BRITISH STANDARD

BS 1906:1952

Incorporating Amendment Nos. 1, 2, 3, 4, 5, and 6

Specification for

Hose couplings (air and water)

($^1/_8$ in. to $1^1/_4$ in. nominal sizes)

UDC 621.643.4

Co-operating organizations

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

Admiralty*
Air Ministry
Associated Offices Technical Committee
Association of Consulting Engineers (Incorporated)
British Chemical Plant Manufacturers' Association
British Compressed Air Society*
British Electrical and Allied Manufacturers' Association
British Electricity Authority and Area Boards
British Engineers Association*
British Internal Combustion Engine Manufacturers' Association
British Iron and Steel Federation
British Railways, The Railway Executive
Crown Agents for the Colonies
D.S.I.R. — Mechanical Engineering Research Organization
Engineering Equipment Users' Association
Institute of Marine Engineers
Institute of Petroleum
Institution of Civil Engineers
Institution of Gas Engineers
Institution of Heating and Ventilating Engineers
Institution of Mechanical Engineers*
Institution of Mechanical Engineers (Automobile Division)
Institution of Production Engineers
Locomotive Manufacturers' Association
Machine Tool Trades' Association
Ministry of Fuel and Power*
Ministry of Labour and National Service (Factory Department)
Ministry of Supply*
Ministry of Transport*
Ministry of Works*
National Physical Laboratory
Office of the High Commissioner for India
War Office*

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 committee entrusted with the preparation of this standard:—

Association of Mining Electrical and Mechanical Engineers
British Wrapped Rubber Hose Manufacturers' Association
Council of Underground Machinery Manufacturers
Cut Thread Screwing Tool Manufacturers' Association
Federation of British Rubber Manufacturers' Associations
Federation of Civil Engineering Contractors
Federation of Manufacturers of Contractors Plant
Federation of Painting Contractors
Institution of Municipal Engineers
Institution of Water Engineers
National Association of Colliery Managers
National Coal Board
Individual Manufacturers of Couplings

Amendments issued since publication

Amd. No.	Date	Comments
1604	April 1953	
3434	June 1959	
3589	December 1959	
3927	September 1960	
4779	January 1963	
5175	February 1964	Indicated by a sideline in the margin

This British Standard, having been approved by the Mechanical Engineering Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 5 December 1952

ISBN 0 580 02073 8

Contents

		Page
Co-operating organizations		Inside front cover
Foreword		ii
Part 1. “Light” Series, coned type (B.S.P. Threads)		
1	Scope	1
2	Designation of size of coupling	1
3	Material	1
4	Dimensions	1
5	Screw threads	1
6	Hexagons	1
7	Tail-ends	1
8	Interchangeability	1
9	Hydraulic test	1
10	Workmanship	1
11	Inspection	1
12	Test facilities	1
Illustrations and tables of dimensions		2–7
Part 2. “Medium” series, flat and coned types (B.S.P. threads)		
13	Scope	8
14	Designation of size of coupling	8
15	Material	8
16	Dimensions	8
17	Screw threads	8
18	Hexagons	8
19	Tail-ends	8
20	Interchangeability	8
21	Hydraulic test	8
22	Workmanship	8
23	Inspection	8
24	Test facilities	9
Illustrations and tables of dimensions		9–23
Part 3. “Heavy” series, flat and coned types (unified threads)		
25	Scope	24
26	Designation of size of coupling	24
27	Material	24
28	Dimensions	24
29	Screw threads	24
30	Hexagons	24
31	Interchangeability	24
32	Hydraulic test	24
33	Workmanship	24
34	Identification marking	24
35	Inspection	25
36	Test facilities	25
Illustrations and tables of dimensions		25–46
Appendix A Limits and tolerances for BS pipe (parallel) threads. Male threads—*free fit*		47
Appendix B Limits and tolerances for BS pipe (parallel) threads. Female threads—*free fit*		48

	Page
Appendix C Limits and tolerances for unified screw threads. Male thread	48
Appendix D Limits and tolerances for unified screw threads. Female thread	49
Figure 1 — Assembly (serrated tail-end)	2
Figure 2 — Assembly (bulbous tail-end)	2
Figure 2a — Assembly (special design tail-end)	3
Figure 3 — Tail-end (coned)	4
Figure 4 — Union nut (hexagon)	6
Figure 5 — Connector, hexagon (double male, coned)	7
Figure 6 — Assembly (tail end, coned)	9
Figure 7 — Assembly (tail-end flat)	9
Figure 8a — Assembly (special design tail-end)	10
Figure 9a — Assembly (tail-end, coned)	10
Figure 10 — Assembly (tail-end, flat)	11
Figure 11 — Tail-end (coned)	12
Figure 12 — Tail-end (flat)	13
Figure 13 — Union nut, hexagon	14
Figure 14 — Connector reducer (hexagon, double male, coned)	16
Figure 15 — Connector reducer (hexagon, double male, flat)	18
Figure 16 — Connector (hexagon, male and female, coned)	20
Figure 17 — Connector (hexagon, male and female, flat)	22
Figure 18 — Assembly (tail-end, coned)	25
Figure 19 — Assembly (tail-end, flat)	26
Figure 20 — Assembly (tail-end, coned)	27
Figure 21 — Assembly (tail-end, flat)	28
Figure 22 — Assembly (tail-end, coned)	29
Figure 23 — Assembly (tail-end, flat)	30
Figure 24 — Tail-end (coned)	31
Figure 25 — Tail-end (flat)	32
Figure 26 — Union nut. Wing (for tail-end, flat)	33
Figure 27 — Connector reducer. Wing (double male, coned)	35
Figure 28 — Connector reducer. Wing (double male, flat)	37
Figure 29 — Connector reducer (hexagon, double male, coned)	39
Figure 30 — Connector reducer (hexagon, double male, flat)	41
Figure 31 — Connector (hexagon, male and female, coned)	43
Figure 32 — Connector (hexagon, male and female, flat)	45
Table 1	5
Table 2	6
Table 3	7
Table 4	12
Table 5	13
Table 6	15
Table 7	16
Table 8	18
Table 9	21
Table 10	23
Table 11	31
Table 12	32
Table 13	34

	Page
Table 14	35
Table 15	37
Table 16	39
Table 17	41
Table 18	44
Table 19	46

Foreword

This standard makes reference to the following British Standards:

BS 21, *Pipe threads. Part 1: Basic sizes and tolerances.*

BS 218, *Leaded brass (58 per cent copper, 2 per cent lead) forging stock and forgings.*

BS 249, *Leaded brass (58 per cent copper, 3 per cent lead) rods and sections (other than forging stock).*

BS 250, *High tensile brass bars and sections (Grades A and B).*

BS 310, *Blackheart malleable iron castings.*

BS 369, *5 per cent phosphor bronze (copper-tin-phosphorous) rods and sections (other than forging stock).*

BS 970, *Wrought steels.*

BS 1083, *Precision hexagon bolts, screws and nuts.*

BS 1400, *Copper alloy ingots and castings.*

BS 1580, *Unified screw threads.*

BS 1768, *Unified precision hexagon bolts, screws and nuts (UNC and UNF threads). Normal series.*

BS 2779, *Fastening threads of B.S.P. sizes.*

The need for a British Standard for hose couplings for air and water has been apparent for some considerable time and in response to a request from the British Compressed Air Society, the Mechanical Engineering Industry Standards Committee authorized the setting up of a representative committee to prepare such a standard.

This standard has been divided into three parts; for quick reference, tabulated details of the couplings specified in each part are given below:—

Part 1. "Light" series of couplings: Coned type

(all sizes in inches)

Nominal size (hose bore)	1/8	3/16	1/4	5/16	3/8	1/2
Screw threads B.S.P. (parallel) complying with BS 2779[a] (see Clause **5**)	1/8	1/8	1/4	1/4	3/8	1/2

NOTE These couplings are intended primarily for use with paint spray equipment and other small appliances.
[a] BS 2779 "*Fastening threads of B.S.P. sizes.*"

Part 2. "Medium" series of couplings: Flat and coned types

(all sizes in inches)

Nominal size (hose bore)		3/16	5/16	1/2	5/8	3/4	**1**
Screw threads B.S.P. (parallel) complying with BS 2779[a] (see Clause **17**)	Flat type	1/4	3/8	1/2	3/4	1	$1\frac{1}{4}$
	Coned type	—	—	—	3/4	1	—

NOTE These couplings are intended primarily for use on light pneumatic tools in general engineering and allied industries.
[a] BS 2779 "*Fastening threads of B.S.P. sizes.*"

Part 3. "Heavy" series of couplings: Flat and coned types

Nominal size (hose bore)		$^1/_2$ in.	$^3/_4$ in.	1 in.	$1^1/_4$ in.
Unified screw threads complying with BS 1580[a] class 1A and 1B (see Clause **29**)	Flat type	—	$1^1/_2$ in.–6UNC	$1^3/_4$ in.–6UN	$2^1/_4$ in.–6UN
	Coned type	$1^1/_4$ in.–7UNC	$1^1/_2$ in.–6UNC	$1^3/_4$ in.–6UN	$2^1/_4$ in.–6UN

NOTE These couplings are intended primarily for use on the heavy type of pneumatic tools, such as rock drills and kindred equipment in the mining and quarrying industries, and in civil engineering. The "coned knock-on" type of coupling has been introduced primarily to meet the needs of H.M. Forces.

[a] BS 1580, "*Unified screw threads.*"

For the "Heavy" series of hose couplings the Unified form of screw thread, which has recently been the subject of agreement between the United Kingdom, Canada and the United States of America, has been adopted.

The couplings specified in this British Standard may be secured to the hose by clamps, clips, or other approved methods. The clamps or clips are to be located between the ridges on the bulbous ended tail-pieces. Tail-ends of special design which employ external sleeves, ferrules or other clamping devices may also be used, subject to agreement between the purchaser and the manufacturer.

The complementary British Standard for hose couplings — BS 1782, "*Hose couplings ($1^1/_2$ in. to 8 in. nominal sizes) other than fire hose couplings*" — has been published.

The following appendices have been included:—

A. Limits and tolerances for BS pipe (parallel) threads. Male threads — *free fit.*
B. Limits and tolerances for BS pipe (parallel) threads. Female threads — *free fit.*
C. Limits and tolerances for unified screw threads. Male thread.
D. Limits and tolerances for unified screw threads. Female thread.

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 to vi, pages 1 to 50, an inside back cover 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.

blank

Part 1. "Light" series, coned type (B.S.P. Threads)

1 Scope

Part 1 of this standard specifies requirements for hose couplings of $^1/_8$ in., $^3/_{16}$ in., $^1/_4$ in., $^5/_{16}$ in., $^3/_8$ in. and $^3/_2$ in. nominal sizes, for use at pressures not exceeding 150 lb/sq. in.

2 Designation of size of coupling

The size by which the coupling is designated shall be the nominal bore of the hose with which it is to be used.

3 Material

The quality of the material used in the manufacture of the couplings shall be at least equivalent to the following:—

a) Bronze or phosphor bronze complying with BS 369.[1)]

b) Brass complying with BS 249.[2)]

c) Steel complying with Specification En3 of BS 970.[3)]

4 Dimensions

The dimensions of the couplings shall be in accordance with those shown in Figure 3, Figure 4 and Figure 5 and Table 1, Table 2 and Table 3.

5 Screw threads

Screw threads, male and female, shall be BS Pipe threads (parallel) complying with the requirements for "FREE FIT" specified in BS 2779[4)] (see Appendix A and Appendix B).

The first male and female threads shall be chamfered to 45° to the core diameter.

6 Hexagons

The dimensions of hexagons on connectors and nuts shall conform to those specified in BS 1083.[5)] (See Figure 4 and Figure 5).

7 Tail-ends

Tail-ends to which the hose is to be attached may be either serrated or bulbous, but they shall comply with the requirements of Table 1.

Tail-ends of special design, which employ external sleeves, ferrules, or other damping devices, may also be used subject to agreement between the purchaser and the manufacturer.

The ends of these special fittings shall, however, be so designed that they can be attached to standard connectors. In addition, these tail-ends, when assembled with hose, shall withstand the hydraulic pressure specified in Clause **9**.

8 Interchangeability

All corresponding parts shall be interchangeable. (See Clause **7**).

9 Hydraulic test

When required, assembled couplings, without hose, shall be given a pressure test in the presence of the purchaser or his representative.

The hydraulic test pressure shall be 300 lb/sq. in. When assembling the couplings for hydraulic test, the force applied to the coupling nut to ensure a watertight joint shall not be excessive. Couplings, showing signs of leakage during this test, by reason of either defective joint or porosity of metal, shall be liable to rejection.

10 Workmanship

Workmanship and finish shall be of good quality. All burrs and sharp edges shall be removed.

11 Inspection

The purchaser or his representative shall have access, at all reasonable times, to those portions of the works in which the couplings ordered are being manufactured, and in which the testing is taking place.

12 Test facilities

The manufacturer shall supply, at his own cost, labour and appliances for making the tests on his premises in accordance with this standard. Failing the existence of facilities for making the prescribed tests at his own works, the manufacturer shall be responsible for having the tests made elsewhere.

[1)] BS 369, "*5 per cent phosphor bronze (copper-tin-phosphorous) rods and sections (other than forging stock).*"
[2)] BS 249, "*Leaded brass (58 per cent copper, 3 per cent lead) rods and sections (other than forging stock).*"
[3)] BS 970, "*Wrought steel.*"
[4)] BS 2779, "*Fastening threads of B.S.P. sizes.*"
[5)] BS 1083, "*Precision hexagon bolts, screws and nuts.*"

Hose couplings: Light series (B.S.P. threads)

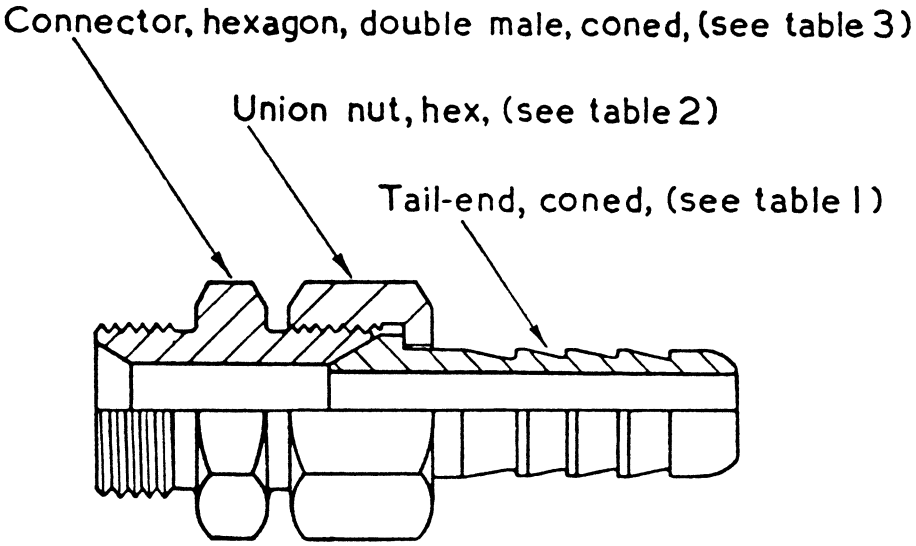

Figure 1 — Assembly (serrated tail-end)

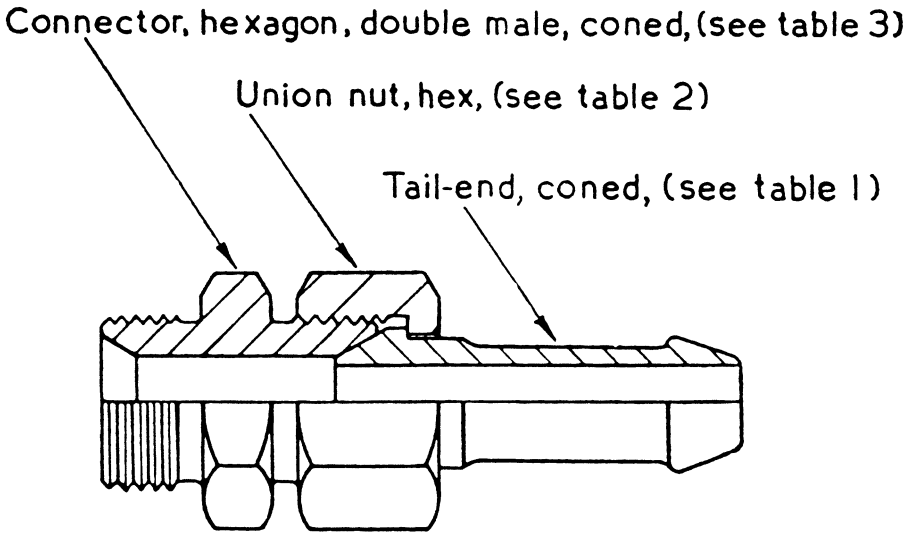

Figure 2 — Assembly (bulbous tail-end)

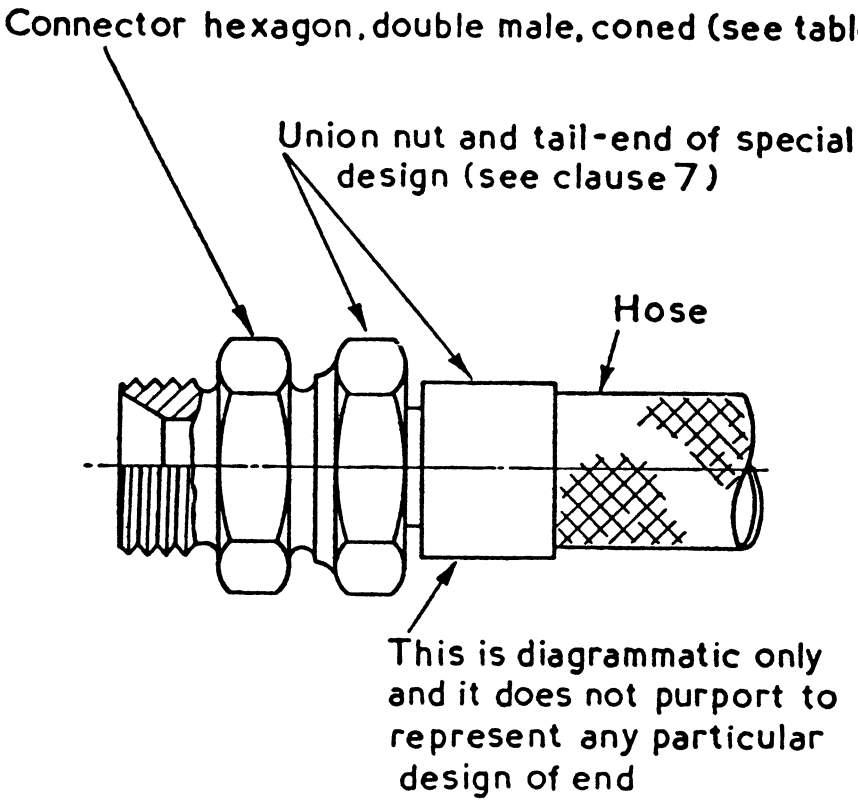

Figure 2a — Assembly (special design tail-end)

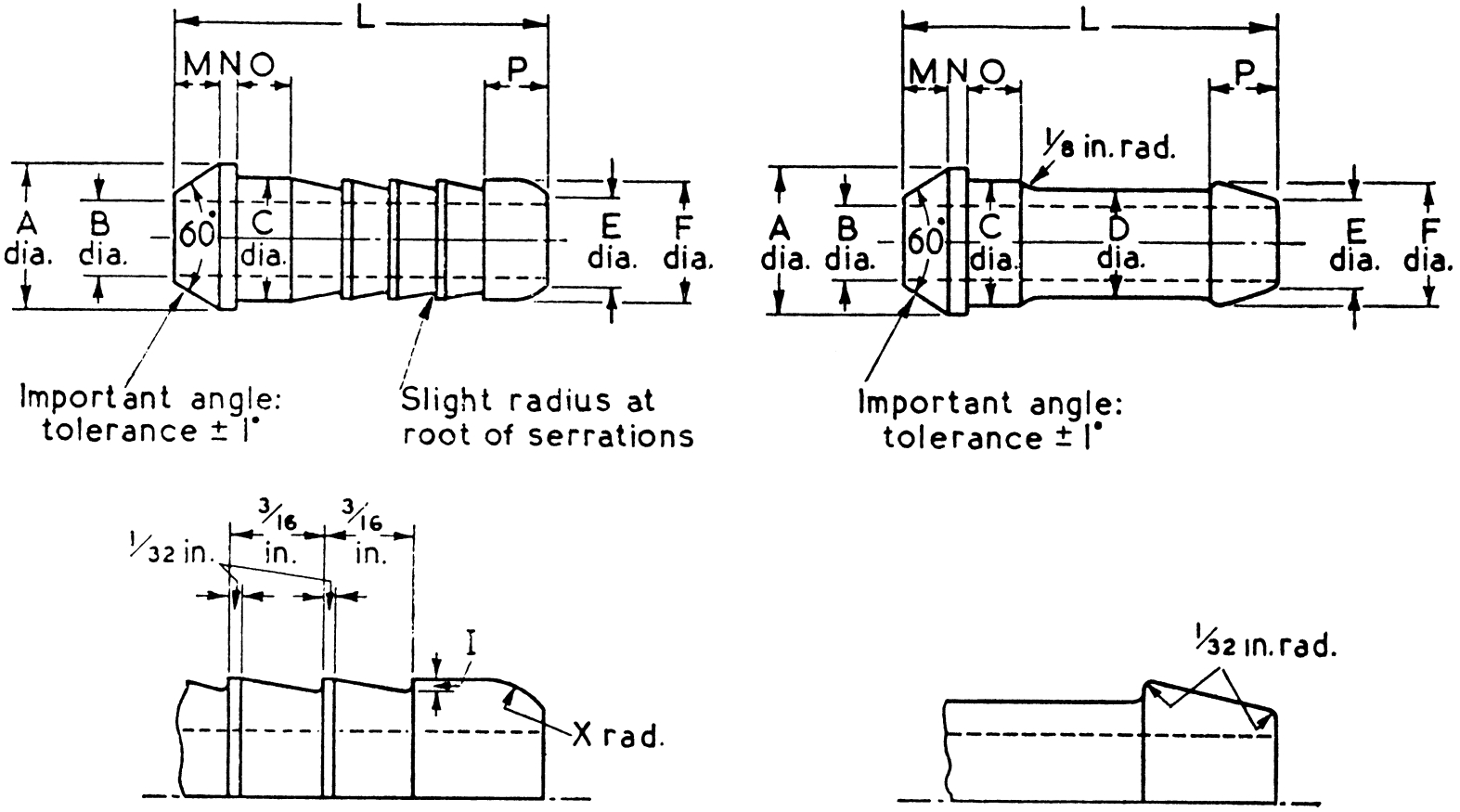

Figure 3 — Tail-end (coned)

Table 1

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 2779[a])	A dia.	B dia.	C dia.	D dia.	E dia.	F dia.	I	L	M	N	O	P	X rad.
		Limits of tolerance + 0.000 – 0.005		Limits of tolerance + 0.000 – 0.005	Limits of tolerance ± 0.005		Limits of tolerance + 0.000 – 0.005	Limits of tolerance + 0.005 – 0.000						
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1/8	1/8 B.S.P.	0.325	0.078	0.242	0.157	0.105	0.187	0.015	1.187	0.109	0.047	0.125	0.156	0.062
3/16	1/8 B.S.P.	0.325	0.125	0.242	0.212	0.156	0.242	0.015	1.187	0.109	0.047	0.156	0.156	0.078
1/4	1/4 B.S.P.	0.435	0.171	0.370	0.268	0.218	0.308	0.020	1.312	0.125	0.062	0.187	0.187	0.093
5/16	1/4 B.S.P.	0.435	0.234	0.370	0.330	0.281	0.370	0.020	1.312	0.125	0.062	0.218	0.187	0.125
3/8	3/8 B.S.P.	0.573	0.281	0.490	0.435	0.343	0.485	0.025	1.500	0.187	0.062	0.218	0.250	0.156
1/2	1/2 B.S.P.	0.719	0.375	0.625	0.531	0.500	0.625	0.025	2.031	0.250	0.093	0.312	0.375	0.250

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 2779, "*Fastening threads of BSP. sizes.*"

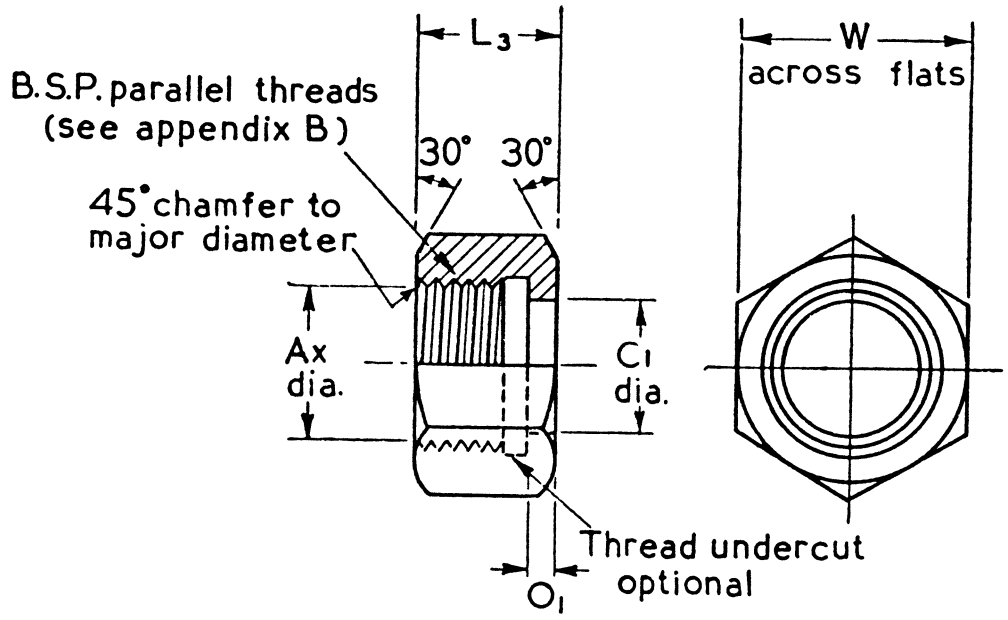

Figure 4 — Union nut (hexagon)

Table 2

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 2779[a])	Ax dia.	C1 dia.	L3	O1	W	
		Minor dia. of thread (min.)	Limits of tolerance + 0.010 – 0.000			Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.
1/8	1/8 B.S.P.	0.337	0.252	0.406	0.062	0.525	0.518
3/16	1/8 B.S.P.	0.337	0.252	0.406	0.062	0.525	0.518
1/4	1/4 B.S.P.	0.451	0.380	0.468	0.109	0.710	0.702
5/16	1/4 B.S.P.	0.451	0.380	0.468	0.109	0.710	0.702
3/8	3/8 B.S.P.	0.589	0.505	0.531	0.109	0.820	0.812
1/2	1/2 B.S.P.	0.734	0.641	0.687	0.187	1.010	1.000

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.
[a] BS 2779, "*Fastening threads of BSP. sizes.*"

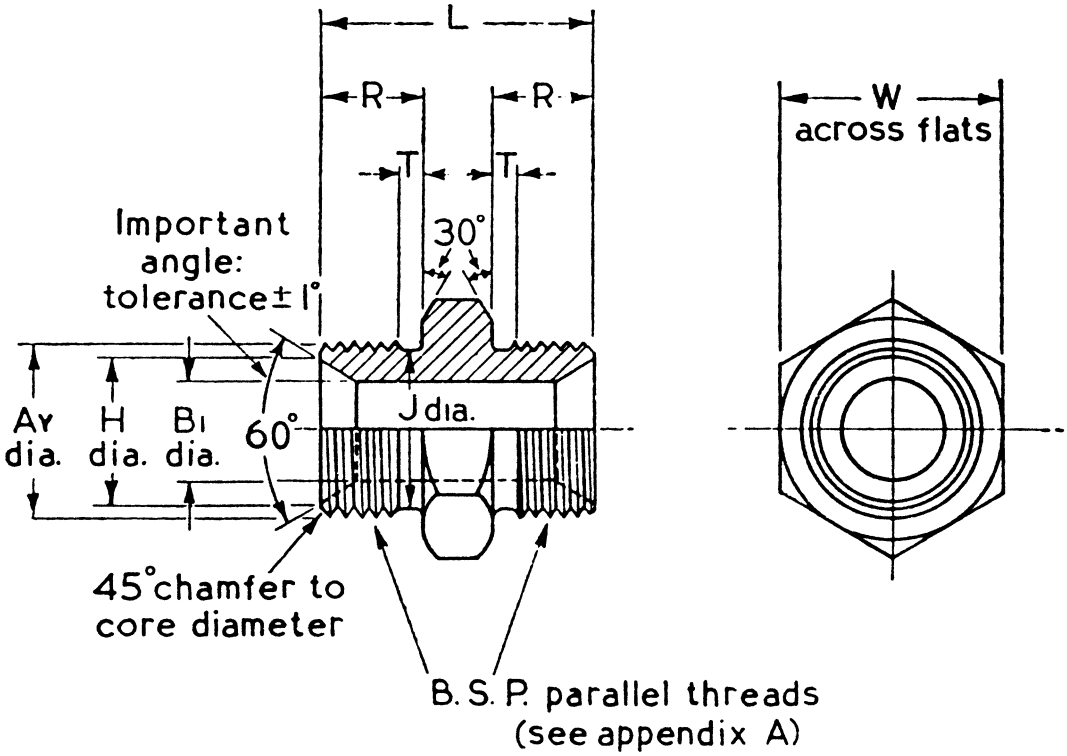

Figure 5 — Connector, hexagon (double male, coned)

Table 3

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 2779[a])	Ay dia.	B1.	H.	J.	L	R	T	W	
		Major dia. of thread (max.)		Limits of tolerance + 0.010 – 0.000	Limits of tolerance + 0.000 – 0.010				Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1/8	1/8 B.S.P.	0.383	0.156	0.285	0.332	0.812	0.312	0.093	0.525	0.518
3/16	1/8 B.S.P.	0.383	0.156	0.285	0.332	0.812	0.312	0.093	0.525	0.518
1/4	1/4 B.S.P.	0.518	0.250	0.405	0.446	0.937	0.375	0.093	0.710	0.702
5/16	1/4 B.S.P.	0.518	0.250	0.405	0.446	0.937	0.375	0.093	0.710	0.702
3/8	3/8 B.S.P.	0.656	0.375	0.545	0.584	1	0.375	0.093	0.820	0.812
1/2	1/2 B.S.P.	0.825	0.437	0.609	0.720	1.375	0.500	0.125	1.010	1.000

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.
[a] BS 2779, "*Fastening threads of BSP. sizes.*"

Part 2. "Medium" series, flat and coned types (B.S.P. threads)

13 Scope

Par 2 of this standard specifies requirements for air hose couplings of $^{3}/_{16}$, $^{5}/_{16}$, $^{1}/_{2}$, $^{5}/_{8}$, $^{3}/_{4}$ and 1 in. nominal sizes for use at pressures not exceeding 150 lb/sq. in. Requirements for connector-reducers are also specified.

14 Designation of size of coupling

The size by which the coupling is designated shall be the nominal bore of the hose with which it is to be used.

15 Material

a) *Couplings.* The quality of the material used in the manufacture of the couplings shall be at least equivalent to the following:—

i) Bronze or phosphor bronze complying with BS 369.[6)]

ii) Brass complying with BS 249.[7)]

iii) Steel complying with Specification En3 of BS 970.[8)]

iv) Malleable cast iron complying with BS 310.[9)]

b) *Washers.* The washers shall be of specially selected leather, rubber, rubber asbestos compound, or other suitable approved material. The purchaser shall be given prior notification by the manufacturer of the type of washer he intends to supply.

16 Dimensions

The dimensions of the couplings shall be in accordance with those shown in Figure 11 to Figure 17 and Table 4 to Table 10 inclusive.

The minimum thickness of washers shall be $^{1}/_{8}$ in. (See Table 6).

17 Screw threads

Screw threads, male and female, shall be BS Pipe threads (parallel) complying with the requirements for "FREE FIT" specified in BS 2779.[10)] (See Appendix A and Appendix B).

The first male and female threads shall be chamfered to 45° to core diameter.

18 Hexagons

The dimensions of hexagons on connectors and nuts shall conform to those specified in BS 1083.[11)] (See Figure 13 to Figure 17).

19 Tail-ends

Except when otherwise agreed between the purchaser and the manufacturer, tail-ends to which the hose is to be attached shall be bulbous and shall comply with the requirements of Table 4 or Table 5.

Tail-ends of special design which employ external sleeves, ferrules or other clamping devices may also be used subject to agreement between the purchaser and the manufacturer. The ends of these special fittings shall, however, be so designed that they can be attached to standard connectors. In addition, these tail-ends, when assembled with hose, shall withstand the hydraulic pressure specified in Clause **21**.

20 Interchangeability

All corresponding parts shall be interchangeable. (See Clause **19**).

21 Hydraulic test

All couplings made from castings shall, when assembled, be subjected to a hydraulic test of 300 lb/sq. in. Couplings other than castings shall, when required, be subjected to the same test in the presence of the purchaser or his representative.

When assembling the couplings for hydraulic test, the force applied to the coupling nut to ensure a watertight joint shall not be excessive. Couplings showing signs of leakage during this test, by reason of either defective joint or porosity of metal, shall be liable to rejection.

22 Workmanship

Workmanship and finish shall be of good quality. All burrs and sharp edges shall be removed.

23 Inspection

The purchaser or his representative shall have access at all reasonable times to those portions of the works in which the couplings ordered are being manufactured, and in which the testing is taking place.

---

6) BS 369, "*5 per cent phosphor bronze (copper-tin-phosphorous) rods and sections (other than forging stock).*"
7) BS 249, "*Leaded brass (58 per cent copper, 3 per cent lead) rods and sections (other than forging stock).*"
8) BS 970, "*Wrought steels.*"
9) BS 310, "*Blackheart malleable iron castings.*"
10) BS 2779, "*Fastening threads of BSP. sizes.*"
11) BS 1083, "*Precision hexagon bolts, screws and nuts.*"

24 Test facilities

The manufacturer shall supply, at his own cost, labour and appliances for making the tests on his premises in accordance with this standard. Failing the existence of facilities for making the prescribed tests at his own works, the manufacturer shall be responsible for having the tests made elsewhere.

Hose couplings: Medium series (B.S.P. threads)

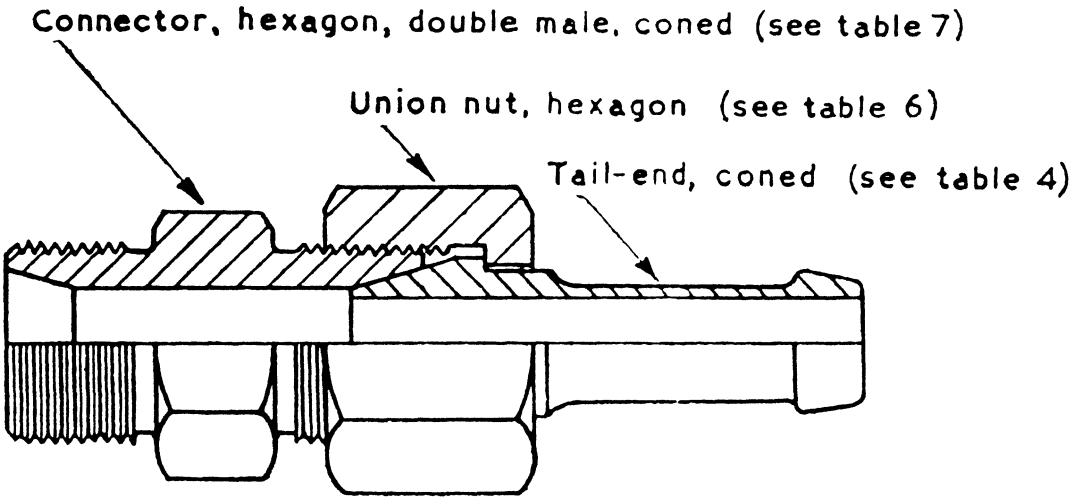

Figure 6 — Assembly (tail-end, coned)

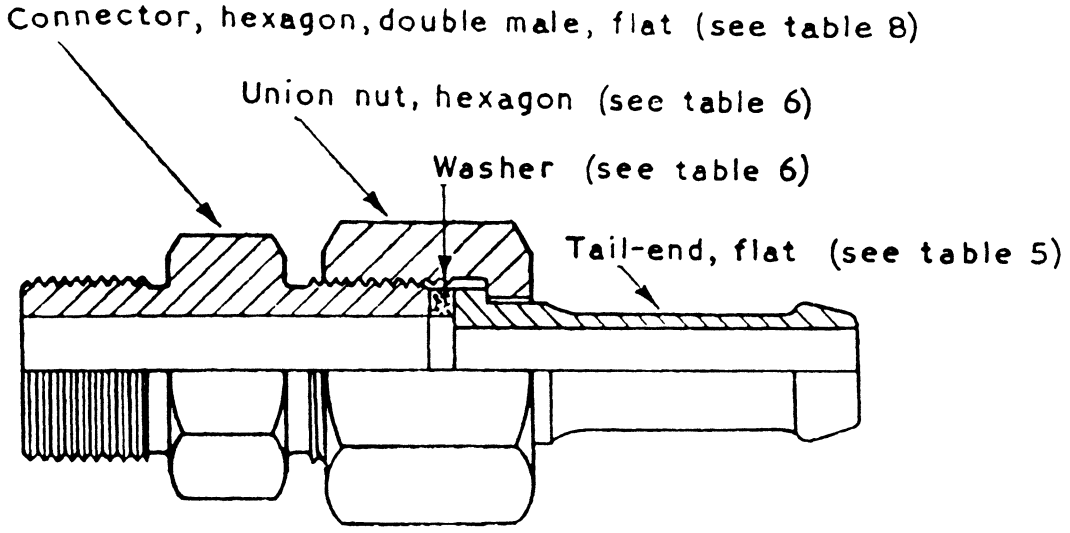

Figure 7 — Assembly (tail-end, flat)

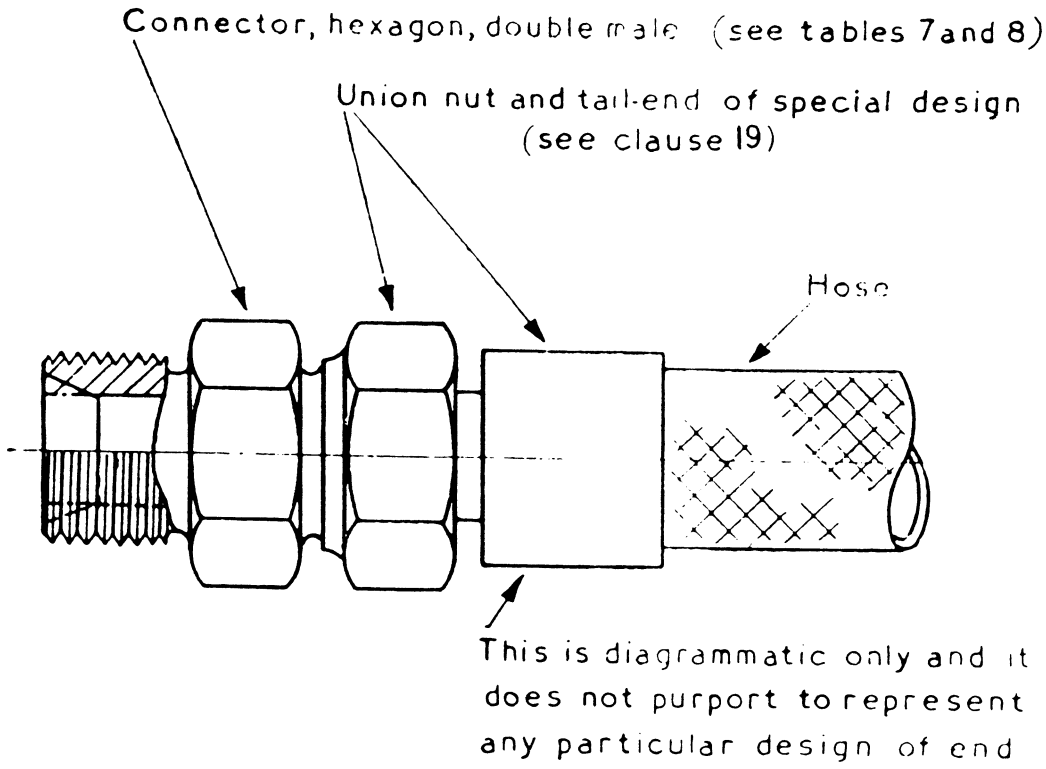

Figure 8a — Assembly (special design tail-end)

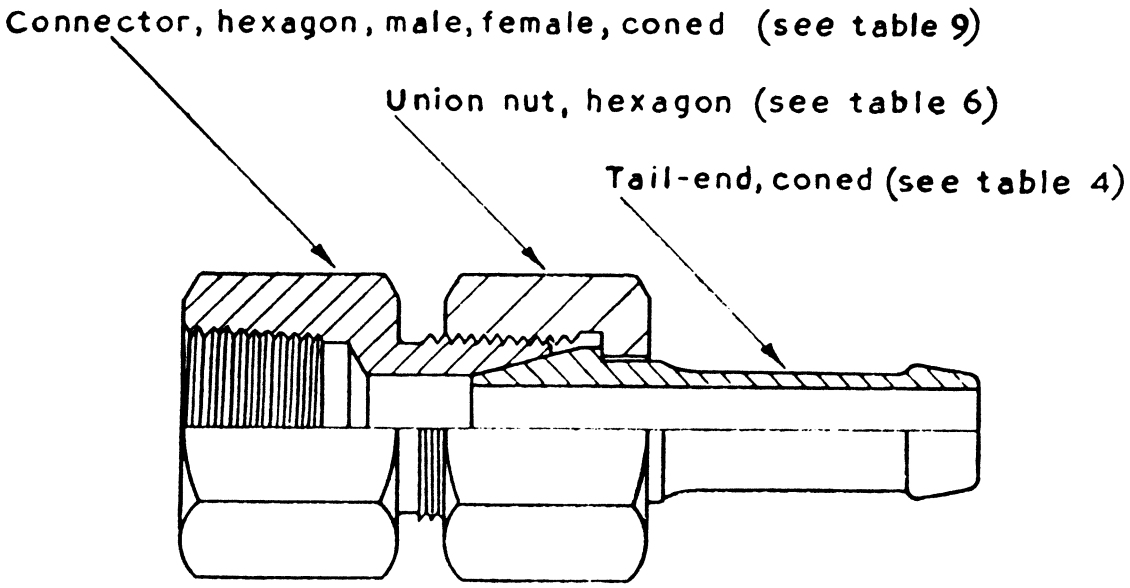

Figure 9a — Assembly (tail-end, coned)

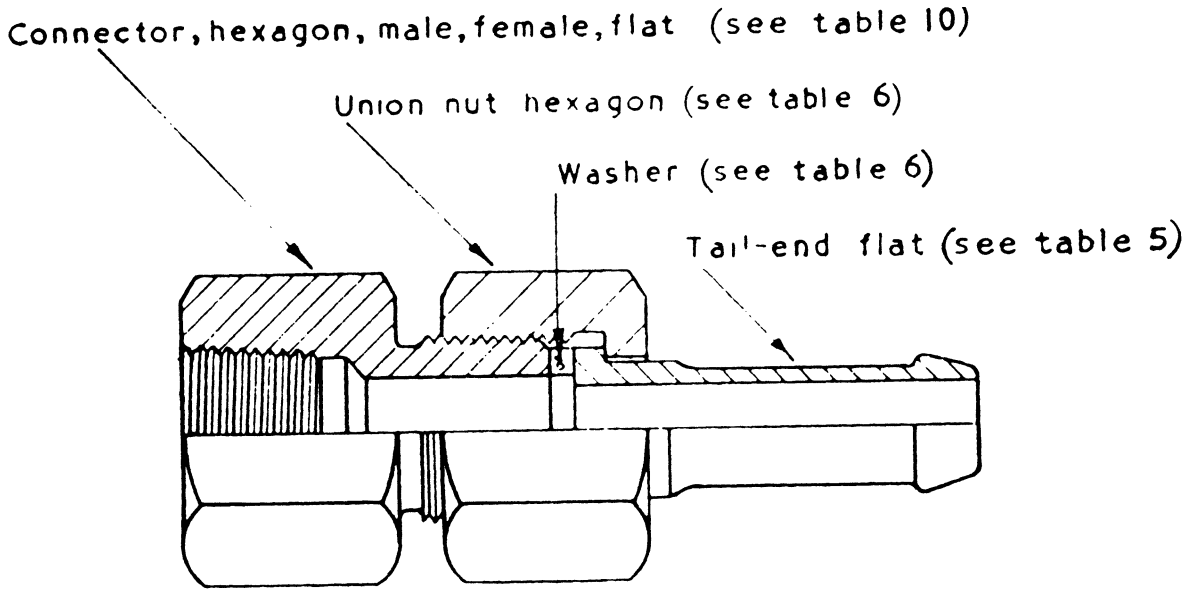

Figure 10 — Assembly (tail-end, flat)

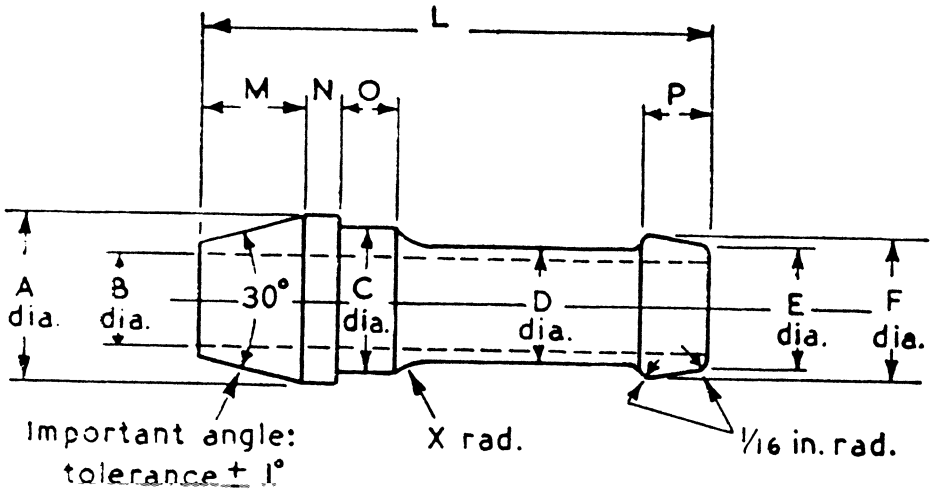

Figure 11 — Tail-end (coned)

Table 4

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 2779[a])	A dia.	B dia.	C dia.	D dia.	E dia.	F dia.	L	M	N	O	P	X rad.
		Limits of tolerance + 0.000 – 0.005		Limits of tolerance + 0.000 – 0.005	Limits of tolerance ± 0.005		Limits of tolerance + 0.000 – 0.005						
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
5/8	3/4 B.S.P.	0.937	0.500	0.812	0.656	0.625	0.765	2.812	0.562	0.187	0.312	0.375	0.250
3/4	1 B.S.P	1.171	0.562	0.906	0.781	0.750	0.843	2.812	0.562	0.187	0.312	0.375	0.250

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 2779, *Fastening threads of BSP. sizes.*"

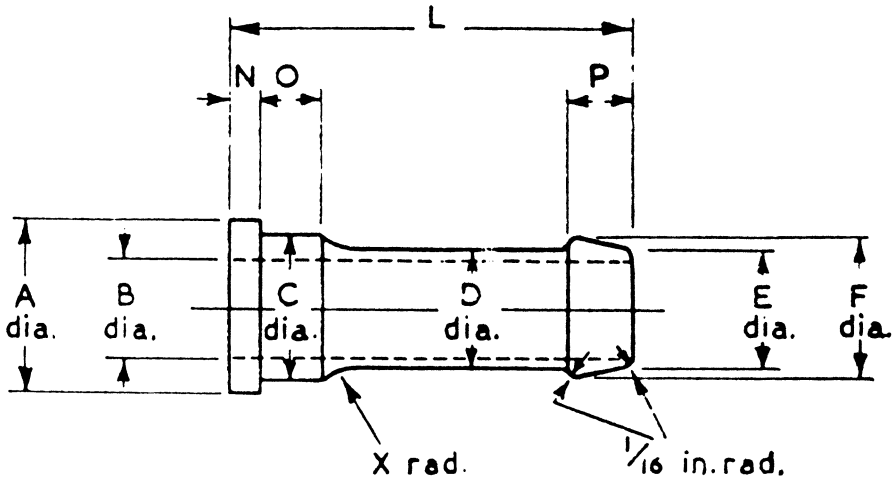

Figure 12 — Tail-end (flat)

Table 5

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 2779[a])	A dia. Limits of tolerance + 0.000 – 0.005	B dia.	C dia. Limits of tolerance + 0.000 – 0.005	D dia. Limits of tolerance ± 0.005	E dia.	F dia. Limits of tolerance + 0.000 – 0.005	L	N	O	P	X rad.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
3/16	1/4 B.S.P.	0.437	0.125	0.312	0.212	0.156	0.242	1.375	0.093	0.250	0.250	0.187
5/16	3/8 B.S.P.	0.578	0.234	0.437	0.330	0.281	0.370	1.625	0.125	0.250	0.312	0.187
1/2	1/2 B.S.P.	0.718	0.375	0.625	0.531	0.500	0.625	2.218	0.156	0.312	0.375	0.250
5/8	3/4 B.S.P.	0.937	0.500	0.812	0.656	0.625	0.765	2.250	0.187	0.312	0.375	0.250
3/4	1 B.S.P.	1.171	0.562	0.906	0.781	0.750	0.843	2.250	0.187	0.312	0.375	0.250
1	1 1/4 B.S.P.	1.500	0.812	1.140	1.031	1.000	1.140	2.500	0.187	0.375	0.375	0.250

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 2779, "*Fastening threads of BSP. sizes.*"

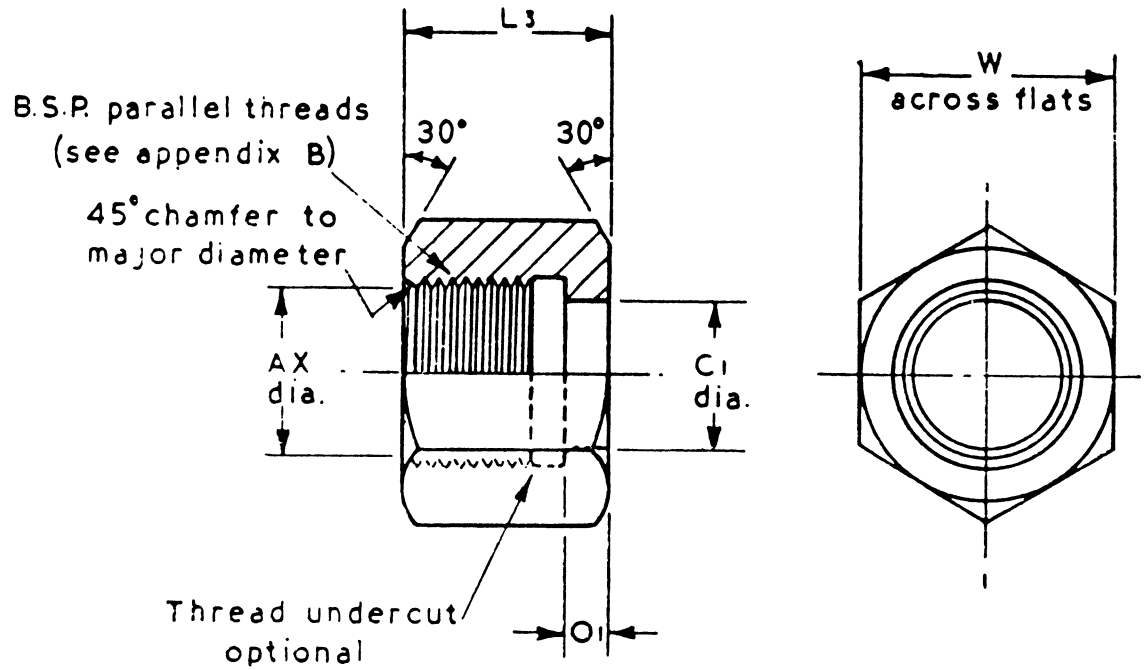

Figure 13 — Union nut, hexagon

Table 6

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 2779[a])	Ax dia.	C1 dia.	L3	O1	W		Minimum thickness of washer
		Minor dia. of thread (min.)	Limits of tolerance + 0.010 – 0.000			Max.	Min.	
in.	in.	in.	in.	in.	in.	in.	in.	in.
3/16	1/4 B.S.P.	0.4506	0.328	0.687	0.125	0.710	0.702	0.125
5/16	3/8 B.S.P.	0.5886	0.453	0.812	0.187	0.820	0.812	0.125
1/2	1/2 B.S.P.	0.7336	0.640	0.875	0.187	1.010	1.000	0.125
5/8	3/4 B.S.P.	0.9496	0.828	1.125	0.250	1.480	1.468	0.125
3/4	1 B.S.P.	1.1926	0.921	1.125	0.250	1.670	1.658	0.125
1	1 1/4 B.S.P.	1.5336	1.156	1.250	0.250	2.050	2.035	0.125

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 2779, "*Fastening threads of BSP. sizes.*"

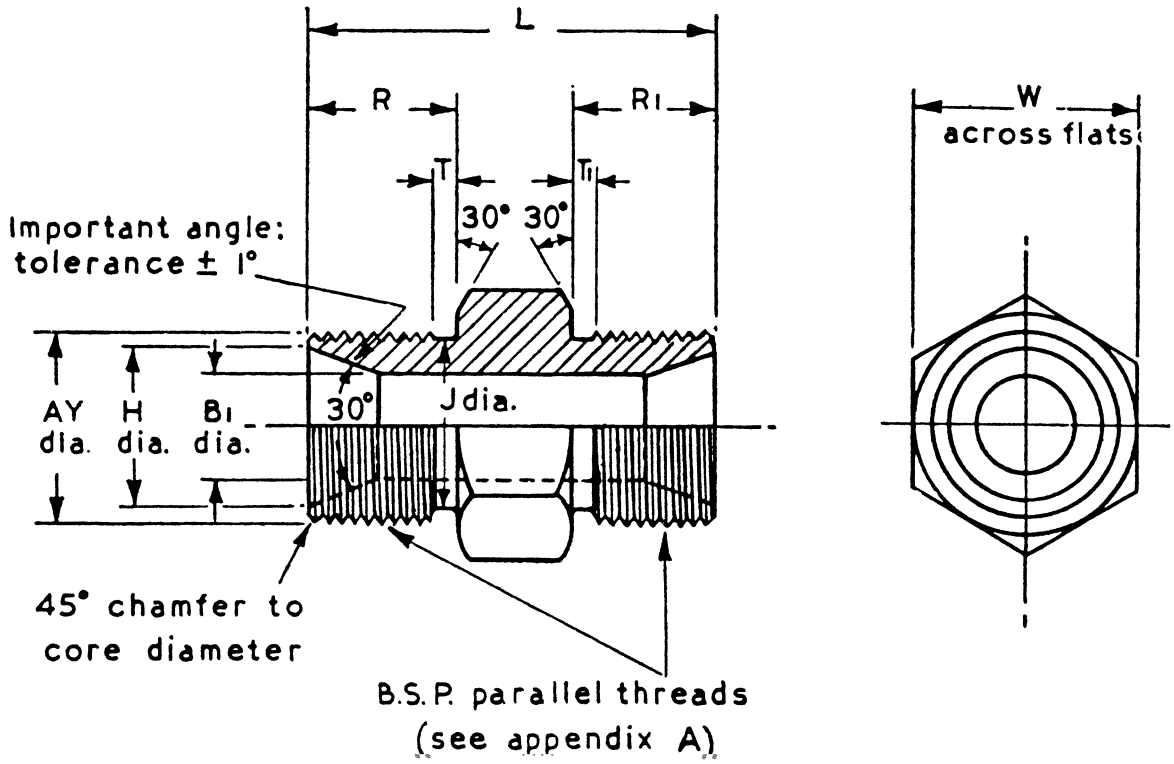

Figure 14 — Connector reducer (hexagon, double male, coned)

Table 7

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 2779[a])	Ay dia.	Az dia.	B1 dia.	B2 dia.	H dia.	H1 dia.
		Major dia. of thread (max.)	Major dia. of thread (max.)			Limits of tolerance + 0.010 – 0.000	Limits of tolerance + 0.010 – 0.000
in.	in.	in.	in.	in.	in.	in.	in.
5/8	3/4 B.S.P.	1.041	1.041	0.625	0.625	0.843	0.843
3/4	1 B.S.P.	1.3090	1.309	0.750	0.750	1.062	1.062
1/2[b] to 3/4	1/2 B.S.P. and 1 B.S.P.	1.3090	0.825	0.750	0.437	1.062	

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.
[a] BS 2779, "*Fastening threads of BSP. sizes.*"
[b] Flat end only.

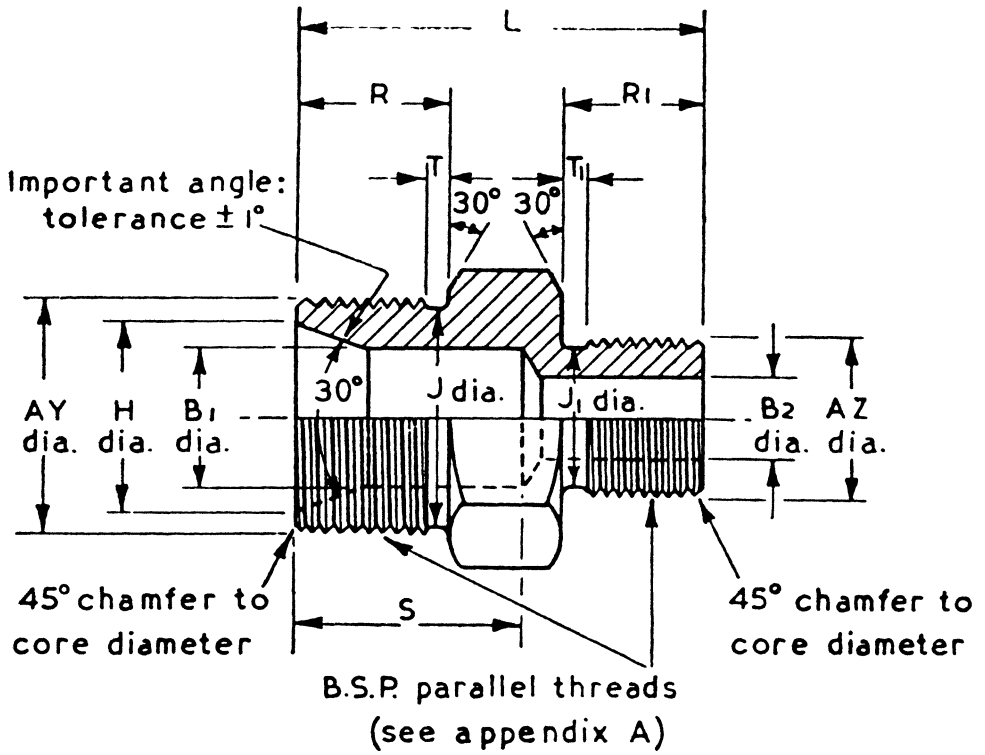

Figure 14 — Connector reducer (hexagon, double male, coned)

Table 7

J dia.	J1 dia.	L	R	R1	S	T	T1	W	
Limits of tolerance + 0.000 – 0.010	Limits of tolerance + 0.000 – 0.010							Max.	Min.
in.	in.	in.	in	in.	in.	in.	in.	in.	in.
0.935	0.935	2.250	0.812	0.812		0.125	0.125	1.300	1.288
1.175	1.175	2.375	0.875	0.875		0.125	0.125	1.480	1.468
	0.720			0.750			0.125		
								1.480	1.468
1.175		2.250	0.875		1.250	0.125			

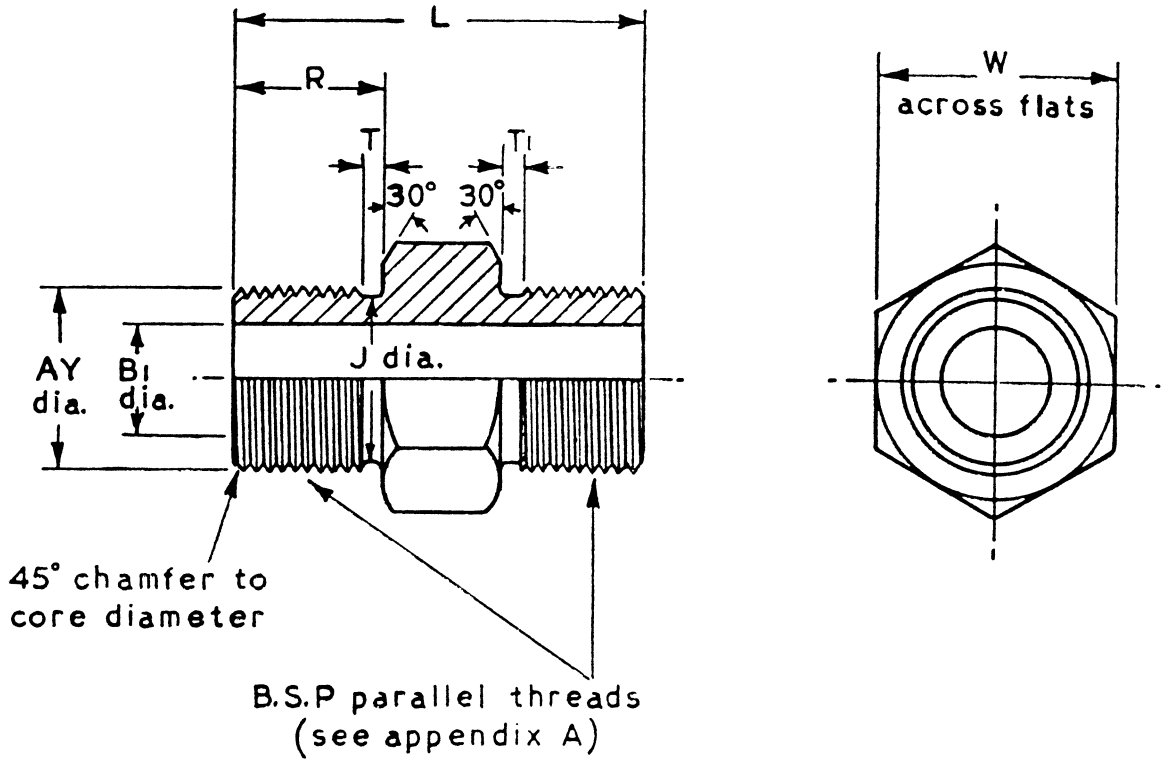

Figure 15 — Connector reducer (hexagon, double male, flat)

Table 8

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 2779[a])	Ay dia.	Az dia.	B1 dia.	B2 dia.	J dia.	J1 dia.
		Major dia. of thread (max.)	Major dia. of thread (max.)			Limits of tolerance + 0.000 – 0.010	Limits of tolerance + 0.000 – 0.010
in.	in.	in.	in.	in.	in.	in.	in.
3/16	1/4 B.S.P.	0.518	0.518	0.250	0.250	0.446	0.446
5/16	3/8 B.S.P.	0.656	0.656	0.312	0.312	0.584	0.584
1/2	1/2 B.S.P.	0.825	0.825	0.436	0.437	0.720	0.720
5/8	3/4 B.S.P.	1.041	1.041	0.625	0.625	0.935	0.935
3/4	1 B.S.P.	1.309	1.309	0.750	0.750	1.175	1.175
1	1 1/4 B.S.P.	1.650	1.650	0.875	0.875	1.520	1.520
1/2	1/2 B.S.P.		0.825		0.437		0.720
to	and						
3/4	1 B.S.P.	1.309		0.750		1.175	
3/4	1 B.S.P.		1.309		0.750		1.175
to	and						
1	1 1/4 B.S.P.	1.650		0.875		1.520	

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.
[a] BS 2779, "*Fastening threads of BSP. sizes.*"

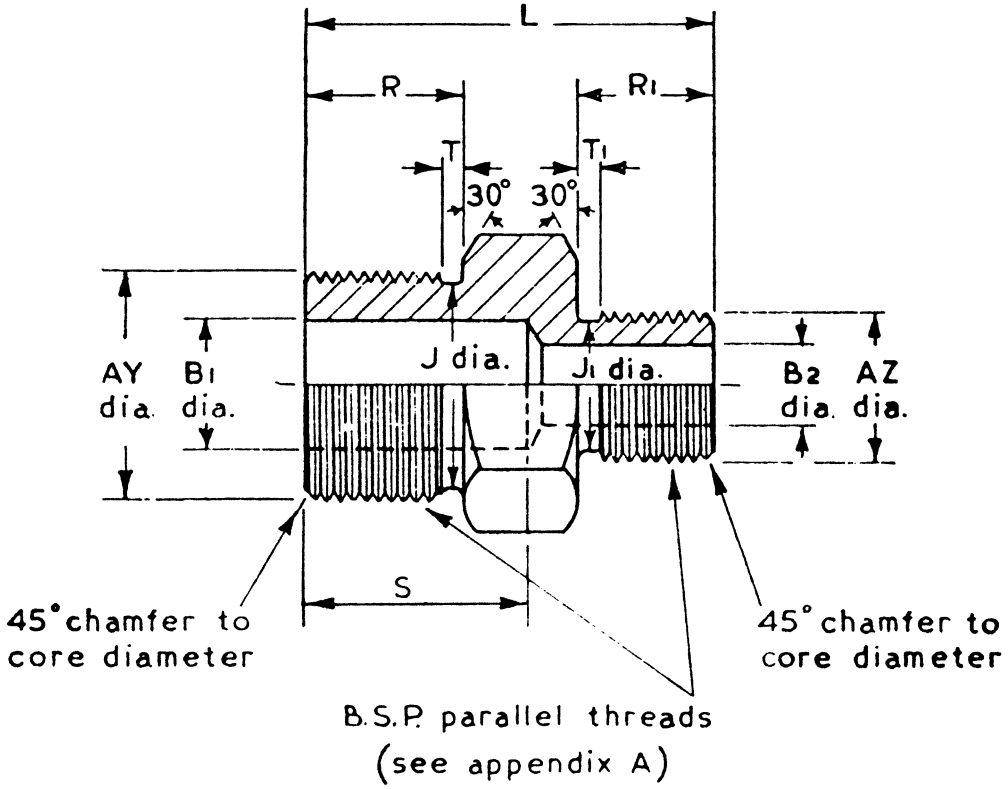

Figure 15 — Connector reducer (hexagon, double male, flat)

Table 8

L	R	R1	S	T	T1	W	
						Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.
1.625	0.625	0.625		0.093	0.093	0.710	0.702
1.625	0.625	0.625		0.093	0.093	0.820	0.812
2.125	0.750	0.750		0.125	0.125	1.010	1.000
2.250	0.812	0.812		0.125	0.125	1.300	1.288
2.375	0.875	0.875		0.125	0.125	1.480	1.468
2.750	1	1		0.187	0.187	1.860	1.845
		0.750			0.125		
						1.480	1.468
2.250	0.875		1.250	0.125			
2.500		0.875			0.125		
						1.860	1.845
	1.000		1.500	0.187			

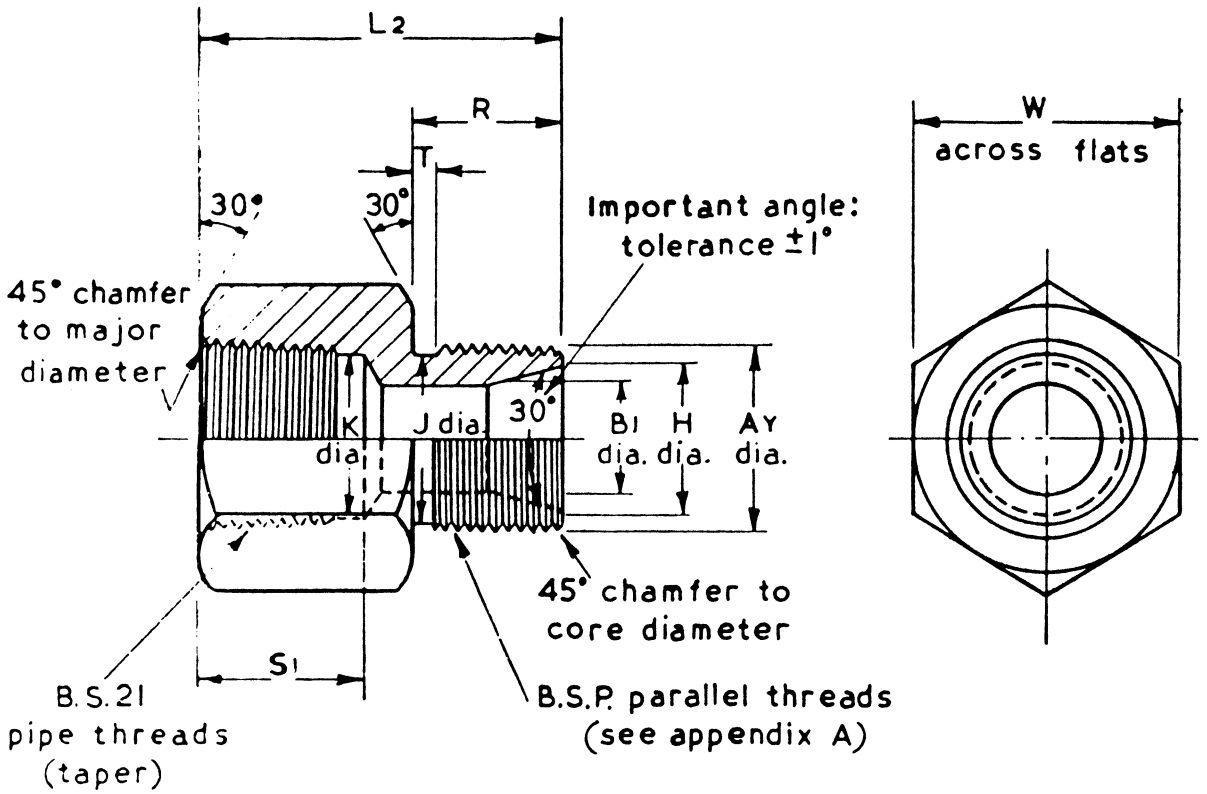

Figure 16 — Connector (hexagon, male and female, coned)

Table 9

Size of fitting, i.e. nominal hose bore	Male thread on connector (BS 2779[a])	Female thread on connector (BS 21[b])	Ay dia.	B1 dia.	H dia.	J dia.	K dia.	L2	R	S1	T	W	
			Major dia. of male thread (max.)		Limits of tolerance + 0.010 – 0.000	Limits of tolerance + 0.000 – 0.010	Limits of tolerance + 0.005 – 0.000					Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
5/8	3/4 B.S.P.	3/4 B.S.P.	1.041	0.625	0.843	0.935	0.924	2.000	0.812	0.906	0.125	1.480	1.468
3/4	1 B.S.P.	1 B.S.P.	1.309	0.750	1.062	1.175	1.050	2.250	0.875	1.000	0.125	1.670	1.658

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 2779, "*Fastening threads of BSP. sizes.*"

[b] BS 21, "*Pipe threads, Part 1: Basic sizes and tolerances.*"

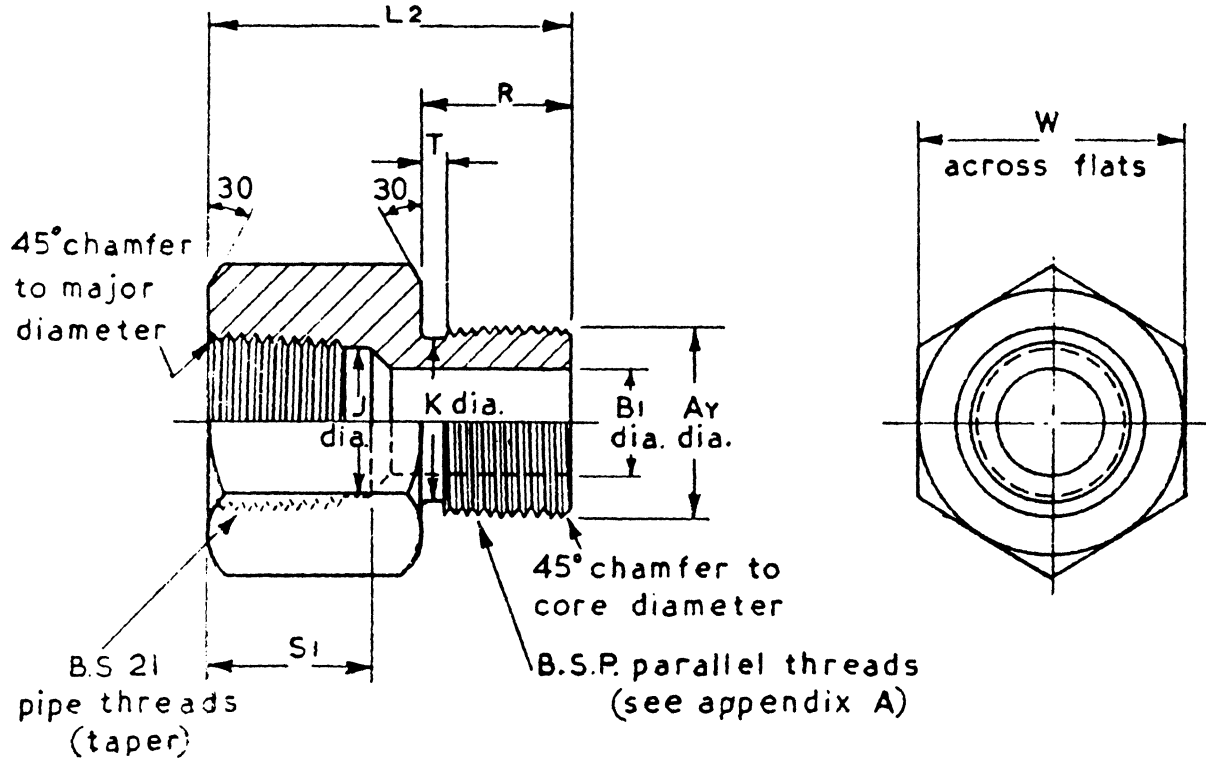

Figure 17 — Connector (hexagon, male and female, flat)

Table 10

Size of fitting, i.e. nominal hose bore	Male thread on connector (BS 2779[a])	Female thread on connector (BS 21[b])	Ay dia.	B1 dia.	J dia.	K dia.	L2	R	S1	T	W	
			Major dia. of male thread (max.)		Limits of tolerance + 0.000 – 0.010	Limits of tolerance + 0.005 – 0.000					Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
3/16	1/4 B.S.P.	1/4 B.S.P.	0.518	0.250	0.446	0.442	1.562	0.625	0.750	0.093	0.710	0.702
5/16	3/8 B.S.P.	3/8 B.S.P.	0.656	0.312	0.584	0.562	1.625	0.625	0.750	0.093	0.820	0.812
1/2	1/2 B.S.P.	1/2 B.S.P.	0.825	0.437	0.720	0.716	1.825	0.750	0.875	0.125	1.010	1.000
5/8	3/4 B.S.P.	3/4 B.S.P.	1.041	0.625	0.935	0.924	2.000	0.812	0.906	0.125	1.480	1.468
3/4	1 B.S.P.	1 B.S.P.	1.309	0.750	1.175	1.050	2.250	0.875	1.250	0.125	1.670	1.658
1	1 1/4 B.S.P.	1 1/4 B.S.P.	1.650	0.875	1.520	1.156	2.875	1.000	1.500	0.187	2.050	2.035

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 2779, "*Fastening threads of BSP. sizes.*"

[b] BS 21, "*Pipe threads, Part 1: Basic sizes and tolerances.*"

Part 3. "Heavy" series, flat and coned types (unified threads)

25 Scope

Part 3 of this standard specifies requirements for hose couplings of $^3/_4$, 1 and $1^1/_4$ in. nominal sizes for use at pressures not exceeding 150 lb/sq. in. Connector reducers are also included.

Tail-ends to which the hose is to be attached shall be bulbous.

26 Designation of size of coupling

The size by which the coupling is designated shall be the nominal bore of the hose with which it is to be used.

27 Material

a) *Couplings.* The quality of the material used in the manufacture of the couplings shall be at least equivalent to the following:—

i) Bronze or phosphor bronze complying with BS 369.[12)]

ii) Bronze and gunmetal castings complying with Specification LG2-C of BS 1400.[13)]

iii) Brass complying with BS 249.[14)]

iv) Brass castings complying with Specification B2-C of BS 1400.[2)]

v) Steel complying with Specification En3 of BS 970.[15)]

vi) Malleable cast iron complying with BS 310.[16)]

vii) Hot pressings complying with BS 218.[17)]

b) *Washers.* The washers shall be of specially selected leather, rubber, rubber asbestos compound, or other suitable approved material. The purchaser shall be given prior notification by the manufacturer of the type of washer he intends to supply.

28 Dimensions

The dimensions of the couplings shall be in accordance with those shown in Figure 24 to Figure 32 and Table 11 to Table 19, inclusive.

The minimum thickness of washers shall be $^1/_8$ in. (See Table 13).

29 Screw threads

Screw threads, male and female, shall be the UNIFIED form of screw thread complying with BS 1580, "*Unified screw threads,*" but only those sizes set out in Appendix C and Appendix D shall be used.

The first male and female threads shall be chamfered to 45° to the core diameter.

30 Hexagons

The dimensions of hexagons on connectors shall conform to those specified in BS 1768, "*Unified precision hexagon bolts, screws and nuts (UNC and UNF threads). Normal series.*" (See Figure 29 to Figure 32.)

31 Interchangeability

All corresponding parts shall be interchangeable.

32 Hydraulic test

All couplings made from castings shall, when assembled, be subjected to a hydraulic test of 300 lb/sq. in. Couplings other than castings shall, when required, be subjected to the same test in the presence of the purchaser or his representative.

When assembling the couplings for hydraulic test, the force applied to the coupling nut to ensure a watertight joint shall not be excessive. Couplings showing signs of leakage during this test, by reason of either defective joint or porosity of metal, shall be liable to rejection.

33 Workmanship

Workmanship and finish shall be of good quality. All burrs and sharp edges shall be removed.

34 Identification marking

All connectors and nuts screwed with Unified threads shall be marked with a continuous line of circles indented on one or more flats of the hexagon or on a suitable flat surface. (See Appendix G of BS 1768.)

12) BS 369, "*5 per cent phosphor bronze (copper-tin-phosphorous) rods and sections (other than forging stock).*"
13) BS 1400, "*Copper alloy ingots and castings.*"
14) BS 249, "*Leaded brass (58 per cent copper, 3 per cent lead) rods and sections (other than forging stock).*"
15) BS 970, "*Wrought steels.*"
16) BS 310, "*Blackheart malleable iron castings.*"
17) BS 218, "*Leaded brass (58 per cent copper, 2 per cent lead) forging stock and forgings.*"

35 Inspection

The purchaser or his representative shall have access at all reasonable times to those portions of the works in which the couplings ordered are being manufactured, and in which the testing is taking place.

36 Test facilities

The manufacturer shall supply, at his own cost, labour and appliances for making the tests on his premises in accordance with this standard. Failing the existence of facilities for making the prescribed tests at his own works, the manufacturer shall be responsible for having the tests made elsewhere.

Hose couplings: Heavy series (unified threads)

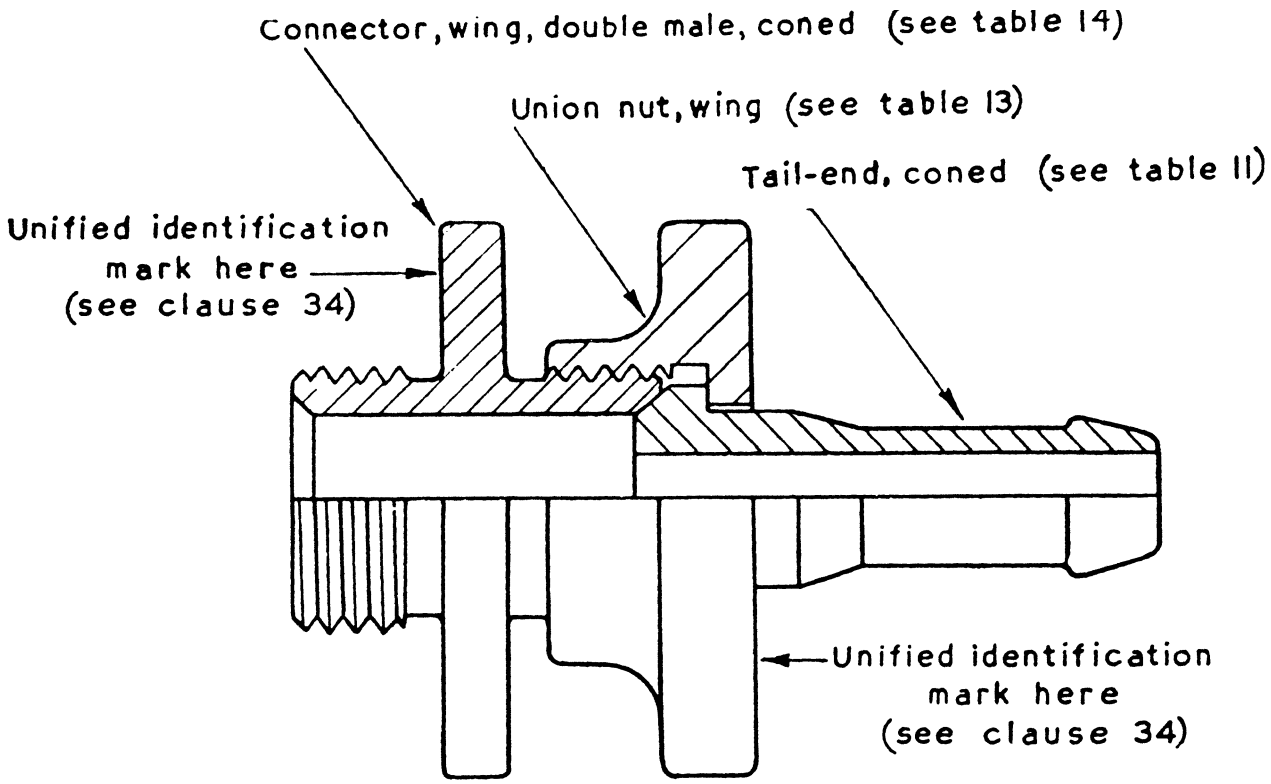

Figure 18 — Assembly (tail-end, coned)

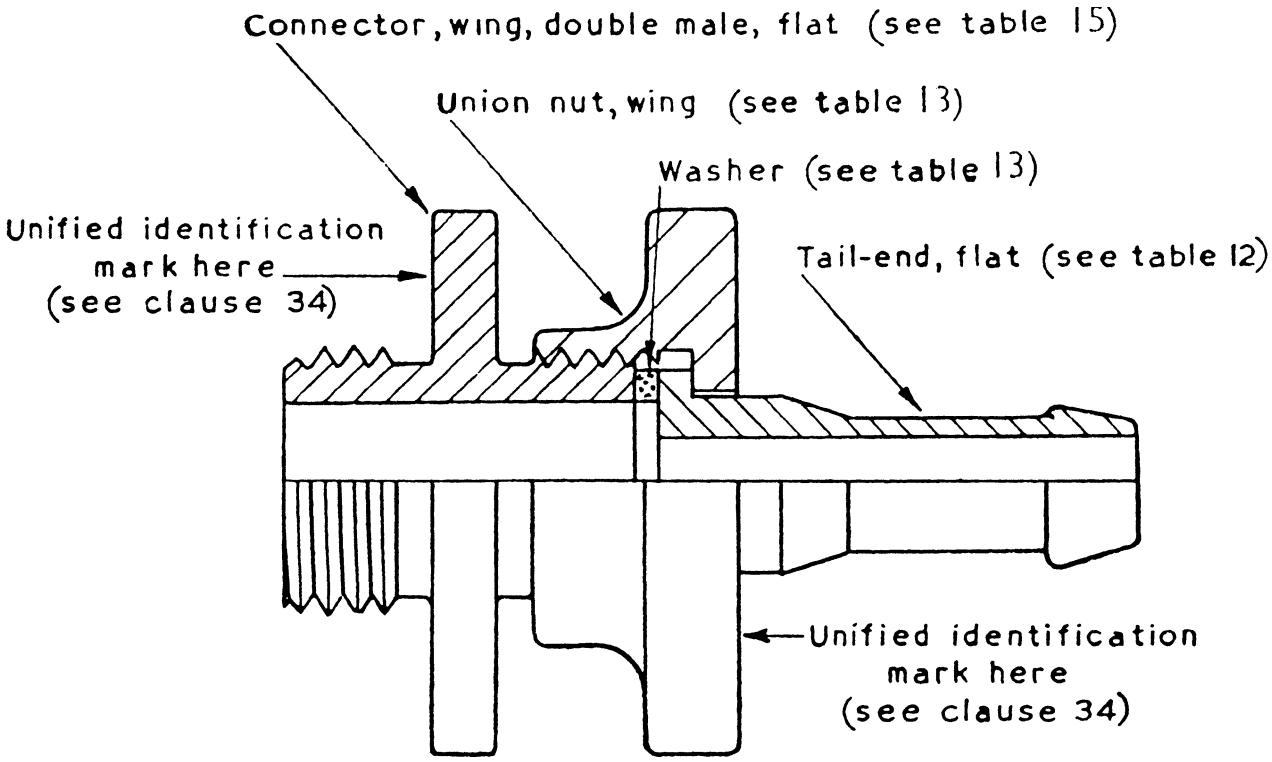

Figure 19 — Assembly (tail-end, flat)

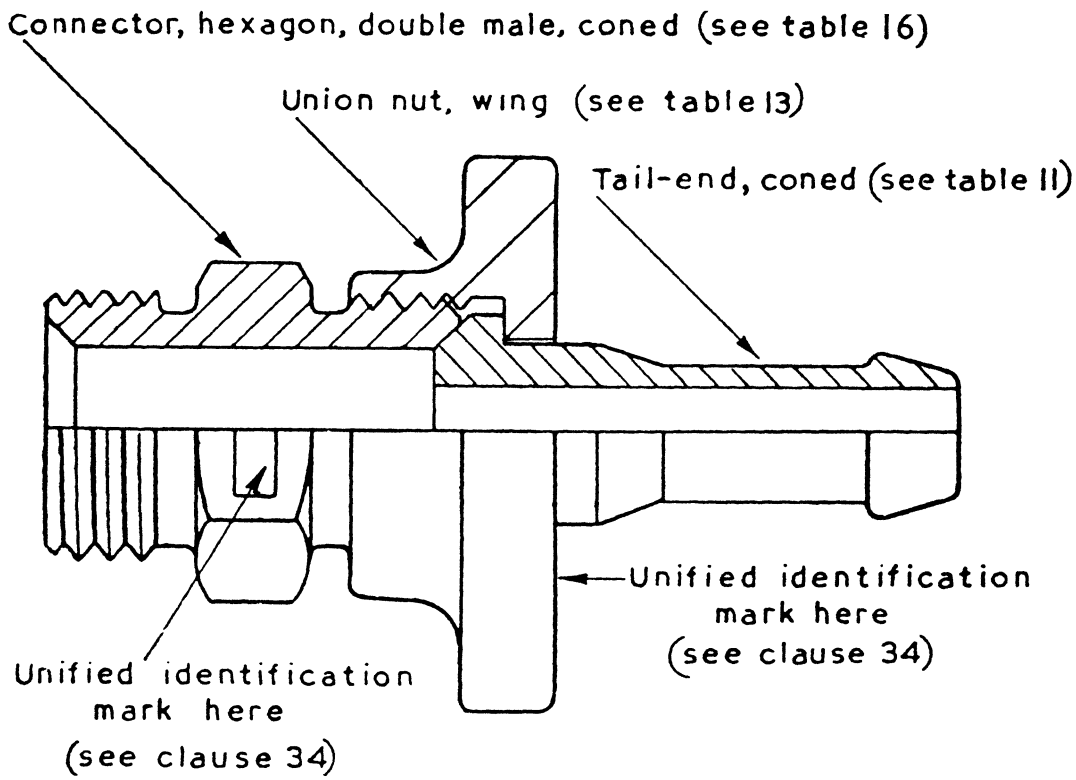

Figure 20 — Assembly (tail-end, coned)

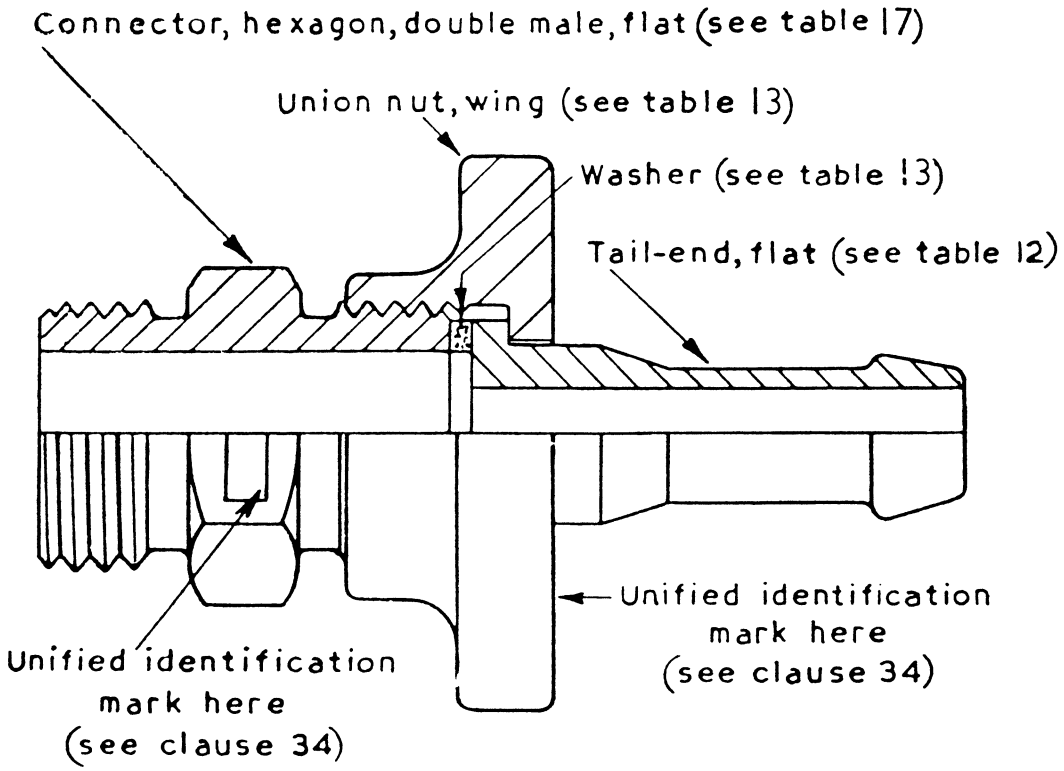

Figure 21 — Assembly (tail-end, flat)

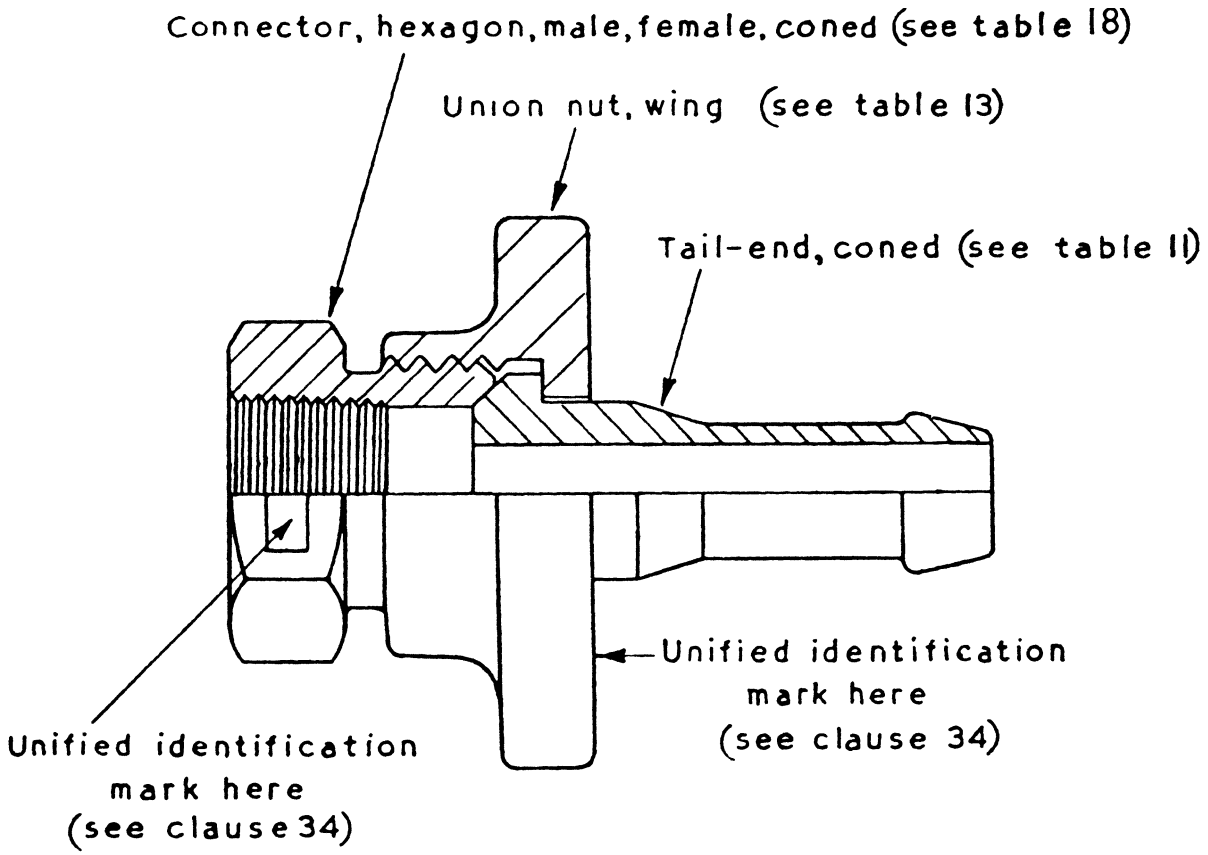

Figure 22 — Assembly (tail-end, coned)

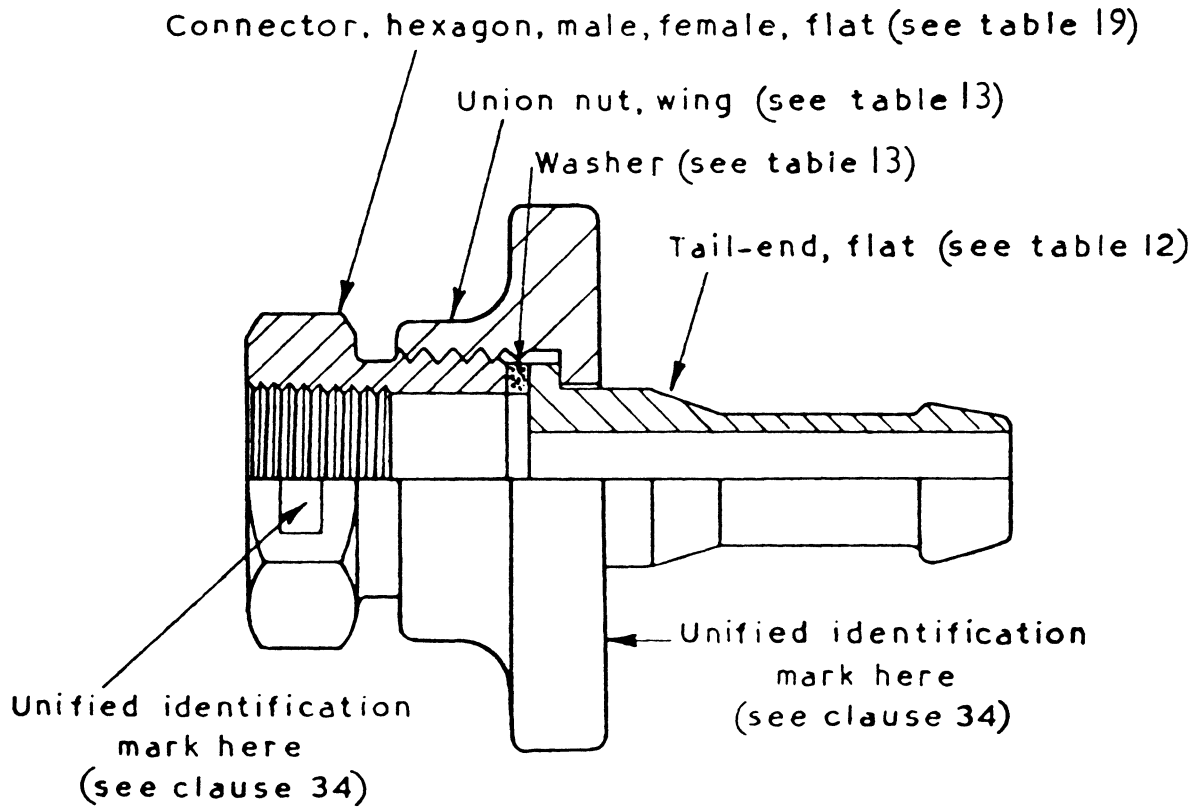

Figure 23 — Assembly (tail-end, flat)

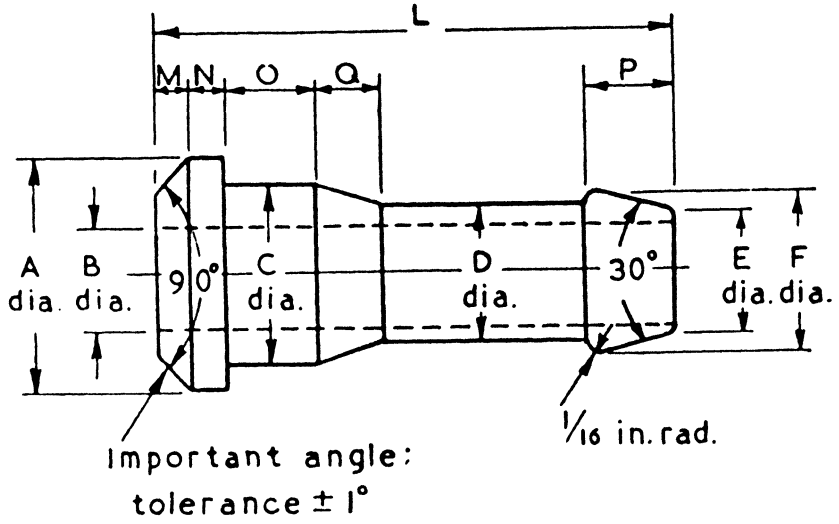

Figure 24 — Tail-end (coned)

Table 11

size of fitting, i.e. nominal hose bore	Thread on union nut (BS 1580[a])	A dia.	B. dia.	C dia.	D dia.	E dia.	F dia.	L	M	N	O	P	Q
		Limits of tolerance + 0.000 – 0.005		Limits of tolerance + 0.000 – 0.005	Limits of tolerance ± 0.005		Limits of tolerance + 0.000 – 0.005						
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1/2	1 1/4–7UNC–1B	1.062	0.375	0.687	0.531	0.453	0.656	2.249	0.156	0.156	0.312	0.437	0.187
3/4	1 1/2–6UNC–1B	1.312	0.562	0.937	0.781	0.703	0.937	2.812	0.187	0.250	0.500	0.500	0.250
1	1 3/4–6UN–1B	1.562	0.812	1.187	1.031	0.953	1.187	3.124	0.218	0.281	0.562	0.500	0.312
1 1/4	2 1/4–6UN–1B	2.000	1.000	1.437	1.281	1.140	1.437	3.562	0.250	0.312	0.562	0.625	0.312

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 1580, "*Unified screw threads*."

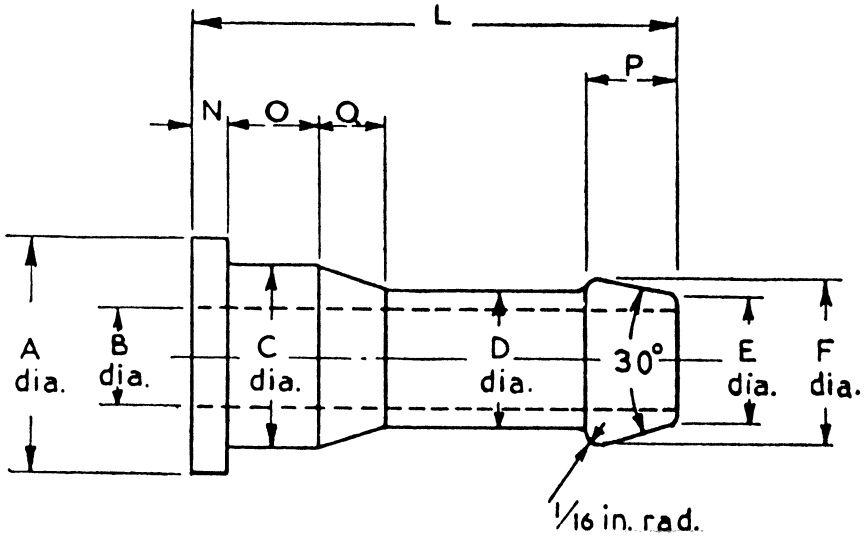

Figure 25 — Tail-end (flat)

Table 12

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 1580[a])	A dia.	B dia.	C dia.	D dia.	E dia.	F dia.	L	N	O	P	Q
		Limits of tolerance + 0.000 – 0.005		Limits of tolerance ± 0.000 – 0.005	Limits of tolerance ± 0.005		Limits of tolerance + 0.000 – 0.005					
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
$^{3}/_{4}$	$1^{1}/_{2}$–6UNC–1B	1.312	0.562	0.937	0.781	0.703	0.937	2.562	0.187	0.500	0.500	0.250
1	$1^{3}/_{4}$–6UN–1B	1.562	0.812	1.187	1.031	0.953	1.187	2.843	0.218	0.562	0.500	0.312
$1^{1}/_{4}$	$2^{1}/_{4}$–6UN–1B	2.000	1.000	1.437	1.281	1.140	1.437	3.250	0.250	0.562	0.625	0.312

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 1580, "*Unified screw threads.*"

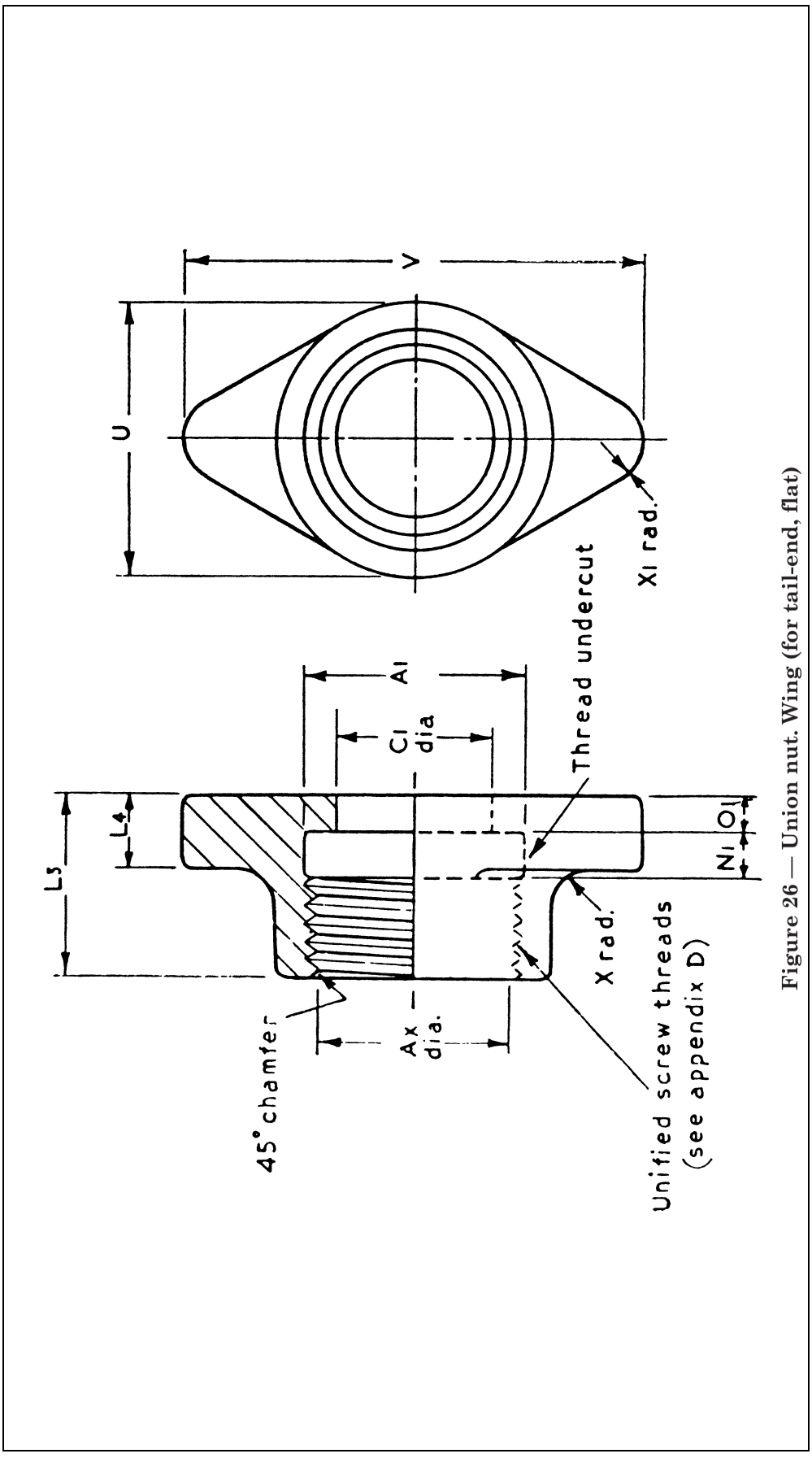

Figure 26 — Union nut. Wing (for tail-end, flat)

Table 13

Size of fitting, i.e. nominal hose bore	Thread on union nut (BS 1580[a])	Ax dia.	A1	C1 dia.	L3	L4	N1	O1	U	V	X rad.	X1 rad.	Minimum thickness of washer for flat type couplings
		Minor dia. of thread (min.)											
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
$^1/_2$	$1^1/_4$–7UNC–1B	1.095 4	1.250	0.718	0.968	0.375	0.187	0.187	1.625	2.625	0.187	0.312	—
$^3/_4$	$1^1/_2$–6UNC–1B	1.319 6	1.500	1.000	1.250	0.500	0.312	0.250	1.875	3.125	0.250	0.312	0.125
1	$1^3/_4$–6UN–1B	1.569 6	1.750	1.250	1.312	0.562	0.343	0.250	2.250	3.750	0.250	0.312	0.125
$1^1/_4$	$2^1/_4$–6UN–1B	2.069 6	2.250	1.500	1.375	0.625	0.375	0.250	2.750	4.562	0.312	0.343	0.125

General limits of tolerance of ± 0.010 in. shall apply.

[a] BS 1580, "*Unified screw threads.*"

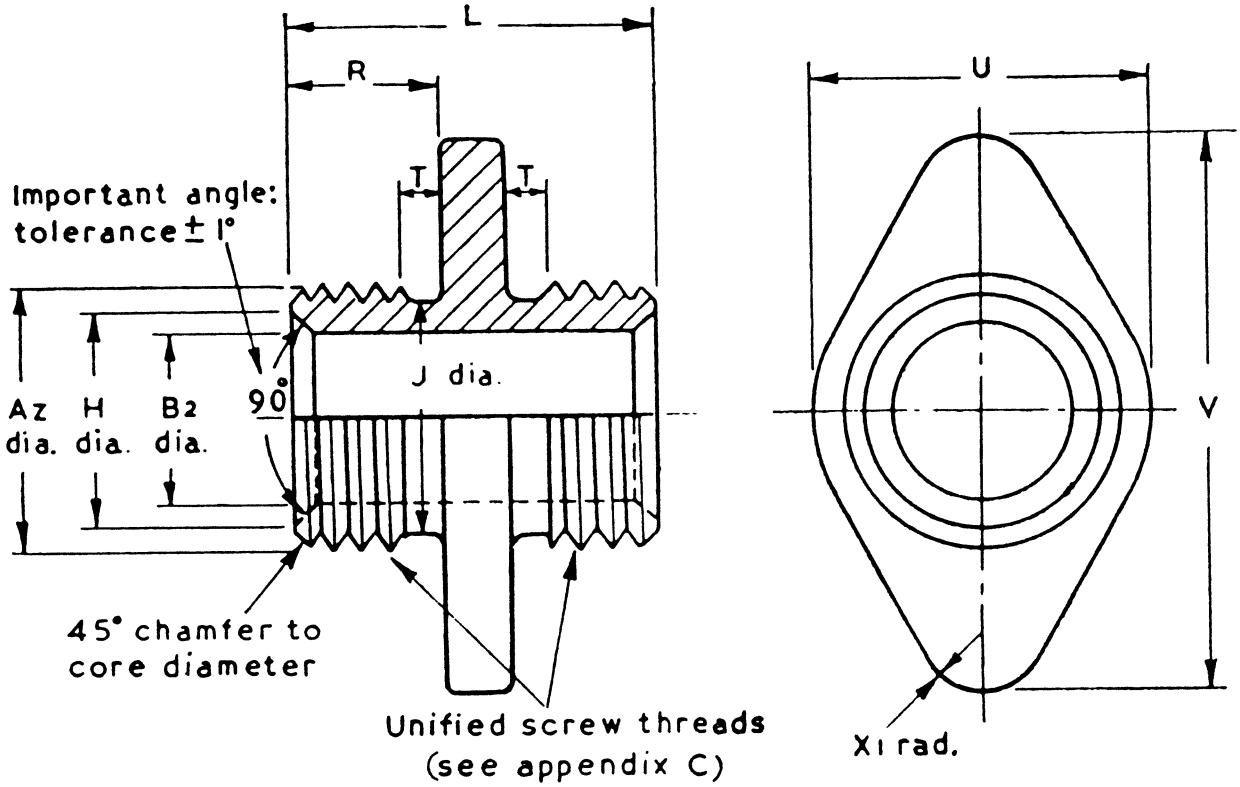

Figure 27 — Connector reducer. Wing (double male, coned)

Table 14

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 1580[a])	Az dia.	Ay dia.	B2 dia.	B1 dia.	H dia.	H1 dia.
		Major dia. of thread (max.)	Major dia. of thread (max.)			Limits of tolerance + 0.010 – 0.000	Limits of tolerance + 0.010 – 0.000
in.	in.	in.	in.	in.	in.	in.	in.
$^1/_2$	$1^1/_4$–7UNC–1A	1.2478	1.2478	0.750	0.750	1.000	1.000
$^1/_2$	$1^1/_4$–7UNC–1A	1.2478		0.750		1.000	
to	and						
$^3/_4$	$1^1/_2$–6UNC–1A		1.4976		0.937		1.187
$^3/_4$	$1^1/_2$–6UNC–1A	1.4976	1.4976	0.937	0.937	1.187	1.187
$^3/_4$	$1^1/_2$–6UNC–1A	1.4976		0.937		1.187	
to	and						
1	$1^3/_4$–6UN–1A		1.7476		1.125		1.437
1	$1^3/_4$–6UN–1A	1.7476	1.7476	1.125	1.125	1.437	1.437
1	$1^3/_4$–6UN–1A	1.7476		1.125		1.437	
to	and						
$1^1/_4$	$2^1/_4$–6UN–1A		2.2475		1.500		1.875
$1^1/_4$	$2^1/_4$–6UN–1A	2.2475	2.2475	1.500	1.500	1.875	1.875

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.
[a] BS 1580, "*Unified screw threads.*"

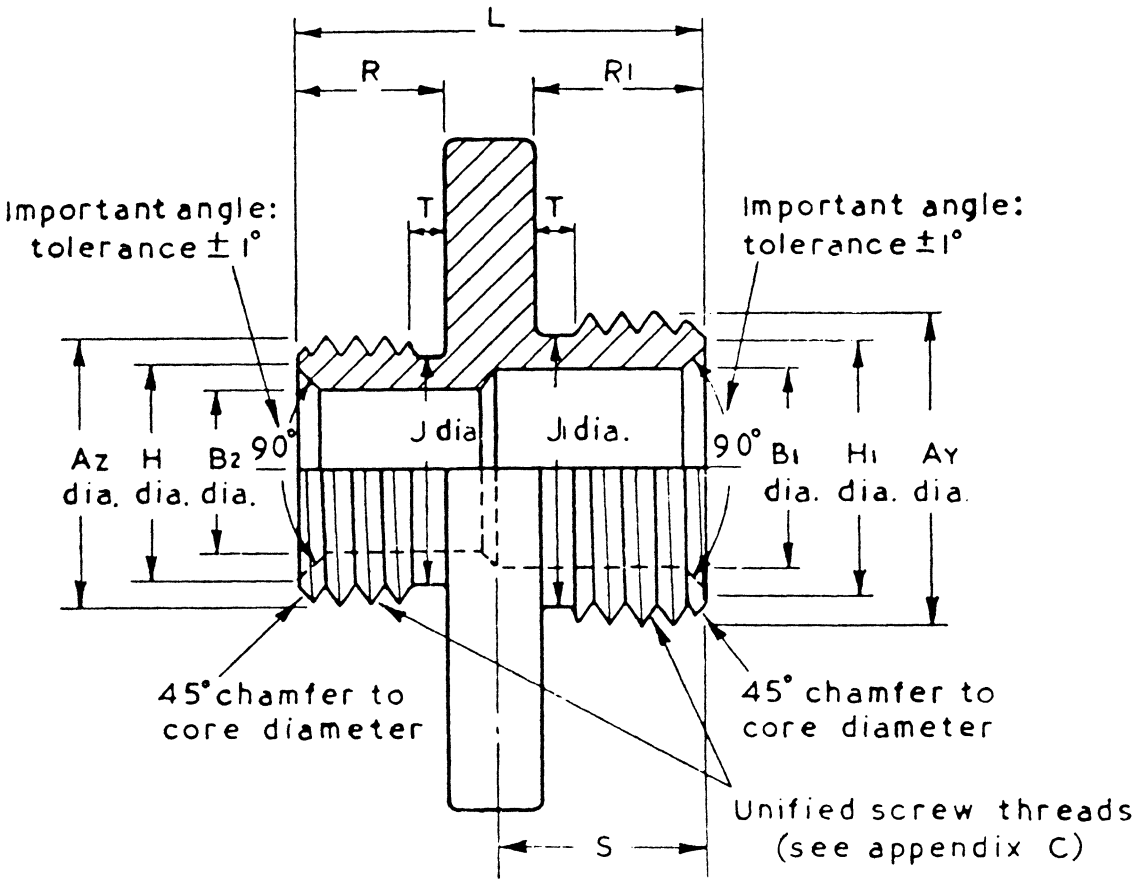

Figure 27 — Connector reducer. Wing (double male, coned)

Table 14

J dia.	J1 dia.	L	R	R1	S	T	U	V	X1 rad.
Limits of tolerance + 0.000 − 0.010	Limits of tolerance + 0.000 − 0.010								
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1.062	1.062	1.937	0.781	0.781		0.187	1.625	2.625	0.312
1.062			0.781			0.187			
		2.218					1.875	3.125	0.312
	1.281			0.906	1.125	0.218			
1.281	1.281	2.312	0.906	0.906		0.218	1.875	3.125	0.312
1.281			0.906			0.218			
		2.406					2.250	3.750	0.312
	1.531			0.937	1.218	0.218			
1.531	1.531	2.437	0.937	0.937		0.218	2.250	3.750	0.312
1.531			0.937			0.218			
		2.562			1.312		2.750	4.562	0.343
	2.028			1.000		0.250			
2.028	2.028	2.625	1.000	1.000		0.250	2.750	4.562	0.343

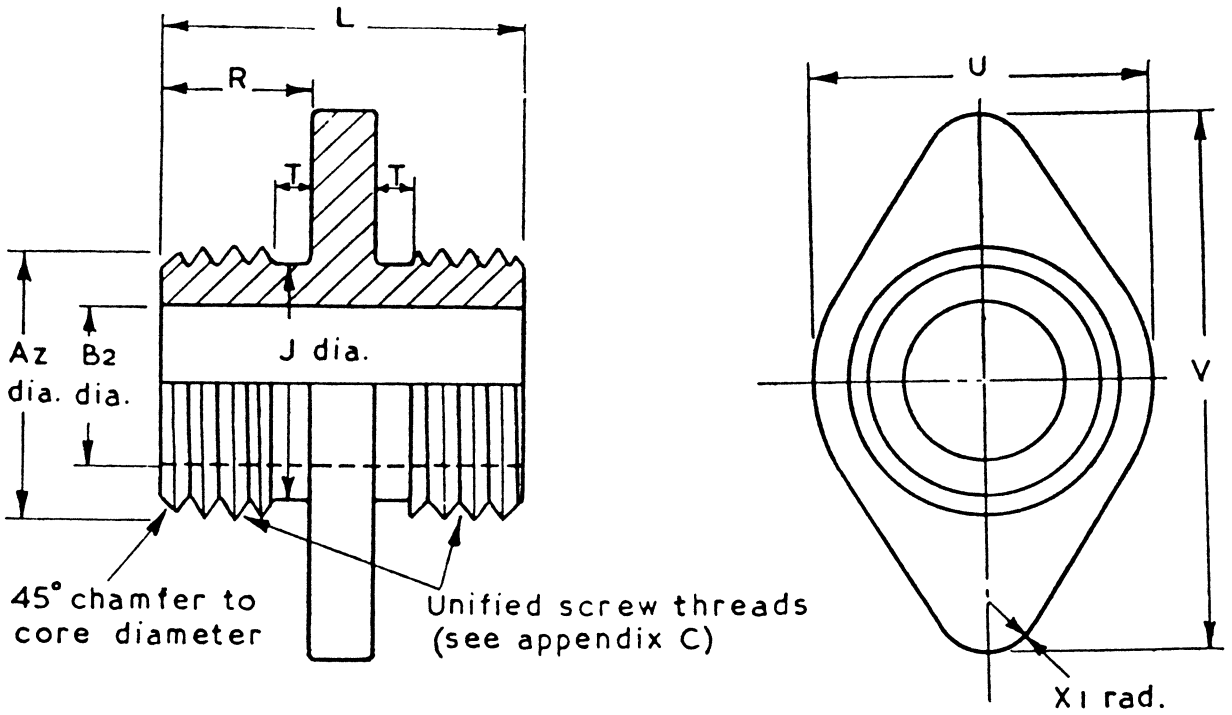

Figure 28 — Connector reducer. Wing (double male, flat)

Table 15

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 1580[a])	Az dia.	Ay dia.	B2 dia.	B1 dia.	J dia.
		Major dia. of thread (max.)	Major dia. of thread (max.)			Limits of tolerance + 0.000 − 0.010
in.	in.	in.	in.	in.	in.	in.
$^3/_4$	$1^1/_2$–6UNC–1A	1.4976	1.4976	0.937	0.937	1.281
$^3/_4$	$1^1/_2$–6UNC–1A	1.4976		0.937		1.281
to	and					
1	$1^3/_4$–6UN–1A		1.7476		1.125	
1	$1^3/_4$–6UN–1A	1.7476	1.7476	1.125	1.125	0.531
1	$1^3/_4$–6UN–1A	1.7476		1.125		1.531
to	and					
$1^1/_4$	$2^1/_4$–6UN–1A		2.2475		1.500	
$1^1/_4$	$2^1/_4$–6UN–1A	2.2475	2.2475	1.500	1.500	2.028

Unless otherwise specified, limits of tolerance ± 0.010 in. shall apply.
[a] BS 1580, "*Unified screw threads.*"

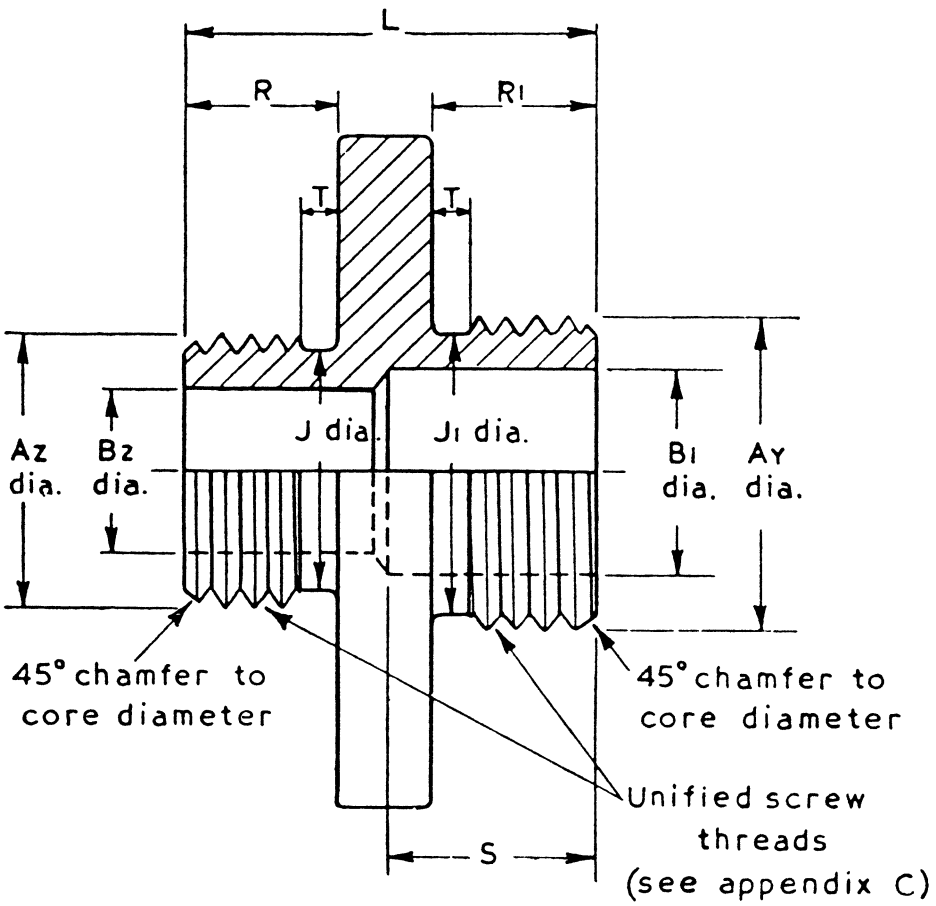

Figure 28 — Connector reducer. Wing (double male, flat)

Table 15

J1 dia.	L	R	R1	S	T	U	V	X1 rad.
Limits of tolerance + 0.000 – 0.010								
in.	in.	in.	in.	in.	in.	in.	in.	in.
1.281	2.312	0.906	0.906		0.218	1.875	3.125	0.312
		0.906			0.218			
	2.406			1.218		2.250	3.750	0.312
1.531			0.937		0.218			
1.531	2.437	0.937	0.937		0.218	2.250	3.750	0.312
		0.937			0.218			
	2.562			1.312		2.750	4.562	0.343
2.028			1.000		0.250			
2.028	2.625	1.000	1.000		0.250	2.750	4.562	0.343

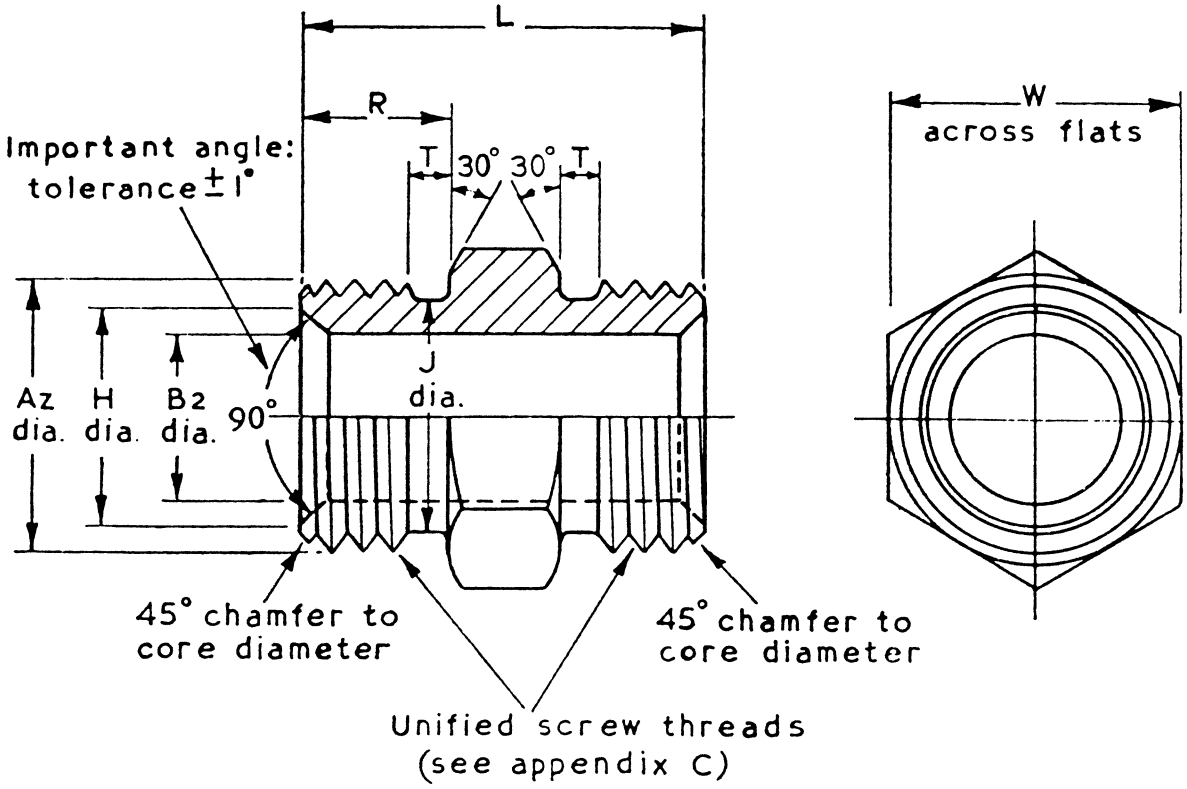

Figure 29 — Connector reducer (hexagon, double male, coned)

Table 16

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 1580[a])	Az dia.	Ay dia.	B2 dia.	B1 dia.	H dia.	H1 dia.
		Major die. of thread (max.)	Major dia. of thread (max.)			Limits of tolerance + 0.010 – 0.000	Limits of tolerance + 0.010 – 0.000
in.	in.	in.	in.	in.	in.	in.	in.
1/2	1 1/4–7UNC–1A	1.2478	1.2478	0.750	0.750	1.000	1.000
1/2	1 1/4–7UNC–1A	1.2478		0.750		1.000	
to	and						
3/4	1 1/2–6UNC–1A		1.4976		0.937		1.187
3/4	1 1/2–6UNC–1A	1.4976	1.4976	0.937	0.937	1.187	1.187
3/4	1 1/2–6UNC–1A	1.4976		0.937		1.187	
to	and						
1	1 3/4–6UN–1A		1.7476		1.125		1.437
1	1 3/4–6UN–1A	1.7476	1.7476	1.125	1.125	1.437	1.437
	1 3/4–6UN–1A	1.7476		1.125		1.437	
to	and						
1 1/4	2 1/4–6UN–1A		2.2475		1.500		1.875
1 1/4	2 1/4–6UN–1A	2.2475	2.2475	1.500	1.500	1.875	1.875

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.
[a] BS 1580, "*Unified screw threads.*"

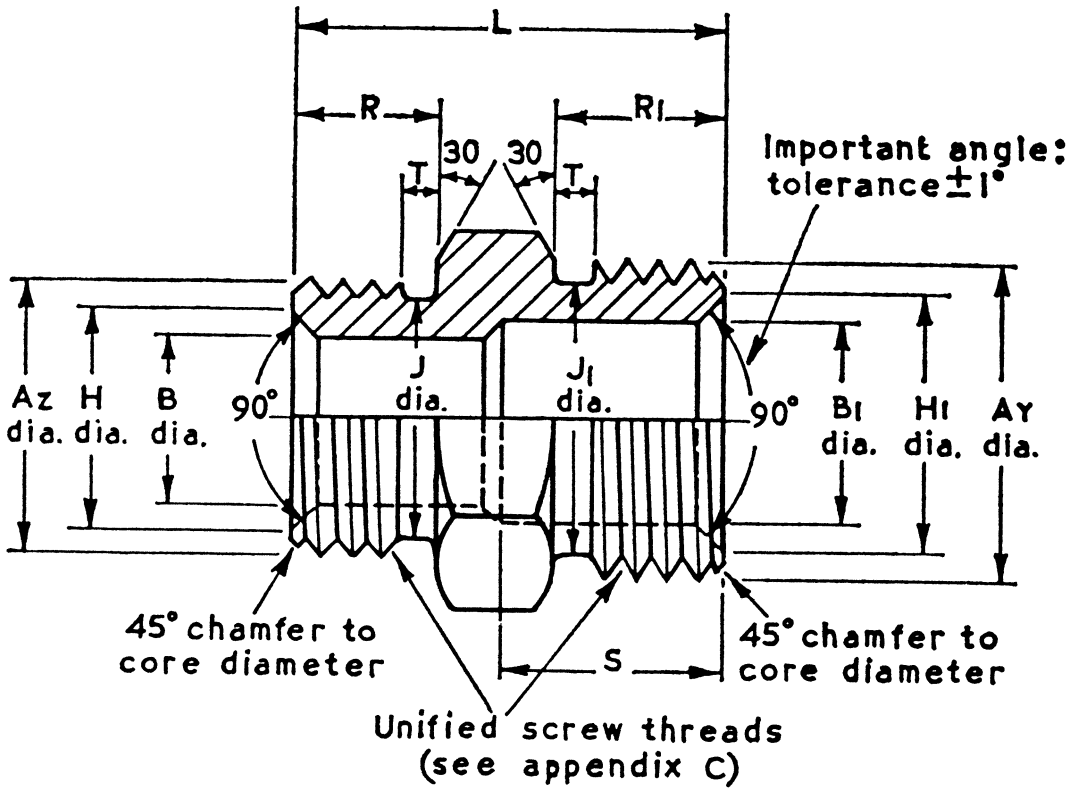

Figure 29 — Connector reducer (hexagon, double male, coned)

Table 16

J dia.	J1 dia.	L	R	R1	S	T	W	
Limits of tolerance + 0.000 – 0.010	Limits of tolerance + 0.000 – 0.010						Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.	in.
1.062	1.062	1.937	0.781	0.781		0.187	1.437 5	1.394
1.062			0.781			0.187		
		2.218			1.125		1.625	1.575
	1.281			0.906		0.218		
1.281	1.281	2.312	0.906	0.906		0.218	1.625	1.575
1.281			0.906			0.218		
		2.406			1.218		1.812	1.756
	1.531			0.937		0.218		
1.531	1.531	2.437	0.937	0.937		0.218	1.812	1.756
1.531			0.937			0.218		
		2.562			1.312		2.375	2.300
	2.028			1.000		0.250		
2.028	2.028	2.625	1.000	1.000		0.250	2.375	2.300

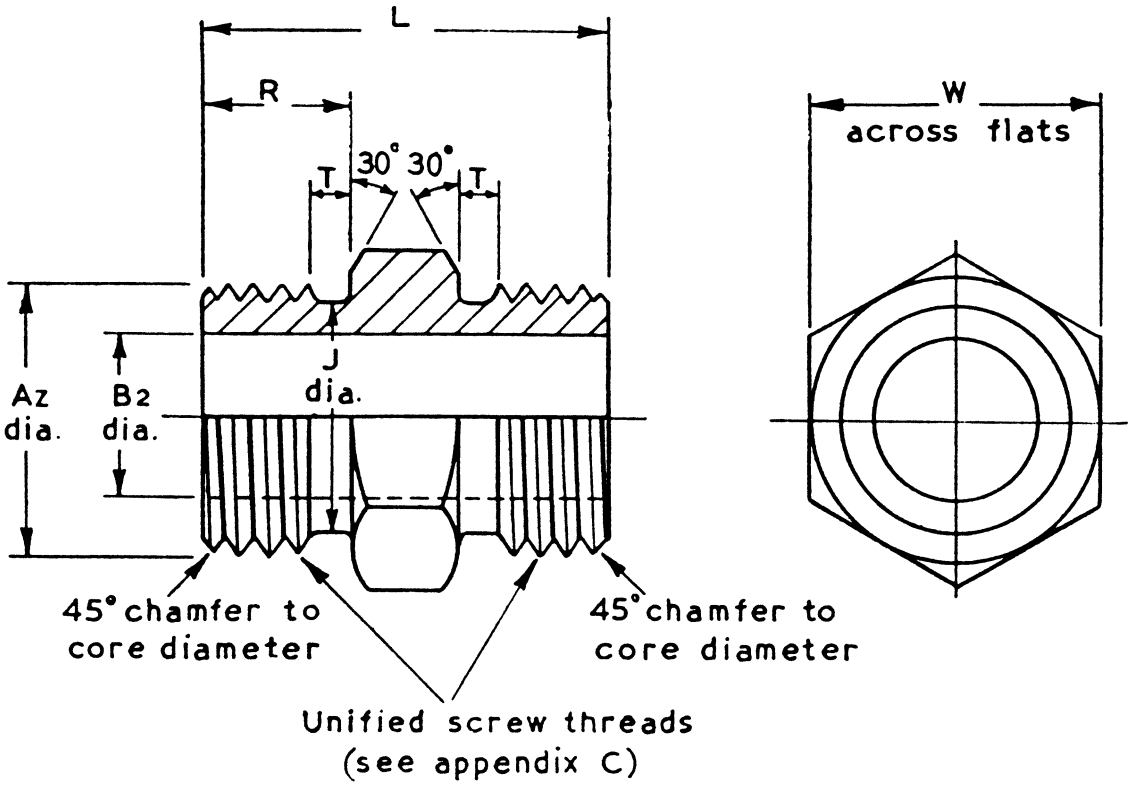

Figure 30 — Connector reducer (hexagon, double male, flat)

Table 17

Size of fitting, i.e. nominal hose bore	Thread on connector (BS 1580[a])	Az dia.	Ay dia.	B2 dia.	B1 dia.	J dia.
		Major dia. of thread (max.)	Major dia. of thread (max.)			Limits of tolerance + 0.000 – 0.010
in.	in.	in.	in.	in.	in.	in.
$^3/_4$	$1^1/_2$–6UNC–1A	1.4976	1.4976	0.937	0.937	1.281
$^3/_4$	$1^1/_2$–6UNC–1A	1.4976		0.937		1.281
to	and					
1	$1^3/_4$–6UN–1A		1.7476		1.125	
1	$1^3/_4$–6UN–1A	1.7476	1.7476	1.125	1.125	1.531
1	$1^3/_4$–6UN–1A	1.7476		1.125		1.531
to	and					
$1^1/_4$	$2^1/_4$–6UN–1A		2.2475		1.500	
$1^1/_4$	$2^1/_4$–6UN–1A	2.2475	2.2475	1.500	1.500	2.028

Unless otherwise specified, limits of tolerance ± 0.010 in. shall apply.
[a] BS 1580, "*Unified screw threads.*"

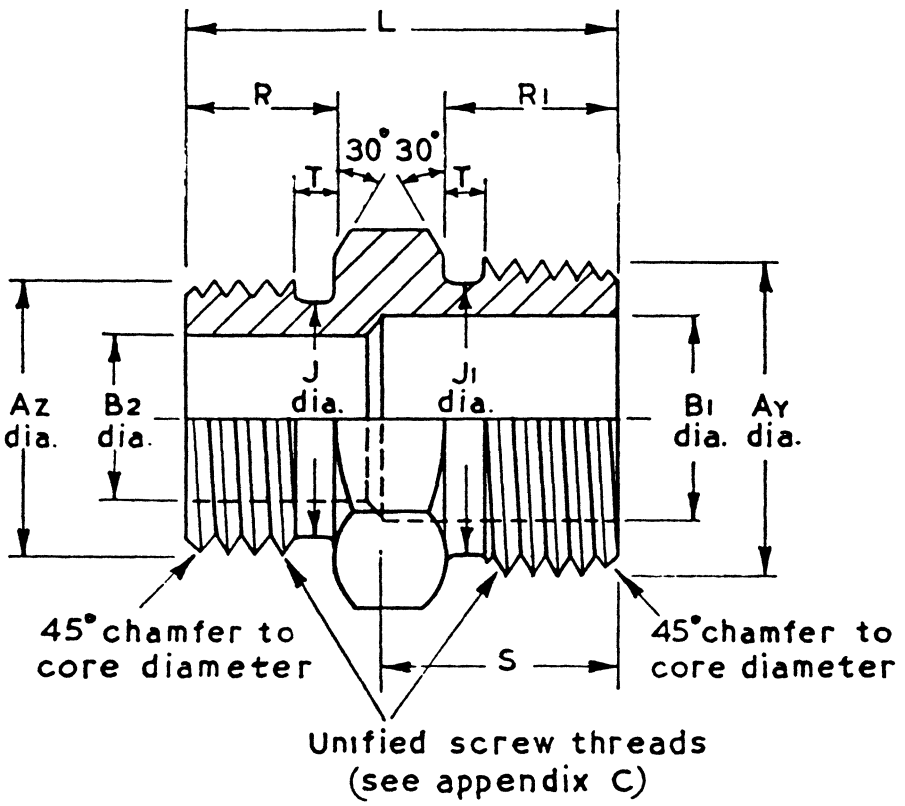

Figure 30 — Connector reducer (hexagon, double male, flat)

Table 17

J1 dia.	L	R	R1	S	T	W	
Limits of tolerance + 0.000 – 0.010						Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.
1.281	2.312	0.906	0.906		0.218	1.625	1.575
		0.906			0.218	1.812	1.756
	2.406			1.218			
1.531			0.937		0.218		
1.531	2.437	0.937	0.937		0.218	1.812	1.756
		0.937			0.218	2.375	2.300
	2.562			1.312			
2.028			1.000		0.250		
2.028	2.625	1.000	1.000		0.250	2.375	2.300

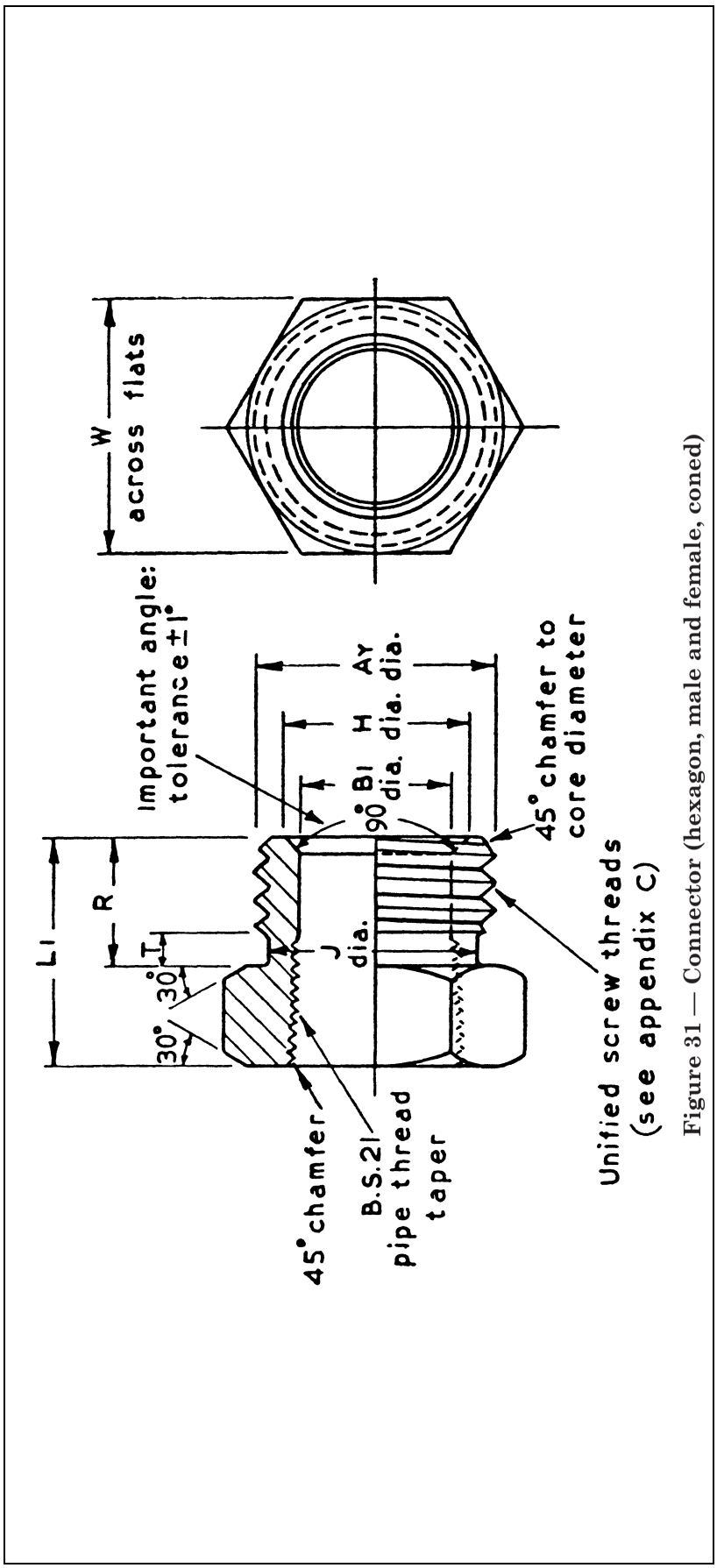

Figure 31 — Connector (hexagon, male and female, coned)

Table 18

Size of fitting, i.e. nominal hose bore	Male thread on connector (BS 1580[a])	Female thread on connector (BS 21[b])	Ay dia.	B1 dia.	H dia.	J dia.	L1	R	T	W	
			Major dia. male thread (max.)		Limits of tolerance + 0.010 – 0.000	Limits of tolerance + 0.000 – 0.010				Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
$^1/_2$	$1^1/_4$–7UNC–1A	$^1/_2$ B.S.P.	1.247 8	0.703	1.000	1.062	1.156	0.781	0.187	1.437	1.394
$^3/_4$	$1^1/_2$–6UNC–1A	$^3/_4$ B.S.P.	1.497 6	0.906	1.187	1.281	1.406	0.906	0.218	1.625	1.575
1	$1^3/_4$–6UN–1A	1 B.S.P.	1.747 6	1.156	1.437	1.531	1.500	0.937	0.218	1.812	1.756
$1^1/_4$	$2^1/_4$–6UN–1A	$1^1/_4$ B.S.P.	2.247 5	1.484	1.875	2.028	1.625	1.000	0.250	2.375	2.300

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 1580, "*Unified screw threads.*"

[b] BS 21, "*Pipe threads, Part 1: Basic sizes and tolerances.*"

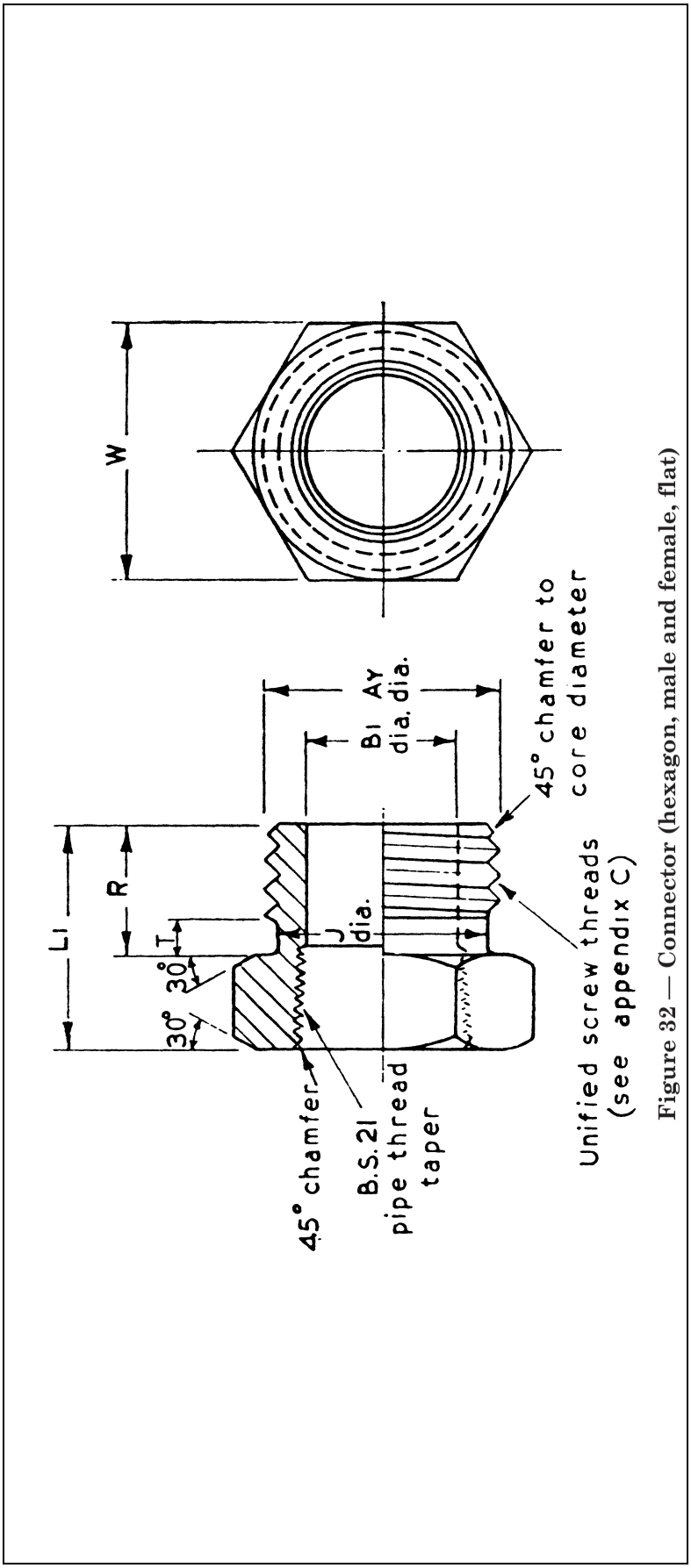

Figure 32 — Connector (hexagon, male and female, flat)

Table 19

Size of fitting, i.e. nominal hose bore	Male thread on connector (BS 1580[a])	Female thread on connector (BS 21[b])	Ay dia.	B1 dia.	J dia.	L1	R	T	W	
			Major dia. male thread (max.)		Limits of tolerance + 0.000 – 0.010				Max.	Min.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
3/4	1 1/2–6UNC–1A	3/4 B.S.P.	1.497 6	0.906	1.281	1.406	0.906	0.218	1.625	1.575
1	1 3/4–6UN–1A	1 B.S.P.	1.747 6	1.156	1.531	1.500	0.937	0.218	1.812	1.756
1 1/4	2 1/4–6UN–1A	1 1/4 B.S.P.	2.247 5	1.484	2.028	1.625	1.000	0.250	2.375	2.300

Unless otherwise specified, limits of tolerance of ± 0.010 in. shall apply.

[a] BS 1580, "*Unified screw threads.*"

[b] BS 21, "*Pipe threads. Part 1: Basic sizes and tolerances.*"

Appendix A Limits and tolerances for BS pipe (parallel) threads

(Extracted from BS 2779, "*Fastening threads of B.S.P. sizes.*")

Male threads—free class

Nominal size of coupling	B.S.P. size	Number of threads per inch	Major diameter			Effective diameter			Minor diameter		
			Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.
in.	in.		in.	in.	in.	in.	in.	in.	in.	in.	in.
1/8	1/8	28	0.383 0	0.008 3	0.374 7	0.360 1	0.006 4	0.353 7	0.337 2	0.010 2	0.327 0
3/16	1/8	28	0.383 0	0.008 3	0.374 7	0.360 1	0.006 4	0.353 7	0.337 2	0.010 2	0.327 0
1/4	1/4	19	0.518 0	0.009 6	0.508 4	0.484 3	0.007 3	0.477 0	0.450 6	0.011 9	0.438 7
5/16	1/4	19	0.518 0	0.009 6	0.508 4	0.484 3	0.007 3	0.477 0	0.450 6	0.011 9	0.438 7
3/8	3/8	19	0.656 0	0.009 8	0.646 2	0.622 3	0.007 5	0.614 8	0.588 6	0.012 1	0.576 5
1/2	1/2	14	0.825 0	0.011 1	0.813 9	0.779 3	0.008 4	0.770 9	0.733 6	0.015 7	0.719 9
5/8	3/4	14	1.041 0	0.011 6	1.029 4	0.995 3	0.008 9	0.986 4	0.949 6	0.014 2	0.935 4
3/4	1	11	1.309 0	0.012 8	1.296 2	1.250 8	0.009 8	1.241 0	1.192 6	0.015 8	1.176 8
1	1 1/4	11	1.650 0	0.013 3	1.636 7	1.591 8	0.010 3	1.581 5	1.533 6	0.016 3	1.517 3

Appendix B Limits and tolerances for BS pipe (parallel) threads

(Extracted from BS 2779, "*Fastening threads of B.S.P. sizes.*")

Female threads—normal class

Nominal size of coupling	B.S.P. size	Number of threads per inch	Major dia.	Effective diameter			Minor diameter		
			Max.	Max.	Tol.	Min.	Max.	Tol.	Min.
in.	in.		in.	in.	in.	in.	in.	in.	in.
1/8	1/8	28	0.383 8	0.366 5	0.006 4	0.360 1	0.348 3	0.011 1	0.337 2
3/16	1/8	28	0.383 8	0.366 5	0.006 4	0.360 1	0.348 3	0.011 1	0.337 2
1/4	1/4	19	0.518 0	0.491 6	0.007 3	0.484 3	0.468 1	0.017 5	0.450 6
5/16	1/4	19	0.518 0	0.491 6	0.007 3	0.484 3	0.468 1	0.017 5	0.450 6
3/8	3/8	19	0.656 0	0.629 8	0.007 5	0.622 3	0.606 1	0.017 5	0.588 6
1/2	1/2	14	0.825 0	0.787 7	0.008 4	0.779 3	0.754 9	0.021 3	0.733 6
5/8	3/4	14	1.041 0	1.004 2	0.008 9	0.995 3	0.970 9	0.021 3	0.949 6
3/4	1	11	1.309 0	1.260 6	0.009 8	1.250 8	1.217 8	0.025 2	1.192 6
1	1 1/4	11	1.650 0	1.602 1	0.010 3	1.591 8	1.558 8	0.025 2	1.533 6

Appendix C Limits and tolerances for unified screw threads

(From BS 1580:1949, "*Unified coarse*")

Male threads—unified coarse

Nominal size of coupling	Designation	Major diameter			Effective diameter			Minor diameter			Allowance
		Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	
in.		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1/2	1 1/4–7UNC–1A	1.247 8	0.024 6	1.223 2	1.155 0	0.011 1	1.143 9	1.072 5	0.021 4	1.051 1	0.02 2
3/4	1 1/2–6UNC–1A	1.497 6	0.027 3	1.470 3	1.389 3	0.012 1	1.377 2	1.293 1	0.024 1	1.269 0	0.02 4
Unified 6—Thread series											
1	1 3/4–6UN–1A	1.747 6	0.027 3	1.720 2	1.639 2	0.012 3	1.626 9	1.543 0	0.024 3	1.518 7	0.002 5
1 1/4	2 1/4–6UN–1A	2.247 5	0.027 3	2.220 2	2.139 2	0.012 5	2.126 7	2.043 0	0.024 5	2.018 5	0.002 5

Appendix D Limits and tolerances for unified screw threads

(From BS 1580:1949, "*Unified screw threads*")

Female threads—unified coarse

Nominal size of coupling	Designation	Major dia. (min.)	Effective diameter			Minor diameter		
			Max.	Tol.	Min.	Max.	Tol.	Min.
in.		in.	in.	in.	in.	in.	in.	in.
1/2	1 1/4–7UNC–1B	1.250 0	1.171 6	0.014 4	1.157 2	1.112 5	0.017 1	1.095 4
3/4	1 1/2–6UNC–1B	1.500 0	1.407 5	0.015 8	1.391 7	1.339 6	0.020 0	1.319 6
Unified 6—Thread series								
1	1 3/4–6UN–1B	1.750 0	1.657 7	0.016 0	1.641 7	1.589 6	0.020 0	1.569 6
1 1/4	2 1/4–6UN–1B	2.250 0	2.158 0	0.016 3	2.141 7	2.089 6	0.020 0	2.069 6

blank

British Standards

The following are available on application:
YEARBOOK
Including subject index and numerical list of British Standards
SECTIONAL LISTS. Gratis
Acoustics (SL 10)
Aerospace materials and components (SL 25)
Automobile (SL 34)
British Standard Handbooks (SL 27)
Building (SL 16)
Chemical engineering (SL 5)
Chemicals, fats, glues, oils, soap, etc. (SL 4)
Cinematography and photography (SL 1)
Coal, coke and colliery requisites (SL 13)
Codes of Practice (SL 8)
Consumer goods (SL 3)
Documentation, including Universal Decimal Classification (SL 35)
Drawing practice (SL 37)
Electrical engineering (SL 26)
Farming, dairying and allied interests (SL 31)
Furniture, bedding and furnishings (SL 11)
Gardening, horticulture and landscape work (SL 41)
Gas and solid fuel and refractories (SL 2)
Glassware, excluding laboratory apparatus (SL 39)
Heating, ventilating and air conditioning (SL 42)
Hospital equipment (SL 18)
Illumination and lighting fittings (SL 14)
Industrial instruments, etc. (SL 17)
Iron and steel (SL 24)
Laboratory apparatus (SL 23)
Leather, plastics, rubber (SL 12)
Local authority purchasing officers' guide (SL 28)
Machine tools (SL 20)
Mechanical engineering (SL 6)
Nomenclature, symbols and abbreviations (SL 29)
Non-ferrous metals (SL 19)
Nuclear energy (SL 36)
Packaging and containers (SL 15)
Paints, varnishes, paint ingredients and colours for paints (SL 9)
Personal safety equipment (SL 30)
Petroleum industry (SL 38)
Printing and stationery, paper and board (SL 22)
Road engineering (SL 32)
Shipbuilding (SL 40)
Textiles and clothing (SL 33)
Welding (SL 7)

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001.

Copyright

BSI
389 Chiswick High Road
London
W4 4AL