

CAST IRON SOIL PIPE PRODUCTS

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Independently listed by IAPMO R&T to comply with the applicable sections of the Uniform Plumbing Code UPC File No. 4818 and 6336.

Meets or exceeds the requirements of applicable portions of ICC International Plumbing Code.

Designed and produced to conform to the following ASTM, FM and CISPI standards:

NO HUB Pipe & Fittings

ASTM A-888

CISPI 301

Standard NO HUB Couplings

ASTM C-1277

CISPI 310

Heavy Duty NO HUB Couplings

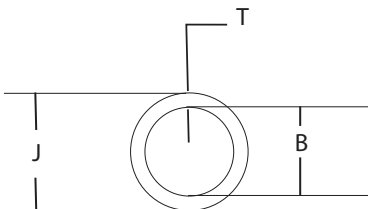
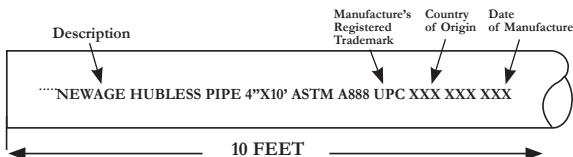
ASTM C-1540

SV Pipe & Fittings

ASTM A-74

NO HUB Gasket

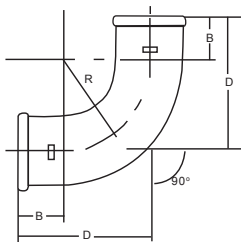
ASTM C-564



NO - HUB PIPE 10 FOOT

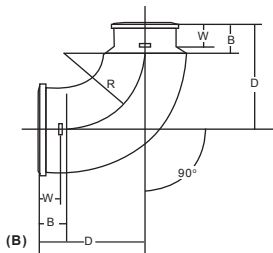
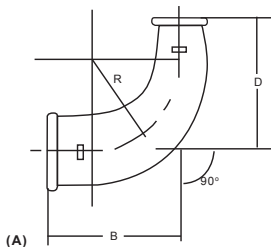
PART #	SIZE	B	J	NOM T	MIN	WEIGHT
0220156	1 1/2	1.50	1.90	0.16	0.13	29.0
0220158	2	1.96	2.35	0.16	0.13	35.0
0220160	3	2.96	3.35	0.16	0.13	51.0
0220162	4	3.94	4.38	0.19	0.15	74.0
0220164	5	4.94	5.30	0.19	0.15	87.0
0220168	6	5.94	6.30	0.19	0.15	112.0
0220170	8	7.94	8.38	0.23	0.17	168.0
0220171	10	10.00	10.56	0.28	0.22	275.0
0220172	12	11.94	12.50	0.28	0.22	350.0
0220173	15	15.11	15.83	0.36	0.30	533.0

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings.
 *All dimensions in inches & all weights are in pounds except where indicated



1/4 BEND

PART #	SIZE	B	D	R
220188	1 1/2	1 1/2	4 1/4	2 3/4
220190	2	1 1/2	4 1/2	3
220192	3	1 1/2	5	3 1/2
220194	4	1 1/2	5 1/2	4
220196	5	2	6 1/2	4 1/2
220198	6	2	7	5
220200	8	2 1/2	8 1/2	6



REDUCING 1/4 BEND 90

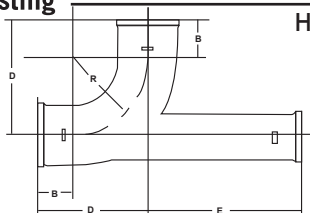
PART #	SIZE	B	D	R	W
220218 (A)	4 x 3	1 1/2	5 1/2	3 1/2	1 1/8
220218 (B)	4 x 3	1 1/2	5 1/2	4	1 1/8

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

*All dimensions in inches & all weights are in pounds except where indicated

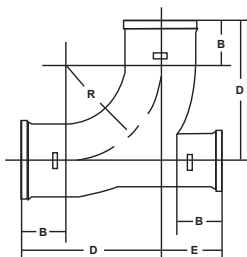
Hubless FITTINGS

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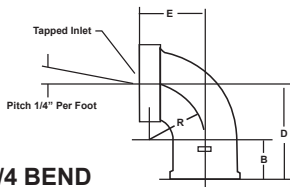
1/4 BEND WITH HEEL OPENING EXTENDED

PART #	SIZE	B	D	E	R
220275	3 x 2	1 1/2	5	10 1/2	3 1/2
220277	4 x 2	1 1/2	5 1/2	11 5/8	4



1/4 BEND WITH HEEL OPENING

PART #	SIZE	B	D	E	R
220280	3 x 2	1 1/2	5	2 7/8	3 1/2
220282	4 x 2	1 1/2	5 1/2	3 1/4	4

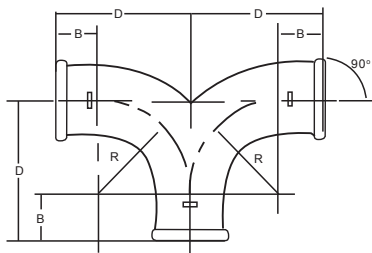


TAPPED 1/4 BEND

PART #	SIZE	B	D	E	R	TAP
220324	1 1/2 x 1 1/4	1 1/2	3	2	1 3/4	1 1/4
220326	1 1/2 x 1 1/2	1 1/2	3	2	1 3/4	1 1/2
220330	2 x 1 1/2	1 1/2	3 1/4	2 1/4	1 3/4	1 1/2
220332	2 x 2	1 1/2	3 1/4	2 1/4	1 3/4	2

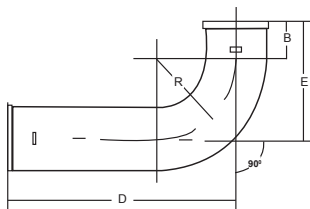
Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

*All dimensions in inches & all weights are in pounds except where indicated



DOUBLE 1/4 BEND

PART #	SIZE	B	D	R
220402	2	1 1/2	4 1/2	3
220404	3	1 1/2	5	3 1/2
220406	4	1 1/2	5 1/2	4



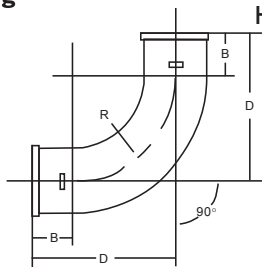
LONG 1/4 BEND

PART #	SIZE	B	D	E	R
220425	2 x 18	1 1/2	18	4 1/2	3

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

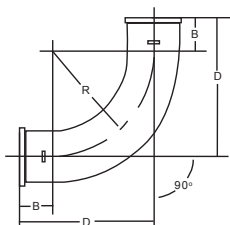
*All dimensions in inches & all weights are in pounds except where indicated

Hubless FITTINGS



SHORT SWEEP (1/4 BEND)

PART #	SIZE	B	D	R
220462	2	1 1/2	6 1/2	5
220464	3	1 1/2	7	5 1/2
220468	4	1 1/2	7 1/2	6
220470	5	2	8 1/2	6 1/2
220472	6	2	9	7
220474	8	2 1/2	10 1/2	8
220475	10	3	12	9
220476	12	3 1/2	13 1/2	10
220477	15	3 1/2	14 1/2	11 1/2

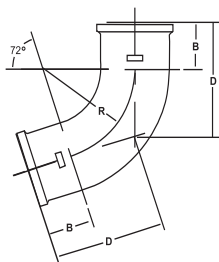


LONG SWEEP (1/4 BEND)

PART #	SIZE	B	D	R
220492	1 1/2	1 1/2	9 1/4	7 3/4
220494	2	1 1/2	9 1/2	8
220496	3	1 1/2	10	8 1/2
220498	4	1 1/2	10 1/2	9
220500	5	2	11 1/2	9 1/2
220502	6	2	12	10

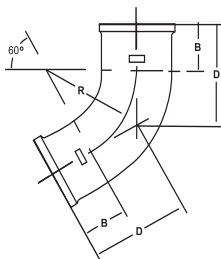
Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

*All dimensions in inches & all weights are in pounds except where indicated



1/5 BEND

PART #	SIZE	B	D	R
220536	2	1 1/2	3 11/16	3
220538	3	1 1/2	4 1/16	3 1/2
220540	4	1 1/2	4 7/16	4



1/6 BEND

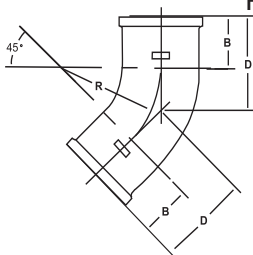
PART #	SIZE	B	D	R
220570	2	1 1/2	3 1/4	3
220572	3	1 1/2	3 1/2	3 1/2
220574	4	1 1/2	3 13/16	4

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

*All dimensions in inches & all weights are in pounds except where indicated

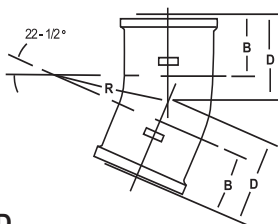
Hubless FITTINGS

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1/8 BEND

PART #	SIZE	B	D	R
220604	1 1/2	1 1/2	2 5/8	2 3/4
220606	2	1 1/2	2 3/4	3
220608	3	1 1/2	3	3 1/2
220610	4	1 1/2	3 1/8	4
220612	5	2	3 7/8	4 1/2
220614	6	2	4 1/16	5
220616	8	2 1/2	5	6
220617	10	3	5 15/16	7
220618	12	3 1/4	6 9/16	8
220619	15	3 1/4	7 3/16	9 1/2



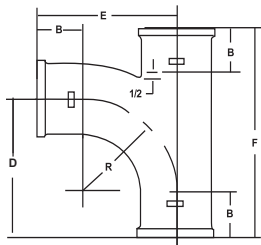
1/16 BEND

PART #	SIZE	B	D	R
220676	1 1/2	1 1/2	2 1/8	2 3/4
220678	2	1 1/2	2 1/8	3
220680	3	1 1/2	2 1/4	3 1/2
220682	4	1 1/2	2 5/16	4
220684	5	2	2 7/8	4 1/2
220686	6	2	3	5
220688	8	2 1/2	3 3/4	6

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

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Hubless FITTINGS

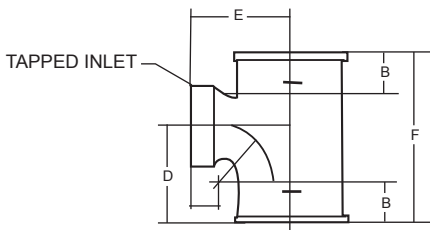


SANITARY TEE

PART #	SIZE	B	B''	D	E	F	R
220806	1 1/2	1 1/2	1 1/2	4 1/4	4 1/4	6 1/2	2 3/4
220808	2 x 1 1/2	1 1/2	1 1/2	4 1/4	4 1/2	6 5/8	2 3/4
220810	2	1 1/2	1 1/2	4 1/2	4 1/2	6 7/8	3
220812	3 x 1 1/2	1 1/2	1 1/2	4 1/4	5	6 1/2	2 3/4
220814	3 x 2	1 1/2	1 1/2	4 1/2	5	6 7/8	3
220816	3	1 1/2	1 1/2	5	5	8	3 1/2
220818	4 x 2	1 1/2	1 1/2	4 1/2	5 1/2	6 7/8	3
220820	4 x 3	1 1/2	1 1/2	5	5 1/2	8	3 1/2
220822	4	1 1/2	1 1/2	5 1/2	5 1/2	9 1/8	4
220824	5 x 2	2	1 1/2	5	6 1/2	8 1/2	3
220826	5 x 3	2	1 1/2	5 1/2	6	9 5/16	3 1/2
220828	5 x 4	2	1 1/2	6	6	10 13/32	4
220830	5	2	2	6 1/2	6 1/2	11 7/16	4 1/2
220832	6 x 2	2	1 1/2	5	6 1/2	8 3/16	3
220834	6 x 4	2	1 1/2	6	6 1/2	10 11/16	4
220835	6 x 5	2	2	6 1/2	7	11 1/2	4 1/2
220836	6	2	2	7	7	12 1/2	5
220838	6 x 3	2	1 1/2	5 1/2	6 1/2	9 3/16	3 1/2
220848	8 x 3	2 1/2	1 1/2	6	7 1/2	10 3/8	3 1/2
220846	8 x 4	2 1/2	1 1/2	6 1/2	7 1/2	11 1/2	4
220844	8 x 5	2 1/2	2	7	8	12 1/2	4 1/2
220842	8 x 6	2 1/2	2	7 1/2	8	13 1/2	5
220840	8	2 1/2	2 1/2	8 1/2	8 1/2	15 1/2	6

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details.

*All dimensions in inches & all weights are in pounds except where indicated

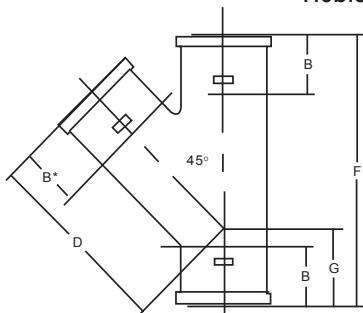


SANITARY TAPPED TEE

PART #	SIZE	B	E	D	F ± 1/8
221208	1 1/2 X 1 1/4	1 1/2	2 9/16	3 1/4	5 11/16
221210	1 1/2 X 1 1/2	1 1/2	2 9/16	3 1/4	5 11/16
221212	2 X 1 1/4	1 1/2	2 13/16	3 1/4	5 11/16
221214	2 X 1 1/2	1 1/2	2 13/16	3 1/4	5 11/16
221216	2 X 2	1 1/2	3 1/16	3 3/4	6 3/8
221218	3 X 1 1/4	1 1/2	3 5/16	3 1/4	5 11/16
221220	3 X 1 1/2	1 1/2	3 5/16	3 1/4	5 11/16
221222	3 X 2	1 1/2	3 9/16	3 3/4	6 3/8
221223	3 X 3	1 1/2	4 3/16	4 7/8	8
221224	4 X 1 1/4	1 1/2	3 13/16	3 1/4	5 11/16
221226	4 X 1 1/2	1 1/2	3 13/16	3 1/4	5 11/16
221228	4 X 2	1 1/2	4 1/16	3 3/4	6 3/8
221232	5 X 1 1/2	2	4 5/16	3 3/4	6 11/16
221233	5 X 2	2	4 9/16	4 1/4	7 15/16
221234	6 X 1 1/2	2	5 1/16	3 3/4	6 11/16
221235	6 X 2	2	5 1/16	4 1/16	7 7/16

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated

Hubless FITTINGS



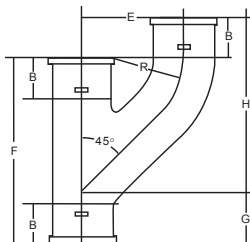
WYE

PART #	SIZE	B	B*	D	F	G
221312	1 1/2	1 1/2	1 1/2	4	6	2
221314	2	1 1/2	1 1/2	4 5/8	6 5/8	2
221316	3 x 2	1 1/2	1 1/2	5 5/16	6 5/8	1 1/2
221318	3	1 1/2	1 1/2	5 3/4	8	2 1/4
221320	4 x 2	1 1/2	1 1/2	6	6 5/8	1
221322	4 x 3	1 1/2	1 1/2	6 1/2	8	1 11/16
221324	4	1 1/2	1 1/2	7 1/16	9 1/2	2 7/16
221326	5 x 2	2	1 1/2	7 1/2	8 1/16	15/16
221328	5 x 3	2	1 1/2	8	9 11/16	1 11/16
221330	5 x 4	2	1 1/2	8 1/2	11 3/16	2 7/16
221332	5	2	2	9 1/2	12 5/8	3 1/8
221334	6 x 2	2	1 1/2	8 1/4	8 5/16	1/2
221336	6 x 3	2	1 1/2	8 3/4	9 3/4	1 1/4
221338	6 x 4	2	1 1/2	9 1/4	11 3/16	1 15/16
221340	6 x 5	2	2	10 1/4	12 1/2	2 9/16
221342	6	2	2	10 3/4	14 1/16	3 5/16
221344	8 x 2	2 1/2	2 1/4	9 3/8	8 1/2	9/16
221346	8 x 3	2 1/2	2 1/4	9 13/16	9 15/16	1/8
221348	8 x 4	2 1/2	2 1/4	10 3/8	11 7/16	15/16
221350	8 x 5	2 1/2	2 3/4	11 3/8	12 13/16	1 5/8
221352	8 x 6	2 1/2	2 3/4	11 13/16	14 3/16	2 5/16
221354	8	2 1/2	3 1/4	13 3/8	17 1/8	3 3/4
221357	10 x 4	3	2 1/2	11 11/16	12 5/8	3/4
221359	10 x 6	3	2	13 1/8	15 7/16	2 3/16
221360	10 x 8	3	2 1/2	14 11/16	18 3/8	3 5/8
221361	10	3	3	16 1/2	21 1/2	5 1/6
221362	12	3 1/4	3 1/4	19 3/4	25 1/2	5 3/4
221363	15	3 1/4	3 1/4	23 1/4	30	6 3/4

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated

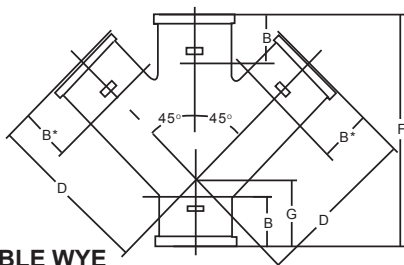
Hubless FITTINGS

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UPRIGHT WYE

PART #	SIZE	B	E	F	G	H	R
221646	2	1 1/2	5 1/2	7	2	8 1/4	3
221648	3 x 2	1 1/2	5 1/2	7	1 1/2	8 3/16	3
221650	3	1 1/2	5 1/2	8 3/8	2 3/16	8 7/16	3 1/2
221652	4 x 2	1 1/2	5 1/2	7	1	8 1/4	3
221654	4 x 3	1 1/2	5 1/2	8 3/8	1 11/16	8 7/16	3 1/2
221656	4	1 1/2	6	9 3/4	2 7/16	9 1/8	4



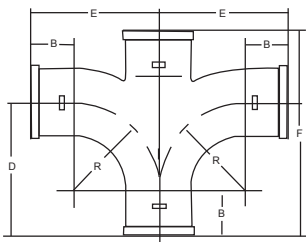
DOUBLE WYE

PART #	SIZE	B	B*	D	F	G
221538	2	1 1/2	1 1/2	4 5/8	6 5/8	2
221540	3 x 2	1 1/2	1 1/2	5 5/16	6 5/8	1 1/2
221542	3	1 1/2	1 1/2	5 3/4	8	2 1/4
221544	4 x 2	1 1/2	1 1/2	6	6 5/8	1
221546	4 x 3	1 1/2	1 1/2	6 1/2	8	1 11/16
221548	4	1 1/2	1 1/2	7 1/16	9 1/2	2 7/16
221550	5 x 4	2	1 1/2	8 1/2	11 3/16	2 7/16
221552	6 x 4	2	1 1/2	9 1/4	11 3/16	1 15/16
221554	6	2	2	10 3/4	14 1/16	3 5/16
221557	8 x 6	2 1/2	2 3/4	11 13/16	14 13/16	2 5/16
221558	8	2 1/2	3 1/4	13 3/8	17 1/8	3 3/4

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*All dimensions in inches & all weights are in pounds except where indicated

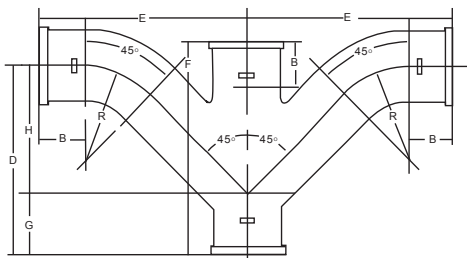
Hubless FITTINGS

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SANITARY CROSS

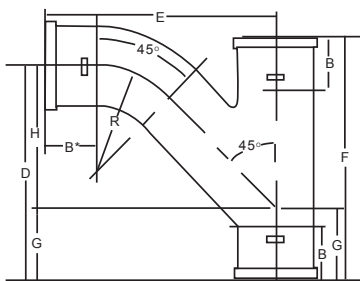
PART #	SIZE	B	D	E	F	R
221850	1 1/2	1 1/2	4 1/4	4 1/4	6 1/2	2 3/4
221852	2	1 1/2	4 1/2	4 1/2	6 7/8	3
221854	3 x 2	1 1/2	4 1/2	5	6 7/8	3
221856	3	1 1/2	5	5	8	3 1/2
221858	4 x 2	1 1/2	4 1/2	5 1/2	6 7/8	3
221860	4 x 3	1 1/2	5	5 1/2	8	3 1/2
221862	4	1 1/2	5 1/2	5 1/2	9 1/8	4
221864	6 x 4	2	6	6 1/2	10 1/16	4
221867	6	2	7	7	12 1/2	5
221874	8 x 4	2 1/2	6 1/2	7 1/2	11 1/2	4



DOUBLE COMBINATION WYE AND 1/8 BEND

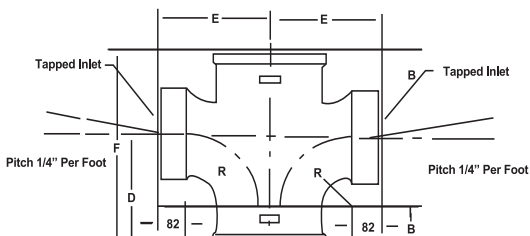
PART #	SIZE	B	D	E	F	G	H	R
221802	2	1 1/2	5 3/8	6 1/8	6 5/8	2	3 3/8	3
221804	3 x 2	1 1/2	5 1/2	6 3/4	6 5/8	1 1/2	4	3
221806	3	1 1/2	7 5/16	8	8	2 1/4	5 1/16	3 1/2
221808	4 x 2	1 1/2	5 1/2	7 1/4	6 5/8	1	4 1/2	3
221810	4 x 3	1 1/2	7 1/4	8 1/2	8	1 1/16	5 9/14	3 1/2
221812	4	1 1/2	9 1/4	10	9 1/2	2 7/16	6 13/16	4

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated


COMBINATION WYE AND 1/8 BEND

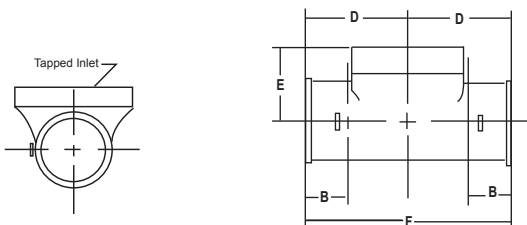
PART #	SIZE	B	B*	D	E	F	G	H	R
221694	1 1/2	1 1/2	1 1/2	4 3/4	5 3/8	6	2	2 3/4	2 3/4
221696	2 x 1 1/2	1 1/2	1 1/2	5	5 7/8	6	2	3	2 3/4
221698	2	1 1/2	1 1/2	5 3/8	6 1/8	6 5/8	2	3 3/8	3
221700	3 x 2	1 1/2	1 1/2	5 1/2	6 3/4	6 5/8	1 1/2	4	3
221702	3	1 1/2	1 1/2	7 5/16	8	8	2 1/4	5 1/16	3 1/2
221704	4 x 2	1 1/2	1 1/2	5 1/2	7 1/4	6 5/8	1	4 1/2	3
221706	4 x 3	1 1/2	1 1/2	7 1/4	8 1/2	8	1 11/16	5 9/16	3 1/2
221708	4	1 1/2	1 1/2	9 1/4	10	9 1/2	2 7/16	6 13/16	4
221710	5 x 2	2	1 1/2	5 15/16	7 3/4	8 1/16	15/16	5	3
221712	5 x 3	2	1 1/2	7 3/4	9	9 11/16	1 11/16	6 1/16	3 1/2
221714	5 x 4	2	1 1/2	9 3/4	10 1/2	11 3/16	2 7/16	7 5/16	4
221716	5	2	2	11 3/4	12 1/2	12 5/8	3 1/8	8 5/8	4 1/2
221718	6 x 2	2	1 1/2	6	8 1/4	8 5/16	1/2	5 1/2	3
221720	6 x 3	2	1 1/2	7 13/16	9 1/2	9 3/4	1 1/4	6 9/16	3 1/2
221722	6 x 4	2	1 1/2	9 3/4	11	11 3/16	1 15/16	7 13/16	4
221724	6 x 5	2	2	11 11/16	13	12 1/2	2 9/16	9 1/8	4 1/2
221726	6	2	2	13 5/8	14 3/8	14 1/16	3 5/16	10 5/16	5
221728	8 x 4	2 1/2	1 1/2	9 7/16	11 5/16	11 3/16	7/8	8 9/16	4
221730	8 x 5	2 1/2	2	10 15/16	12 13/16	11 3/16	7/8	8 9/16	4
221732	8 x 6	2 1/2	2	12	13 3/8	13 15/16	2 1/4	9 3/4	5
221734	8	2 1/2	1 1/2	14 3/4	15 9/15	16 15/16	3 3/4	11	6

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated



SANITARY TAP CROSS

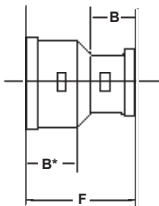
PART #	SIZE	B	D	E	F	R	TAP
222012	1 1/2 x 1 1/2	1 1/2	3 1/4	2 9/16	5 11/16	1 3/4	1 1/2
222014	2 x 1 1/4	1 1/2	3 1/4	2 13/16	5 11/16	1 3/4	1 1/4
222016	2 x 1 1/2	1 1/2	3 1/4	2 13/16	5 11/16	1 3/4	1 1/2
222018	2 x 2	1 1/2	3 3/4	3 1/16	6 3/8	2 1/4	2
222022	3 x 1 1/2	1 1/2	3 1/4	3 5/16	5 11/16	1 3/4	1 1/2
222024	3 x 2	1 1/2	3 3/4	3 9/16	6 3/8	2 1/4	2
222028	4 x 1 1/2	1 1/2	3 1/4	3 13/16	5 11/16	1 3/4	1 1/2



TEST TEE

PART #	SIZE	B	D	E	F	TAP
222046	2	1 1/2	3 3/16	2	6 3/8	2
222048	3	1 1/2	3 7/8	2 11/16	7 3/4	3
222050	4	1 1/2	4 7/16	3	8 7/8	4
222052	5	2	5 3/4	4 1/2	11 1/2	5
222054	6	2	6 1/4	5	12 1/2	6
222056	8	8	7 5/8	6	15 1/4	8
222058	10	4	10	6 1/2	20	10

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated



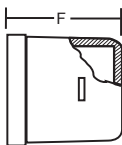
SHORT INCREASER REDUCER

PART #	SIZE	B	B*	F
222138	2 x 1 1/2	1 1/2	1 1/2	3 5/8
222140	3 x 2	1 1/2	1 1/2	3 5/8
222142	4 x 2	1 1/2	1 1/2	3 5/8
222144	4 x 3	1 1/2	1 1/2	3 5/8
222146	5 x 2	1 1/2	2	4
222148	5 x 3	1 1/2	2	4
222150	5 x 4	1 1/2	2	4
222152	6 x 2	1 1/2	2	4
222154	6 x 3	1 1/2	2	4
222156	6 x 4	1 1/2	2	4
222158	6 x 5	2	2	4 1/2
222160	8 x 2	1 1/2	2	4 1/2
222162	8 x 3	1 1/2	2	4 1/2
222164	8 x 4	1 1/2	2	4 1/2
222166	8 x 5	2	2	5
222168	8 x 6	2	2	5
222172	10 x 4	1 1/2	3	5 1/2
222174	10 x 6	2	3	6
222175	10 x 8	2	3	6
222176	12 x 4	1 1/2	3 1/4	6 1/2
222177	12 x 6	2	3 1/4	6 1/2
222178	12 x 8	2 1/2	3 1/4	7
222179	12 x 10	3	3 1/4	7 1/2
222180	15 x 4	1 1/2	3 1/4	7
222181	15 x 6	2	3 1/4	7
222182	15 x 8	2 1/2	3 1/4	7
222183	15 x 10	3	3 1/4	7 1/2
222184	15 x 12	3 1/4	3 1/4	7 3/4

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated

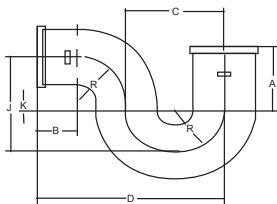
Hubless FITTINGS

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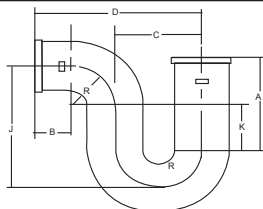
BLIND PLUG

PART #	SIZE	F
222480	1 1/2	1 3/4
222482	2	1 3/4
222484	3	1 3/4
222486	4	1 3/4
222490	6	1 3/4
222492	8	2 1/4
222494	10	3
222495	12	3 1/2
222496	15	3 1/2



P-TRAP

PART #	SIZE	A	B	C	D	J	K
222508	2	2	1 1/2	4	7 1/2	4	0
222510	3	3 1/4	1 1/2	5	9	5 1/2	1/2
222512	4	4	1 1/2	6	10 1/2	6 1/2	1/2

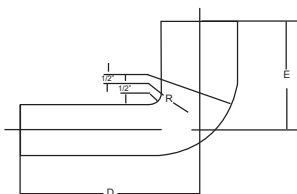


DEEP SEAL P-TRAP

PART #	SIZE	A	B	C	D	J	K	R
222564	2	5	1 1/2	4	7 1/2	7	3	2
222566	3	4 1/2	1 1/2	5	9	7	2	2 1/2
222567	4	5	1 1/2	6	10 1/2	8	2	3

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.

*All dimensions in inches & all weights are in pounds except where indicated



CLOSET BENDS

PART #	SIZE	D	E	R
222832	3 x 4 x 6 x 12	12	6	3
222840	3 x 4 x 6 x 15	15	6	3
222844	3 x 4 x 16 x 18	18	16	3
222852	3 x 4 x 10 x 12	12	6	3
222860	3 x 4 x 10 x 15	15	10	3
222866	3 x 4 x 16 x 16	16	16	3
222867	4 x 4 x 16 x 16	16	16	3
222904	4 x 4 x 6 x 12	12	6	3
222906	4 x 4 x 6 x 15	15	6	3
222924	4 x 4 x 10 x 12	12	10	3
225572	4 x 4 x 10 x 15	15	10	3

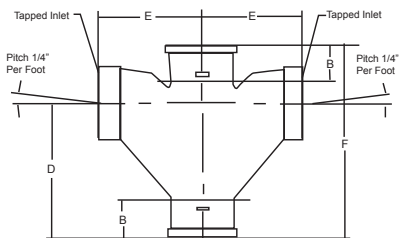


FIGURE ONE (TAP CROSS)

PART #	SIZE	B	D	E	F	TAP
228002	2 x 1 1/2	1 1/2	4 7/8	3 3/16	7	1 1/2

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated

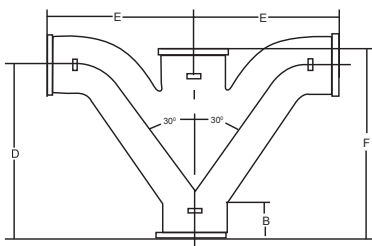
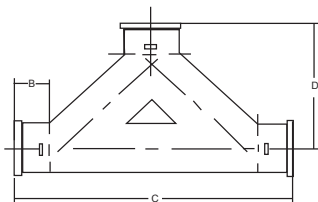


FIGURE FIVE (COMB)

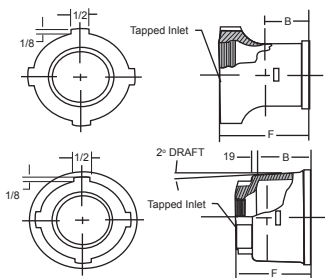
PART #	SIZE	B	D	E	F
228052	2	1 1/2	6 1/2	5	8
228054	3x2x3x3	1 1/2	8 7/8	6 9/16	9 1/4
228056	3	1 1/2	8 7/8	6 9/16	10 1/8
228058	4x2x4x4	1 1/2	10 1/4	7 3/4	11 1/2
228062	4	1 1/2	10 1/4	7 3/4	12



TWO WAY BAFFLE CLEANOUT

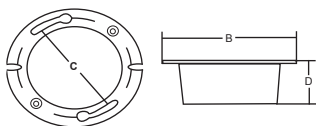
PART #	SIZE	B	C	D
228442	3 x 3 x 4	1 1/2	15	9
228444	4 x 3 x 4	1 1/2	19 1/2	9 1/2
228446	4 x 4 x 4	1 1/2	18 3/4	9 1/2

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
*All dimensions in inches & all weights are in pounds except where indicated



TAP ADAPTER/FERRULE

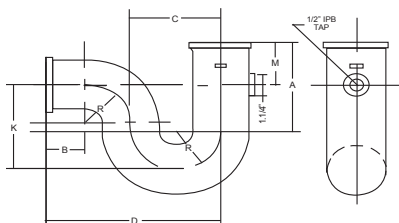
PART #	SIZE	B	F	TAP
222242	2 X 1 1/2	1 1/2	2 3/16	1 1/2
222244	2	1 1/2	2 5/8	2



CLOSET FLANGES

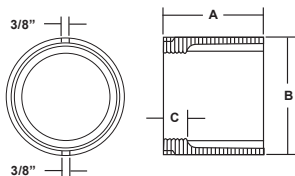
PART #	SIZE	B	D	C
229426	4 x 2	7 1/4	2	6 1/4
222968	4 x 3	7 1/4	3	6 1/4
228413	4 x 4	7 1/4	4	6 1/4

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.
 *All dimensions in inches & all weights are in pounds except where indicated



P - TRAP W/ 1/2" PRIMER TAP

PART #	SIZE	A	B	C	D	K	R	M
228530	2	2	1 1/2	4	7 1/2	0	2	2
228532	3	3 1/4	1 1/2	5	9	1/2	2 1/2	2
228534	4	4	1 1/2	6	10 1/2	1/2	3	2



CLEANOUT FERRULE (I.B.C.O.)

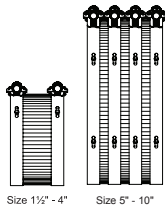
PART #	SIZE	A	B	TAP
228562	2	2 3/16	2 3/8	1 1/2
228564	3	2 3/16	3 3/8	2 1/2
228566	4	2 3/16	4 7/16	3 1/2
228570	6	4 1/2	6 5/16	5

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. See page 37 for Spigot & Bead Details. See page 38 for tapping boss details.

*All dimensions in inches & all weights are in pounds except where indicated

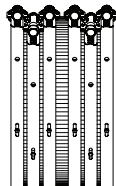
STANDARD STAINLESS STEEL COUPLINGS

SIZE	ITEM CODE	# OF BANDS PER COUPLING	INSTALLATION TORQUE (in. lbs.)
1 1/2	SSC150	2	60
2 X 1 1/2	SSC215	2	60
2	SSC200	2	60
3 X 2	SSC320	2	60
3	SSC300	2	60
4 X 2	SSC420	2	60
4 X 3	SSC430	2	60
4	SSC400	2	60
5	SSC500	4	60
6	SSC600	4	60
8	SSC800	4	60
10	SSC1000	4	60



STANDARD LARGE DIAMETER STAINLESS STEEL COUPLINGS

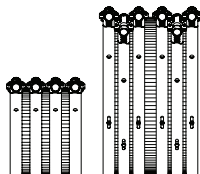
SIZE	ITEM CODE	# OF BANDS PER COUPLING	INSTALLATION TORQUE (in. LBS.)
12	SSC1200	6	80
15	SSC1500	6	80



Size 12" - 15"

EXTRA HEAVY DUTY STAINLESS STEEL COUPLING

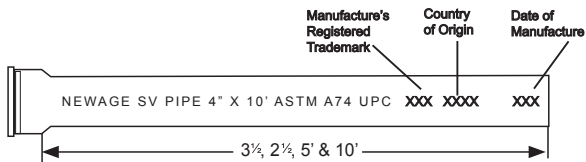
SIZE	ITEM CODE	# OF BANDS PER COUPLING	INSTALLATION TORQUE (in. lbs.)
1-1/2	XHDC150	4	80
2	XHDC200	4	80
3	XHDC300	4	80
4	XHDC400	4	80
5	XHDC500	6	80
6	XHDC600	6	80
8	XHDC800	6	80
10	XHDC1000	6	80
12	XHDC1200	6	80
15	XHDC1500	6	80



Size 1 1/2" - 4"

Size 5" - 15"

**All dimensions in inches & all weights are in pounds except where indicated*



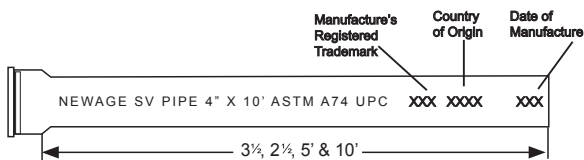
SINGLE HUB 3.5 FT PIPE

PART #	SIZE	Pieces per Bundle	WEIGHT
SVP02S35	2 x 3.5	56	15.00
SVP03S35	3 x 3.5	40	23.00
SVP04S35	4 x 3.5	27	30.00
SVP05S35	5 x 3.5	21	39.00
SVP06S35	6 x 3.5	18	45.00
SVP08S35	8 x 3.5	10	72.00
SVP10S35	10 x 3.5	6	106.00
SVP12S35	12 x 3.5	6	135.00
SVP15S35	15 x 3.5	2	184.00

SINGLE HUB 5 FT PIPE

PART #	SIZE	Pieces per Bundle	WEIGHT
SVP02S05	2 x 5	64	21.00
SVP03S05	3 x 5	33	32.00
SVP04S05	4 x 5	27	44.00
SVP05S05	5 x 5	21	56.00
SVP06S05	6 x 5	18	63.00
SVP08S05	8 x 5	10	100.00
SVP10S05	10 x 5	6	150.00
SVP12S05	12 x 5	6	192.00
SVP15S05	15 x 5	2	261.00

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



SINGLE HUB 10 FT PIPE

PART #	SIZE	Pieces per Bundle	WEIGHT
SVP02S10	2 x 10	64	35.00
SVP03S10	3 x 10	33	52.00
SVP04S10	4 x 10	27	76.00
SVP05S10	5 x 10	21	97.00
SVP06S10	6 x 10	18	128.00
SVP08S10	8 x 10	10	190.00
SVP10S10	10 x 10	6	270.00
SVP12S10	12 x 10	6	325.00
SVP15S10	15 x 10	2	465.00

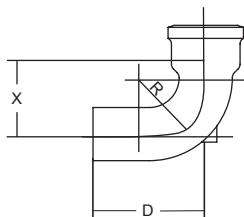
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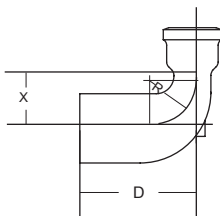
DOUBLE HUB 2.5 FT PIPE

PART #	SIZE	Pieces per Bundle	WEIGHT
SVP02D25	2 x 2.5	60	22.00
SVP03D25	3 x 2.5	TBA	31.83
SVP04D25	4 x 2.5	27	44.80

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.

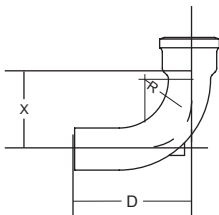

1/4 BEND 90°

PART #	SIZE	D	R	X
SVFO4B20	2	6	3	3 1/4
SVFO4B30	3	7	3 1/2	4
SVFO4B40	4	8	4	4
SVFO4B50	5	8 1/2	4 1/2	5
SVFO4B60	6	9	5	5 1/2
SVFO4B80	8	11 1/2	6	6 5/8
SVFO4B100	10	12 1/2	7	7 5/8
SVFO4B120	12	15	8	8 3/4
SVFO4B150	15	16 1/2	9 1/2	10 1/4


REDUCING 1/4 BEND * - 90°

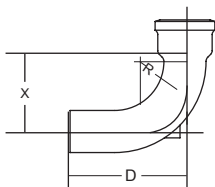
PART #	SIZE	D	R	X
SVF04B420	4 x 2	7	3 1/4	3 3/4

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



SHORT SWEEP BEND* - 90°

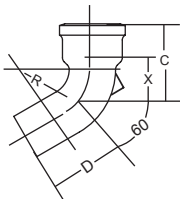
PART #	SIZE	D	R	X
SVFSSB20	2	8	5	5 1/4
SVFSSB30	3	9	5 1/2	6
SVFSSB40	4	10	6	6 1/2
SVFSSB50	5	10 1/2	6 1/2	7
SVFSSB60	6	11	7	7 1/2
SVFSSB80	8	13 1/2	8	8 5/8
SVFSSB100	10	14 1/2	9	9 5/8
SVFSSB120	12	17	10	10 3/4



LONG SWEEP BEND* - 90°

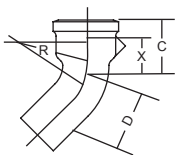
PART #	SIZE	D	R	X
SVFLSB20	2	11	8	8 1/4
SVFLSB30	3	12	8 1/2	9
SVFLSB40	4	13	9	9 1/2
SVFLSB50	5	13 1/2	9 1/2	10
SVFLSB60	6	14	10	10 1/2
SVFLSB80	8	16 1/2	11	11 5/8
SVFLSB100	10	17 1/2	12	12 5/8
SVFLSB120	12	20	13	13 3/4
SVFLSB150	15	21 1/2	14 1/2	15 1/4

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



1/6 BEND* - 60°

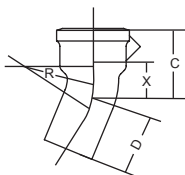
PART #	SIZE	C	D	R	X
SVF06B20	2	4 1/2	4 3/4	3	2
SVF06B30	3	5 1/4	5 1/2	3 1/2	2 1/2
SVF06B40	4	5 13/16	6 5/16	4	2 13/16
SVF06B50	5	6 1/8	6 5/8	4 1/2	3 1/8
SVF06B60	6	6 3/8	6 7/8	5	3 3/8
SVF06B80	8	7 5/8	9	6	4 1/8
SVF06B10	10	8 3/16	9 9/16	7	4 11/16



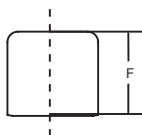
1/8 BEND* - 45°

PART #	SIZE	C	D	R	X
SVFO8B20	2	4	4 1/4	3	1 1/2
SVFO8B30	3	4 1/16	4 15/16	3 1/2	1 15/16
SVFO8B40	4	5 3/16	5 11/16	4	2 3/16
SVFO8B50	5	5 3/8	5 7/8	4 1/2	2 3/8
SVFO8B60	6	5 9/16	6 1/16	5	2 9/16
SVFO8B80	8	6 5/8	8	6	3 1/8
SVFO8B100	10	7	8 3/8	7	3 1/2
SVFO8B120	12	8 5/16	10 5/16	8	4 1/16
SVFO8B150	15	8 15/16	10 5/16	9 1/2	4 11/16

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.

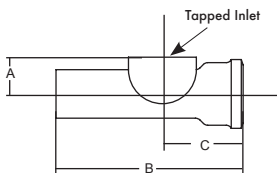

1/16 BEND* - 22 1/2°

PART #	SIZE	C	D	R	X
SVF16B20	2	3 3/8	3 5/8	3	7/8
SVF16B30	3	3 15/16	4 3/16	3 1/2	1 3/16
SVF16B40	4	4 5/16	4 13/16	4	1 5/16
SVF16B50	5	4 3/8	4 7/8	4 1/2	1 3/8
SVF16B60	6	4 1/2	5	5	1 1/2
SVF16B80	8	5 5/16	6 11/16	6	1 13/16
SVF16B100	10	5 1/2	6 7/8	7	2
SVF16B120	12	6 5/8	8 7/8	8	2 3/8
SVF16B150	15	6 7/8	8 7/8	9 1/2	2 5/8


BLIND PLUG*

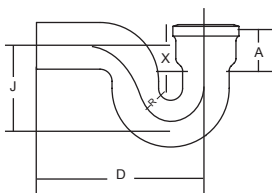
PART #	SIZE	F
SVFPLG20	2	3 1/2
SVFPLG30	3	3 3/4
SVFPLG40	4	4
SVFPLG50	5	4
SVFPLG60	6	4
SVFPLG80	8	4 1/2
SVFPLG100	10	4 1/2
SVFPLG120	12	5 1/4
SVFPLG150	15	5 1/4

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



TEST TEE W/OUT BRASS PLUG*

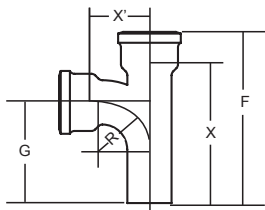
PART #	SIZE	A	B	C	TAP
SVFTTE20	2	2	10 3/8	4 1/4	2
SVFTTE30	3	2 11/16	12 3/4	5 1/2	3
SVFTTE40	4	3	13 7/8	6	4
SVFTTE50	5	4 1/2	15	7 1/8	5
SVFTTE60	6	5	16	7 1/8	6
SVFTTE80	8	6	20 1/2	9 1/2	8
SVFTTE100	10	6 1/2	20 1/2	9 7/8	10



PLAIN- P TRAP*

PART #	SIZE	A	D	J	X
SVFPTPO20	2	3	9 1/2	4	1 1/2
SVFPTPO30	3	4 1/2	12	5 1/2	1 1/4
SVFPTPO40	4	5 1/2	14	6 1/2	1
SVFPTPO50	5	6 1/2	15 1/2	7 1/2	15 1/2
SVFPTPO60	6	7 1/2	17	8 1/2	17
SVFPTPO80	8	10 1/2	22 1/16	11	22
SVFPTPO100	10	13	25	14 3/8	25

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.

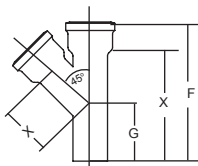

SANITARY TEE*

PART #	SIZE	F	G	R	X	X'
SVFSTE20	2	10 1/2	6 1/4	2 1/2	8	2 3/4
SVFSTE32	3 x 2	11 3/4	7	3	9	4
SVFSTE30	3	12 3/4	7 1/2	3 1/2	10	4
SVFSTE42	4 x 2	12	7	3	9	4 1/2
SVFSTE43	4 x 3	13	7 1/2	3 1/2	10	4 1/2
SVFSTE40	4	14	8	4	11	4 1/2
SVFSTE54	5 x 4	14	8	4	11	5
SVFSTE50	5	15	8 1/2	4 1/2	12	5
SVFSTE62	6 x 2	12	7	3	9	5 1/2
SVFSTE63	6 x 3	13	7 1/2	3 1/2	10	5 1/2
SVFSTE64	6 x 4	14	8	4	11	5 1/2
SVFSTE60	6	16	9	5	13	5 1/2
SVFSTE84	8 x 4	16 1/2	9 3/4	4	13	6 1/2
SVFSTE86	8 x 6	18 1/2	10 3/4	5	15	6 1/2
SVFSTE80	8	20 1/2	11 3/4	6	17	6 5/8
SVFSTE104	10 x 4	16 1/2	9 3/4	4	13	7 1/2
SVFSTE106	10 x 6	18 1/2	10 3/4	5	15	7 1/2
SVFSTE108	10 x 8	20 1/2	11 3/4	6	17	7 5/8
SVFSTE110	10	22 1/2	12 3/4	7	19	7 5/8
SVFSTE126	12 x 6	20 3/4	12	5	16 1/2	8 1/2
SVFSTE128	12 x 8	22 3/4	13	6	18 1/2	8 5/8
SVFSTE120	12 x 10	24 3/4	14	7	20 1/2	8 5/8
SVFSTE122	12	26 3/4	15	8	22 1/2	8 3/4
SVFSTE150	15	29 3/4	16 1/2	9 1/2	25 1/2	10 1/4

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.

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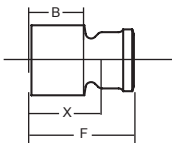
WYE*

PART #	Size	F	G	X	X'
SVFWYE20	2	10 1/2	4	8	4
SVFWYE32	3 x 2	11 3/4	4 3/16	9	5
SVFWYE30	3	13 1/4	5	10 1/2	5 1/2
SVFWYE42	4 x 2	12	3 5/8	9	5 3/4
SVFWYE43	4 x 3	13 1/2	4 7/16	10 1/2	6 1/4
SVFWYE40	4	15	5 1/4	12	9
SVFWYE52	5 x 2	12	3 1/8	9	6 1/2
SVFWYE53	5 x 3	13 1/2	3 7/8	10 1/2	7
SVFWYE54	5 x 4	15	4 11/16	12	7 1/2
SVFWYE50	5	16 1/2	5 1/2	13 1/2	8
SVFWYE62	6 x 2	12	2 9/16	9	7 1/4
SVFWYE63	6 x 3	13 1/2	3 3/8	10 1/2	7 3/4
SVFWYE64	6 x 4	15	4 3/16	12	8 1/4
SVFWYE65	6 x 5	16 1/2	4 15/16	13 1/2	8 3/4
SVFWYE60	6	18	5 3/4	15	9 1/4
SVFWYE82	8 x 2	14	3 1/8	10 1/2	8 1/2
SVFWYE83	8 x 3	15 1/2	3 15/16	12	9
SVFWYE84	8 x 4	17	4 3/4	13 1/2	9 1/2
SVFWYE85	8 x 5	18 1/2	5 1/2	15	10
SVFWYE86	8 x 6	20	6 5/16	16 1/2	10 1/2
SVFWYE80	8	23	7 11/16	19 1/2	11 13/16
SVFWYE103	10 x 3	15 1/2	2 3/4	12	10 3/4
SVFWYE104	10 x 4	17	3 9/16	13 1/2	11 1/8
SVFWYE105	10 x 5	18 1/2	4 5/16	15	11 5/8
SVFWYE106	10 x 6	20	5 1/2	16 1/2	12 1/8
SVFWYE108	10 x 8	23	6 1/2	19 1/2	13 7/18
SVFWYE100	10	26	8	22 1/2	14 1/2
SVFWYE124	12 x 4	19 1/4	4 1/8	15 1/2	12 7/8
SVFWYE125	12 x 5	20 3/4	4 7/8	16 1/2	12 15/16
SVFWYE126	12 x 6	22 1/4	5 11/16	18	13 7/16
SVFWYE128	12 x 8	25 1/4	7 1/16	21	14 3/4

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.

WYE* (continued)

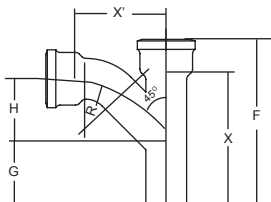
PART #	Size	F	G	X	X'
SVFWYE1210	12 x 10	28 1/4	8 9/16	24	15 13/16
SVFWYE1200	12	31 1/4	10 1/8	27	16 7/8
SVFWYE1540	15 x 4	19 1/2	2 1/2	15 1/4	15
SVFWYE1560	15 x 6	22 1/4	4	18	15 3/4
SVFWYE1580	15 x 8	25 1/4	5 3/8	21	17 1/16
SVFWYE1510	15 x 10	28 1/4	6 7/8	24	18 1/8
SVFWYE1512	15 x 12	31 1/4	8 7/16	27	19 3/16
SVFWYE1500	15	35 3/4	10 3/4	31 1/2	20 3/4



REDUCER

PART #	SIZE	B	F	X	PART #	SIZE	B	F	X
SVFRED32	3 x 2	3-3/4	7-1/4	4-3/4	SVFRED86	8 x 6	4-1/2	9	6
SVFRED42	4 x 2	4	7-1/2	5	SVFRED104	10 x 4	4-1/2	9	6
SVFRED43	4 x 3	4	7-3/4	5	SVFRED105	10 x 5	4-1/2	9	6
SVFRED52	5 x 2	4	7-1/2	5	SVFRED106	10 x 6	4-1/2	9	6
SVFRED53	5 x 3	4	7-3/4	5	SVFRED108	10 x 8	4-1/2	9-1/2	6
SVFRED54	5 x 4	4	8	5	SVFRED124	12 x 4	5-1/4	9-1/2	6-1/2
SVFRED62	6 x 2	4	7-1/2	5	SVFRED125	12 x 5	5-1/4	9-1/2	6-1/2
SVFRED63	6 x 3	4	7-3/4	5	SVFRED126	12 x 6	5-1/4	9-1/2	6-1/2
SVFRED64	6 x 4	4	8	5	SVFRED128	12 x 8	5-1/4	10	6-1/2
SVFRED65	6 x 5	4	8	5	SVFRED1210	12 x 10	5-1/4	10	6-1/2
SVFRED82	8 x 2	4-1/2	8-1/2	6	SVFRED156	15 x 6	5-1/4	9-1/2	6-1/2
SVFRED83	8 x 3	4-1/2	8-3/4	6	SVFRED158	15 x 8	5-1/4	10	6-1/2
SVFRED84	8 x 4	4-1/2	9	6	SVFRED1510	15 x 10	5-1/4	10	6-1/2
SVFRED85	8 x 5	4-1/2	9	6	SVFRED1512	15 x 12	5-1/4	10-3/4	6-1/2

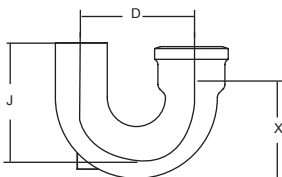
Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



COMBINATION WYE & 1/8 BEND*

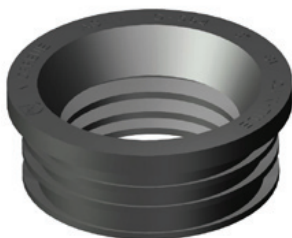
PART#	SIZE#	F	G	H	R	X	X'
SVFCOM20	2	10 1/2	4	3 3/8	3	8	4 7/8
SVFCOM32	3 x 2	11 3/4	4 3/16	4	3	9	5 3/4
SVFCOM30	3	13 1/4	5	5 1/16	3 1/2	10 1/2	7
SVFCOM42	4 x 2	12	3 11/16	4 1/2	3	9	6 1/4
SVFCOM43	4 x 3	3 1/2	4 1/2	5 9/16	3 1/2	10 1/2	7 1/2
SVFCOM40	4	15	5 1/4	6 13/16	4	12	9
SVFCOM52	5 x 2	12	3 1/2	5	3	9	6 3/4
SVFCOM53	5 x 3	13 1/2	4	6 1/16	3 1/2	10	8
SVFCOM54	5 x 4	15	4 1/4	7 5/16	4	12	9 1/2
SVFCOM50	5	16 1/2	5 1/2	8 5/8	4 1/2	13 1/2	11
SVFCOM62	6 x 2	18	2 11/16	5 1/2	3	9	7 1/4
SVFCOM63	6 x 3	17	3 1/16	6 9/16	3 1/2	10 1/4	8 1/2
SVFCOM64	6 x 4	20	4 1/4	7 13/16	4	12	10
SVFCOM65	6 x 5	23	5 1/16	9 1/16	4 1/2	13 1/2	11 1/2
SVFCOM60	6	-	5 3/4	10 5/16	5	15	12 7/8
SVFCOM84	8 x 4	-	4 3/4	8 13/16	4	13 1/2	11
SVFCOM86	8 x 6	-	6 5/16	11 5/16	5	16 1/2	13 7/8
SVFCOM80	8	-	7 11/16	13 7/8	6	19 1/2	17

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



SINGLE HUB RETURN BEND*

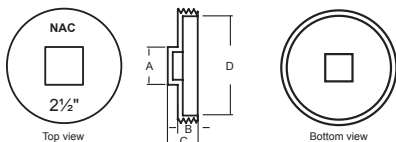
PART#	SIZE	D	J	X
SVFRBD03	3	7	7	6
SVFRBD04	4	7 1/2	7 3/16	6 3/8



SV GASKET

PART #	Size	WEIGHT
SVGMS200	2	0.3
SVGMS300	3	0.4
SVGMS400	4	0.6
SVGMS500	5	1.2
SVGMS600	6	1.4
SVGMS800	8	1.6
SVGMS1000	10	2.0
SVGMS1200	12	2.5
SVGMS1500	15	3.8

Note: All dimensions and tolerances are from ASTM A-74. See page 39 for Hub & Spigot Details.
 *All dimensions in inches & all weights are in pounds except where indicated.



BRASS PLUG TYPE "A" LOW SQUARE HEAD

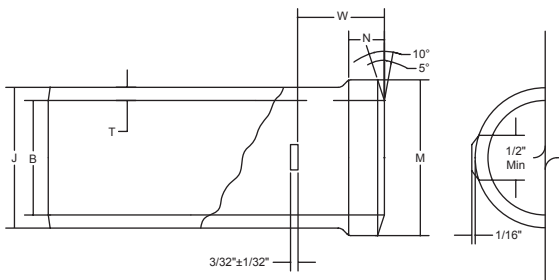
PART #	SIZE#	A	B	C	D	WEIGHT
BPR125	1 1/4	0.69	0.41	0.72	1.36	0.1
BPR150	1 1/2	0.75	0.50	0.81	1.60	0.2
BPR200	2	0.94	0.50	0.81	2.07	0.3
BPR250	2 1/2	1.00	0.50	0.81	2.44	0.4
BPR300	3	1.13	0.50	0.93	3.07	0.7
BPR350	3 1/2	1.13	0.50	0.93	3.57	0.8
BPR400	4	1.13	0.50	0.93	4.07	1.0
BPR500	5	1.38	0.56	0.99	5.13	1.3
BPR600	6	1.38	0.63	1.13	6.19	2.3
BPR800	8	1.63	0.75	1.25	8.19	3.5
BPR1000	10	2.00	0.75	1.75	10.32	6.2

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*All dimensions in inches & all weights are in pounds except where indicated.

Details of Spigot Bead & Gasket Position Lug



SPIGOT BEAD & GASKET POSITION LUG*

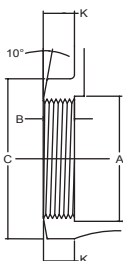
SIZE	INSIDE DIAMETER BARREL (B)	OUTSIDE DIAMETER BARREL (J)	INSIDE DIAMETER BARREL (M)
1 1/2	1.50 ± 0.09	1.90 ± 0.06	1.96 ± 0.06
2	1.96 ± 0.09	2.35 ± 0.09	2.41 ± 0.09
3	2.96 ± 0.09	3.35 ± 0.09	3.41 ± 0.09
4	3.94 ± 0.09	4.38+0.09/-0.05	4.44 ± 0.09
5	4.94 ± 0.09	5.30+0.09/-0.05	5.36 ± 0.09
6	5.94 ± 0.09	6.30+0.09/-0.05	6.36 ± 0.09
8	7.94 ± 0.13	8.38 ± 0.09	8.44 ± 0.09
10	10.0 ± 0.13	10.56 ± 0.09	10.62 ± 0.09
12	11.94 ± 0.13	12.50 ± 0.13	12.62 ± 0.13
15	15.11 ± 0.13	15.83 ± 0.13	16.12 ± 0.13

SIZE	WIDTH SPIGOT BEAD (N ± 1.13)	THICKNESS OF BARREL		GASKET POSITIONING LUG (W)
		(T-NOM)	(T-MIN)	
1 1/2	0.25	0.16	0.13	1.13
2	0.25	0.16	0.13	1.13
3	0.25	0.16	0.13	1.13
4	0.31	0.19	0.15	1.13
5	0.31	0.19	0.15	1.50
6	0.31	0.19	0.15	1.50
8	0.31	0.23	0.17	2.00
10	0.31	0.28	0.22	2.00
12	0.31	0.28	0.22	2.75
15	0.31	0.36	0.30	2.75

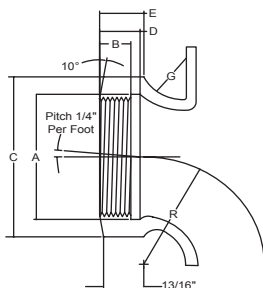
TECHNICAL

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings.
*All dimensions in inches.

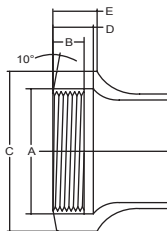
Details for Tapping Bosses



**FOR FITTINGS WHERE
CASTING OPENING
IS LARGER THAN
TAPPED OPENING**



**FOR FITTINGS TAPPED ON
SANITARY BRANCH**



**FOR FITTINGS WHERE
CASTING OPENING
IS SMALLER THAN
TAPPED OPENING**

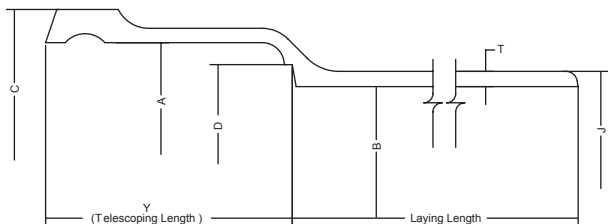
TAPPING BOSSES*

SIZE	A	B	C	D	E	G	K	R
1 1/4	1.94	0.44	2.69	0.75	0.88	0.50	0.50	1.75
1 1/2	1.94	0.44	2.69	0.75	0.88	0.50	0.50	1.75
2	2.44	0.44	3.25	0.75	0.94	0.63	0.50	2.25
2 1/2	3.00	0.63	3.94	1.00	1.13	0.75	0.63	2.75
3	3.56	0.75	4.63	1.19	1.31	1.00	0.75	3.00
3 1/2	4.06	0.75	5.13	1.25	1.38	1.00	0.75	3.00
4	4.56	0.81	5.75	1.25	1.44	1.13	1.19	3.50
5	5.63	0.94	7.06	-	-	-	1.38	-
6	6.69	1.00	8.31	-	-	-	1.44	-
8	8.88	1.00	10.25	-	-	-	1.81	-
10	11.00	1.25	12.00	-	-	-	1.94	-

Note: All dimensions and tolerances are from ASTM A-888 and CISPI 301 Hubless Pipe & Fittings. Horizontal inlet waste bosses to be at an angle of 1/4" per foot to provide flow. Pipe threads in accordance with ANSI/ASME B1.20.1

*All dimensions in inches & all weights are in pounds except where indicated.

Details of Hub & Spigot for SV



DETAILS OF HUB & SPIGOT FOR SV*

SIZE	INSIDE DIAMETER HUB (A)		OUTSIDE DIAMETER BARREL (J)		C
2	2.94	± 0.06	1.96	± 0.09	3.62
3	3.94	+0.09 / -0.06	2.96	± 0.09	4.68
4	4.94	+0.09 / -0.06	3.94	± 0.09	5.68
5	5.94	+0.09 / -0.06	4.94	± 0.09	6.68
6	6.94	+0.09 / -0.06	5.95	± 0.09	7.68
8	9.25	± 0.13	7.94	± 0.13	10.13
10	11.38	± 0.13	9.94	± 0.13	12.44
12	13.50	± 0.13	11.94	± 0.19	14.56
15	16.95	± 0.13	15.16	± 0.19	18.11

SIZE	INSIDE DIAMETER OF BARREL (J)		THICKNESS BARREL		TELESCOPING LENGTH Y	
			T NOM	T MIN		
2	2.30	± 09	0.17	0.14	2.50	± 0.06
3	3.30	± 09	0.17	0.14	2.75	± 0.06
4	4.30	± 09	0.18	0.15	3.00	± 0.06
5	5.30	± 09	0.18	0.15	3.00	± 0.06
6	6.30	± 09	0.18	0.15	3.00	± 0.06
8	8.38	± 0.13	0.23	0.17	3.50	± 0.13
10	10.50	± 0.13	0.28	0.22	3.50	± 0.13
12	12.50	± 0.19	0.28	0.22	4.25	± 0.19
15	15.88	± 0.19	0.36	0.22	4.25	± 0.19

Note: All dimensions and tolerances are from ASTM A-74.
*All dimensions in inches.

INSTALLATION INSTRUCTIONS FOR CAST IRON SOIL PIPE AND FITTINGS

The installation of cast iron soil pipe and fittings shall be made according to local plumbing codes of engineering specifications. Care taken during installation will assure the plumbing drainage system will perform properly.

Warning: Failure to follow proper installation instructions and procedures may result in system failure, property loss or personal injury.

JOINING METHODS

There are three basic methods for joining cast iron soil pipe and fittings.

1. A hubless coupling is used to join hubless pipe and fittings.
Numerous coupling designs are available either shielded or non-shielded. Each unique coupling should be installed per its manufacturer's installation instructions.
2. A one piece elastomeric compression gasket used to join hub and spigot pipe and fittings. Service weight pipe and fittings (SV) must be joined with service weight (SV) gaskets and extra-heavy pipe and fittings must be joined with extra-heavy gaskets.
3. Lead and Oakum caulked method to join hub and spigot cast iron soil pipe and fittings.

GENERAL INSTALLATION INSTRUCTIONS

1. Hubless Coupling per ASTM 1277, ASTM C1540 or CISPI 310
 - A. Clean the outside surface of the pipe/fitting ends to be joined of dirt, mud or any other foreign material.
 - B. Pipe ends should be square, and if cut, sharp edges must be removed. Insert the gasket on one end of the pipe/fitting and the stainless steel coupling loosely fitted on the other pipe/fitting
 - C. Firmly seat the pipe/fitting ends against the internally molded gasket shoulder.
 - D. Slide the loose stainless steel coupling into position by centering it over the gasket then tighten (torque) the clamp per the procedure recommended by the coupling manufacturer.
2. Compression Gasket (Service Weight)
 - A. Clean the hub and spigot of the pipe/fitting ends to be joined of dirt, mud or any other foreign material.
 - B. Pipe ends should be square, and if cut, sharp edges must be removed.
 - C. Fold and insert the gasket into the hub completely. Only the gasket flange that contains identification markings remains exposed outside the hub.
 - D. Lubricate following the gasket and lubricant manufacturer's application and safety instructions. For sizes 2"-4", lubricate only the inside surfaces of the gasket and the outside surfaces of the spigot. **Do not apply regular lubricant to the inside surfaces of the hub or to the outside surfaces of the gasket.** For sizes 5"-15", we recommend the use of an appropriate adhesive lubricant applied to the inside surfaces of the gasket and to the hub and spigot surfaces. **The use of adhesive lubricant does not take the place of proper joint restraint when required.**
 - E. Align the hub and spigot to be joined so that it is straight. By using any commercial available tool, push or pull the spigot completely through the gasket. When you feel the spigot bottom out in the hub, the joint is complete. Most fittings may be installed either by driving them into place with a lead maul or a mallet, jolting them into place or forcing or forcing together using a pry-bar.
To make cold weather installations easy, keep gaskets warm until ready for use. Cold stiff gaskets may be made pliable by immersing in warm water or storing in a heated space.

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3. Lead and Oakum Caulked
 - A. Clean the hub and spigot of the pipe/fitting ends to be joined of dirt, mud or any other foreign material.
 - B. Insert the spigot end of one pipe/fitting completely into the hub of another pipe/fitting and align correctly.
 - C. Place oakum into the joint with a yarning iron then solidly and evenly pack to the proper depth using a packing tool and hammer.
 - D. Pour molten lead into the joint filling it to the top of the hub.
 - E. After the lead has solidified and cooled, the joint is ready to be caulked. Caulk the joint using inside and outside caulking irons to set the lead and make a leak-free joint.

INSTALLATION METHODS

1. Underground
 - A. The inherent physical properties of cast iron soil pipe and fittings make it the best choice of DWV materials for buried service.
 - B. Trench design should be wide enough to allow adequate room for joint assembly. Total load on the pipe includes both earth load and truck load. Trenching safety procedures shall be followed including provisions to avoid trench wall collapse. The trench bottom should be stable enough to support the complete barrel of the pipe. Ideally, the pipe should rest on even, undisturbed soil. If trench is to be excavated deeper than the final depth of the drainage pipe, place and tamp backfill material to provide uniform pipe support. Cavities should be provided at each hub or coupling joint to allow continuous support of the pipe barrel along the trench bottom. Cast iron soil pipe joints allow for angular deflection when needed. The maximum deflection of a joint should not exceed ½ inch per foot of pipe. This allows 5 inches of deflection for each 10 foot pipe length. If needed deflection is greater than what a joint allows, appropriate fittings should be used.
 - C. Once installation is complete; the underground section is ready for testing. After testing is completed, the trench may now be properly backfilled. Care should be taken not to damage the pipe/fittings during backfilling. Installers shall always consider local conditions, codes, manufacturer's instructions and engineer/architect instructions on any installation.
 - D. When it is determined that soil environment is corrosive to cast iron, adequate precautionary polythene encasement practices are required. Detailed instructions maybe referred from appendices of ASTM A-74 and ASTM A-888 standards.
2. Above Ground*
 - A. Vertical piping: Shall be secured at sufficient intervals to maintain correct pipe alignment and support the weight of pipe and its contents. Support stacks at their bases and at sufficient floor intervals to meet local code requirements. Approved clamps shall be used for this purpose. If vertical piping is to be free of any support or if no structure is available for support and stability during construction, secure the piping in position using metal stakes or braces fastened to the pipe.
 - B. Horizontal piping: According to most authority and plumbing code requirements, 5 foot pipe is to be supported at 5 foot intervals and 10 foot pipe be supported at 10 foot intervals. Support each pipe properly to maintain pipe alignment, prevent sagging and prevent grade reversal. Support each length of pipe with an approved pipe hanger as close to the joint as possible but not more than 18 inches from the joint. For 12" and 15" hubless pipe, hangers should be placed on both sides of the coupling when using full 10 foot pipe lengths. Each terminal end, branch and change of direction or alignment shall be supported. When installing piping 5" or larger, sway brace the system to prevent horizontal movement.
 - The above procedures are general guidelines. Specific installation instructions and techniques may be applicable if required by local plumbing or building codes and regulations or engineering specifications or instructions support and bracing should be done in accordance with local and state codes.

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PIPE CUTTING METHODS*

There are several methods of cutting pipe and they may be divided into two categories, those that require external power for their operation and those methods that only require hand operation. External powered cutters are primarily used in high production shops.

1. External Powered

- A. Abrasive chop saws have been found to be very effective tools for cutting cast iron soil pipe.
- B. Power reciprocating hack saw.
- C. An electrically actuate hydraulic snap cutter.

2. Hand Operated

- A. Standard steel pipe cutter equipped with special cutter wheels for use with cast iron soil pipe.
- B. Snap cutters are the primary tool used for cutting cast iron soil pipe in the field. Good consistent square cuts may be obtained when following the tool manufacturer's instructions.

- Always use proper safety gear when cutting pipe.

TESTING AND INSPECTION

Cast iron soil pipe and fittings are designed for low pressure and gravity fed systems. Testing of these products with air, liquid or compressed gas under pressure higher than recommended, may cause product to explode or system failure. After roughing-in has been completed, it is important to test and inspect the system for leaks. The installer will usually notify the plumbing inspector or administrative authority having jurisdiction over plumbing installations before tests are performed. Concealed work should remain uncovered until required tests are performed and approved. Several test methods are used to test cast iron soil pipe systems. They include water (hydrostatic), air and smoke.

1. Water Test

- A. This is the most common type of test used to inspect a completed system and should be made before the system is concealed and before fixtures are in place. Its purpose is to check the system for leaks at the joints and to correct them prior to enclosing above ground systems or backfilling underground systems.
- B. Isolate each section or floor being tested by inserting plugs into the test tees in the stacks and tightly closing all other openings except for the highest opening. The system should be properly restrained at all bends, changes of direction and at ends of runs. If not restrained, the thrust force created by internal pressure will result in joint movement or separation causing failure of the test.
- D. Fill the system slowly with water to its highest opening allowing any trapped air to expel. As water fills a vertical pipe it creates hydrostatic pressure. The pressure increases as the height of water rises in the vertical pipe. The system should be subjected to 10 feet of head pressure (4.3 psi).
- E. Once the system is filled, visually inspect the system for leaks around the joints. 15 minutes is a suitable time for a water test. Where leaks are detected, make corrections as needed and retest the system. Once a successful test has been made, drain the system and prepare the next section for testing.

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2. Air Test (Not Recommended)

A. Sometimes an air test is required instead of water tests. Cast Iron Soil Pipe & Fittings subjected to air and gas pressure can explode and cause serious injuries and property damages. We do not recommend air testing and will not be responsible or liable for injury or property loss due to alleged failures of our products when tested with compressed air or gas.

B. If you still choose to test with air or gas, the system should only be tested to 5.1 psi utilizing a test gauge graduated no more than three times the test pressure. The gauge shall be monitored during a maximum 15 minute test period. Upon completion of the test, slowly depressurize the system and cautiously remove test balls and plugs.

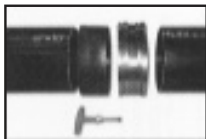
3. Smoke Test

A. When a smoke test is required by engineers, architects or plumbing codes, it is applied to all parts of the drainage and venting systems after all fixtures have been permanently connected and all traps filled with water.

B. A thick penetrating smoke produced by one or more smoke machines is introduced into the system through a suitable opening. As smoke appears at the stack opening on the roof, the opening is closed off and the introduction of smoke is continued until a pressure equal to one inch of water is built up and maintained for 15 minutes or longer as required.

C. Under this pressure, smoke should not be visible at any point, connection or fixture. All windows in the building should be closed and any mechanical exhaust system in the building should be stopped during the test.

INSTALLATION INSTRUCTIONS


STEP 1

Items for assembly include NewAge's hubless pipe coupling, two lengths of pipe or fittings to be joined and a torque wrench.

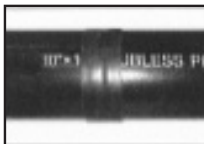

STEP 2

Insert the gasket on one end of the pipe/fitting making sure that the pipe/fitting is against the internally molded shoulder provider at the center of the gasket. With NewAge's hubless pipe coupling loosely fitted on the other pipe/fitting, insert it into the gasket such that it is against the other end of the internally molded shoulder.


STEP 2 (Alternative)

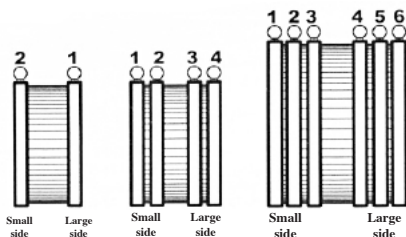
Alternative: After inserting the gasket on the first pipe/fitting, fold the gasket back until you see the internally molded shoulder against the pipe end. Insert the second pipe/fitting until it firmly contacts the internally molded shoulder.

Flip the gasket back onto the pipe/fitting.


STEP 3

Slide the loose pipe coupling centering it over the gasket. After taking the slack out of the clamps the following tightening sequence should be followed.





NO. OF BANDS	SEQUENCE OF TIGHTENING
2	Starting on the side of pipe/fitting having the smallest diameter, the following sequence to be torqued to required tension (see table): 2,1 - 2,1
4	Starting on the side of pipe/fitting having the smallest diameter, the following sequence to be torqued to required tension (see table): 2,1 - 2,1 - 3,4 - 3,4 - 2,1 - 3,4
6	Starting on the side of pipe/fitting having the smallest diameter, the following sequence to be torqued to required tension (see table): 3,2,1 - 3,2,1 - 4,5,6 - 4,5,6 - 3,2,1 - 4,5,6

Note:

1. Once coupling is installed and torqued in this pattern, it is not required to go back and re-torque the coupling.
2. All hubless pipes and fittings should be properly restrained if test pressure exceeds 10 feet of head.
3. All sizes of pipe and fitting assembly must be properly restrained.

REQUIRED TORQUE (in-lbs)		
Coupling Size (inch)	Standard Screw - 5/16 inch	Extra Heavy Duty Screw - 3/8 inch
1 1/2	60	80
2	60	80
3	60	80
4	60	80
5	60	80
6	60	80
8	60	80
10	60	80

General Terms and Conditions

GENERAL

These terms and conditions shall control with respect to any purchase order or sale of Sellers products. No waiver, alteration or modification of these terms and conditions whether on Buyers purchase order or otherwise shall be valid unless the waiver, alteration, or modification is specifically accepted in writing and signed by an authorized representative of Seller.

DELIVERY

Seller will make any effort to complete delivery of products as indicated on Sellers acceptance of an order, but Seller assumes no responsibility or liability, and will accept no back charge, for loss or damage due to delay or inability to deliver caused by acts of God, war, labor difficulties, accident, delays of carriers, by contractors or suppliers, inability to obtain materials, shortages of fuel or energy, or any other causes of any kind whatsoever beyond the control of Seller. Seller may terminate any contract of sale of its products without liability of any nature, by written notice of Buyer, in the event that the delay in delivery or performance resulting from any of the aforesaid causes shall continue for a period of sixty (60) days. Under no circumstances shall Seller be liable for any special or consequential damages or for loss, damage, or expense (whether or not based on negligence) directly or indirectly arising from delays or failure to give notice of delay.

WARRANTY

Seller warrants for five years from the date of shipment Sellers manufactured products to the extent that Seller will replace those having defects in material or workmanship when used for the purpose and in the manner which Seller recommends. If Sellers examination shall disclose to its satisfaction that the product is defective, and an adjustment is required, the amount of such adjustment shall the not exceed the net sales price of the defective products only and no allowance will be made for labor or expense of repairing or replacing defective product or workmanship or damage resulting from the same. No adjustment shall be implemented unless product in question is returned to seller in its originally installed condition, still connected to other components of the joint. Buyer must contact Seller as quickly as possible so Seller can assess product in its installed condition. No claims will be honored unless claim is made within forty five (45) days of the defect being found. Where engineering design or fabrication work is supplied, Buyers acceptance of Sellers design or of delivery of work shall relieve Seller of all further obligation, other than expressed in Sellers product warranty. THIS IS SELLERS SOLE WARRANTY. SELLERS MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED SELLERS AFORESTATED OBLIGATION ARE HEREBY DISCLAIMED BY SLLER AND EXCLUDED FROM THIS WARRANTY. Seller neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or product. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of Sellers factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to Sellers instructions or recommendations. Seller shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives. This warranty is non-transferable.

LIABILITY

Seller will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by Seller under warranty above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer.

RETURNS

Seller cannot accept return of any products unless its written permission has been first obtained, in which case same will be credited subject to the following: (a) All material returned must, on its arrival at Sellers plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) A handling charge deduction of twenty five percent (25%) will be made from all credit memoranda issued for material returned; (c) transportation charges, if not prepaid will be deducted from credit memoranda.

SHIPMENTS

All products sent out will be carefully examined, counted, and packed. The cost of any special packing or special handling caused by Buyers requirements or request shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for products damaged or lost in transit should be made on the carrier, as Sellers responsibility ceases, and title passes, on delivery to the carrier.

PRODUCTS

Orders covering special or non-standard products are not subject to cancellation except on such terms as Seller may specify on application.

PRICES

Prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.

TAXES

The amount of any sales, excise or other taxes, if any, applicable to the products covered by this order, shall be added to the purchased price and shall not be paid by Buyer unless buyer provides Seller with an exemption certificate acceptable to the taxing authorities.

