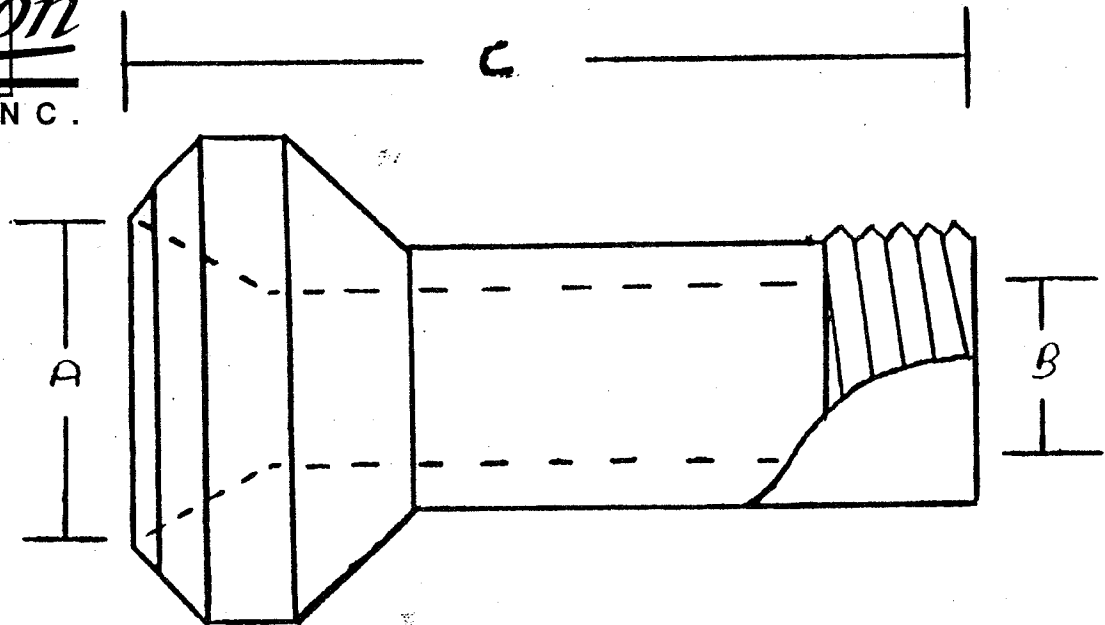


SWAGE NIPPLES

SIZES/INCHES			
NOMINAL	O.D.	REDUCED TO	LENGTH/INCHES
1/2	0.845	1/8	2-3/4
		1/4 and 3/8	2-3/4
3/4	1.050	1/8 thru 3/8	3
		1/2	3
1	1.315	1/8 thru 3/8	3-1/2
		1/2 and 3/4	3-1/2
1-1/4	1.660	1/4 and 3/8	4
		1/2 and 3/4	4
		1	4
1-1/2	1.900	1/4 and 3/8	4-1/2
		1/2 and 3/4	4-1/2
		1 and 1-1/4	4-1/2
2	2-3/8	1/4 and 3/8	6-1/2
		1/2 and 3/4	6-1/2
		1-1/4	6-1/2
		1 and 1-1/2	6-1/2
2-1/2	2-7/8	1/4 thru 3/4	7
		1 thru 1-1/2	7
		2	7
3	3-1/2	1/4 thru 3/4	8
		1 thru 1-1/2	8
		2 and 2-1/2	8
3-1/2	4	1/4 thru 3/4	8
		1 thru 1-1/2	8
		2 thru 3	8
4	4-1/2	1/4 thru 3/4	9
		1 thru 1-1/2	9
		2 thru 3-1/2	9



NIPPLE OUTLET CONNECTIONS

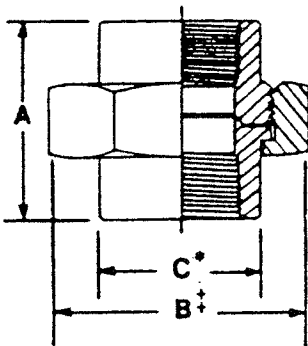
OUTLET SIZE	A DIM	B PLAIN END		L	B THREADED END		WT
		3000	6000		3000	6000	
1/2	.560	.546	.466	3 1/2	.466	.252	.45
3/4	1.187	.742	.614	3 1/2	.614	.434	.64
1	1.437	.957	.815	3 1/2	.815	.599	.92
1 1/4	1.687	1.278	1.160	3 1/2	1.160	.896	1.40
1 1/2	2.000	1.500	1.338	3 1/2	1.338	1.100	1.72
2	2.56	1.939	1.689	3 1/2	1.689	1.503	2.5



MSS-SP-83 Unions - Threaded and Socket Weld

THREADED

3000 POUND

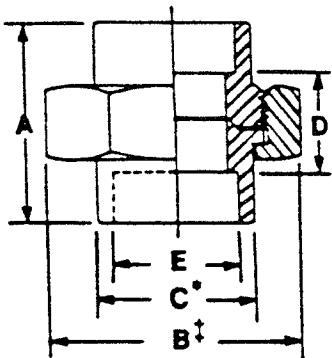


PIPE SIZE	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	1 15/16	2 1/4	2 7/16	2 13/16	3	3 3/8	4 1/32	4 5/16
B	1 13/16	2 7/32	2 9/16	3 1/16	3 7/16	4 3/32	4 7/8	5 3/4
C	1 15/64	1 15/32	1 51/64	2 11/64	2 7/16	2 31/32	3 39/64	4 5/16
D	15/16	1 1/8	1 3/16	1 7/16	1 1/2	1 5/8	2 1/4	2 5/16
E	.855 .865	1.065 1.075	1.330 1.340	1.675 1.685	1.915 1.925	2.406 2.416	2.906 2.921	3.535 3.550
Wt. of Union (Lbs.)	.73	1.19	1.66	2.66	3.42	5.36	8.36	11.78

- + B dimension is across flats for octagon or hexagon nuts.
- * C dimension is a diameter or across octagon flats as applicable.

SOCKET WELD

6000 POUND



PIPE SIZE	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A	2 1/4	2 7/16	2 13/16	3	3 3/8	4 1/32	-	-
B	2 7/32	2 9/16	3 1/16	3 7/16	4 3/32	4 7/8	-	-
C	1 15/32	1 51/64	2 11/64	2 7/16	2 31/32	3 39/64	-	-
D	15/16	1 1/8	1 3/16	1 7/16	1 1/2	1 5/8	-	-
E	.855 .865	1.065 1.075	1.330 1.340	1.675 1.685	1.915 1.925	2.406 2.416	-	-
Wt. of Union (Lbs.)	1.35	2.01	3.17	3.92	6.60	10.12		

- + B dimension is across flats for octagon or hexagon nuts.
- * C dimension is a diameter or across octagon flats as applicable.