BRITISH STANDARD

BS 4568-2: 1970

Incorporating Amendment Nos. 1, 2, 3 and 4

Specification for

Steel conduit and fittings with metric threads of ISO form for electrical installations —

Part 2: Fittings and components

UDC 621.315.67:669.14

Co-operating organizations

The Electrical Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Associated Offices' Technical Committee
Association of Consulting Engineers*
Association of Mining Electrical and Mechanical Engineers
Association of Supervisory and Executive Engineers*
British Electrical and Allied Manufacturers' Association*
British Radio Equipment Manufacturers' Association
British Railways Board
Crown Agents for Oversea Governments and Administrations
Department of Employment and Productivity*
Electric Cable Makers' Confederation
Electrical Contractors' Association (Incorporated)*
Electrical Contractors' Association of Scotland
Electrical Research Association
Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales*
Electronic Engineering Association
Engineering Equipment Users' Association
Institution of Electrical Engineers*
Lighting Industry Federation Limited
Ministry of Defence*
Ministry of Defence, Army Department
Ministry of Defence, Navy Department
Ministry of Public Building and Works*
Ministry of Technology
Municipal Passenger Transport Association (Incorporated)
National Inspection Council for Electrical Installation Contracting*
National Physical Laboratory (Ministry of Technology)
Oil Companies Materials Association
Post Office*
Public Transport Association (Incorporated)
South of Scotland Electricity Board

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committees entrusted with the preparation of this British Standard:

Aluminium Federation
British Electric Conduit Systems Manufacturers
British Plastics Federation
Confederation of British Industry
Light Metal Founders' Association
Zinc Development Association

This British Standard, having been approved by the Electrical Industry Standards Committee, was published under the authority of the Executive Board on
31 July 1970

The following BSI references relate to the work on this standard:
Committee reference ELE/80/1
Draft for comment D65/12020

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Amendments issued since publication

Amd. No.	Date of issue	Comments
1133	March 1973	
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4973	December 1985	
5691	September 1987	Indicated by a sideline in the margin

Contents

Foreword

This standard makes reference to the following British Standards:

BS 729, *Zinc coatings on iron and steel articles.*

BS 3382, *Electroplated coatings on threaded components.*

BS 3643, *ISO metric screw threads.*

This British Standard has been prepared under the authority of the Electrical Industry Standards Committee and is in close agreement with Publication 23, "*Steel conduit and fittings for electrical installations*", issued by the International Commission on Rules for the Approval of Electrical Equipment (CEE).
The 19 mm and 22 mm sizes of the 1962 edition of CEE 23 will be replaced by a single 20 mm size when it is revised.

An important feature of the CEE specification is the adoption of a series of conduit diameters which will also apply to the conduit entries into all types of electrical enclosures and fittings.

The standard is similar in scope to BS 31[1)] and specifies both plain and screwed conduit and fittings.

The wall thickness of the conduit, however, in some cases has been reduced from that specified in BS 31[1)] for conduit of similar external diameters owing to the employment of a 60° thread on the tube based on the ISO thread form.

Conduit and fittings described in this standard will be alternative to, and eventually supersede, those complying with BS 31[1)], with the ultimate object of unification with the standards of other European countries.

Additionally, when preparing the standard, full consideration was given to proposals received for revisions needed to BS 31[1)] and, where desirable, the necessary amendments have been incorporated.

The standard has been divided into two Parts:

— *Part 1: Steel conduit, bends and couplers*;

— *Part 2: Fittings and components*.

Part 1 of the standard specifies conduit and those bends and couplers which have been standardized internationally and are covered by CEE Specification No. 23.

This Part of the standard specifies fittings and components not at present standardized internationally but which have found wide practical application.

In both Parts the range of conduit diameters included is from 16 mm to 32 mm outside diameter. Consideration will be given to the inclusion of larger sizes when they have been standardized internationally.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 53 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

[1)] BS 31, "*Steel conduit and fittings for electrical wiring*".

1 Scope

1.1 This Part of this British Standard specifies requirements for conduit fittings and components of sheet steel or malleable cast iron. In addition, in certain cases a wider choice of materials is given which is indicated on the relevant Standard Sheets.

1.2 The fittings are designed to be used in conjunction with the conduit described in Part 1 of this standard.

2 General requirements

2.1 Fittings shall be so designed and constructed that they are not adversely affected by transport and storage and that they afford reliable mechanical protection to the cables.

2.2 Fittings shall be either of the screwed type, threaded for connection to heavy gauge conduits, or of the plain non-screwed type, primarily designed for use with non-screwed light gauge conduit.

2.3 TEST. In general, compliance with **2.1** and **2.2** shall be checked by carrying out all the tests specified.

3 General conditions for tests

3.1 Tests according to the specification are type tests.

3.2 Unless otherwise specified, tests are made at an ambient temperature of 20 ± 5 °C.

3.3 Each test is made on three samples.

3.4 Fittings shall be deemed not to comply with this standard if more than one sample fails any one of the tests. If one sample fails in a test, that test shall be repeated on a second set of three samples, all of which shall comply with the repeated test. If any sample fails in the retest then all the samples shall be deemed to have failed to comply with this standard.

NOTE The applicant may submit, together with the first set of samples, the additional set which may be required should the first sample fail. The testing station will then, without further request, test the additional samples and will only reject if a further failure occurs. If the further set of samples is not submitted at the same time, a failure of one sample will entail a rejection.

4 Classification

4.1 Fittings are classified according to the method of assembly with the conduits:

1) those intended for use with plain (non-screwed) conduits;

2) those intended for use with screwed conduits.

4.2 Fittings are further classified according to the type of protection.

Class 1.	Light protection both inside and outside	Example:	priming paint
Class 2.	Medium protection both inside and outside	Example:	stoved enamel, air-drying paint
Class 3.	Medium/heavy protection, inside as Class 2, outside as Class 4	Example:	stoved enamel inside, sherardized outside
Class 4.	Heavy protection both inside and outside	Example:	hot-dip zinc coating sherardizing

5 Marking

5.1 Fittings shall be marked either on the fitting or on the containing package with the following:

1) The name or identification mark of the maker or responsible vendor.

2) The number of this British Standard.

3) The class of finish.

4) The type reference (see **5.3**, Note 1) or description.

5) The material from which the fitting is made or a suitable abbreviation in those cases where a choice of materials is given on the Standard Sheet.

5.2 The marking, whether on the fitting or the package, shall be easily legible. If on the fitting, it shall also be durable.

5.3 TEST. Compliance with **5.1** and **5.2** shall be checked by inspection and, for markings on fittings, by the durability of marking test described in **A.1**.

NOTE 1 The type reference comprises the number of this British Standard, the Standard Sheet number for the fitting and the size in millimetres.

Example BS/4568/10/32

6 Dimensions

6.1 Fittings shall comply with the relevant Standard Sheets as specified below:

Bends, internally screwed:	Sheet 1
Bends, internally screwed, inspection:	Sheet 2
Boxes, adaptable:	Sheets 3*a* and 3*b*
Boxes, circular, small:	Sheet 4
Boxes, circular, large:	Sheet 5
Boxes, circular, looping:	Sheet 6
Bushes, circular, internally screwed:	Sheet 7
Bushes, hexagonal, externally screwed:	Sheet 8
Couplers, externally screwed (nipples):	Sheet 9
Couplers, inspection, internally screwed:	Sheet 10
Couplers, flanged, internally screwed:	Sheet 11
Covers, circular, internally screwed, domed:	Sheet 12
Covers, circular hook:	Sheet 13
Covers, circular, ball and socket:	Sheet 14
Crampets:	Sheet 15
Locknuts, hexagonal:	Sheet 16
Locknuts, milled edge and crenellated:	Sheet 17
Plugs, hexagonal:	Sheet 18
Plugs, slotted:	Sheet 19
Reducers	Sheet 20
Saddles:	Sheet 21
Saddles, spacer bar:	Sheet 22
Saddles, distance:	Sheet 23

6.2 Screw threads shall comply with the basic dimensions of Figure 1 of Part 1 of this standard.

6.3 The Standard Sheets illustrate screwed fittings, but the dimensions are equally applicable to fittings intended for plain conduit. For plain fittings the length of the portion receiving the conduit shall be not less than the minimum length shown on the appropriate Standard Sheet for the screwed equivalent. The plain or threaded portion shall have its axis parallel to the appropriate axis of the fitting to within a tolerance of 1 % (10 mm in 1 m).

6.4 TEST. Compliance with **6.1** to **6.3** shall be checked by measurement and, for screw threads, by using gauges as shown in Figures 2 and 3 of Part 1 of this standard.

6.5 All dimensions on Standard Sheets, except those for which tolerances are specifically stated or for which maxima and/or minima are given, are to be regarded as nominal dimensions and subject to a tolerance of ± 5 %.

6.6 On certain Standard Sheets a minimum wall thickness is given, but this has been calculated in the case of steel fittings to allow for strip or sheet rolling tolerances and an appropriate nominal value should be chosen, taking this into account. It is not the intention that the minimum wall thicknesses should be taken as the nominal thickness.

When the wall thickness is given (with or without tolerances) such thickness applies to the material from which the product is made. All other dimensions apply to the finished product.

7 Construction

7.1 Fittings shall be made of the materials defined on the relevant Standard Sheet. All materials used shall conform to an appropriate British Standard Specification.

7.2 Thread forms of fixing screws and tapped holes shall be ISO metric free fit, coarse pitch, size M4 in conformity to BS 3643-2[2)].

Screws for use with all fittings shall be of brass or steel. If of steel they shall be protected against corrosion by the process described in BS 729-2[3)], or BS 3382-2[4)].

NOTE 1 Electro-brass plated screws are expressly excluded from this specification.
NOTE 2 Where fixing screws are shown in the illustrations, it is not intended to imply that they should be of the round-head type.

7.2.1 TEST. Compliance shall be checked by inspection and by the appropriate tests of the relevant standards, if required.

7.3 The interior and ends of fittings shall be free from burrs, fins and the like. Surfaces and edges over which cables are likely to be drawn shall be smooth and well rounded.

7.4 No portion of the interior of any fitting shall have a diameter less than the maximum internal diameter of the corresponding conduit.

7.5 It shall not be possible for the cover fixing screws or other devices on inspection fittings to come into contact with the conduit or cable.

7.6 Fittings fabricated from two or more component parts shall be so constructed that:

1) the threaded outlets will resist any turning moment normally applied to the conduit during erection;

2) where fittings are constructed to comply with Clause **10**, permanent and electrically efficient continuity shall be ensured.

7.6.1 Provision shall be made in fittings to Standard Sheets 4, 5, and 6 for the addition of means for the effective connection of these fittings to an internal earthing conductor. Where a screw is employed for the purpose it shall be of size M.4.

7.7 Boxes adaptable to Standard Sheets 3*a* and 3*b* shall be made from grey cast iron or sheet steel and shall comply with the following requirements.

1) Provision shall be made for securing covers with a minimum of four screws or other fixing devices, one at each corner where only four are used. The peripheral distance between these fixings shall not exceed 300 mm. If screws are used, they shall be of the minimum size of M4 and their minimum length shall be 10 mm for cast iron boxes or 6 mm for sheet steel boxes. All screws shall have a minimum engagement of two full threads.

2) When the length of the wall of any sheet metal box exceeds 305 mm then that wall shall have an in-turned flange which, when measured from the inside of the wall, shall have a width of between 7 mm and 12 mm.

3) The corners of sheet steel boxes shall be joined by welding or similar effective means.

4) Adaptable boxes may be supplied with plain sides or with knockouts therein, as agreed between the manufacturer and the purchaser.

7.8 TEST. Compliance with the requirements of **7.3** to **7.7** shall be checked by inspection and by measurement.

7.9 Conduit entries into fittings shall conform to the following.

1) Knockouts are circular portions in the walls or base of a fitting which are easily removable to permit the entry of conduits or components of like diameter. The diameter of knockouts shall be equal to the nominal conduit diameter plus 0.25 mm, with a tolerance of + 0.50 mm, – 0.00 mm.

2) Knockouts shall be so located that locknuts or bushes, when clamped in position, will rest flat against the walls or base of a fitting when the cover is in position.

7.9.1 TEST. Compliance shall be checked by inspection and by measurement.

[2)] BS 3643, "*ISO metric screw threads*", Part 2, "*Limits and tolerances for coarse pitch series threads*".

[3)] BS 729, "*Zinc coatings on iron and steel articles*", Part 2, "*Sherardized coatings*".

[4)] BS 3382, "*Electroplated coatings on threaded components,*" Part 2, "*Zinc on steel components*".

7.10 Covers for conduit fittings and their fixing devices shall comply with the following requirements:

1) overlapping covers for circular boxes shall be of 13 mm greater diameter than the minimum diameter of the standard cover for that box.

2) screws and other fixing devices for covers shall be capable of being removed and replaced six times without damage.

7.10.1 TEST. Compliance with **7.10** 1) shall be checked by measurement and with **7.10** 2) by trial.

8 Mechanical properties of fittings

8.1 Boxes, circular, small and boxes, circular looping shall be sufficiently robust to withstand the test described in **A.2.2**.

8.2 Covers, circular, hook, shall be sufficiently robust to withstand the test described in **A.2.3**.

8.3 Fittings manufactured from malleable cast iron shall withstand the test described in **A.2.1**.

8.4 Knockouts shall be sufficiently robust to withstand the test described in **A.2.4**.

9 Resistance to corrosion

9.1 Fittings shall be adequately protected against corrosion, both inside and outside. Machined surfaces, screw threads and plain entries for conduit tubing are excluded from the provisions of this clause.

9.1.1 TEST. Compliance shall be checked by the appropriate test or tests described in **A.3**, which defines tests for light, medium and heavy protection.

Fittings may be split to the extent considered necessary to allow adequate examination of their interior surfaces.

For Class 3 fittings, the inside and outside protective coatings shall separately comply with the relevant tests described in **A.3**.

10 Electrical continuity

10.1 Fittings intended for installations where an electrically continuous path is required throughout the assembly of conduit and fittings shall be so constructed that they comply with the requirements of **A.4**.

10.2 Fittings for plain conduit require special devices to ensure permanent and reliable metallic contact between fitting and conduit. In some designs this may involve removal of the protective finish from the conduit and fitting at the point where metallic contact is to be established.

Appendix A Tests

A.1 Test for durability of marking

Durability shall be checked by rubbing the marking by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked with petroleum spirit. After the test the marking shall remain legible.

NOTE Marking may be achieved by, for example, stamping, printing, adhesive labels or waterslide transfers.

A.2 Test of mechanical properties of fittings

A.2.1 *Test for fittings manufactured from malleable cast iron.* Test pieces are cut from the fitting (e.g. the plain or threaded outlet of a box) and shall be the configuration of half, or slightly less than half, of an open ended cylinder.

The test sample shall be capable of being pressed flat without showing signs of cracking when compressed diametrically between two smooth parallel faces having a width not less than half the original circumference of the specimen and a length not less than the length of the specimen.

A.2.2 *Test for circular boxes to Standard Sheets 4 and 6.* A cover, circular, hook to Standard Sheet 13 shall be attached to the box by an M4 screw into one fixing lug only. The box shall be rigidly mounted in a horizontal plane with the cover hook vertically downwards. A load of 445 N shall be applied steadily to the hook and maintained for a period of 5 min. The box shall be undamaged at the completion of the test.

A.2.3 *Test for covers, circular, hook to Standard Sheet 13.* The cover shall be attached to a box, circular, small to Standard Sheet 4 by two M4 screws. The box shall be rigidly mounted as for the test of **A.2.2**. A load of 890 N shall be applied steadily to the hook and maintained for a period of 5 min. After the test the hook shall show no sign of deformation.

A.2.4 *Test for knockouts.* A steady load of 45 N shall be applied at right angles to the knockout by a punch having a 6 mm flat end resting on its surface. The end of the punch shall be applied at the weakest point on the surface of the knockout. After the test the knockout shall not have moved visibly relative to the fitting.

A.3 Tests for resistance to corrosion

A.3.1 *Light protection.* Fittings shall be inspected for completeness of covering by the protective coating, both inside and outside.

A.3.2 *Medium protection.* Fittings shall be cleaned with a piece of wadding soaked in benzine and then dried. They shall then be totally immersed in a solution of 0.75 % potassium ferricyanide [$K_3Fe(CN)_6$] and 0.25 % ammonium persulphate [$(NH_4)_2S_2O_8$] in water and a quantity of about 0.1 % of a suitable wetting agent, for instance a sodium salt of an alkylnaphthaline sulphonic acid, shall be added.

The solution and the samples shall be maintained at a temperature of 20 ± 1 °C.

Each sample shall be tested separately, a fresh solution being used each time.

After immersion for 5 min, the samples shall be removed from the solution and left to dry at room temperature in air. After completion of the test as described above, the samples shall show no more than two blue coloured spots on each square centimetre of the surface, and no blue spot shall have a dimension larger than 1.5 mm. Traces of rust on sharp edges, screw threads and machined surfaces, also any yellowish film removable by rubbing, shall be ignored.

A.3.3 *Heavy protection.* Fittings shall be degreased by immersion in trichloroethylene in accordance with BS 580[5)] for 10 min and wiped dry with a piece of soft cloth. They shall then be immersed in a 2 % solution of sulphuric acid in water for 15 s, thoroughly cleaned in running water and again wiped dry with a piece of clean soft cloth.

Each sample shall then be totally immersed in a solution of copper sulphate ($CuSO_4.5H_2O$) in distilled water, having a specific gravity of 1.186 at 20 °C.

The solution and the samples shall be maintained at a temperature of 20 ± 1 °C, without stirring.

NOTE The solution is made by dissolving 360 g of crystalline copper sulphate in one litre of distilled water and neutralizing with copper carbonate or copper hydroxide (about 1 g/l). The specific gravity is then checked and adjusted as necessary.

The container shall be such that it will not react with the solution and shall be of such a size as to provide clearance of at least 25 mm between the wal thereof and the sample.

[5)] BS 580 "*Trichloroethylene*".

Each sample shall be immersed four times in succession in the same solution, each time for 1 minute. A fresh solution shall be used for each sample. After each immersion the sample shall immediately be cleaned in running water with a brush to remove any black deposit. The sample shall then be wiped dry with a piece of clean soft cloth, and, except after the fourth immersion, returned to the solution. Care should be taken to clean out all holes and pockets.

After the test the sample shall show no precipitation of copper which cannot be scrubbed off in running water, if necessary after immersion for 15 s in a 10 % solution of hydrochloric acid in water.

Traces of copper precipitation on screw threads, sharp edges and machined surfaces may be ignored.

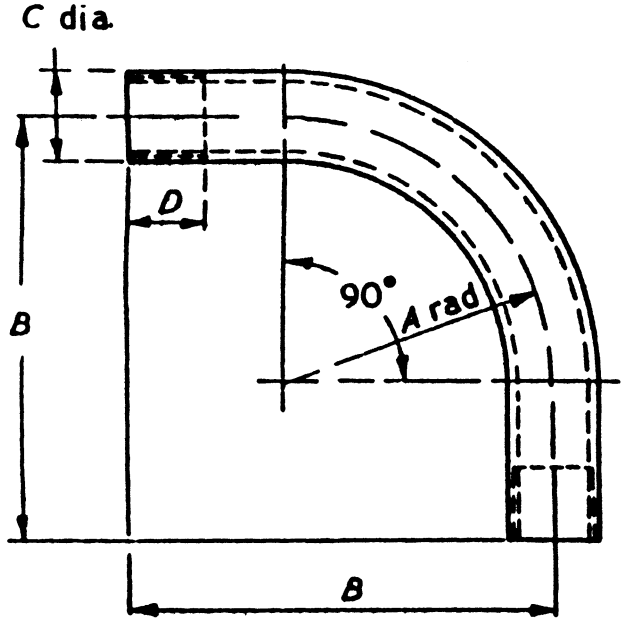
A.4 Requirements for the efficiency of the conduit/fitting conducting path

An arrangement of conduit and fittings consisting of ten plain (i.e. non-screwed) conduit lengths coupled together by fittings not less than 25 mm apart shall be assembled (with their continuity devices, where applicable) in the manner of use as designed.

They shall then be tested for continuity between the ends of the assembly. The resistance so measured shall not exceed 0.05 Ω.

Materials: steel or mall. cast iron	Bends, internally screwed	STANDARD SHEET 1

For tolerances see Clause **6**. For screw threads see Figure 1 of BS 4568-1.



All dimensions are in millimetres

Nominal size	*A* Min.	*B* Min.	*C* Min.	*D* Min.	*D* Max.
16	40.0	72.0	17.5	13.5	15.5
20	50.0	90.0	21.5	15.0	17.0
25	62.5	110.0	26.7	18.0	20.0
32	80.0	144.0	33.8	20.0	22.0

NOTE The wall thickness should be selected to ensure that the thread conforms to the gauging requirements of Clause **6**, BS 4568-1.

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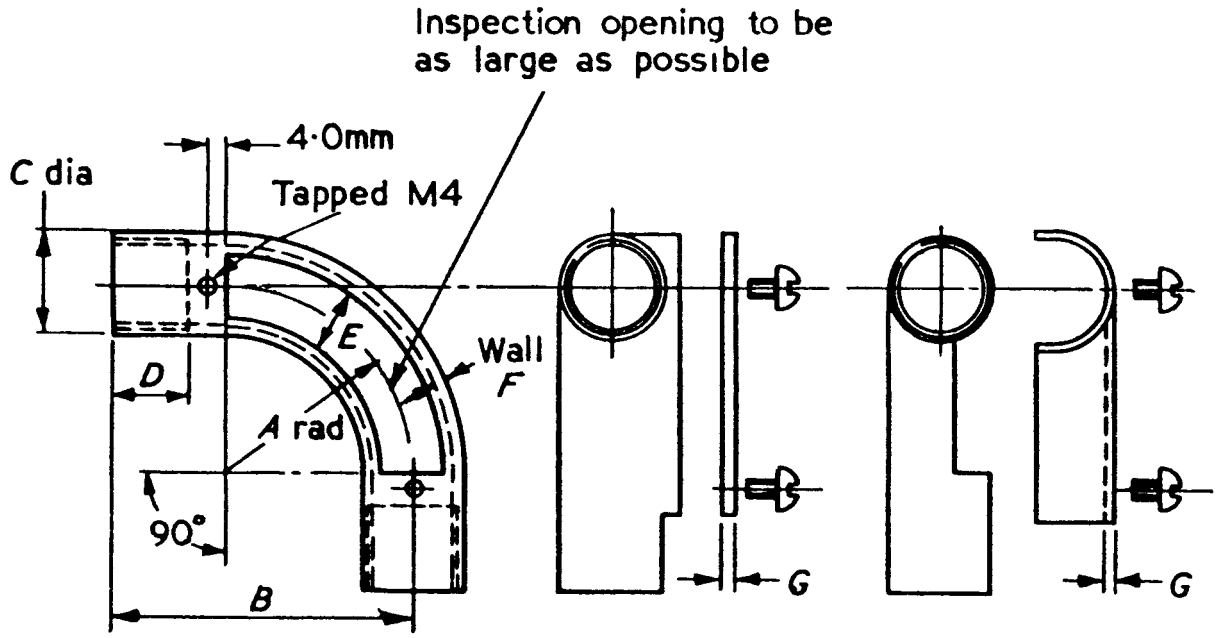
Material: malleable cast iron and/or steel	Bends, internally screwed, inspection and covers	STANDARD SHEET 2

This drawing does not purport to show constructional details. For tolerances, see Clause **6**.

MALLEABLE CAST IRON STEEL



All dimensions are in millimetres

Nominal size	*A* min.	*B* min.	*C* min.		*D*		*E* min.	*F* min.		*G* min.		
			mall.	steel	min.	max.		mall.	steel	mall.	steel	steel formed
16	33.5	57.0	19.2	17.5	13.5	15.5	13.0	2.0	1.85	2.0	1.15	0.92
20	43.0	68.0	23.2	21.5	15.0	17.0	15.0	2.0	1.85	2.0	1.15	0.92
25	53.0	81.0	28.4	26.7	18.0	20.0	18.6	2.4	2.35	2.4	1.15	0.92
32	72.0	102.0	36.8	33.8	20.0	22.0	25.0	2.4	2.35	2.4	1.15	0.92

NOTE Diameter *C* must be maintained over the threaded portion but the thickness may be reduced to *F* elsewhere.

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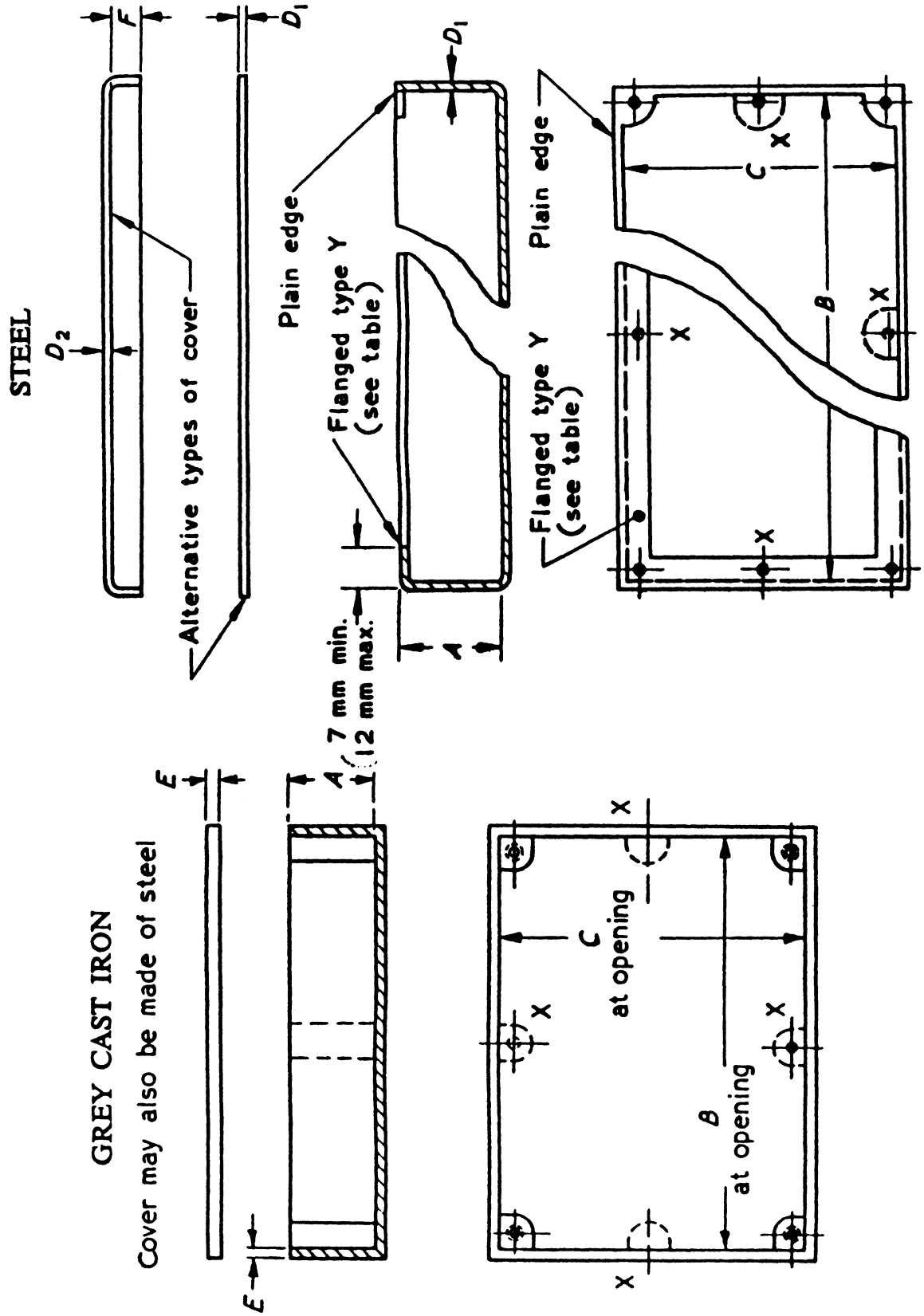
Materials: grey cast iron and/or steel	Boxes, adaptable and covers	STANDARD SHEET 3*a*

This drawing does not purport to show constructional details



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$B \times C$ **(Preferred dimensions marked ✓).** All dimensions are in millimetres																
A	**75 × 75**	**100 × 75**	**100 × 100**	**150 × 75**	**150 × 100**	**150 × 150**	**225 × 75**	**225 × 150**	**225 × 225**	**300 × 150**	**300 × 225**	**300 × 300**	**450 × 300**	**450 × 450**	**Above 450 × 450**	**Materials: grey cast iron and/or steel**
37.5	✓	✓	✓	✓	✓	✓	✓	✓	✓							
50.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
75.0	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	**Boxes, adaptable and covers**
100.0			✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	
150.0						✓						✓	✓	✓	✓	
D_1 min	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.30	1.30	1.30	1.50	1.50		
D_1 nom	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.40	1.40	1.40	1.60	1.60		
D_2 min	0.70	0.70	0.70	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10		
D_2 nom	0.80	0.80	0.80	0.80	0.80	0.80	1.10	1.10	1.10	1.10	1.10	1.10	1.20	1.20		
E min	2.40	2.40	2.40	2.40	2.40	2.40	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		**STANDARD SHEET 3*b***
F min	4.00	4.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00	5.00	5.00	6.00	6.00		
X & Y	Box Flanges and additional cover fixing holes — optional												Additional fixing holes required.			
For details of covers and screws see Clause **7**. For knockout details see Clause **7.9** and Clause **8**. For constructional details see Clause **7.7**																

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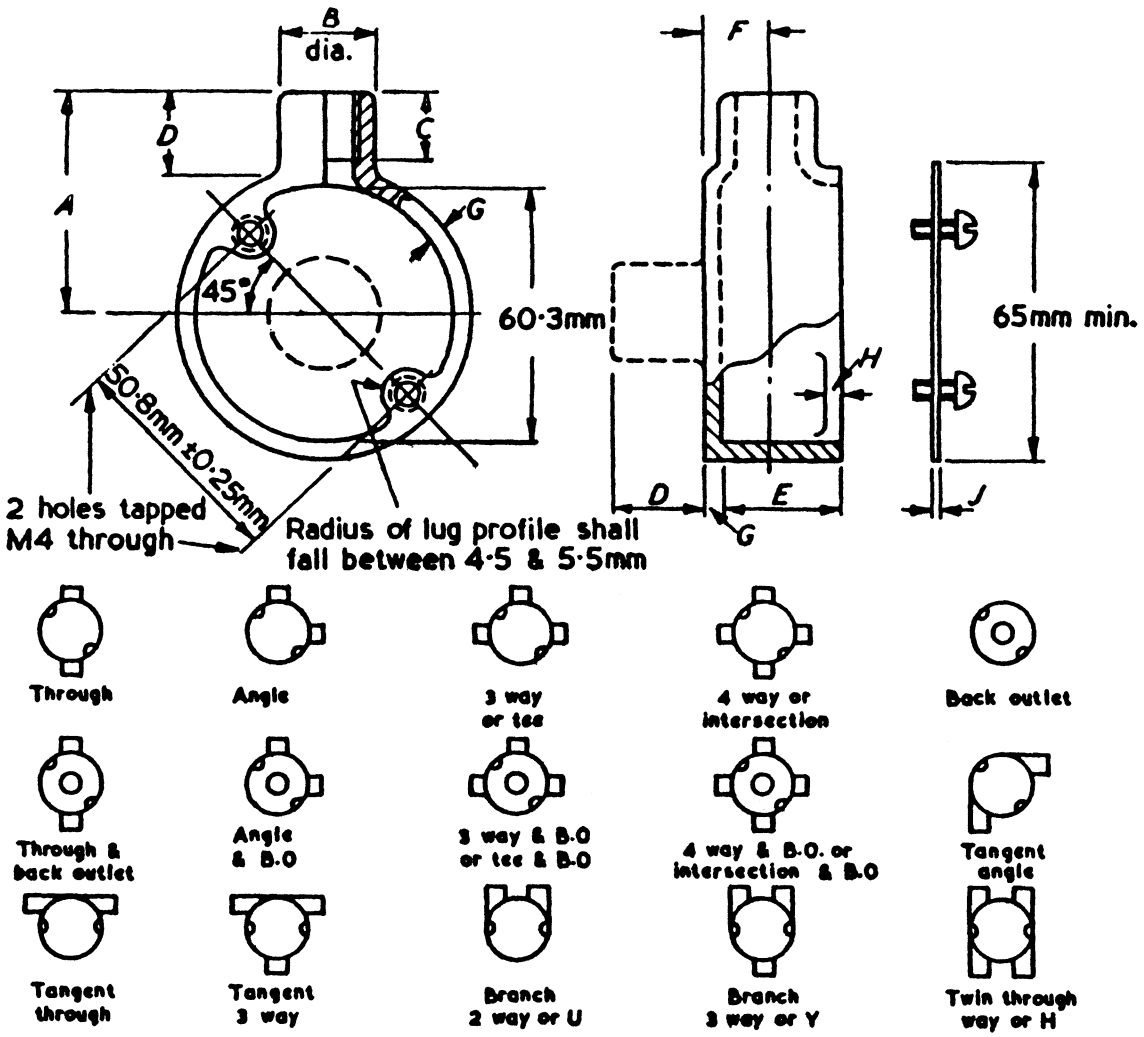
Material: mall. cast iron and/steel	Boxes, circular, small, internally screwed and flat covers	STANDARD SHEET 4

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



All dimensions are in millimetres

Nom. size	*A* approx.	*B* min.		*C*		*D* min.	*E* min.	*F* nom.	*G* min.		*H* min.		*J* min.	
		mall.	steel	min.	max.				mall.	steel	mall.	steel	mall.	steel
16	50.0	19.2	17.5	13.5	15.5	17.5	25.0	11.0	2.00	1.47	2.8	1.47	2.40	1.15
20	51.5	23.2	21.5	15.0	17.0	19.0	25.0	13.0	2.00	1.47	2.8	1.47	2.40	1.15
25	54.5	28.4	26.7	18.0	20.0	22.0	28.0	15.8	2.00	1.47	2.8	1.47	2.40	1.15

NOTE Dimension *G* applies to unmachined parts only. For static load test see Appendix A.

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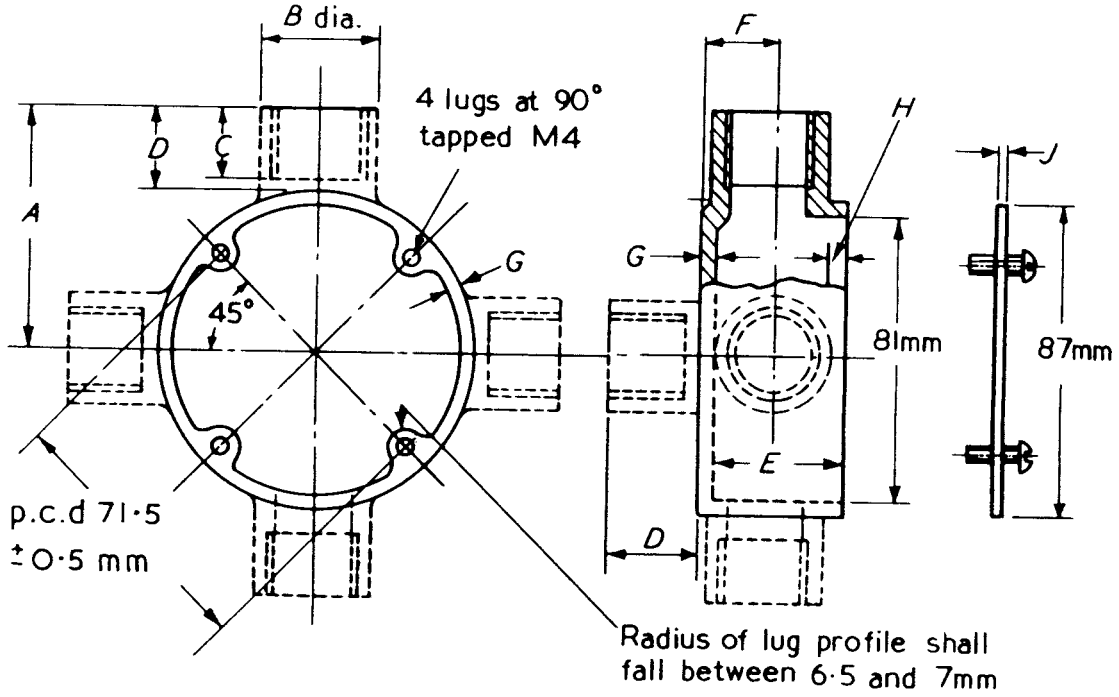
Material: mall. cast iron and/or steel	Boxes, circular, large, internally screwed, and flat covers	STANDARD SHEET 5

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



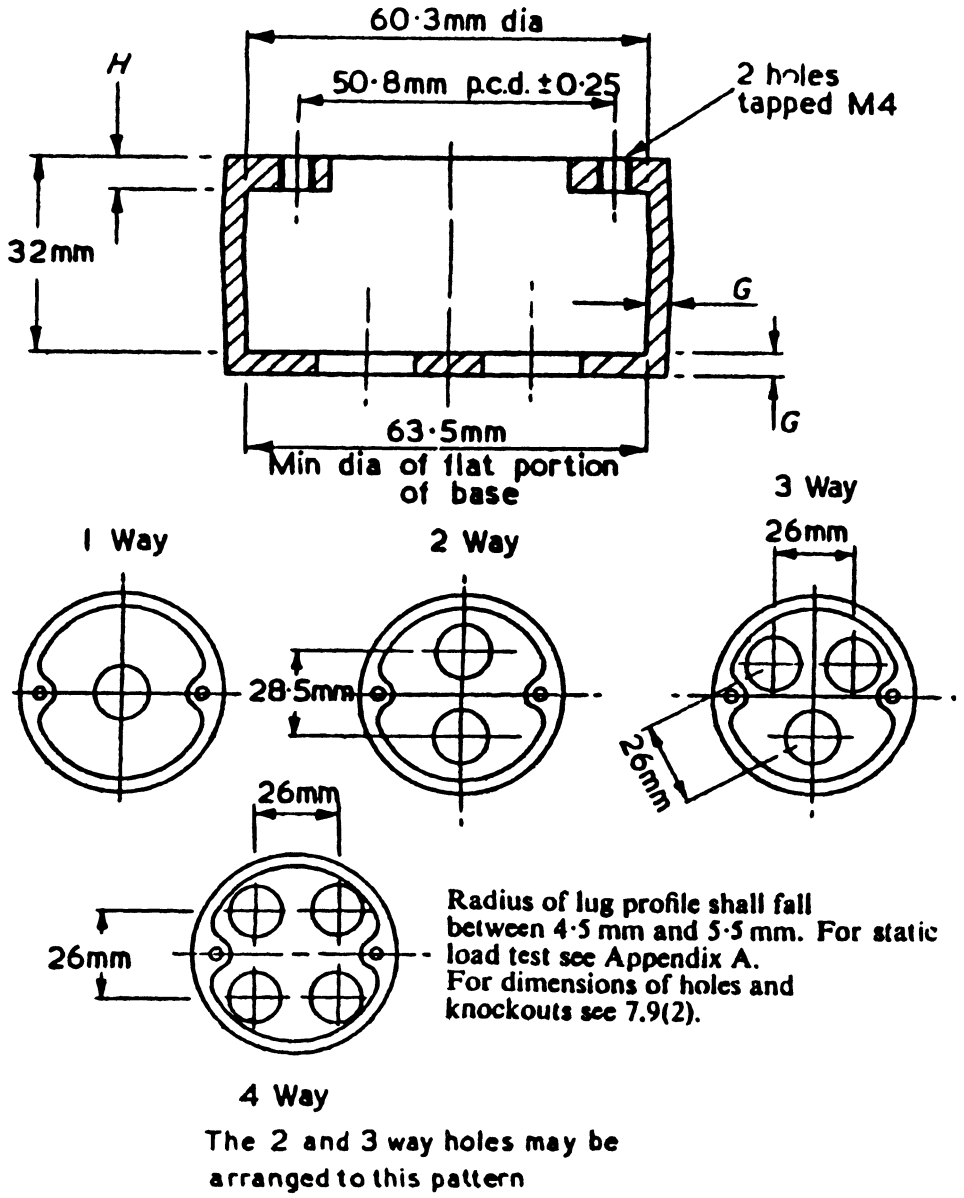
All dimensions are in millimetres

Nom. size	*A* approx.	*B* min.		*C*		*D* min.	*E* min.	*F* nom.	*G*		*H*		*J* min.	
		mall.	steel	min.	max.				mall.	steel	mall.	steel	mall.	steel
20	62	23.2	21.5	15.0	17.0	19.0	35.0	13.0	2.8	2.35	3.6	2.35	3.2	1.47
25	65	28.4	26.7	18.0	20.0	22.0	35.0	15.8	2.8	2.35	3.6	2.35	3.2	1.47
32	67	36.8	33.8	20.0	22.0	24.0	38.0	19.2	2.8	2.35	3.6	2.35	3.2	1.47
Dimension *G* applies to unmachined parts only.														

blank

Material: mall. cast iron or steel	Boxes, circular, looping	STANDARD SHEET 6

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



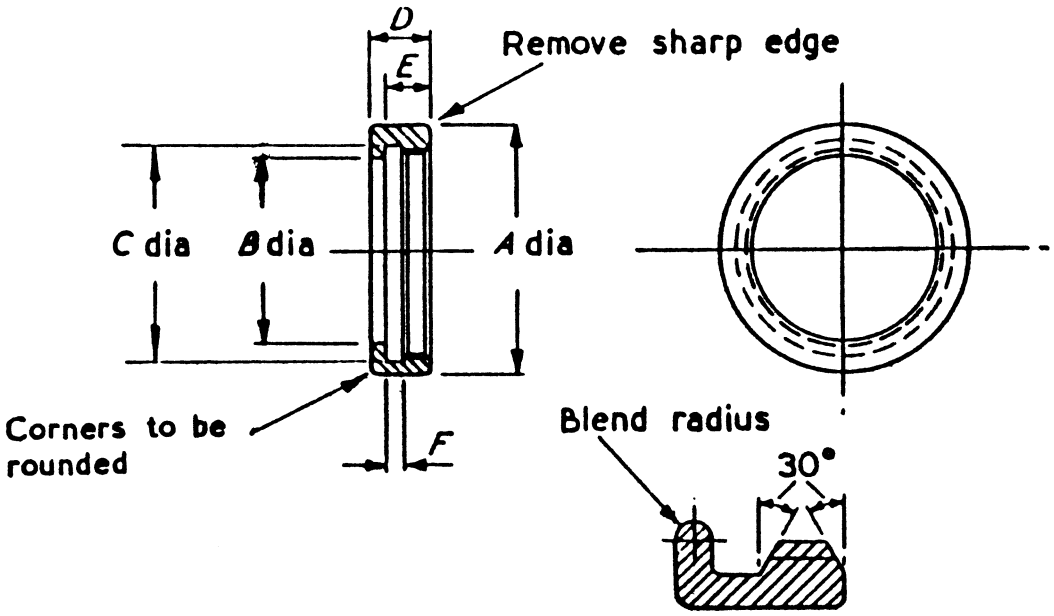
Matric dimensions (mm)

Nominal size	*G* minimum		*H* minimum	
	mall.	steel	mall.	steel
16	2.0	1.47	2.8	1.47
20	2.0	1.47	2.8	1.47

blank

Materials: Brass, mall. cast iron, steel, aluminium alloy, zinc alloy	Bushes, circular, internally screwed	STANDARD SHEET 7

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



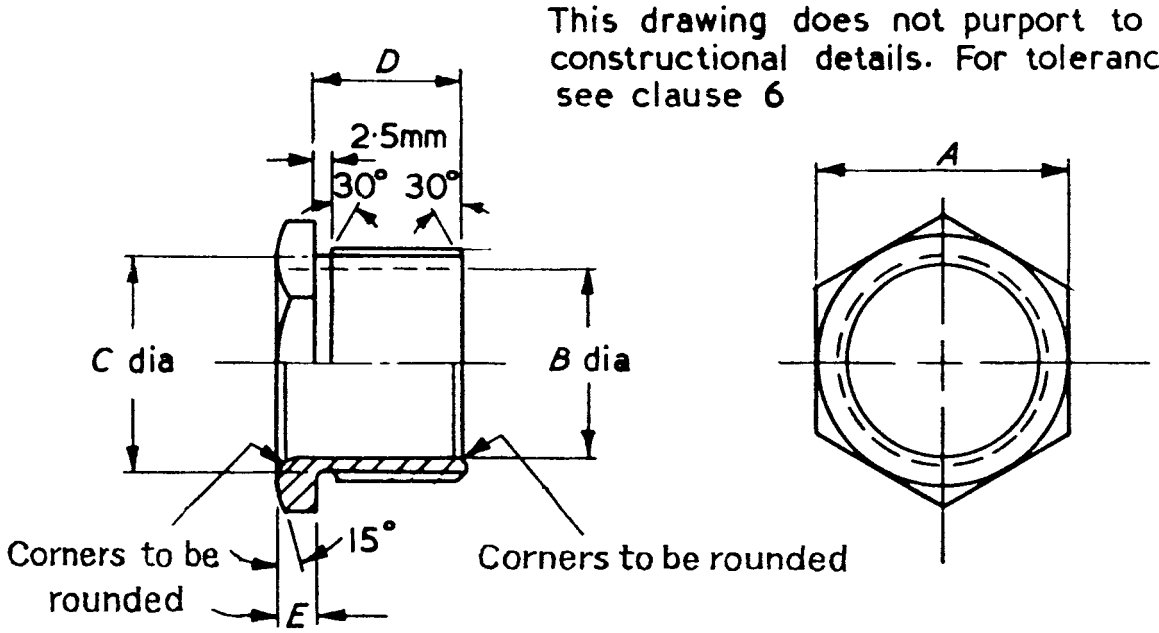
Scrap view of section

All dimensions are in millimetres

Nominal size	*A* min.	*B*		*C*		*D* min.	*E*		*F* max.
		min.	max.	min.	max.		min.	max.	
16	17.7	11.1	11.4	16.0	16.3	6.6	5.2	5.5	2.5
20	22.0	15.0	15.3	20.0	20.3	7.5	5.8	6.1	2.5
25	27.1	19.5	19.8	25.0	25.3	7.8	5.8	6.1	2.5
32	34.0	26.5	26.8	32.0	32.3	7.8	5.8	6.1	2.5

blank

Materials: Brass, mall. cast iron, steel, aluminium alloy, zinc alloy	Bushes, hexagonal, externally screwed, long and short threads	STANDARD SHEET 8



NOTE Two lengths of bushes are specified to make allowance for various wall thicknesses of fittings and enclosures

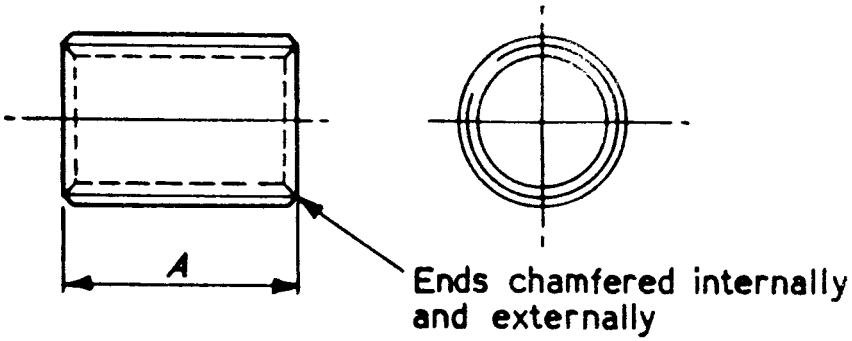
All dimensions are in millimetres

Nominal size	*A* min.	*B*		*C*		*D* short		*D* long		*E*	
		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
16	17.5	11.6	11.9	13.7	14.0	9.5	9.8	14.3	14.6	3.2	3.5
20	21.5	15.4	15.7	17.7	18.0	11.1	11.4	15.9	16.2	3.2	3.5
25	27.0	19.9	20.2	22.7	23.0	11.1	11.4	19.1	19.4	4.0	4.3
32	34.0	26.7	27.0	29.7	30.0	11.1	11.4	20.7	21.0	4.8	5.1

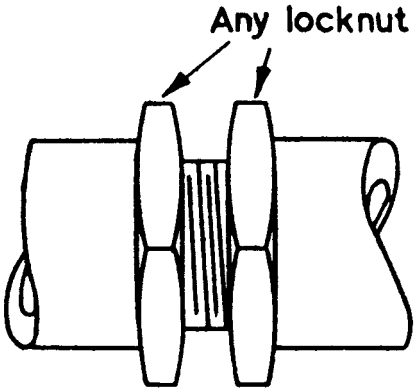
blank

Material: steel	Couplers, externally screwed (nipples)	STANDARD SHEET 9

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



Nipples to be made from corresponding size of heavy gauge conduit tube in accordance with Standard Sheet 2, BS 4568-1.



The long type when used as shown above enables any two fittings to be rigidly locked

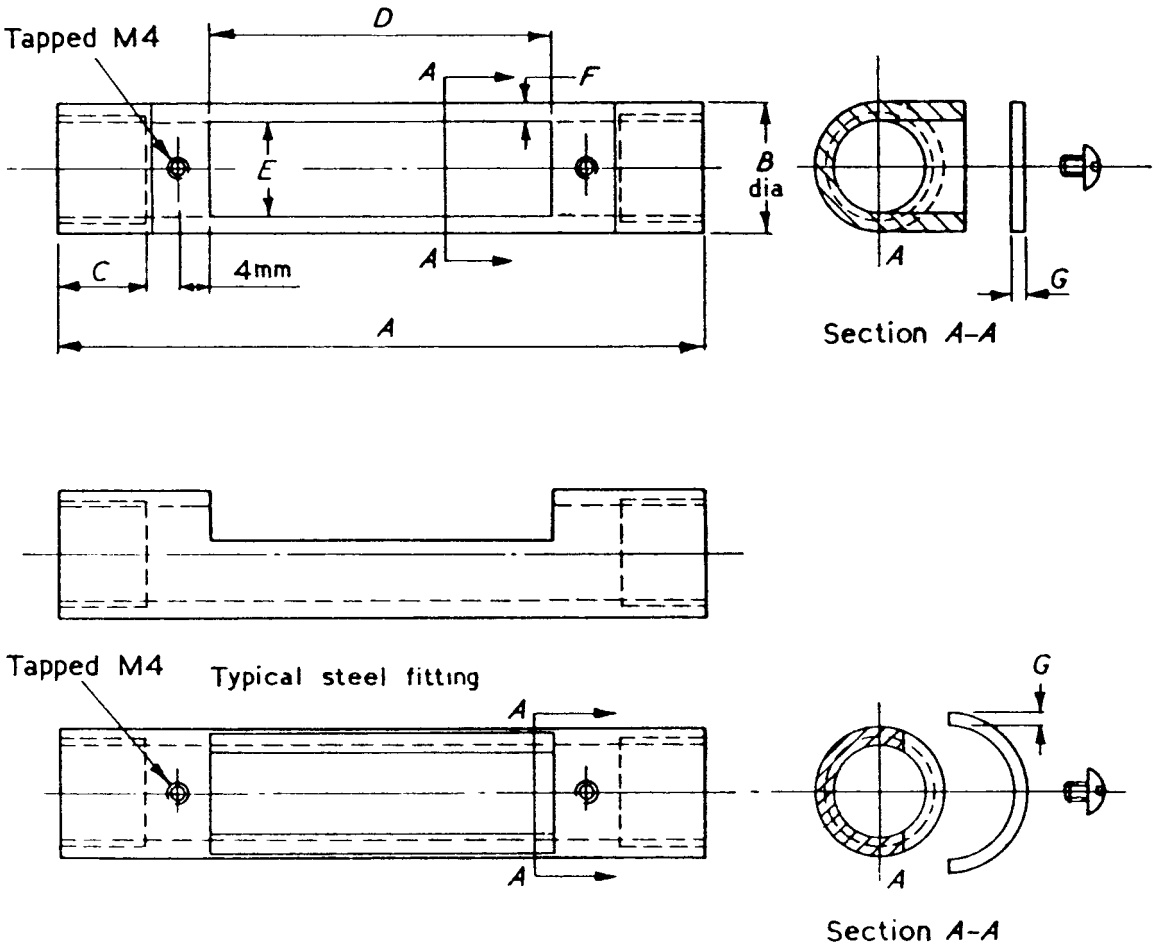
All dimensions are in millimetres

Nominal size	*A* min.	
	short	long
16	22	46
20	25	52
25	28	58
32	32	62

blank

Materials: mall. cast iron and/or steel	Couplers, inspection, internally screwed, with covers	STANDARD SHEET 10

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



Dimension *B* must be maintained over the threaded portion but the wall thickness may be reduced to *F* elsewhere.

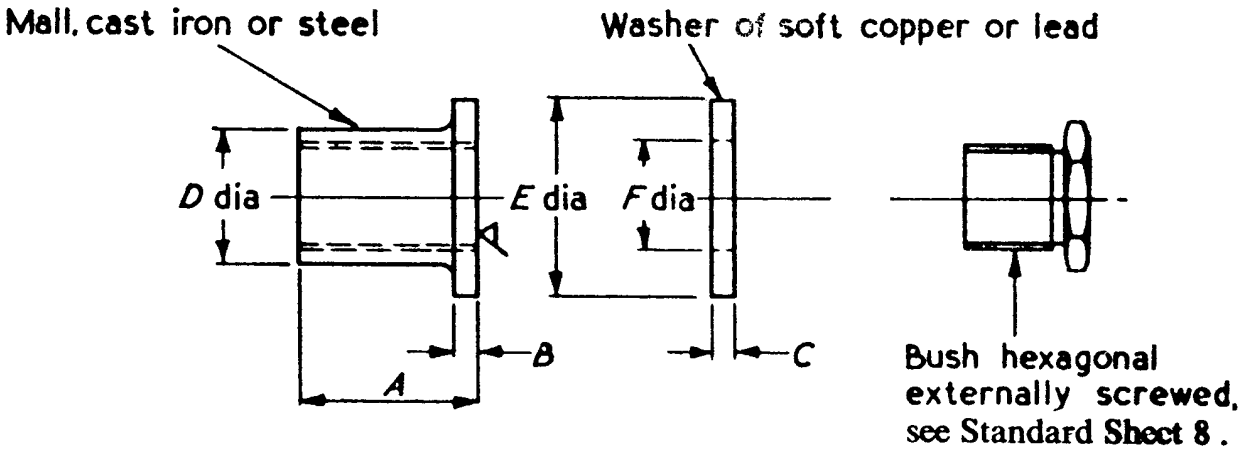
All dimensions are in millimetres

Nominal size	*A* min.	*B* min.		*C*		*D* min.	*E* min.	*F* min.		*G* min.		
		mall.	steel	min.	max.			mall.	steel	mall.	flat	form
16	127	19.2	17.5	13.5	15.5	76.0	13.0	2.0	1.85	2.0	1.15	0.90
20	140	23.2	21.5	15.0	17.0	82.0	15.0	2.0	1.85	2.0	1.15	0.92
25	165	28.4	26.7	18.0	20.0	95.0	19.0	2.4	2.35	2.4	1.15	0.92
32	228	36.8	33.8	20.0	22.0	146.0	25.0	2.4	2.35	2.4	1.47	1.15

blank

Materials: as shown	Couplers, flanged, internally screwed	STANDARD SHEET 11

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



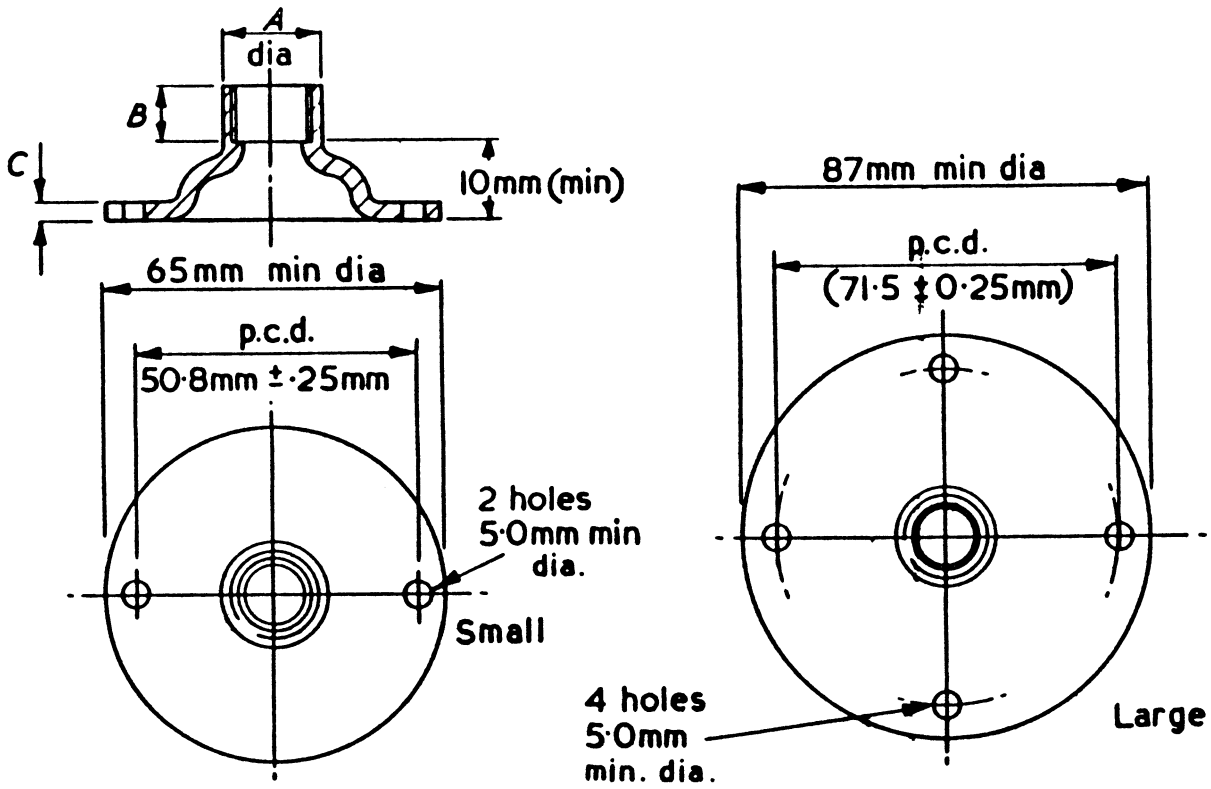
All dimensions are in millimetres

Nominal size	*A* min.	*B* min.	*C* min.	*D* min.		*E* nom.	*E* min.
				malleable cast iron	steel		
16	25.0	3.0	2.0	19.2	17.5	29	16.0
20	29.0	4.0	2.0	23.2	21.5	33	20.0
25	35.0	4.0	2.0	28.4	26.7	38	25.0
32	39.0	4.0	2.0	36.8	33.8	45	32.0

blank

Material: malleable cast iron or steel	Covers, circular, internally screwed, domed, small and large	STANDARD SHEET 12

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



All dimensions are in millimetres

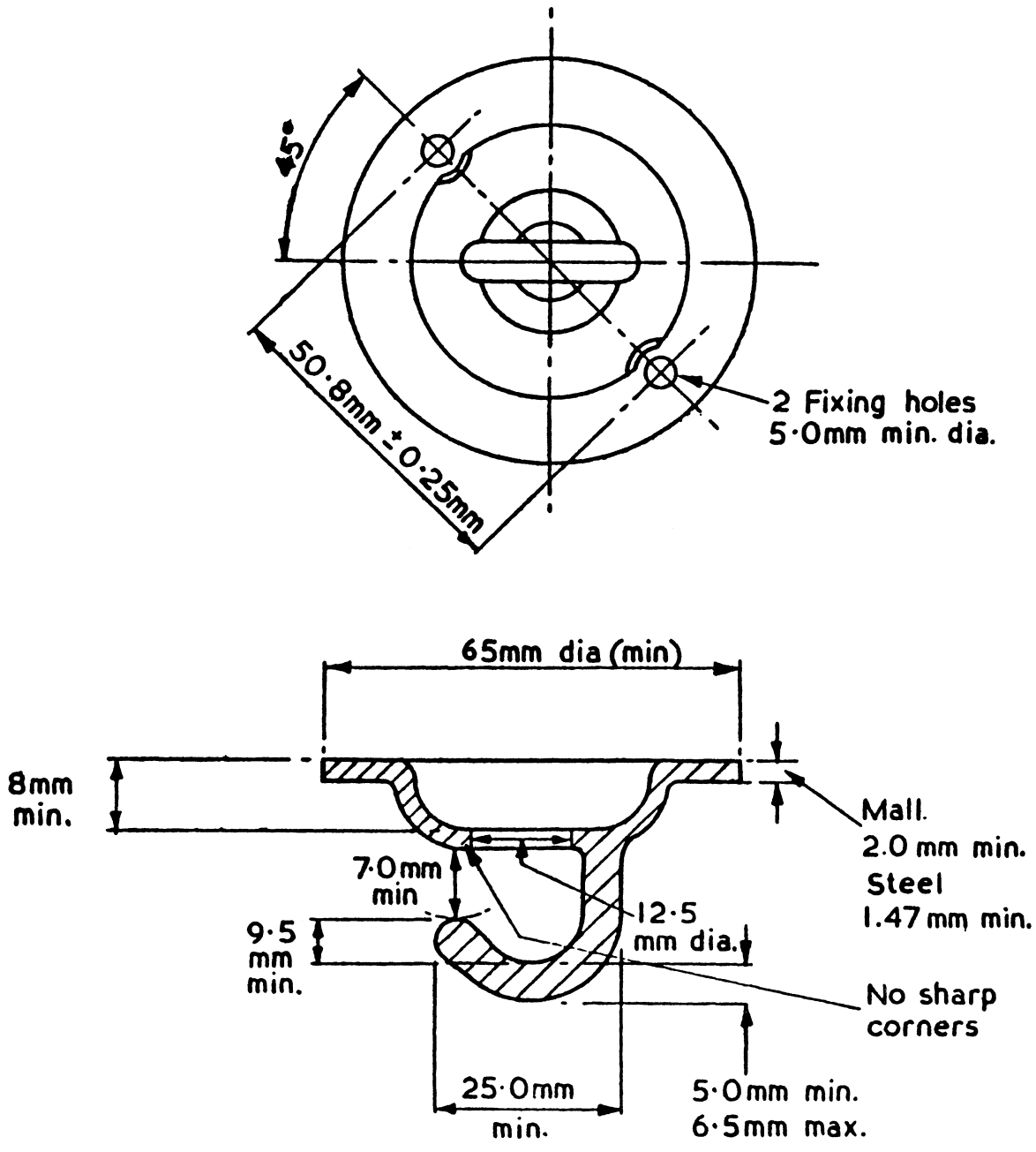
Nominal size	*A* min.		*B*		*C* (small) min.		*C* (large) min.	
	mall.	steel	min.	max.	mall.	steel	mall.	steel
16	19.2	17.5	13.5	15.5	2.0	1.47	2.8	2.35
20	23.2	21.5	15.0	17.0	2.0	1.47	2.8	2.35
25	28.4	26.7	18.0	20.0	2.0	1.47	2.8	2.35

blank

Material: malleable cast iron and/or steel	Covers, circular, hook	STANDARD SHEET 13

This drawing does not purport to show constructional details.
For tolerances see Clause **6**.

Provision shall be made for the attachment of an earthing device when required. For load test see Appendix A.



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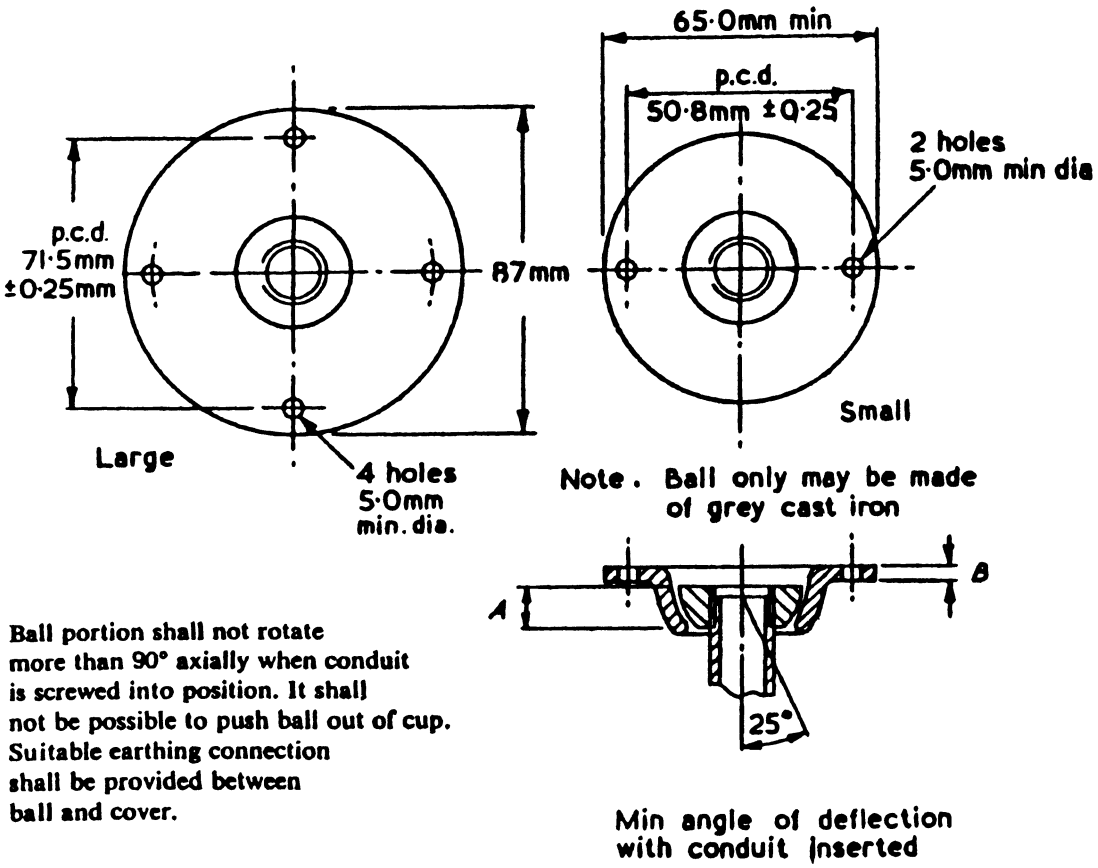
Material: malleable cast iron and/or steel	Covers, circular, ball and socket, internally screwed, small and large	STANDARD SHEET 14

This drawing does not purport to show constructional details.
For tolerances see Clause **6**.



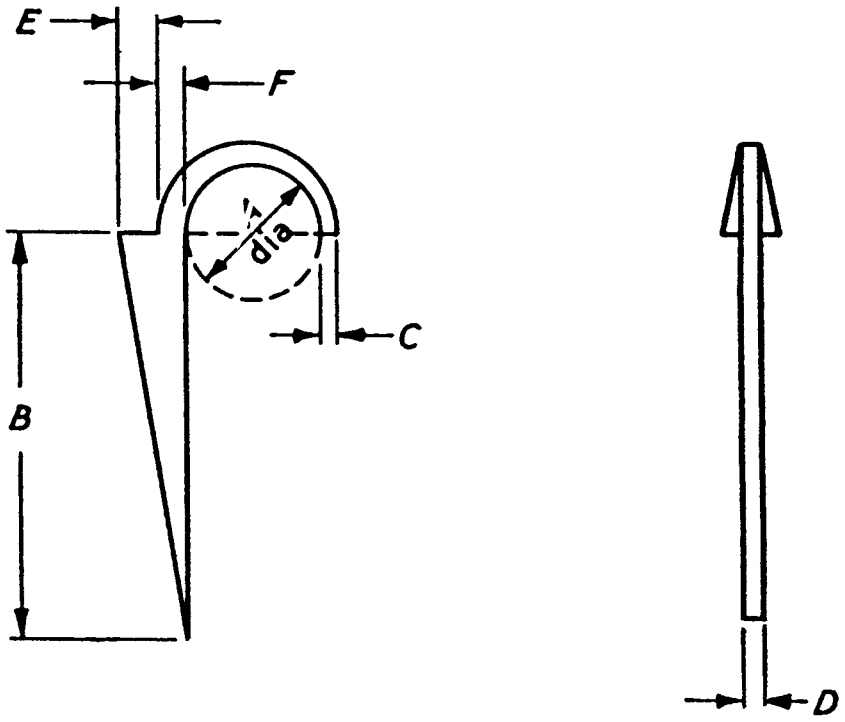
Matric dimensions (mm)

Nominal size	*A*		*B* (small) min.		*B* (large) min.	
	min.	max.	mall.	steel	mall.	steel
16	13.5	15.5	2.0	1.47	2.8	2.35
20	15.0	17.0	2.0	1.47	2.8	2.35
25	18.0	20.0	2.4	1.47	2.8	2.35

blank

Material: malleable cast iron or steel	Crampets	STANDARD SHEET 15

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



All dimensions are in millimetres

Nominal size	*A* min.	*B* min.	*C* min.	*D* min.	*E* min.	*F* min.
16	16.0	48.0	2.35	2.35	6.5	3.2
20	20.0	51.0	2.35	2.35	6.5	4.8
25	25.0	57.0	2.87	2.87	6.5	4.8
32	32.0	76.0	3.25	3.25	6.5	4.8

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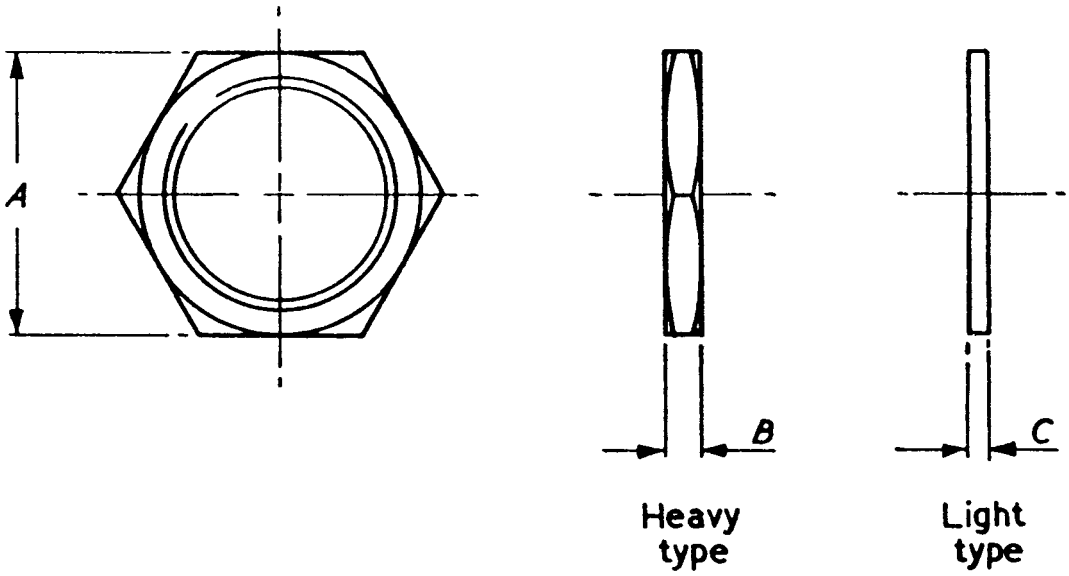
Material: malleable cast iron or steel or brass	Locknuts, hexagonal, screwed, light and heavy	STANDARD SHEET 16

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



All dimensions are in millimetres

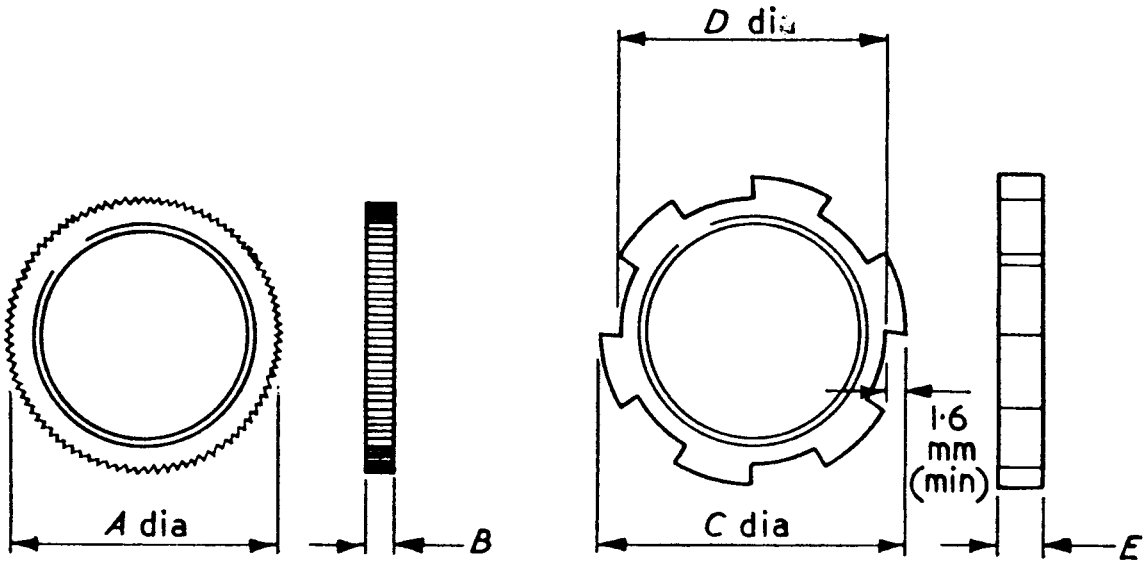
Nominal size	*A* nom.	*B* min. heavy	*C* min. light
16	22	4.4	2.87
20	27	4.4	2.87
25	36	5.9	2.87
32	41	5.9	2.87

blank

Material: malleable cast iron, zinc alloy, steel, brass	Locknuts, circular, screwed milled edge and crenellated	STANDARD SHEET 17

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.

NOTE The number of crenellations may be either six or eight.



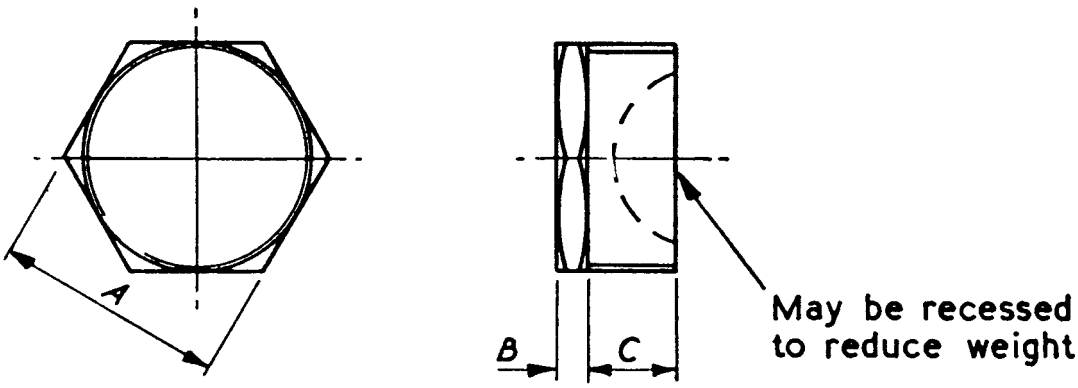
All dimensions are in millimetres

Nominal size	*A* min.	*B* min.	*C* max.	*D* min.	*E* min.
16	21.0	2.87	24.0	19.0	4.8
20	25.0	2.87	28.0	23.0	6.3
25	32.0	2.87	35.0	30.0	6.3
32	40.0	2.87	41.5	36.5	6.3

blank

Materials: brass, mall. cast iron, steel, aluminium alloy, zinc alloy	**Plugs, hexagonal, externally screwed**	**STANDARD SHEET 18**

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



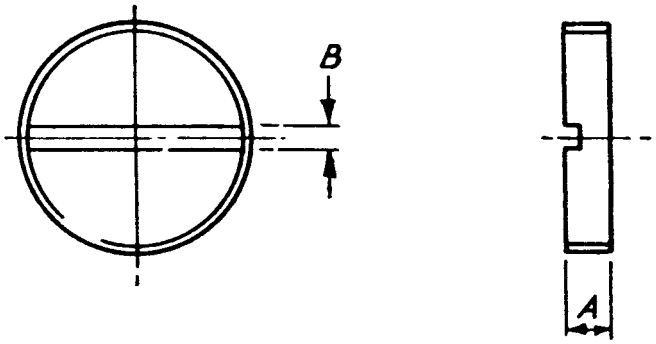
All dimensions are in millimetres

Nominal size	***A* nom.**	***B* min.**	***C***	
			min.	**max.**
16	17	3.2	8.0	12.0
20	22	3.2	8.0	12.0
25	27	3.2	9.5	13.0
32	36	4.0	11.0	14.0

blank

Materials: brass, mall. cast iron, steel, aluminium alloy, zinc alloy	**Plugs, slotted, externally screwed**	**STANDARD SHEET 19**

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



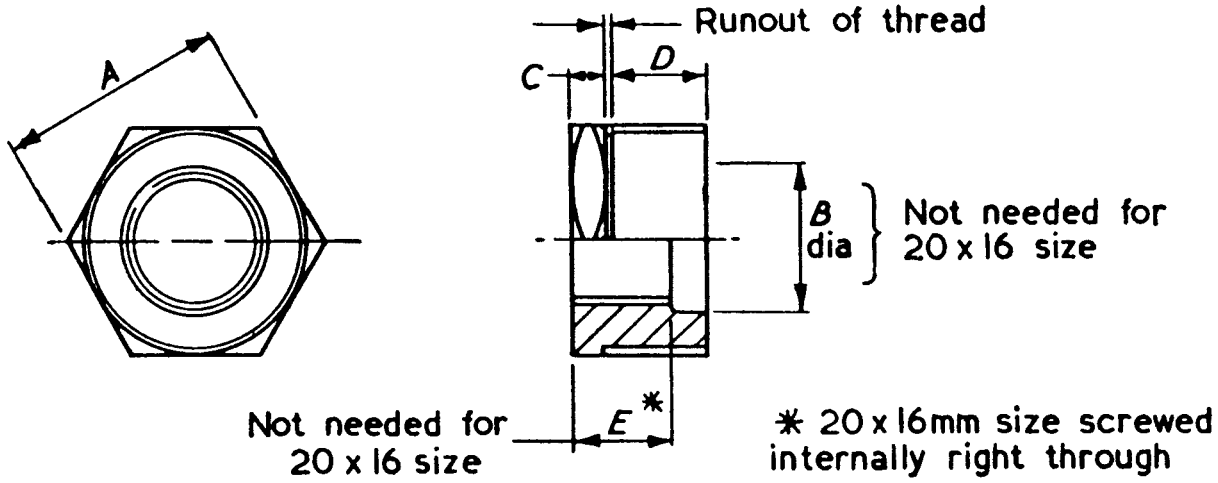
All dimensions are in millimetres

Nominal size	***A* min.**	***B* min.**
16	5.0	1.5
20	6.0	1.5
25	6.0	2.5
32	7.0	3.0

blank

Materials: mall. cast iron or steel	Reducers, screwed internally and externally	STANDARD SHEET 20

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



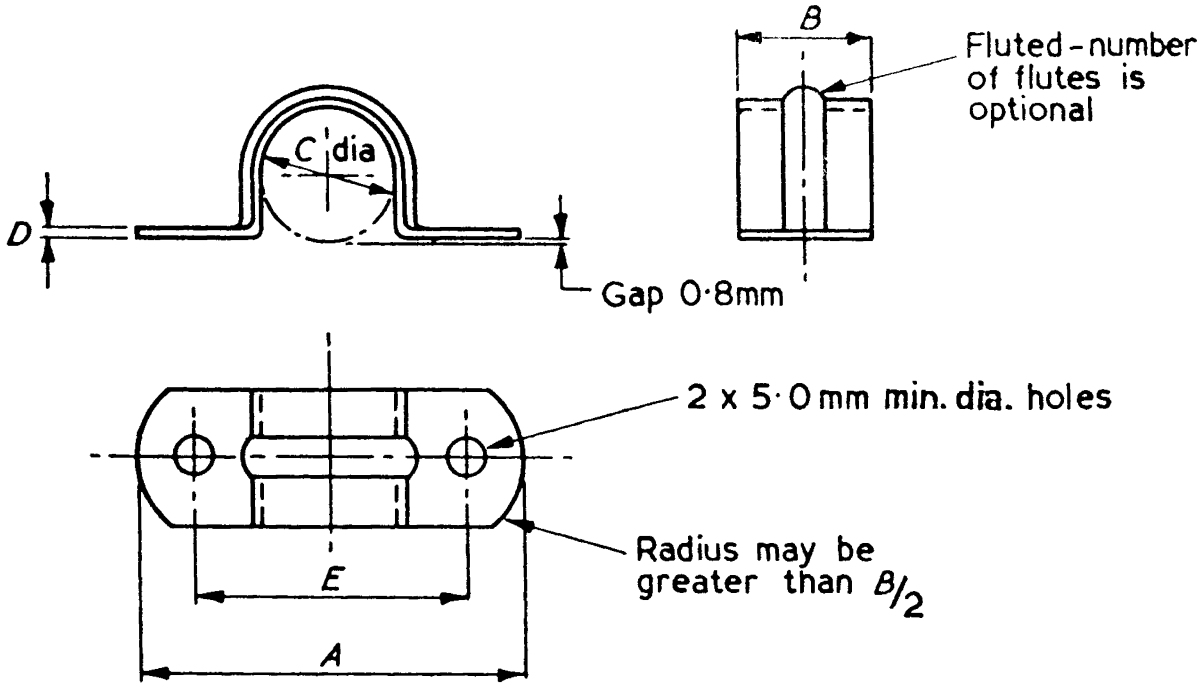
All dimensions are in millimetres

Nominal sizes	*A* nom.	*B* min.	*C* min.	*D*		*E*	
				min.	max.	min.	max.
20 × 16	22	—	3.2	13	15	13.5	—
25 × 20	27	20.8	3.2	16	18	15.0	17.0
32 × 20	36	20.8	4.0	18	20	15.0	17.0
32 × 25	36	25.8	4.0	18	20	18.0	20.0

blank

Materials: steel	Saddles	STANDARD SHEET 21

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



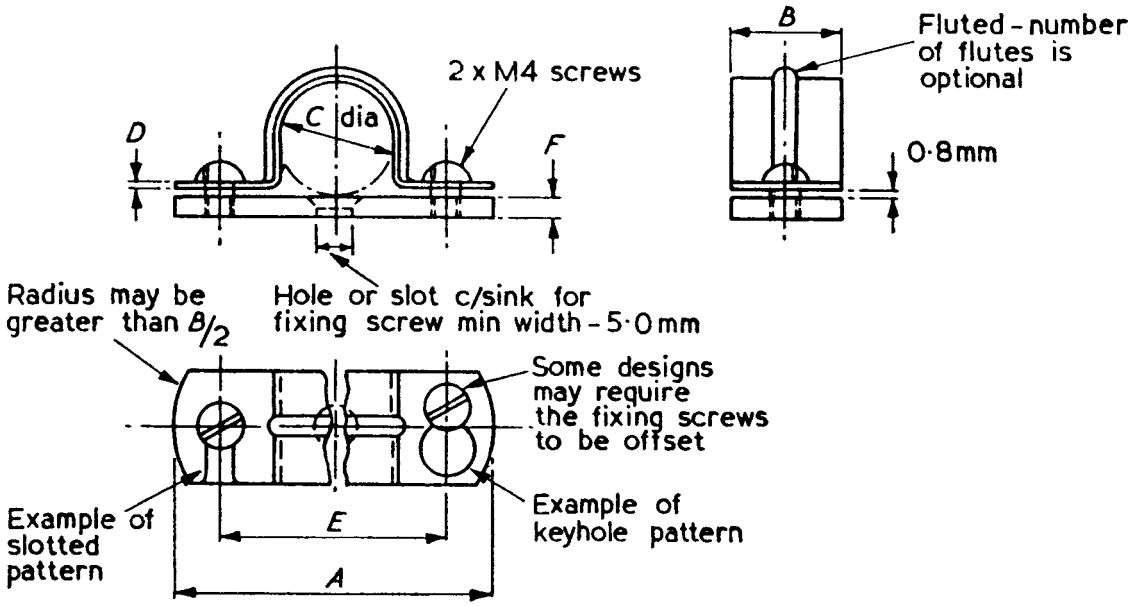
All dimensions are in millimetres

Nominal size	*A* min.	*B* min.	*C*		*D* min.	*E* nom.
			min.	**max.**		
16	50.0	16	16.0	16.4	0.87	33
20	55.0	19	20.0	20.4	0.87	39
25	61.0	19	25.0	25.4	0.87	45
32	73.0	25	32.0	32.4	0.87	53

blank

Materials: steel	Saddles, spacer bar	STANDARD SHEET 22

This drawing does not purport to show constructional details.
For tolerances, see Clause **6**.



NOTE 1 Saddle tops shall be so designed as to permit assembly or removal with the screws in position.
NOTE 2 The base may be made of malleable cast iron or steel but if of dished section the minimum thickness must not be less than 1.09 mm and the threaded holes shall provide a minimum engagement of $1^1/_2$ full threads.
NOTE 3 The base may exceed the dimensions *A* and *B*.
NOTE 4 Dimension *B* for 16 mm size for "keyhole" pattern to be 17.5 mm minimum.

All dimensions are in millimetres

Nominal size	*A*	*B*	*C*		*D*	*E*	*F*
	min.	min.	min.	max.	min.	nom.	min.
16	50.0	16	16.0	16.4	0.87	33.0	3.0
20	55.0	19	20.0	20.4	0.87	39.0	3.0
25	61.0	19	25.0	25.4	0.87	45.0	3.3
32	73.0	25	32.0	32.4	0.87	53.0	3.3

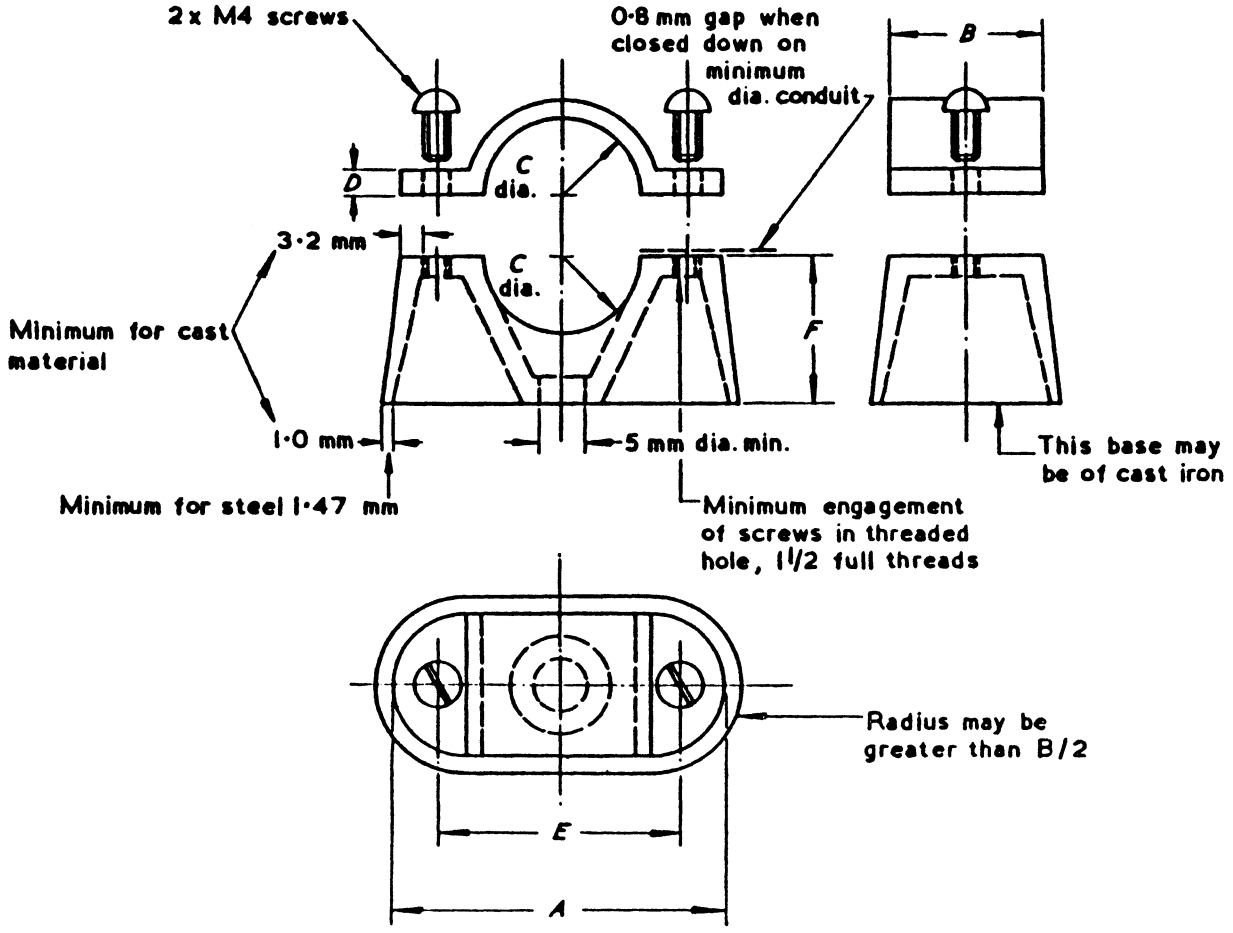
blank

Materials: cast iron or steel	Saddles, distance	STANDARD SHEET 23

This drawing does not purport to show constructional details.
For tolerances see Clause **6**.

All dimensions are in millimetres

Nominal size	*A*	*B*	*C*		*D* min.		*E*	*F*
	min.	min.	min.	max.	cast	steel	min.	nom.
16	41	13	16.0	16.4	3.2	1.14	29	14
20	49	16	20.0	20.4	3.2	1.65	36	16
25	52	16	25.0	25.4	3.2	1.65	40	19
32	69	19	32.0	32.4	3.2	1.65	46	22



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