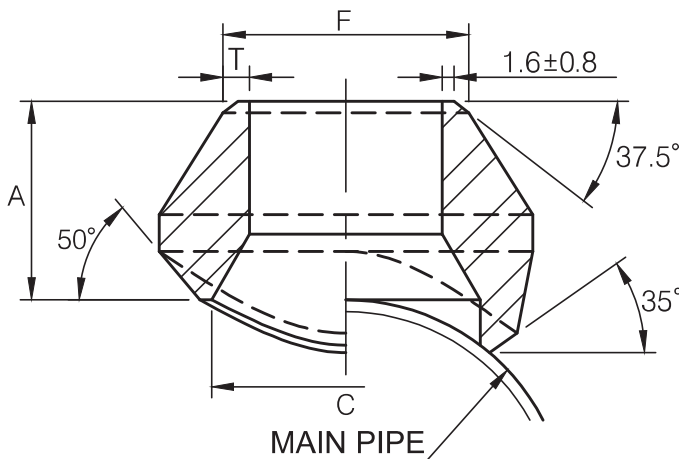


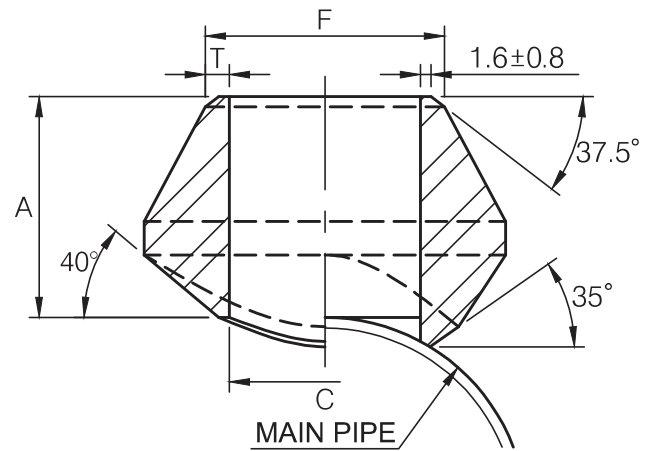


BUTT WELDING END 90° BRANCH OUTLET

MSS SP-97-2012



REDUCING WAY



STRAIGHT WAY

STANDARD

Dimensions are in millimeters.

Reducing way				
OutLet Pipe (in)	A	C	F	T
1/8	15.7	13.7	10.3	1.73
1/4	15.7	13.7	13.7	2.24
3/8	19.1	17.1	17.1	2.31
1/2	19.1	21.3	21.3	2.77
3/4	22.4	26.7	26.7	2.87
1	26.9	33.4	33.4	3.38
1-1/4	31.8	42.2	42.2	3.56
1-1/2	33.3	48.3	48.3	3.68
2	38.1	60.3	60.3	3.91
2-1/2	41.1	73.0	73.0	5.16
3	44.4	88.9	88.9	5.49
3-1/2	47.8	101.6	101.6	5.74
4	50.8	114.3	114.3	6.02
5	57.2	141.3	141.3	6.55
6	60.4	168.3	168.3	7.11
8	69.8	219.3	219.3	8.11
10	77.7	273.1	273.1	9.27
12	85.9	323.9	323.9	9.53
14	88.9	355.6	355.6	9.53
16	93.7	406.4	406.4	9.53
18	96.8	457.2	457.2	9.53
20	101.6	508.0	508.0	9.53
24	115.8	609.6	609.6	9.53

Dimensions are in millimeters.

Straight way				
OutLet Pipe (in)	A	C	F	T
1/4	15.7	11.5	13.7	2.24
3/8	19.1	14.5	17.1	2.31
1/2	19.1	16.5	21.3	2.77
3/4	22.4	21.5	26.7	2.87
1	26.9	27.2	33.4	3.38
1-1/4	31.8	36.0	42.2	3.56
1-1/2	33.3	42.0	48.3	3.68
2	38.1	53.0	60.3	3.91
2-1/2	41.1	65.0	73.0	5.16
3	44.4	80.0	88.9	5.49
4	50.8	104.0	114.3	6.02

(1) Weld Bevel in accordance with ASME B16.25.

- (1) Weld Bevel in accordance with ASME B16.25.
 (2) Outlet size 4 and less fit a number of run pipe sizes and the fittings are marked accordingly.
 See page 38 for conventional run pipe size combination.
 (3) Outlet sizes 5 and up order to specific size combination.

DIMENSIONAL TOLERANCE

MSS SP-97-2012

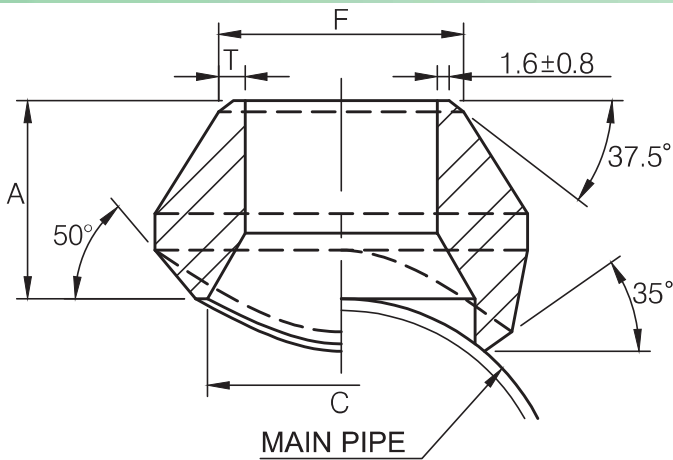
Unit : mm

Item	1/8"~3/4"	1"~4"	5"~12"	14"~24"
Face of fitting to crotch (A)	±0.8	±1.6	±3.2	±4.8

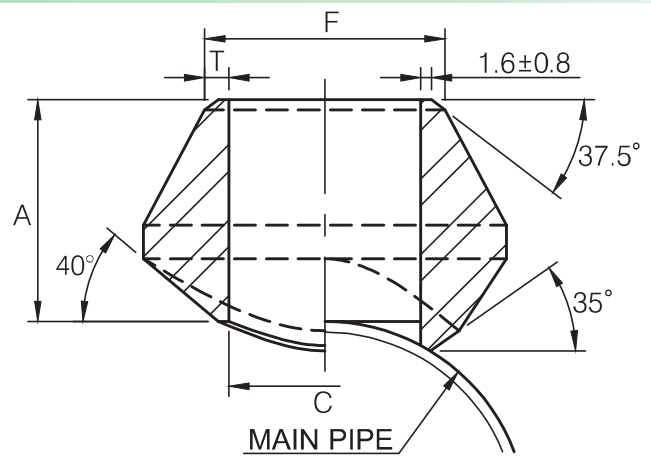


BUTT WELDING END 90° BRANCH OUTLET

MSS SP-97-2012



REDUCING WAY



STRAIGHT WAY

EXTRA STRONG

Dimensions are in millimeters.

Reducing way				
OutLet Pipe (in)	A	C	F	T
1/8	15.7	13.7	10.3	2.41
1/4	15.7	13.7	13.7	3.02
3/8	19.1	17.1	17.1	3.20
1/2	19.1	21.3	21.3	3.73
3/4	22.4	26.7	26.7	3.91
1	26.9	33.4	33.4	4.55
1-1/4	31.8	42.2	42.2	4.85
1-1/2	33.3	48.3	48.3	5.08
2	38.1	60.3	60.3	5.54
2-1/2	41.1	73.0	73.0	7.01
3	44.4	88.9	88.9	7.62
3-1/2	47.8	101.6	101.6	8.56
4	50.8	114.3	114.3	8.56
5	57.2	141.3	141.3	9.53
6	77.7	168.3	168.3	10.97
8	98.6	219.3	219.3	12.70
10	93.7	273.1	273.1	12.70
12	103.1	323.9	323.9	12.70
14	100.1	355.6	355.6	12.70
16	106.2	406.4	406.4	12.70
18	111.2	457.2	457.2	12.70
20	119.1	508.0	508.0	12.70
24	139.7	609.6	609.6	12.70

Dimensions are in millimeters.

Straight way				
OutLet Pipe (in)	A	C	F	T
1/4	15.7	11.5	13.7	3.02
3/8	19.1	14.5	17.1	3.20
1/2	19.1	16.5	21.3	3.73
3/4	22.4	21.5	26.7	3.91
1	26.9	27.2	33.4	4.55
1-1/4	31.8	36.0	42.2	4.85
1-1/2	33.3	42.0	48.3	5.08
2	38.1	53.0	60.3	5.54
2-1/2	41.1	65.0	73.0	7.01
3	44.4	80.0	88.9	7.62
4	50.8	104.0	114.3	8.56

(1) Weld Bevel in Accordance with ASME B16.25.

DIMENSIONAL TOLERANCE

MSS SP-97-2012

Unit : mm

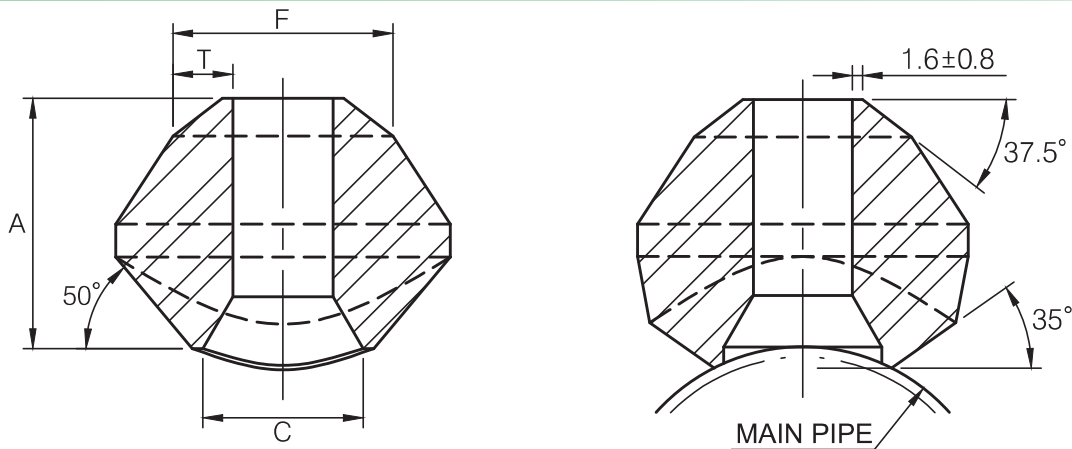
Item	1/8"~3/4"	1"~4"	5"~12"	14"~24"
Face of fitting to crotch (A)	±0.8	±1.6	±3.2	±4.8

- (1) Weld Bevel in accordance with ASME B16.25
- (2) Outlet size 4 and less fit a number of run pipe sizes and the fittings are marked accordingly.
See page 38 for conventional run pipe size combination.
- (3) Outlet sizes 5 and up order to specific size combination.



BUTT WELDING END 90° BRANCH OUTLET

MSS SP-97-2012



SCHEDULE 160 & DOUBLE EXTRA STRONG

Dimensions are in millimeters.

Reducing way					
OutLet Pipe (in)	A	C	F	T	
				S160	XXS
1/2	28.4	13.8	21.3	4.78	7.47
3/4	31.8	18.9	26.7	5.56	7.82
1	38.1	24.3	33.4	6.35	9.09
1-1/4	44.4	32.5	42.2	6.35	9.70
1-1/2	50.8	38.1	48.3	7.14	10.15
2	55.4	49.2	60.3	8.74	11.07
2-1/2	62.0	59.0	73.0	9.53	14.02
3	73.2	73.7	88.9	11.13	15.24
4	84.1	97.2	114.3	13.49	17.12
5	93.7	122.2	141.3	15.88	19.05
6	104.6	146.4	168.3	18.26	21.95

- (1) Weld bevel in accordance with ASME B16.25
- (2) Outlet size by order to specific size combination.

CONVENTIONAL RUN PIPE SIZE COMBINATIONS

3000Lb THREAD/SOCKET-WELD END STD/XS BUTT WELDING END

		OUTLET SIZE										
		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
RUN SIZE (MAIN PIPE)	Reducing way	3/8"~3/4" 1"~36"	1/2" 3/4"~1-1/4" 1-1/2"~36"	3/4" 1" 1-1/4" 1-1/2"~3"	1" 1-1/4" 1-1/2" 2"~3"	1-1/4" 1-1/2" 2" 2-1/2"	1-1/2" 2" 2-1/2" 3"	2" 2-1/2" 3" 3-1/2"	2-1/2" 3" 3-1/2" 4"	3" 3-1/2" 4" 5"	3-1/2" 4" 5" 6"	5" 6" 8" 10"
	Straight way	3/8"~36"	1/2"~36"	3/4"~36"	1"~36"	1-1/4"~1-1/2" 2"~36"	1-1/2" 2"~3"	2" 2-1/2"~4"	2-1/2" 3"~3-1/2"	3" 3-1/2"~4"	3-1/2" 4" 5"~8"	4" 5" 6" 8"~12"

Each charted outlet size is designed to fit a number of run pipe sizes.