INTERPLANT STANDARD - STEEL INDUSTRY		
IPSS	**SPECIFICATION FOR COMPRESSION TYPE TERMINAL ENDS AND IN-LINE CONNECTORS FOR CONDUCTORS OF INSULATED CABLES** (First Revision)	**IPSS:1-10-033-11**
	Based on IS 8308 & IS 8309	Formerly : IPSS:1-10-033-93

0. FOREWORD

0.1 This Inter Plant Standard has been prepared by the Standards Committee on Electrical Components & Equipment, IPSS 1:10 with the active participation of the representatives of the steel plants reputed consulting organizations and established manufacturers in this field and was adopted in May 2011.

0.2 Inter Plant Standards for steel industry primarily aim at achieving rationalization and unification of parts and assemblies used in steel plant equipment and accessories, and provide guidance in indenting stores or equipment (or while placing orders for additional requirements) by individual steel plants. For exercising effective control on inventories, it is advisable to select a fewer number of sizes (or types) from among those mentioned in this standard, for the purpose of company standards of individual steel plants. It is not desirable to make deviations in technical requirements.

1. SCOPE

1.1 This Interplant Standard covers the requirements of specification for compression type terminal ends and in-line connectors for conductors (both aluminium & copper) of insulated cables for rated voltages up to and including 11 kV. It is generally based on IS 8308 : 1993 `Specification for compression type tubular in-line connectors for aluminium conductors of insulated cables', and IS 8309 : 1993 `Specification for compression type tubular terminal ends for aluminium conductors of insulated cables'. Hence the requirements of these Indian standards regarding terminology, materials, finish, dimensions and tests are applicable in general. Other technical aspects for meeting the specific needs of steel industry are covered in this standard. It shall also cover pin type lugs.

1.2 This standard does not cover soldering and welding type terminal ends for conductors of insulated cables.

2. TERMINOLOGY

2.1 **Terminal End** – A connecting device with barrel accommodating respective conductor size of electrical cable and which has a fixing arrangement of termination by means of a bolt fixing or pin insertion in tunnel type terminal blocks and screwing.

2.2 **Ring Tongue Type Terminal End** – A stamped terminal end which is blanked out of a copper sheet in the form of an open type into which the cable is to be inserted before crimping.

2.3 **Tubular Type Terminal End** – A terminal end made out of Copper or aluminum tube into which the conductor can be inserted and then crimped and which is of suitable shape externally for making connection between the cable and the other parts of the circuit by means of screw bolt or stud.

2.4 **In-line Connector** – A connecting device accommodating two electrical conductors to form straight joint.

3. MATERIAL

3.1 The terminal ends shall be made from pure high grade electrolytically refined annealed copper sheets or tubes according to IS 1897: 1983 'Specification for copper strip for electrical purposes (second revision)' or aluminum of grade 1950 IE of IS 5082:1981 'Specification for wrought aluminum and aluminum alloy bars, rods, tubes and sections for electrical purposes (first revision)'.

4. CONSTRUCTION

4.1 Terminal ends shall be Heavy Duty Type. For 600 A and above, dimension 'B' shall be adequate for 3 crimps. Where specified 2 holes shall be provided.

5. FINISH

5.1 Copper terminal ends shall be electrotinned.

5.2 The inside of the barrel shall either be suitably roughened through out the crimping length of terminal end or provided with a suitable grease based compound with abrasive action.

5.3 Edges and corners shall be free from burrs and sharp edges

5.4 The faces on each side of the palm shall be parallel and flat to provide proper surface contact.

6. DIMENSIONS

6.1 Dimensions of terminal ends shall be as given in Tables 1 to 8 (Reference Fig 1 to 8).

7. MARKING

7.1 Following information shall be marked on each terminal end :

a) Size of conductor.

b) Material of the terminal end

c) Material of conductor to be used. (Whether for use with aluminum or copper conductor)

d) Manufacturer's identification

8. RECOMMENDED SAMPLING PLAN

8.1 The sampling shall be carried out according to the sampling plan given at *Appendix-A*.

9. TESTS

9.1 **Visual Examination and Dimensional Check-up** – Check for dimensions given in relevant tables and also examine for freedom from flaws, rust, crevices, cracks and other defects harmful for the joint.

9.2 **Flattening Test** – Place the test piece between two plane, parallel rigid platens extending over a length not more than 75% of the barrel. Apply a gradually increasing load until the internal surfaces are in contact over at least half of the internal width of the flattened test piece. At the end, observe if there is any crack. Reject if any crack is seen.

NOTE : In case of dispute, the rate of movement of the platen shall not exceed 25 mm/min.

9.3 **Type Test**

9.3.1 *Electrical Resistance Test* - The electrical resistance shall be measured on the terminal end joined to the conductor or cable with compression by voltage drop method as shows in *Fig.9*. A suitable current as per the size of the conductor or cable shall be passed. The measurement should be taken when the temperature of the terminal end under test has reached a steady value. The electrical resistance, as determined, must not exceed the electrical resistance of the conductor or cable of a length equal to the length of the terminal end.

9.3.2 *Temperature Test* – In the temperature test as shown in *Fig.10,* an alternating current corresponding to the current carrying capacity of the conductor or cable used shall be passed through the sample, with which the electrical resistance has been measured until the temperatures of all parts of the sample have become constant. The temperature-rise of jointed terminal ends measured with a thermoelectric thermometer or a long time recording thermometer must not exceed the temperature-rise in the conductor or the cable.

NOTE: i) The final temperature shall be recognized as constant when the values of temperature measured three times in 10 minutes show no variation.

ii) The temperature of the conductor or cable shall be measured at such points which have no influence on the temperature of the terminal end under test.

iii) By this method, the temperature tests of two terminal ends may be performed.

TABLE-1 COMPRESSION TYPE COPPER RING TONGUE TERMINAL ENDS FOR COPPER OR ALUMINIUM CONDUCTORS

(Ref Fig 1)

All dimensions in millimetres

Designation	Dia E ±0.1	Dia A	Dia C	D	F	B	G	J
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IPSS-CCR-1.5	3.2,3.7	1.5	3.2	6	0.8	5	3	14
	4.2	1.6	3.2	8	0.8	5	4	16
	5.2	1.6	3.2	8	0.8	5	4	16
IPSS-CCR-2.5	3.2,3.7	2.3	3.9	6	0.8	5	3	14
	4.2	2.3	3.9	8	0.8	5	4	16
	5.2	2.3	3.9	10	0.8	5	6	18
	6.4	2.3	3.9	10	0.8	5	6	18
IPSS-CCR-4/6	4.2	3.5	5.5	8	1.0	6	4	17
	5.2,6.4	3.5	5.5	10	1.0	6	6	19
	6.4,8.2	3.5	5.5	12	1.0	6	6	22
	8.2	3.5	5.5	14	1.0	6	7	25
IPSS-CCR-10	5.4	4.3	6.3	10	1.0	8	5	22
	6.4	4.3	6.3	12	1.0	8	6	22
	8.2	4.3	6.3	16	1.0	8	8	30
IPSS-CCR-16	5.2	5.6	8.0	12	1.2	10	6	
	6.4	5.6	8.0	16	1.2	10	6	
	8.2	5.6	8.0	18	1.2	10	8	
	10.2	5.6	8.0	18	1.2	10	9	
IPSS-CCR-25	6.4	7.5	11.1	12	1.8	12	6.0	31
	8.2	7.5	11.1	16	1.8	12	8.0	33
	10.2	7.5	11.1	18	1.8	12	9.0	34
	10.2	7.5	11.1	22	1.8	12	11.0	42
IPSS-CCR-35	6.4	9.0	12.6	16	1.8	12	8	31
	8.2	9.0	12.6	18	1.8	12	9	36
	10.2	9.0	12.6	22	1.8	12	11	42
	12.7	9.0	12.6	22	1.8	12	11	42
IPSS-CCR-50	8.2	10.5	14.1	18	1.8	16	9	43
	10.2	10.5	14.1	22	1.8	16	11	43
	12.7	10.5	14.1	24	1.8	16	12	48
IPSS-CCR-70	10.2	12.0	16.0	22	2.0	18	11	47
	12.7	12.0	16.0	24	2.0	18	12	48
	16.2	12.0	16.0	28	2.0	18	14	54

(Contd)

TABLE-1 (Contd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IPSS-CCR-95	10.2	13.5	18.1	22	2.3	20	11	46
	12.7	13.5	18.1	24	2.3	20	12	50
	16.7	13.5	18.1	28	2.3	20	14	58
IPSS-CCR-120	12.7	15.0	20.2	26	2.6	22	13	52
	16.2	15.0	20.2	32	2.6	22	18	64
IPSS-CCR-150	12.7	16.5	23.7	34	3.6	24	17	66
	16.2	16.5	23.7	34	3.6	24	17	66
	20.3	16.5	23.7	40	3.6	24	20	74

DESIGNATION - IPSS : INTERPLANT STANDARD - STEEL INDUSTRY
C : COMPRESSION TYPE JOINTING METHOD
C : TERMINAL END MATERIAL - COPPER
R : RING TONGUE

TABLE-2 COMPRESSION TYPE ALUMINIUM TUBULAR TERMINAL ENDS FOR CRIMPING TO ALUMINIUM CONDUCTORS

(Ref Fig 2)

All dimensions in millimetres

Designation	Dia E ±0.1	Dia E* ±0.1	Dia A	Dia C	D	F	B	H	G	J
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
IPSS-CA -2.5	3.2	-	1.9-2.1	5.4-5.6	6.3-6.9	3.3-3.7	7	4	4	18
IPSS-CAA-2.5	3.2	3.7	2.5-2.7	5.4-5.6	6.7-7.3	2.7-3.1	7	4	4	18
IPSS-CAA-4	3.2	4.2	2.8-3.0	5.4-5.6	6.9-7.5	2.4-2.8	7	4	4	18
IPSS-CAA-6	3.2	5.2	3.4-3.6	5.4-5.6	7.2-7.8	1.8-2.2	7	7	6	24
IPSS-CA -10	4.2	5.2	3.7-3.9	6.1-6.3	8.1-8.7	2.2-2.6	7	9	8	28
IPSS-CAA-10	4.2	6.4	4.3-4.5	7.1-7.3	9.4-10.9	2.6-3.0	9	9	8	30
IPSS-CAA-16	5.2	8.2	5.3-5.5	8.2-8.4	11.1-11.7	2.7-3.1	13	11	9	37
IPSS-CAA-25	6.4	10.2	6.8-7.1	9.6-9.8	13.4-14.0	2.5-2.9	16	11	10	44
IPSS-CAA-35	6.4	10.2	7.8-8.1	10.7-10.9	15.1-15.7	2.6-3.0	18	11	11	47
IPSS-CAA-50	6.4	10.2	9.1-9.4	12.9-13.11	8.0-18.6	3.4-4.0	22	13	11	54
IPSS-CAA-70	8.2	12.7	11.1-11.4	15.4-15.6	21.7-22.3	3.9-4.5	26	13	13	60
IPSS-CAA-95	10.2	12.7	13.0-13.3	17.3-17.5	24.6-25.2	3.9-4.5	28	14	14	64
IPSS-CAA-120	10.2	16.2	14.5-14.9	19.5-19.7	27.7-38.3	4.5-5.1	32	15	15	73
IPSS-CAA-150	10.2	16.2	16.2-16.6	21.4-21.6	30.6-31.2	4.7-5.3	34	17	17	79
IPSS-CAA-185	10.2	16.3	18.2-18.6	23.9-24.1	34.2-35.0	5.0-6.0	36	18	18	84

TABLE-2 (Contd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
IPSS-CAA-240	12.7	20.3	20.7-21.3	27.9-28.2	39.6-40.6	6.3-7.3	44	22	22	102
IPSS-CAA-300	16.2	20.3	23.5-24.1	30.9-31.2	44.2-45.2	6.5-7.5	47	27	27	115
IPSS-CAA-400	16.2	20.3	26.5-27.1	35.4-35.7	50.5-51.5	7.8-9.2	56	31	30	130
IPSS-CAA-500	20.3	-	29.5-30.2	40.9-41.2	57.4-58.8	10.1-11.9	60	33	32	140
IPSS-CAA-630	20.3	-	34.5-35.2	45.9-46.2	65.4-66.0	10.1-11.9	59	35	34	154
IPSS-CAA-800	-	-	38.5-39.2	50.9-51.2	72.5-74.1	11.1-12.9	77	39	39	180
IPSS-CAA-1000	-	-	43.0-43.7	56.8-57.2	80.9-82.9	12.5-14.5	100	45	45	220

DESIGNATION: IPSS STANDS FOR INTERPLANT STANDARD-STEEL INDUSTRY,

`C' - stands for jointing method i.e. Compression;

Second letter A' for terminal and material aluminium;

Third letter `A' for applicable conductor material, i.e. Aluminium (`a' for single strand conductor and `A' for multistrand conductor, where depending upon conductor construction, for a particular conductor size two terminal ends are specified); and

Numeral separated by hyphen from the third letter stands for Nominal conductor size in mm^2.

NOTE: If the purchaser desires to have a larger stud hole than the standard hole specified in col. 2, stud hole size shall be chosen from 3.7, 4.2, 6.4, 8.2, 10.2, 12.7, 16.2 and 20.3 mm subject to a maximum as given in col.3.

TABLE-3 COMPRESSION TYPE COPPER TUBULAR TERMINAL ENDS FOR COPPER OR ALUMINIUM CONDUCTORS

(Ref Fig 3)

All dimensions in millimetres

Designation	Dia E ±0.1	Dia A	Dia C	D	F	B	H	G	J
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
IPSS-CCT-2.5	5.2	2.0	3.7	9	1.0	7	5	5	20
IPSS-CCT-4	6.5	3.1	4.8	11	1.0	7	6	6	22
IPSS-CCT-6	6.5	3.8	5.5	11	1.1	9	6	6	24
IPSS-CCT-10	6.5	4.4	6.2	11	1.3	9	6	6	24
IPSS-CCT-16 (i)	6.5	5.3	7.1	11	1.6	12	8	6	30
IPSS-CCT-16 (ii)	6.5	5.3	7.1	11	1.6	16	8	6	34
IPSS-CCT-25 (i)	8.2	7.0	9.0	13	2.0	12	12	8	37
IPSS-CCT-25 (ii)	8.2	7.0	9.0	13	2.0	16	12	8	41
IPSS-CCT-35 (i)	8.2	8.0	10.0	15	2.0	12	12	8	37
IPSS-CCT-35 (ii)	8.2	8.0	10.0	15	2.6	20	14	9	48
IPSS-CCT-50 (i)	8.2	9.2	12.2	17	3.0	26	16	10	59
IPSS-CCT-50 (ii)	10.2	9.2	12.2	17	3.0	26	16	10	59
IPSS-CCT-70 (i)	10.2	11.5	15.0	20	3.5	28	19	12	66
IPSS-CCT-70 (ii)	12.7	11.5	15.0	20	3.5	28	19	12	66
IPSS-CCT-95	12.7	12.8	17.0	24	4.2	32	20	12	74
IPSS-CCT-120 (i)	12.7	14.8	19.6	28	4.8	35	23	14	82
IPSS-CCT-120 (ii)	16.2	14.8	19.6	28	4.8	35	23	14	82
IPSS-CCT-150 (i)	12.7	16.0	21.2	30	5.2	38	24	14	86
IPSS-CCT-150 (ii)	16.2	16.0	21.2	30	5.2	38	24	14	86
IPSS-CCT-185 (i)	12.7	18.0	24.0	34	6.0	43	23	17	95
IPSS-CCT-185 (ii)	16.2	18.0	24.0	34	6.0	43	23	17	95
IPSS-CCT-240 (i)	16.2	22.0	28.0	40	6.0	50	30	20	112
IPSS-CCT-240 (ii)	20.3	22.0	28.0	40	6.0	50	30	20	112
IPSS-CCT-300 (i)	16.2	24.0	28.7	42	6.0	55	30	20	117
IPSS-CCT-300 (ii)	20.3	24.0	28.7	42	6.0	55	30	20	117
IPSS-CCT-400	20.3	28.0	33.2	49	7.0	60	30	20	122
IPSS-CCT-500	20.3	30.0	36.0	53	8.0	65	30	20	127
IPSS-CCT-630	20.3	35.0	41.5	61	10.0	68	33	22	133
IPSS-CCT-800	-	39.0	46.3	67	12.0	70	35	25	148
IPSS-CCT-1000	-	43.0	53.8	76	12.0	90	40	30	172

DESIGNATION: IPSS - INTERPLANT STANDARD-STEEL INDUSTRY
C - COMPRESSION TYPE JOINTING METHOD
C - TERMINAL END MATERIAL-COPPER
T - TUBULAR TERMINAL END

TABLE-4 COPPER PIN TYPE TERMINAL ENDS FOR ALUMINIUM OR COPPER CONDUCTORS

(Ref Fig 4)

All dimensions in millimetres

Designation (1)	Dia A (2)	Dia C (3)	D (4)	F (5)	B (6)	G+H (7)	J (8)
IPSS CCP 2.5	2.3	3.9	3.1	0.8	5	10	17
IPSS CCP 4	2.9	4.9	2.7	1.0	6	10	20
IPSS CCP 6	3.6	5.6	2.7	1.0	6	10	20
IPSS CCP 10	4.5	6.5	4.3	1.1	8	12	22

DESIGNATION:

IPSS - INTERPLANT STANDARD - STEEL INDUSTRY
C - COMPRESSION TYPE JOINTING METHOD
C - TERMINAL END MATERIAL-COPPER
P - PIN TYPE TERMINAL END

TABLE-5 COMPRESSION TYPE ALUMINIUM TUBULAR IN-LINE CONNECTOR FOR CRIMPING TO ALUMINIUM OR COPPER CONDUCTORS

(Ref Fig.5)

All dimensions in millimetres

Designation (1)	Dia A (2)	Dia C (3)	J (4)
IPSS CCL 2.5	1.9-2.1	5.4-5.6	15-17
IPSS CCL 2.5	2.5-2.7	5.4-5.6	15-17
IPSS CCL 4	2.8-3.0	5.4-5.6	15-17
IPSS CCL 6	3.4-3.6	5.4-5.6	19-21
IPSS CCL 10	3.7-3.9	6.1-6.3	19-21
IPSS CCL 10	4.3-4.5	7.1-7.3	19-21
IPSS CCL 16	5.3-5.5	8.2-8.4	25-27
IPSS CCL 25	6.8-7.1	9.6-9.8	33-37
IPSS CCL 35	7.8-8.1	10.7-10.9	38-42
IPSS CCL 50	9.1-9.4	12.9-13.1	43-47
IPSS CCL 70	11.1-11.4	15.4-15.6	52-58
IPSS CCL 95	13.0-13.3	17.3-17.5	57-63
IPSS CCL 120	14.5-14.9	19.5-19.7	62-68
IPSS CCL 150	16.2-16.6	21.4-21.6	66-74
IPSS CCL 185	18.2-18.6	23.9-24.1	71-79
IPSS CCL 240	20.7-21.3	27.9-28.2	85-95
IPSS CCL 300	23.5-24.1	30.9-31.2	95-105
IPSS CCL 400	26.5-27.1	35.4-35.7	109-121
IPSS CCL 500	29.5-30.2	40.9-41.2	110-131
IPSS CCL 630	34.5-35.2	45.9-46.2	133-147
IPSS CCL 800	38.5-39.2	50.9-51.2	152-168
IPSS CCL 1000	43.0-43.7	56.8-57.2	200-220

DESIGNATION: IPSS stands for INTERPLANT STANDARD - STEEL INDUSTRY,

`C' stands for jointing method i.e., Compression;

Second letter `C' for applicable conductor material i.e., Aluminium or copper; and

`L' stands for Tubular In-line connector.

TABLE-6 COPPER RING TONGUE FORK TYPE TERMINAL END FOR SOLDERLESS CRIMPING TO ALUMINIUM OR COPPER CONDUCTORS

(Ref Fig 6)

All dimensions in millimetres

Designation (1)	Dia A (2)	Dia C (3)	D (4)	F (5)	B (6)	J (7)	E (8)
IPSS CC RF 1.5	1.6	3.2	6	0.8	5	14	3.2, 3.7, 4.2
	1.6	3.2	8	0.8	5	16	3.2, 3.7, 4.2
	1.6	3.2	10	0.8	5	18	5.2
IPSS CC RF 2.5	2.3	3.9	6	0.8	5	14	3.2, 3.7
	2.3	3.9	8	0.8	5	16	3.2, 4.2
	2.3	3.9	10	0.8	5	18	5.2, 6.4
IPSS CC RF 4.6	3.5	5.5	8	1.0	6	17	4.2, 5.2
	3.5	5.5	10	1.6	6	19	5.2, 6.4
	3.5	5.5	12	1.0	6	22	6.4, 8.2
	3.5	5.5	14	1.0	6	25	6.4, 8.2, 10.2
IPSS CC RF 10	4.3	6.3	10	1.0	8	20	4.2, 5.2, 6.4
	4.3	6.3	12	1.0	8	23	6.4, 8.2
	4.3	6.3	16	1.0	8	27	8.2
	4.3	6.3	18	1.0	8	30	8.2, 10.2
IPSS CC RF 16	5.6	8.0	12	1.2	10	26	5.2, 6.4
	5.6	8.0	16	1.2	10	30	8.2, 10.2
	5.6	8.0	18	1.2	10	33	10.2, 12.7

DESIGNATION: IPSS - INTERPLANT STANDARD - STEEL INDUSTRY
C - COMPRESSION TYPE JOINTING METHOD
C - TERMINAL END MATERIAL-COPPER
RF - RING FORK

TABLE-7 COPPER RECTANGULAR FORK TYPE TERMINAL ENDS FOR SOLDERLESS CRIMPING TO COPPER/ALUMINIUM CONDUCTORS

(Ref Fig 7)

All dimensions in millimetres

Designation (1)	Dia A (2)	Dia C (3)	D (4)	F (5)	B (6)	J (7)	E (8)
IPSS CC F 1.0	1.2	2.4	6	0.6	5	15.5	2.2, 2.6, 3.2 3.7
IPSS CC F 1.5	1.6	3.2	6	0.8	5	15.5	2.2, 2.6, 3.2 3.7,4.2
	1.6	3.2	6	0.8	5	17.5	2.6, 3.2, 4.2 5.2
IPSS CC F 4/6	3.5	5.5	8	1.0	6	18	4.2, 5.2
	3.5	5.5	10	1.0	6	20	4.2, 5.2, 6.4
	3.5	5.5	12	1.0	6	24	5.2, 6.4, 8.2
	3.5	5.5	14	1.0	6	27	6.4, 8.2,10.2
IPSS CC F 10	4.3	6.3	8	1.0	8	16	4.2
	4.3	6.3	10	1.0	8	22	4.2, 5.2, 6.4
	4.3	6.3	12	1.0	8	22	5.2, 6.4, 8.2
	4.3	6.3		1.0	8	30	8.2, 10.2
IPSS CC F 16	5.6	8.0	12	1.2	10	26	5.2, 6.4, 8.2
	5.6	8.0	16	1.2	10	30	5.2, 6.4, 8.2 10.2
	5.6	8.0	18	1.2	10	33	6.4, 8.2,12.7

DESIGNATION: IPSS - INTERPLANT STANDARD - STEEL INDUSTRY
C - COMPRESSION TYPE JOINTING METHOD
C - TERMINAL END MATERIAL-COPPER
F - RECTANGULAR FORK

TABLE-8 REDUCER TYPE TERMINAL ENDS FOR ALUMINIUM OR COPPER CONDUCTOR SUITABLE FOR FUSE UNITS AND ICTP SWITCHES

(Ref Fig 8)

All dimensions in millimeters

Designation (1)	Dia A (2)	Dia C (3)	D (4)	D_1 (5)	B (6)	K (7)	G+H (8)	J (9)
IPSS CC S 16	5.3	7.1	4.0	4.0	12	5	13	30
IPSS CC S 25	7.0	9.0	7.5	6.5	12	5	20	37
IPSS CC S 35	8.0	10.0	7.5	6.5	12	5	20	37
IPSS CC S 50	9.2	11.2	7.5	6.5	16	5	19	40
IPSS CC S 70	11.5	13.8	11.5	10.5	18	5	25	48
IPSS CC S 95	12.8	15.6	11.5	10.5	20	6	25	51
IPSS CC S120	14.8	17.8	11.5	10.5	22		25	53
IPSS CC S150	16.0	19.6	15.6	14.0	26		30	62
IPSS CC S185	18.0	22.0	16.0	15.0	32		30	68
IPSS CC S300	24.0	28.7	23.0	22.0	42		35	83
IPSS CC S400	28.0	33.2	26.0	25.0	49		38	92
IPSS CC S630	35.0	41.5	33.0	30.0	61		92	108

DESIGNATION: IPSS - INTERPLANT STANDARD - STEEL INDUSTRY
C - COMPRESSION TYPE JOINTING METHOD
C - TERMINAL END MATERIAL-COPPER
S - SWITCHES

APPENDIX-A

(item 8.1)

RECOMMENDED SAMPLING PLAN FOR TERMINAL ENDS/IN-LINE CONNECTORS (Clause 7)

A-1. LOT

In any consignment, the terminal ends/in-line connectors of the same type manufactured by the same factory during the same period shall be grouped together to constitute a lot.

A-2 SCALE OF SAMPLING

From each lot a certain number of terminal ends/in-line connectors shall be selected at random and subjected to tests (see clause 9). Any terminal end/in-line connector failing to satisfy the appropriate requirement specified in the specification shall be considered as defective.

A-2.1 The number of terminal ends/in-line connectors to be selected depends on col 1 and 2 of Table 9 given below. The terminal ends/in-line connectors shall be selected at random.

TABLE-9 SCALE OF SAMPLING
(Clause A-2.1)

Lot Size (N) (1)	First Stage n (2)	Second Stage n (3)	2n (4)	C_1 (5)	C_2 (6)	C_3 (7)
Up to 300	8	8	16	0	2	2
301 to 500	13	13	26	0	3	4
501 to 1000	20	20	40	1	4	5
1001 and above	32	32	64	2	5	7

A-2.1.1 In order to randomness for selection, random number Tables shall be used (see IS 4905:1968 `Methods for random sampling').

A-3 NUMBER OF TESTS AND CRITERIA FOR ACCEPTANCES

Each of the in-line connectors selected in the first stage in accordance with col 2 of Table-9 shall be tested for visual examination, dimensional check up and flattening test (see clause 9). If the number of defectives is less than or equal to C_1, the lot shall be considered as conforming to the requirements of the standard. If the number of defectives is equal to or greater than C_2, the lot shall be considered as not conforming to the requirements of the standard. If the number of defective in the first stage is between C_1 and C_2, a further sample of same size as taken in the first stage shall be taken and tested. If the number of defectives in the two samples combined is less than C_3, the lot shall be considered as conforming to the requirements of the test, otherwise not.

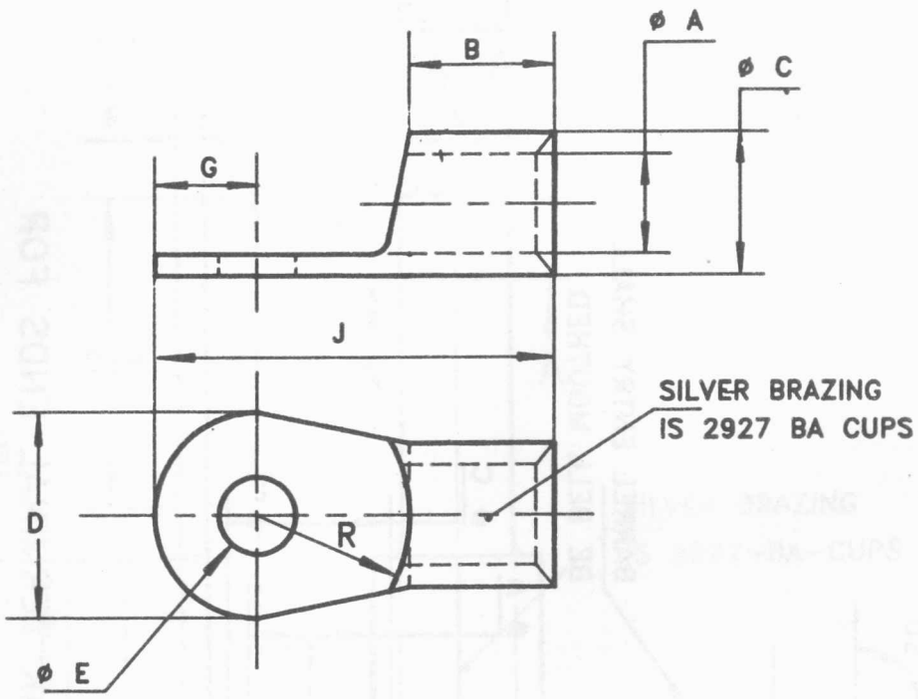

FIG. 1 (see Table 1)

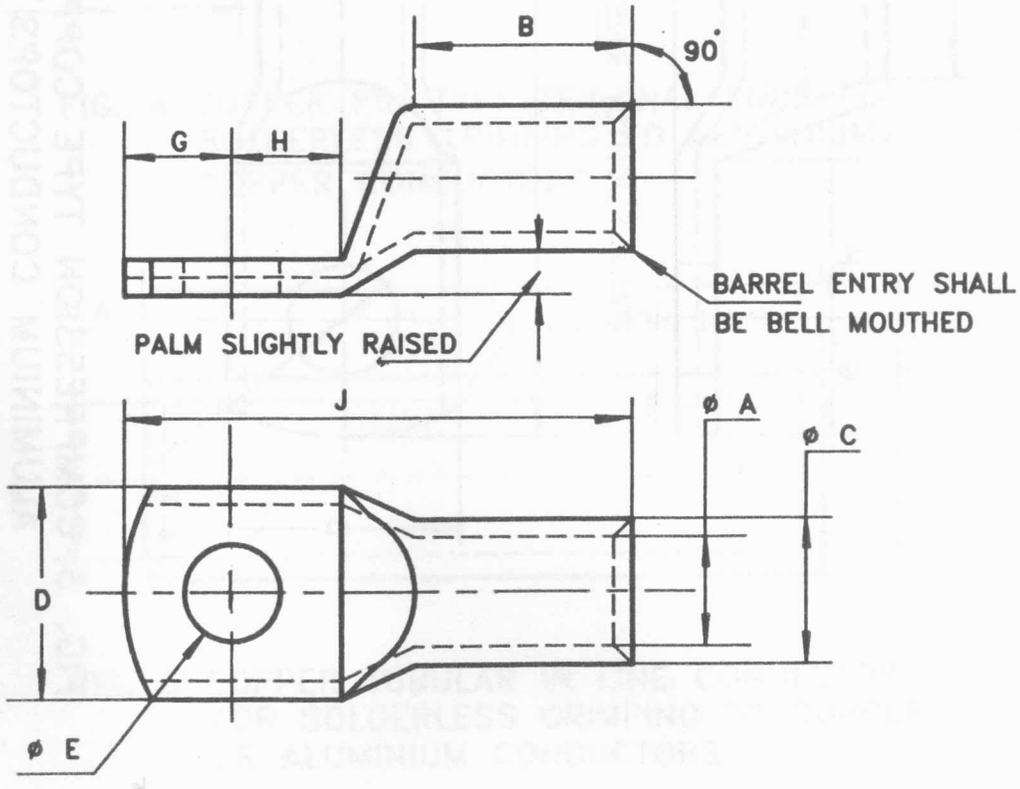

Fig. 2 (see Table 2)

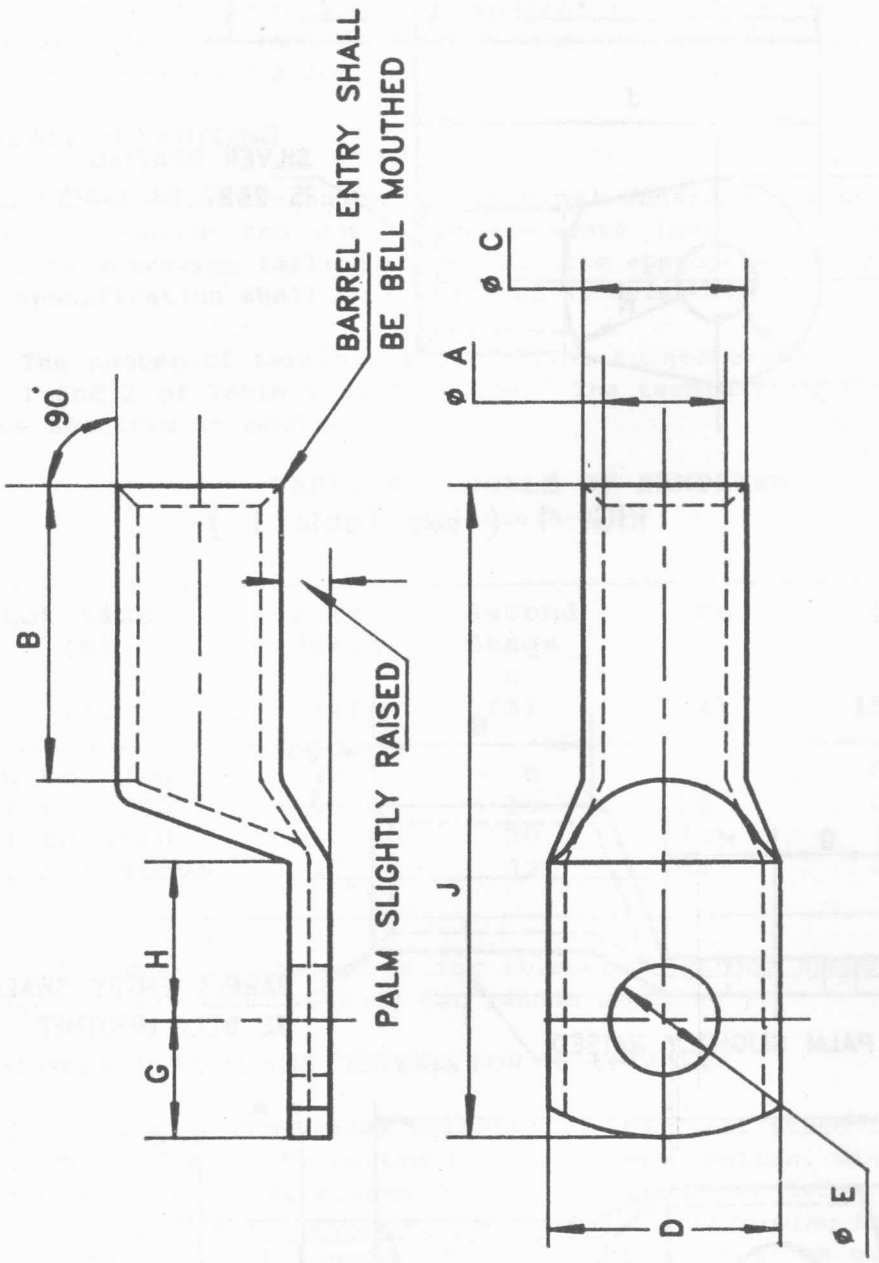

FIG. 3 COMPRESSION TYPE COPPER TUBULAR TERMINAL ENDS FOR ALUMINIUM CONDUCTORS

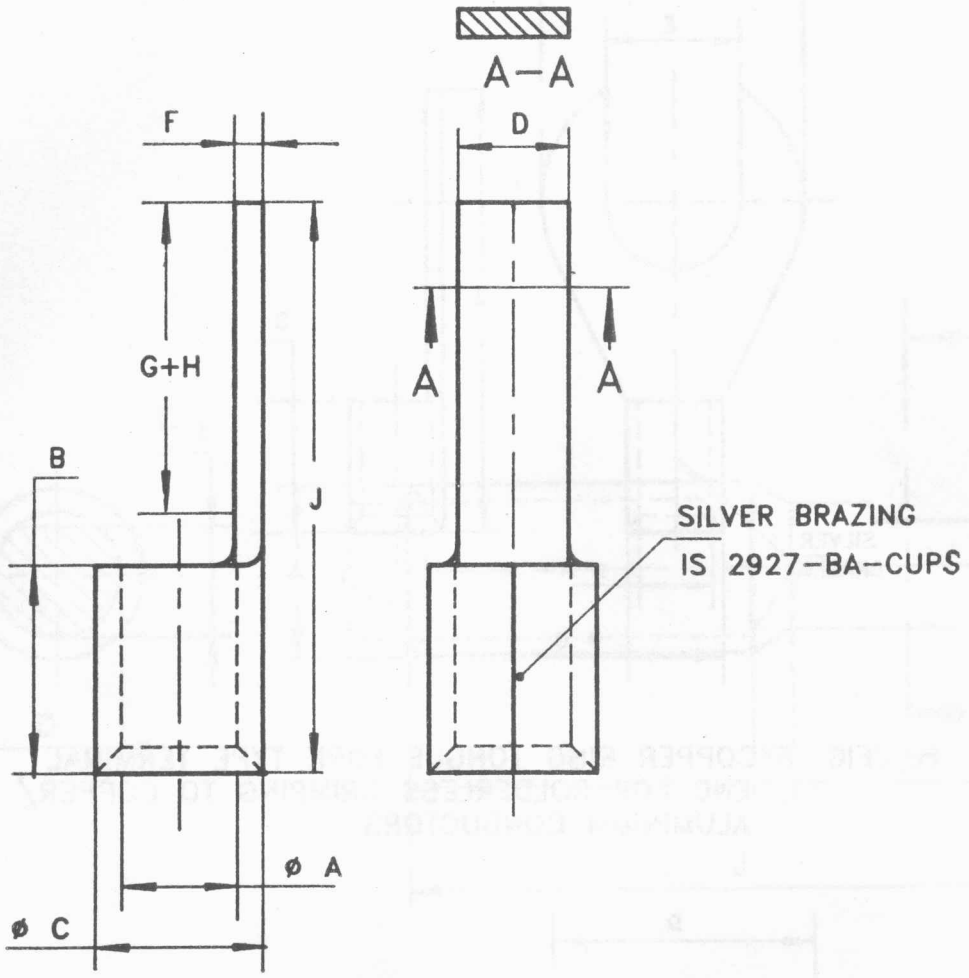

FIG. 4 COPPER PIN TYPE TERMINAL ENDS FOR SOLDERLESS CRIMPING TO ALUMINIUM/ COPPER CONDUCTORS

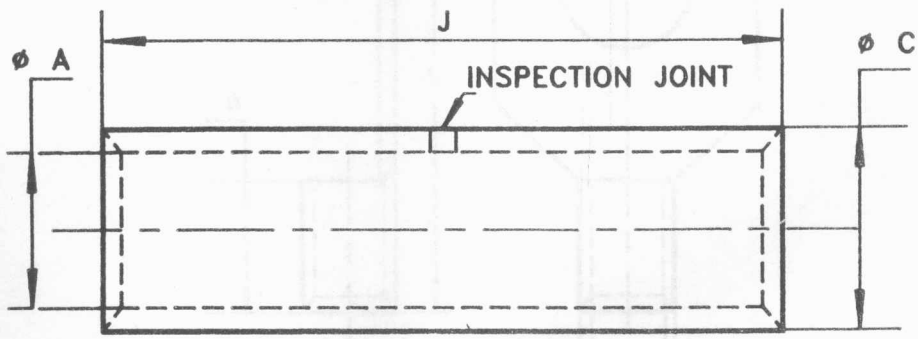

FIG. 5 COPPER TUBULAR IN LINE CONNECTOR FOR SOLDERLESS CRIMPING TO COPPER OR ALUMINIUM CONDUCTORS

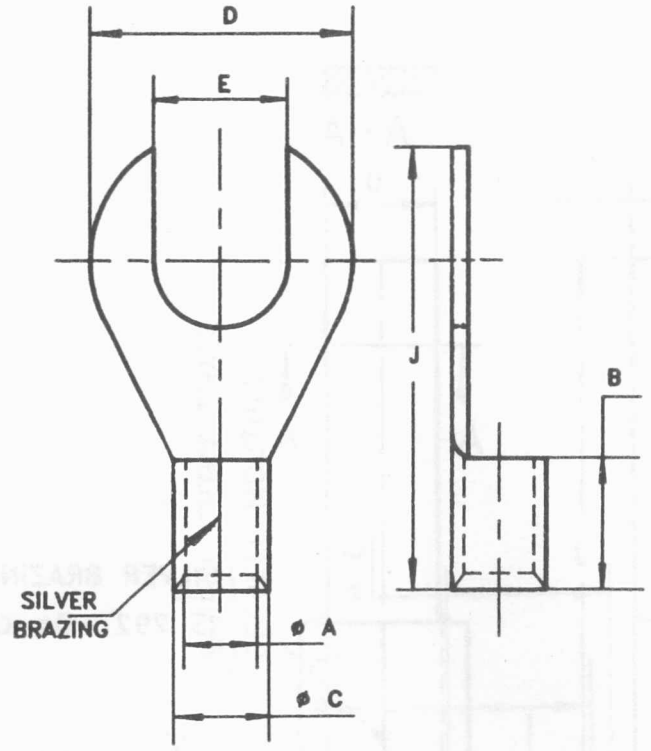

FIG. 6 COPPER RING TONGUE FORK TYPE TERMINAL END FOR SOLDERLESS CRIMPING TO COPPER/ ALUMINIUM CONDUCTORS

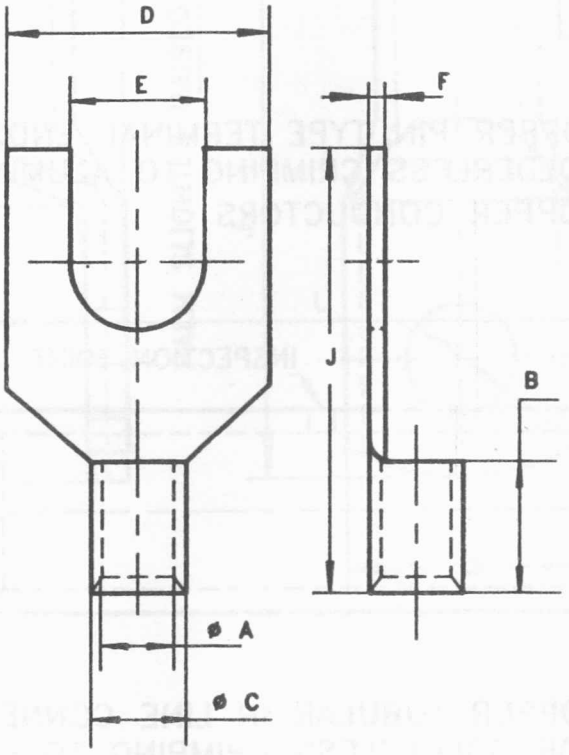

FIG. 7 COPPER RECTANGULAR FORK TYPE TERMINAL END FOR SOLDERLESS CRIMPING TO COPPER/ ALUMINIUM CONDUCTORS

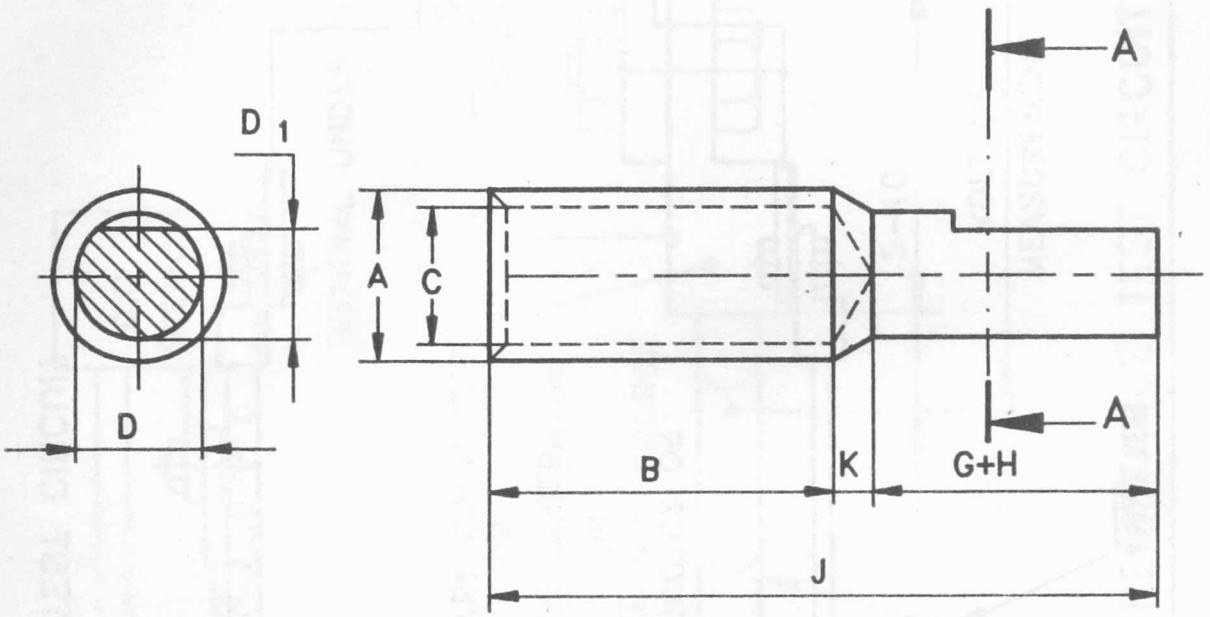

FIG. 8 REDUCER TYPE TERMINAL ENDS FOR ALUMINIUM OR COPPER CONDUCTOR SUITABLE FOR FUSE UNITS AND I C T P SWITCHES

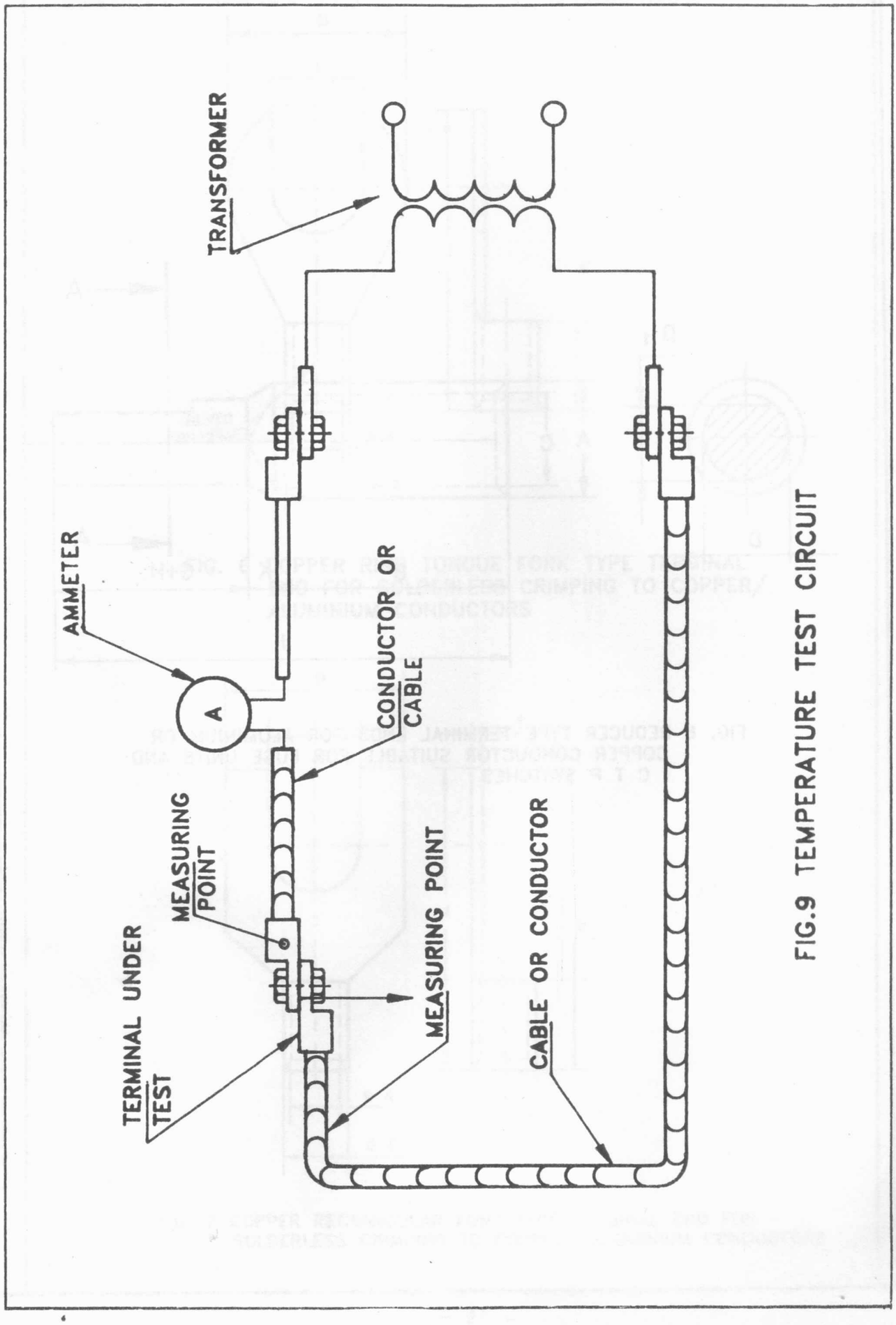

FIG.9 TEMPERATURE TEST CIRCUIT

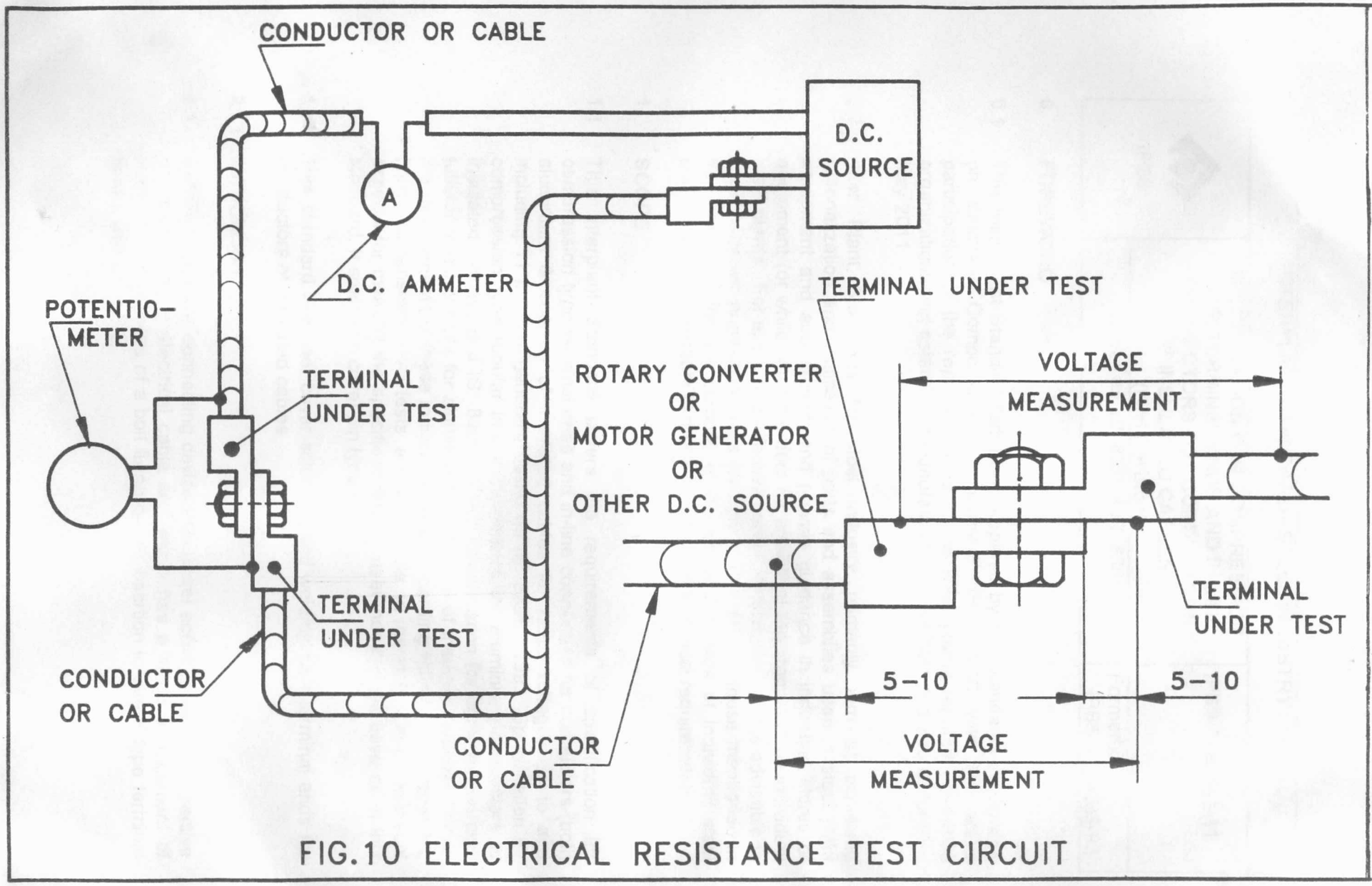

FIG.10 ELECTRICAL RESISTANCE TEST CIRCUIT