INTERNATIONAL STANDARD 485

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Aircraft water-methanol pressure connections

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 485 was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*. It was submitted directly to the ISO Council, in accordance with clause F.7.1 of the Directives for the technical work of ISO.

This International Standard cancels and replaces ISO Recommendation R 485-1966, which was approved in March 1961 by the Member Bodies of the following countries :

Belgium	Israel	Spain
Canada	Italy	Sweden
Chile	Japan	Turkey
Czechoslovakia	Netherlands	United Kingdom
France	New Zealand	U.S.S.R.
Germany	Poland	Yugoslavia
Iran	Portugal	

No Member Body expressed disapproval of the document.

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Aircraft water-methanol pressure connections

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the dimensions of 19 mm (3/4 in) and 38 mm (1 1/2 in) bore pressure connections for water-methanol for aircraft.

A space envelope is also specified for each size of connection.

2 DIMENSIONS

Dimensions of connectors are given in Figures 1 and 3, and those for space envelopes in Figures 2 and 4.

2.1 Connections of 19 mm (3/4 in)

The dimensions and tolerances of 19 mm (3/4 in) aircraft water-methanol pressure connections, suitable for rates of flow up to 114 l/min (25 gal (UK)/min), shall be as shown in Figures 1 and 2.

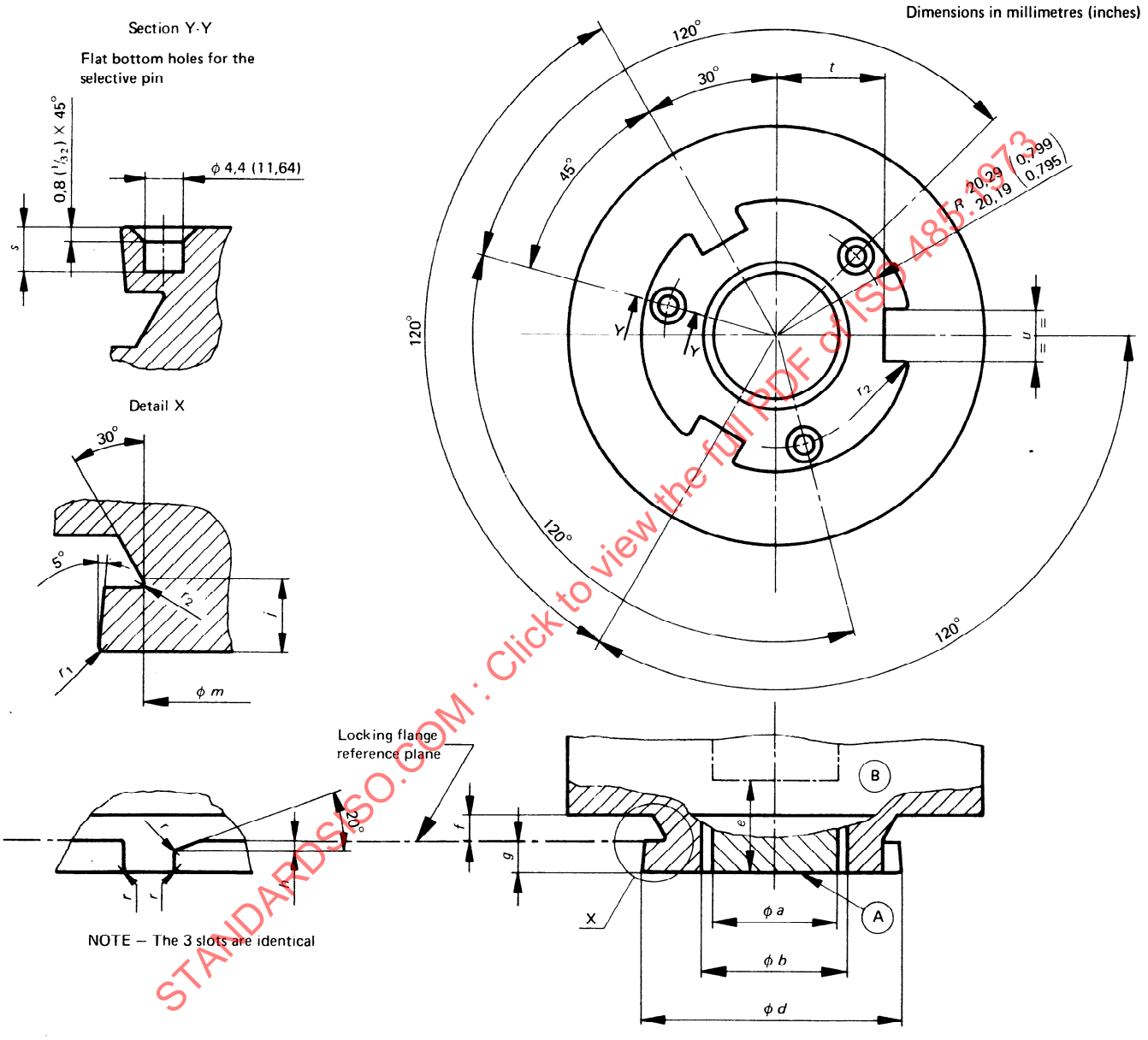


FIGURE 1 – **Dimensions and connection detail**

Dimension		mm	in
a	min.	22,22	0.875
b	max.	25,68	1.011
	min.	25,55	1.006
d	max.	48,95	1.927
	min.	48,84	1.923
e[1]	min.	16,7	0.656
f	min.	4,9	0.193

Dimension		mm	in
g	max.	5,56	0.219
	min.	5,51	0.217
h	max.	0,76	0.030
	min.	0,64	0.025
j		7,1	9/32
m		39,7	1 9/16
r		0,8	1/32

Dimension		mm	in
r_1		1,2	3/64
r_2	max.	0,5	0.020
s		3,6	9/64
t	max.	19,96	0.786
	min.	19,71	0.776
u	max.	10,44	0.411
	min.	10,31	0.406

1) Valve travel.

Tolerances, unless otherwise stated :

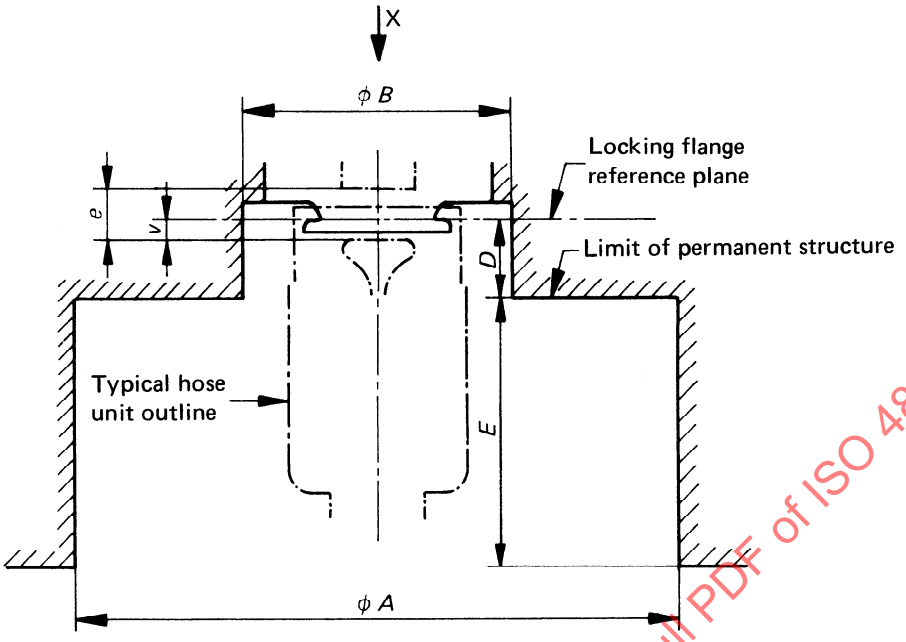
dimensional tolerance = ± 0,1 mm (± 0.005 in),
angular tolerance = ± 0° 15′.

NOTES

(A) The valve face shall be parallel to the locking flange reference plane within this diameter and no part of the valve may extend beyond this face, but it may be recessed up to 0,76 mm (0.030 in) to allow for compressibility of valve seal. Configuration of the valve behind this face is optional.

(B) The valve shall be spring loaded. Loading at 16,6 mm (0.656 in) travel shall not exceed 44,5 N (10 lbf) and loading in the valve shut position shall be 15,5 to 22,3 N (3 1/2 to 5 lbf).

Dimensions in millimetres (inches)



This diameter and associated firm outline represent the clearance envelope of the hose unit assembly and show the minimum clearance recommended for satisfactory operation.

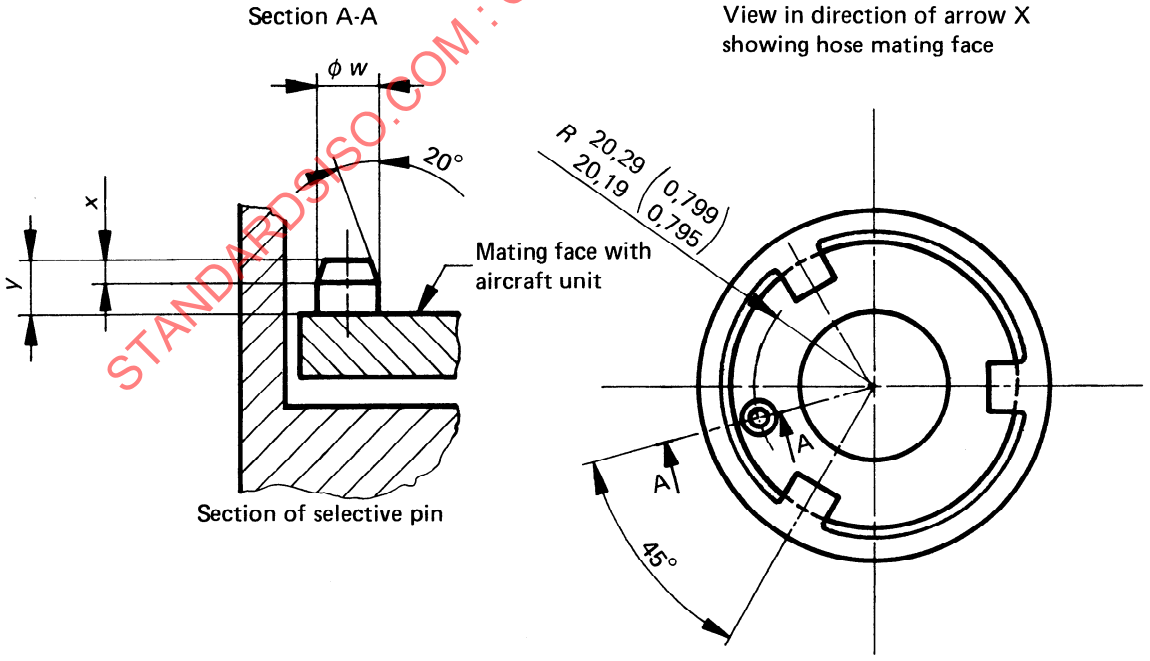


FIGURE 2 — **Space envelope and connection detail**

Dimension		mm	in	Dimension		mm	in
e [1]	max.	16,66	0.656	A	min.	203	8
	min.	16,05	0.632				
v [2]		+ 5,7 [3] − 5,6	+ 0.226 −0.220	B	min.	89	3 1/2
w	max.	4,06	0.160	D	max.	25	1
	min.	3,96	0.156				
x		1,2	0.047	E	max.	89	3 1/2
y		3,2	0.125				

1) Hose unit valve travel (obtained by movement of mechanism within the hose unit).

2) Top of valve to locking flange reference plane, when hose unit valve is closed.

3) Face of valve in closed position may be between 5,7 mm (0.226 in) above and 5,6 mm (0.220 in) below the locking flange reference plane.

Tolerances, unless otherwise stated :

dimensional tolerance = ± 0,1 mm (± 0.005 in),
angular tolerance = ± 0° 15′.

2.2 Connections of 38 mm (1 1/2 in)

The dimensions and tolerances of 38 mm (1 1/2 in) aircraft water-methanol pressure connections, suitable for rates of flow up to 546 l/min (120 gal (UK)/min), shall be as shown in Figures 3 and 4.

Dimensions in millimetres (inches)

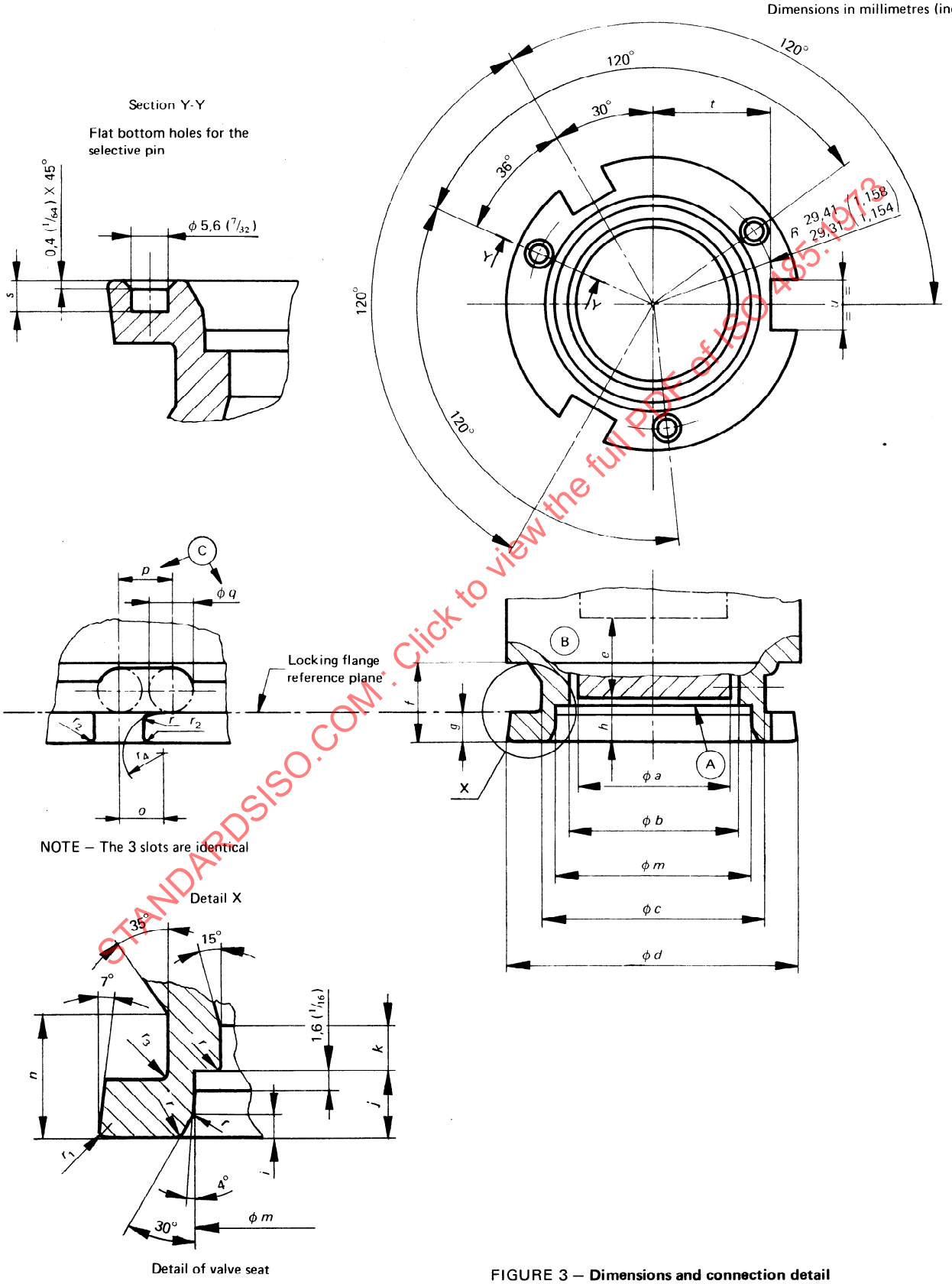


FIGURE 3 – **Dimensions and connection detail**

Dimension		mm	in
a	min.	38,1	1 1/2
b	max.	41,33	1.627
	min.	41,25	1.624
c		54,80	2.156
d	max.	69,81	2.749
	min.	69,72	2.745
e [1]	min.	24	0.942
f		19,8	25/32
g	max.	6,35	0.250
	min.	6,30	0.248
h	max.	7,49	0.295
	min.	7,11	0.280

Dimension		mm	in
j	max.	7,21	0.284
	min.	7,13	0.281
k		4,0	5/32
l		2,8	7/64
m	max.	48,36	1.904
	min.	48,26	1.900
n		15,9	5/8
o [2]		11,1	7/16
p [2]		12,7	1/2
q [3]	max.	11,28	0.445
	min.	11,18	0.440

Dimension	mm	in
r	0,8	1/32
r_1	1,2	3/64
r_2	1,6	1/16
r_3	2,0	5/64
r_4	9,5	0.375
s	3,2	1/8
t	$27{,}8\ ^{0}_{-0{,}1}$	$1\ 3/32\ ^{0}_{-0.005}$
u	11,9	15/32

1) Valve travel.

2) Centres.

3) Diameter of cutter.

Tolerances, unless otherwise stated :

dimensional tolerance = ± 0,1 mm (± 0.005 in)
angular tolerance = ± 0° 15'.

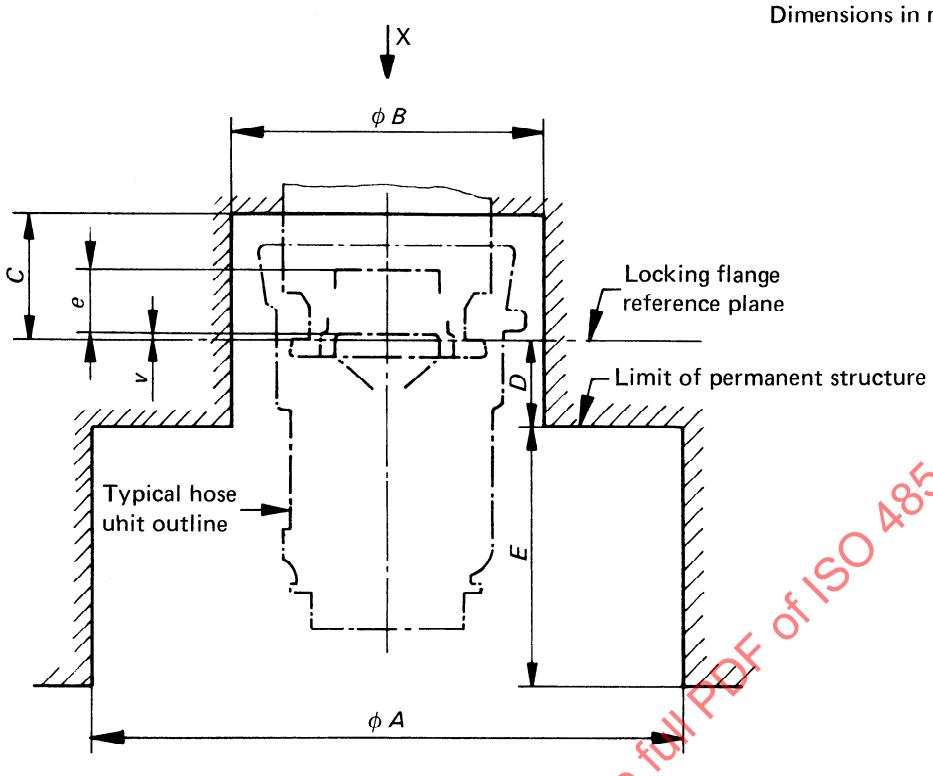
NOTES

(A) Configuration of the valve behind this face is optional.

(B) The valve shall be spring loaded. Loading at 23,93 mm (0.942 in) travel shall not exceed 98 N (22 lbf) and loading in the valve shut position shall be 40 to 49 N (9 to 11 lbf).

(C) Diameter q represents the diameter of the cutter which is required to traverse a minimum distance p in order to accomodate the rollers (or dogs) of the ground half coupling.

Dimensions in millimetres (inches)



This diameter and associated firm outline represent the clearance envelope of the hose unit assembly and show the minimum clearance recommended for satisfactory operation.

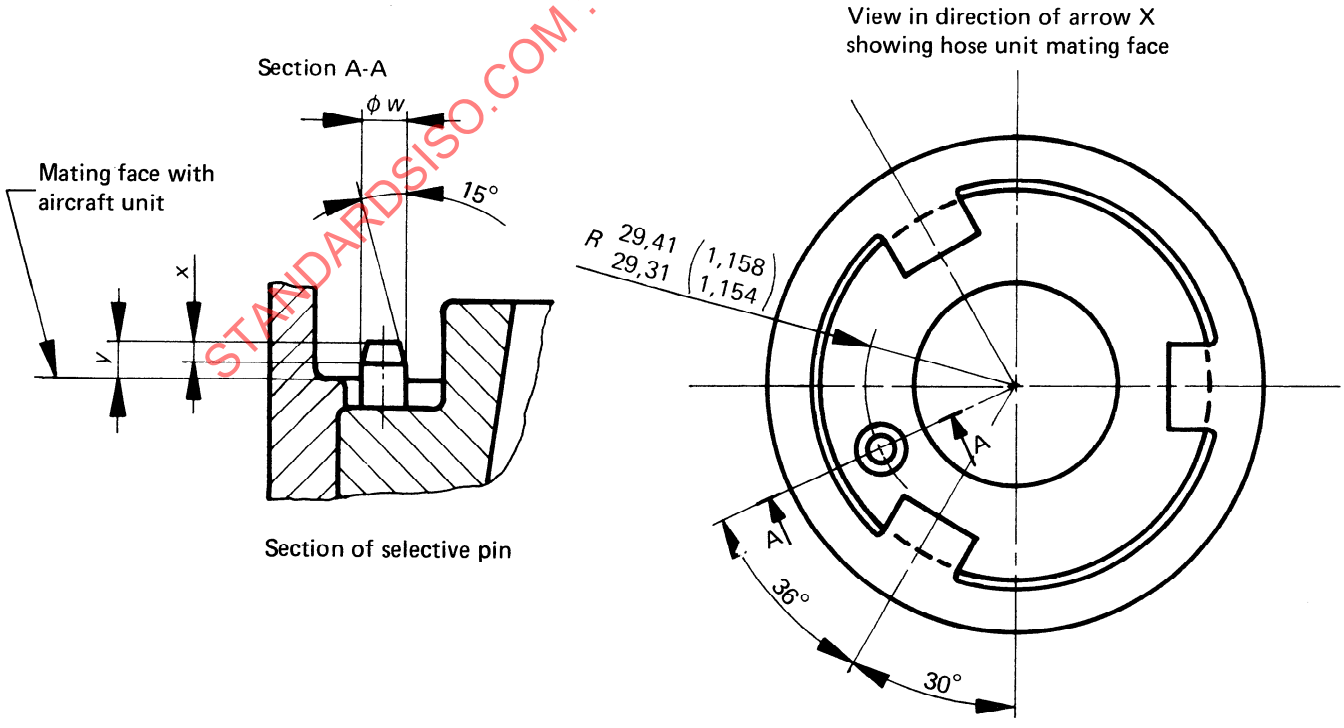


FIGURE 4 — **Space envelope and connection detail**

Dimension		mm	in	Dimension		mm	in
e[1]	max.	23,93	0.942	A	min.	203	8
	min.	22,71	0.894				
v[2]		+ 0,56[3] − 0,41	+ 0.022 −0.016	B	min.	108	4 1/4
w		4,8	3/16	C		41	1 5/8
x		1,6	1/16	D		28,5	1 1/8
y		2,4	3/32	E	max.	89	3 1/2

1) Hose unit valve travel (obtained by movement of mechanism within the hose unit).

2) Top of valve to locking flange reference plane, when hose unit valve is closed.

3) Face of valve in closed position may be between 0,56 mm (0.022 in) above and 0,41 mm (0.016 in) below the locking flange reference plane.

Tolerances, unless otherwise stated :

dimensional tolerance = ± 0,1 mm (± 0.005 in),
angular tolerance = ± 0° 15′.