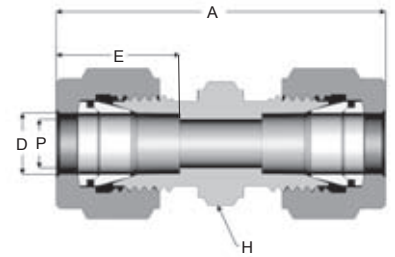


STRAIGHT UNION | US

APPLICATION

Connects tubes of the same dimension in a straight configuration.

Special requirements on request



TUBE SIZE - METRIC (mm)

D	Reference	A	E	H	P
3	US*3	35,3	12,9	12	2,4
4	US*4	37,3	13,7	12	3,2
6	US*6	41,0	15,3	14	4,8
8	US*8	43,2	16,2	14	6,4
10	US*10	46,2	17,2	17	7,9
12	US*12	51,2	22,8	22	9,5
14	US*14	52,0	24,4	24	11,1
16	US*16	52,0	24,4	24	12,7
18	US*18	53,5	24,4	27	15,1
20	US*20	55,0	26,0	30	15,9
22	US*22	55,0	26,0	30	18,3
25	US*25	65,0	31,3	36	22,2

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	Reference	A	E	H (mm)	P
1/16"	US*1/16	0.99	0.34	8	3/64"
1/8"	US* 1/8	1.39	0.54	12	3/32"
3/16"	US* 3/16	1.47	0.60	12	1/8"
1/4"	US* 1/4	1.61	0.64	14	3/16"
5/16"	US* 5/16	1.70	0.68	14	1/4"
3/8"	US* 3/8	1.77	0.90	17	9/32"
1/2"	US* 1/2	2.02	0.96	22	1 3/32"
5/8"	US* 5/8	2.05	0.96	24	1/2"
3/4"	US* 3/4	2.11	0.96	37	5/8"
7/8"	US* 7/8	2.17	1.02	30	3/4"
1"	US* 1"	2.56	1.23	36	7/8"

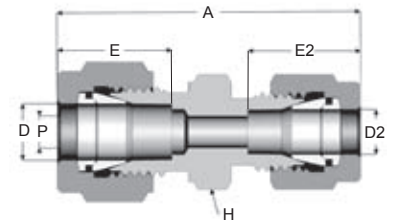
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

CONVERSION UNION | USMOD

APPLICATION

Join a metric tube to a fractional tube.

Special requirements on request



TUBE SIZE-METRIC TO FRACTIONAL (mm to inch)

D	D2	Reference	A	E	E2	H	P
3	1/8"	USMOD* 3 1/8	35.2	12.9	12.8	12	2.4
4	1/8"	USMOD* 4 1/8	36.5	13.7	12.8	12	2.4
4	3/16"	USMOD* 4 3/16	38.6	13.7	13.7	12	2.4
4	1/4"	USMOD* 4 1/4	39.4	13.7	15.3	14	2.4
6	1/8"	USMOD* 6 1/8	38.5	15.3	12.8	14	2.4
6	3/16"	USMOD* 6 3/16	39.8	15.3	13.7	14	3.2
6	1/4"	USMOD* 6 1/4	41.0	15.3	15.3	14	4.8
6	5/16"	USMOD* 6 5/16	42.3	15.3	16.2	14	4.8
6	3/8"	USMOD* 6 3/8	43.7	15.3	17.2	17	4.8
8	1/4"	USMOD* 8 1/4	42.3	16.2	15.3	14	6.4
8	5/16"	USMOD* 8 5/16	43.2	16.2	16.2	14	6.4
8	3/8"	USMOD* 8 3/8	44.3	16.2	16.9	17	6.4

*Specify material when ordering. See page 8 for materials and codes.

D	D2	Reference	A	E	E2	H	P
10	1/8"	USMOD*10 1/8	41.8	17.2	12.8	17	2.4
10	1/4"	USMOD*10 1/4	44.5	17.2	15.3	17	4.8
10	5/16"	USMOD*10 5/16	45.1	17.2	16.2	17	6.4
10	3/8"	USMOD* 10 3/8	45.9	17.2	17.2	17	7.1
12	1/4"	USMOD* 12 1/4	47.3	22.8	15.3	22	4.8
12	3/8"	USMOD* 12 3/8	48.4	22.8	16.9	22	7.1
12	1/2"	USMOD* 12 1/2	51.2	22.8	22.8	22	9.5
16	5/8"	USMOD* 16 5/8	52	24.4	24.4	24	12.7
18	3/4"	USMOD* 18 3/4	53.5	24.4	24.4	27	15.1
20	1/2"	USMOD* 20 1/2	55	26	22.8	30	10.3
25	1"	USMOD* 25 1	65	31.3	31.3	36	21.8

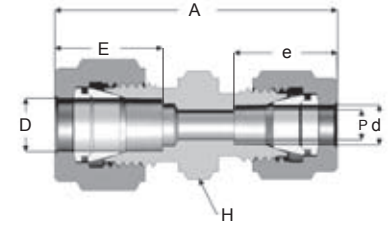
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

REDUCING UNION | URS

APPLICATION

Connects tubes of different dimensions.

Special requirements on request



TUBE SIZE - METRIC (mm)

D	d	Reference	A	E	e	H	P
4	3	URS* 4 3	36,6	13,7	12,9	12	2,4
6	3	URS* 6 3	38,6	15,7	12,9	14	2,4
6	4	URS* 6 4	39,4	15,7	13,7	14	3,2
8	6	URS* 8 6	42,3	16,2	15,3	14	4,8
10	6	URS* 10 6	44,5	17,2	15,3	17	4,8
10	8	URS* 10 8	45,1	17,2	16,2	17	6,4
12	6	URS* 12 6	47,0	22,8	15,3	22	4,8
12	8	URS* 12 8	47,8	22,8	16,2	22	6,4
12	10	URS* 12 10	48,7	22,8	17,2	22	7,9
16	10	URS* 16 10	49,5	24,4	17,2	24	7,9
16	12	URS* 16 12	52,0	24,4	22,8	24	9,5
18	12	URS* 18 12	53,5	24,4	22,8	27	9,5
20	12	URS* 20 12	54,0	26,0	22,8	30	9,5
22	20	URS* 22 20	55,6	26,0	26,0	30	15,9
25	20	URS* 25 20	62,3	31,3	26,0	36	15,9
25	22	URS* 25 22	62,3	31,3	26,0	36	19,1

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	d	Reference	A	E	e	H (mm)	P
1/8"	1/16"	URS* 1/8 1/16	1.22	0.50	0.34	12	3/64"
3/16"	1/8"	URS* 3/16 1/8	1.44	0.54	0.51	12	3/32"
1/4"	1/16"	URS* 1/4 1/16	1.35	0.60	0.34	14	3/64"
1/4"	1/8"	URS* 1/4 1/8	1.52	0.62	0.51	14	3/32"
1/4"	3/16"	URS* 1/4 3/16	1.55	0.62	0.54	14	1/8"
5/16"	1/4"	URS* 5/16 1/4	1.67	0.64	0.60	14	3/16"
3/8"	1/4"	URS* 3/8 1/4	1.75	0.68	0.60	17	3/16"
3/8"	5/16"	URS* 3/8 5/16	1.78	0.68	0.64	17	1/4"
1/2"	1/4"	URS* 1/2 1/4	1.85	0.90	0.60	17	3/16"
1/2"	3/8"	URS* 1/2 3/8	1.92	0.90	0.68	17	9/32"
5/8"	3/8"	URS* 5/8 3/8	1.95	0.96	0.68	24	9/32"
5/8"	1/2"	URS* 5/8 1/2	2.05	0.96	0.90	24	13/32"
3/4"	1/2"	URS* 3/4 1/2	2.13	1.02	0.90	30	3/8"
3/4"	5/8"	URS* 3/4 5/8	2.13	1.02	0.96	30	1/2"
1"	1/2"	URS* 1" 1/2	2.38	1.23	0.9	36	3/8"
1"	3/4"	URS* 1" 3/4	2.45	1.23	0.96	36	5/8"

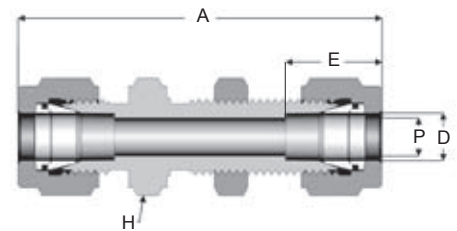
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

BULKHEAD UNION | UCS

APPLICATION

Join tubes of the same dimension through a wall panel.

Special requirements on request



TUBE SIZE - METRIC (mm)

D	Reference	A	E	H	P	B'Head Hole Drill Size	Max. B'Head Thickness
3	UCS* 3	51,3	12,9	12	2,4	8,3	12,7
4	UCS* 4	53,6	13,7	14	3,2	9,8	12,7
6	UCS* 6	57,7	15,3	17	4,8	11,5	10,3
8	UCS* 8	61,0	16,2	17	6,4	13,1	11,1
10	UCS* 10	63,7	17,2	19	7,9	16,3	11,1
12	UCS* 12	71,0	22,8	24	9,5	19,5	12,7
14	UCS* 14	72,5	24,4	27	11,1	21,0	12,7
16	UCS* 16	72,5	24,4	27	12,7	22,5	12,7
18	UCS* 18	78,9	24,4	30	15,1	26,0	16,7
20	UCS* 20	84,5	26,0	36	15,9	29,0	19,1
22	UCS* 22	84,9	26,0	36	19,1	29,0	20,6
25	UCS* 25	95,8	31,3	41	22,2	33,8	23,8

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	Reference	A	E	H (mm)	P	B'Head Hole Drill Size	Max. B'Head Thickness
1/8"	UCS* 1/8	2.02	0.51	12	3/32"	21/64"	1/2"
3/16"	UCS* 3/16	2.11	0.54	14	1/8"	25/64"	1/2"
1/4"	UCS* 1/4	2.27	0.60	17	3/16"	29/64"	17/32"
5/16"	UCS* 5/16	2.40	0.64	17	1/4"	33/64"	9/16"
3/8"	UCS* 3/8	2.45	0.68	19	9/32"	37/64"	9/16"
1/2"	UCS* 1/2	2.80	0.90	24	13/32"	49/64"	19/32"
5/8"	UCS* 5/8	2.85	0.96	27	1/2"	57/64"	19/32"
3/4"	UCS* 3/4	3.11	0.96	27	5/8"	1 1/64"	25/32"
1"	UCS* 1"	3.77	1.23	41	7/8"	1 21/64"	15/16"

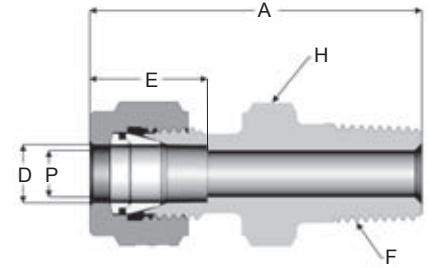
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

MALE UNION | UMS

APPLICATION

Connects a tube to a pipe or a female taper-threaded apparatus.

Special requirements on request



NPT (N)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	1/16"	UMS* 3 1/16 N	30,5	12,9	12	2,4
3	1/8"	UMS* 3 1/8 N	30,5	12,9	12	2,4
3	1/4"	UMS* 3 1/4 N	35,6	12,9	14	2,4
4	1/8"	UMS* 4 1/8 N	31,2	13,7	12	3,2
4	1/4"	UMS* 4 1/4 N	36,3	13,7	14	3,2
6	1/8"	UMS* 6 1/8 N	32,8	15,3	14	4,8
6	1/4"	UMS* 6 1/4 N	37,9	15,3	14	4,8
6	3/8"	UMS* 6 3/8 N	38,4	15,3	19	4,8
6	1/2"	UMS* 6 1/2 N	44,7	15,3	22	4,8
8	1/8"	UMS* 8 1/8 N	34,2	16,2	14	4,8
8	1/4"	UMS* 8 1/4 N	38,7	16,2	14	6,4
8	3/8"	UMS* 8 3/8 N	39,3	16,2	19	6,4
8	1/2"	UMS* 8 1/2 N	45,6	16,2	22	6,4
10	1/8"	UMS* 10 1/8 N	36,3	17,2	17	4,8
10	1/4"	UMS* 10 1/4 N	40,9	17,2	17	7,9
10	3/8"	UMS* 10 3/8 N	40,9	17,2	19	7,9
10	1/2"	UMS* 10 1/2 N	46,5	17,2	22	7,9
10	3/4"	UMS* 10 3/4 N	48,0	17,2	27	7,9
12	1/8"	UMS* 12 1/8 N	38,8	22,8	22	4,8
12	1/4"	UMS* 12 1/4 N	43,4	22,8	22	7,1
12	3/8"	UMS* 12 3/8 N	43,4	22,8	22	9,5
12	1/2"	UMS* 12 1/2 N	49,0	22,8	22	9,5
12	3/4"	UMS* 12 3/4 N	50,5	22,8	27	9,5
14	1/4"	UMS* 14 1/4 N	44,1	24,4	24	7,1
14	3/8"	UMS* 14 3/8 N	44,1	24,4	24	9,5
14	1/2"	UMS* 14 1/2 N	44,1	24,4	24	11,1
14	3/4"	UMS* 14 3/4 N	49,0	24,4	27	11,1
15	3/8"	UMS* 15 3/8 N	45,6	24,3	24	9,5
15	1/2"	UMS* 15 1/2 N	50,5	24,3	24	11,1
16	3/8"	UMS* 16 3/8 N	44,1	24,4	24	7,1
16	1/2"	UMS* 16 1/2 N	49,0	24,4	24	11,1
16	3/4"	UMS* 16 3/4 N	50,5	24,4	27	12,7
18	1/2"	UMS* 18 1/2 N	50,5	24,4	27	11,1
18	3/4"	UMS* 18 3/4 N	50,5	24,4	27	15,9
18	1"	UMS* 18 1" N	57,2	24,4	36	15,9
20	1/2"	UMS* 20 1/2 N	52,3	26,0	30	11,1
20	3/4"	UMS* 20 3/4 N	52,3	26,0	30	15,9
20	1"	UMS* 20 1" N	56,4	26,0	36	15,9
22	1/2"	UMS* 22 1/2 N	52,1	26	30	11,1
22	3/4"	UMS* 22 3/4 N	52,3	26,0	30	15,9
22	1"	UMS* 22 1" N	57,1	26,0	36	19,1
25	1/2"	UMS* 25 1/2 N	56,9	31,3	36	11,1
25	3/4"	UMS* 25 3/4 N	57,5	31,3	36	15,9
25	1"	UMS* 25 1" N	62,3	31,3	36	22,2

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	1/16"	UMS* 1/16 1/16 N	0.94	0.34	8	3/16"
1/16"	1/8"	UMS* 1/16 1/8 N	1.03	0.34	12	3/16"
1/8"	1/16"	UMS* 1/8 1/16 N	1.20	0.50	12	3/32"
1/8"	1/8"	UMS* 1/8 1/8 N	1.20	0.50	12	3/32"
1/8"	1/4"	UMS* 1/8 1/4 N	1.40	0.50	14	3/32"
3/16"	1/8"	UMS* 3/16 1/8 N	1.23	0.54	12	1/8"
3/16"	1/4"	UMS* 3/16 1/4 N	1.43	0.54	14	1/8"
1/4"	1/8"	UMS* 1/4 1/8 N	1.29	0.60	14	3/16"
1/4"	1/4"	UMS* 1/4 1/4 N	1.49	0.60	14	3/16"
1/4"	3/8"	UMS* 1/4 3/8 N	1.51	0.60	19	3/16"
1/4"	1/2"	UMS* 1/4 1/2 N	1.76	0.60	22	3/16"
5/16"	1/8"	UMS* 5/16 1/8 N	1.35	0.64	14	3/16"
5/16"	1/4"	UMS* 5/16 1/4 N	1.52	0.64	14	1/4"
3/8"	1/8"	UMS* 3/8 1/8 N	1.43	0.66	17	3/16"
3/8"	1/4"	UMS* 3/8 1/4 N	1.61	0.66	17	9/32"
3/8"	3/8"	UMS* 3/8 3/8 N	1.61	0.66	19	9/32"
3/8"	1/2"	UMS* 3/8 1/2 N	1.83	0.66	22	9/32"
3/8"	3/4"	UMS* 3/8 3/4 N	1.89	0.66	27	9/32"
1/2"	1/4"	UMS* 1/2 1/4 N	1.71	0.90	22	9/32"
1/2"	3/8"	UMS* 1/2 3/8 N	1.71	0.90	22	3/8"
1/2"	1/2"	UMS* 1/2 1/2 N	1.93	0.90	22	3/8"
1/2"	3/4"	UMS* 1/2 3/4 N	1.99	0.90	27	3/8"
5/8"	3/8"	UMS* 5/8 3/8 N	1.74	0.96	24	3/8"
5/8"	1/2"	UMS* 5/8 1/2 N	1.93	0.96	24	3/8"
5/8"	3/4"	UMS* 5/8 3/4 N	1.99	0.96	27	1/2"
3/4"	1/2"	UMS* 3/4 1/2 N	1.99	0.96	27	15/32"
3/4"	3/4"	UMS* 3/4 3/4 N	1.99	0.96	27	5/8"
3/4"	1"	UMS* 3/4 1" N	2.25	0.96	36	5/8"
7/8"	3/4"	UMS* 7/8 3/4 N	2.06	1.02	30	5/8"
7/8"	1"	UMS* 7/8 1" N	2.25	1.02	36	3/4"
1"	3/4"	UMS* 1" 3/4 N	2.26	1.23	36	5/8"
1"	1"	UMS* 1" 1" N	2.45	1.23	36	7/8"

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

BSPT - ISO BSP Tapered Thread (T)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	1/8"	UMS* 3 1/8 T	30,5	12,9	12	2,4
3	1/4"	UMS* 3 1/4 T	35,6	12,9	14	2,4
4	1/8"	UMS* 4 1/8 T	31,2	13,7	12	3,2
4	1/4"	UMS* 4 1/4 T	36,3	13,7	14	3,2
6	1/8"	UMS* 6 1/8 T	32,8	15,3	14	4,8
6	1/4"	UMS* 6 1/4 T	37,9	15,3	14	4,8
6	3/8"	UMS* 6 3/8 T	38,4	15,3	19	4,8
6	1/2"	UMS* 6 1/2 T	44,7	15,3	22	4,8
8	1/8"	UMS* 8 1/8 T	34,2	16,2	14	4,8
8	1/4"	UMS* 8 1/4 T	38,7	16,2	14	6,4
8	3/8"	UMS* 8 3/8 T	39,3	16,2	19	6,4
8	1/2"	UMS* 8 1/2 T	45,6	16,2	22	6,4
10	1/8"	UMS* 10 1/8 T	36,3	17,2	17	4,8
10	1/4"	UMS* 10 1/4 T	40,9	17,2	17	7,9
10	3/8"	UMS* 10 3/8 T	40,9	17,2	19	7,9
10	1/2"	UMS* 10 1/2 T	46,5	17,2	22	7,9
10	3/4"	UMS* 10 3/4 T	48,0	17,2	27	7,9
12	1/4"	UMS* 12 1/4 T	43,4	22,8	22	7,1
12	3/8"	UMS* 12 3/8 T	43,4	22,8	22	9,5
12	1/2"	UMS* 12 1/2 T	49,0	22,8	22	9,5
12	3/4"	UMS* 12 3/4 T	50,5	22,8	27	9,5
14	1/4"	UMS* 14 1/4 T	44,1	24,4	24	7,1
14	3/8"	UMS* 14 3/8 T	44,1	24,4	24	9,5
14	1/2"	UMS* 14 1/2 T	44,1	24,4	24	11,1
14	3/4"	UMS* 14 3/4 T	49,0	24,4	27	11,1
15	1/2"	UMS* 15 1/2 T	50,5	24,3	24	11,1
16	3/8"	UMS* 16 3/8 T	44,1	24,4	24	7,1
16	1/2"	UMS* 16 1/2 T	49,0	24,4	24	11,1
16	3/4"	UMS* 16 3/4 T	50,5	24,4	27	12,7
18	1/2"	UMS* 18 1/2 T	50,5	24,4	27	11,1
18	3/4"	UMS* 18 3/4 T	50,5	24,4	27	15,9
20	1/2"	UMS* 20 1/2 T	52,3	26,0	30	11,1
20	3/4"	UMS* 20 3/4 T	52,3	26,0	30	15,9
22	3/4"	UMS* 22 3/4 T	52,3	26,0	30	15,9
22	1"	UMS* 22 1" T	57,1	26,0	36	19,1
25	3/4"	UMS* 25 3/4 T	57,5	31,3	36	15,9
25	1"	UMS* 25 1" T	62,3	31,3	36	22,2

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	1/16"	UMS* 1/16 1/16 T	0.94	0.34	8	3/16"
1/16"	1/8"	UMS* 1/16 1/8 T	1.03	0.34	12	3/16"
1/8"	1/8"	UMS* 1/8 1/8 T	1.20	0.50	12	3/32"
1/8"	1/4"	UMS* 1/8 1/4 T	1.40	0.50	14	3/32"
1/8"	3/8"	UMS* 1/8 3/8 T	1.42	0.5	19	3/32"
3/16"	1/4"	UMS* 3/16 1/4 T	1.43	0.54	14	1/8"
1/4"	1/8"	UMS* 1/4 1/8 T	1.29	0.60	14	3/16"
1/4"	1/4"	UMS* 1/4 1/4 T	1.49	0.60	14	3/16"
1/4"	3/8"	UMS* 1/4 3/8 T	1.51	0.60	19	3/16"
1/4"	1/2"	UMS* 1/4 1/2 T	1.76	0.60	22	3/16"
5/16"	1/8"	UMS* 5/16 1/8 T	1.35	0.64	14	3/16"
5/16"	1/4"	UMS* 5/16 1/4 T	1.52	0.64	14	1/4"
3/8"	1/8"	UMS* 3/8 1/8 T	1.43	0.66	17	3/16"
3/8"	1/4"	UMS* 3/8 1/4 T	1.61	0.66	17	9/32"
3/8"	3/8"	UMS* 3/8 3/8 T	1.61	0.66	19	9/32"
3/8"	1/2"	UMS* 3/8 1/2 T	1.83	0.66	22	9/32"
3/8"	3/4"	UMS* 3/8 3/4 T	1.89	0.66	27	9/32"
1/2"	1/4"	UMS* 1/2 1/4 T	1.71	0.90	22	9/32"
1/2"	3/8"	UMS* 1/2 3/8 T	1.71	0.90	22	3/8"
1/2"	1/2"	UMS* 1/2 1/2 T	1.93	0.90	22	3/8"
1/2"	3/4"	UMS* 1/2 3/4 T	1.99	0.90	27	3/8"
5/8"	3/8"	UMS* 5/8 3/8 T	1.74	0.96	24	3/8"
5/8"	1/2"	UMS* 5/8 1/2 T	1.93	0.96	24	3/8"
3/4"	3/4"	UMS* 3/4 3/4 T	1.99	0.96	27	5/8"
3/4"	1"	UMS* 3/4 1" T	2.25	0.96	36	5/8"
1"	3/4"	UMS* 1" 3/4 T	2.26	1.23	36	5/8"
1"	1"	UMS* 1" 1" T	2.45	1.23	36	7/8"

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

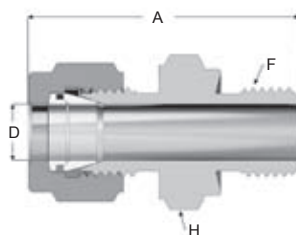
THERMOCOUPLE CONNECTOR | UMTS

For ordering use UMTS instead of UMS

APPLICATION

Straight-through bore to join apparatus such as dip tubes and thermocouple sensors.

Special requirements on request



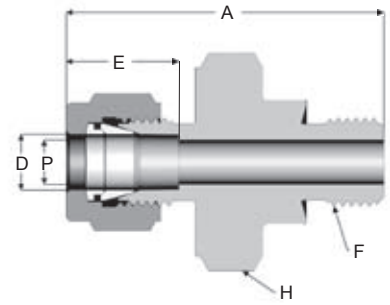
Depending on the UMTS reference, the operating pressure might be lower due to the lower wall thickness.

MALE UNION | UMS

APPLICATION

Connects a tube to a pipe or a female parallel-threaded apparatus.

Special requirements on request



BSPP - ISO BSP Parallel Thread (G)
TUBE SIZE - METRIC

D	F	Reference	A	E	H	P
3	1/8"	UMS* 3 1/8 G	30,0	12,9	14	2,4
3	1/4"	UMS* 3 1/4 G	35,3	12,9	19	2,4
4	1/8"	UMS* 4 1/8 G	30,7	13,7	14	3,2
4	1/4"	UMS* 4 1/4 G	35,9	13,7	19	3,2
6	1/8"	UMS* 6 1/8 G	32,3	15,3	14	4
6	1/4"	UMS* 6 1/4 G	37,6	15,3	19	4,8
6	3/8"	UMS* 6 3/8 G	38,9	15,3	22	4,8
6	1/2"	UMS* 6 1/2 G	44,7	15,3	27	4,8
8	1/8"	UMS* 8 1/8 G	33,2	16,2	14	4,8
8	1/4"	UMS* 8 1/4 G	38,5	16,2	19	5,9
8	3/8"	UMS* 8 3/8 G	39,8	16,2	22	6,4
8	1/2"	UMS* 8 1/2 G	45,6	16,2	27	6,4
8	3/4"	UMS* 8 3/4 G	50,8	16,2	36	6,4
10	1/8"	UMS* 10 1/8 G	36,5	17,2	17	4
10	1/4"	UMS* 10 1/4 G	39,4	17,2	19	5,9
10	3/8"	UMS* 10 3/8 G	40,6	17,2	22	7,9
10	1/2"	UMS* 10 1/2 G	46,5	17,2	27	7,9
10	3/4"	UMS* 10 3/4 G	50,7	17,2	36	7,9
12	1/4"	UMS* 12 1/4 G	42,6	22,8	22	5,9
12	3/8"	UMS* 12 3/8 G	43,1	22,8	22	7,9
12	1/2"	UMS* 12 1/2 G	49,0	22,8	27	9,5
12	3/4"	UMS* 12 3/4 G	52,8	22,8	36	9,5
14	1/4"	UMS* 14 1/4 G	43,4	24,4	24	5,9
14	3/8"	UMS* 14 3/8 G	43,3	24,4	24	7,9
14	1/2"	UMS* 14 1/2 G	49,2	24,4	27	9,5
16	3/8"	UMS* 16 3/8 G	43,9	24,4	24	7,9
16	1/2"	UMS* 16 1/2 G	49,0	24,4	27	11,9
16	3/4"	UMS* 16 3/4 G	53,0	24,4	36	12,7
18	1/2"	UMS* 18 1/2 G	49,0	24,4	27	11,9
18	3/4"	UMS* 18 3/4 G	52,8	24,4	36	15,1
20	1/2"	UMS* 20 1/2 G	50,5	26,0	30	11,9
20	3/4"	UMS* 20 3/4 G	52,8	26,0	36	15,9
22	1/2"	UMS* 22 1/2 G	50,5	26	30	11,9
22	3/4"	UMS* 22 3/4 G	52,8	26,0	36	15,9
22	1"	UMS* 22 1 G	55,3	26,0	41	18,3
25	3/4"	UMS* 25 3/4 G	57,5	31,3	36	15,9
25	1"	UMS* 25 1 G	60,1	31,3	41	19,8

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	1/8"	UMS* 1/16 1/8 G	0.98	0.35	14	3/64
1/8"	1/8"	UMS* 1/8 1/8 G	1.18	0.50	14	3/32"
1/8"	1/4"	UMS* 1/8 1/4 G	1.39	0.50	19	3/32"
1/8"	3/8"	UMS* 1/8 3/8 G	1.44	0.5	22	3/32
3/16"	1/4"	UMS* 3/16 1/4 G	1.21	0.54	19	3/32"
1/4"	1/8"	UMS* 1/4 1/8 G	1.27	0.60	14	5/32"
1/4"	1/4"	UMS* 1/4 1/4 G	1.48	0.60	19	3/16"
1/4"	3/8"	UMS* 1/4 3/8 G	1.53	0.60	22	3/16"
1/4"	1/2"	UMS* 1/4 1/2 G	1.76	0.60	27	3/16"
3/8"	1/8"	UMS* 3/8 1/8 G	1.44	0.66	17	5/32"
3/8"	1/4"	UMS* 3/8 1/4 G	1.55	0.66	19	7/32"
3/8"	3/8"	UMS* 3/8 3/8 G	1.60	0.66	22	9/32"
1/2"	1/4"	UMS* 1/2 1/4 G	1.68	0.90	22	7/32"
1/2"	3/8"	UMS* 1/2 3/8 G	1.70	0.90	22	3/8"
1/2"	1/2"	UMS* 1/2 1/2 G	1.93	0.90	27	3/8"
5/8"	3/8"	UMS* 5/8 3/8 G	1.73	0.96	24	3/8"
5/8"	1/2"	UMS* 5/8 1/2 G	1.93	0.96	27	15/32"
5/8"	3/4"	UMS* 5/8 3/4 G	2.09	0.96	36	1/2"
3/4"	1/2"	UMS* 3/4 1/2 G	1.93	0.96	27	15/32"
3/4"	3/4"	UMS* 3/4 3/4 G	2.08	0.96	36	5/8"
1"	1"	UMS* 1" 1" G	2.37	1.23	41	7/8"

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

BSPP G end connections should be used with sealing gaskets. See page 9 for further information. See page 59 for gaskets.

Metric Parallel Thread (MB)
TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
6	10 x 1	UMSI 6 10 x 1 MB	25,7	15,3	14	4
6	12 x 1	UMSI 6 12 x 1 MB	30,2	15,3	17	4,8
8	12 x 1	UMSI 8 12 x 1 MB	30,9	16,2	17	4,8
10	10 x 1	UMSI 10 10 x 1 MB	27,8	17,2	19	4
10	12 x 1	UMSI 10 12 x 1 MB	31,8	17,2	19	4,8

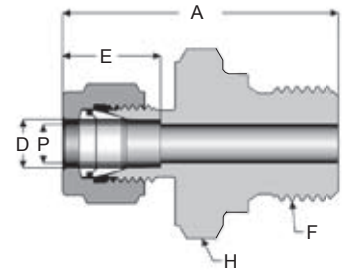
*Specify material when ordering. See page 8 for materials and codes.

MALE UNION | UMS

APPLICATION

Connects a tube to a pipe or a female parallel-threaded apparatus.

Special requirements on request



BSPP - ISO BSP Parallel Thread (K)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	1/8"	UMS* 3 1/8 K	30,0	12,9	14	2,4
3	1/4"	UMS* 3 1/4 K	35,3	12,9	19	2,4
4	1/8"	UMS* 4 1/8 K	30,7	13,7	14	3,2
6	1/8"	UMS* 6 1/8 K	32,3	15,3	14	4
6	1/4"	UMS* 6 1/4 K	37,6	15,3	19	4,8
6	3/8"	UMS* 6 3/8 K	38,9	15,3	22	4,8
6	1/2"	UMS* 6 1/2 K	44,7	15,3	27	4,8
8	1/8"	UMS* 8 1/8 K	33,2	16,2	14	4,8
8	1/4"	UMS* 8 1/4 K	38,5	16,2	19	5,9
8	3/8"	UMS* 8 3/8 K	39,8	16,2	22	6,4
8	1/2"	UMS* 8 1/2 K	45,6	16,2	27	6,4
10	1/4"	UMS* 10 1/4 K	39,4	17,2	19	5,9
10	3/8"	UMS* 10 3/8 K	40,6	17,2	22	7,9
10	1/2"	UMS* 10 1/2 K	46,5	17,2	27	7,9
12	1/4"	UMS* 12 1/4 K	42,6	22,8	22	5,9
12	3/8"	UMS* 12 3/8 K	43,1	22,8	22	7,9
12	1/2"	UMS* 12 1/2 K	49,0	22,8	27	9,5
12	3/4"	UMS* 12 3/4 K	52,8	22,8	36	9,5
14	3/8"	UMS* 14 3/8 K	43,3	24,4	24	7,9
14	1/2"	UMS* 14 1/2 K	49,2	24,4	27	9,5
16	3/8"	UMS* 16 3/8 K	43,9	24,4	24	7,9
16	1/2"	UMS* 16 1/2 K	49,0	24,4	27	11,9
16	3/4"	UMS* 16 3/4 K	53,0	24,4	36	12,7
18	1/2"	UMS* 18 1/2 K	49,0	24,4	27	11,9
18	3/4"	UMS* 18 3/4 K	52,8	24,4	36	15,1
20	1/2"	UMS* 20 1/2 K	50,5	26,0	30	11,9
20	3/4"	UMS* 20 3/4 K	52,8	26,0	36	15,9
22	3/4"	UMS* 22 3/4 K	52,8	26,0	36	15,9
22	1"	UMS* 22 1 K	55,3	26,0	41	18,3
25	3/4"	UMS* 25 3/4 K	57,5	31,3	36	15,9
25	1"	UMS* 25 1 K	60,1	31,3	41	19,8

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/8"	1/8"	UMS* 1/8 1/8 K	1.18	0.50	14	3/32"
1/8"	1/4"	UMS* 1/8 1/4 K	1.39	0.50	19	3/32"
3/16"	1/8"	UMS* 3/16 1/8 K	1.21	0.54	14	3/32"
1/4"	1/8"	UMS* 1/4 1/8 K	1.27	0.60	14	5/32"
1/4"	1/4"	UMS* 1/4 1/4 K	1.48	0.60	19	3/16"
1/4"	3/8"	UMS* 1/4 3/8 K	1.53	0.60	22	3/16"
1/4"	1/2"	UMS* 1/4 1/2 K	1.76	0.60	27	3/16"
5/16"	1/4"	UMS* 5/16 1/4 K	1.52	0.64	19	7/32"
3/8"	1/8"	UMS* 3/8 1/8 K	1.44	0.66	17	5/32"
3/8"	1/4"	UMS* 3/8 1/4 K	1.55	0.66	19	7/32"
3/8"	3/8"	UMS* 3/8 3/8 K	1.60	0.66	22	9/32"
3/8"	1/2"	UMS* 3/8 1/2 K	1.83	0.66	27	9/32"
1/2"	1/4"	UMS* 1/2 1/4 K	1.68	0.90	22	7/32"
1/2"	3/8"	UMS* 1/2 3/8 K	1.70	0.90	22	3/8"
1/2"	1/2"	UMS* 1/2 1/2 K	1.93	0.90	27	3/8"
1/2"	3/4"	UMS* 1/2 3/4 K	2.08	0.90	36	3/8"
3/4"	1/2"	UMS* 3/4 1/2 K	1.93	0.96	27	15/32"
3/4"	3/4"	UMS* 3/4 3/4 K	2.08	0.96	36	5/8"
1"	3/4"	UMS* 1" 3/4 K	2.26	1.23	36	5/8"
1"	1"	UMS* 1" 1" K	2.37	1.23	41	7/8"

BSPP K end connections must be used with sealing gaskets. See page 9 for further information. See page 59 for gaskets.

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

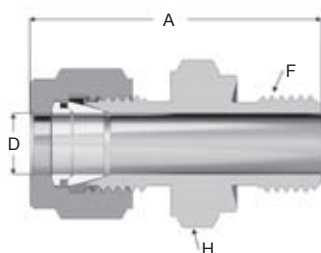
THERMOCOUPLE CONNECTOR | UMTS

For ordering use UMTS instead of UMS

APPLICATION

Straight-through bore to join apparatus such as dip tubes and thermocouple sensors.

Special requirements on request



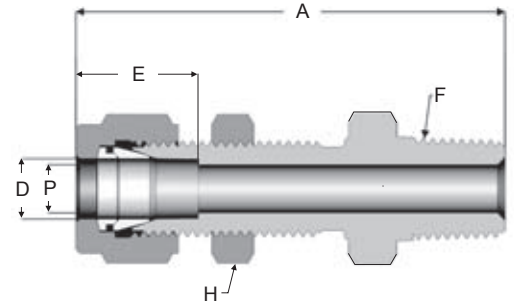
Depending on the UMTS reference, the operating pressure might be lower due to the lower wall thickness.

MALE BULKHEAD UNION | UCMS

APPLICATION (NPT)

Connects a tube to a female taper-threaded apparatus or pipe through a wall or panel.

Special requirements on request



NPT (N)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P	B'Head Hole Drill Size	Max. B'Head Thick.
3	1/8"	UCMS* 3 1/8 N	46,5	12,9	12	2,4	8,3	12,7
4	1/8"	UCMS* 4 1/8 N	47,2	13,7	12	3,2	9,8	12,7
6	1/8"	UCMS* 6 1/8 N	49,5	15,3	17	4,8	11,5	10,3
6	1/4"	UCMS* 6 1/4 N	49,5	15,3	17	4,8	11,5	10,3
6	3/8"	UCMS* 6 3/8 N	53,3	15,3	17	4,8	11,5	10,3
8	1/8"	UCMS* 8 1/8 N	51,9	16,2	17	4,8	13,1	11,1
8	1/4"	UCMS* 8 1/4 N	56,6	16,2	17	6,4	13,1	11,1
10	1/4"	UCMS* 10 1/4 N	57,4	17,2	19	7,9	16,3	11,1
12	3/8"	UCMS* 12 3/8 N	63,2	22,8	24	9,5	19,5	12,7
12	1/2"	UCMS* 12 1/2 N	68,8	22,8	24	9,5	19,5	12,7

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P	B'Head Hole Drill Size	Max. B'Head Thick.
1/8"	1/8"	UCMS* 1/8 1/8 N	1.83	0.51	12	3/32"	21/64"	1/2"
3/16"	1/8"	UCMS* 3/16 1/8 N	1.86	0.54	12	1/8"	25/64"	1/2"
1/4"	1/8"	UCMS* 1/4 1/8 N	1.95	0.60	17	3/16"	29/64"	17/32"
1/4"	1/4"	UCMS* 1/4 1/4 N	2.10	0.60	17	3/16"	29/64"	17/32"
3/8"	1/4"	UCMS* 3/8 1/4 N	2.26	0.68	19	9/32"	37/64"	9/16"
3/8"	3/8"	UCMS* 3/8 3/8 N	2.26	0.68	19	9/32"	37/64"	9/16"
3/8"	1/2"	UCMS* 3/8 1/2 N	2.51	0.68	22	9/32"	37/64"	9/16"
1/2"	3/8"	UCMS* 1/2 3/8 N	2.49	0.90	24	3/8"	49/64"	19/32"
1/2"	1/2"	UCMS* 1/2 1/2 N	2.71	0.90	24	3/8"	49/64"	19/32"
3/4"	3/4"	UCMS* 3/4 3/4 N	3	0.96	30	5/8"	1 1/64"	25/32"
1"	1"	UCMS* 1" 1" N	3.67	1.23	41	7/8"	1 21/64"	15/16"

Hex flats (H) are metric. Fractional upon request

*Specify material when ordering. See page 8 for materials and codes.

BSPT - ISO BSP Tapered Thread (T)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P	B'Head Hole Drill Size	Max. B'Head Thick.
3	1/8"	UCMS* 3 1/8 T	46,5	12,9	12	2,4	8,3	12,7
4	1/8"	UCMS* 4 1/8 T	47,2	13,7	12	3,2	9,8	12,7
6	1/8"	UCMS* 6 1/8 T	49,5	15,3	17	4,8	11,5	10,3
6	1/4"	UCMS* 6 1/4 T	49,5	15,3	17	4,8	11,5	10,3
8	3/8"	UCMS* 8 3/8 T	56,6	16,2	19	6,4	13,1	11,1

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P	B'Head Hole Drill Size	Max. B'Head Thick.
1/8"	1/8"	UCMS* 1/8 1/8 T	1.83	0.51	12	3/32"	21/64"	1/2"
1/4"	1/4"	UCMS* 1/4 1/4 T	2.10	0.60	17	3/16"	29/64"	17/32"
3/8"	1/4"	UCMS* 3/8 1/4 T	2.26	0.68	19	9/32"	37/64"	9/16"

Hex flats (H) are metric. Fractional upon request

*Specify material when ordering. See page 8 for materials and codes.

MALE BULKHEAD UNION WITH O-RING | UCOMS

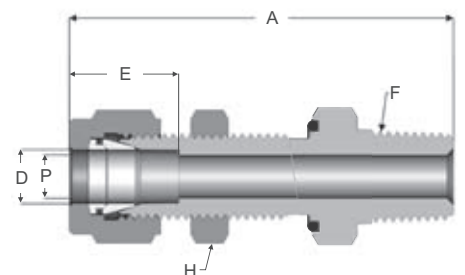
For ordering use UCOMS instead of UCMS

APPLICATION

Connects a tube to a female taper-threaded apparatus or pipe through a wall or panel.

The O-ring ensures a perfect tightness for isolators.

Special requirements on request

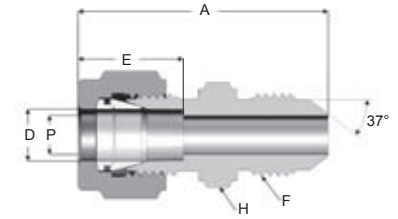


STRAIGHT UNION «AN» | UMS AN

APPLICATION

Connects tubes to a female AN-threaded apparatus.

Special requirements on request



TUBE SIZE - METRIC (mm)

D	AN tube flare size	Reference	A	E	H	F
4	3/16"	UMS*4 3/16 AN	34,1	13,7	12	3/16" - 24
10	1/4"	UMS* 10 1/4 AN	40,1	17,2	17	7/16" - 20
10	3/8"	UMS* 10 3/8 AN	40,5	17,2	17	9/16" - 18
12	1/2"	UMS* 12 1/2 AN	46,0	22,8	22	3/4" - 16
18	3/4"	UMS* 18 3/4 AN	54,0	24,4	27	1 1/16" - 12

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	AN tube flare size	Reference	A	E	H	F
1/8"	1/8"	UMS* 1/8 1/8 AN	1.25	0.51	12	5/16" - 24
1/8"	1/4"	UMS* 1/8 1/4 AN	1.41	0.51	14	7/16" - 20
3/16"	3/16"	UMS* 3/16 3/16 AN	1.34	0.54	12	3/16" - 24
1/4"	1/4"	UMS* 1/4 1/4 AN	1.50	0.60	14	7/16" - 20
5/16"	5/16"	UMS* 5/16 5/16 AN	1.53	0.64	14	1/2" - 20
3/8"	1/4"	UMS* 3/8 1/4 AN	1.58	0.68	17	7/16" - 20
3/8"	3/8"	UMS* 3/8 3/8 AN	1.59	0.68	17	9/16" - 18
1/2"	1/2"	UMS* 1/2 1/2 AN	1.81	0.90	22	3/4" - 16
3/4"	1/4"	UMS* 3/4 3/4 AN	2.13	0.96	27	1 1/16" - 12
1"	1"	UMS* 1" 1" AN	2.43	1.23	36	1 5/16" - 12

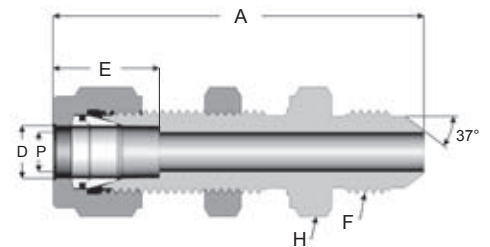
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

BULKHEAD UNION «AN» | UCMS AN

APPLICATION

Connects tubes to a female AN-threaded apparatus through a wall or panel.

Special requirements on request



TUBE SIZE - FRACTIONAL (inch)

D	AN tube flare size	Reference	A	E	H (mm)	P	B'Head Hole Drill Size	Max. B'Head Thick.	F
1/4"	1/4"	UCMS* 1/4 1/4 AN	2.14	0.60	17	1 1/64"	29/64"	17/32"	7/16" - 20
3/8"	3/8"	UCMS* 3/8 3/8 AN	2.28	0.68	19	19/64"	37/64"	9/16"	9/16" - 18
1/2"	1/2"	UCMS* 1/2 1/2 AN	2.59	0.90	24	25/64"	49/64"	19/32"	3/4" - 16
3/4"	3/4"	UCMS* 3/4 3/4 AN	3.08	0.96	36	39/64"	1 1/64"	25/32"	1 1/16" - 12
1	1"	UCMS* 1" 1" AN	3.63	1.23	41	27/32"	1 2 1/64"	15/16"	1 5/16" - 12

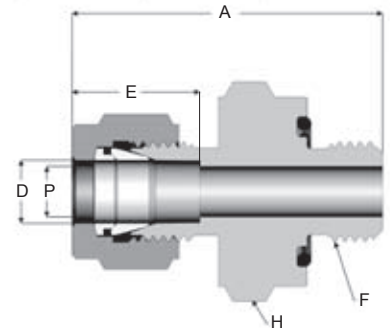
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

MALE O-RING CONNECTOR (NPSM) | UMOMS

APPLICATION

Connects a tube to a female threaded apparatus with an O-ring face seal connection.

Special requirements on request



NPSM (NM)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	1/8"	UMOMS* 3 1/8	32,8	12,9	19	2,4
6	1/8"	UMOMS* 6 1/8	35,2	15,3	19	4,8
6	3/8"	UMOMS* 6 3/8	39,9	15,3	30	4,8
8	1/4"	UMOMS* 8 1/4	39,3	16,2	24	6,4
10	1/4"	UMOMS* 10 1/4	40,1	17,2	24	7,1
10	1/2"	UMOMS* 10 1/2	47,3	17,2	36	7,1
12	1/2"	UMOMS* 12 1/2	49,8	22,8	36	9,5
16	1/2"	UMOMS* 16 1/2	49,8	24,4	36	13

NPSM fittings are supplied with sealing O-rings in Nitrile (NBR). Fluorocarbon (FPM) O-rings are available upon request. See page 8 for additional information.

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	1/8"	UMOMS* 1/16 1/8	1.13	0.34	19	3/64"
1/8"	1/8"	UMOMS* 1/8 1/8	1.29	0.5	19	3/32"
1/8"	1/4"	UMOMS* 1/8 1/4	1.44	0.5	24	3/32"
3/16"	1/8"	UMOMS* 3/16 1/8	1.34	0.54	19	1/8"
1/4"	1/8"	UMOMS* 1/4 1/8	1.41	0.60	19	3/16"
1/4"	1/4"	UMOMS* 1/4 1/4	1.51	0.60	24	3/16"
1/4"	1/2"	UMOMS* 1/4 1/2	1.81	0.6	36	3/16"
1/4"	3/8"	UMOMS* 1/4 3/8	1.59	0.60	30	3/16"
3/8"	1/8"	UMOMS* 3/8 1/8	1.47	0.68	19	3/16"
3/8"	1/4"	UMOMS* 3/8 1/4	1.59	0.68	24	9/32"
3/8"	3/8"	UMOMS* 3/8 3/8	1.66	0.68	30	9/32"
3/8"	1/2"	UMOMS* 3/8 1/2	1.87	0.68	36	9/32"
1/2"	1/4"	UMOMS* 1/2 1/4	1.69	0.90	24	9/32"
1/2"	3/8"	UMOMS* 1/2 3/8	1.75	0.90	30	3/8"
1/2"	1/2"	UMOMS* 1/2 1/2	1.96	0.90	36	3/8"
5/8"	1/2"	UMOMS* 5/8 1/2	1.97	0.96	36	1/2"
5/8"	3/4"	UMOMS* 5/8 3/4	2.06	0.96	41	1/2"
3/4"	1/2"	UMOMS* 3/4 1/2	1.97	1.02	36	1/2"
3/4"	3/4"	UMOMS* 3/4 3/4	2.06	1.02	41	5/8"
1"	3/4"	UMOMS* 1" 3/4	2.22	1.23	41	5/8"
1"	1"	UMOMS* 1" 1"	2.37	1.23	46	7/8"

Hex flats (H) are metric. Fractional upon request. *Specify material when ordering. See page 8 for materials and codes.

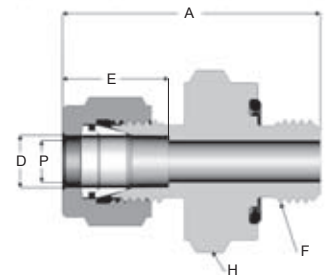


Do not mistake NPSM thread with BSPP threads

MALE O-RING CONNECTOR «UN» | UMOMSS

APPLICATION

Connects a tube to a female threaded apparatus with an O-ring face seal connection.



UN (UN)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	5/16" - 24	UMOMSS* 3 5/16	32,8	12,9	14	2,4
4	3/8" - 24	UMOMSS* 4 3/8	34,4	13,7	17	3,2
6	7/16" - 20	UMOMSS* 6 7/16	38,4	15,3	19	4,8
8	1/2" - 20	UMOMSS* 8 1/2	40,9	16,2	22	6,4
10	9/16" - 18	UMOMSS* 10 9/16	42,4	17,2	24	8
12	5/8" - 18	UMOMSS* 12 5/8	45,7	22,8	24	9,5
12	3/4" - 16	UMOMSS* 12 3/4	45,8	22,8	30	9,5
18	1 1/16" - 12	UMOMSS* 18 1 1/16	50,6	24,4	38	15
20	1 1/16" - 12	UMOMSS* 20 1 1/16	52,2	26,0	38	16

UN fittings are supplied with sealing O-rings in Nitrile (NBR). Fluorocarbon (FPM) O-rings are available upon request. See page 8 for additional information.

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	5/16" - 24	UMOMSS* 1/16 5/16	1.29	0.34	14	3/64"
1/8"	5/16" - 24	UMOMSS* 1/8 5/16	1.29	0.51	14	3/32"
1/8"	9/16" - 18	UMOMSS* 1/8 9/16	1.59	0.51	24	3/32"
3/16"	3/8" - 24	UMOMSS* 3/16 3/8	1.35	0.54	17	1/8"
1/4"	7/16" - 20	UMOMSS* 1/4 7/16	1.51	0.60	19	3/16"
5/16"	1/2" - 20	UMOMSS* 5/16 1/2	1.61	0.64	22	1/4"
3/8"	9/16" - 18	UMOMSS* 3/8 9/16	1.67	0.66	24	5/8"
1/2"	3/4" - 16	UMOMSS* 1/2 3/4	1.8	0.90	30	3/8"
3/4"	1 1/16" - 12	UMOMSS* 3/4 1 1/16	1.98	0.96	38	19/32"

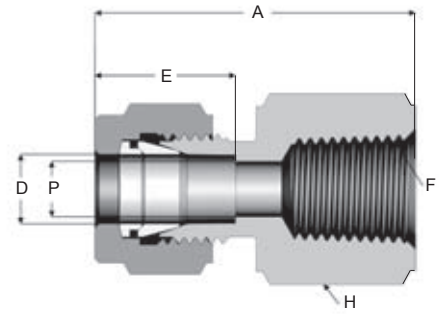
Hex flats (H) are metric. Fractional upon request. *Specify material when ordering. See page 8 for materials and codes.

FEMALE UNION | UFS

APPLICATION

Connects a tube to a male NPT-tapered apparatus or pipe.

Special requirements on request



NPT (N)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	1/8"	UFS* 3 1/8 N	28,7	12,9	14	2,4
3	1/4"	UFS* 3 1/4 N	33,5	12,9	19	2,4
4	1/8"	UFS* 4 1/8 N	29,7	13,7	14	2,4
6	1/8"	UFS* 6 1/8 N	31,3	15,3	14	4,8
6	1/4"	UFS* 6 1/4 N	35,8	15,3	19	4,8
6	3/8"	UFS* 6 3/8 N	37,6	15,3	22	4,8
6	1/2"	UFS* 6 1/2 N	42,5	15,3	27	4,8
8	1/8"	UFS* 8 1/8 N	32,1	16,2	14	6,4
8	1/4"	UFS* 8 1/4 N	37,0	16,2	19	6,4
8	3/8"	UFS* 8 3/8 N	38,5	16,2	22	6,4
8	1/2"	UFS* 8 1/2 N	43,3	16,2	27	6,4
10	1/8"	UFS* 10 1/8 N	33,3	17,2	17	7,9
10	1/4"	UFS* 10 1/4 N	37,8	17,2	19	7,9
10	3/8"	UFS* 10 3/8 N	39,4	17,2	22	7,9
10	1/2"	UFS* 10 1/2 N	44,2	17,2	27	7,9
12	1/4"	UFS* 12 1/4 N	40,3	22,8	22	9,5
12	3/8"	UFS* 12 3/8 N	41,9	22,8	22	9,5
12	1/2"	UFS* 12 1/2 N	46,7	22,8	27	9,5
12	3/4"	UFS* 12 3/4 N	48,9	22,8	32	9,5
14	3/8"	UFS* 14 3/8 N	42,1	24,4	24	11,1
14	1/2"	UFS* 14 1/2 N	46,9	24,4	27	11,1
16	1/4"	UFS* 16 1/4 N	41,7	24,4	24	9,5
16	3/8"	UFS* 16 3/8 N	46,9	24,4	24	12,7
16	1/2"	UFS* 16 1/2 N	46,9	24,4	27	12,7
16	3/4"	UFS* 16 3/4 N	48,9	24,4	32	12,7
18	1/2"	UFS* 18 1/2 N	46,9	24,4	27	12,7
18	3/4"	UFS* 18 3/4 N	48,4	24,4	30	12,7
20	1/2"	UFS* 20 1/2 N	47,9	26,0	30	15,9
20	3/4"	UFS* 20 3/4 N	49,7	26,0	36	15,9
22	3/4"	UFS* 22 3/4 N	49,7	26,0	36	18,5
22	1"	UFS* 22 1" N	57,9	26,0	41	18,5
25	3/4"	UFS* 25 3/4 N	53,4	31,3	36	22,2
25	1"	UFS* 25 1" N	62,3	31,3	41	22,2

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	1/16"	UFS* 1/16 1/16 N	0.93	0.34	12	3/64"
1/16"	1/8"	UFS* 1/16 1/8 N	0.96	0.34	12	3/64"
1/16"	1/4"	UFS* 1/16 1/4 N	1.15	0.34	19	3/64"
1/8"	1/8"	UFS* 1/8 1/8 N	1.13	0.51	14	3/32"
1/8"	1/4"	UFS* 1/8 1/4 N	1.32	0.51	19	3/32"
3/16"	1/8"	UFS* 3/16 1/8 N	1.17	0.54	14	1/8"
1/4"	1/16"	UFS* 1/4 1/16 N	1.23	0.6	14	3/16"
1/4"	1/8"	UFS* 1/4 1/8 N	1.23	0.60	14	3/16"
1/4"	1/4"	UFS* 1/4 1/4 N	1.41	0.60	19	3/16"
1/4"	3/8"	UFS* 1/4 3/8 N	1.48	0.60	22	3/16"
1/4"	1/2"	UFS* 1/4 1/2 N	1.67	0.60	27	3/16"
5/16"	1/8"	UFS* 5/16 1/8 N	1.26	0.64	14	1/4"
5/16"	1/4"	UFS* 5/16 1/4 N	1.46	0.64	19	1/4"
3/8"	1/8"	UFS* 3/8 1/8 N	1.31	0.68	17	9/32"
3/8"	1/4"	UFS* 3/8 1/4 N	1.49	0.68	19	9/32"
3/8"	3/8"	UFS* 3/8 3/8 N	1.55	0.68	22	9/32"
3/8"	1/2"	UFS* 3/8 1/2 N	1.74	0.68	27	9/32"
3/8"	3/4"	UFS* 3/8 3/4 N	1.88	0.68	30	9/32"
1/2"	1/8"	UFS* 1/2 1/8 N	1.4	0.9	22	9/32"
1/2"	1/4"	UFS* 1/2 1/4 N	1.59	0.90	22	13/32"
1/2"	3/8"	UFS* 1/2 3/8 N	1.65	0.90	22	13/32"
1/2"	1/2"	UFS* 1/2 1/2 N	1.84	0.90	27	13/32"
1/2"	3/4"	UFS* 1/2 3/4 N	1.9	0.90	30	13/32"
5/8"	3/8"	UFS* 5/8 3/8 N	1.64	0.96	24	1/2"
5/8"	1/2"	UFS* 5/8 1/2 N	1.85	0.96	27	1/2"
5/8"	3/4"	UFS* 5/8 3/4 N	1.9	0.96	30	1/2"
3/4"	1/2"	UFS* 3/4 1/2 N	1.85	0.96	27	5/8"
3/4"	3/4"	UFS* 3/4 3/4 N	1.91	0.96	30	5/8"
7/8"	3/4"	UFS* 7/8 3/4 N	1.96	1.02	30	3/4"
1"	3/4"	UFS* 1" 3/4 N	2.10	1.23	36	7/8"
1"	1"	UFS* 1" 1" N	2.45	1.23	41	7/8"

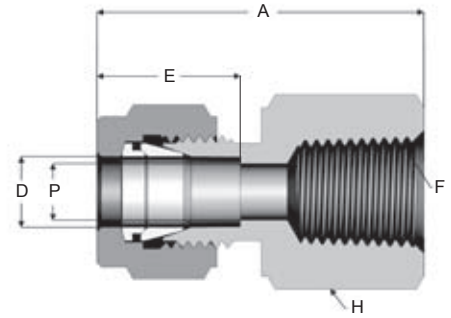
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

FEMALE UNION

APPLICATION

Connects a tube to a male BSPT-tapered apparatus or pipe.

Special requirements on request



BSPT - ISO BSP Tapered Thread (T)
TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P
3	1/8"	UFS* 3 1/8 T	28,7	12,9	14	2,4
4	1/8"	UFS* 4 1/8 T	29,7	13,7	14	2,4
6	1/8"	UFS* 6 1/8 T	31,3	15,3	14	4,8
6	1/4"	UFS* 6 1/4 T	35,8	15,3	19	4,8
6	3/8"	UFS* 6 3/8 T	37,6	15,3	22	4,8
6	1/2"	UFS* 6 1/2 T	42,5	15,3	27	4,8
8	1/8"	UFS* 8 1/8 T	32,1	16,2	14	6,4
8	1/4"	UFS* 8 1/4 T	37,0	16,2	19	6,4
8	3/8"	UFS* 8 3/8 T	38,5	16,2	22	6,4
8	1/2"	UFS* 8 1/2 T	43,3	16,2	27	6,4
10	1/8"	UFS* 10 1/8 T	33,3	17,2	17	7,9
10	1/4"	UFS* 10 1/4 T	37,8	17,2	19	7,9
10	3/8"	UFS* 10 3/8 T	39,4	17,2	22	7,9
10	1/2"	UFS* 10 1/2 T	44,2	17,2	27	7,9
12	1/4"	UFS* 12 1/4 T	40,3	22,8	22	9,5
12	3/8"	UFS* 12 3/8 T	41,9	22,8	22	9,5
12	1/2"	UFS* 12 1/2 T	46,7	22,8	27	9,5
14	3/8"	UFS* 14 3/8 T	42,1	24,4	24	11,1
14	1/2"	UFS* 14 1/2 T	46,9	24,4	27	11,1
16	3/8"	UFS* 16 3/8 T	46,9	24,4	24	12,7
16	1/2"	UFS* 16 1/2 T	46,9	24,4	27	12,7
16	3/4"	UFS* 16 3/4 T	48,9	24,4	32	12,7
18	1/2"	UFS* 18 1/2 T	46,9	24,4	27	12,7
20	1/2"	UFS* 20 1/2 T	47,9	26,0	30	15,9
20	3/4"	UFS* 20 3/4 T	49,7	26,0	36	15,9
22	3/4"	UFS* 22 3/4 T	49,7	26,0	36	18,5
22	1"	UFS* 22 1" T	57,9	26,0	41	18,5
25	3/4"	UFS* 25 3/4 T	53,4	31,3	36	22,2
25	1"	UFS* 25 1" T	62,3	31,3	41	22,2

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/16"	1/8"	UFS* 1/16 1/8 T	0.96	0.34	12	3/64"
1/8"	1/8"	UFS* 1/8 1/8 T	1.13	0.51	14	3/32"
1/8"	1/4"	UFS* 1/8 1/4 T	1.32	0.51	19	3/32"
1/4"	1/8"	UFS* 1/4 1/8 T	1.23	0.60	14	3/16"
1/4"	1/4"	UFS* 1/4 1/4 T	1.41	0.60	19	3/16"
1/4"	3/8"	UFS* 1/4 3/8 T	1.48	0.60	22	3/16"
1/4"	1/2"	UFS* 1/4 1/2 T	1.67	0.60	27	3/16"
3/8"	1/8"	UFS* 3/8 1/8 T	1.31	0.68	17	9/32"
3/8"	1/4"	UFS* 3/8 1/4 T	1.49	0.68	19	9/32"
3/8"	3/8"	UFS* 3/8 3/8 T	1.55	0.68	22	9/32"
3/8"	1/2"	UFS* 3/8 1/2 T	1.74	0.68	27	9/32"
1/2"	1/4"	UFS* 1/2 1/4 T	1.59	0.90	22	13/32"
1/2"	3/8"	UFS* 1/2 3/8 T	1.65	0.90	22	13/32"
1/2"	1/2"	UFS* 1/2 1/2 T	1.84	0.90	27	13/32"
1/2"	3/4"	UFS* 1/2 3/4 T	1.9	0.90	30	13/32"
3/4"	3/4"	UFS* 3/4 3/4 T	1.91	0.96	30	5/8"

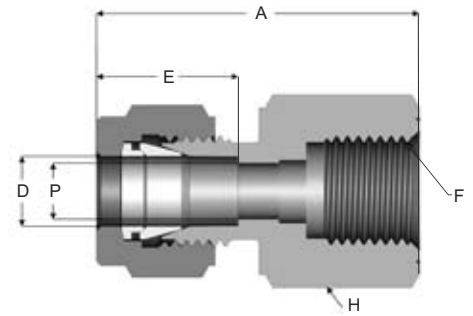
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

FEMALE UNION | UFS

APPLICATION

Connects a tube to a male BSPP parallel-threaded apparatus or pipe.

Special requirements on request



BSPP - ISO BSPP Parallel Thread (G)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H (mm)	P
3	1/4"	UFS* 3 1/4 G	35,3	12,9	19	2,4
4	1/8"	UFS* 4 1/8 G	29,6	13,7	14	2,4
4	1/4"	UFS* 4 1/4 G	35,9	13,7	19	2,4
4	3/8"	UFS* 4 3/8 G	39,2	13,7	22	2,4
4	1/2"	UFS* 4 1/2 G	40,6	13,7	27	2,4
6	1/8"	UFS* 6 1/8 G	31,3	15,3	14	4,8
6	1/4"	UFS* 6 1/4 G	37,6	15,3	19	4,8
6	3/8"	UFS* 6 3/8 G	37,6	15,3	22	4,8
6	1/2"	UFS* 6 1/2 G	43,5	15,3	27	4,8
8	1/8"	UFS* 8 1/8 G	32,0	16,2	14	4,5
8	1/4"	UFS* 8 1/4 G	38,5	16,2	19	5,5
8	3/8"	UFS* 8 3/8 G	36,2	16,2	22	6,4
8	1/2"	UFS* 8 1/2 G	41,0	16,2	27	6,4
10	1/8"	UFS* 10 1/8 G	33,1	17,2	17	4,5
10	1/4"	UFS* 10 1/4 G	39,4	17,2	19	5,5
10	3/8"	UFS* 10 3/8 G	38,8	17,2	22	6,4
10	1/2"	UFS* 10 1/2 G	42,1	17,2	27	7,0
12	1/4"	UFS* 12 1/4 G	41,9	22,8	22	5,5
12	3/8"	UFS* 12 3/8 G	44,4	22,8	22	6,4
12	1/2"	UFS* 12 1/2 G	48,2	22,8	27	7,0
12	3/4"	UFS* 12 3/4 G	48,9	22,8	32	9,5
14	3/8"	UFS* 14 3/8 G	41,7	24,4	24	6,5
14	1/2"	UFS* 14 1/2 G	46,5	24,4	27	7,1
16	1/2"	UFS* 16 1/2 G	46,5	24,4	27	7,1
18	1/2"	UFS* 18 1/2 G	46,5	24,4	27	7,1
18	3/4"	UFS* 18 3/4 G	48,9	24,4	32	15
20	1/2"	UFS* 16 1/2 G	54,3	26,0	30	7,0
22	1/2"	UFS* 22 1/2 G	54,3	26,0	30	7,0

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P
1/8"	1/4"	UFS* 1/8 1/4 G	1.39	0.51	19	3/32"
1/4"	1/8"	UFS* 1/4 1/8 G	1.25	0.6	14	3/16"
1/4"	1/4"	UFS* 1/4 1/4 G	1.48	0.60	19	3/16"
1/4"	3/8"	UFS* 1/4 3/8 G	1.48	0.60	22	3/16"
1/4"	1/2"	UFS* 1/4 1/2 G	1.71	0.60	27	3/16"
5/16"	1/4"	UFS* 5/16 1/4 G	1.52	0.64	19	7/32"
5/16"	1/2"	UFS* 5/16 1/2 G	1.61	0.64	27	9/32"
3/8"	1/4"	UFS* 3/8 1/4 G	1.55	0.66	19	7/32"
3/8"	3/8"	UFS* 3/8 3/8 G	1.53	0.66	22	17/64"
3/8"	1/2"	UFS* 3/8 1/2 G	1.66	0.66	27	9/32"
1/2"	3/8"	UFS* 1/2 3/8 G	1.75	0.9	22	17/64"
1/2"	1/2"	UFS* 1/2 1/2 G	1.90	0.9	27	9/32"
1/2"	3/4"	UFS* 1/2 3/4 G	1.94	0.9	32	3/8"

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

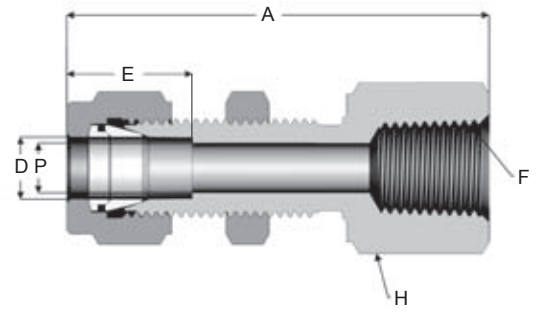
BSPP G end connections should be used with sealing gaskets.
See page 9 for further information. See page 59 for gaskets.

FEMALE BULKHEAD UNION | UCFS

APPLICATION

Connects a tube to a male threaded apparatus or pipe through a wall or panel.

Special requirements on request



NPT (N)

TUBE SIZE - METRIC (mm)

D	F	Reference	A	E	H	P	B'head Hole drill size	Max. B'head Thickness
4	1/4"	UCFS* 4 1/4 N	50,3	13,7	19	2,4	9,8	12,7
6	1/8"	UCFS* 6 1/8 N	47,1	15,3	17	4,8	11,5	10,3
6	1/4"	UCFS* 6 1/4 N	51,9	15,3	19	4,8	11,5	10,3
10	1/4"	UCFS* 10 1/4 N	54,3	17,2	19	7,9	16,3	11,1
12	1/4"	UCFS* 12 1/4 N	60,0	22,8	22	9,5	19,5	12,7
12	3/8"	UCFS* 12 3/8 N	61,7	22,8	22	9,5	19,5	12,7
12	1/2"	UCFS* 12 1/2 N	66,5	22,8	27	9,5	19,5	12,7
16	1/2"	UCFS* 16 1/2 N	67,1	24,4	27	12,7	22,5	12,7

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F	Reference	A	E	H (mm)	P	B'head Hole drill size	Max. B'head Thickness
1/8"	1/8"	UCFS* 1/8 1/8 N	1.76	0.51	14	3/32"	21/64"	1/2"
1/4"	1/8"	UCFS* 1/4 1/8 N	1.85	0.60	17	3/16"	29/64"	17/32"
1/4"	1/4"	UCFS* 1/4 1/4 N	2.04	0.60	19	3/16"	29/64"	17/32"
3/8"	1/4"	UCFS* 3/8 1/4 N	2.14	0.68	19	9/32"	37/64"	9/16"
3/8"	1/2"	UCFS* 3/8 1/2 N	2.43	0.68	27	9/32"	37/64"	9/16"
1/2"	3/8"	UCFS* 1/2 3/8 N	2.43	0.90	24	3/8"	49/64"	19/32"
1/2"	1/2"	UCFS* 1/2 1/2 N	2.62	0.90	27	3/8"	49/64"	19/32"

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

BSPT - ISO BSP Tapered Thread (T)

TUBE SIZE - METRIC (mm)

D	F (BSPT)	Reference	A	E	H	P	B'head Hole drill size	Max. B'head Thickness
3	1/8"	UCFS* 3 1/8 T	44,6	12,9	14	2,4	8,3	12,7
6	1/4"	UCFS* 6 1/4 T	51,9	15,3	19	4,8	11,5	10,3
10	1/4"	UCFS* 10 1/4 T	54,3	17,2	19	7,9	16,3	11,1
12	1/2"	UCFS* 12 1/2 T	66,5	22,8	27	9,5	19,5	12,7

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	F (BSPT)	Reference	A	E	H (mm)	P	B'head Hole drill size	Max. B'head Thickness
1/4"	1/4"	UCFS* 1/4 1/4 T	2.04	0.60	19	3/16"	29/64"	17/32"
3/8"	1/4"	UCFS* 3/8 1/4 T	2.14	0.68	19	9/32"	37/64"	9/16"

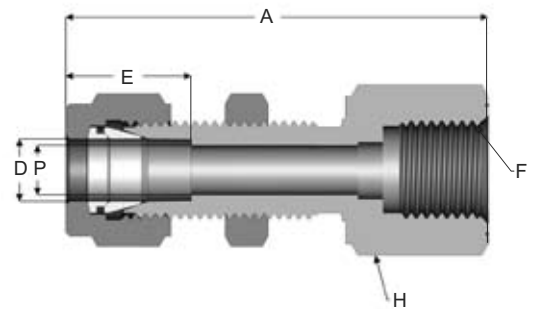
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

BSPP - ISO BSP Parallel Thread (G)

TUBE SIZE - METRIC (mm)

D	F (BSPT)	Reference	A	E	H	P	B'head Hole drill size	Max. B'head Thickness
6	1/8"	UCFS* 6 1/8 G	47,1	15,3	17	4,8	11,5	10,3
8	1/4"	UCFS* 8 1/4 G	54,2	16,2	19	5,5	13,1	11,1
10	3/8"	UCFS* 10 3/8 G	56,6	17,2	22	6,4	16,3	11,1
12	3/8"	UCFS* 12 3/8 G	61,7	22,8	22	9,5	19,5	12,7
12	1/2"	UCFS* 12 1/2 G	66,5	22,8	27	9,5	19,5	12,7

BSPP G end connections should be used with sealing gaskets.
See page 9 for further information. See page 59 for gaskets.
*Specify material when ordering. See page 8 for materials and codes.

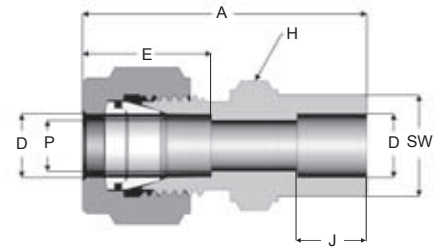


TUBE SOCKET WELD UNION | UMSWS

APPLICATION

Connects a tube to another tube via a socket weld.

Special requirements on request



TUBE SIZE - METRIC (mm)

D	Reference	A	E	H	J	P	SW
3	UMSWS* 3	29,0	12,9	12	6,4	2,4	7,9
4	UMSWS* 4	31,4	13,7	12	7,1	3,2	9,5
6	UMSWS* 6	33,5	15,3	14	7,9	4,8	11,1
8	UMSWS* 8	35,5	16,2	14	8,7	6,4	12,7
10	UMSWS* 10	37,6	17,2	17	9,5	7,9	15,9
12	UMSWS* 12	41,1	22,8	22	12,7	9,5	19,1
14	UMSWS* 14	42,1	24,4	24	14,3	11	22,2
16	UMSWS* 16	42,1	24,4	24	14,3	13	22,2
20	UMSWS* 20	45,2	26,0	30	15,9	16	27,0

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	Reference	A	E	H (mm)	J	P	SW
1/8"	UMSWS* 1/8	1.14	0.5	12	0.25	3/32"	0.31
1/4"	UMSWS* 1/4	1.32	0.60	14	0.31	3/16"	0.44
3/8"	UMSWS* 3/8	1.48	0.66	17	0.38	9/32"	0.63
1/2"	UMSWS* 1/2	1.62	0.90	22	0.50	13/32"	0.75
5/8"	UMSWS* 5/8	1.66	0.96	24	0.56	1/2"	0.88
3/4"	UMSWS* 3/4	1.71	0.96	27	0.56	5/8"	1.06
1"	UMSWS* 1"	2.07	1.23	36	0.75	7/8"	1.31

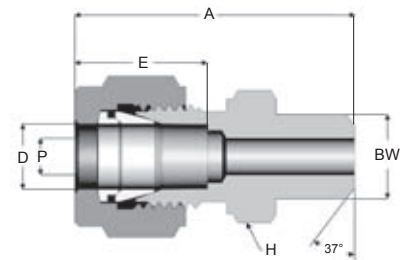
Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.

MALE PIPE WELD CONNECTOR | UMBWS

APPLICATION

Connects a tube to a pipe via a butt weld.

Special requirements on request



TUBE SIZE - METRIC (mm)

D	Nominal Pipe size	Reference	A	E	H	BW
3	1/8"	UMBWS* 3 1/8	30,5	12,9	12	10,28
4	1/8"	UMBWS* 4 1/8	31,2	13,7	12	10,28
6	1/8"	UMBWS* 6 1/8	32,8	15,3	14	10,28
6	1/4"	UMBWS* 6 1/4	37,9	15,3	14	13,72
6	1/2"	UMBWS* 6 1/2	44,8	15,3	22	21,34
8	1/8"	UMBWS* 8 1/8	34,2	16,2	14	10,28
8	1/4"	UMBWS* 8 1/4	38,7	16,2	14	13,72
8	3/8"	UMBWS* 8 3/8	39,1	16,2	19	17,15
8	1/2"	UMBWS* 8 1/2	45,6	16,2	22	21,34
10	1/4"	UMBWS* 10 1/4	40,9	17,2	17	13,72
10	3/8"	UMBWS* 10 3/8	40,9	17,2	19	17,15
10	1/2"	UMBWS* 10 1/2	46,5	17,2	22	21,34
12	3/8"	UMBWS* 12 3/8	43,4	22,8	22	17,15
12	1/2"	UMBWS* 12 1/2	49,0	22,8	22	21,34
12	3/4"	UMBWS* 12 3/4	50,5	22,8	27	26,67
14	1/4"	UMBWS* 14 1/4	44,1	24,4	24	13,72
14	1/2"	UMBWS* 14 1/2	44,1	24,4	24	21,34
14	3/8"	UMBWS* 14 3/8	44,1	24,4	24	17,15
16	1/2"	UMBWS* 16 1/2	49,0	24,4	24	21,34

*Specify material when ordering. See page 8 for materials and codes.

TUBE SIZE - FRACTIONAL (inch)

D	Nominal Pipe size	Reference	A	E	H (mm)	BW
1/8"	1/8"	UMBWS* 1/8 1/8	1.20	0.50	12	0.405
3/16"	1/8"	UMBWS* 3/16 1/8	1.23	0.54	12	0.405
1/4"	1/8"	UMBWS* 1/4 1/8	1.29	0.60	14	0.405
1/4"	1/4"	UMBWS* 1/4 1/4	1.49	0.60	14	0.540
5/16"	1/8"	UMBWS* 5/16 1/8	1.35	0.64	14	0.405
5/16"	1/4"	UMBWS* 5/16 1/4	1.56	0.64	14	0.540
3/8"	1/4"	UMBWS* 3/8 1/4	1.61	0.66	17	0.540
3/8"	3/8"	UMBWS* 3/8 3/8	1.61	0.66	19	0.675
3/8"	1/2"	UMBWS* 3/8 1/2	1.83	0.66	22	0.840
1/2"	3/8"	UMBWS* 1/2 3/8	1.71	0.90	22	0.675
1/2"	1/2"	UMBWS* 1/2 1/2	1.93	0.90	22	0.840
1/2"	3/4"	UMBWS* 1/2 3/4	1.99	0.90	27	1.050
5/8"	1/2"	UMBWS* 5/8 1/2	1.93	0.96	24	0.840
3/4"	1/2"	UMBWS* 3/4 1/2	1.99	0.96	27	0.840
3/4"	3/4"	UMBWS* 3/4 3/4	1.99	0.96	27	1.050
1"	1"	UMBWS* 1" 1"	2.45	1.23	36	1.315

Hex flats (H) are metric. Fractional upon request
*Specify material when ordering. See page 8 for materials and codes.