitted herein, and include the following information in procurement documents:

(*a*) title, number, and date of this Standard;
(*b*) type, class and style of pliers required;
(*c*) nominal size of pliers required;
(*d*) when comfort grips are required;
(*e*) when a particular type of coating is required;
(*f*) If other than the specified finish or polish is required.
(*g*) When springs are required.

EXAMPLE: Lineman's pliers, Type I, Class 3, 8 in.

TABLE 3 TYPES I, II, AND III LINEMAN'S, HIGH LEVERAGE LINEMAN'S, AND IRON WORKER'S

Nominal Size		A Overall Length ±0.50 (±12.7)		B Jaw Length ±0.25 (±6.4)		C Joint Thickness ±0.125 (±3.2)		D Jaw Width +0.18 −0.12 (+4.6 − 35)		E Handle Span ±0.250 (±6.4)		F Nose Width ±0.062 (±1.6)		G Min. Jaw Opening	
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
6	(152)	6.50	(165)	1.25	(32)	0.50	(13)	0.875	(22)	1.750	(44)	0.219	(6)	0.625	(16)
7	(178)	7.50	(191)	1.25	(32)	0.50	(13)	0.969	(25)	1.750	(44)	0.219	(6)	0.625	(16)
8	(203)	8.50	(216)	1.50	(38)	0.62	(16)	1.281	(33)	1.875	(48)	0.281	(7)	0.875	(22)
9	(229)	9.50	(241)	1.562	(40)	0.625	(16)	1.281	(33)	1.875	(48)	0.281	(7)	0.875	(22)

GENERAL NOTE: A and E dimensions in the table are without comfort grips. Comfort grips shall not increase dimension A by more than 0.25 in. (6.4 mm) and dimension E by more than 0.50 in. (12.7 mm).

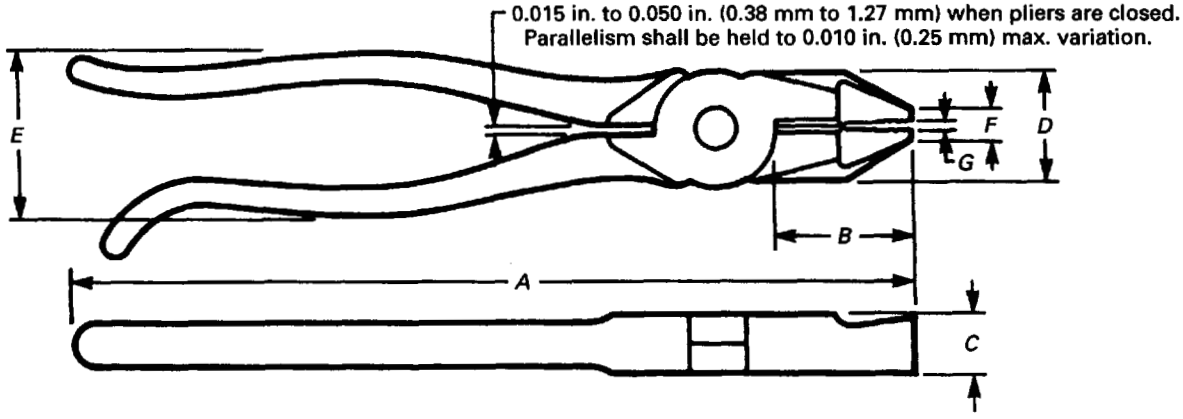

FIG. 7 TYPE III, CLASS 1, IRON WORKER'S, REGULAR DESIGN SQUARE HEAD

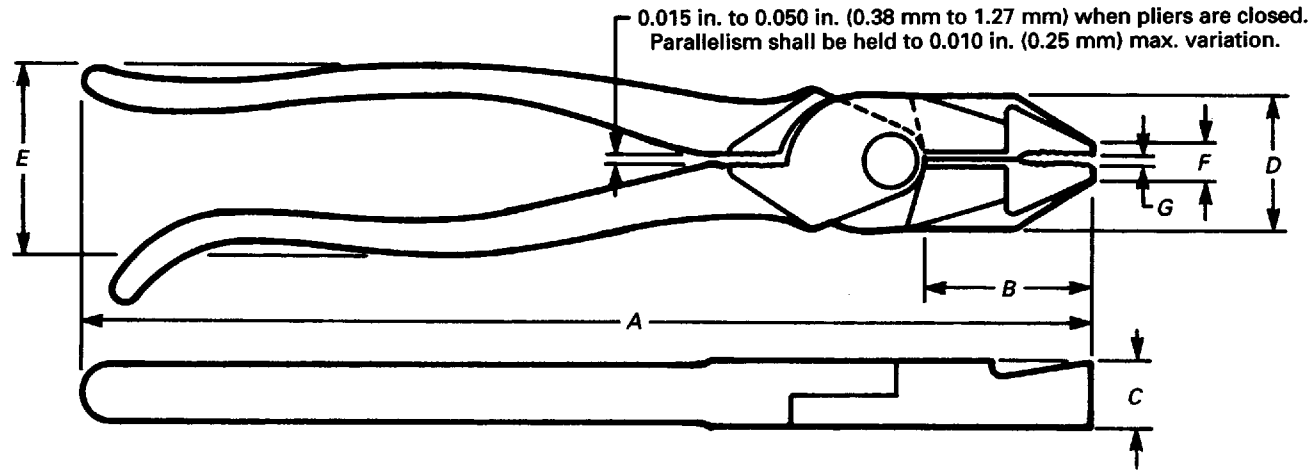

FIG. 8 TYPE III, CLASS 2, IRON WORKER'S, HIGH LEVERAGE DESIGN SQUARE HEAD

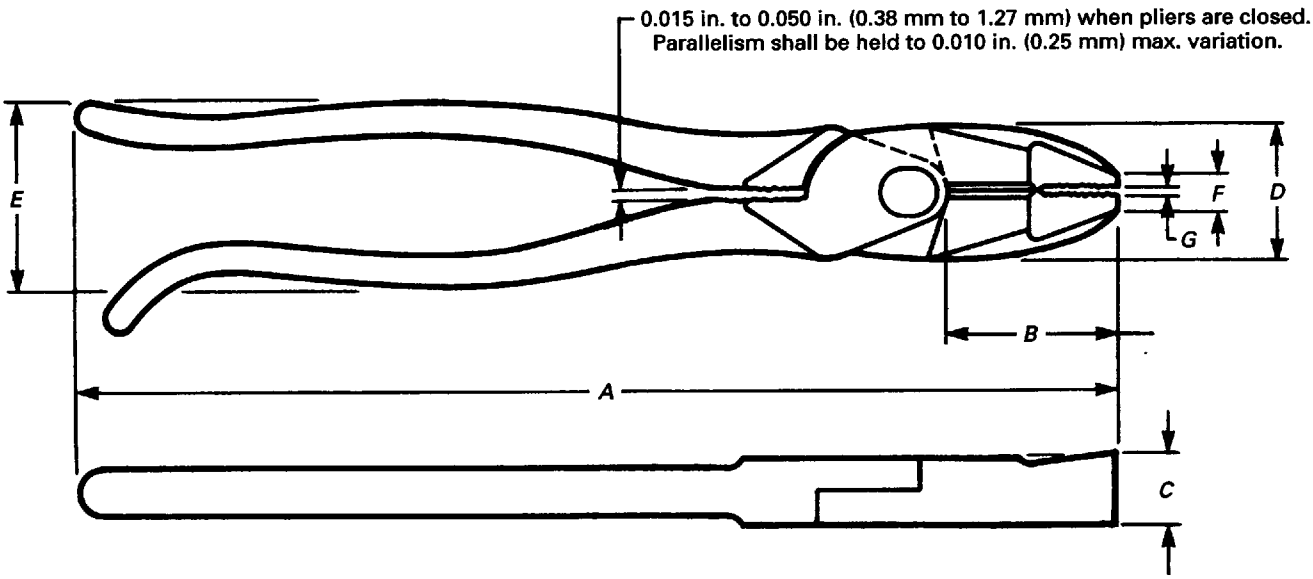

FIG. 9 TYPE III, CLASS 3, IRON WORKER'S, HIGH LEVERAGE DESIGN ROUNDED HEAD

TABLE 4 TYPE IV, COMBINATION JAW WITH CUTTERS

Nominal Size		*A* Overall Length		*B* Jaw Length		*C* Joint Thickness		*D* Jaw Width		*E* Handle Span		*F* Nose Width		*G* Min. Jaw Opening	
		±0.50	(±12.7)	±0.25	(±6.4)	±0.125	(±3.2)	±0.19	(±4.8)	±0.25	(±6.4)	±0.19 −0.07	(±4.8) (−1.8)		
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
8	(203)	8	(203)	1.375	(35)	0.625	(16)	1.187	(30)	1.875	(48)	0.25	(6)	0.875	(22)
10½	(267)	10.50	(267)	1.50	(38)	0.625	(16)	1.375	(35)	1.937	(49)	0.312	(8)	0.875	(22)

GENERAL NOTE: A and E dimensions in the table are without comfort grips. Comfort grips shall not increase dimension A by more than 0.25 in. (6.4 mm) and dimension E by more than 0.50 in. (12.7 mm).

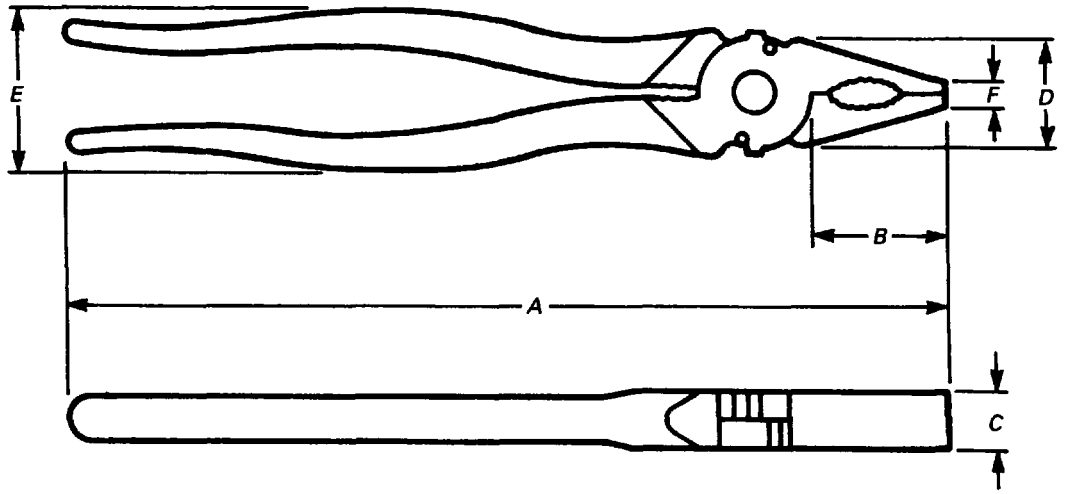

FIG. 10 TYPE IV, COMBINATION JAW WITH CUTTERS

TABLE 5 TYPE V, GAS

Nominal Size		*A* Overall Length ±0.50	(±12.7)	*B* Jaw Length ±0.25	(±6.4)	*C* Joint Thickness ±0.062	(±1.6)	*D* Jaw Width ±0.125	(±3.2)	*E* Handle Span ±0.375	(±9.5)	Min. Jaw Opening	
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
6½	(165)	6.50	(165)	1.062	(27)	0.312	(8)	0.812	(21)	1.875	(48)	0.875	(22)
8½	(216)	8.50	(216)	2	(51)	0.437	(11)	1.062	(27)	1.75	(44)	1.375	(35)
10	(254)	10	(254)	2.125	(54)	0.625	(16)	1.187	(30)	1.50	(38)	1.375	(35)

GENERAL NOTE: A and E dimensions in the table are without comfort grips. Comfort grips shall not increase dimension A by more than 0.25 in. (6.4 mm) and dimension E by more than 0.50 in. (12.7 mm).

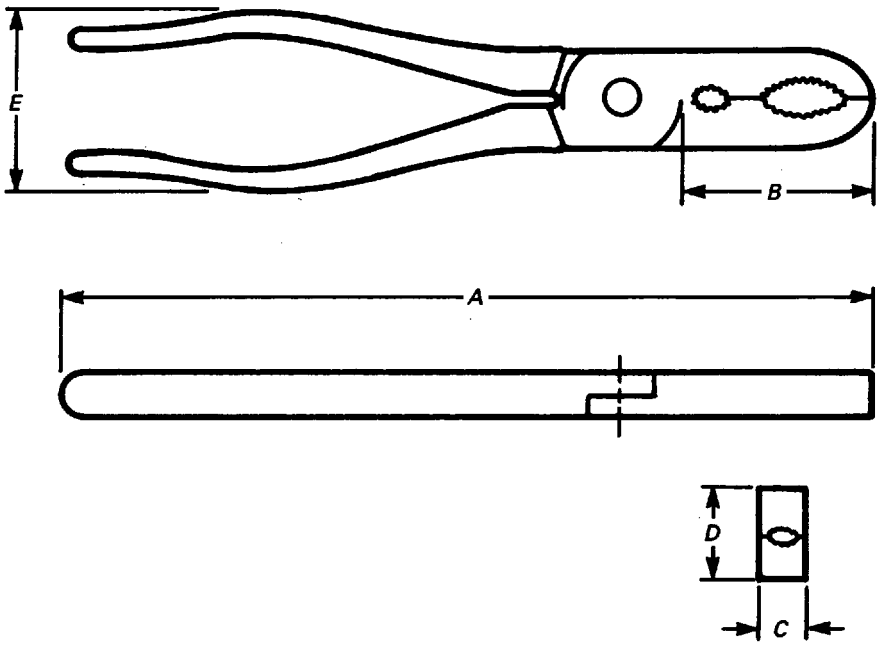

FIG. 11 TYPE V, GAS

TABLE 6 TYPE VI, GLASS

Nominal Size		A Overall Length ±0.50 (±12.7)		B Jaw Length ±0.25 (±6.4)		C Joint Thickness ±0.125 (±3.2)		D Jaw Width ±0.125 (±3.2)		E Handle Span ±0.25 (±6.4)		F Nose Thickness ±0.125 (±3.2)		G Nose Width ±0.25 (±6.4)		Min. Jaw Opening	
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
7	(178)	7	(178)	1.125	(29)	0.50	(13)	1.125	(29)	1.875	(48)	0.25	(6)	0.875	(22)	1	(25)
8	(203)	8	(203)	1.375	(35)	0.50	(13)	1.25	(32)	1.875	(48)	0.3125	(8)	0.875	(22)	1	(25)

GENERAL NOTE: A and E dimensions in the table are without comfort grips. Comfort grips shall not increase dimension A by more than 0.25 inch (6.4 mm) and dimension E by more than 0.50 in. (12.7 mm).

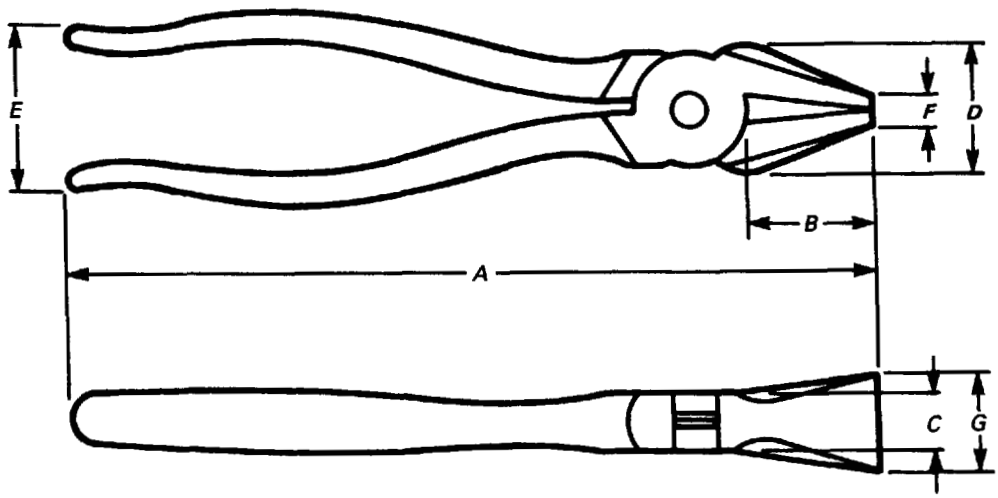

FIG. 12 TYPE VI, GLASS

TABLE 7 TYPE VIII, FENCE, SINGLE HEAD

Nominal Size		*A* Overall Length ±0.50 (±12.7)		*B* Jaw Length ±0.25 (±6.4)		*C* Joint Thickness ±0.062 (±1.6)		*D* Head Width +0.50 (+12.7)		*E* Handle Span ±0.25 (±6.4)	
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
10	(254)	10.375	(264)	0.75	(19)	0.562	(14)	3.25	(83)	2	(51)

GENERAL NOTE: A and E dimensions in the table are without comfort grips. Comfort grips shall not increase dimension A by more than 0.25 in. (6.4 mm) and dimension E by more than 0.50 in. (12.7 mm).

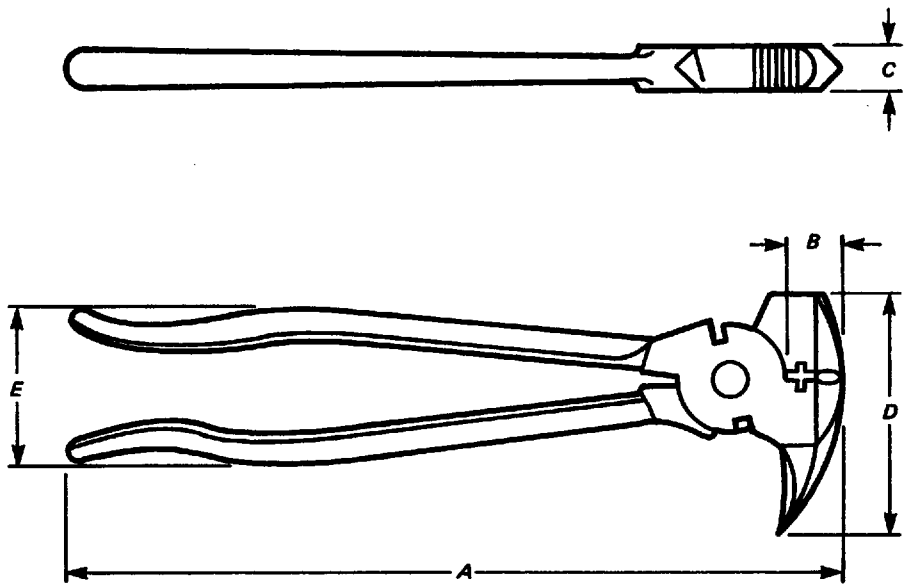

FIG. 13 TYPE VII, FENCE, SINGLE HEAD

TABLE 8 TYPE VIII, BATTERY

Nominal Size		*A* Overall Length ±0.50 (±12.7)		*B* Jaw Length ±0.25 (±6.4)		*C* Jaw Tip Thickness ±0.062 (±1.6)		*D* Joint Thickness ±0.125 (±3.2)		Min. Jaw Opening	
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
7	(178)	7.50	(191)	1.375	(35)	0.219	(5.5)	0.375	(9.5)	0.625	(15.9)

GENERAL NOTE: A dimension in the table is without comfort grips. Comfort grips shall not increase dimension A by more than 0.25 in. (6.4 mm).

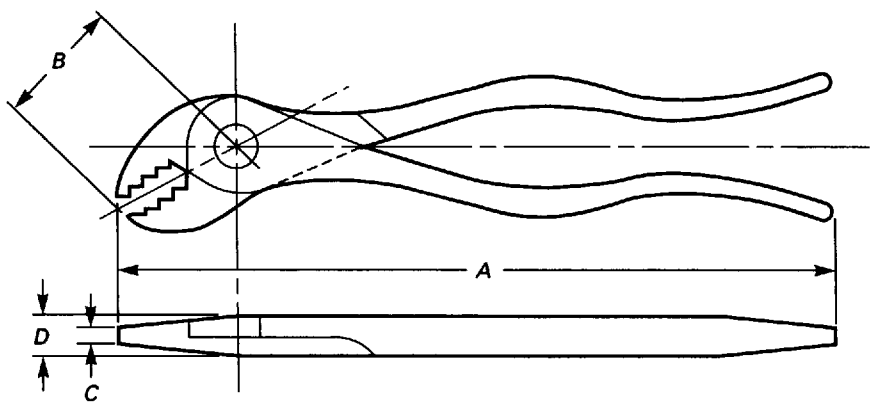

FIG. 14 TYPE VIII, BATTERY

AMERICAN NATIONAL STANDARDS FOR HAND TOOLS

Socket Wrenches, Hand (Inch Series) B107.1-1993
Socket Wrenches, Extensions, Adaptors, and Universal Joints, Power Drive (Impact) (Inch Series) B107.2-1995
Socket Wrenches, Power Drive (Non-Impact) (Inch Series) ..... B107.3-1978(R1991)
Driving and Spindle Ends for Portable Hand, Impact, Air, and Electric Tools (Percussion Tools Excluded) B107.4M-1995
Socket Wrenches, Hand (Metric Series) B107.5M-1994
Wrenches, Box, Angled, Open End, Combination, Flare Nut, and Tappet (Inch Series) B107.6-1994
Adjustable Wrenches B107.8M-1996
Wrenches, Box, Angled, Open End, Combination, Flare Nut, and Tappet (Metric Series) B107.9M-1994
Handles and Attachments for Hand Socket Wrenches — Inch and Metric Series B107.10M-1996
Pliers, Diagonal Cutting, and Nippers, End Cutting B107.11M-1993
Nut Drivers (Spin Type, Screwdriver Grip) (Inch Series) B107.12-1997
Pliers — Long Nose, Long Reach B107.13M-1996
Hand Torque Tools B107.14M-1994
Flat Tip and Phillips Screwdrivers B107.15-1993
Shears (Metal Cutting, Hand) B107.16M-1998
Gages, Wrench Openings, Reference B107.17M-1997
Pliers (Wire Twister) B107.18M-1996
Pliers, Retaining Ring B107.19-1993
Pliers (Lineman's, Iron Worker's, Gas, Glass, Fence, and Battery) B107.20M-1998
Wrench, Crowfoot Attachments B107.21-1998
Electronic Cutters B107.22M-1998
Pliers, Multiple Position, Adjustable B107.23M-1997
Pliers — Performance Test Methods B107.25M-1996
Pliers, Multiple Position (Electrical Connector) B107.27-1996
Electronic Torque Instruments B107.28M-1997
Electronic Tester, Hand Torque Tools B107.29M-1997
Screwdrivers, Cross Tip Gaging B107.31M-1997
Socket Wrenches for Spark Plugs B107.34M-1997
Nut Drivers (Spin Type, Screwdriver Grip) (Metric Series) B107.35M-1997
Electronic Pliers B107.38M-1998
Nail Hammers — Safety Requirements B107.41M-1997
Hatchets: Safety Requirements B107.42M-1997
Wood-Splitting Wedges: Safety Requirements B107.43M-1997
Glaziers' Chisels and Wood Chisels: Safety Requirements B107.44M-1998
Ripping Chisels and Flooring/Electricians' Chisels: Safety Requirements B107.45M-1998
Stud, Screw, and Pipe Extractors: Safety Requirements B107.46M-1998
Metal Chisels: Safety Requirements B107.47M-1998
Metal Punches and Drift Pins: Safety Requirements B107.48M-1998
Nail Sets: Safety Requirements B107.49M-1998
Brick Chisels and Brick Sets: Safety Requirements B107.50M-1998
Nail-Puller Bars: Safety Requirements B107.52M-1998
Ball Peen Hammers: Safety Requirements B107.53M-1998
Axes: Safety Requirements B107.55M-1998

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