

# **OUC-The *Reliable* One**

Water Material

Manual Specification



<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
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*Note: Ghosted stock numbers, i.e. (012-34567NS) represent non-stock items listed in the Manual. These numbers are not Item IDs. The \* symbol in the Page # column indicates specification development.*

051-03001	Tubing – Copper . . . . .	1” OD	G 1.1
051-03002	Pipe – PVC Comp. Joint (Class 200) . . . . .	2”	A 5.1
051-03004	Pipe – PVC Comp. Joint (C900) . . . . .	4”	A 4.1
051-03012	Pipe – PVC Restrained Joint . . . . .	2”	G 1.5
051-03020	Tubing – Copper (40’ Coil) . . . . .	2” OD	G 1.2
051-03021	Tubing – Copper – Soft (20’ Straight) . . . . .	2” OD	G 1.3
051-03022	Tubing – Copper – Hard (20’ Straight) . . . . .	2” OD	G 1.3
051-03034	Tubing – Copper . . . . .	¾” OD	G 1.1
051-06012	Pipe – Steel Casing . . . . .	12”	A 6.1
051-06016	Pipe – Steel Casing . . . . .	16”	A 6.1
051-06020	Pipe – Steel Casing . . . . .	20”	A 6.1
051-06024	Pipe – Steel Casing . . . . .	24”	A 6.1
051-06030	Pipe – Steel Casing . . . . .	30”	A 6.1
051-06036	Pipe – Steel Casing . . . . .	36”	A 6.1
051-06048NS	Pipe – Steel Casing . . . . .	48”	A 6.1
051-06054NS	Pipe – Steel Casing . . . . .	54”	A 6.1
055-06003	Pipe – D.I. Flanged . . . . .	3” ID	A 2.1
055-06004	Pipe – D.I. Flanged . . . . .	4” ID	A 2.1
055-06006	Pipe – D.I. Flanged . . . . .	6” ID	A 2.1
055-06008	Pipe – D.I. Flanged . . . . .	8” ID	A 2.1
055-06010	Pipe – D.I. Flanged . . . . .	10” ID	A 2.1
055-06606	Spool Piece – D.I. Flanged – 6” long . . . . .	6”	B 7.3
055-06612	Spool Piece – D.I. Flanged – 12” long . . . . .	6”	B 7.3
055-06806	Spool Piece – D.I. Flanged – 6” long . . . . .	8”	B 7.3
055-06812	Spool Piece – D.I. Flanged – 12” long . . . . .	8”	B 7.3
056-01004	Pipe – D.I. Comp. Joint . . . . .	4” ID	A 1.1
056-01006	Pipe – D.I. Comp. Joint . . . . .	6” ID	A 1.1
056-01008	Pipe – D.I. Comp. Joint . . . . .	8” ID	A 1.1
056-01010	Pipe – D.I. Comp. Joint . . . . .	10” ID	A 1.1
056-01012	Pipe – D.I. Comp. Joint . . . . .	12” ID	A 1.1
056-01016	Pipe – D.I. Comp. Joint . . . . .	16” ID	A 1.1

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
056-01020	Pipe – D.I. Comp. Joint . . . . .	20” ID	A 1.1
056-01024	Pipe – D.I. Comp. Joint . . . . .	24” ID	A 1.1
056-01030	Pipe – D.I. Comp. Joint . . . . .	30” ID	A 1.1
056-01036	Pipe – D.I. Comp. Joint . . . . .	36” ID	A 1.1
056-01042	Pipe – D.I. Comp. Joint . . . . .	42” ID	A 1.1
058-01004	Accessory Kit – MJ Pipe Fitting . . . . .	4”	B 16.1
058-01006	Accessory Kit – MJ Pipe Fitting . . . . .	6”	B 16.1
058-01008	Accessory Kit – MJ Pipe Fitting . . . . .	8”	B 16.1
058-01010	Accessory Kit – MJ Pipe Fitting . . . . .	10”	B 16.1
058-01012	Accessory Kit – MJ Pipe Fitting . . . . .	12”	B 16.1
058-01016	Accessory Kit – MJ Pipe Fitting . . . . .	16”	B 16.2
058-01020	Accessory Kit – MJ Pipe Fitting . . . . .	20”	B 16.2
058-01024	Accessory Kit – MJ Pipe Fitting . . . . .	24”	B 16.2
058-02004	Restrainer – Pipe Fitting . . . . .	4”	B 14.2
058-02006	Restrainer – Pipe Fitting . . . . .	6”	B 14.2
058-02008	Restrainer – Pipe Fitting . . . . .	8”	B 14.2
058-02010NS	Restrainer – Pipe Fitting . . . . .	10”	B 14.2
058-02012NS	Restrainer – Pipe Fitting . . . . .	12”	B 14.2
058-02104	Restrainer – Bell Joint . . . . .	4”	B 14.3
058-02106	Restrainer – Bell Joint . . . . .	6”	B 14.3
058-02108	Restrainer – Bell Joint . . . . .	8”	B 14.3
058-02110NS	Restrainer – Bell Joint . . . . .	10”	B 14.3
058-02112NS	Restrainer – Bell Joint . . . . .	12”	B 14.3
058-02002	Restrainer – Pipe Fitting	2”	B 14.5
058-02204	MJ Restraint – Wedge Action . . . . .	4”	B 14.4
058-02206	MJ Restraint – Wedge Action . . . . .	6”	B 14.4
058-02208	MJ Restraint – Wedge Action . . . . .	8”	B 14.4
058-02210	MJ Restraint – Wedge Action . . . . .	10”	B 14.4
058-02212	MJ Restraint – Wedge Action . . . . .	12”	B 14.4
058-02216	MJ Restraint – Wedge Action . . . . .	16”	B 14.4
058-02220	MJ Restraint – Wedge Action . . . . .	20”	B 14.4
058-02224NS	MJ Restraint – Wedge Action . . . . .	24”	B 14.4
059-01104	Gasket – MJ Transition . . . . .	4”	B 16.4
059-01106	Gasket – MJ Transition . . . . .	6”	B 16.4

Item Id. #	Description	Size	Page #
059-01108	Gasket – MJ Transition . . . . .	8”	B 16.4
059-01110	Gasket – MJ Transition . . . . .	10”	B 16.4
059-01112	Gasket – MJ Transition . . . . .	12”	B 16.4
059-01204	Gasket – Field-Lok Restraint . . . . .	4”	B 16.3
059-01206	Gasket – Field-Lok Restraint . . . . .	6”	B 16.3
059-01208	Gasket – Field-Lok Restraint . . . . .	8”	B 16.3
059-01210	Gasket – Field-Lok Restraint . . . . .	10”	B 16.3
059-01212	Gasket – Field-Lok Restraint . . . . .	12”	B 16.3
059-01216	Gasket – Field-Lok Restraint . . . . .	16”	B 16.3
059-01220	Gasket – Field-Lok Restraint . . . . .	20”	B 16.3
059-01224NS	Gasket – Field-Lok Restraint . . . . .	24”	B 16.3
059-01312	O-Ring – Restrained Joint PVC . . . . .	2”	B 16.5
059-01322	Spline – Restrained Joint PVC . . . . .	2”	B 16.6
061-01004	Valve – Gate w/Resilient Seat – MJ. . . . .	4”	C 1.1
061-01006	Valve – Gate w/Resilient Seat – MJ. . . . .	6”	C 1.1
061-01008	Valve – Gate w/Resilient Seat – MJ. . . . .	8”	C 1.1
061-01010	Valve – Gate w/Resilient Seat – MJ. . . . .	10”	C 1.1
061-01012	Valve – Gate w/Resilient Seat – MJ. . . . .	12”	C 1.1
061-03012	Valve – Butterfly MJ . . . . .	12”	C 3.1
061-03016	Valve – Butterfly MJ . . . . .	16”	C 3.1
061-03020	Valve – Butterfly MJ . . . . .	20”	C 3.1
061-03024	Valve – Butterfly MJ . . . . .	24”	C 3.1
062-01004NS	Valve – Detector Check . . . . .	4”	K 1.1
062-01006	Valve – Detector Check . . . . .	6”	K 1.1
062-01008	Valve – Detector Check . . . . .	8”	K 1.1
062-01010	Valve – Detector Check . . . . .	10”	K 1.1
062-05020	Valve – Ball w/Padlock Wing (FIPTxFIPT) . . . . .	2”	G 16.1
062-09134	Valve – Swing Check . . . . .	¾”	J 3.0
063-01001	Valve – Gate – FIPT Screw . . . . .	1 ½”	G 14.1
063-01002	Valve – Gate – FIPT Screw . . . . .	2”	G 14.1
063-01003	Valve – Gate – FIPT Screw . . . . .	3”	C 1.4
063-01011	Valve – Gate – NRS (FIPT) . . . . .	1½”	G 14.2
063-01012	Valve – Gate – NRS (FIPT) . . . . .	2”	G 14.2
063-07003	Valve – Gate – Flanged NRS . . . . .	3”	C 1.2
063-07004	Valve – Gate – Flanged NRS . . . . .	4”	C 1.2
063-07006	Valve – Gate – Flanged NRS . . . . .	6”	C 1.2
063-07008	Valve – Gate – Flanged NRS . . . . .	8”	C 1.2
063-07010	Valve – Gate – Flanged NRS . . . . .	10”	C 1.2

Item Id. #	Description	Size	Page #
063-07012	Valve – Gate – Flanged NRS . . . . .	12”	C 1.2
063-07024	Valve – Butterfly - FLG . . . . .	24”	C 3.1
063-08004	Valve – Gate – Flanged OS&Y . . . . .	4”	C 1.3
063-08006	Valve – Gate – Flanged OS&Y . . . . .	6”	C 1.3
063-08008	Valve – Gate – Flanged OS&Y . . . . .	8”	C 1.3
063-08010	Valve – Gate – Flanged OS&Y . . . . .	10”	C 1.3
063-08012	Valve – Gate – Flanged OS&Y . . . . .	12”	C 1.3
063-09001	Valve Box Lid only . . . . .		C 4.1
063-09005	Valve Box w/Lid – CI – 5 ¼” Shaft . . . . .	18” – 24”	C 4.1
063-09010	Valve Box w/Lid – CI – 5 ¼” Shaft . . . . .	24” – 36”	C 4.1
063-09016	Valve Box Lid – Non-Pop (Plastic)		C 4.3
063-09015	Valve Box w/Lid – CI – 5 ¼” Shaft . . . . .	36” – 48”	C 4.1
063-09016	Valve Box Lid – Non-Pop (Plastic) . . . . .		C 4.3
063-09020	Valve Box Riser w/Lid . . . . .	1 1/8 ”	C 4.2
063-09025	Valve Box Riser w/Lid . . . . .	1 ½ ”	C 4.2
063-09030	Valve Box Riser w/Lid . . . . .	2 ¼ ”	C 4.2
066-01104	Valve- Tapping w/Resilient Seat . . . . .	4”	C 2.1
066-01106	Valve- Tapping w/Resilient Seat . . . . .	6”	C 2.1
066-01108	Valve- Tapping w/Resilient Seat . . . . .	8”	C 2.1
066-01110	Valve- Tapping w/Resilient Seat . . . . .	10”	C 2.1
066-01112	Valve- Tapping w/Resilient Seat . . . . .	12”	C 2.1
071-01204	Bend – 11 ¼ ° MJ D.I. “Compact”. . . . .	4”	B 2.5
071-01206	Bend – 11 ¼ ° MJ D.I. “Compact”. . . . .	6”	B 2.5
071-01208	Bend – 11¼ ° MJ D.I. “Compact”. . . . .	8”	B 2.5
071-01210	Bend – 11¼ ° MJ D.I. “Compact”. . . . .	10”	B 2.5
071-01212	Bend – 11¼ ° MJ D.I. “Compact”. . . . .	12”	B 2.5
071-01216NS	Bend – 11¼ ° MJ D.I. “Compact”. . . . .	16”	B 2.5
071-01220NS	Bend – 11¼ ° MJ D.I. “Compact”. . . . .	20”	B 2.5
071-01224NS	Bend – 11¼ ° MJ D.I. “Compact”. . . . .	24”	B 2.5
071-01316	Bend – 11¼ ° MJ D.I. Standard . . . . .	16”	B 2.6
071-01320	Bend – 11¼ ° MJ D.I. Standard . . . . .	20”	B 2.6
071-01324	Bend – 11¼ ° MJ D.I. Standard . . . . .	24”	B 2.6
071-01330NS	Bend – 11¼ ° MJ D.I. Standard . . . . .	30”	B 2.6
071-01336NS	Bend – 11¼ ° MJ D.I. Standard . . . . .	36”	B 2.6
071-01404	Bend – 22 ½ ° MJ D.I. “Compact”. . . . .	4”	B 2.3
071-01406	Bend – 22 ½ ° MJ D.I. “Compact”. . . . .	6”	B 2.3
071-01408	Bend – 22 ½ ° MJ D.I. “Compact”. . . . .	8”	B 2.3
071-01410	Bend – 22 ½ ° MJ D.I. “Compact”. . . . .	10”	B 2.3

Item Id. #	Description	Size	Page #
071-01412	Bend – 22 ½ ° MJ D.I. “Compact” . . . . .	12”	B 2.3
071-01416NS	Bend – 22 ½ ° MJ D.I. “Compact” . . . . .	16”	B 2.3
071-01420NS	Bend – 22 ½ ° MJ D.I. “Compact” . . . . .	20”	B 2.3
071-01424NS	Bend – 22 ½ ° MJ D.I. “Compact” . . . . .	24”	B 2.3
071-01516	Bend – 22 ½ ° MJ D.I. Standard . . . . .	16”	B 2.4
071-01520	Bend – 22 ½ ° MJ D.I. Standard . . . . .	20”	B 2.4
071-01524	Bend – 22 ½ ° MJ D.I. Standard . . . . .	24”	B 2.4
071-01530NS	Bend – 22 ½ ° MJ D.I. Standard . . . . .	30”	B 2.4
071-01536NS	Bend – 22 ½ ° MJ D.I. Standard . . . . .	36”	B 2.4
071-05012	Bend – 45° PVC – Restrained Joint . . . . .	2”	B 2.8
071-06101	Bend – 45° Brass . . . . .	1”	G 3.2
071-06102	Bend – 45° Brass . . . . .	2”	G 3.2
071-06134	Bend – 45° Brass . . . . .	¾”	G 3.2
071-06154	Bend – 45° Brass . . . . .	1 ¼”	G 3.2
071-06164	Bend – 45° Brass . . . . .	1 ½”	G 3.2
071-06202	Bend – 45° Brass . . . . .	2”	G 3.1
071-06404	Bend – 45° MJ D.I. “Compact” . . . . .	4”	B 2.1
071-06406	Bend – 45° MJ D.I. “Compact” . . . . .	6”	B 2.1
071-06408	Bend – 45° MJ D.I. “Compact” . . . . .	8”	B 2.1
071-06410	Bend – 45° MJ D.I. “Compact” . . . . .	10”	B 2.1
071-06412	Bend – 45° MJ D.I. “Compact” . . . . .	12”	B 2.1
071-06416NS	Bend – 45° MJ D.I. “Compact” . . . . .	16”	B 2.1
071-06420NS	Bend – 45° MJ D.I. “Compact” . . . . .	20”	B 2.1
071-06424NS	Bend – 45° MJ D.I. “Compact” . . . . .	24”	B 2.1
071-06516	Bend – 45° MJ D.I. Standard . . . . .	16”	B 2.2
071-06520	Bend – 45° MJ D.I. Standard . . . . .	20”	B 2.2
071-06524	Bend – 45° MJ D.I. Standard . . . . .	24”	B 2.2
071-06530NS	Bend – 45° MJ D.I. Standard . . . . .	30”	B 2.2
071-06536	Bend – 45° MJ D.I. Standard . . . . .	36”	B 2.2
071-09502	Bend – 45° PVC . . . . .	2”	B 2.7
072-01001	Cap – Brass . . . . .	1”	G 10.1
072-01002	Cap – Brass . . . . .	2”	G 10.1
072-01034	Cap – Brass. . . . .	¾”	G 10.1
072-01054	Cap – Brass . . . . .	1 ¼”	G 10.1
072-01064	Cap – Brass . . . . .	1 ½”	G 10.1
072-01142	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	4” x 2”	B 12.1
072-01162	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	6” x 2”	B 12.1
072-01182	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	8” x 2”	B 12.1

Item Id. #	Description	Size	Page #
072-01192	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	10" x 2"	B 12.1
072-01222	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	12" x 2"	B 12.1
072-01622	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	16" x 2"	B 12.1
072-02022	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	20" x 2"	B 12.1
072-02024	Cap – MJ D.I. Standard (Tapped Plug) . . . . .	24" x 2"	B 12.1
073-00931	Clamp – Service for Transite . . . . .	3"	*
073-00932	Clamp – Service for Transite . . . . .	3"	*
073-00933	Clamp – Service for Transite . . . . .	3"	*
073-01011	Clamp – Service . . . . .	1 ½" x 1"	*
073-01013	Clamp – Service . . . . .	1 ½" x ¾"	*
073-01021	Clamp – Service for Steel Pipe (CC) . . . . .	2" x 1"	E 5.1
073-01032	Clamp – Service for CI Pipe . . . . .	3" x 2"	E 2.1a
073-01034	Clamp – Service for C900 PVC Pipe. . . . .	4" x ¾"	E 3.1
073-01041	Clamp – Service for C900 PVC Pipe. . . . .	4" x 1"	E 3.1
073-01042	Clamp – Service for CI Pipe . . . . .	4" x 2" IPT	E 2.1
073-01062	Clamp – Service for CI Pipe . . . . .	6" x 2" IPT	E 2.2
073-01082	Clamp – Service for CI Pipe . . . . .	8" x 2" IPT	E 2.3
073-01102	Clamp – Service for CI Pipe . . . . .	10" x 2" IPT	E 2.4
073-01114	Clamp – Service for Steel Pipe (CC) . . . . .	2" x ¾"	E 5.1
073-01122	Clamp – Service for CI Pipe . . . . .	12" x 2" IPT	E 2.5
073-01162	Clamp – Service for CI Pipe . . . . .	16" x 2" IPT	E 2.6
073-01202	Clamp – Service for CI Pipe . . . . .	20" x 2" IPT	E 2.7
073-01242	Clamp – Service for CI Pipe . . . . .	24" x 2" IPT	E 2.8
073-01321	Clamp – Service for Class 200 PVC Pipe (CC)	2" x 1"	E 4.1
073-01334	Clamp – Service for Class 200 PVC Pipe (CC)	2" x ¾"	E 4.1
073-01434	Clamp – Service for Class 200 PVC Pipe (CC)	4" x ¾"	E 4.2
073-01441	Clamp – Service for Class 200 PVC Pipe (CC)	4" x 1"	E 4.2
073-01442	Clamp – Service for Class 200 PVC Pipe (CC)	4" x 2"	E 4.3
073-02234	Clamp – Service (IPS HDPE) . . . . .	2" x ¾"	E 6.1
073-02021	Clamp – Service (IPS HDPE) . . . . .	2" x 1"	E 6.1
073-02434	Clamp – Service (IPS HDPE) . . . . .	4" x ¾"	E 6.2
073-02041	Clamp – Service (IPS HDPE) . . . . .	4" x 1"	E 6.2
073-05002	Clamp – Emergency . . . . .	2" x 6"	F 1.10
073-05003	Clamp – Emergency . . . . .	3" x 10"	F 2.1
073-05004	Clamp – Emergency . . . . .	4" x 10"	F 2.3
073-05006	Clamp – Emergency . . . . .	6" x 10"	F 2.5
073-05007	Clamp – Emergency . . . . .	6" x 18"	F 2.6
073-05008	Clamp – Emergency . . . . .	8" x 10"	F 2.7

Item Id. #	Description	Size	Page #
073-05009	Clamp – Emergency . . . . .	8" x 18"	F 2.8
073-05010	Clamp – Emergency . . . . .	10" x 10"	F 2.9
073-05011	Clamp – Emergency . . . . .	10" x 18"	F 2.10
073-05012	Clamp – Emergency . . . . .	12" x 10"	F 2.11
073-05013	Clamp – Emergency . . . . .	12" x 18"	F 2.12
073-05014	Clamp – Emergency . . . . .	3" x 15"	F 2.2
073-05015	Clamp – Emergency . . . . .	4" x 15"	F 2.4
073-05016	Clamp – Emergency . . . . .	16" x 12"	F 3.1
073-05017	Clamp – Emergency . . . . .	16" x 20"	F 3.2
073-05020	Clamp – Emergency . . . . .	20" x 12"	F 3.3
073-05021	Clamp – Emergency . . . . .	20" x 18"	F 3.4
073-05024	Clamp – Emergency . . . . .	24" x 12"	F 3.5
073-05025	Clamp – Emergency . . . . .	24" x 18"	F 3.6
073-05026	Clamp – Emergency . . . . .	16" x 30"	F 3.7
073-05027	Clamp – Emergency . . . . .	20" x 30"	F 3.7
073-05028	Clamp – Emergency . . . . .	24" x 30"	F 3.7
073-05029	Clamp – Emergency . . . . .	30" x 30"	F 3.7
073-05202	Clamp – Emergency (HDPE) . . . . .	2" x 8"	F 1.11
073-05204	Clamp – Emergency (HDPE) . . . . .	4" x 12"	F 2.3a
073-05301	Clamp – Emergency . . . . .	1" x 3"	F 1.3
073-05302	Clamp – Emergency . . . . .	2" x 3"	F 1.9
073-05334	Clamp – Emergency . . . . .	¾" x 3"	F 1.1
073-05354	Clamp – Emergency . . . . .	1 ¼" x 3"	F 1.5
073-05364	Clamp – Emergency . . . . .	1 ½" x 3"	F 1.7
073-05601	Clamp – Emergency . . . . .	1" x 6"	F 1.4
073-05634	Clamp – Emergency . . . . .	¾" x 6"	F 1.2
073-05654	Clamp – Emergency . . . . .	1 ¼" x 6"	F 1.6
073-05664	Clamp – Emergency . . . . .	1 ½" x 6"	F 1.8
073-05904	Clamp – Bell Joint Leak . . . . .	4"	F 4.1
073-05906	Clamp – Bell Joint Leak . . . . .	6"	F 4.1
073-05908	Clamp – Bell Joint Leak . . . . .	8"	F 4.1
073-05910	Clamp – Bell Joint Leak . . . . .	10"	F 4.1
073-05912	Clamp – Bell Joint Leak . . . . .	12"	F 4.1
073-05916	Clamp – Bell Joint Leak . . . . .	16"	F 4.2
073-05920	Clamp – Bell Joint Leak . . . . .	20"	F 4.2
073-05924	Clamp – Bell Joint Leak . . . . .	24"	F 4.2
074-01001	Coupling – Straight (Copper x MIPT) . . . . .	1"	G 8.7
074-01034	Coupling – Straight (Copper x MIPT) . . . . .	¾"	G 8.7



Item Id. #	Description	Size	Page #
074-01101	Coupling – Straight (Comp. x MIPT) . . . . .	1”	G 8.5
074-01102	Coupling – Straight (Comp. x MIPT) . . . . .	2”	G 8.5
074-01134	Coupling – Straight (Comp. x MIPT) . . . . .	¾”	G 8.5
074-02001	Coupling – Straight (Copper x MIPT) . . . . .	1”	G 8.6
074-02034	Coupling – Straight (Copper x MIPT) . . . . .	¾”	G 8.6
074-03001	Coupling – Brass (FIPT x FIPT) . . . . .	1”	G 8.2
074-03002	Coupling – Brass (FIPT x FIPT) . . . . .	2”	G 8.2
074-03032	Coupling – Brass (FIPT x FIPT) . . . . .	1 ½”	G 8.2
074-03034	Coupling – Brass (FIPT x FIPT) . . . . .	¾”	G 8.2
074-03054	Coupling – Brass (FIPT x FIPT) . . . . .	1 ¼”	G 8.2
074-05052	Coupling – Brass Reducer . . . . .	1 ½” x ¾”	G 8.3
074-05074	Coupling – Brass Reducer . . . . .	1” x ¾”	G 8.3
074-05084	Coupling – Brass Reducer . . . . .	1 ¾” x ¾”	G 8.3
074-05094	Coupling – Brass Reducer . . . . .	1 ¼” x 1”	G 8.3
074-05104	Coupling – Brass Reducer . . . . .	1 ½” x 1”	G 8.3
074-05114	Coupling – Brass Reducer . . . . .	1 ½” x 1 ¼”	G 8.3
074-05124	Coupling – Brass Reducer . . . . .	2” x 1”	G 8.3
074-05134	Coupling – Brass Reducer . . . . .	2” x 1 ¼”	G 8.3
074-05144	Coupling – Brass Reducer . . . . .	2” X 1 ½”	G 8.3
074-05234	Coupling – Brass Reducer . . . . .	2” X ¾”	G 8.3
074-05502	Coupling – PVC Comp. . . . .	2”	B 7.8
074-05512	Coupling – PVC – Restrained Joint . . . . .	2”	B 15.7
074-05522	Coupling – PVC – Restrained Joint x Slip . . . . .	2”	B 15.8
074-06001	Coupling – Galvanized Comp. (E-Z On) . . . . .	1”	G 8.1
074-06002	Coupling – Galvanized Comp. (E-Z On) . . . . .	2”	G 8.1
074-06003	Coupling – Comp. (E-Z On) . . . . .	3”	B 7.5
074-06004	Coupling – Comp. (E-Z On) . . . . .	4”	B 7.6
074-06034	Coupling – Galvanized Comp. (E-Z On) . . . . .	¾”	G 8.1
074-06054	Coupling – Galvanized Comp. (E-Z On) . . . . .	1 ¼”	G 8.1
074-06064	Coupling – Galvanized Comp. (E-Z On) . . . . .	1 ½”	G 8.1
074-06074	Coupling – Comp. (E-Z On) . . . . .	2 1/2”	B 7.4
074-06083	Coupling – Comp. CU . . . . .	3”	B 7.19
074-06104	Coupling – For IPS HDPE . . . . .	4”	B 7.20
074-07404	Flange Adapter . . . . .	4”	B 15.1
074-07406	Flange Adapter . . . . .	6”	B 15.2
074-07408	Flange Adapter . . . . .	8”	B 15.3
074-07410	Flange Adapter . . . . .	10”	B 15.4
074-07412	Flange Adapter . . . . .	12”	B 15.5

Item Id. #	Description	Size	Page #
074-08404	Coupling – Combination D.I. (MJ to FLG) . . .	4”	B 7.1
074-08406	Coupling – Combination D.I. (MJ to FLG) . . .	6”	B 7.1
074-08408	Coupling – Combination D.I. (MJ to FLG) . . .	8”	B 7.1
074-08410	Coupling – Combination D.I. (MJ to FLG) . . .	10”	B 7.1
074-08412	Coupling – Combination D.I. (MJ to FLG) . . .	12”	B 7.1
074-08504	Coupling – Combination D.I. (FLG to PE) . . .	4”	B 7.2
074-08506NS	Coupling – Combination D.I. (FLG to PE) . . .	6”	B 7.2
074-08508NS	Coupling – Combination D.I. (FLG to PE) . . .	8”	B 7.2
074-08510NS	Coupling – Combination D.I. (FLG to PE) . . .	10”	B 7.2
074-08512	Coupling – Combination D.I. (FLG to PE) . . .	12”	B 7.2
074-08604	Coupling – Ringwej (RW) – ACxD.I. . . . .	4”	B 7.7
074-08606	Coupling – Ringwej (RW) – ACxD.I. . . . .	6”	B 7.7
074-08608	Coupling – Ringwej (RW) – ACxD.I. . . . .	8”	B 7.7
074-08616	Coupling – Steel Red. ACxD.I. . . . .	16”	*
074-08620	Coupling – Steel Red. ACxD.I. . . . .	20”	*
074-08624	Coupling – Steel Red. ACxD.I. . . . .	24”	*
074-08703	Coupling – Straight . . . . .	3”	B 7.9
074-08704	Coupling – Transition . . . . .	4”	B 7.10
074-08706	Coupling – Transition . . . . .	6”	B 7.11
074-08708	Coupling – Transition . . . . .	8”	B 7.12
074-08710	Coupling – Transition . . . . .	10”	B 7.13
074-08712	Coupling – Transition . . . . .	12”	B 7.14
<b>074-08716</b>	Coupling – Transition . . . . .	16”	B 7.15
<b>074-08720</b>	Coupling – Transition . . . . .	20”	B 7.16
<b>074-08724</b>	Coupling – Transition . . . . .	24”	B 7.17
074-08804	Coupling – Universal . . . . .	4”	B 7.18
074-08806	Coupling – Universal . . . . .	6”	B 7.18
074-08808	Coupling – Universal . . . . .	8”	B 7.18
074-08810	Coupling – Universal . . . . .	10”	B 7.18
074-08812	Coupling – Universal . . . . .	12”	B 7.18
074-08816	Coupling – Universal . . . . .	16”	B 7.18
074-08820	Coupling – Universal . . . . .	20”	B 7.18
074-08824NS	Coupling – Universal . . . . .	24”	B 7.18
075-01001	Cross – Brass . . . . .	1”	G 6.1
075-01002	Cross – Brass . . . . .	2”	G 6.1
075-01034	Cross – Brass . . . . .	¾”	G 6.1
075-01054	Cross – Brass. . . . .	1 ¼”	G 6.1
075-01064	Cross – Brass. . . . .	1 ½”	G 6.1

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
075-07010	Cross – MJ D.I. “Compact” . . . . .	10” x 10”	B 4.1
075-07016	Cross – MJ D.I. Standard. . . . .	16” x 16”	B 4.2
075-07044	Cross – MJ D.I. “Compact” . . . . .	4” x 4”	B 4.1
075-07064	Cross – MJ D.I. “Compact” . . . . .	6” x 4”	B 4.1
075-07066	Cross – MJ D.I. “Compact” . . . . .	6” x 6”	B 4.1
075-07086	Cross – MJ D.I. “Compact” . . . . .	8” x 6”	B 4.1
075-07088	Cross – MJ D.I. “Compact” . . . . .	8” x 8”	B 4.1
075-07106	Cross – MJ D.I. “Compact” . . . . .	10” x 6”	B 4.1
075-07108	Cross – MJ D.I. “Compact” . . . . .	10” x 8”	B 4.1
075-07110	Cross – MJ D.I. “Compact” . . . . .	12” x 10”	B 4.1
075-07121	Cross – MJ D.I. “Compact” . . . . .	12” x 12”	B 4.1
075-07126	Cross – MJ D.I. “Compact” . . . . .	12” x 6”	B 4.1
075-07128	Cross – MJ D.I. “Compact” . . . . .	12” x 8”	B 4.1
075-07160	Cross – MJ D.I. Standard. . . . .	16” x 10”	B 4.2
075-07162	Cross – MJ D.I. Standard. . . . .	16” x 12”	B 4.2
075-07166	Cross – MJ D.I. Standard. . . . .	16” x 6”	B 4.2
075-07168	Cross – MJ D.I. Standard. . . . .	16” x 8”	B 4.2
075-07200	Cross – MJ D.I. Standard. . . . .	20” x 10”	B 4.2
075-07202	Cross – MJ D.I. Standard. . . . .	20” x 20”	B 4.2
075-07205	Cross – MJ D.I. Standard. . . . .	20” x 12”	B 4.2
075-07206	Cross – MJ D.I. Standard. . . . .	20” x 6”	B 4.2
075-07208	Cross – MJ D.I. Standard. . . . .	20” x 8”	B 4.2
075-07216	Cross – MJ D.I. Standard. . . . .	20” x 16”	B 4.2
075-07240	Cross – MJ D.I. Standard. . . . .	24” x 10”	B 4.2
075-07242	Cross – MJ D.I. Standard. . . . .	24” x 12”	B 4.2
075-07244	Cross – MJ D.I. Standard. . . . .	24” x 24”	B 4.2
075-07246	Cross – MJ D.I. Standard. . . . .	24” x 6”	B 4.2
075-07248	Cross – MJ D.I. Standard. . . . .	24” x 8”	B 4.2
075-07416	Cross – MJ D.I. Standard. . . . .	24” x 16”	B 4.2
075-07420NS	Cross – MJ D.I. Standard. . . . .	24” x 20”	B 4.2
075-07424NS	Cross – MJ D.I. Standard. . . . .	24” x 24”	B 4.2
075-07520	Cross – MJ D.I. Standard. . . . .	30” x 20”	B 4.3
075-07524	Cross – MJ D.I. Standard. . . . .	30” x 24”	B 4.3
075-09000	Ell – Brass (FIPT x FIPT). . . . .	¾”	G 2.1
075-09001	Ell – Brass (FIPT x FIPT). . . . .	1”	G 2.1
076-01002	Ell – Brass (FIPT x FIPT). . . . .	2”	G 2.1
076-01032	Ell – Brass (FIPT x FIPT). . . . .	1 ½ “	G 2.1

Item Id. #	Description	Size	Page #
076-01034	Ell – Brass (FIPT x FIPT). . . . .	¾”	G 2.2
076-01054	Ell – Brass (FIPT x FIPT). . . . .	1 ¼”	G 2.1
076-03021	Ell – Brass Reducing. . . . .	2” x 1”	G 2.4
076-03052	Ell – Brass Reducing. . . . .	1 ½” x 1”	G 2.4
076-03072	Ell – Brass Reducing. . . . .	2” x 1 ½”	G 2.4
076-03074	Ell – Brass Reducing. . . . .	1” x ¾”	G 2.4
076-03084	Ell – Brass Reducing. . . . .	1¼” X ¾”	G 2.4
076-03094	Ell – Brass Reducing. . . . .	1 ¼” X 1”	G 2.4
076-03098	Ell – Brass Reducing. . . . .	1½”X ¾”	G 2.4
076-03114	Ell – Brass Reducing. . . . .	1½” X 1¼”	G 2.4
076-03134	Ell – Brass Reducing. . . . .	2” X 1 ¼”	G 2.4
076-03234	Ell – Brass Reducing. . . . .	2” X ¾”	G 2.4
076-05002	Ell – PVC . . . . .	2”	B 1.4
076-05012	Ell – PVC – Restrained Joint. . . . .	2”	B 1.5
076-07003	Ell – D.I. Flanged . . . . .	3”	B 1.3
076-07004	Ell – D.I. Flanged . . . . .	4”	B 1.3
076-07006	Ell – D.I. Flanged . . . . .	6”	B 1.3
076-07008	Ell – D.I. Flanged . . . . .	8”	B 1.3
076-07010	Ell – D.I. Flanged . . . . .	10”	B 1.3
076-07012	Ell – D.I. Flanged . . . . .	12”	B 1.3
076-07143	Ell – D.I. Flanged Reducing. . . . .	4’ x 3”	B 1.3a
076-08001	Ell – Brass Street. . . . .	1”	G 2.3
076-08002	Ell – Brass Street. . . . .	2”	G 2.3
076-08032	Ell – Brass Street. . . . .	1 ½”	G 2.3
076-08034	Ell – Brass Street. . . . .	¾”	G 2.3
076-08054	Ell – Brass Street. . . . .	1 ¼”	G 2.3
076-08504	Ell – MJ D.I. “Compact”. . . . .	4”	B 1.1
076-08506	Ell – MJ D.I. “Compact”. . . . .	6”	B 1.1
076-08508	Ell – MJ D.I. “Compact”. . . . .	8”	B 1.1
076-08510	Ell – MJ D.I. “Compact”. . . . .	10”	B 1.1
076-08512	Ell – MJ D.I. “Compact”. . . . .	12”	B 1.1
076-08516NS	Ell – MJ D.I. “Compact”. . . . .	16”	B 1.1
076-08520NS	Ell – MJ D.I. “Compact”. . . . .	20”	B 1.1
076-08524NS	Ell – MJ D.I. “Compact”. . . . .	24”	B 1.1
076-09014	Ell – MJ D.I. Standard. . . . .	14”	B 1.2
076-09016	Ell – MJ D.I. Standard. . . . .	16”	B 1.2
076-09020	Ell – MJ D.I. Standard. . . . .	20”	B 1.2
076-09024	Ell – MJ D.I. Standard. . . . .	24”	B 1.2

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
077-01130	Nipple – Brass. . . . .	¾” x 3”	G 7.2
077-01135	Nipple – Brass. . . . .	¾” x ¾”	G 7.2
077-01145	Nipple – Brass. . . . .	¾” x 4 ½”	G 7.2
077-01150	Nipple – Brass. . . . .	¾” x 5”	G 7.2
077-01155	Nipple – Brass. . . . .	¾” x 5 ½”	G 7.2
077-01160	Nipple – Brass. . . . .	¾” x 6”	G 7.2
077-01325	Nipple – Brass. . . . .	1” x 2 ½”	G 7.3
077-01330	Nipple – Brass. . . . .	1” x 3”	G 7.3
077-01335	Nipple – Brass. . . . .	1” x 3 ½”	G 7.3
077-01340	Nipple – Brass. . . . .	1” x 4”	G 7.3
077-01345	Nipple – Brass. . . . .	1” x 4 ½”	G 7.3
077-01350	Nipple – Brass. . . . .	1” x 5”	G 7.3
077-01355	Nipple – Brass. . . . .	1” x 5 ½”	G 7.3
077-01360	Nipple – Brass. . . . .	1” x 6”	G 7.3
077-01500	Nipple – Brass Close . . . . .	1 ½”	G 7.4
077-01525	Nipple – Brass. . . . .	1 ¼” x 2 ½”	G 7.4
077-01530	Nipple – Brass. . . . .	1 ¼” x 3”	G 7.4
077-01535	Nipple – Brass. . . . .	1 ¼” x 3 ½”	G 7.4
077-01540	Nipple – Brass. . . . .	1 ¼” x 4”	G 7.4
077-01545	Nipple – Brass. . . . .	1¼”x 4 ½”	G 7.4
077-01550	Nipple – Brass. . . . .	1 ¼” x 5”	G 7.4
077-01555	Nipple – Brass. . . . .	1 ¼” x 5 ½”	G 7.4
077-01560	Nipple – Brass. . . . .	1 ¼” x 6”	G 7.4
077-01700	Nipple – Brass Close . . . . .	1 ½”	G 7.5
077-01730	Nipple – Brass. . . . .	1 ½” x 3”	G 7.5
077-01735	Nipple – Brass. . . . .	1½” x 3 ½”	G 7.5
077-01740	Nipple – Brass. . . . .	1 ½” x 4”	G 7.5
077-01745	Nipple – Brass. . . . .	1 ½” x 4 ½”	G 7.5
077-01750	Nipple – Brass. . . . .	1 ½” x 5”	G 7.5
077-01755	Nipple – Brass. . . . .	1 ½” x 5 ½”	G 7.5
077-01760	Nipple – Brass. . . . .	1 ½” x 6”	G 7.5
077-01900	Nipple – Brass Close . . . . .	2”	G 7.6

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
077-01930	Nipple – Brass. . . . .	2” x 3”	G 7.6
077-01935	Nipple – Brass. . . . .	2” x 3 ½”	G 7.6
077-01940	Nipple – Brass. . . . .	2” x 4”	G 7.6
077-01945	Nipple – Brass. . . . .	2” x 4 ½”	G 7.6
077-01950	Nipple – Brass. . . . .	2” x 5”	G 7.6
077-01955	Nipple – Brass. . . . .	2” x 5 ½”	G 7.6
077-01960	Nipple – Brass. . . . .	2” x 6”	G 7.6
077-02304	Nipple – Brass. . . . .	3” x 4”	B 5.1
077-02309	Nipple – Brass. . . . .	3” x 9”	B 5.1
077-03012	Nipple – PVC – Restrained Joint x PE . . . . .	2”	B 5.2
077-03212	Nipple – PVC – Restrained Joint x MIPT . . . . .	2”	B 5.3
077-05000	Nipple – Brass Close . . . . .	¾”	G 7.2
077-05001	Nipple – Brass Close . . . . .	1”	G 7.3
077-05002	Nipple – Brass . . . . .	¾” x 1 ½”	G 7.2
077-05004	Nipple – Brass . . . . .	¾” x 4”	G 7.2
077-05006	Nipple – Brass . . . . .	1” x 6”	G 7.3
077-05015	Nipple – Brass . . . . .	1 ½” x 2 ½”	G 7.5
077-05020	Nipple – Brass . . . . .	2” x 2 ½”	G 7.6
078-01001	Plug – Brass. . . . .	1”	G 12.2
078-01002	Plug – Brass. . . . .	2”	G 12.2
078-01075	Plug – Brass. . . . .	¾”	G 12.2
078-01125	Plug – Brass. . . . .	1 ¼”	G 12.2
078-01150	Plug – Brass. . . . .	1 ½”	G 12.2
078-02186	Gasket – Companion Flange . . . . .	3”	B 8.2
078-02187	Gasket – Companion Flange . . . . .	4”	B 8.2
078-02188	Gasket – Companion Flange . . . . .	6”	B 8.2
078-02189	Gasket – Companion Flange . . . . .	8”	B 8.2
078-02190	Gasket – Companion Flange . . . . .	10”	B 8.2
078-02191	Gasket – Drop In . . . . .	1½”	H 1.5
078-02192	Gasket – Drop In . . . . .	2”	H 1.5
078-02206	Companion Flange . . . . .	2” x 6”	B 8.1
078-02207	Reducing Flange . . . . .	2” x 7 ½”	B 11.1
078-02209	Reducing Flange . . . . .	2” x 9”	B 11.1
078-02307	Companion Flange . . . . .	3” x 7 ½”	B 8.1
078-02309	Reducing Flange . . . . .	3” x 9”	B 11.2
078-02311	Reducing Flange . . . . .	3” x 11”	B 11.2
078-02409	Companion Flange . . . . .	4” x 9”	B 8.1

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
078-02411	Reducing Flange . . . . .	4" x 11"	B 11.3
078-02611	Companion Flange . . . . .	6" x 11"	B 8.1
078-02768	Reducing Flange . . . . .	6" x 13? "	B 11.4
078-02813	Companion Flange . . . . .	8" x 13? "	B 8.1
078-02910	Companion Flange . . . . .	10" x 16"	B 8.1
078-03001	Plug – Brass . . . . .	1"	G 12.1
078-03075	Plug – Brass . . . . .	¾"	G 12.1
078-09033	Plug – MJ D.I. Standard (Tapped Plug) . . . .	3" x 2 ½"	B 13.1
078-09042	Plug – MJ D.I. Standard (Tapped Plug) . . . .	4" x 2"	B 13.1
078-09062	Plug – MJ D.I. Standard (Tapped Plug) . . . .	6" x 2"	B 13.1
078-09082	Plug – MJ D.I. Standard (Tapped Plug) . . . .	8" x 2"	B 13.1
078-09102	Plug – MJ D.I. Standard (Tapped Plug) . . . .	10" x 2"	B 13.1
078-09122	Plug – MJ D.I. Standard (Tapped Plug) . . . .	12" x 2"	B 13.1
078-09162	Plug – MJ D.I. Standard (Tapped Plug) . . . .	16" x 2"	B 13.1
078-09202	Plug – MJ D.I. Standard (Tapped Plug) . . . .	20" x 2"	B 13.1
078-09242	Plug – MJ D.I. Standard (Tapped Plug) . . . .	24" x 2"	B 13.1
078-09302	Plug – MJ D.I. Standard (Tapped Plug) . . . .	30" x 2"	B 13.1
079-01043	Reducer – MJ x MJ D.I. "Compact" . . . . .	4" x 3"	B 10.1
079-01064	Reducer – MJ x MJ D.I. "Compact" . . . . .	6" x 4"	B 10.1
079-01084	Reducer – MJ x MJ D.I. "Compact" . . . . .	8" x 4"	B 10.1
079-01086	Reducer – MJ x MJ D.I. "Compact" . . . . .	8" x 6"	B 10.1
079-01106	Reducer – MJ x MJ D.I. "Compact" . . . . .	10" x 6"	B 10.1
079-01108	Reducer – MJ x MJ D.I. "Compact" . . . . .	10" x 8"	B 10.1
079-01126	Reducer – MJ x MJ D.I. "Compact" . . . . .	12" x 6"	B 10.1
079-01128	Reducer – MJ x MJ D.I. "Compact" . . . . .	12" x 8"	B 10.1
079-01129	Reducer – MJ x MJ D.I. "Compact" . . . . .	12" x 10"	B 10.1
079-03043	Reducer – Small End MJ D.I. Standard . . . . .	4" x 3"	B 10.2
079-03064	Reducer – Small End MJ D.I. Standard . . . . .	6" x 4"	B 10.2
079-03084	Reducer – Small End MJ D.I. Standard . . . . .	8" x 4"	B 10.2
079-03086	Reducer – Small End MJ D.I. Standard . . . . .	8" x 6"	B 10.2
079-03106	Reducer – Small End MJ D.I. Standard . . . . .	10" x 6"	B 10.2
079-03108	Reducer – Small End MJ D.I. Standard . . . . .	10" x 8"	B 10.2
079-03120	Reducer – Small End MJ D.I. Standard . . . . .	12" x 6"	B 10.2
079-03126	Reducer – Small End MJ D.I. Standard . . . . .	12" x 8"	B 10.2
079-03128	Reducer – Small End MJ D.I. Standard . . . . .	12" x 10"	B 10.2
079-03142	Reducer – Small End MJ D.I. Standard . . . . .	14" x 12"	B 10.3
079-03160	Reducer – Small End MJ D.I. Standard . . . . .	16" x 10"	B 10.3

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
079-03162	Reducer – Small End MJ D.I. Standard . . .	16” x 12”	B 10.3
079-03164	Reducer – Small End MJ D.I. Standard . . .	16” x 14”	B 10.3
079-03166	Reducer – Small End MJ D.I. Standard . . .	16” x 6”	B 10.3
079-03168	Reducer – Small End MJ D.I. Standard . . .	16” x 8”	B 10.3
079-03200	Reducer – Small End MJ D.I. Standard . . .	20” x 10”	B 10.3
079-03202	Reducer – Small End MJ D.I. Standard . . .	20” x 12”	B 10.3
079-03206	Reducer – Small End MJ D.I. Standard . . .	20” x 16”	B 10.3
079-03240	Reducer – Small End MJ D.I. Standard . . .	24” x 20”	B 10.3
079-03242	Reducer – Small End MJ D.I. Standard . . .	24” x 12”	B 10.3
079-03246	Reducer – Small End MJ D.I. Standard . . .	24” x 16”	B 10.3
079-03302	Reducer – Small End MJ D.I. Standard . . .	30” x 20”	B 10.3
079-03304	Reducer – Small End MJ D.I. Standard . . .	30” x 24”	B 10.3
079-04043	Spool Piece – DI Flanged End . . . . .	4” x 3”	B 10.5
079-04064	Spool Piece – DI Flanged End . . . . .	6” x 4”	B 10.6
079-04086	Reducer – D.I. Flanged . . . . .	8” x 6”	B 10.4
079-04108	Reducer – D.I. Flanged . . . . .	10” x 8”	B 10.4
079-04101	Reducer – D.I. Flanged . . . . .	12” X 10”	B 10.4
080-04901	Sleeve – Copper to Galvanized . . . . .	1”	*
080-04902	Sleeve – Copper to Galvanized . . . . .	2”	*
080-04925	Sleeve – Copper to Galvanized . . . . .	1 ¼”	*
080-04934	Sleeve – Copper to Galvanized . . . . .	¾”	*
080-04950	Sleeve – Copper to Galvanized . . . . .	1 ½”	*
080-05004	Sleeve – MJ D.I. “Compact” . . . . .	4” x 12”	B 6.1
080-05006	Sleeve – MJ D.I. “Compact” . . . . .	6” x 12”	B 6.1
080-05008	Sleeve – MJ D.I. “Compact” . . . . .	8” x 12”	B 6.1
080-05010	Sleeve – MJ D.I. “Compact” . . . . .	10” x 12”	B 6.1
080-05012	Sleeve – MJ D.I. “Compact” . . . . .	12” x 12”	B 6.1
080-06003	Sleeve – MJ D.I. “Compact” . . . . .	3” x 12”	B 6.1
080-06014	Sleeve – MJ D.I. Standard . . . . .	14” x 12”	B 6.2
080-06016	Sleeve – MJ D.I. Standard . . . . .	16” x 15”	B 6.2
080-06018	Sleeve – MJ D.I. Standard . . . . .	18” x 15”	B 6.2
080-06020	Sleeve – MJ D.I. Standard . . . . .	20” x 15”	B 6.2
080-06024	Sleeve – MJ D.I. Standard . . . . .	24” x 15”	B 6.2
080-06030	Sleeve – MJ D.I. Standard . . . . .	30” x 15”	B 6.2
080-06036	Sleeve – MJ D.I. Standard . . . . .	36” x 15”	B 6.2
080-09664	Tapping Sleeve – Split . . . . .	6” x 4”	E 1.1
080-09666	Tapping Sleeve – Split . . . . .	6” x 6”	E 1.1
080-09684	Tapping Sleeve – Split . . . . .	8” x 4”	E 1.2



<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
080-09686	Tapping Sleeve – Split . . . . .	8” x 6”	E 1.2
080-09688	Tapping Sleeve – Split . . . . .	8” x 8”	E 1.2
080-09704	Tapping Sleeve – Split . . . . .	10” x 4”	E 1.3
080-09706	Tapping Sleeve – Split . . . . .	10” x 6”	E 1.3
080-09708	Tapping Sleeve – Split . . . . .	10” x 8”	E 1.3
080-09710	Tapping Sleeve – Split . . . . .	10” x 10”	E 1.3
080-09720	Tapping Sleeve – Split . . . . .	12” x 10”	E 1.4
080-09722	Tapping Sleeve – Split . . . . .	12” x 12”	E 1.4
080-09724	Tapping Sleeve – Split . . . . .	12” x 4”	E 1.4
080-09726	Tapping Sleeve – Split . . . . .	12” x 6”	E 1.4
080-09728	Tapping Sleeve – Split . . . . .	12” x 8”	E 1.4
080-09740	Tapping Sleeve – Split . . . . .	14” x 10”	E 1.5
080-09742	Tapping Sleeve – Split . . . . .	14” x 12”	E 1.5
080-09744	Tapping Sleeve – Split . . . . .	14” x 4”	E 1.5
080-09746	Tapping Sleeve – Split . . . . .	14” x 6”	E 1.5
080-09748	Tapping Sleeve – Split . . . . .	14” x 8”	E 1.5
080-09760	Tapping Sleeve – Split . . . . .	16” x 10”	E 1.6
080-09762	Tapping Sleeve – Split . . . . .	16” x 12”	E 1.6
080-09764	Tapping Sleeve – Split . . . . .	16” x 4”	E 1.6
080-09766	Tapping Sleeve – Split . . . . .	16” x 6”	E 1.6
080-09768	Tapping Sleeve – Split . . . . .	16” x 8”	E 1.6
080-09800	Tapping Sleeve – Split . . . . .	20” x 10”	E 1.7
080-09802	Tapping Sleeve – Split . . . . .	20” x 12”	E 1.7
080-09806	Tapping Sleeve – Split . . . . .	20” x 6”	E 1.7
080-09808	Tapping Sleeve – Split . . . . .	20” x 8”	E 1.7
080-09842	Tapping Sleeve – Split . . . . .	24” x 12”	E 1.8
080-09846	Tapping Sleeve – Split . . . . .	24” x 6”	E 1.8
080-09848	Tapping Sleeve – Split . . . . .	24” x 8”	E 1.8
080-09906	Tapping Sleeve – Split . . . . .	30” x 6”	E 1.9
081-01000	Insert – For CTS HDPE . . . . .	¾”	G 18.1
081-01001	Insert – For CTS HDPE . . . . .	1”	G 18.1
081-01002	Insert – For CTS HDPE . . . . .	2”	G 18.1
081-01004	Insert – For CTS HDPE . . . . .	4”	G 18.1
082-01002	Tee – Brass. . . . .	2”	G 4.8
082-01125	Tee – Brass . . . . .	1 ¼”	G 4.8
082-01135	Tee – Brass . . . . .	1 ¼” x ¾”	G 4.8

Item Id. #	Description	Size	Page #
082-01145	Tee – Brass. . . . .	1 ½” x 1 ¼”	G 4.8
082-01150	Tee – Brass. . . . .	1 ½”	G 4.8
082-01151	Tee – Brass. . . . .	1 ½” x 1”	G 4.8
082-01175	Tee – Brass. . . . .	1 ½” x ¾”	G 4.8
082-01201	Tee – Brass. . . . .	2” x 1”	G 4.8
082-01210	Tee – Brass. . . . .	2” x 1 ½”	G 4.8
082-01215	Tee – Brass. . . . .	2” x 1 ¼”	G 4.8
082-01234	Tee – Brass. . . . .	2” x ¾”	G 4.8
082-01332	Tee – Brass. . . . .	3” x 2”	B 3.9
082-01550	Tee – Brass Service Fitting (FIPT) . . . . .	¾” x ¾” x ¾”	G 4.5
082-01555	Tee – Brass Service Fitting (FIPT) . . . . .	1” x 1” x 1”	G 4.5
082-01560	Tee – Brass Service Fitting (FIPT) . . . . .	1” x 1” x ¾”	G 4.5
082-01565	Tee – Brass Service Fitting (FIPT) . . . . .	2” x 2” x 2”	G 4.5
082-01601	Tee – Brass Service Fitting (Comp.) . . . . .	¾” x ¾” x 1”	G 4.1
082-01602	Tee – Brass Service Fitting (Comp.) . . . . .	¾” x ¾” x ¾”	G 4.1
082-01605	Tee – Brass Service Fitting (Comp.) . . . . .	2” x 2” x 2”	G 4.2
082-01606	Tee – Brass Service Fitting (Comp. x Comp. x FIPT) . . . . .	2” x 2” x ¾”	G 4.3
082-01607	Tee – Brass Service Fitting (Comp. x Comp. x FIPT) . . . . .	2” x 2” x 1”	G 4.3
082-01608	Tee – Brass Service Fitting (Comp. x Comp. x CC) . . . . .	2” x 2” x ¾”	G 4.4
082-01609	Tee – Brass Service Fitting (Comp. x Comp. x CC) . . . . .	2” x 2” x 1”	G 4.4
082-01734	Y Branch Service Fitting (Comp.) . . . . .	¾” x ¾” x 1”	G 5.1
082-05002	Tee – PVC w/Gasketed Ends . . . . .	2”	B 3.10
082-05012	Tee – PVC – Restrained Joint . . . . .	2”	B 3.11
082-06004	Tee – MJ D.I. “Compact” . . . . .	4”	B 3.1
082-06006	Tee – MJ D.I. “Compact” . . . . .	6”	B 3.1
082-06008	Tee – MJ D.I. “Compact” . . . . .	8”	B 3.1
082-06010	Tee – MJ D.I. “Compact” . . . . .	10”	B 3.1
082-06012	Tee – MJ D.I. “Compact” . . . . .	12”	B 3.1
082-06064	Tee – MJ D.I. “Compact” . . . . .	6” x 4”	B 3.1
082-06084	Tee – MJ D.I. “Compact” . . . . .	8” x 4”	B 3.1
082-06086	Tee – MJ D.I. “Compact” . . . . .	8” x 6”	B 3.1
082-06104	Tee – MJ D.I. “Compact” . . . . .	10” x 4”	B 3.1
082-06106	Tee – MJ D.I. “Compact” . . . . .	10” x 6”	B 3.1
082-06108	Tee – MJ D.I. “Compact” . . . . .	10” x 8”	B 3.1
082-06124	Tee – MJ D.I. “Compact” . . . . .	12” x 4”	B 3.1
082-06126	Tee – MJ D.I. “Compact” . . . . .	12” x 6”	B 3.1
082-06128	Tee – MJ D.I. “Compact” . . . . .	12” x 8”	B 3.1

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
082-06129	Tee – MJ D.I. “Compact” . . . . .	12” x 10”	B 3.1
082-07004	Tee – MJ D.I. Standard . . . . .	4”	B 3.2
082-07006	Tee – MJ D.I. Standard . . . . .	6”	B 3.2
082-07008	Tee – MJ D.I. Standard . . . . .	8”	B 3.2
082-07010	Tee – MJ D.I. Standard . . . . .	10”	B 3.2
082-07012	Tee – MJ D.I. Standard . . . . .	12”	B 3.2
082-07014	Tee – MJ D.I. Standard . . . . .	14”	B 3.3
082-07016	Tee – MJ D.I. Standard . . . . .	16”	B 3.4
082-07020	Tee – MJ D.I. Standard . . . . .	20”	B 3.5
082-07024	Tee – MJ D.I. Standard . . . . .	24”	B 3.6
082-07030	Tee – MJ D.I. Standard . . . . .	30”	B 3.7
082-07064	Tee – MJ D.I. Standard . . . . .	6” x 4”	B 3.2
082-07084	Tee – MJ D.I. Standard . . . . .	8” x 4”	B 3.2
082-07086	Tee – MJ D.I. Standard . . . . .	8” x 6”	B 3.2
082-07104	Tee – MJ D.I. Standard . . . . .	10” x 4”	B 3.2
082-07106	Tee – MJ D.I. Standard . . . . .	10” x 6”	B 3.2
082-07108	Tee – MJ D.I. Standard . . . . .	10” x 8”	B 3.2
082-07120	Tee – MJ D.I. Standard . . . . .	12” x 10”	B 3.2
082-07124	Tee – MJ D.I. Standard . . . . .	12” x 4”	B 3.2
082-07126	Tee – MJ D.I. Standard . . . . .	12” x 6”	B 3.2
082-07128	Tee – MJ D.I. Standard . . . . .	12” x 8”	B 3.2
082-07142	Tee – MJ D.I. Standard . . . . .	14” x 12”	B 3.3
082-07160	Tee – MJ D.I. Standard . . . . .	16” x 10”	B 3.4
082-07162	Tee – MJ D.I. Standard . . . . .	16” x 12”	B 3.4
082-07164NS	Tee – MJ D.I. Standard . . . . .	16” x 4”	B 3.4
082-07166	Tee – MJ D.I. Standard . . . . .	16” x 6”	B 3.4
082-07168	Tee – MJ D.I. Standard . . . . .	16” x 8”	B 3.4
082-07206	Tee – MJ D.I. Standard . . . . .	20” x 6”	B 3.5
082-07208	Tee – MJ D.I. Standard . . . . .	20” x 8”	B 3.5
082-07210	Tee – MJ D.I. Standard . . . . .	20” x 10”	B 3.5
082-07212	Tee – MJ D.I. Standard . . . . .	20” x 12”	B 3.5
082-07216	Tee – MJ D.I. Standard . . . . .	20” x 16”	B 3.5
082-07240	Tee – MJ D.I. Standard . . . . .	24” x 20”	B 3.6
082-07242	Tee – MJ D.I. Standard . . . . .	24” x 12”	B 3.6
082-07246	Tee – MJ D.I. Standard . . . . .	24” x 6”	B 3.6
082-07248	Tee – MJ D.I. Standard . . . . .	24” x 8”	B 3.6
082-07250	Tee – MJ D.I. Standard . . . . .	24” x 10”	B 3.6
082-07320NS	Tee – MJ D.I. Standard . . . . .	30” x 20”	B 3.7

Item Id. #	Description	Size	Page #
082-07324NS	Tee – MJ D.I. Standard . . . . .	30" x 24"	B 3.7
082-07416	Tee – MJ D.I. Standard . . . . .	24" x 16"	B 3.6
082-08004	Tee – D.I. Flanged . . . . .	4"	B 3.8
082-08006	Tee – D.I. Flanged . . . . .	6"	B 3.8
082-08008	Tee – D.I. Flanged . . . . .	8"	B 3.8
082-08064	Tee – D.I. Flanged . . . . .	6" x 4"	B 3.8
082-08084	Tee – D.I. Flanged . . . . .	8" x 4"	B 3.8
082-08104	Tee – D.I. Flanged . . . . .	10" x 4"	B 3.8
082-08108	Tee – D.I. Flanged . . . . .	10" x 8"	B 3.8
082-08124	Tee – D.I. Flanged . . . . .	12" x 4"	B 3.8
083-00406NS	Offset – MJ x MJ D.I. . . . .	4" x 6"	B 9.1
083-00412NS	Offset – MJ x MJ D.I. . . . .	4" x 12"	B 9.1
083-00418NS	Offset – MJ x MJ D.I. . . . .	4" x 18"	B 9.1
083-00424NS	Offset – MJ x MJ D.I. . . . .	4" x 24"	B 9.1
083-00606	Offset – MJ x MJ D.I. . . . .	6" x 6"	B 9.2
083-00612	Offset – MJ x MJ D.I. . . . .	6" x 12"	B 9.2
083-00618	Offset – MJ x MJ D.I. . . . .	6" x 18"	B 9.2
083-00624	Offset – MJ x MJ D.I. . . . .	6" x 24"	B 9.2
083-00806	Offset – MJ x MJ D.I. . . . .	8" x 6"	B 9.3
083-00812	Offset – MJ x MJ D.I. . . . .	8" x 12"	B 9.3
083-00818	Offset – MJ x MJ D.I. . . . .	8" x 18"	B 9.3
083-00824	Offset – MJ x MJ D.I. . . . .	8" x 24"	B 9.3
083-01006	Offset – MJ x MJ D.I. . . . .	10" x 6"	B 9.4
083-01012	Offset – MJ x MJ D.I. . . . .	10" x 12"	B 9.4
083-01018	Offset – MJ x MJ D.I. . . . .	10" x 18"	B 9.4
083-01024	Offset – MJ x MJ D.I. . . . .	10" x 24"	B 9.4
083-01206	Offset – MJ x MJ D.I. . . . .	12" x 6"	B 9.5
083-01212	Offset – MJ x MJ D.I. . . . .	12" x 12"	B 9.5
083-01218	Offset – MJ x MJ D.I. . . . .	12" x 18"	B 9.5
083-01224	Offset – MJ x MJ D.I. . . . .	12" x 24"	B 9.5
083-01612	Offset – MJ x MJ D.I. . . . .	16" x 12"	B 9.6
083-01618	Offset – MJ x MJ D.I. . . . .	16" x 18"	B 9.6
086-01050	Bushing – Brass . . . . .	¾" x ½"	G 11.2
086-01150	Bushing – Brass . . . . .	1" x ½"	G 11.2
086-01175	Bushing – Brass . . . . .	1" x ¾"	G 11.2
086-01210	Bushing – Brass . . . . .	1 ¼" x 1"	G 11.2
086-01275	Bushing – Brass . . . . .	1 ¼" x ¾"	G 11.2
086-01310	Bushing – Brass . . . . .	1 ½" x 1"	G 11.2

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
086-01325	Bushing – Brass . . . . .	1 ½” x 1 ¼”	G 11.2
086-01375	Bushing – Brass . . . . .	1 ½” x ¾”	G 11.2
086-01410	Bushing – Brass . . . . .	2” x 1”	G 11.2
086-01425	Bushing – Brass . . . . .	2” x 1 ¼”	G 11.2
086-01450	Bushing – Brass . . . . .	2” x 1 ½”	G 11.2
086-01475	Bushing – Brass . . . . .	2” x ¾”	G 11.2
087-40556	Nipple – PVC . . . . .	2” x 6”	G 7.1
087-40456	Nipple – PVC . . . . .	1 ½” x 6”	G 7.1
088-01215NS	Corporation Stop Ball Valve (MIPT x MIPT) . . . . .	1 ½”	G 13.4
088-01220NS	Corporation Stop Ball Valve (MIPT x MIPT) . . . . .	2”	G 13.4
088-01310	Corporation Stop (CC x Comp.) . . . . .	1”	G 13.1
088-01315	Corporation Stop (MIPT x FIPT) . . . . .	1 ½”	G 13.3
088-01320	Corporation Stop (MIPT x FIPT) . . . . .	2”	G 13.3
088-01375	Corporation Stop (CC x Comp.) . . . . .	¾”	G 13.1
088-01400	Coupling – Straight - Corp Stop (LD x CU) . . . . .	¾”	G 8.8
088-01450	Coupling – Straight - Corp Stop (LD x CU) . . . . .	1”	G 8.8
088-01500	Coupling – Ell – Corporation Stop (LD x CU) . . . . .	¾”	G 9.7a
088-01590	Coupling – Ell – Corporation Stop (LD x CU) . . . . .	1”	G 9.7a
090-01001	Curb Stop (FIPT x FIPT) . . . . .	1”	G 15.2
090-01075	Curb Stop (FIPT x FIPT) . . . . .	¾”	G 15.2
090-01110	Curb Stop (FIPT x FIPT) . . . . .	1”	G 15.3
090-01175	Curb Stop (FIPT x FIPT) . . . . .	¾”	G 15.3
090-01210	Curb Stop (Pack Joint x FIPT) . . . . .	1”	G 15.1
090-01275	Curb Stop (Pack Joint x FIPT) . . . . .	? ”	G 15.1
090-02110	Curb Stop – Angle Ball (Copper x FIPT) . . . . .	1”	G 15.5
090-02134	Curb Stop – Angle Ball (Copper x FIPT) . . . . .	¾”	G 15.5
090-02210	Curb Stop – Angle Ball (Comp. x FIPT) . . . . .	1”	G 15.4
090-02234	Curb Stop – Angle Ball (Comp. x FIPT) . . . . .	¾”	G 15.4
090-03015	Meter Valve – Flanged Ball (FIPT x FLG) . . . . .	1 ½”	G 16.2
090-03020	Meter Valve – Flanged Ball (FIPT x FLG) . . . . .	2”	G 16.2
090-03025	Meter Valve – Flanged Ball (Comp. x FLG) . . . . .	2”	G 16.3
090-03030	Meter Valve – Flanged Ball Angle (Comp. X FLG) . . . . .	2”	G 16.4
092-01001	Meter Box w/Cover – CI (Oval) . . . . .	Standard	H 2.11
092-01002	Meter Box w/Cover – Plastic (Grnd. Inst.) . . . . .	Standard	H 2.1
092-01040	Meter Box w/Cover – Polymer Concrete . . . . .	Standard	H 2.15

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
092-01045	Meter Box w/Cover – Polymer Concrete . . .	Medium	H 2.16
092-01050	Meter Box w/Cover CI . . . . .	Medium	H 2.13
092-01051	Meter Box w/Cover – Plastic (Sidewalk Inst.) . . .	Standard	H 2.3
092-01052	Meter Box w/Cover – Plastic . . . . .	Medium	H 2.5
092-01053	Meter Box w/Cover – Plastic . . . . .	Large	H 2.9
092-01054	Meter Box w/Cover – Plastic (Spec. Irr.) . . .	Medium	H 2.7
092-02001	Meter Box Cover – Plastic (Grnd. Inst.) . . .	Standard	H 2.2
092-02002	Meter Box Cover – CI (Oval) . . . . .	Standard	H 2.10
092-02003	Meter Box Cover – Plastic (Sidewalk Inst.) . . .	Standard	H 2.4
092-02040	Meter Box Cover – Polymer Concrete . . .	Standard	H 2.15
092-02045	Meter Box Cover – Polymer Concrete . . .	Medium	H 2.16
092-02051	Meter Box Cover – CI . . . . .	Medium	H 2.14
092-02052	Meter Box Cover – Plastic . . . . .	Medium	H 2.6
092-02053	Meter Box Cover – Plastic . . . . .	Large	H 2.10
092-02054	Meter Box Cover – Plastic (Spec. Irr.) . . .	Medium	H 2.8
092-02055	Meter Box Cover – Plastic (Spec. Irr.) . . .	Medium	H 2.8
092-02056	Meter Box Cover – Plastic (Spec. Irr.) . . .	Medium	H 2.8
092-03000	Meter Vault – Std. . . . .	4' x 6'	H 3.1
092-05007	Meter Resetter – Copper for 5/8" x 3/4" Meter .	7"	G 17.1
092-05012	Meter Resetter – Copper for 5/8" x 3/4" Meter .	12"	G 17.1
092-05018	Meter Resetter – Copper for 5/8" x 3/4" Meter .	18"	G 17.1
092-06012	Meter Resetter – Copper for 1" Meter . . .	12"	G 17.2
092-06015	Meter Resetter – Copper for 1" Meter . . .	15"	G 17.2
092-06018	Meter Resetter – Copper for 1" Meter . . .	18"	G 17.2
093-01075	Union – 45° (Copper) . . . . .	5/8"	G 9.8
093-01076	Union – Ell (Copper) . . . . .	3/4"	G 9.7
093-01077	Union – 2 Part (Copper) . . . . .	3/4"	G 9.4
093-01080	Union – 45° (Copper x Comp.) . . . . .	3/4"	G 9.9
093-01087	Union – 2 Part (FIPT x Comp.) . . . . .	3/4"	G 9.3
093-01088	Union – 3 Part (Comp.) . . . . .	3/4"	G 9.1
093-01090	Union – Ell (Comp.) . . . . .	3/4"	G 9.6
093-01175	Union – 45° (Copper) . . . . .	1"	G 9.8
093-01176	Union – Ell (Copper) . . . . .	1"	G 9.7
093-01177	Union – 2 Part (Copper) . . . . .	1"	G 9.4
093-01180	Union – 45° (Copper x Comp.) . . . . .	1"	G 9.9
093-01187	Union – 2 Part (FIPT x Comp.) . . . . .	1"	G 9.3

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
093-01188	Union – 3 Part (Comp.) . . . . .	1”	G 9.1
093-01190	Union – Ell (Comp.) . . . . .	1”	G 9.6
093-01288	Union – 3 Part (Comp.) . . . . .	2”	G 9.1
093-01290	Union – Ell (Comp.) . . . . .	2”	G 9.6
093-02075	Union – Brass . . . . .	¾”	G 9.5
093-02100	Union – Brass . . . . .	1”	G 9.5
093-02125	Union – Brass . . . . .	1 ¼”	G 9.5
093-02150	Union – Brass . . . . .	1 ½”	G 9.5
093-02200	Union – Brass . . . . .	2”	G 9.5
093-11078	Straight Coupling (Copper x Compression)	¾”	G 9.2
093-11178	Straight Coupling (Copper x Compression)	1”	G 9.2
093-03202	Adapter – Male – PVC . . . . .	2”	B 15.6
095-01004	Extension Kit – Fire Hydrant – Mueller. . . . .	6”	D 1.3
095-01008	Extension Kit – Fire Hydrant – Clow . . . . .	6”	D 1.3
095-01010	Extension Kit – Fire Hydrant – US Pipe M94	6”	D 1.3
095-01012	Extension Kit – Fire Hydrant – US Pipe M250	6”	D 1.3
095-01104	Extension Kit – Fire Hydrant – Mueller. . . . .	12”	D 1.3
095-01108	Extension Kit – Fire Hydrant – Clow . . . . .	12”	D 1.3
095-01109	Extension Kit – Fire Hydrant – US Pipe M94	12”	D 1.4
095-01110	Extension Kit – Fire Hydrant – US Pipe M250	12”	D 1.4
095-01230	Fire Hydrant – Breakaway . . . . .	6” x 30”	D 1.1
095-01236	Fire Hydrant – Breakaway . . . . .	6” x 36”	D 1.1
095-01242	Fire Hydrant – Breakaway . . . . .	6” x 42”	D 1.1
095-01248	Fire Hydrant – Breakaway . . . . .	6” x 48”	D 1.1
095-01254	Fire Hydrant – Breakaway . . . . .	6” x 54”	D 1.1
095-01260	Fire Hydrant – Breakaway . . . . .	6” x 60”	D 1.1
095-01302	Repair Kit – Fire Hydrant Traffic – AFC . . . . .		D 1.2
095-01304	Repair Kit – Fire Hydrant Traffic – Clow . . . . .		D 1.2
095-01305	Repair Kit – Fire Hydrant Traffic – Clow 2500		D 1.2
095-01306	Repair Kit – Fire Hydrant Traffic – Kennedy . . . . .		D 1.2
095-01308	Repair Kit – Fire Hydrant Traffic – Mueller . . . . .		D 1.2
095-01310	Repair Kit – Fire Hydrant Traffic – M&H 929		D 1.2
095-01312	Repair Kit – Fire Hydrant Traffic US Pipe M94		D 1.2
096-00001	Coupling – Brass Meter . . . . .	2 5/8” x 1”	G 8.4
096-00002	Coupling – Brass Meter . . . . .	¾” x 2”	G 8.4
096-00003	Coupling – Brass Meter . . . . .	2 ½” x ¾”	G 8.4
096-00004	Coupling – Brass Meter . . . . .	3” x ¾”	G 8.4
096-00010	Washer – Red Fiber – 1/32” thick . . . . .	1”	*

<b>Item Id. #</b>	<b>Description</b>	<b>Size</b>	<b>Page #</b>
096-00011	Washer – Red Fiber – 1/16” thick . . . . .	1”	*
096-00012	Washer – Red Fiber – 1/32” thick . . . . .	3/4”	*
096-00013	Washer – Red Fiber – 1/16” thick . . . . .	3/4”	*
096-01001	Water Meter – PD (Exch.) – w/o coupling . . . . .	1”	H 1.2
096-01058	Water Meter – PD (Exch.) – w/o coupling . . . . .	5/8” x 3/4”	H 1.2
096-01101	Water Meter – PD (Exch.) – w/coupling . . . . .	1”	H 1.2
096-01158	Water Meter – PD (Exch.) – w/coupling . . . . .	5/8” x 3/4”	H 1.2
096-02001	Water Meter – PD (Const.) – w/o coupling . . . . .	1”	H 1.1
096-02002	Water Meter – PD (Exch.) – w/o coupling . . . . .	2”	H 1.3
096-02015	Water Meter – PD (Exch.) – w/o coupling . . . . .	1 1/2”	H 1.3
096-02058	Water Meter – PD (Const.) – w/o coupling . . . . .	5/8” x 3/4”	H 1.1
096-02101	Water Meter – PD (Const.) – w/coupling . . . . .	1”	H 1.1
096-02102	Water Meter – PD (Exch.) – w/coupling . . . . .	2”	H 1.3
096-02115	Water Meter – PD (Exch.) – w/coupling . . . . .	1 1/2”	H 1.3
096-02158	Water Meter – PD (Const.) – w/coupling . . . . .	5/8” x 3/4”	H 1.1
096-03002	Water Meter – Turbine – w/o strainer . . . . .	2”	H 1.4
096-03003	Water Meter – Turbine – w/o strainer . . . . .	3”	H 1.4
096-03004	Water Meter – Turbine – w/o strainer . . . . .	4”	H 1.4
096-03006	Water Meter – Turbine – w/o strainer . . . . .	6”	H 1.4
096-03008NS	Water Meter – Turbine – w/o strainer . . . . .	8”	H 1.4
096-03010NS	Water Meter – Turbine – w/o strainer . . . . .	10”	H 1.4
096-03102	Water Meter – Turbine – w/strainer . . . . .	2”	H 1.4
096-03103	Water Meter – Turbine – w/strainer . . . . .	3”	H 1.4
096-03104	Water Meter – Turbine – w/strainer . . . . .	4”	H 1.4
096-03106	Water Meter – Turbine – w/strainer . . . . .	6”	H 1.4
096-03204	Dual Range Fireline Meter – UL Approved . . . . .	4” x 1 1/2”	H 1.4a
096-03206	Dual Range Fireline Meter – UL Approved . . . . .	6” x 2”	H 1.4a
096-03208	Dual Range Fireline Meter – UL Approved . . . . .	8” x 2”	H 1.4b
096-03210	Dual Range Fireline Meter – UL Approved . . . . .	10” x 2”	H 1.4b



# Section A – Contents

## Pipe

<b>A 1.1</b>	Pipe – D.I. Comp. Joint – 4” (I.D.) thru 30” (I.D.)	<b>1/05</b>
<b>A 2.1</b>	Pipe – D.I. Flanged – 3” (I.D.) thru 10” (I.D.)	<b>1/05</b>
<b>A 4.1</b>	Pipe – PVC Comp. Joint (C900) – 4”	<b>6/97</b>
<b>A 5.1</b>	Pipe – PVC Comp. Joint (Class 200) – 2”	<b>5/99</b>
<b>A 6.1</b>	Pipe – Steel Casing – 4” thru 54”	<b>4/00</b>
<b>A 7.1</b>	Pipe – PVC – C900/RJ – 2” & 4”	<b>10/05</b>
<b>A 8.1</b>	Pipe – HDPE – ¾”, 1”, 2”	<b>5/07</b>
<b>Exhibit AA</b>	Pipe – Ductile Iron Compression Joint (Class 350)	<b>1/05</b>
<b>Exhibit BB</b>	Pipe – PVC Compression Joint (C900) with Rubber Gaskets	<b>6/97</b>
<b>Exhibit CC</b>	Pipe – PVC Compression Joint (Class 200) and Fittings	<b>6/97</b>

**Material Specifications**

**Pipe – D.I. Comp. Joint – 4” (I.D.) thru 30” (I.D.)**

AKA Slip Joint

**Material:**

Ductile iron pipe conforming to ANSI/AWWA C150/A21.50-96 and the latest revisions thereto.

**Design:**

Class 350 – size determined by inside diameter (I.D.) – 4” thru 24”.

Class 250 – size determined by inside diameter (I.D.) – 30” only.

**Connections:**

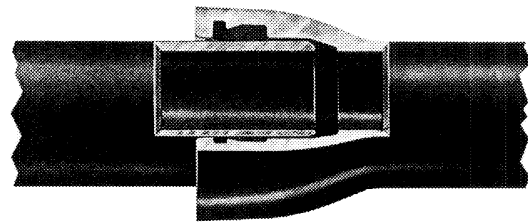
Compression joint

**Special Features:**

Must be furnished with gaskets and lubricant.

\* 4” through 8” must not exceed 18’ in length per piece.

See Exhibit AA (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
* 4”	056-01004	American C.I. Pipe	
* 6”	056-01006	U.S. Pipe and Fdry.	
* 8”	056-01008	Griffin Pipe Products	
10”	056-01010		
12”	056-01012		
14”	056-01014		
16”	056-01016		
20”	056-01020		
24”	056-01024		
30”	056-01030		
36”	056-01036		
42”	056-01042		

**Revision Date:** 4/01/08 (RNK)  
 1/14/05 (RNK)  
 12/12/00 (RNK)  
 9/27/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Pipe – D.I. Flanged – 3” (I.D.) thru 10” (I.D.)**

AKA

**Material:**

Ductile iron pipe conforming to ANSI/AWWA C115/A21.15-94 and the latest revisions thereto.

**Design:**

Class 53 – size determined by inside diameter (I.D.) – 3” thru 10”.

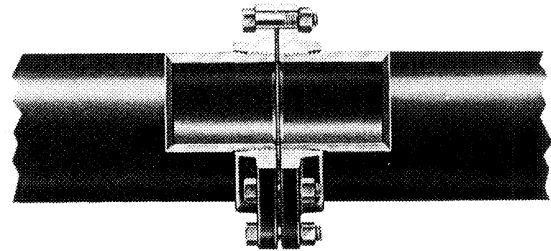
**Connections:**

Class 125 flange face on each end.

**Special Features:**

Must be delivered in 12 ft. lengths. Accessories (gasket, hex head machine bolts and nuts) must be included for each flanged end.

\* **4” through 8” must not exceed 18’ in length per piece.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
* 3”	055-06003	American C.I. Pipe	
* 4”	055-06004	U.S. Pipe and Fdry.	
* 6”	055-06006		
* 8”	055-06008		
10”	055-06010		

**Revision Date:** 4/01/08 (RNK)  
 1/14/05 (RNK)  
 9/27/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Pipe – D.I. Flanged – 3” (I.D.) thru 10” (I.D.)**

AKA

**Material:**

Ductile iron pipe conforming to ANSI/AWWA C115/A21.15-94 and the latest revisions thereto.

**Design:**

Class 53 – size determined by inside diameter (I.D.) – 3” thru 10”.

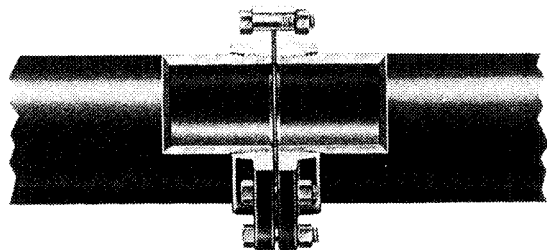
**Connections:**

Class 125 flange face on each end.

**Special Features:**

Must be delivered in 12 ft. lengths. Accessories (gasket, hex head machine bolts and nuts) must be included for each flanged end.

\* **4” through 8” must not exceed 18’ in length per piece.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
* 3”	055-06003	American C.I. Pipe	
* 4”	055-06004	McWane C.I. Pipe	
* 6”	055-06006	U.S. Pipe and Fdry.	
* 8”	055-06008		
10”	055-06010		

**Revision Date:** 1/14/05 (RNK)  
9/27/97 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

**Material Specifications**

**Pipe – PVC Comp. Joint (C900) – 4”**

AKA

**Material:**

Polyvinyl Chloride (PVC) SDR18 Class 150 pipe conforming to AWWA C900-97 and the latest revisions thereto.

**Design:**

Outside diameter (O.D.) dimensions must be 4” cast iron pipe equivalent (4.80”) O.D. with wall thickness DR Series 18.

**Connections:**

Compression joint with integral elastomeric-gasket bell end. No coupling end pipe allowed.

**Special Features:**

Color must be blue. Must be furnished with pipe lubricant. Must be in 20’ joints.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	051-03004	Can-Tex Ind. CertainTeed (1B) Clow Valve Diamond Plastics E.T.I. J.M. Mfg. North American Pipe Co. (NAPCO)	

**Revision Date:** 6/1/97 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

**Material Specifications**

**Pipe – PVC Comp. Joint (Class 200) – 2”**

AKA

**Material:**

Class 200, SDR21 IPS Polyvinyl Chloride (PVC) pipe.

**Design:**

Class 200 – Outside diameter (O.D.) 2.375” dimensions must be 2” galvanized Schedule 40 pipe. (Iron Pipe Size)

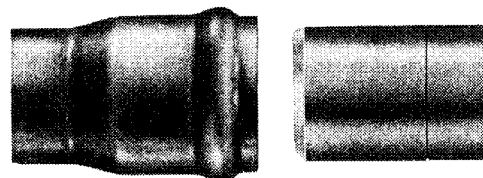
**Connections:**

Compression joint with integral elastomeric-gasket bell end. No coupling end pipe allowed.

**Special Features:**

Color must be blue. Must be furnished with pipe lubricant. Must be in 20’ joints.

See Exhibit CC



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	051-03002	Can-Tex Ind. Carlton Clow Valve Diamond Plastics Elson Thermoplastics J.M. Mfg. North American Pipe Co. (NAPCO)	

**Revision Date:** 5/14/99 (RNK)  
6/1/97 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

**Material Specifications**

**Pipe – Steel Casing – 12” thru 54”**

AKA

**Material:**

All pipe must be domestic structural steel, straight seam and suitable for boring and jacking purposes.

Steel must meet requirements of ASTM-853, Grade B.

**Design:**

Outside diameter (O.D.) and wall thickness (W.T.) must be clearly marked upon each joint of casing pipe.

O.D. (Size)	W.T. (OUC Std.)	Heavy Duty W.T. (RR Projects)
12"	0.250	0.250
16"	0.250	0.312
20"	0.312	0.375
24"	0.375	0.500
30"	0.375	0.500
36"	0.375	0.625
48"	0.500	0.625
54"	0.500	0.625



**Special Features:**

Must be furnished in 20'.00" sections only.

Size/Details	OUC Item ID	Manufacturer	Catalog Number
12"	051-06012	Bartow Steel	
16"	051-06016		
20"	051-06020		
24"	051-06024		
30"	051-06030		
36"	051-06036		
48"	Non-Stock		
54"	Non-Stock		

**Revision Date:** 4/20/00 (RNK)  
3/5/98 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

## Material Specifications

A 7.1

### Pipe, PVC – C900/RJ – 2” & 4”

**AKA** Aquamine, Certa-Lok, Yelomine

**Material:**

Polyvinyl Chloride (PVC) SDR 18 and 21 Class 200 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

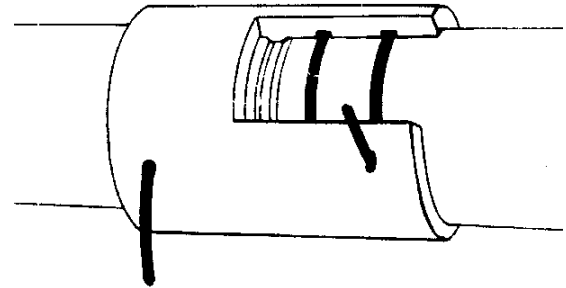
Outside diameter (O.D.) dimensions shall be 2.375” IPS, SDR 18 & 4.80” IPS, SDR 21 wall thickness in accordance with ASTM D2241.


**Connections:**

Restrained joint coupling end pipe using strong, flexible plastic restraining splines, with mating coupling incorporating integral elastomeric gaskets conforming with ASTM F477.

**Special Features:**

Blue color, 20’ lengths, **furnished with one double gasketed coupling and two splines.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	051-03012	CertainTeed Corp.	Certa-Lok Yelomine 2” - Pipe p/n 09225 4” – Pipe p/n 08425
4”	051-03014		
		Victaulic Co.	Aquamine Aqua Link Pipe p/n 290021725
<b>Revision Date:</b>	10/25/05 (RNK) 1/25/99 (DSW)	 <b>The <i>Reliable One</i></b> ®	
		Material Specifications Water Business Unit <b>ORLANDO UTILITIES</b> COMMISSION	



# Material Specifications

A 8.1

## Pipe, HDPE – 3/4”, 1”, 2”

AKA

**Material:**

High Density Polyethylene pipe, bi-modal design, meeting or exceeding PE 4710 (PE80) listed resins.

**Design:**

All service tubing must meet AWWA C901, or ASTM D2737NSF-14, SDOR9, CTS pipe with a minimum pressure rating of 200 PSI. Blue tubing to have a 5 year Florida UV Rating. Wall Thickness - 3/4” .097, 1” .128, 2” .236.

**Special Features:**

Blue color, 100’ lengths, furnished in coils with a 29-inch center. SODR 9



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4 ”	051-03134	ENDOT	
1”	051-03101		
2”	051-03102		

**Revision Date:** 5/31/07 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Exhibit AA

### Pipe – Ductile Iron Compression/Slip Joint (Class 350)

#### Specifications

#### Compression/Slip Joint Ductile Iron Pipe (Class 350), 4” (I.D.) thru 30” (I.D.)

Compression/slip joint ductile iron pipe is to be designed and manufactured in accordance with ANSI/AWWA C150/A21.50-96 and ANSI/AWWA C151/A21.51-96, and the latest revisions thereto, EXCEPT that the nominal laying lengths shall be with no trim pieces.

The following thicknesses and sizes for ductile iron pipe will be bid on per Table 14 of ANSI/AWWA C150/A21.50-96.

4"	18'	0.25"	350
6"	18'	0.25"	350
8"	18'	0.25"	350
10"	18' or 20'	0.26"	350
12"	18' or 20'	0.28"	350
16"	18' or 20'	0.34"	350
20"	18' or 20'	0.38"	350
24"	18' or 20'	0.43"	350
30"	18' or 20'	0.42"	250

Compression/slip joint type ductile iron pipe is to be furnished with gaskets conforming to ANSI/AWWA C111/A21.11-95 and lubricant. Restraint gaskets shall be bid separately.

Proprietary self-restraining gaskets shall be rated for 250 psi maximum working pressure and meet all material requirements of ANSI/AWWA C111/A21.11-95

The Orlando Utilities Commission will receive bids for their requirements of compression/slip joint ductile iron pipe (Class 350) 4” through 24” sizes, Class 250 30” pipe, and if available, proprietary self-restraining gaskets.

**Revision Date:** 1/14/05 (RNK)  
3/5/98 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

## Exhibit BB

Pipe – PVC Compression Joint (C900) with Rubber Gaskets

### Specifications

#### Compression Joint Polyvinyl Chloride Pipe (C900) – 4”

Compression joint polyvinyl chloride (PVC) SDR18 Class 150 pipe is to be designed and manufactured in accordance with AWWA C900-97 and the latest revisions thereto. Outside diameter (O.D.) dimensions must be 4” cast iron pipe equivalent (4.80”) O.D. with wall thickness DR Series 18. Pipe is to be extruded from clean virgin, approved Class 12454-A-PVC compound conforming to ASTM Resin Specification D1784. Color must be blue. Each pipe shall be 20’ in length and shall be furnished with an integral elastomeric-gasket bell end and one gasket to conform to ASTM D3139. No coupling end pipe allowed. Pipe lubricant must be included with delivery.

The Orlando Utilities Commission reserves the right to increase or decrease the number of feet of pipe purchased under this bid by twice the amount at the option of the Orlando Utilities Commission. The Orlando Utilities Commission will accept the bid as a total in order to expedite the shipment of pipe from one company.

The Orlando Utilities Commission reserves the right to reject any or all bids and re-advertise, and further reserves the right to decide for itself just which is the lowest and best bid. The Orlando Utilities Commission further reserves the right to decide for itself if the quoted material is an equal to the material for which specifications have been given.

Revision Date: 6/1/97 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

## Exhibit CC

Pipe – PVC Compression Joint (Class 200) and Fittings

### Specifications

#### **Compression Joint Polyvinyl Chloride Pipe (Class 200) – 2”**

Compression joint polyvinyl chloride (PVC) Class 200 SDR21 IPS pipe. Outside diameter (O.D.) dimensions must be 2.375” (same as 2” galvanized Schedule 40 pipe). Color must be blue. Each pipe shall be 20’ in length and shall be furnished with an integral elastomeric-gasket bell end and one gasket. No random lengths will be accepted. No coupling end pipe allowed. Pipe lubricant must be included with delivery.

#### **Polyvinyl Chloride Fittings – 2”**

Polyvinyl chloride (PVC) pipe fittings must meet ASTM Specification D3139; SDR17, 250 psi. All PVC pipe fittings must be equal to Bartech “Upp-Tite”. Ells, bends, and tees must be gasketed; male adapter must be MIPT to gasket. Compression couplings must be SDR21, 200 psi.

#### **Service Clamps for Class 200 PVC Pipe – 2”**

Service clamps used for 2” Class 200 PVC must be strapped for 2.375” O.D. The body and the strap shall both be 85-5-5-5 cast bronze; bolts and nuts shall be silicon bronze grade ASTM B98 or stainless steel. The gasket must be a grade 60 “O” ring or equal, cemented in place.

Revision Date: 6/1/97 (DSW)



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Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

## Section B – Contents

### Pipe Fittings and Accessories

<b>B 1.1</b>	Ell – MJ x MJ D.I. Compact – 4” thru 12”	10/04
<b>B 1.2</b>	Ell – MJ x MJ D.I. Standard – 14” thru 24”	10/04
<b>B 1.3</b>	Ell – D.I. Flanged – 3” thru 12”	10/04
<b>B 1.3a</b>	Ell – Reducing Flanged – 4” x 3”	10/04
<b>B 1.4</b>	Ell – PVC – 2” slip	5/99
<b>B 1.5</b>	Ell – PVC – C900/RJ – 2”	10/05
<b>B 1.6</b>	Bend – 45° PVC – C900/RJ – 2”	10/05
<b>B 1.7</b>	Tee – PVC – C900/RJ - 2”	10/05
<b>B 1.8</b>	Nipple – PVC – C900/RJ - R J x PE – 2”	10/05
<b>B 1.9</b>	Nipple – PVC – C900/RJ - R J x MIPT – 2”	10/05
<b>B 1.10</b>	Plug – PVC – C900/RJ – 2”	10/05
<b>B 1.11</b>	Coupling – PVC – C900/RJ – 2”	10/05
<b>B 1.12</b>	Coupling – PVC – C900/RJ - R J x Slip – 2”	10/05
<b>B 1.13</b>	Coupling – Transition – PVC – C900/RJ - 2”	10/05
<b>B 1.14</b>	Reducer – PVC – C900/RJ – 4” FM X 2” M	10/05
<b>B 2.1</b>	Bend – 45° MJ x MJ D.I. Compact – 4’ thru 12”	10/04
<b>B 2.2</b>	Bend – 45° MJ x MJ D.I. Standard – 16” thru 36”	10/04
<b>B 2.3</b>	Bend – 22 ½° MJ x MJ D.I. Compact – 4” thru 12”	10/04
<b>B 2.4</b>	Bend – 22 ½° MJ x MJ D.I. Standard 16” thru 36”	10/04
<b>B 2.5</b>	Bend – 11 ¼° MJ x MJ D.I. Compact – 4” thru 12”	10/04
<b>B 2.6</b>	Bend – 11 ¼° MJ x MJ D.I. Standard 16” thru 36”	10/04
<b>B 2.7</b>	Bend – 45° PVC – 2”	5/99
<b>B 3.1</b>	Tee – MJ x MJ D.I. Compact – 4” thru 12”	10/04
<b>B 3.3</b>	Tee – MJ D.I. Standard – 14”	10/04



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## Pipe Fittings and Accessories

<b>B 3.4</b>	Tee – MJ D.I. Standard – 16”	10/04
<b>B 3.5</b>	Tee – MJ D.I. Standard – 20”	10/04
<b>B 3.6</b>	Tee – MJ D.I. Standard – 24”	10/04
<b>B 3.7</b>	Tee – MJ D.I. Standard – 30”	10/04
<b>B 3.8</b>	Tee – D.I. Flanged – 4” thru 12”	10/04
<b>B 3.10</b>	Tee – PVC – w/Gasketed Ends – 2”	5/99
<b>B 4.1</b>	Cross – MJ D.I. Compact – 4” thru 12”	8/01
<b>B 4.2</b>	Cross – MJ D.I. Standard – 16” thru 24”	8/00
<b>B 4.3</b>	Cross – MJ D.I. Standard – 30”	8/00
<b>B 6.1</b>	Sleeve – MJ x MJ D.I. Compact – 3” x 3” thru 12”	8/01
<b>B 6.2</b>	Sleeve – MJ x MJ D.I. Standard – 14” thru 36”	8/01
<b>B 7.1</b>	Coupling – Combination DI (MJ to FLG) 4” thru 12”	3/01
<b>B 7.2</b>	Coupling – Combination DI (FLG to PE) 4” thru 12”	10/97
<b>B 7.3</b>	Spool Piece – D.I. Flanged	10/97
<b>B 7.8</b>	Coupling – PVC Comp. – 2”	5/99
<b>B 7.18</b>	Coupling – Universal – 4” thru 24”	5/04
<b>B 7.20</b>	Coupling – for IPS HPDE – 4”	9/98

## Section B – Contents (cont)

### Pipe Fittings and Accessories

<b>B 8.1</b>	Companion Flange – 2” thru 10”	<b>10/97</b>
<b>B 8.2</b>	Gasket – Companion Flange – 3” thru 10”	<b>5/99</b>
<b>B 9.1</b>	Offset – MJ x MJ D.I. – 4”	<b>3/01</b>
<b>B 9.2</b>	Offset – MJ x MJ D.I. – 6”	<b>3/01</b>
<b>B 9.2a</b>	Offset – swivel x swivel - 6” x 6” & 6” x 12”	<b>2/03</b>
<b>B 9.3</b>	Offset – MJ x MJ D.I. – 8”	<b>3/01</b>
<b>B 9.4</b>	Offset – MJ x MJ D.I. – 10”	<b>3/01</b>
<b>B 9.5</b>	Offset – MJ x MJ D.I. – 12”	<b>8/00</b>
<b>B 9.6</b>	Offset – MJ x MJ D.I. – 16”	<b>8/00</b>
<b>B 10.1</b>	Reducer – MJ x MJ D.I. “Compact” – 4” thru 12”	<b>8/00</b>
<b>B 10.2</b>	Reducer – MJ x MJ D.I. “Compact” – 14” thru 30”	<b>8/03</b>
<b>B 10.4</b>	Reducer – D.I. Flanged – 8”x 6”, 10”x8”, 12”x10”	<b>8/00</b>
<b>B 10.5</b>	Spool Piece – D.I. Flanged End 4” x 3”	<b>4/99</b>
<b>B 10.6</b>	Spool Piece – D.I. Flanged End 6” x 4”	<b>5/99</b>
<b>B 11.1</b>	Reducing Flange – 2”	<b>10/97</b>
<b>B 11.2</b>	Reducing Flange – 3”	<b>10/97</b>
<b>B 11.3</b>	Reducing Flange – 4”	<b>10/97</b>
<b>B 11.4</b>	Reducing Flange – 6”	<b>10/97</b>
<b>B 12.1</b>	Cap – MJ D.I. (Tapped Plug) – 4” thru 24”	<b>10/97</b>
<b>B 13.1</b>	Plug – MJ D.I. (Tapped Plug) – 3” thru 30”	<b>4/00</b>
<b>B 14.2</b>	Restrainer – Pipe Fitting – 4” thru 12”	<b>10/97</b>



The *Reliable One*®

## Section B – Contents (cont)

4

### Pipe Fittings and Accessories

<b>B14.3</b>	Restrainer – Bell Joint – 4” thru 12”	10/97
<b>B14.4</b>	MJ Restraint – Wedge Action – 4” thru 24”	6/98
<b>B 14.4A</b>	MJ Restraint Plastic – Wedge Action – 4” thru 8”	10/04
<b>B 14.5</b>	Restrainer Split Ring – Pipe Fitting – 2”	7/06
<b>B 15.1</b>	Flange Adapter – 4” thru 12”	8/01
<b>B 15.2</b>	Foster Adaptors – 4” thru 8”	8/01
<b>B15.6</b>	Adapter- Male – PVC – 2”	10/97
<b>B16.1</b>	Accessory Kit – MJ Pipe Fitting – 4” thru 12”	10/97
<b>B16.2</b>	Accessory Kit – MJ Pipe Fitting – 16” thru 24”	10/97
<b>B16.3</b>	Gasket – Field Lok® - 4” thru 24”	3/97
<b>B16.4</b>	Gasket - MJ Transition – 4” thru 12”	9/99
<b>B16.5</b>	O-Ring – Restrained Joint PVC – 2”	9/99
<b>B16.6</b>	Spline – Restrained Joint PVC – 2”	9/99
<b>B 16.7</b>	Insert – IPS HPDE – ¾”, 1”, 4”	4/08
<b>Exh DD</b>	MJ D.I. Compact Pipe Fittings (Class 350) and MJ D.I. Pipe Fittings (Class 350) and MJ D.I. Offsets (Class 350) and MJ D.I. Pipe Fitting Accessory Kits	2/02



The *Reliable One*®



**Material Specifications**

**EII – MJ x MJ D.I. “Compact” – 4” thru 12”**

**AKA**

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

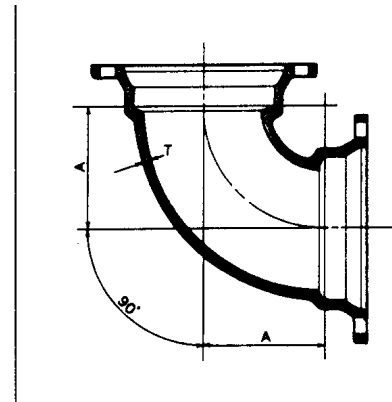
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less accessories.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	076-08504	Sigma (Russell Pipe)	
6"	076-08506	Tyler Pipe	
8"	076-08508	Star Pipe	
10"	076-08510	U.S. Pipe & Foundry	
12"	076-08512	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**EII – MJ x MJ D.I. Standard – 14” thru 24”**

AKA 90, 90° Bend

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

Class 350

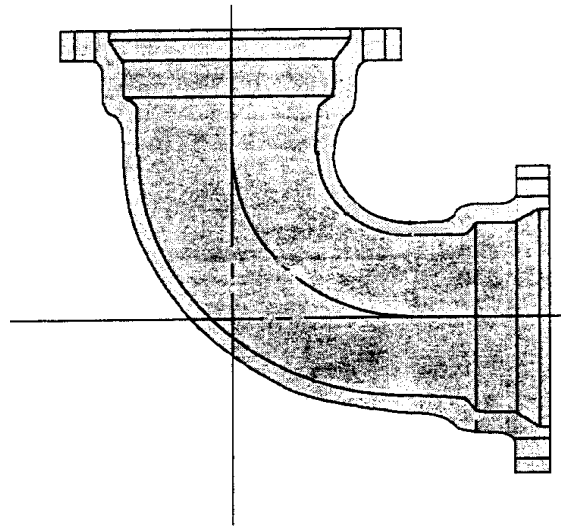
**Connections:**

Mechanical joint x mechanical joint

**Special Features:**

Less MJ accessory kit.

See Exhibit DD (ANNUAL BID)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
14"	076-09014	American C.I. Pipe	
16"	076-09016	Star Pipe	
20"	076-09020	Tyler Pipe	
24"	076-09024	U.S. Pipe & Foundry	
		Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 2/5/01 (RNK)  
 3/5/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**EII – D.I. Flanged – 3” thru 12”**

AKA Flanged 90, ¼ Bend

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

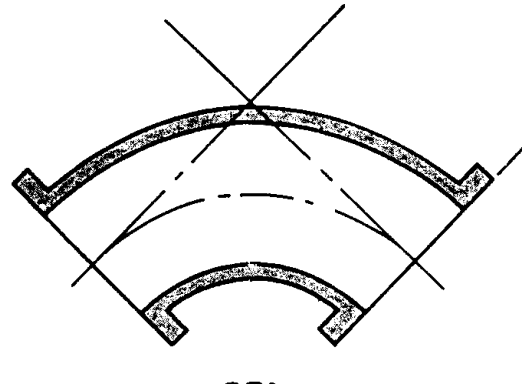
Pressure rating 250 psi.

**Connections:**

Flange x flange, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Accessories (gasket, hex head machine bolts, and hexagon nuts) must be included for each flanged end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3"	076-07003	American C.I. Pipe	
4"	076-07004	Tyler Pipe	
6"	076-07006	U.S. Pipe & Foundry	
8"	076-07008	Union Foundry	
10"	076-07010	Griffin Pipe	
12"	076-07012	Sigma (Russell Pipe) Star Pipe Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 4/22/03 (RNK)  
 8/10/01 (RNK)  
 3/5/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**EII – D.I. Flanged Reducing – 4” x 3”**

AKA Flanged ¼ Reducing Bend

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

Pressure rating 250 psi.

**Connections:**

Flange x flange, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Accessories (gasket, hex head machine bolts, and hexagon nuts) must be included for each flanged end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4” x 3”	076-07143	Sigma (Russell Pipe) Tyler Pipe Star Pipe U.S. Pipe & Foundry Union Foundry Griffin Pipe American Pipe Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 8/11/00 (RNK)  
 3/5/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**El – PVC – 2”**

**AKA**

**Material:**

Polyvinyl chloride must conform to ASTM D 3139.

**Design:**

SDR 21, pressure rating 250 psi.

**Connections:**

Gasketed each end.

**Special Features:**

Fitting must be equal to BARTECH : Upp-Tite”

**See Exhibit CC**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	076-05002		

**Revision Date:** 5/10/99 (RNK)  
5/12/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

**B 1.5**

### El, PVC – C900/RJ – 2”

**AKA** Elbow; 90° Bend

**Material:**

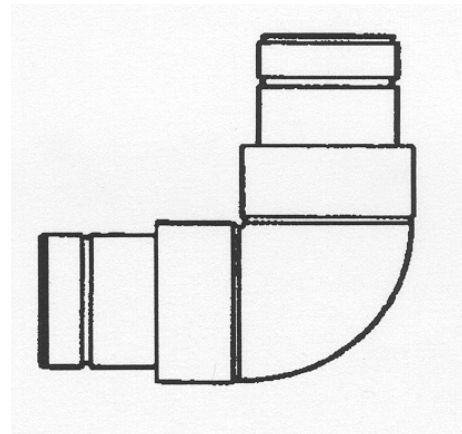
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end x male proprietary grooved end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	076-05012	CertainTeed Corp.	Certa-Lok 90° El C/L Male x C/L Male p/n 70496
		Victaulic Co. (Aquamine)	Aqua Link 90° Elbow Male x Male p/n 291000002

**Revision Date:** 10/25/05 (RNK)  
4/4/01 (RNK)  
3/5/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**B 1.6**

### Bend - 45° PVC – C900/RJ – 2”

**AKA** 45° Elbow; 45° Ell

**Material:**

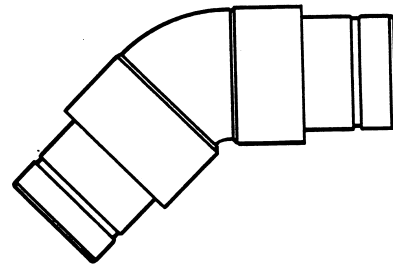
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end x male proprietary grooved end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	071-05012	CertainTeed Corp.	Certa-Lok 45° Ell C/L Male x C/L Male p/n 70494
		Victaulic Co. (Aquamine)	Aqua Link 45° Elbow Male x Male p/n 291200002

**Revision Date:** 10/25/05 (RNK)  
12/8/97 (DSW)



Material Specifications  
Water Business Unit  
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COMMISSION

## Material Specifications

**B 1.7**

### Tee – PVC – C900/RJ – 2”

**AKA**

**Material:**

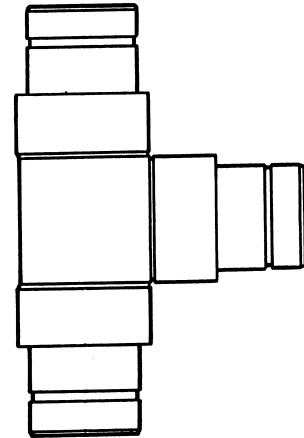
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end x male proprietary grooved end x proprietary grooved end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	082-05012	CertainTeed Corp.	Certa-Lok Tee C/L Male x C/L Male x C/L Male p/n 70491
		Victaulic Co. (Aquamine)	Aqua Link Tee Male x Male x Male p/n 291700002

**Revision Date:** 10/25/05 (RNK)  
12/8/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**



## Material Specifications

**B 1.8**

### Nipple – PVC – C900/RJ - Restrained Joint x PE – 2”

**AKA**

**Material:**

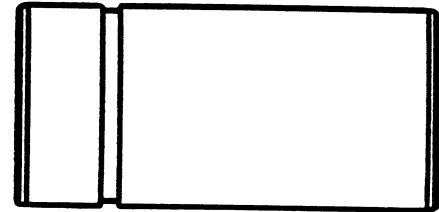
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end x plain end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	077-03012	CertainTeed Corp.	Certa-Lok Nipple C/L Male x Plain End p/n 70584
		Victaulic Co. (Aquamine)	Aqua Groove x Solvent Cement Nipple p/n 290600002

**Revision Date:** 10/25/05 (RNK)  
12/8/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

**B 1.9**

### Nipple – PVC – C900/RJ - Restrained Joint x MIPT – 2”

AKA

**Material:**

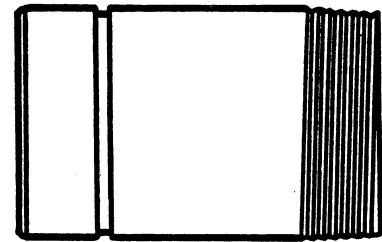
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end x male pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	077-03212	CertainTeed Corp.	Certa-Lok Nipple C/L Male x Male Pipe Threads (NPT) p/n 70599
		Victaulic Co. (Aquamine)	Aqua Groove x Male Thread Nipple p/n 290800002

**Revision Date:** 12/8/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

# Material Specifications

B 1.10

## Plug, PVC – C900/RJ – 2”

AKA End Plug, End Cap

**Material:**

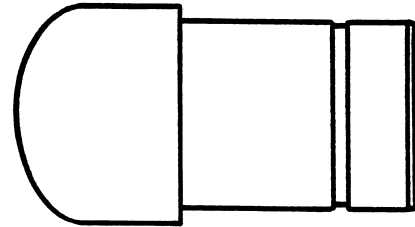
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.


**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	078-05012	CertainTeed Corp.	Certa-Lok End Plug p/n 70626
		Victaulic Co. (Aquamine)	Aqua Groove End Cap p/n 291500002
<b>Revision Date:</b>	10/25/05 (RNK)	<b>OUC</b>  The <i>Reliable One</i> ®	Material Specifications Water Business Unit <b>ORLANDO UTILITIES COMMISSION</b>

## Material Specifications

**B 1.11**

### Coupling – PVC – C900/RJ – 2”

**AKA**

**Material:**

Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

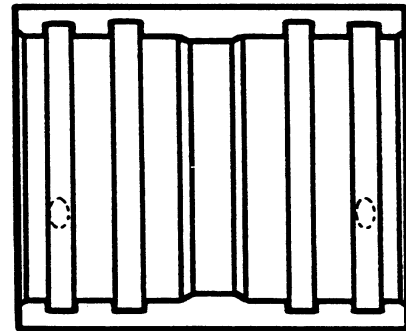
Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and fittings.

**Connections:**

Female proprietary grooved end x female proprietary grooved end with integral elastomeric gaskets conforming to ASTM D2241.

**Special Features:**

Furnished with two gaskets and two splines.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	074-05512	CertainTeed Corp.	Certa-Lok Coupling p/n 71502
		Victaulic Co. (Aquamine)	Aqua Link Coupling p/n 290400002

**Revision Date:** 10/25/05 (RNK)  
12/8/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

**B 1.12**

### Coupling – PVC – C900/RJ - Restrained Joint x Slip – 2”

AKA

**Material:**

Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

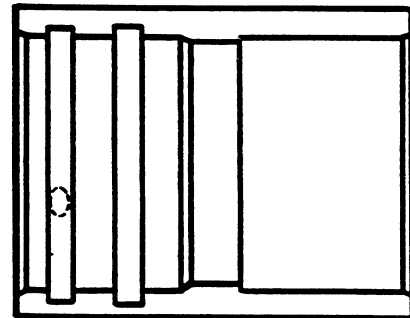
Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and fittings.

**Connections:**

Female proprietary grooved end x female slip joint with integral elastomeric gasket conforming to ASTM D2241 in restrained end.

**Special Features:**

Furnished with one gasket and one spline.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	074-05522	CertainTeed Corp.	Certa-Lok x Solvent Weld Coupling C/L Female x SW Socket End p/n 71535
		Victaulic Co. (Aquamine)	Aqua Link x Solvent Cement Coupling p/n 290500002

**Revision Date:** 10/25/05 (RNK)  
12/8/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

**B 1.13**

### Coupling, Transition – PVC – C900/RJ - Restrained Joint – 2”

AKA Adapter

**Material:**

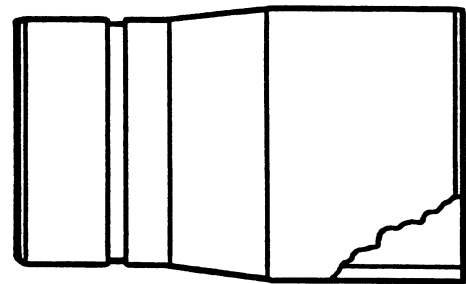
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

Compatible with 2.375” O.D. IPS, SDR 18 restrained joint PVC pipe and fittings.

**Connections:**

Male proprietary grooved end x female slip joint.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	093-03112	CertainTeed Corp.	Certa-Lok Adapter C/L Male x Solvent Weld Bell p/n 70530
		Victaulic Co. (Aquamine)	Aqua Groove x Solvent Cement Transition Male x Female p/n 292000002

**Revision Date:** 10/25/05 (RNK)  
5/13/02 (RNK)  
12/8/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

**B 1.14**

### Reducer – PVC – C900/RJ – 4” Female X 2” Male

AKA Reducer

**Material:**

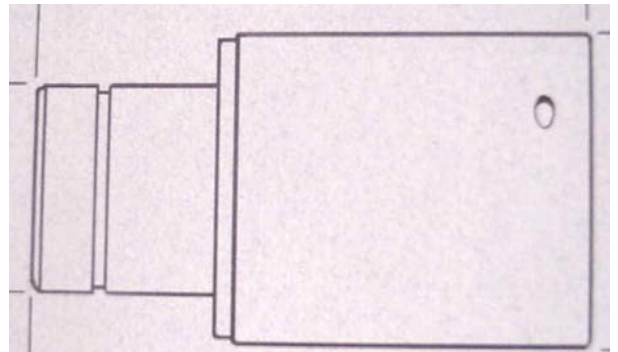
Polyvinyl chloride (PVC) SDR 18 Class 250 2000 psi design stress material, Class 12454B conforming with ASTM D-1784 and certified in accordance with NSF 14 and NSF 61.

**Design:**

4 x 2 – Reducer compatible with 5.470” x 2.375” IPS, SDR 18 restrained joint PVC pipe and couplings.

**Connections:**

Male proprietary grooved end x female slip joint.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4” X 2”	093-03114	CertainTeed Corp.	Certa-Lok Reducer 2” C/L Male x 4” Solvent Weld Bell p/n 71614
		Victaulic Co. (Aquamine)	Aqua Groove x Solvent Cement Transition Male x Female

**Revision Date:** 10/25/05 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Bend - 45° MJ x MJ D.I. Compact – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

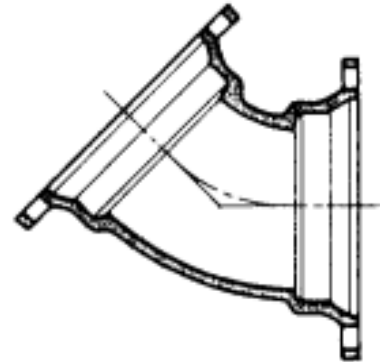
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less accessories.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	071-06404	Sigma (Russell Pipe)	
6"	071-06406	Tyler Pipe	
8"	071-06408	Star Pipe	
10"	071-06410	U.S. Pipe & Foundry	
12"	071-06412	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION



**Material Specifications**

**Bend - 45° MJ x MJ D.I. Standard – 16” thru 26”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement Lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350 through 24”**

**Class 250 greater than 24”**

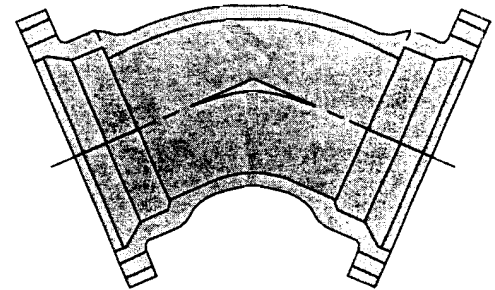
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts, and bolts) must be included for each end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16”	071-06516	Sigma (Russell Pipe)	
20”	071-06520	Tyler Pipe	
24”	071-06524	Star Pipe	
30”	Non-Stock	U.S. Pipe & Foundry	
36”	071-06536	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:**

10/30/04	(RNK)
8/10/01	(RNK)
4/4/01	(RNK)
8/11/00	(RNK)
10/97	(DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Bend – 22 1/2° MJ x MJ D.I. Compact – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

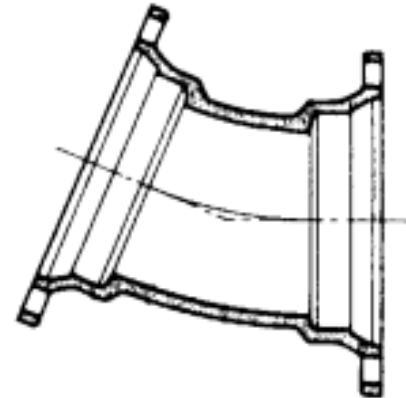
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less accessories.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	071-01404	Sigma (Russell Pipe)	
6"	071-01406	Tyler Pipe	
8"	071-01408	Star Pipe	
10"	071-01410	U.S. Pipe & Foundry	
12"	071-01412	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Bend – 22 ½° MJ x MJ D.I. Standard – 16” thru 36’**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement Lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350 through 24”**

**Class 250 greater than 24”**

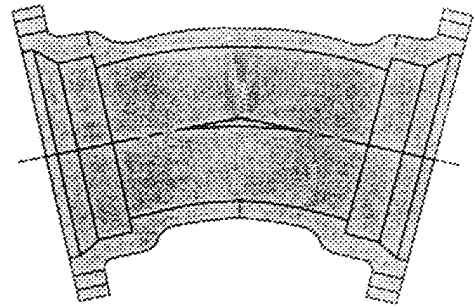
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts, and bolts) must be included for each end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16”	071-01516	Sigma (Russell Pipe)	
20”	071-01520	Tyler Pipe	
24”	Non-Stock	Star Pipe	
30”	Non-Stock	U.S. Pipe & Foundry	
36”	Non-Stock	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 8/25/99 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**Bend – 11 ¼° MJ x MJ D.I. Compact – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

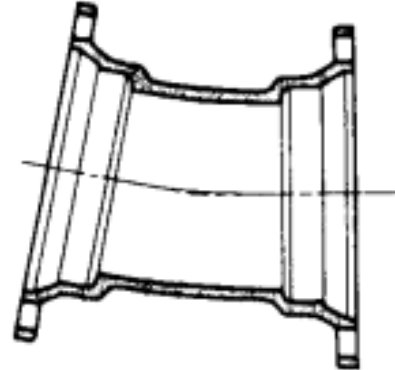
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less accessories.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	071-01204	Sigma (Russell Pipe)	
6"	071-01206	Tyler Pipe	
8"	071-01208	Star Pipe	
10"	071-01210	U.S. Pipe & Foundry	
12"	071-01212	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:**

10/30/04	(RNK)
8/10/01	(RNK)
4/4/01	(RNK)
10/97	(DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Bend – 11 ¼° MJ x MJ D.I. Standard – 16” thru 36”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350 thru 24”**

**Class 250 greater than 24”**

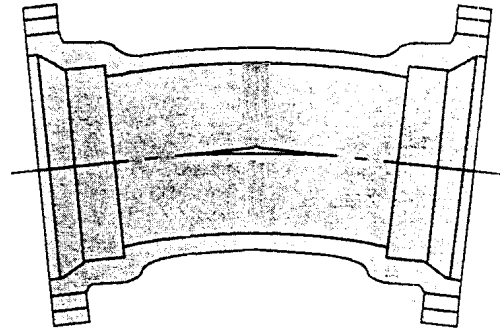
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16”	071-01316	Sigma (Russell Pipe)	
20”	071-01320	Tyler Pipe	
24”	071-01324	Star Pipe	
30”	071-01330NS	U.S. Pipe & Foundry	
36”	071-01336NS	Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:**

- 10/30/04 (RNK)
- 8/10/01 (RNK)
- 4/4/01 (RNK)
- 8/25/99 (RNK)
- 10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Bend - 45° PVC – 2”**

**AKA**

**Material:**

Polyvinyl chloride must conform to ASTM D-3139.

**Design:**

SDR 17, pressure rating 250 psi.

**Connections:**

Gasketed each end.

**Special Features:**

Fittings must be equal to BARTECH “Upp-Tite”.

**See Exhibit CC**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	071-09502		

**Revision Date:**

5/10/99 (RNK)  
5/5/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Tee – MJ x MJ D.I. Compact – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

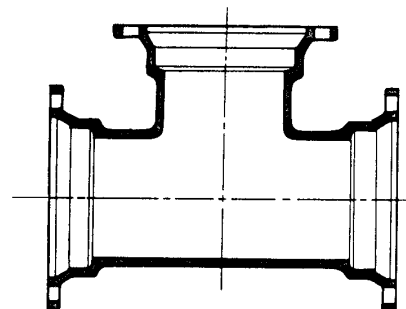
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

**Less accessories**

See Exhibit DD (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	082-06004	Sigma (Russell Pipe)	
6"	082-06006	Tyler Pipe	
8"	082-06008	Star Pipe	
10"	082-06010	U.S. Pipe & Foundry	
12"	082-06012	Union Foundry	
6" x 4"	082-06064	Griffin Pipe	
8" x 4"	082-06084	American Pipe	
8" x 6"	082-06086	Pipeline Components	
10" x 4"	082-06104		
10" x 6"	082-06106		
10" x 8"	082-06108		
12" x 4"	082-06124		
12" x 6"	082-06126		
12" x 8"	082-06128		
12" x 10"	082-06129		

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Tee – MJ D.I. Standard – 14”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

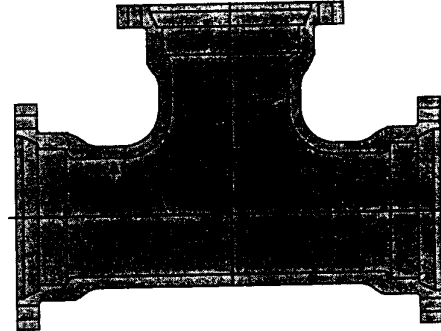
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
14”	082-07014	Sigma (Russell Pipe)	
14”x12”	082-07142	Tyler Pipe Star Pipe U.S. Pipe & Foundry Union Foundry Griffin Pipe American Pipe Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
8/10/01 (RNK)  
8/25/99 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION



**Material Specifications**

**Tee – MJ D.I. Standard – 16”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

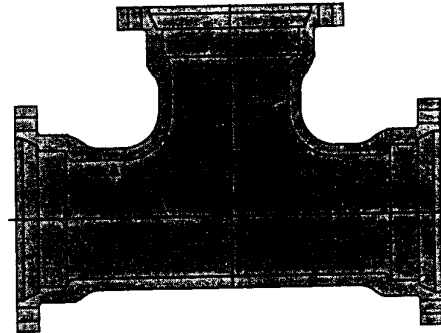
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16”	082-07016	Sigma (Russell Pipe)	
16” x 4”	Non-Stock	Tyler Pipe	
16” x 6”	082-07166	Star Pipe	
16” x 8”	082-07168	U.S. Pipe & Foundry	
16” x 10”	082-07160	Union Foundry	
16” x 12”	082-07162	Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 8/25/99 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Tee – MJ D.I. Standard – 20”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

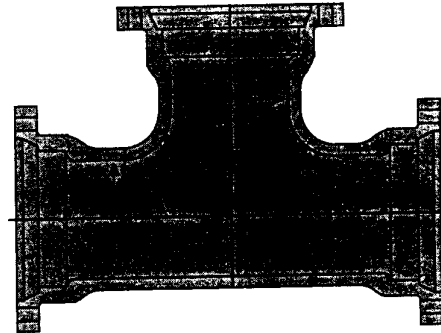
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
20"	082-07020	Sigma (Russell Pipe)	
20" x 6"	082-07206	Tyler Pipe	
20" x 8"	082-07208	Star Pipe	
20" x 10"	082-07210	U.S. Pipe & Foundry	
20" x 12"	082-07212	Union Foundry	
20" x 16"	082-07216	Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 8/25/99 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Tee – MJ D.I. Standard – 24”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

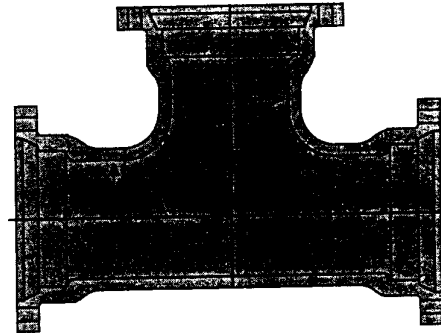
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
24”	082-07024	Sigma (Russell Pipe)	
24” x 6”	082-07246	Tyler Pipe	
24” x 8”	082-07248	Star Pipe	
24” x 10”	082-07250	U.S. Pipe & Foundry	
24” x 12”	082-07242	Union Foundry	
24” x 16”	082-07416	Griffin Pipe	
24” x 20”	082-07240	American Pipe Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 8/25/99 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Tee – MJ D.I. Standard – 30”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 250**

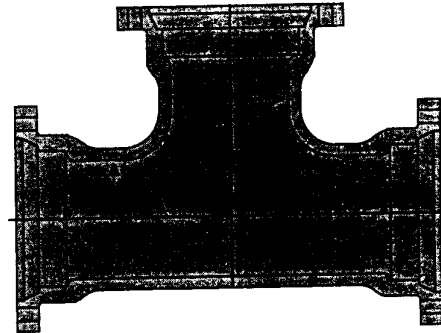
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
30”	082-07030	Sigma (Russell Pipe)	
30” x 20”	Non-Stock	Tyler Pipe	
30” x 24”	Non-Stock	Star Pipe	
		U.S. Pipe & Foundry	
		Union Foundry	
		Griffin Pipe	
		American Pipe	
		Pipeline Components	

**Revision Date:** 10/30/04 (RNK)  
 8/10/01 (RNK)  
 8/25/99 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Tee – D.I. Flanged – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside, or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

Class 250, pressure rating 250 psi.

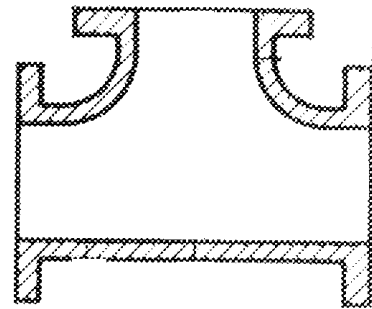
**Connections:**

Flange x flange, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Accessories (gasket, hex head machine bolts, and nuts) must be included for each flanged end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	082-08004	Sigma (Russell Pipe)	
6" x 4"	082-08064	Tyler Pipe	
6"	082-08006	Star Pipe	
8" x 4"	082-08084	U.S. Pipe & Foundry	
8"	082-08008	Union Foundry	
10" x 4"	082-08104	Griffin Pipe	
10" x 8"	082-08108	American Pipe	
12" x 4"	082-08124	Pipeline Components	

**Revision Date:**

10/30/04	(RNK)
8/10/01	(RNK)
4/4/01	(RNK)
8/25/99	(RNK)
10/97	(DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Tee – PVC – w/Gasketed Ends – 2”**

AKA

**Material:**

Polyvinyl chloride must conform to ASTM D-3139.

**Design:**

Class 200 SDR 17, pressure rating 250 psi.

**Connections:**

Gasketed each end.

**Special Features:**

Fitting must be equal to BARTECH “Upp-Tite”.

See Exhibit CC



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	082-05002		

**Revision Date:** 5/10/99 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Cross – MJ D.I. Compact – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI.AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

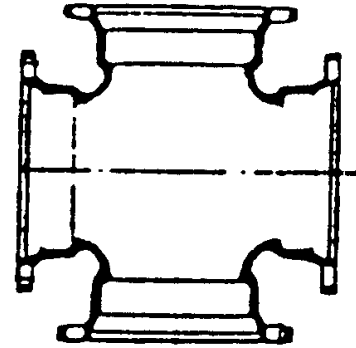
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

**Less accessories**

See Exhibit DD (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 4"	075-07044	Sigma (Russell Pipe)	
6" x 4"	075-07064	Tyler Pipe	
6" x 6"	075-07066	Star Pipe	
8" x 6"	075-07086	U.S. Pipe & Foundry	
8" x 8"	075-07088	Union Foundry	
10" x 6"	075-07106	Griffin Pipe	
10" x 8"	075-07108	American Pipe	
10" x 10"	075-07010		
12" x 6"	075-07126		
12" x 8"	075-07128		
12" x 10"	075-07110		
12" x 12"	075-07121		

**Revision Date:** 8/10/01 (RNK)  
8/11/00 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Cross – MJ D.I. Standard – 16” thru 24””**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 250**

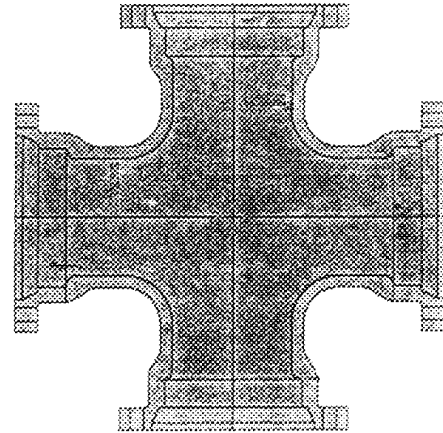
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16" x 6"	075-07166	Sigma (Russell Pipe) Tyler Pipe Star Pipe U.S. Pipe & Foundry Union Foundry Griffin Pipe American Pipe	
16" x 8"	075-07168		
16" x 10"	075-07160		
16" x 12"	075-07162		
16" x 16"	075-07016		
20" x 6"	075-07206		
20" x 8"	075-07208		
20" x 10"	075-07200		
20" x 12"	075-07205		
20" x 16"	075-07216		
20" x 20"	075-07202		
24" x 6"	075-07246		
24" x 8"	075-07248		
24" x 10"	075-07240		
24" x 12"	075-07242		
24" x 16"	075-07416		
24" x 20"	Non-Stock		
24" x 24"	Non-Stock		

**Revision Date:** 8/10/01 (RNK)  
8/11/00 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**



**Material Specifications**

**Cross – MJ D.I. Standard – 30”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 250**

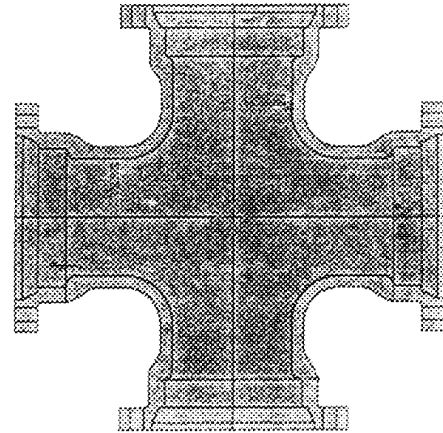
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
30” x 20”	075-07520	Sigma (Russell Pipe)	
30” x 24”	075-07524	Tyler Pipe	
		Star Pipe	
		U.S. Pipe & Foundry	
		Union Foundry	
		Griffin Pipe	
		American Pipe	

**Revision Date:** 8/10/01 (RNK)  
8/11/00 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Sleeve – MJ x MJ D.I. Compact – 12” x 3” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI.AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

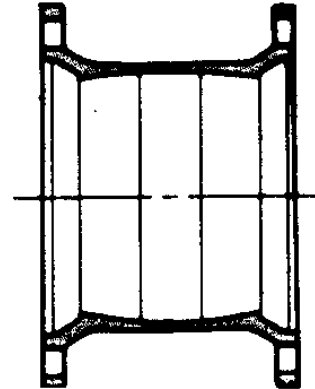
**Connections:**

**Mechanical joint x mechanical joint**

**Special Features:**

**Less accessories**

See Exhibit DD (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3” x 12”	080-06003	Sigma (Russell Pipe)	
4” x 12”	080-05004	Tyler Pipe	
6” x 12”	080-05006	Star Pipe	
8” x 12”	080-05008	U.S. Pipe & Foundry	
10” x 12”	080-05010	Union Foundry	
12” x 12”	080-05012	Griffin Pipe American Pipe	

**Revision Date:** 8/10/01 (RNK)  
 4/4/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Sleeve – MJ x MJ D.I. Standard – 14” thru 36”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 or C153/A21.53-94 and latest revisions thereto. Cement lined with bituminous coating inside and outside.

**Design:**

Class 350 through 24”

Class 250 greater than 24”

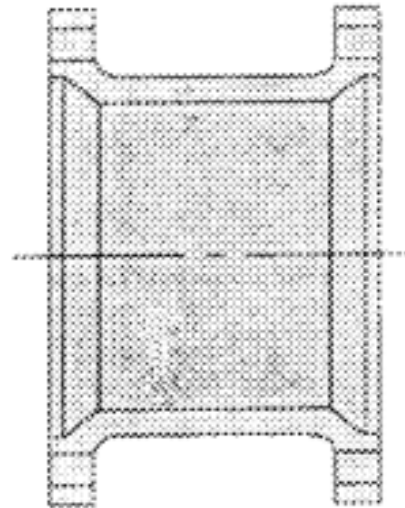
**Connections:**

Mechanical joint x mechanical joint

**Special Features:**

Without accessories.

See Exhibit DD (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
14” x 12”	080-06014	Sigma (Russell Pipe)	
16” x 15”	080-06016	Tyler Pipe	
18” x 15”	080-06018	Star Pipe	
20” x 15”	080-06020	U.S. Pipe & Foundry	
24” x 15”	080-06024	Union Foundry	
30” x 15”	080-06030	Griffin Pipe	
36” x 15”	080-06036	American Pipe	
42” x 15”	080-06042		

**Revision Date:** 6/11/03 (RNK)  
 8/10/01 (RNK)  
 4/4/01 (RNK)  
 3/5/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

**Material Specifications**

**Coupling – Combination D.I. (MJ to FLG) Compact 4” thru 12”**

AKA Connecting Piece, Adapter

**Material:**

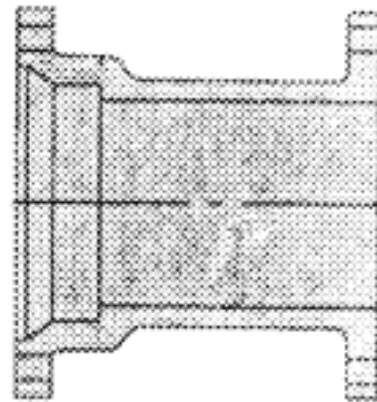
Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside.

**Connections:**

**Mechanical joint x Flange**

**Special Features:**

Less accessory kits for MJ end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	074-08404	American C.I. Pipe	<b>B-39000</b>
6”	074-08406	Clow Valve	F-1432
8”	074-08408	Tyler Pipe	5-158
10”	074-08410	U.S.Pipe & Fdry.	<b>U-576</b>
12”	074-08412	Griffin Pipe Sigma (Russell Pipe) Star Pipe Union Foundry	

**Revision Date:** 8/10/01 (RNK)  
4/4/01 (RNK)  
3/05/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Coupling – Combination D.I. (FLG to PE) – 4” thru 12”**

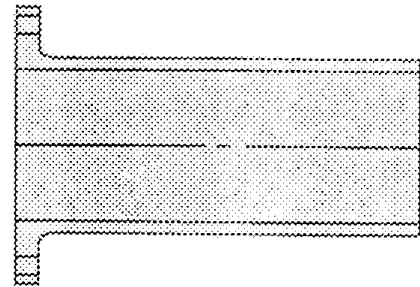
AKA Adapter

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside.

**Connections:**

**Flange x Plain End**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	074-08504	American C.I. Pipe	<b>1-33000</b>
6"	Non-Stock	Clow Valve	F-1426
8"	Non-Stock	Tyler Pipe	5-161
10"	Non-Stock	U.S. Pipe & Fdry.	U-471
12"	074-08512	Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	
		Union Foundry	

**Revision Date:** 8/10/01 (RNK)  
 4/4/01 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**Spool Piece – D.I. Flanged**

AKA

**Material:**

Ductile iron pipe conforming to ANSI/AWWA C115/21.15-93 and the latest revisions thereto.

**Design:**

Class 53 – size determined by inside diameter (I.D.) – 6” and 8”

**Connections:**

Class 125 flange face on each end, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Accessories (gaskets, hex head machine bolts , and hexagon nuts) must be included for each flanged end.

**No Illustration Available**

Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 6” long	055-06606	American C.I. Pipe	1 – 30000
6” x 12” long	055-06612	Tyler Pipe	5-163
8” x 6” long	055-06806		
8” x 12” long	055-06812		

Note;  
These fittings are generally fabricated locally.

**Revision Date:** 10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Coupling – PVC Comp. – 2”**

AKA

**Material:**

Polyvinyl chloride must conform to ASTM D3139.

**Design:**

Class 200 SDR21, pressure rating 250 psi.

**Connections:**

Gasketed each end.

**Special Features:**

Fitting must be equal to BARTECH “Upp-Tite”.

See Exhibit CC



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	074-05502		

**Revision Date:** 5/10/99 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Coupling – Universal - 4” thru 24”**

AKA

**Material:**

**Sleeve:** Carbon steel, ductile iron, or malleable iron conforming to ANSI/AWWA C219-91, fusion nylon coated.

**Followers:** Carbon steel or ductile iron conforming to ANSI/AWWA C219-91, fusion nylon coated.

**Bolts & Nuts:** Fusion nylon coated conforming to ANSI/AWWA C219-91.

**Gaskets:** Grade 30 or equal rubber compounded for water service. Shall meet requirements of ASTM D2000.



**Special Features:**

Coupling shall fit D.I. pipe and Universal Pipe with the following O.D. ranges:

4”	4.25” to 5.11”
6”	6.42” to 7.68”
8”	8.54” to 9.84”
10”	10.70” to 12.00”
12”	12.40” to 13.66”
16”	17.40” to 17.88”
20”	21.60” to 21.94”



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	074-08804	Underpressure Viking Johnson Dresser	<b>Unicup</b> <b>MaxiFit</b> Style 262 Hymax in sizes 4” thru 16”
6”	074-08806		
8”	074-08808		
10”	074-08810	Smith-Blair	<b>Quantum</b>
12”	074-08812		
16”	074-08816		
20”	074-08820		
24”	Non Stock		

**Revision Date:** 5/26/04 (RNK)  
5/13/02 (RNK)  
4/20/00 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION



**Material Specifications**

**Coupling – for IPS HDPE – 4”**

AKA

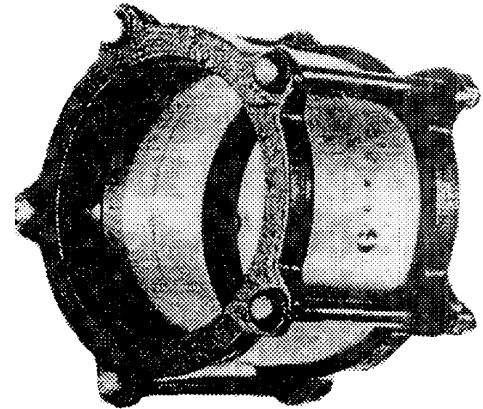
**Material:**

**Sleeve:** Ductile iron ASTM A536 conforming to ANSI/AWWA C219-91 and the latest revisions thereto. Epoxy coated.

**Followers:** Ductile iron ASTM A536 conforming to ANSI/AWWA C219-91 and the latest revisions thereto. Shop coat.

**Bolts & Nuts:** High strength, low alloy steel with heavy semi-finished hexagon nuts, conforming to ANSI/AWWA C219-91 and the latest revisions thereto.

**Gaskets:** Virgin SBR ASTM D-2000 compounded for water service.



**Special Features:**

Fits iron pipe size (IPS) HDPE – O.D. Range 4.50” – 4.70”.

Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	074-06104	Romac	501-H-4.70 x 4.70 x 11

**Origin Date:** 9/3/98 (DSW)  
**Revision Date:**



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Companion Flange – 2” thru 10”**

**AKA**

**Material:**

150 lb. malleable iron – galvanized.

**Design:**

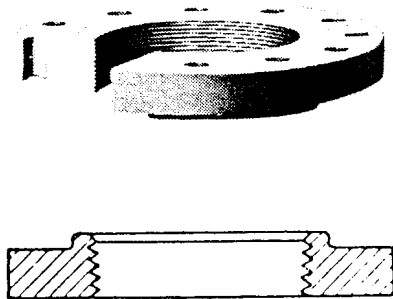
Schedule 40 – Faced and drilled to 125 pound template.

**Connections:**

FIPT (nominal pipe size) x Flange (outside diameter).

**Special Features:**

Gasket, bolts and nuts must be included.  
Must be a domestic product.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2" x 6"	078-02206	Clow Valve	F-1900 w/F-1940 Gasket
3" x 7 1/2"	078-02307		
4" x 9"	078-02409		
6" x 11"	078-02611		
8" x 13 1/2"	078-02813		
10" x 16"	078-02910		

**Revision Date:** 10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Gasket, Companion Flange**

AKA

**Material:**  
Synthetic rubber.

**Design:**  
Full face, conforming to ductile iron class 125 flange dimensions specified in ANSI/AWWA C115/A21.15-94.

**Special Features:**  
1/8" (3.18 mm) thick.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3"	078-02186		
4"	078-02187		
6"	078-02188		
8"	078-02189		
10"	078-02190		

**Revision Date:** 5/10/99 (RNK)  
5/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Offset – MJ x MJ D.I. – 4”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

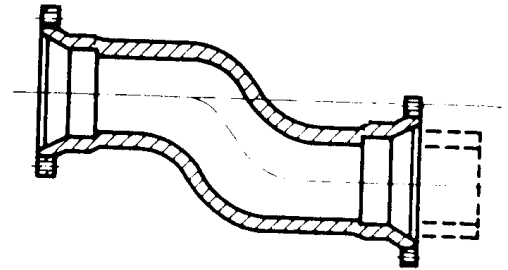
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less MJ accessory kit.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 6"	Non-Stock	American C.I. Pipe	
4" x 12"	Non-Stock	Tyler Pipe	
4" x 18"	Non-Stock	U.S. Pipe & Fdry	
4" x 24"	Non-Stock	Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
 3/05/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Offset – MJ x MJ D.I. – 6”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

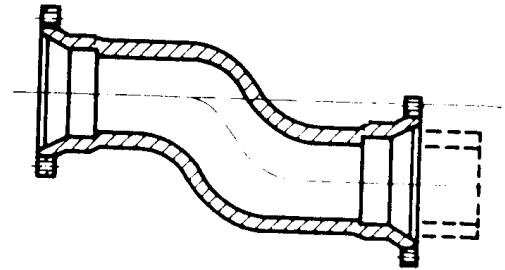
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less MJ accessory kit.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6" x 6"	083-00606	American C.I. Pipe	
6" x 12"	083-00612	Tyler Pipe	
6" x 18"	083-00618	U.S. Pipe & Fdry	
6" x 24"	083-00624	Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
 3/05/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Offset – Swivel x Swivel, D.I. – 6”x 6” or 12”**

**AKA GRADELOK**

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C104/A21.4.

**Design:**

Class 350

**Connections:**

Swivel x Swivel



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 6”	083-10606	Assured Flow Sales	
6” x 12”	083-10612		

**Revision Date:** 2/06/03 (RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**Offset – MJ x MJ D.I. – 8”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

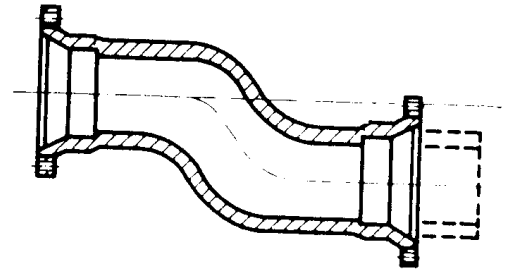
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less MJ accessory kit.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
8" x 6"	083-00806	American C.I. Pipe	
8" x 12"	083-00812	Tyler Pipe	
8" x 18"	083-00818	U.S. Pipe & Fdry	
8" x 24"	083-00824	Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
 3/05/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Offset – MJ x MJ D.I. – 10”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

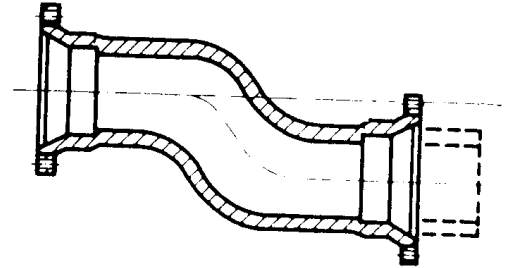
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less MJ accessory kit.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
10" x 6"	083-01006	American C.I. Pipe	
10" x 12"	083-01012	Tyler Pipe	
10" x 18"	083-01018	U.S. Pipe & Fdry	
10" x 24"	083-01024	Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
 3/05/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION



**Material Specifications**

**Offset – MJ x MJ D.I. – 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

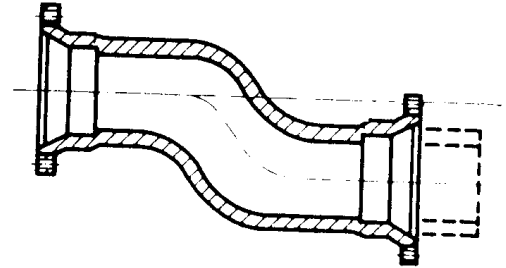
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12” x 6”	083-01206	American C.I. Pipe	
12” x 12”	083-01212	Tyler Pipe	
12” x 18”	083-01218	U.S. Pipe & Fdry	
12” x 24”	083-01224	Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
8/11/00 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Offset – MJ x MJ D.I. – 16”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

**Class 350**

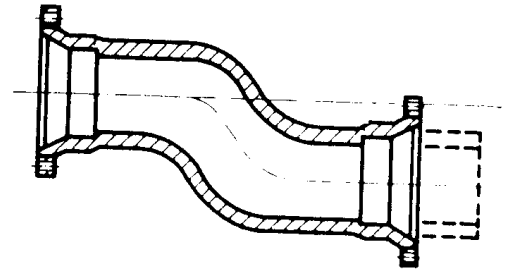
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Accessory kits (ductile iron gland, gasket, nuts and bolts) must be included for each MJ end.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16” x 12”	083-01612	American C.I. Pipe	
16” x 18”	083-01618	Tyler Pipe	
		U.S. Pipe & Fdry	
		Union Foundry	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**Reducer – MJ x MJ , D.I. “Compact” – 4” thru 12”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

Class 350.

**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less accessories.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 3"	079-01043	Sigma (Russell Pipe)	
6" x 4"	079-01064	Tyler Pipe	
8" x 4"	079-01084	Star Pipe	
8" x 6"	079-01086	U.S. Pipe & Foundry	
10" x 6"	079-01106	Union Foundry	
10" x 8"	079-01108	Griffin Pipe	
12" x 6"	079-01126	American Pipe	
12" x 8"	079-01128		
12" x 10"	079-01129		

**Revision Date:** 8/10/01 (RNK)  
 4/5/01 (RNK)  
 8/11/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

# Material Specifications

B 10.2

## Reducer – MJ X MJ D.I. “Compact” – 14” thru 30”

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coating for interior & exterior conforming to C116/A21.16-98.

**Design:**

Class 350 through 24”  
Class 250 greater than 24”

**Connections:**

MJ x MJ

**Special Features:**

Less Accessory Kit.  
See Exhibit DD (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
14” x 12”	079-03142	Sigma (Russell Pipe)	
16” x 6”	079-03166	Tyler Pipe	
16” x 6”	079-03168	Star Pipe	
16” x 10”	079-03160	U.S. Pipe & Foundry	
16” x 12”	079-03162	Union Foundry	
16” x 14”	079-03164	Griffin Pipe	
20” x 10”	079-03200	American Pipe	
20” x 12”	079-03202		
20” x 16”	079-03206		
24” x 12”	079-03242		
24” x 16”	079-03246		
24” x 20”	079-03240		
30” x 20”	079-03302		
30” x 24”	079-03304		

**Revision Date:** 8/22/03 (RNK)  
10/15/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Reducer – D.I. Flanged – 8”x 6” & 10”x 8” & 12”x 10”**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and the latest revisions thereto. Cement lined with bituminous coating inside and outside or protective fusion bonded epoxy coatings for interior & exterior conforming to C116/A21.16-98.

**Design:**

Class 250, pressure rating 250 psi.

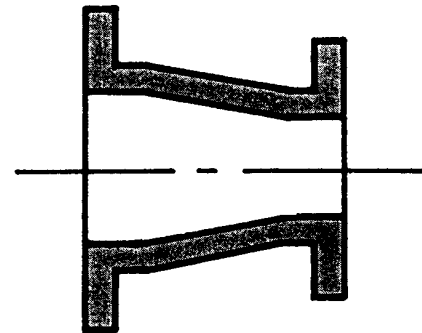
**Connections:**

Flange x flange, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Accessories (gasket, hex head machine bolts and hexagon nuts) must be included for each flanged end.

See Exhibit DD (Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
8” x 6”	079-04086	Sigma (Russell Pipe)	
10” x 8”	079-04108	Tyler Pipe	
12” x 10”	079-04101	Star Pipe	
		U.S. Pipe & Foundry	
		Union Foundry	
		Griffin Pipe	
		American Pipe	

**Revision Date:**

8/10/01	(RNK)
4/5/01	(RNK)
8/11/00	(RNK)
2/10/00	(RNK)
5/10/99	(RNK)
10/97	(DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Spool Piece – D. I. Flanged End 4” x 3”**

AKA Spool Piece

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and latest revisions thereof. Cement lined with bituminous coating inside and outside.

**Design:**

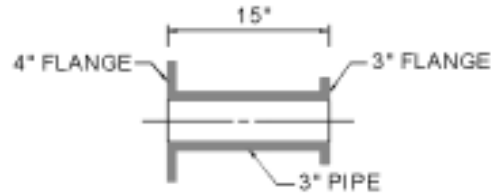
Class 250, pressure rating 250 PSI.

**Connections:**

Flange x Meter Flange, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Pipe must be 3” D.I. and 15” in total length measured from outside edge of the flanges. Flanges must be one 4” reduced to 3”, and one 3” meter flange. Accessories (gasket, hex head machine bolts and hexagon nuts) must be included for each flanged end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 3"	079-04043	US FILTER Ferguson Underground	

**Revision Date:** 4/22/03 (RNK)  
4/9/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Spool Piece – D. I. Flanged End 6” x 4”**

AKA Spool Piece

**Material:**

Ductile iron conforming to ANSI/AWWA C153/A21.53-94 and latest revisions thereof. Cement lined with bituminous coating inside and outside.

**Design:**

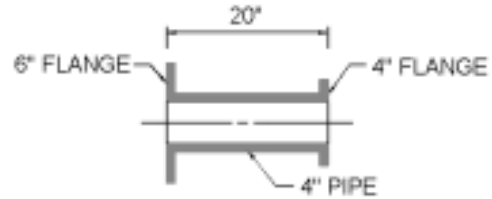
Class 250, pressure rating 250 PSI.

**Connections:**

Flange x Flange, facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Spool piece must be 20” in total length measured from outside edge of the flanges. Flanges must be one 6” reduced to 4”, and one 4” meter flange. The pipe must be 4” D.I. Accessories (gasket, hex head machine bolts and hexagon nuts) must be included for each flanged end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6" x 4"	079-04064	US FILTER Ferguson Underground	

**Revision Date:** 4/22/03 (RNK)  
5/18/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Reducing Flange – 2”**

AKA

**Material:**

150 lb. malleable iron – galvanized.

**Design:**

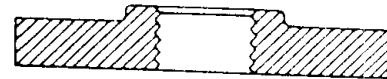
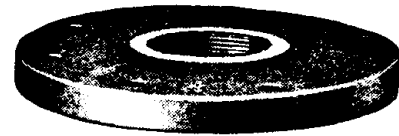
**Schedule 40**

**Connections:**

FIPT (nominal pipe size) x Flange (outside diameter), facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Gasket, bolts and nuts must be included. Must be a domestic product.



**Size/Details**

**OUC Item ID**

2” x 7 ½”  
2” x 9”

078-02207  
078-02209

**Manufacturer**

American C.I. Pipe  
Clow Valve  
  
EBAA Iron Sales  
Tyler Pipe  
U.S. Pipe & Fdry.  
Union Fdry.

**Catalog Number**

**F-1905 w/F-1940**  
Gasket

**Revision Date:** 10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**



**Material Specifications**

**Reducing Flange –3”**

AKA

**Material:**

150 lb. malleable iron – galvanized.

**Design:**

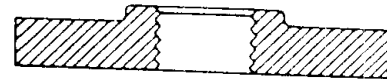
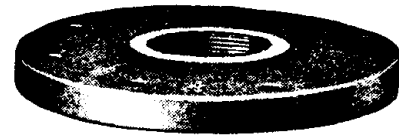
**Schedule 40**

**Connections:**

FIPT (nominal pipe size) x Flange (outside diameter), facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Gasket, bolts and nuts must be included.  
Must be a domestic product.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3" x 9"	078-02309	American C.I. Pipe Clow Valve  EBAA Iron Sales Tyler Pipe U.S. Pipe & Fdry. Union Fdry.	<b>F-1905 w/F-1940</b> Gasket
3" x 11"	078-02311		

**Revision Date:** 10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Reducing Flange –4”**

AKA

**Material:**

150 lb. malleable iron – galvanized.

**Design:**

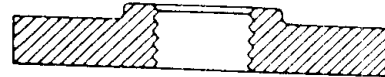
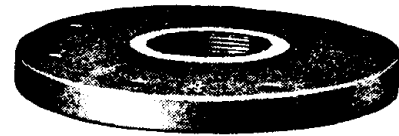
**Schedule 40**

**Connections:**

FIPT (nominal pipe size) x Flange (outside diameter), facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Gasket, bolts and nuts must be included.  
Must be a domestic product.



**Size/Details**

4” x 11”

**OUC Item ID**

078-02411

**Manufacturer**

American C.I. Pipe  
Clow Valve

EBAA Iron Sales  
Tyler Pipe  
U.S. Pipe & Fdry.  
Union Fdry.

**Catalog Number**

**F-1905 w/F-1940**  
Gasket

**Revision Date:**

10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

**Material Specifications**

**Reducing Flange – 6”**

AKA

**Material:**

150 lb. malleable iron – galvanized.

**Design:**

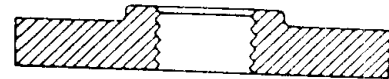
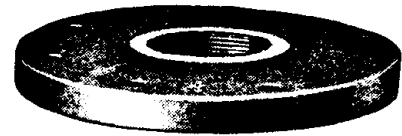
**Schedule 40**

**Connections:**

FIPT (nominal pipe size) x Flange (outside diameter), facing and drilling conforming to ANSI B16.1 Class 125.

**Special Features:**

Gasket, bolts and nuts must be included.  
Must be a domestic product.



**Size/Details**

6” x 13 ½”

**OUC Item ID**

078-02768

**Manufacturer**

American C.I. Pipe  
Clow Valve  
EBAA Iron Sales  
Tyler Pipe  
U.S. Pipe & Fdry.  
Union Fdry.

**Catalog Number**

**Revision Date:**

10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Cap – MJ D.I. – (Tapped Plug) – 4” thru 24’**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto. Cement lined with bituminous coating inside and outside.

**Design;  
Class 350**

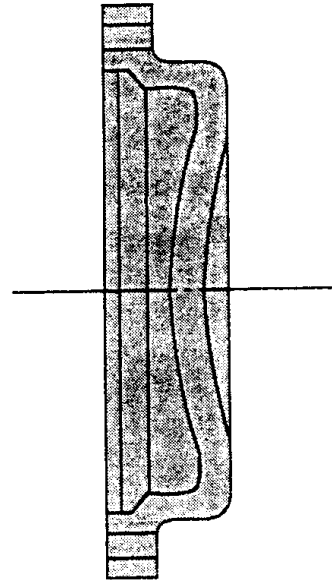
**Connections:**

Mechanical joint with FIPT tap.

**Special Features:**

Cap must be tapped 2” FIPT with 2” galvanized plug inserted. Threading must be clean cut and double check by the manufacturer before delivery. Accessory kit (gasket, bolt and nuts) must be included for MJ joint.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4” x 2”	072-01142	American C.I. Pipe	
6” x 2”	072-01162	Tyler Pipe	
8” x 2”	072-01182	U.S. Pipe & Fdry.	
10” x 2”	072-01192	Union Fdry.	
12” x 2”	072-01222	Griffin Pipe	
16” x 2”	072-01622	Sigma (Russell Pipe)	
20” x 2”	072-02022	Star Pipe	
24” x 2”	072-02024		

**Revision Date:** 4/5/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Plug – MJ D.I. – (Tapped Plug) – 3” thru 30’**

AKA

**Material:**

Ductile iron conforming to ANSI/AWWA C110/A21.10-93 and the latest revisions thereto.

**Design;**

**Class 350 through 24”**

Class 250 greater than 24”

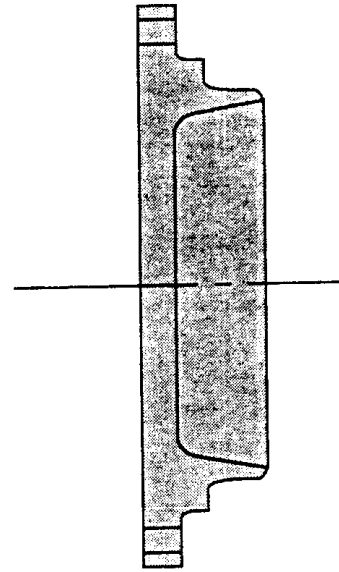
**Connections:**

Mechanical joint with FIPT tap.

**Special Features:**

Plug must be tapped 2” FIPT with 2” galvanized plug inserted. Threading must be clean cut and double check by the manufacturer before delivery. Accessory kit (gasket, bolt and nuts) must be included for MJ joint.

**See Exhibit DD (Annual Bid)**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3” x 2 ½”	078-09033	American C.I. Pipe	
4” x 2”	078-09042	Tyler Pipe	
6” x 2”	078-09062	U.S. Pipe & Fdry.	
8” x 2”	078-09082	Union Fdry.	
10” x 2”	078-09102	Griffin Pipe	
12” x 2”	078-09122	Sigma (Russell Pipe)	
16” x 2”	078-09162	Star Pipe	
20” x 2”	078-09202		
24” x 2”	078-09242		
30” x 2”	078-09302		

**Revision Date:** 4/5/01 (RNK)  
 4/20/00 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

**Retainer Gland – MJ D.I. – 3” thru 12”**

AKA Locking Ring, Accessory Kit

**Material:**

Ductile iron conforming to applicable provisions of ANSI/AWWA C111/A21.11-95 and the latest revisions thereto. Standard thickness.

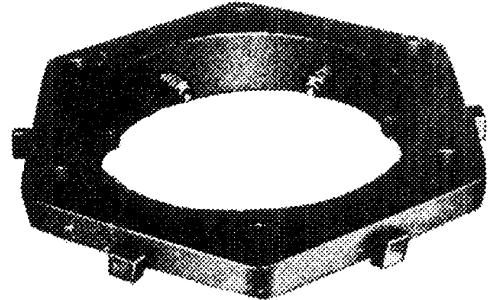
**Design:**

Class 250 – mechanical joint.

**Special Features:**

Set-screws shall be tightened to 75 foot-pounds torque. Manufacture and materials must be domestic. All sizes must be U.L. (Underwriters Laboratories, Inc.) listed. Must be in kit including bolts, nuts, and gasket. Kit must be in an individually sealed box, labeled with the manufacturer’s name and contents.

See Exhibit DD ( Annual Bid)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3”	059-01003	American C.I. Pipe	F1058 Series 100/1200
4”	059-01004	Clow Valve	
6”	059-01006	EBAA Iron Sales	
8”	059-01008	U.S. Pipe & Fdry.	
10”	059-01010	Union Fdry.	
12”	059-01012		

Revision Date: 10/97 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

**Material Specifications**

**Restrainer – Pipe Fitting – 4” thru 12”**

AKA

**Material:**

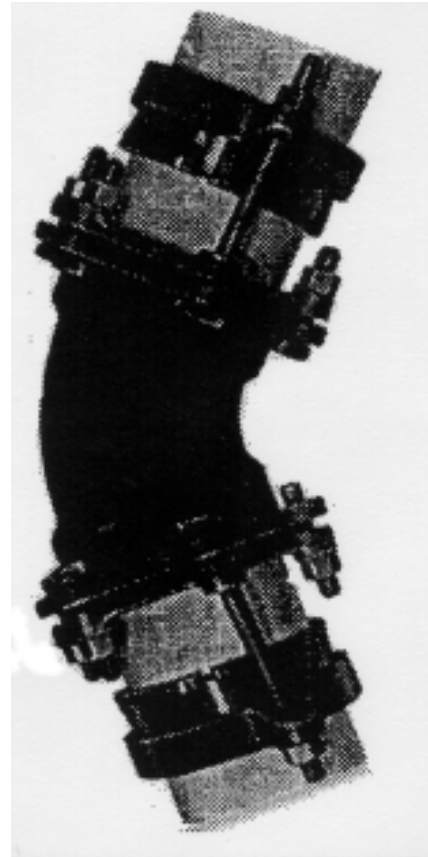
**Restrainer Ring:** Ductile iron conforming to ANSI/AWWA C111/A21.11-95 (ASTM A536).

**Follower Rings:** Ductile iron conforming to ANSI/AWWA C111/A21.11-95 (ASTM A536).

**Tee Head Bolts & Nuts:** Cor-Ten conforming to ANSI/AWWA C111/A21.11-95 (ASME B1.1 & B1.2).

**Design:**

Restrainer shall be for ductile iron pipe and shall have a pressure rating of 350 psi or equal to that of the ductile iron pipe on which it is used. The restrainer shall be separate from the mechanical joint gasket sealing gland and it shall be designed so that restraint action is increased as a result of increases in line pressure. Restrainer ring shall have enough machined serrations on the inside contact surface around the full circumference of the pipe to provide adequate restraint. Follower rings shall provide even circumferential loading over the entire restrainer, at both the bell and plain ends.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	058-02004	JCM	610 (Sur-Grip)
6”	058-02006	Romac	Grip Ring
8”	058-02008	Star Pipe	1100 series
10”	Non-Stock		
12”	Non-Stock		

**Revision Date:** 4/22/03 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Restrainer – Bell Joint – 4” thru 12”**

AKA

**Material:**

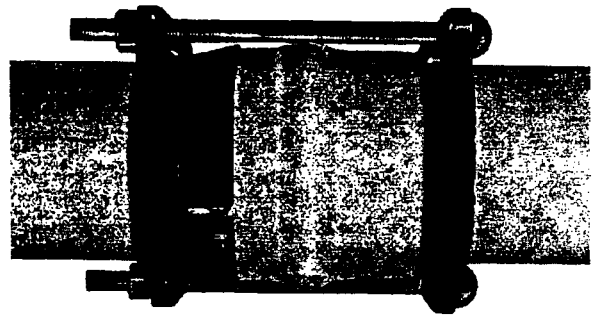
Restrainer Ring – Ductile iron conforming to ANSI/AWWA C111/A21.11-95 (ASTM A536).

Follower Rings – Ductile iron conforming to ANSI/AWWA C111/A21.11-95 (ASTM A536).

Tee Head Bolts & Nuts – Cor-Ten conforming to ANSI/AWWA C111/A21.11-95 (ASME B1.1 & B1.2).

**Design:**

Restrainer shall be for ductile iron pipe and shall have a pressure rating of 350 psi or equal to that of the ductile iron pipe on which it is used. The restrainer shall be separate from the mechanical joint gasket sealing gland and it shall be designed so that restraint action is increased as a result of increases in line pressure. Restrainer ring shall have enough machined serration’s on the inside contact surface around the full circumference of the pipe to provide adequate restraint. Follower rings shall provide even circumferential loading over the entire restrainer, at both the bell and plain ends.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	058-02104	JCM	620 (Sur-Grip)
6”	058-02106		
8”	058-02108		
10”	Non-Stock		
12”	Non-Stock		

**Revision Date:** 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**



**Material Specifications**

**MJ Restraint – Wedge Action – 4” thru 42”**

AKA

**Dimensions:**

The gland shall be compatible with the standardized mechanical joint bell conforming to ANSI/AWWA C111/A21.11-95.

**Material:**

**Gland:** Ductile iron conforming to the applicable provisions of ANSI/AWWA C111/A21.11-95 and ASTM A536.80.

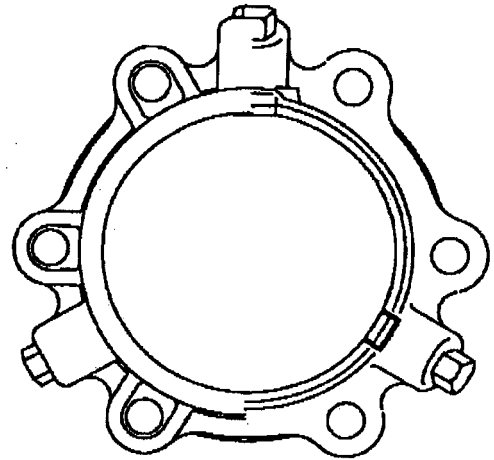
**Wedges:** Ductile iron heat treated to a minimum hardness of 370 BHN.

**Design:**

Multiple gripping wedges incorporated within a mechanical joint follower gland, that when actuated, impart increasing resistance to pipe separation as pressure increases. Must be rated at 250 psi with a minimum safety factor of 2:1.

**Special Features:**

Accessory kit (gasket, T-bolts, and nuts) must be included.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	058-02204	EBAA Iron	1100 Megalug
6"	058-02206	Uni-Flange (Ford)	Series 1400
8"	058-02208	Star Pipe	Star Grip 3000
10"	058-02210	Sigma Russell	One Lok
12"	058-02212		
16"	058-02216		
20"	058-02220		
24"	058-02224		
30"	058-02230		
36"	058-02236		
42"	058-02242		

**Revision Date:** 6/11/03 (RNK)  
 4/22/03 (RNK)  
 6/28/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**MJ Restraint Plastic – Wedge Action – 4” thru 8”**

AKA

**Dimensions:**

The gland shall be compatible with the standardized mechanical joint bell conforming to ANSI/AWWA C111/A21.10 & 11 and C153/121.53. UL approved.

**Material:**

**Gland:** Ductile Iron conforming to the applicable provisions of ASTM A536.

**Wedges:** Ductile Iron heat treated to a minimum hardness of 370 BHN.

**Design:**

Multiple gripping wedges incorporated within a mechanical joint follower gland, that when actuated, impart increasing resistance to pipe separation as pressure increases. Must be rated at 250 psi with a minimum safety factor of 2:1.

**Special Features:**

Accessory kit (gasket, T-bolts, and nuts) must be included.



OUC Item ID		Manufacturer	Catalog Number
4”	058-12204	EBAA Iron	2000 PV
6”	058-12206	Uni-Flange (Ford)	
8”	058-12208	Star Pipe	<b>Stargrip Series 4000</b>
		Sigma Russell	One Lok
		Total Piping Solutions	

**Revision Date:** 10/01/04 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Restrainer Split Ring – Pipe Fitting – 2” thru 20”**

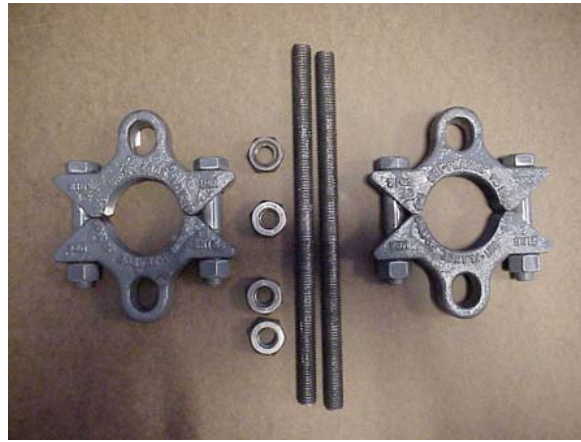
AKA

**Material:**

Restrain Devices – Ductile iron conforming to ASTM A536, Grade 65-45-12.  
 Connecting Bolts & Nuts – High strength, low alloy material in accordance with ANSI/AWWA C111/A21.11.

**Design:**

All restraint devices shall have a water working pressure rating equivalent to the full rated pressure of the PC pipe they are installed on, with a minimum 2:1 safety factor in any nominal pipe size. Shall consist of split rings incorporating a series of machined serration’s on the inside diameter to provide positive restraint, exact fit, 360° contact and support of the pipe wall.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	058-02002	Ford Uni-Flange	Series 1390
4”	058-02104	Sigma	
6”	058-02106	STAR	12” and less only
8”	058-02108	JCM	12” and less only
10”	058-02110		
12”	058-02112		
14”	058-02114		
16”	058-02116		
20”	058-02120		
24”	058-02124		

**Revision Date:**

9/12/06	(RNK)
10/26/05	(RNK)
9/15/05	(RNK)
11/19/99	(RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**Flange Adapter – 4” thru 12”**

AKA Union Flange

**Material:**

**Body:** Class 250 cast iron or ductile iron.

**Set Screws:** Stainless steel.

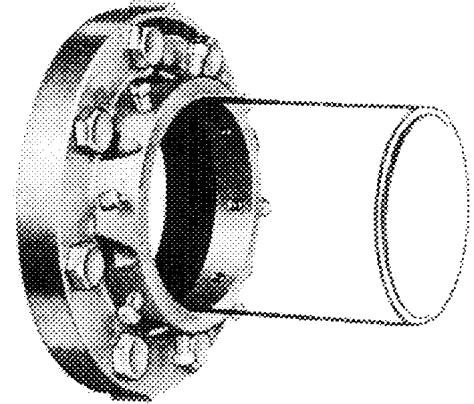
**Gasket:** Standard SBR (BUNA –S) or equal conforming to ANSI/AWWA C111- /A21.11-95 and the latest revisions thereto.

**Design:**

Working pressure – 250 psi. Must be equal to the Uni-Flange Corp. Series 400-C.

**Special Features:**

Fits cast iron pipe O.D. 4.80”



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	074-07404	EBAA Iron Sales	Series 1004, 1006, 1008, 1010, 1012
6”	074-07406	Uni-Flange	(E-Z) Flange)
8”	074-07408	Union Fdry.	Series 400-C
10”	074-07410		Union Flange
12”	074-07412	Star Pipe	400

**Revision Date:** 8/16/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**Foster Adaptors 4” thru 10”**

**AKA**

**Material:**

Ductile iron conforming to ANSI.AWWAC153/A21.53-94 and the latest revision thereto. Supplied with an asphaltic seal coating in accordance with ANSI/AWWA C104/A1.4 or fusion bonded epoxy coating.

**Nuts and Bolts:**

Weathering steel (Corten) bolts conforming to AWWA C111/A21.11 AND ASTM A242. Nuts shall be SAE grade.

**Gasket:**

Standard Butalene rubber (SBR) MJ gaskets conforming to AWWA C111/ASTM F-477.

**Accessories:**

- 2 each – MJ Gaskets
- 2 each – ¾” x 4 ½ “ Eyebolts
- 4 each – ¾ “ x ½ “ Tee Bolts
- 6 each – ¾ “ Hex Nuts
- 6 each – Adaptor Spacers
- 1 each – Foster Adaptor



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	074-07504	HD Supply Ferguson	
6”	074-07506		
8”	074-07508		
10”	074-07510		
12”	074-07512		

**Revision Date:** 1/10/08 (RNK)  
8/16/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**MJ Field Lok Gasket Series DI**

**AKA**

**Material:**

Conforming to fit mechanical joints that conform to AWWA C110 or AWWA C153 in 4” thru 12”

**Design:**

Gaskets require 90 ft-lb of bolt torque for 4” thru 8” and 120 ft-lb of bolt torque for 10” & 12”. Gaskets must be NSF, UL and FM approved. Gasket is only warranted when used with a MJ Field Lok Gland. Pressure rated at 350 psi. Must include bolts and nuts.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	074-07514	Tyler Pipe	
6”	074-07516		
8”	074-07518		
10”	074-07520		
12”	074-07522		

**Revision Date:** 4/08/08 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Adapter – Male – PVC – 2”**

**AKA**

**Material:**

Polyvinyl chloride must conform to ASTM D-3139.

**Design:**

Class 200 SDR 17, pressure rating 250 psi.

**Connections:**

MIPT x rubber gasketed bell for push-on joint.

**Special Features:**

Fitting must be equal to BARTECH “Upp-Tite”.

**See Exhibit CC**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	093-03202		

**Revision Date:** 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**



**Material Specifications**

**Accessory Kit – MJ Pipe Fitting – 4” thru 12”**

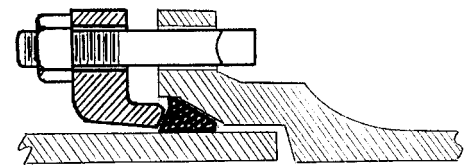
AKA Gland Kit

**Material:**

**Follower Gland:** Ductile iron MJ gland conforming to ANSI/AWWA C111/A21.11-95 and ANSI/AWWA C153/A21.53-94 and the latest revision thereto.

**Gasket:** Standard MJ rubber gasket conforming to ANSI/AWWA C111/A21.11-95.

**Bolts & Nuts:** Cor-Ten Tee-Head bolts and hexagonal nuts conforming to ANSI/AWWA C111/A21.11-95 (ASME B1.1 & B1.2).



**Design:**

Follower gland shall match Class 350 “Compact” fittings.

**Connections:**

Mechanical joint.

**See Exhibit DD (Annual Bid)**

Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	058-01004	American C.I. Pipe	
6”	058-01006	McWane C.I. Pipe	
8”	058-01008	Tyler Pipe	
10”	058-01010	U.S. Pipe & Fdry.	
12”	058-01012	Union Fdry. Griffin Pipe Sigma (Russell Pipe) Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION



**Material Specifications**

**Accessory Kit – MJ Pipe Fitting – 16” thru 24”**

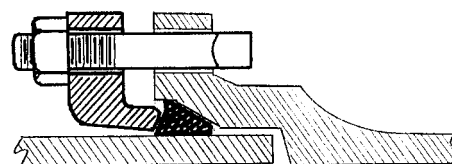
AKA Gland Kit

**Material:**

**Follower Gland:** Ductile iron MJ gland conforming to ANSI/AWWA C111/A21.11-95 and ANSI/AWWA C110/A21.10-93 and the latest revision thereto.

**Gasket:** Standard MJ rubber gasket conforming to ANSI/AWWA C111/A21.11-95.

**Bolts & Nuts:** Cor-Ten Tee-Head bolts and hexagonal nuts conforming to ANSI/AWWA C111/A21.11-95 (ASME B1.1 & B1.2).



**Design:**

Follower gland shall match Class 350 “Compact” fittings when possible.

**Connections:**

Mechanical joint.

**See Exhibit DD (Annual Bid)**

Size/Details	OUC Item ID	Manufacturer	Catalog Number
16”	058-01016	American C.I. Pipe	
20”	058-01020	McWane C.I. Pipe	
24”	058-01024	Tyler Pipe	
		U.S. Pipe & Fdry.	
		Union Fdry.	
		Griffin Pipe	
		Sigma (Russell Pipe)	
		Star Pipe	

**Revision Date:** 4/5/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Gasket – Field Lok - 4” thru 24”**

AKA Joint Restraint Gasket

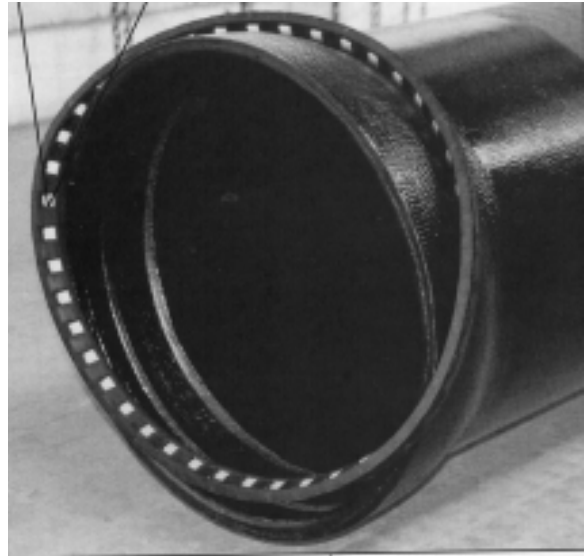
**Material:**

**Gasket:** Vulcanized SBR in accordance with ANSI/AWWA C111/A21.11-95.

**Locking Segments:** Stainless steel vulcanized into the gasket.

**Design:**

Restrained gaskets are for use only in push-on joints. Both American Pipe, Fast Grip Gaskets and US Pipe, TR Flex gaskets are acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	US -059-01204 AMER – 059-01304	U.S. Pipe & Fdry. American Pipe	Field Lok® Gasket Fast Grip
6”	US -059-01206 AMER - 059-01306		
8”	US - 059-01208 AMER – 059-01308		
10”	US - 059-01210 AMER – 059-01310		
12”	US - 059-01212 AMER – 059-01313		
16”	US - 059-01216 AMER – 059-01316		
20”	US - 059-01220 AMER – 059-01320		
24”	US - Non-Stock AMER – 059-01324		

**Revision Date:** 10/11/02 (RNK)  
5/13/02 (RNK)  
4/5/01 (RNK)  
3/10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Gasket – MJ Transition – 4” thru 12”**

AKA

**Material:**

Vulcanized styrene butadiene rubber (SBR) in accordance with ANSI/AWWA C111-A21.11-95.

**Design:**

Transition gasket shall be designed to allow mechanical joint fittings to accommodate IPS steel pipe with a watertight seal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	059-01104	American C.I. Pipe	
6”	059-01106	Russell Pipe	
8”	059-01108	Union Foundry Co.	
10”	059-01110	Griffin Pipe	
12”	059-01112		

**Revision Date:** 4/5/01 (RNK)  
 9/99 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Material Specifications**

**O-Ring – Restrained Joint PVC – 2”**

AKA

**Material:**

Acid resistant rubber O-ring meeting the requirements of ASTM F477 “Standard Specification for Elastomeric Seals (Gaskets) For Joining Plastic Pipe”.

**Design:**

These O-rings are proprietary elastomeric gaskets for use in restrained joint PVC pipe.

**FOR PERMANENT USE**

**Dimensions:**

<u>Size</u>	<u>CS O.D.</u>	<u>O.D.</u>
2”	.240”	2.770”

*Note: CS O.D. is the cross section of the O-ring.*



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	059-01312	CertainTeed Corp.	Certa-Lok O-Ring p/n 86060
		Victaulic Co. (Aquamine)	Aqua O-Ring p/n 299999992

**Revision Date:** 9/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Spline – Restrained Joint PVC – 2”**

AKA Locking Spline, Straw

**Material:**

Proprietary round nylon spline for locking restrained joint PVC pipe and fittings to couplings.

**Dimensions:**

<u>Size</u>	<u>Length</u>	<u>CS O.D.</u>
2”	10.5”	.188”

*Note: CS O.D. is the cross section of the Spline.*



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	059-01322	CertainTeed Corp.	<b>Certa-Lok Spline</b> p/n 86460
		Victaulic Co. (Aquamine)	Aqua Spline p/n 299900002

**Revision Date:** 9/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

**Material Specifications**

**Insert – for IPS HDPE – 3/4”, 1”, 4”**

AKA Stiffening Insert

**Material:**

Stainless Steel – Type 304

**Design:**

Plain end x plain end. Insert shall be suitable for use with SDR 11, iron pipe size (IPS), high density polyethylene (HDPE) tubing.

**Special Features:**

Insert shall be designed for and compatible with the Romac Series 501-H Coupling for HDPE pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" (for 3.633-3.682 I.D.)	081-01004	Romac	206-04021107
3/4"	081-01034	Ford	3/4" = #51
1"	081-01001		1" = #52

**Origin Date:** 4/08/08 (RNK)  
**Revision Date:**



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Exhibit DD**

**Mechanical Joint Ductile Iron “Compact” Pipe Fittings (Class 350) and  
 Mechanical Joint Ductile Iron Pipe Fittings (Class 350) and  
 Mechanical Joint Ductile Iron Offsets (MJ x MJ – Class 350) and  
 Mechanical Joint Ductile Iron Pipe Fitting Accessory Kits**

**Specifications****Mechanical Joint Ductile Iron “Compact” Pipe Fittings (Class 350), 4” thru 12”**

Mechanical Joint Ductile Iron “Compact” Pipe Fittings shall be in conformance with ANSI/AWWA C153/A21.53-94 and ANSI/AWWA C11/A21.11-95, and the latest revisions thereto. All fittings shall be Class 350 for 4” through 12” sizes. All ductile iron pipe fittings shall have standard pipe coatings outside, and cement lining and seal coat inside in conformance with ANSI/AWWA C104/A21.40-95 and the latest revisions thereto. The design for compact reducers shall be Mechanical Joint by Mechanical Joint (MJ x MJ). For small end reducers, see below. Accessory kits must be bid separately.

**Mechanical Joint Ductile Iron Pipe Fittings (Class 350), 16” thru 24”**

Mechanical Joint Ductile Iron Pipe Fittings shall be in conformance with ANSI/AWWA C110/A21.10-93 and ANSI/AWWA C111/A21.11-95, and the latest revisions thereto. All fittings shall be Class 350 for 16” through 24” sizes. All ductile iron pipe fittings shall have standard pipe coating outside, cement lining and seal coat inside in conformance with ANSI/AWWA C104/A21.4-95 and the latest revisions thereto. The design for reducer pipe fittings shall be Small End – Mechanical Joint. Small end MJ reducers, 4” thru 12”, shall also meet this specification. Accessory kits must be bid separately.

**Mechanical Joint Ductile Iron Offsets (MJ x MJ - Class 350), 6” thru 12”**

Mechanical Joint Ductile Iron Offsets shall be in conformance with ANSI/AWWA C110/A21.10-93 and ANSI/AWWA C111/A21.11-95, and the latest revisions thereto. All (MJ x MJ) offsets shall be Class 350 for 6” through 12” sizes – all dimensions. All ductile iron (MJ x MJ) offsets shall have standard pipe coating outside and cement lining and seal coat inside in conformance with ANSI/AWWA C104/A21.4-95 and the latest revisions thereto. Accessory kits must be bid separately.

**Mechanical Joint Ductile Iron Pipe Fitting Accessory Kits, 4” thru 12” and 16” thru 24”**

Mechanical Joint Ductile Iron Pipe Fitting Accessory Kits shall be in conformance with ANSI/AWWA C111/A21.11-95 and the latest revisions thereto. Accessory kits for 4” through 12” sizes shall also conform to ANSI/AWWA C153/A21.53-94; accessory kits for 16” through 24” sizes shall also conform to ANSI/AWWA C110/A21.10-93; and the latest revisions thereto. Each accessory kit shall be a boxed package and shall include one (1) ductile iron gland, one (1) rubber gasket, and the proper number of cor-ten bolts and nuts required for each Class 350 MJ pipe fitting face. The accessory kits, if ordered separate from the fitting, must be palletized for safety.

**Revision Date:**

02/02 (RNK)  
 10/97 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

**Mechanical Joint Ductile Iron “Compact” Pipe Fittings (Class 350) and Mechanical Joint Ductile Iron Pipe Fittings (Class 350) and Mechanical Joint Ductile Iron Offsets (MJ x MJ – Class 350) and Mechanical Joint Ductile Iron Pipe Fitting Accessory Kits**

**Specifications  
continued**

The Orlando Utilities Commission will receive bids for their requirements of mechanical joint ductile iron compact pipe fittings (Class 350) 4” through 12” sizes, and mechanical joint ductile iron pipe fittings (Class 350) 16” through 24” sizes, and mechanical joint ductile iron offsets (MJ x MJ – Class 350) 6” through 12” sizes, and mechanical joint ductile iron pipe fitting accessory kits 4” through 12” and 16” through 24” sizes - all dimensions. All prices quoted must be firm.

The Orlando Utilities Commission may accept the bid as a total or may award the MJ “Compact pipe fittings, and the MJ pipe fittings portion, and the MJ offsets portion, and the accessory kit portion separately. Each bidder must bid all sizes of the MJ ductile iron pipe “compact” pipe fittings or the “compact” pipe fittings portion of said bid will be considered incomplete and thereby rejected. Each bidder must bid all sizes of the MJ ductile iron pipe fittings or the MJ pipe fittings portion of said bid will be considered incomplete and thereby rejected. Each bidder must bid 4” through 12” MJ ductile iron pipe fitting accessory kits – complete or that accessory kit portion of said bid will be considered incomplete and thereby rejected. Each bidder must bid 16” through 24” MJ ductile iron pipe fitting accessory kits – complete or that accessory kit portion of said bid will be considered incomplete and thereby rejected. **Ductile iron offsets are exempt from this stipulation.**

Each bidder must bid understanding that all MJ pipe fittings, compact pipe fittings, (MJ x MJ) offsets, and accessory kits shall be delivered by truck with no minimum quantities being required. The MJ pipe fittings, compact fittings, MJ offsets, and accessory kits must also be palletized and strapped for ease of handling and safe unloading and will have a four (4) week maximum delivery time. Otherwise, the MJ pipe fitting, compact pipe fittings, MJ offset, and the accessory kit portion of the said bid will be considered incomplete and thereby rejected.

The Orlando Utilities Commission reserves the right to reject any or all bids and re-advertise, and further reserves the right to decide for itself just which is the lowest and best bid. The Orlando Utilities Commission further reserves the right to decide for itself if the quoted material is an equal to the material for which specifications have been given.

<b>Revision Date:</b>	02/02 (RNK) 10/97 (DSW)	 The <i>Reliable One</i> ®	Material Specifications Water Business Unit <b>ORLANDO UTILITIES COMMISSION</b>
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## Valve and Valve Boxes

<b>C 1.1</b>	Valve, Gate – with Resilient Seat – MJ 4” thru 12”	<b>3/07</b>
<b>C 1.2</b>	Valve, Gate – Flanged NRS – 3” thru 12”	<b>8/99</b>
<b>C 1.3</b>	Valve, Gate – Flanged OS & Y – 4” thru 12”	<b>8/99</b>
<b>C 2.1</b>	Valve, Tapping – with Resilient Seat – 4” thru 12”	<b>3/07</b>
<b>C 3.1</b>	Valve, Butterfly – MJ – 12” thru 24”	<b>10/05</b>
<b>C 4.1</b>	Valve Box with Lid – C.I. – 5 ¼” Shaft, Lid Only	<b>10/04</b>
<b>C 4.1a</b>	Valve Box Top Half Only – CI	<b>3/07</b>
<b>C 4.2</b>	Valve Box Riser with Lid – 1” thru 6”	<b>10/04</b>
<b>C 4.3</b>	Valve Box Lid – Non-Pop (Plastic)	<b>11/99</b>
<b>Exh EE</b>	4” thru 12” Gate Valves with Resilient Seats	<b>4/96</b>
<b>Exh GG</b>	Butterfly Valves	<b>6/98</b>

## Material Specifications

C 1.1

### Valve, Gate – with Resilient Seat – MJ – 4” thru 12”

AKA

**General:**

Valves shall conform to ANSI/AWWA C509-94 and the latest revisions thereto. Epoxy coated interior.

**Design:**

Resilient seat gate. 200 PSI working pressure. Non-rising stem (NRS) with operating nut.

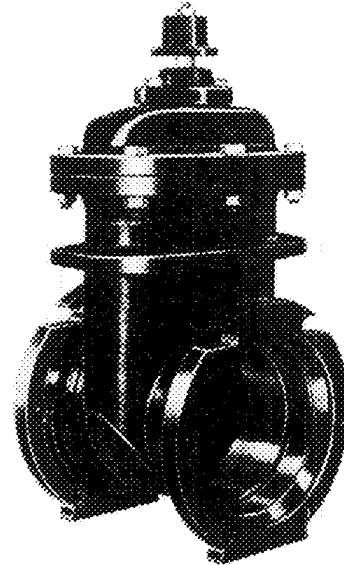
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Less MJ accessory kit.

**See Exhibit EE (Annual Bid)**



**Size/Details**

**OUC Item ID**

4”	061-01004
6”	061-01006
8”	061-01008
10”	061-01010
12”	061-01012

**Manufacturer**

**Catalog Number**

AFC	Series 500 & 2500
American-Darling Valve	“CRS-80” (No. 85)
Clow Valve	F-6100
Kennedy Valve	4000 series
M&H Valve	Style 4067-01
Mueller	A-2360-20-LN A-2370-20
U.S. Pipe & Fdry.	Metroseal (No. 5460)
Waterous	Series 500
AVK	

**Revision Date:**

5/14/99	(RNK)	8/25/99	(RNK)
4/5/96	(DSW)	3/05/01	(RNK)
3/20/95	(DSW)		
7/13/94	(DSW)		
5/8/92	(DSW)		



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

C 1.2

### Valve, Gate – Flanged NRS – 3” thru 12”

AKA

**General:**

Valves shall conform to ANSI/AWWA C509-94 and the latest revisions thereto. Epoxy coated interior.

**Design:**

Resilient seat gate. 200 PSI working pressure. Non-rising (NRS) stem with hand wheel.

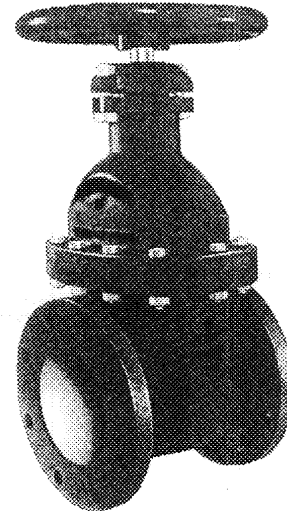
**Connections:**

Flange x flange.

**Special Feature:**

Gasket, bolts and nuts must be included for each flanged end.

See Exhibit EE



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3"	063-07003	AFC	Series 500 & 2500
4"	063-07004	American-Darling Valve	“CRS-80” (No. 82)
6"	063-07006	Clow Valve	F-6102
8"	063-07008	Kennedy Valve	4000 series
10"	063-07010	M&H Valve	Style No. 4067-02
12"	063-07012	Mueller	A-2360-LH A-2370-6
		U.S. Pipe & Fdry. Waterous	Metroseal (No. 5100) Series 500

**Revision Date:** 5/14/99 (RNK) 8/25/99 (RNK)  
 4/5/96 (DSW)  
 3/20/95 (DSW)  
 5/8/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

## Material Specifications

C 1.3

### Valve, Gate – Flanged OS & Y – 4” thru 12”

AKA

**General:**

Valves shall conform to ANSI/AWWA C509-94 and the latest revisions thereto. Epoxy coated interior.

**Design:**

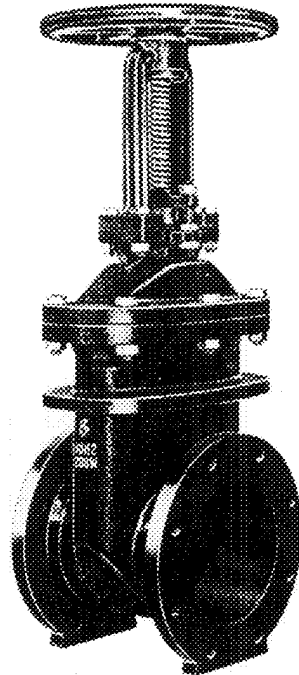
Resilient seat gate, 200 PSI working pressure. Outside screw and yoke (OS & Y) with handwheel.

**Connections:**

Flange x flange.

**Special Features:**

Gasket, bolts and nuts must be included for each flanged end.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	063-08004	AFC	Series 500 & 2500
6”	063-08006	American-Darling Valve	“CRS-80” (No. 82-OS&Y)
8”	063-08008	Clow Valve	F-6136
10”	063-08010	Kennedy Valve	4068
12”	063-08012	M&H Valve	Style No. 4068 - OS&Y
		Mueller	R-2360-LH A2079-6
		U.S. Pipe & Fdry.	5120
		Waterous	Series 500

**Revision Date:**

8/25/99	(RNK)
5/14/99	(RNK)
4/5/96	(DSW)
3/20/95	(DSW)
5/8/92	(DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

C 2.1

### Valve, Tapping – with Resilient Seat – 4” thru 12”

AKA

**General:**

Valves shall conform to applicable requirements of ANSI/AWWA C509-94 and the latest revisions thereto. Valves must also conform to all OUC specifications outlined in Exhibit EE. Must be completely epoxy coated, inside and outside.

**Design:**

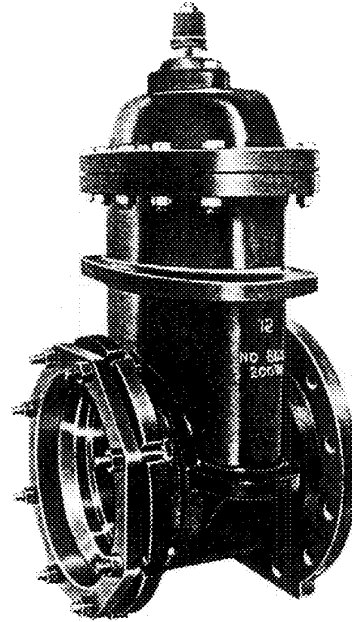
Class 250 resilient seat gate – non-rising stem with operating nut.

**Connections:**

Tapping valve or flanged x mechanical joint. Flanged end shall have a raised face (lip) to match groove cut within the flanged face of the tapping sleeve.

**Special Features:**

Less MJ accessory kit. *Must include gasket, bolts and nuts for flanged end*



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”	066-01104	American – Darling Valve	865/825 2500
6”	066-01106	AFC	F-6114
8”	066-01108	Clow	4000 series
10”	066-01110	Kennedy Valve	3751-01/3067-13
12”	066-01112	M&H Valve	A-2370-16
		Mueller	Metroseal (No. 5960) 500TM/500FM
		U.S. Pipe & Fdry. Waterous	(4”, 6” & 8” approved, 10” & 12” not approved)
		AVK	25/3X

<b>Revision Date:</b>	3/15/07 (RNK)
	3/05/01 (RNK)
	8/25/99 (RNK)
	5/14/99 (RNK)
	5/28/98 (DSW) 5/8/92



The Reliable One®

Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

C 3.1

### Valve, Butterfly – MJ – 12” thru 24”

**AKA**

**General:**

Valves shall conform to ANSI/AWWA C504-94 and the latest revisions thereto. Epoxy coated.

**Design:**

Rubber seated – Class 150B for buried installation. Two inch square operating nut or operator as specified.

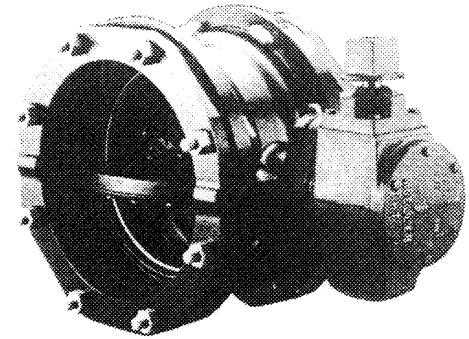
**Connections:**

Mechanical joint x mechanical joint.

**Special Features:**

Operator shall open left (counter-clockwise). Accessory kit (ductile iron gland, gasket, bolts and nuts) must be included for each MJ end.

**See Exhibit GG**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12” MJ	061-03012	Clow Valve	
16” MJ	061-03016	Henry Pratt	
20” MJ	061-03020	M&H Valve	
24” MJ	061-03024	Mueller	3B3211-20-MJ
24” FLG	063-07024		3B3211-6-FLG

**Revision Date:** 10/28/05 (RNK)  
 5/14/99 (RNK)  
 5/28/98 (DSW)  
 5/8/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

C 4.1

### Valve Box with Lid – C.I. – 5 ¼” Shaft & Lid Only

**AKA**

**Material:**

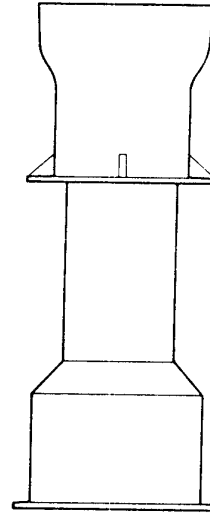
Cast iron top section, bottom section, and lid.

**Design:**

Two piece slip or sliding type with 5 ¼” shaft extension. 5 ¼” drop lid with “Water” marking. The drop lid shall weigh no less than 13 pounds. It shall be designed to remain seated when subjected to mobile traffic conditions.

**Special Features**

No.	Shaft Ext. Range	Min. Complete Weight
461	18” – 24”	59 lbs.
562	24” – 36”	79 lbs.
564	36” – 48”	90 lbs.



**Size/Details**

**OUC Item ID**

18” – 24”	063-09005
24” – 36”	063-09010
36” – 48”	063-09015

Lid Only                      063-09001

**Manufacturer**

**Catalog Number**

Opelika Foundry	4908-5461-S 4908-5562-S 4908-5564-S
Russell Pipe & Fdry. (Sigma & Nappco & Russco)	VB461-AX VB562-AX VB564-AX
Tyler Pipe	6855-461-A 6855-562-A 6855-564-A
Star Pipe	VB461A W/LID-HD VB562A W/LID-HD VB564A W/LID-HD
Pipeline Components	

**Revision Date:**

10/30/04 (RNK)  
6/07/04 (RNK)  
4/12/01 (RNK)  
5/14/99 (RNK)  
5/8/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**C 4.1a**

**Valve Box Top Half Only – C.I. – 5 1/4” Shaft**

**AKA**

**Material:**

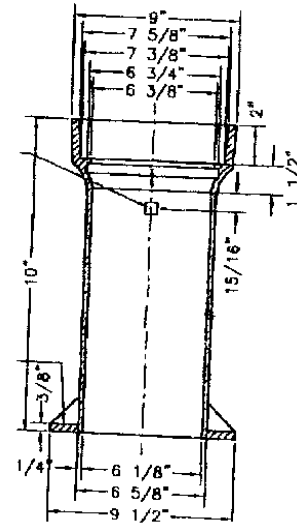
Cast iron top section, bottom section, and lid.

**Design:**

Top for two piece slip or sliding type with 5 1/4” shaft extension.

**Special Features**

Heavy Duty wall construction.



**Size/Details**

**OUC Item ID**

18"	063-09105
24"	063-09110
36"	063-09115

**Manufacturer**

**Catalog Number**

Opelika Foundry  
 Russell Pipe & Fdry.  
 (Sigma & Nappco &  
 Russco)  
 Tyler Pipe  
 Star Pipe  
 Pipeline Components

**Revision Date:** 3/22/07 (RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**



**Material Specifications**

**C 4.2**

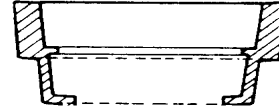
**Valve Box Riser – 1” thru 6”**

AKA Adapter

**Material:**  
**Cast Iron**

**Design:**  
For slip or sliding type 5 ¼” shaft 461, 562, & 564 valve boxes with lids. Standard lid must properly fit the riser and may be marked “Water”. Refer to page C4.1 for valve box dimension information.

**Special Features:**  
Must securely fit in all 461, 562, and 564 valve boxes and accommodate standard 13 pound lids.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1 ”	063-09020	Opelika Foundry	6016-B (Water)
1 ½”	063-09025	Russell Pipe & Fdry.	
2 ½”	063-09030	Sigma	1” Riser w/ Std Lid
6”	063-09060	Tyler Pipe (6855 box)	1 ½” Riser w/ Std. Lid 2 ½” Riser w/ Std. Lid
		Star Pipe	VBR1, VBR1.5, VBR2.5
		Pipeline Components	

**Revision Date:**  
3/15/07 (RNK)  
10/30/04 (RNK)  
6/07/04 (RNK)  
5/28/98 (DSW)  
5/8/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**C 4.2a**

**Valve Box Replacement Lid**

**AKA**

**Material:**

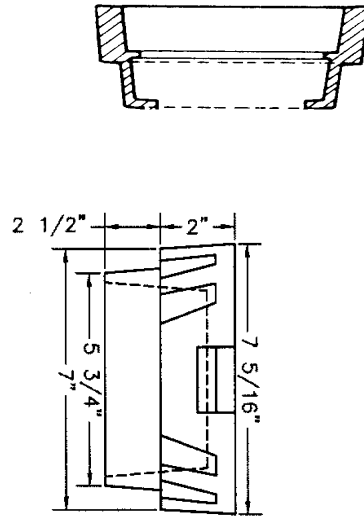
**Cast Iron**

**Design:**

For heavy duty slip valve boxes. Standard lid must properly fit the valve box and/or riser. The lid shall be designed to remain seated when subjected to mobile traffic conditions.

**Special Features:**

Must securely fit in all heavy duty valve boxes and the lid shall weigh no less than 13 pounds.



**Size/Details**

13 lbs

**OUC Item ID**

063-09000

**Manufacturer**

Opelika Foundry  
Russell Pipe & Fdry.  
Sigma  
Tyler Pipe (6855 box)

**Catalog Number**

Star Pipe

Pipeline Components

**Revision Date:** 3/22/07 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

# Material Specifications

C 4.3

## Valve Box Lid – Non-Pop (Plastic)

**AKA**

**Material:**

Fiberglass- reinforced Nylon.

**Design:**

The lid will have '**Water**' molded into the top. The main body shall be constructed of high-impact, fiberglass-reinforced Nylon. Must be capable of operating at temperatures in excess of 250 degrees, and highly resistant to UV sunlight, ozone, hydrocarbon fluids, and other chemicals associated with roadways. The rubber retention seal shall be ozone and chemical resistant thermoplastic Elastomer composite. The rubber seal shall absorb the direct shock and vibration from traffic impact.

**Special Features:**

Must securely fit in all 461, 562, and 564 valve boxes. (OUC Specification C 4.1)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
5 ¼” Non-Pop Lid	063-09016	SW Services (LJ Ruffin & Associates)	'MIZI' (WATER) Non-Pop Lid

**Revision Date:** 11/4/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**4” through 12” Gate Valves with Resilient Seats**

**Specifications**

All resilient seat gate valves purchased under these specifications shall as a minimum conform to AWWA Standard C509-94 and the latest revisions thereto. The resilient seat gate valve body and bonnet shall be made of Class B gray iron meeting ASTM 126 or ductile iron conforming to ASTM A395 or ASTM 536 and shall be provided with mechanical joint ends complete with accessories and suitable for 200 PSI working pressure. Test pressure shall be twice the rated working pressure and at all times zero leakage will be maintained. The dual sealing mechanism must be a replaceable reinforced specially contoured molded rubber wedge or disc. Valve stem seals will be “O” ring. Valves shall be delivered to OUC with all nuts and bolts properly tightened and ready for installation.

Resilient seat gate valves are to operate in a vertical position, shall open left (counter-clockwise) with non-rising stem (NRS), and have a 2-inch square operating nut. Accessories for the mechanical joint ends shall include rubber gaskets with glands, COR-TEN bolts and nuts packaged in the proper manner to accommodate each individual MJ valve end. Valves must be delivered securely on pallets with accessory packages.

The interior areas of the cast iron shall be provided with a two part thermosetting epoxy protective coating and shall function as a physical, chemical, and electrical barrier between the base metal to which it is applied and the surrounding medium. The coating shall be non-toxic and shall not impart taste to the water. The coating must be formulated from materials deemed acceptable per the Food and Drug Administration Document Title 2 of the Federal Regulations on Food Additives, Section 175.300, entitled, Resins and Polymeric Coatings. The coating shall have a successful record of performance in valves, pipe and other allied equipment.

The number of valves in each size class, as shown on the bid form, are estimated requirements of the Orlando Utilities Commission for a period of 12 months, beginning with the latest bid date. However, the Orlando Utilities Commission reserves the right to increase or decrease the number of gate valves from the quantities as shown. All bids must be firm for a twelve month period, and prices quoted will be f.o.b. delivered to Orlando Utilities Commission Warehouse. Manufacturer shall maintain an inventory of valves furnished within the State of Florida that may be delivered to Orlando Utilities Commission within a 48 hour time limit.

<b>Revision Date:</b>	4/5/96 (DSW)
	3/20/95 (DSW)
	5/8/92 (DSW)

	Material Specifications Water Business Unit <b>ORLANDO UTILITIES COMMISSION</b>
<b>The <i>Reliable One</i></b> ®	

**4” through 12” Gate Valves with Resilient Seats**

**Specifications (cont)**

The Orlando Utilities Commission reserves the right to accept the bid in whole or in part, the right to reject any or all bids and re-advertise, and the right to decide for itself just which is the lowest and best bid. Delivery time will be a consideration in awarding the bid. Delivery time will be guaranteed and failure to meet schedule will be cause for Orlando Utilities Commission to cancel successful bidders contract and re-advertise.

The Orlando Utilities Commission further reserves the right to decide for itself if the quoted material is an equal to the material for which specifications have been given.

By mutual consent this agreement can be extended by periods of twelve months.

Written releases will be made as required by the Purchasing Division.

**Revision Date:** 3/20/95 (DSW)  
5/8/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Butterfly Valves

### Specifications

All butterfly valves purchased under these specifications shall as a minimum be manufactured to conform to ANSI/AWWA C504-94 and the latest revisions thereto. The body, disc, shaft, seats, bearings, and actuators shall be designed based on Class 150B valves and may be of either the short or long body type. All valves shall have a minimum of 4 mil factory applied thermosetting (epoxy coating) on all internal ferrous surfaces. Coatings shall meet all FDS and government regulations. The valves shall have mechanical joint ends with accessories.

The valve disc shall be corrosion-resistant alloy, cast iron, or ductile iron and shall be pressure sealed to the stainless shaft. The valves shall be equipped with a stop in the actuator. The shaft seals shall be the self-adjusting Chevron "Split-V" or "O-ring" type, suitable for buried service. The shaft may be of the through type or stub type and shall be marked on the end to indicate the position of the valve disc in relation to the shaft. It shall be equipped with a (2) two inch square operating nut or operator as specified.

The valve seat shall be made of rubber and may be located either in the body of the valve or in the disc. Rubber seats located in the body of the valve shall be encapsulated on three sides within the body. If the valve has the rubber seat in the disc, the valve must have a floating "O" ring under the seat ring. On butterfly valves 24" and larger the seat shall be adjustable and replaceable in the field.

The actuator shall open left (counter-clockwise) and shall be of the traveling nut type. The actuator housing shall be removable under pressure to facilitate repair or replacement. The actuator shall be capable of handling 450 foot pounds of torque at the stops without damage.

**Revision Date:** 6/1/98 (DSW)  
5/8/92 (DSW)

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Water Business Unit  
**ORLANDO UTILITIES**  
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## Fire Hydrants

<b>D 1.1</b>	Fire Hydrant – Breakaway	<b>6/02</b>
<b>D 1.2</b>	Repair Kit – Fire Hydrant Traffic	<b>9/01</b>
<b>D 1.3</b>	Extension Kit – Fire Hydrant – 6” & 12”	<b>9/01</b>
<b>D 1.4</b>	Extension Kit – Fire Hydrant – 12”	<b>9/01</b>
<b>Exhibit HH</b>	Fire Hydrants	<b>9/01</b>

# Material Specifications

D 1.1

## Fire Hydrant – Breakaway

**AKA**

**General:**

Fire hydrants shall conform to ANSI/AWWA C502-94 and the latest revisions thereto. Traffic section, lower barrel, and shoe interior must be epoxy coated.

**Design:**

Breakaway, dry barrel type, with drain holes plugged. Operating nut and hose nozzle cap nuts must be 1 ½” pentagon shape.

**Connections:**

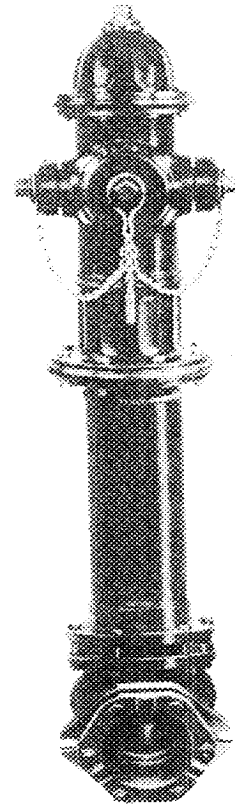
**Inlet:** Mechanical joint

**Outlets:** (2) 2 ½” hose nozzles and (1) 4 ½” pumper nozzle.

**Special Features:**

**Traffic coupling must be made of Bronze, Cast Iron, or Stainless Steel. No substitutes.**

Hydrant stems, stem threads, and bearings shall be protected by an oil or grease self-lubricating system. Accessory kits have been removed from specification as of March 5, 2001.



See Exhibit HH (Annual Bid)

Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 30”	095-01230	American Flow Control	<b>B-84-B</b>
6” x 36”	095-01236	Clow Valve	<b>Medallion</b>
6” x 42”	095-01242	Kennedy Valve	K-81D
6” x 48”	095-01248	M&H Valve	#929
6” x 54”	095-01254	Mueller	A-423
6” x 60”	095-01260	U.S. Pipe & Fdry. American AVK	Metropolitan M-94 Series 2780

**Revision Date:**

6/20/02	(RNK)
9/05/01	(RNK)
3/05/01	(RNK)
8/31/98	(DSW)



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## Material Specifications

D 1.2

### Repair Kit – Fire Hydrant Traffic

**AKA** Safety Flange Repair Kit, Collision Repair Kit

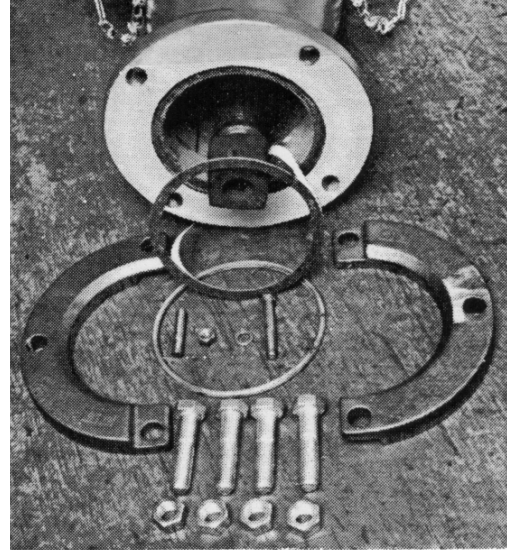
**General:**

All components of the traffic repair kit shall be designed for and properly fit the specific make and model fire hydrant for which they are intended. Neither the traffic kits nor any component of the kits shall diminish the operating efficiency or service life of the fire hydrant to which they are attached. All components shall conform, when applicable, to ANSI/AWWA C502-94 and the latest revisions thereto.

**Special Features:**

**Traffic coupling must be made of Bronze, Cast Iron, or Stainless Steel. No substitutes.**

Traffic repair kits shall include the appropriate amount of stem couplings, pins, flange and bonnet o-rings or gaskets, safety flange(s), lubricant, bolts, and nuts as required.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1] 5 ¼" AFC B84B	095-01302	1] American Flow Control (AFC) or Hydrant Repair Parts	<b>AFCB84BTRK</b> HRPI-473/584
2] 5 ¼" Clow Medallion	095-01304	2] Clow Valve Co. or Hydrant Repair Parts	R1620653 HRPI-653
3] 5 ¼" Clow 2500	095-01305	3] Clow Valve Co. or Hydrant Repair Parts	R1620545 HRPI-2500
4] 5 ¼" Kennedy K81D Guardian	095-01306	4] Kennedy Valve or Hydrant Repair Parts	K8149 HRPI-5-8149
5] 5 ¼" Mueller Centurion	095-01308	5] Mueller or Hydrant Repair Parts or Hydraflo	A 301 HRPI-301 2074
6] 5 ¼" M&H 929	095-01310	6] M&H or Hydrant Repair Parts or Hydraflo	442929-5 ¼ 929-5 ¼ 1507
7] 5¼" US PIPE M-94	095-01312	7] US PIPE	V658665

**Revision Date:** 9/05/01 (RNK)  
8/26/99 (RNK)  
10/16/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

D 1.3

### Extension Kit – Fire Hydrant – 6”

AKA

**General:**

All components of the fire hydrant extension kit shall be designed for and properly fit the specific make and model fire hydrant for which they are intended. Neither the extension kit nor any component of the kit shall diminish the operating efficiency or service life of the fire hydrant to which they are attached. All components shall conform, when applicable, to ANSI/AWWA C502-94 and the latest revisions thereto.



**Special Features:**

Extension coupling must be made of Bronze, Cast Iron, or Stainless Steel. No substitutes. Fire hydrant extension kits shall include the appropriate quantity of barrels, flanges, couplings, stems or rods, gaskets, lubricant, and hardware to properly complete the installation.

Size/Details	OUC Item ID	Manufacturer	Catalog Number
1] 5 ¼” Mueller Centurion – 6” ext.	095-01004	1] Mueller or Hydrant Repair Parts or Hydriflo	A 320-6 HRPI-375-6” 1341 – 6”
2] 5 ¼” Clow Medallion – 6” ext.	095-01008	2] Clow or Hydrant Repair Parts	R1620664 HRPI-475-6”
3] 5¼” US PIPE M-94 - 6” ext.	095-01010	3] US PIPE	V664509
4] 5¼” US PIPE M-250 - 6” ext.	095-01012	4] US PIPE	V658249

**Revision Date:** 9/05/01 (RNK)  
8/26/99 (RNK)  
3/10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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**Extension Kit – Fire Hydrant – 12”**

AKA

**General:**

All components of the fire hydrant extension kit shall be designed for and properly fit the specific make and model fire hydrant for which they are intended. Neither the extension kit nor any component of the kit shall diminish the operating efficiency or service life of the fire hydrant to which they are attached. All components shall conform, when applicable, to ANSI/AWWA C502-94 and the latest revisions thereto.

**Special Features:**

Extension coupling must be made of Bronze, Cast Iron, or Stainless Steel. No substitutes. Fire hydrant extension kits shall include the appropriate quantity of barrels, flanges, couplings, stems or rods, gaskets, lubricant, and hardware to properly complete the installation.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1] 5 ¼” Mueller Centurion – 12” ext.	095-01104	1] Mueller or Hydrant Repair Parts or Hydrflo	A320-12 HRPI-375-12” 1341 – 12”
2] 5 ¼”Clow Medallion – 12” ext.	095-01108	2] Clow or Hydrant Repair Parts	R1620665 HRPI-475-12”
3] 5¼” US PIPE M-94 - 12” ext.	095-01109	3] US PIPE	V664519
4] 5¼” US PIPE M-250 - 12” ext.	095-01110	4] US PIPE	V658259

**Revision Date:** 9/05/01 (RNK)  
8/26/99 (RNK)  
3/10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Fire Hydrants

### Specifications

Fire hydrants provided under this specification shall be post type, dry-barrel, Class A fire hydrants conforming to ANSI/AWWA C502-94 and the latest revisions thereto. The hydrants shall further comply with all requirements of Associates Factory Mutual Fire Insurance Companies and shall be listed with Underwriter’s Laboratories. The flow capacity shall be 1250 gpm with a maximum permissible head loss of 6.0 psi, the rated water working pressure shall be 150 psi, and the test pressure shall be 300 psi. All hydrants meeting this specification shall be the traffic “breakaway” type.

The inlet connection shall be mechanical joint conforming to ANSI Specification A21.10 for connection to pipe 6 inches in diameter. Bolt holes at either side of the exterior flange shall be slotted to the outer face of the flange to accommodate tie rods, or the fire hydrant shall be equipped with strapping lugs. Accessories for the mechanical joint ends shall include rubber gaskets with glands and COR-TEN bolts and nuts. Drain holes in the shoe or seat shall be deleted at the factory or they shall be plugged with brass plugs.

The barrel section of the hydrant shall be made in two or more sections, with a flange located at least two inches above the finished grade line, and provided with a break flange, flange clips or lugs at the ground line. Undercut or frangible bolts for the break connection are not acceptable. Hydrants shall have the capability of turning the upper barrel section 360° at any desired angle. Iron components, i.e. barrel, lower barrel, and shoe, shall be all cast iron or ductile iron. The traffic section, lower barrel, and shoe interior of the hydrant shall have a minimum 4 mil thickness of factory applied thermosetting (epoxy) coating.

The main valve shall be compression type, opening against pressure and closing with pressure. The main valve opening shall be 5 1/4 inches in size. The hydrant main valve and operating parts including valve seat, valve seat insert, and upper valve washer shall all be bronze, meeting either ASTM B-61, B-62, B-98, B-150, or B-763. The main valve shall be placed between the lower barrel flange and the shoe flange thus assuring accessibility. To prevent overtravel, a travel stop shall be placed in either the hydrant shoe or hydrant bonnet.

Hydrant stems, stem threads, and bearings shall be protected by a self-lubricating system consisting of an oil or grease filled reservoir serviceable by external means. Oil or grease used for lubrication shall be non-toxic and safe for use in potable water systems. Grease shall be non-hardening. Any migration or leakage of oil or grease into the barrel or bonnet areas is unacceptable. The bonnet shall be of dry type design.

**Revision Date:** 9/5/01 (RNK)  
 9/4/98 (DSW)  
 5/8/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
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**Fire Hydrants**

**Specifications (cont.)**

Mechanical working areas in the hydrant bonnet shall be protected from water intrusion from both inside and outside the hydrant by use of “O” rings. Hydrants having stem thread (upper or lower) that is constantly exposed or immersed in water are not acceptable.

All internal stem pins or bolts and nuts shall be stainless steel. The safety stem coupling shall be of either Cast Iron, Bronze, or Stainless Steel.

The fire hydrants shall open left (counter-clockwise). They shall have pentagon shaped operating nuts and cap nuts measuring 1 ½” inches from point to flat.

Hydrant nozzles shall consist of two 2 ½” inch hose nozzles and one 4 ½ inch pumper nozzle, all with NFPA No. 194 for National (American) Standard Fire Hose Coupling Screw Threads. The hose and pumper outlets shall be on the same horizontal plane with a minimum distance of 18 inches from the center of nozzle to ground line located not more than 3 ½ inches from the centerline of the break flange. All nozzles shall be field replaceable. There shall also be a vertical clearance of 9 inches from the centerline of the pumper outlet to the top of the bonnet to comply with an Orlando Fire Department requirement related to their equipment.

The American Water Works uniform color scheme shall be utilized on all fire hydrants, with the exception of the upper barrels, which shall be aluminum or silver. Bonnet or tops and nozzle caps shall be blue.

Fire hydrant length, also known as the bury length, shall be as measured from the bottom of the connecting pipe to the ground line of the hydrant in six inch increments, from 30 inches to 60 inches inclusive. The bury length shall be clearly indicated on the upper 6 inches of the lower barrel of each hydrant.

Manufacturers of acceptable fire hydrants shall maintain an inventory of hydrants to be furnished within the State of Florida that may be delivered to Orlando Utilities Commission within any 48 hour time limit. The initial purchase or release for any fire hydrant contract shall include three (3) sets of Maintenance and Repair Tools and factory made traffic hydrant repair kits.

**Revision Date:** 9/5/01 (RNK)  
9/4/98 (DSW)  
5/8/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**



## Tapping Sleeves and Service Clamps

<b>E 1.1</b>	Tapping Sleeve – Split – 6” x 4” and 6” x 8”	6/04
<b>E 1.2</b>	Tapping Sleeve – Split – 8” x 4”, 8” x 6”, 8” x 8”	6/04
<b>E 1.3</b>	Tapping Sleeve – Split – 10” x 4” thru 10” x 10”	6/04
<b>E 1.4</b>	Tapping Sleeve – Split – 12” x 4” thru 12” x 12”	6/04
<b>E 1.5</b>	Tapping Sleeve – Split – 14” x 4” thru 14” x 12”	6/04
<b>E 1.6</b>	Tapping Sleeve – Split – 16” x 4” thru 16” x 12”	6/04
<b>E 1.7</b>	Tapping Sleeve – Split – 20” x 6” thru 20” x 12”	6/04
<b>E 1.8</b>	Tapping Sleeve – Split – 24” x 6” thru 24” x 12”	6/04
<b>E 1.9</b>	Tapping Sleeve – Split – 30” x 6”	6/04
<b>E 1.10</b>	Tapped Full Circle Repair Clamp – 2” & 4” x 1”cc	4/08
<b>E 2.1</b>	Service Clamp for C.I. Pipe – 4” x 2” IPT	2/08
<b>E 2.1a</b>	Service Clamp for C.I. Pipe – 3” x 2” IPT	2/08
<b>E 2.1b</b>	Service Clamp for C.I. Pipe – 3” x 1” Transite	3/99
<b>E 2.2</b>	Service Clamp for C.I. Pipe – 6” x 2” IPT	2/08
<b>E 2.3</b>	Service Clamp for C.I. Pipe – 8” x 2” IPT	2/08
<b>E 2.4</b>	Service Clamp for C.I. Pipe – 10” x 2” IPT	2/08
<b>E 2.5</b>	Service Clamp for C.I. Pipe – 12” x 2” IPT	2/08
<b>E 2.6</b>	Service Clamp for C.I. Pipe – 16” x 2” IPT	2/08
<b>E 2.7</b>	Service Clamp for C.I. Pipe – 20” x 2” IPT	2/08
<b>E 2.8</b>	Service Clamp for C.I. Pipe – 24” x 2” IPT	2/08
<b>E 3.1</b>	Service Clamp for C900 4” thru 8” PVC Pipe	10/98

## Tapping Sleeves and Service Clamps

<b>E 4.1</b>	Service Clamp for Class 200 2” PVC Pipe (cc)	<b>6/04</b>
<b>E 4.2</b>	Service Clamp for Class 200 4” PVC Pipe (cc)	<b>10/98</b>
<b>E 4.3</b>	Service Clamp for Class 200 4” PVC Pipe (IPT)	<b>10/98</b>
<b>E 5.1</b>	Service Clamp for 2” Steel Pipe (cc)	<b>2/08</b>
<b>E 6.1</b>	Service Clamp for 2” x ¾” & 1” IPS HDPE (cc)	<b>7/99</b>
<b>E 6.2</b>	Service Clamp for 4” x ¾” & 1” IPS HDPE (cc)	<b>7/99</b>

## Material Specifications

E 1.1

### Tapping Sleeve – Split – 6” x 4” and 6” x 6”

AKA

**Material:**

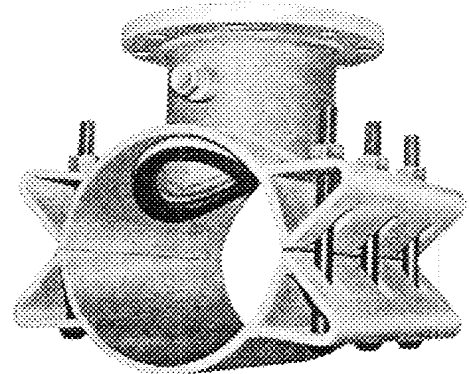
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 6.90” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 4”	080-09664	APAC Products	512-6.90
6” x 6”	080-09666	Ford Meter Box	FTSC-716
		JCM Ind.	412-0690 (ESS)
		Mueller	None
		Romac	FTS420-7.16-SS
		Smith-Blair	622-06900400-031 (6 x 4)
			622-06900600-231 (6 x 6)
		Water Works Mfg.	CT-790
		Cascade	CFT 716 – 4 ESS CFT 716 – 6 ESS

**Revision Date:** 6/07/04 (RNK)  
9/30/98 (DSW)



Material Specifications  
Water Business Unit  
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## Material Specifications

E 1.2

### Tapping Sleeve – Split – 8” x 4” thru 8” x 8”

AKA

**Material:**

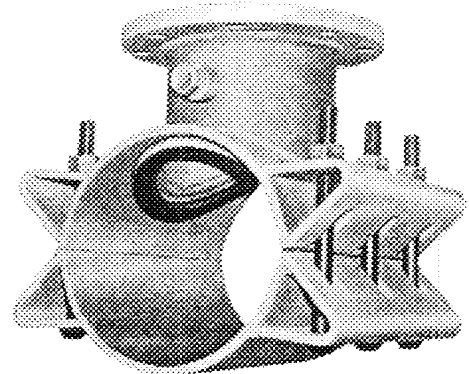
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 9.05” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
8” x 4”	080-09684	APAC Products	512-9.05
8” x 6”	080-09686	Ford Meter Box	FTSC-937
8” x 8”	080-09688	JCM Ind.	412-0905 (ESS)
		Mueller	None
		Romac	FTS420-9.37-SS
		Smith-Blair	622-09050400 (8 x 4)
			622-09050600-031 (8 x 6)
			622-09050800-231 (8 x 8)
		Water Works Mfg.	CT-790
		Cascade	CFT 937 – 4 ESS
			CFT 937 – 6 ESS
			CFT 937 – 8 ESS

**Revision Date:** 6/07/04 (RNK)  
 9/30/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

E 1.3

### Tapping Sleeve – Split – 10” x 4” thru 10” x 10”

AKA

**Material:**

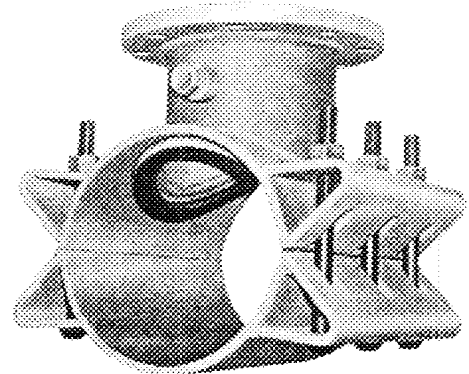
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 11.10” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
10” x 4”	080-09704	APAC Products	512-11.10
10” x 6”	080-09706	Ford Meter Box	FTSC-1147
10” x 8”	080-09708	JCM Ind.	412-1110 (ESS)
10” x 10”	080-09710	Mueller	None
		Romac	FTS420-11.47-SS
		Smith-Blair	622-11100400-031 (10 x 4)
			622-11100600-031 (10 x 6)
			622-11100800-031 (10 x 8)
			622-11101000-231(10 x 10)
		Water Works Mfg.	CT-790
		Cascade	CFT 1147 – 4 ESS
			CFT 1147 – 6 ESS
			CFT 1147 – 8 ESS
			CFT 1147 – 10 ESS

**Revision Date:** 6/07/04 (RNK)  
 9/30/98 (DSW)



Material Specifications  
 Water Business Unit  
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## Material Specifications

E 1.4

### Tapping Sleeve – Split – 12” x 4” thru 12” x 12”

AKA

**Material:**

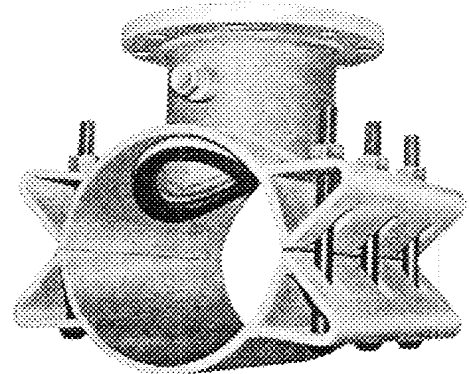
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 13.20” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12” x 4”	080-09724	APAC Products	512-13.20
12” x 6”	080-09726	Ford Meter Box	FTSC-1360
12” x 8”	080-09728	JCM Ind.	412-1320 (ESS)
12” x 10”	080-09720	Mueller	None
12” x 12”	080-09722	Romac	FTS420-13.60-SS
		Smith-Blair	622-13200400-031 (12 x 4)
			622-13200600-031 (12 x 6)
			622-13200800-031 (12 x 8)
			622-13201000-031 (12x10)
			622-13201200-231 (12x12)
		Water Works Mfg.	CT-790
		Cascade	CFT 1360 4 – ESS
			CFT 1360 6 – ESS
			CFT 1360 8 - ESS
			CFT 1360 10 – ESS
			CFT 1360 12 - ESS

**Revision Date:** 6/07/04 (RNK)  
 9/30/98 (DSW)



Material Specifications  
 Water Business Unit  
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## Material Specifications

E 1.5

### Tapping Sleeve – Split – 14” x 4” thru 14” x 12”

AKA

**Material:**

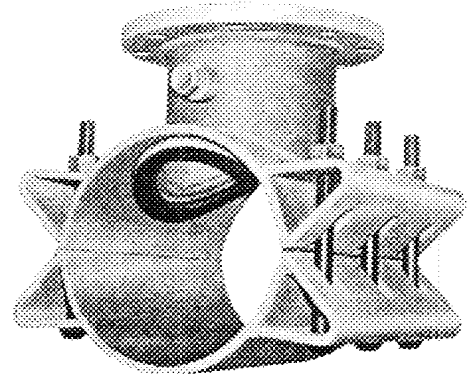
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 15.30” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
14” x 4”	080-09744	APAC Products	<b>512-15.30</b>
14” x 6”	080-09746	Ford Meter Box	<b>FTSC-1572</b>
14” x 8”	080-09748	JCM Ind.	412-1530 (ESS)
14” x 10”	080-09740	Mueller	None
14” x 12”	080-09742	Romac	FTS420-15.80-SS
		Smith-Blair	622-15300400-031 (14 x 4) 622-15300600-031 (14 x 6) 622-15300800-031 (14 x 8) 622-15301000-031 (14x10) 622-15301200-031 (14x12)
		Water Works Mfg. Cascade	CT-790 CFT 1572 4 – ESS CFT 1572 6 – ESS CFT 1572 8 – ESS CFT 1572 10 – ESS CFT 1572 12 – ESS

**Revision Date:** 6/07/04 (RNK)  
9/30/98 (DSW)



Material Specifications  
Water Business Unit  
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## Material Specifications

E 1.6

### Tapping Sleeve – Split – 16” x 4” thru 16” x 12”

AKA

**Material:**

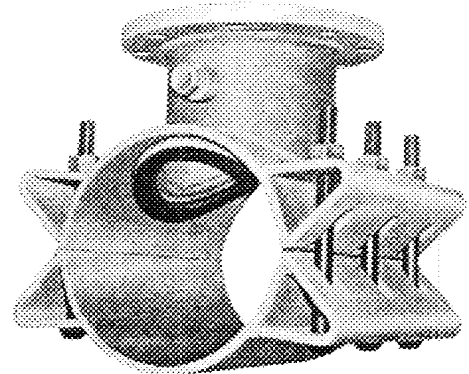
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 17.40” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16” x 4”	080-09764	APAC Products	512-17.40
16” x 6”	080-09766	Ford Meter Box	FTSC-1787
16” x 8”	080-09768	JCM Ind.	412-1740 (ESS)
16” x 10”	080-09760	Mueller	None
16” x 12”	080-09762	Romac	FTS420-17.87-SS
		Smith-Blair	622-17400400-031 (16 x 4) 622-17400600-031 (16 x 6) 622-17400800-031 (16 x 8) 622-17401000-031 (16x10) 622-17401200-031 (16x12)
		Water Works Mfg. Cascade	CT-790 CFT 1787 4 – ESS CFT 1787 6 – ESS CFT 1787 8 – ESS CFT 1787 10 – ESS CFT 1787 12 - ESS

**Revision Date:** 6/07/04 (RNK)  
9/30/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

E 1.7

### Tapping Sleeve – Split – 20” x 6” thru 20” x 12”

AKA

**Material:**

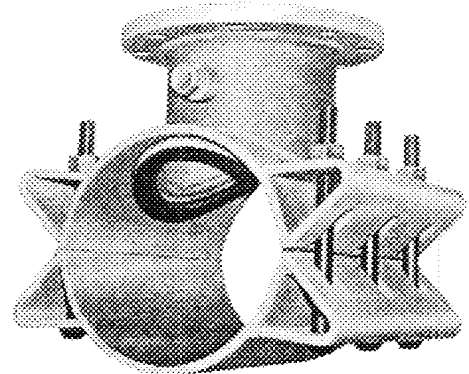
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 21.60” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
20” x 6”	080-09806	APAC Products	512-21.60
20” x 8”	080-09808	Ford Meter Box	FTSC-2215
20” x 10”	080-09800	JCM Ind.	412-2160 (ESS)
20” x 12”	080-09802	Mueller	None
		Romac	FTS420-22.15-SS
		Smith-Blair	622-21600600-031 (20 x 6)
			622-21600800-031 (20 x 8)
			622-21601000-031 (20x10)
			622-21601200-031 (20x12)
			CT-790
		Water Works Mfg.	CFT 2213 6 – ESS
			CFT 2213 8 – ESS
			CFT 2213 10 – ESS
			CFT 2213 12 – ESS

**Revision Date:** 6/07/04 (RNK)  
 9/30/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

E 1.8

### Tapping Sleeve – Split – 24” x 6” thru 24” x 12”

AKA

**Material:**

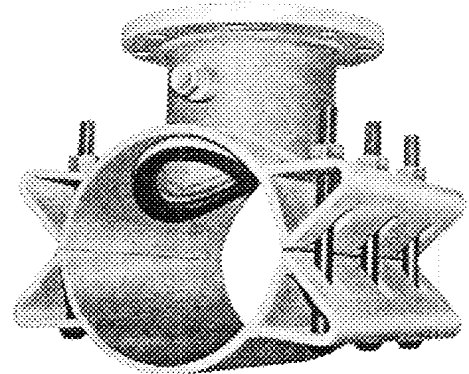
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 350 ductile iron pipe, 25.80” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
24” x 6”	080-09846	APAC Products	512-25.80
24” x 8”	080-09848	Ford Meter Box	FTSC-2641
24” x 12”	080-09842	JCM Ind.	412-2580 (ESS)
		Mueller	None
		Romac	FTS420-26.41-SS
		Smith-Blair	622-25800600-031 (24 x 6)
			622-25800800-031 (24 x 8)
			622-25801200-031 (24x 2)
		Water Works Mfg.	CT-790
		Cascade	CFT 2641 6 – ESS
			CFT 2641 8 – ESS
			CFT 2641 12 – ESS

**Revision Date:** 6/07/04 (RNK)  
 9/30/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

E 1.9

### Tapping Sleeve – Split – 30” x 6”

AKA

**Material:**

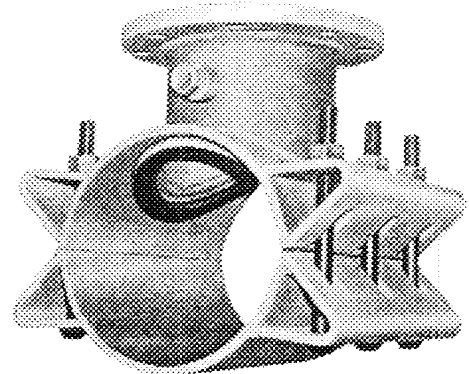
**Body:** Carbon steel ASTM A285 Grade C.  
**Flanged Outlet:** ANSI/AWWA C207-94 Class D, 150 lb. drilling, recessed for tapping valve.  
**Gasket:** Compounded for use with water.  
**Bolts & Nuts:** Stainless steel 18-8 type 304.  
**Finish:** Fusion applied epoxy coating.

**Design:**

Tapping sleeves must fit Pressure Class 250 ductile iron pipe, 32.00” O.D.

**Special Features:**

Overall stainless steel tapping valves are **NOT ACCEPTABLE.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
30” x 6”	080-09906	APAC Products Ford Meter Box JCM Ind. Mueller Romac Smith-Blair Water Works Mfg. Cascade	512-32.00 FTSC-3222 412-3200 (ESS) None FTS420-32.22-SS 622-32000600-031 CT-790 CFT 3222 6 – ESS

**Revision Date:** 6/07/04 (RNK)  
9/30/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**



## Material Specifications

E 1.10

### Tapped Full Circle Repair Clamp – 2” & 4” x 1” cc

AKA

**Material:**

**Body:** Stainless Steel Type 304.  
**Tapped Outlet:** Stainless steel outlet welded to the band, with CC threads.  
**Gasket:** Nitrile (Buna N)  
**Bolts & Nuts:** High strength low-alloy steel ASTM A325 or A242 with heavy semi-finished hexagon nuts ASTM A563.

**Design:**

Tapped sleeve must fit Pressure Class 250 ductile iron pipe



**Size/Details**

**OUC Item ID**

2” x 1”cc  
 4” x 1”cc

080-09902  
 080-09904

**Manufacturer**

Smith Blair

**Catalog Number**

2”=238-00023807-009  
 4”=238-00045007-009

**Revision Date:** 4/08/08 (RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

E 2.1

### Service Clamp for C.I. Pipe – 4” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

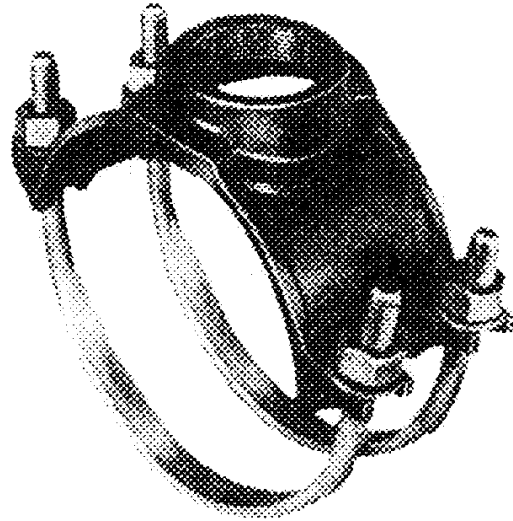
For ductile iron and cast iron pipe.


**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped with approximate range of 4.74” thru 5.14” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4” x 2”	073-01042	Dresser Mfg. Ford Meter Box JCM Ind. Mueller Smith-Blair Romac	Style 91 F202-526 x IP7 402-20545-14 H 10501 or DB2A0450IP200 313-051414-000 DI 313-056314-000 CAST 202U-480x2” IP
<b>Revision Date:</b>	3/28/08 (RNK) 6/07/04 (RNK) 10/13/98 (DSW)	 <b>The Reliable One®</b>	
		Material Specifications Water Business Unit <b>ORLANDO UTILITIES</b> COMMISSION	

## Material Specifications

E 2.1a

### Service Clamp for C.I. Pipe – 3” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

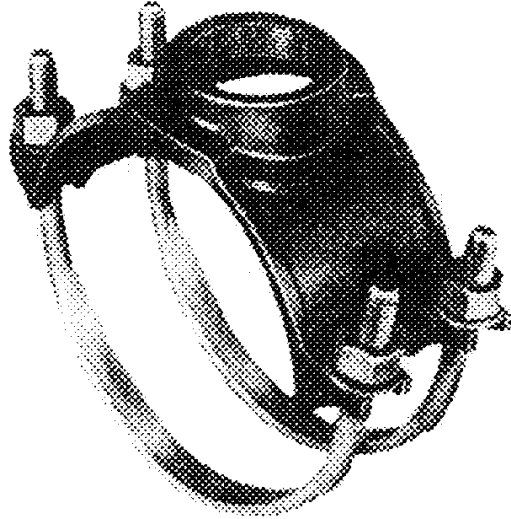
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 3.74” O.D. Gasket to be cemented in place.



**Size/Details**

OUC Item ID

3” x 2”

073-01032

Manufacturer

Smith-Blair  
Romac

**Catalog Number**

313-041314-000  
202U-405 x 2”IP

**Revision Date:**

3/28/08 (RNK)  
6/29/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 2.1b

### Service Clamp for C.I. Pipe – 3” x 1” Transite

AKA “AC”

**Material:**

**Body:** Cast bronze, ASTM-B584, 85-5-5-5

**Bale and Nuts:** Copper silicon alloy 651 bolt temper, ASTM-B98.

**Washers:** Silicon bronze, ASTM-B36.

**Gasket:** Grade 60 Buna N-compounded to resist oil, alkalies, most (aliphatic) hydrocarbon fluids, water and many chemicals. Temperatures up to 212°F.

**Design:**

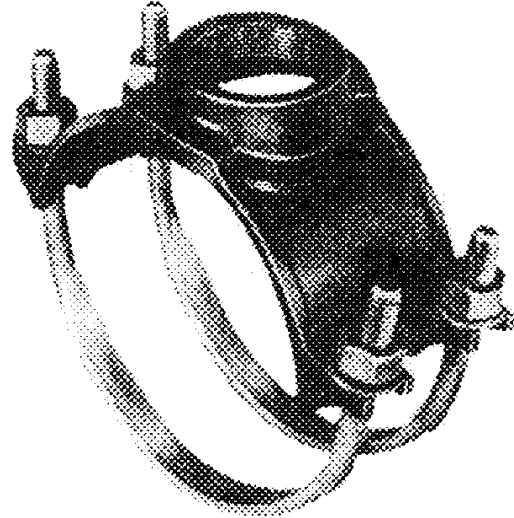
For Transite (AC) pipe.

**Connection:**

Female iron pipe threading.

**Pipe Size:**

3.80-4.13



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3” x 1”	073-00931	Smith-Blair	323-041309-000

**Revision Date:** 9/13/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

E 2.2

### Service Clamp for C.I. Pipe – 6” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

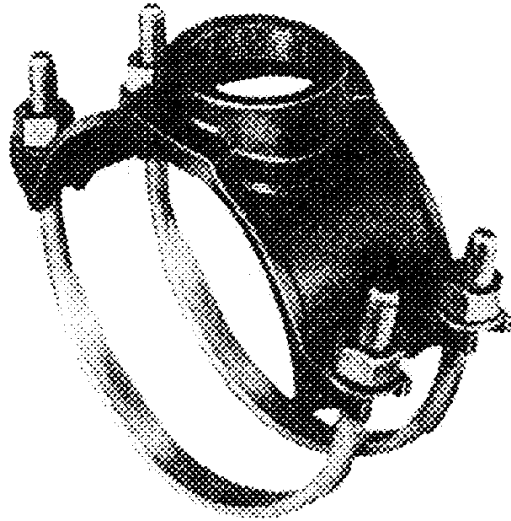
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 6.90” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 2”	073-01062	Dresser Mfg. Ford Meter Box JCM Ind. Mueller	Style 91 F202-760 x IP7 402-0745-14 H 10505 or DB2A0663IP200
		Smith-Blair	313-069014-000 DI 313-076014 CAST
		Romac	202U-690 x 2” IP

**Revision Date:** 3/28/08 (RNK)  
6/07/04 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

# Material Specifications

E 2.3

## Service Clamp for C.I. Pipe – 8” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

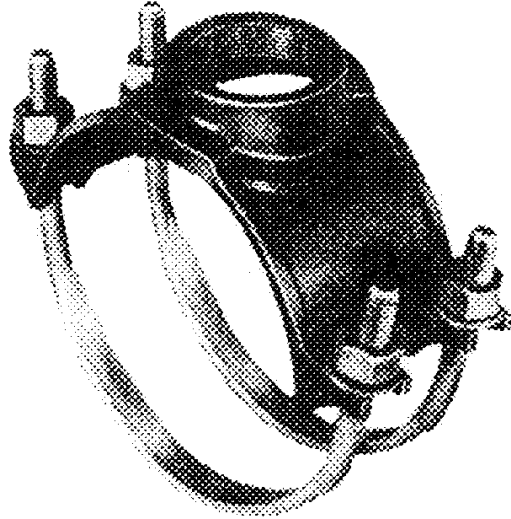
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 9.05” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
8” x 2”	073-01082	Dresser Mfg. Ford Meter Box JCM Ind. Mueller	Style 91 F202-979 x IP7 402-0963-14 H 10509 or DB2A0905IP200
		Smith-Blair	313-101014-000 CAST 313-09051-4000 DI
		Romac	202U – 905 x 2” IP

**Revision Date:** 3/28/08 (RNK)  
6/07/04 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

E 2.4

### Service Clamp for C.I. Pipe – 10” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

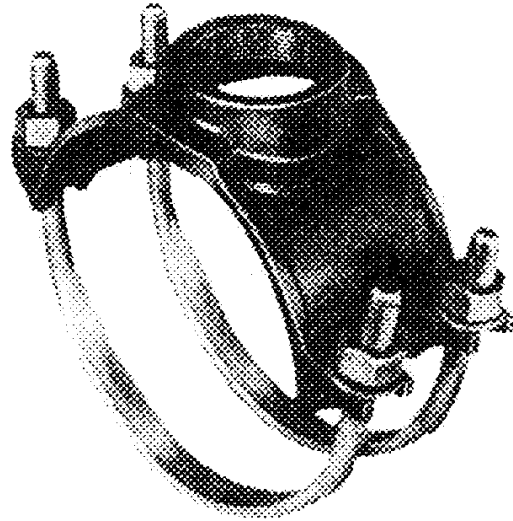
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 11.10” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
10” x 2”	073-01102	Dresser Mfg. Ford Meter Box JCM Ind. Mueller	Style 91 F202—1212 x IP7 402-1140-14 H 10512 or DB2A1050IP200
		Smith-Blair	313-121214-000
		Romac	202U-1110 x 2” IP

**Revision Date:** 3/28/08 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

# Material Specifications

E 2.5

## Service Clamp for C.I. Pipe – 12” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

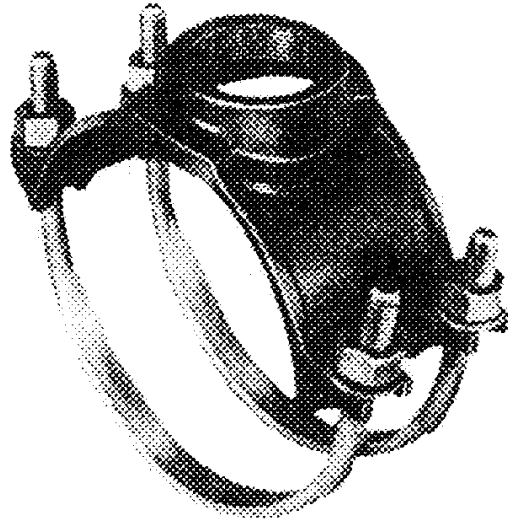
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 13.20” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12” x 2”	073-01122	Dresser Mfg. Ford Meter Box JCM Ind. Mueller	Style 91 F202-1438 x IP7 402-1350-14 H 10515 or DB2A1306IP200
		Smith-Blair Romac	313-143214-000 202U-1320 x 2” IP

**Revision Date:** 9/25/08 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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# Material Specifications

E 2.6

## Service Clamp for C.I. Pipe – 16” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

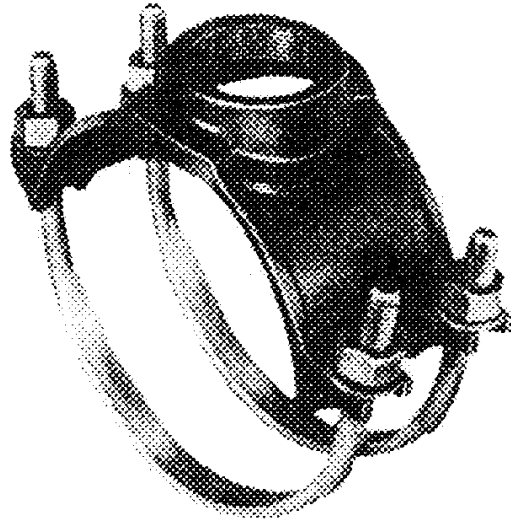
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 17.40” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16” x 2”	073-01162	Dresser Mfg.	None
		Ford Meter Box	F202-1840 x IP7
		JCM Ind.	402-1888-14
		Mueller	None
		Smith-Blair	313-188814-000
		Romac	202U-1890 x 2” IP

**Revision Date:** 9/25/08 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 2.7

### Service Clamp for C.I. Pipe – 20” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

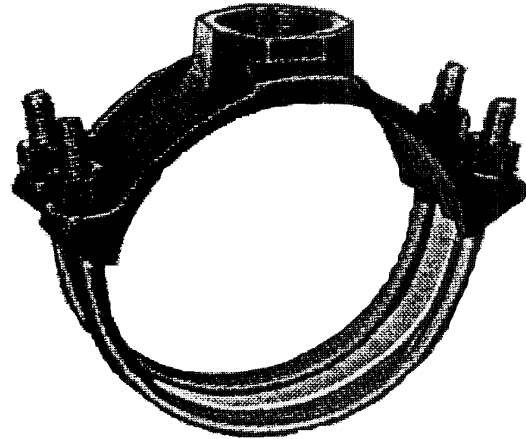
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 21.60” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
20” x 2”	073-01202	Dresser Mfg. Ford Meter Box JCM Ind. Mueller Smith-Blair Romac	None F202-2220 x IP7 402-2260-14 None None 202U-2270 x 2” IP

**Revision Date:** 9/25/08 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 2.8

### Service Clamp for C.I. Pipe – 24” x 2” IPT

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Straps:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal or stainless steel.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Neoprene or equal.

**Design:**

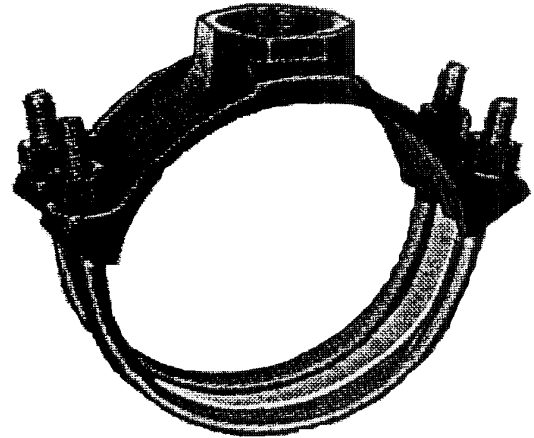
For ductile iron and cast iron pipe.

**Connection:**

Female iron pipe threading.

**Special Features:**

Clamps must be double strapped for 25.80” O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
24” x 2”	073-01242	Dresser Mfg. Ford Meter Box JCM Ind. Mueller Smith-Blair	None F202-2650 x IP7 402-2650-14 None None

**Origin Date:** 10/13/98 (DSW)  
**Revision Date:**



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

## Material Specifications

E 3.1

### Service Clamp for C900 - 4" thru 8" PVC Pipe

AKA

**Material:**

- Body:** Cast bronze 85-5-5-5.
- Strap:** Cast bronze 85-5-5-5.
- Bolts & Nuts:** Silicon bronze grade ASTM B98 or stainless steel.
- Gasket:** Grade 60 "O"-ring or equal.

**Design:**

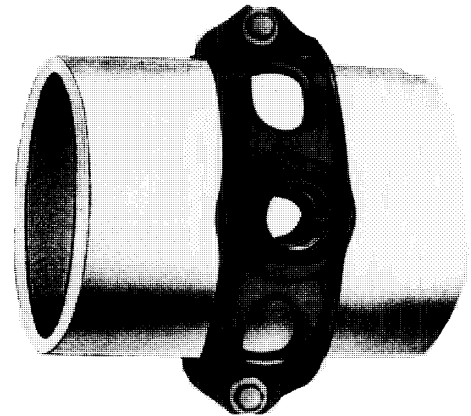
For C900 PVC pipe.

**Connection:**

CC threading.

**Special Features:**

Clamp must be strapped 4.80" O.D. for 4", 6.90" O.D. for 6", and 9.05" O.D. for 8".  
Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 3/4"	073-01034	Ford Meter Box	S90 Series
4" x 1"	073-01041	JCM Ind.	None
6" x 3/4"	Non-stock	Mueller	H-13000 Series
6" x 1"	Non-stock	Power Seal	Style 3407
8" x 3/4"	Non-stock	Smith-Blair	323 Series
8" x 1"	Non-stock	Cambridge Brass	800 or 810 Series

**Revision Date:** 10/01/04 (RNK)  
10/13/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 4.1

### Service Clamp for Class 200 2" PVC Pipe (CC)

AKA

**Material:**

- Body:** Cast bronze 85-5-5-5.
- Strap:** Cast bronze 85-5-5-5.
- Bolts & Nuts:** Silicon bronze grade ASTM B98 or stainless steel.
- Gasket:** Grade 60 "O" ring or equal.

**Design:**

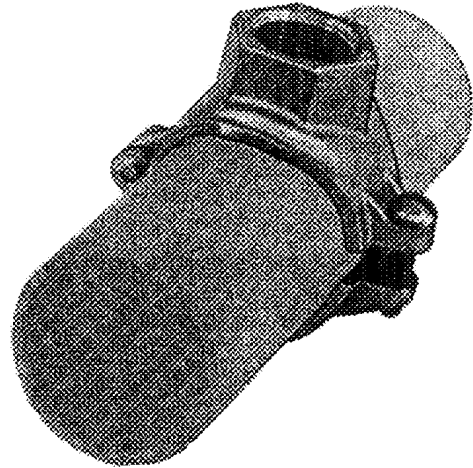
For Class 200 PVC Pipe (IPS O.D.)

**Connection:**

CC threading.

**Special Features:**

Clamp must be strapped for 2.375" O.D.  
Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2" x 3/4"	073-01334	A. Y. McDonald	Model 3801
2" x 1"	073-01321	Ford Meter Box	S70-203 (2" x 3/4") S70-204 (2" x 1")
		JCM Ind.	None
		Mueller	H-13420
		Power Seal	CC Style 3401
		Smith-Blair	391-023807-000 (2" x 3/4") 391-023809-000 (2" x 1")
		Cambridge Brass	800 Series

**Revision Date:** 10/01/04 (RNK)  
6/07/04 (RNK)  
10/20/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 4.2

### Service Clamp for Class 200 4" PVC Pipe (CC)

AKA

**Material:**

- Body:** Cast bronze 85-5-5-5.
- Strap:** Cast bronze 85-5-5-5.
- Bolts & Nuts:** Silicon bronze grade ASTM B98 or stainless steel.
- Gasket:** Grade 60 "O" ring or equal.

**Design:**

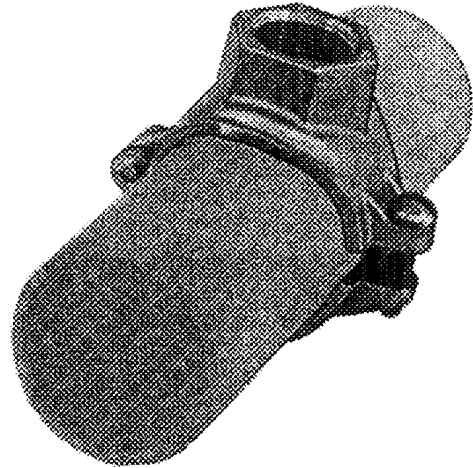
For Class 200 PVC Pipe (IPS O.D.)

**Connection:**

CC threading.

**Special Features:**

- Clamp must be strapped for 4.50" O.D.
- Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 3/4"	073-01434	B. Y. McDonald	Model 3801
4" x 1"	073-01441	Ford Meter Box	S70-403 (4" x 3/4") S70-404 (4" x 1")
		JCM Ind.	None
		Mueller	H-13428
		Power Seal	CC Style 3401
		Smith-Blair	381-045007-000 (4" x 3/4") 381-045009-000 (4" x 1")
		Cambridge Brass	800 Series

**Revision Date:** 10/01/04 (RNK)  
10/20/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 4.3

### Service Clamp for Class 200 4" PVC Pipe (IPT)

AKA

**Material:**

- Body:** Cast bronze 85-5-5-5.
- Strap:** Cast bronze 85-5-5-5.
- Bolts & Nuts:** Silicon bronze grade ASTM B98 or stainless steel.
- Gasket:** Grade 60 "O" ring or equal.

**Design:**

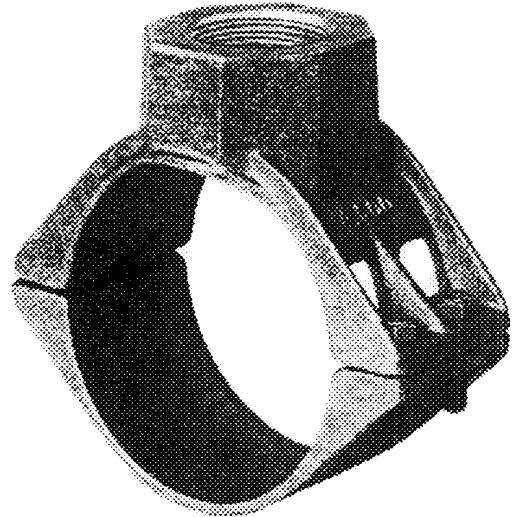
For Class 200 PVC Pipe (IPS O.D.)

**Connection:**

IPT threading.

**Special Features:**

- Clamp must be strapped for 4.50" O.D.
- Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 2"	073-01442	A.Y. McDonald Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair Cambridge Brass	Model 3801 S71-407 None H-13428 IPS – Style 3402 381-045014-000 800 Series

**Revision Date:** 10/01/04 (RNK)  
10/20/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 5.1

### Service Clamp for 2" Steel Pipe (CC)

AKA

**Material:**

- Body:** Malleable iron or ductile iron.
- Strap:** Flat carbon steel, electro-galvanized with di-chromate seal.
- Nuts:** Cold formed semi-finished heavy hex steel with di-chromate seal.
- Washers:** Carbon steel, electro-galvanized with di-chromate seal.
- Gasket:** Neoprene or equal.

**Design:**

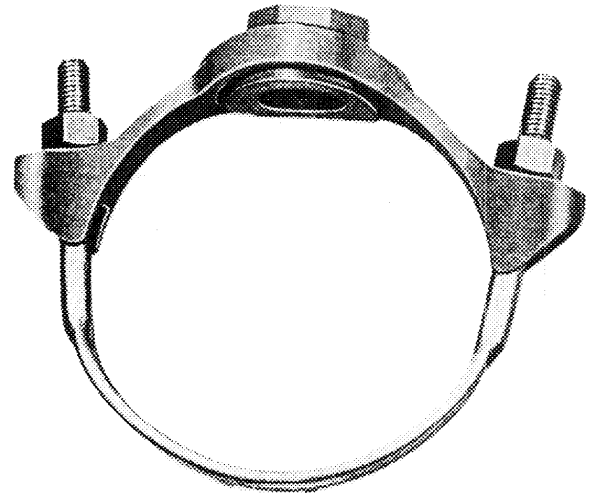
For steel pipe.

**Connection:**

CC threading.

**Special Features:**

Clamp to be single strapped for 2.375" O.D. Gasket to be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2" x 3/4"	073-01114	Dresser Mfg.	Style 91
2" x 1"	073-01021	Ford Meter Box	F101-250 x CC3
		JCM Ind.	401-0238 CC
		Mueller	DB2A0235IP075 (3/4")
			DB2A0235IP100 (1")
		Smith-Blair	311-025607-000
			(2" x 3/4")
			311-025609-000
			(2" x 1")

**Revision Date:** 10/20/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION



## Material Specifications

E 6.1

### Service Clamp for 2" IPS HDPE (cc)

AKA

**Material:**

**Body:** Ductile iron per ASTM A-536, 10-12 mil thick nylon fusion coating.

**Straps:** Twin 2' wide stainless steel, type 304 – per ASTM A-240.

**Bolts & Nuts:** Heavy hex, stainless steel type 304 – per ASTM A-193 and A-194 respectively.

**Gasket:** Virgin NBR compounded for water service.

**Design:**

For use on iron pipe size (IPS) HDPE – 2.375" O.D.

**Connection:**

CC threading.

**Special Features:**

Service clamp must be double strapped.  
Gasket must be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2" x 3/4"	073-02234	Romac	202N-H-2.50x 3/4" x CC
2" x 1"	073-02021		202N-H-2.50x1" x CC

**Origin Date:** 9/3/98 (DSW)  
**Revision Date:** 7/13/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

E 6.2

### Service Clamp for 4" IPS HDPE (cc)

AKA

**Material:**

**Body:** Ductile iron per ASTM A-536, 10-12 mil thick nylon fusion coating.

**Straps:** Twin 2' wide stainless steel, type 304 – per ASTM A-240.

**Bolts & Nuts:** Heavy hex, stainless steel type 304 – per ASTM A-193 and A-194 respectively.

**Gasket:** Virgin NBR compounded for water service.

**Design:**

For use on iron pipe size (IPS) HDPE – 4.50" O.D.

**Connection:**

CC threading.

**Special Features:**

Service clamp must be double strapped.  
Gasket must be cemented in place.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4" x 3/4"	073-02434	Romac	202N-H-4.50x 3/4" x CC
4" x 1"	073-02041		202N-H-4.50x1" x CC

**Origin Date:** 7/13/99 (RNK)  
**Revision Date:** 9/3/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Repair Clamps

<b>F 1.1</b>	Emergency Clamp – 3/4” x 3”	10/98
<b>F 1.2</b>	Emergency Clamp – 3/4” x 6”	10/98
<b>F 1.3</b>	Emergency Clamp – 1” x 3”	10/98
<b>F 1.4</b>	Emergency Clamp – 1” x 6”	10/98
<b>F 1.5</b>	Emergency Clamp – 1¼” x 3”	10/98
<b>F 1.6</b>	Emergency Clamp – 1¼” x 6”	10/98
<b>F 1.7</b>	Emergency Clamp – 1½” x 3”	10/98
<b>F 1.8</b>	Emergency Clamp – 1½” x 6”	10/98
<b>F 1.9</b>	Emergency Clamp – 2” x 3”	10/98
<b>F 1.10</b>	Emergency Clamp – 2” x 6”	10/98
<b>F 1.11</b>	Emergency (HPDE) Clamp – 2” x 8”	7/99
<b>F 2.1</b>	Emergency Clamp – 3” x 10”	10/98
<b>F 2.2</b>	Emergency Clamp – 3” x 15”	10/98
<b>F 2.3</b>	Emergency Clamp – 4” x 10”	1/03
<b>F 2.3a</b>	Emergency (HPDE) Clamp – 4” x 12”	7/99
<b>F 2.4</b>	Emergency Clamp – 4” x 15”	1/03
<b>F 2.5</b>	Emergency Clamp – 6” x 10”	1/03
<b>F 2.6</b>	Emergency Clamp – 6” x 20”	1/03
<b>F 2.7</b>	Emergency Clamp – 8” x 10”	1/03
<b>F 2.8</b>	Emergency Clamp – 8” x 20”	1/03
<b>F 2.9</b>	Emergency Clamp – 10” x 10”	1/03
<b>F 2.10</b>	Emergency Clamp – 10” x 20”	1/03
<b>F 2.11</b>	Emergency Clamp – 12” x 10”	1/03
<b>F 2.12</b>	Emergency Clamp – 12” x 18”	1/03
<b>F 2.13</b>	Galvanized Full Circle Leak Repair Clamp 2”	4/08

## Repair Clamps

<b>F 3.1</b>	Emergency Clamp – 16” x 12”	<b>11/98</b>
<b>F 3.2</b>	Emergency Clamp – 16” x 20”	<b>11/98</b>
<b>F 3.3</b>	Emergency Clamp – 20” x 12”	<b>11/98</b>
<b>F 3.4</b>	Emergency Clamp – 20” x 18”	<b>11/98</b>
<b>F 3.5</b>	Emergency Clamp – 24” x 12”	<b>11/98</b>
<b>F 3.6</b>	Emergency Clamp – 24” x 18”	<b>11/98</b>
<b>F 3.7</b>	Emergency Clamp – Extended Length 30” Long	<b>12/99</b>
<b>F 4.1</b>	Bell Joint Leak Clamp – 4” x 12”	<b>11/98</b>
<b>F 4.2</b>	Bell Joint Leak Clamp – 16” x 24”	<b>2/00</b>

## Material Specifications

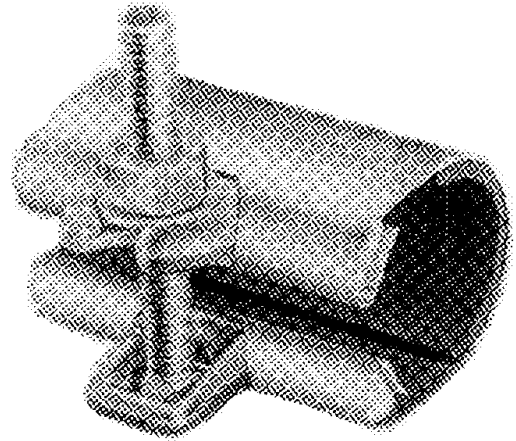
F 1.1

### Emergency Clamp – 3/4” x 3”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4” x 3”	073-05334	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>441-105-3</b> Style 118-005 FSC - 12 x 3” 110-0105-3-SS 220-3-105 3151-AS 245-0105-03-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

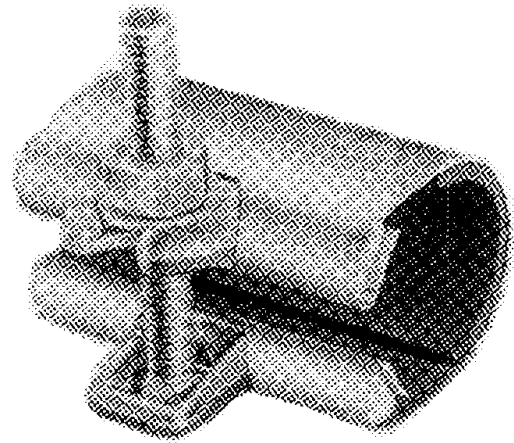
F 1.2

### Emergency Clamp – 3/4” x 6”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4” x 6”	073-05634	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>441-105-6</b> Style 118-0006 FSC - 12 x 6” 110-0105-6-SS 220-6-105 3151-AS 245-0105-06-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

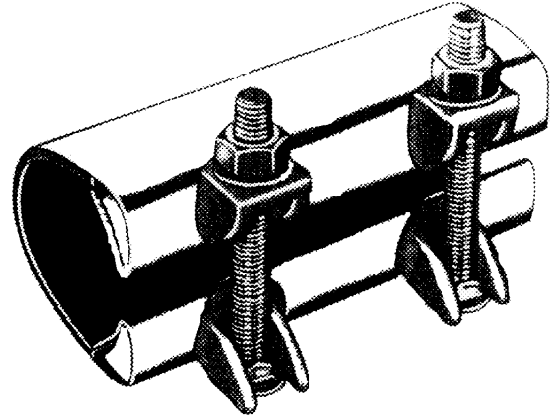
F 1.3

### Emergency Clamp – 1” x 3”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1” x 3”	073-05301	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>441-132-3</b> Style 118-0010 FSC – 13 x 3” 110-0132-3-SS 220-3-131 3151-AS 245-0132-03-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

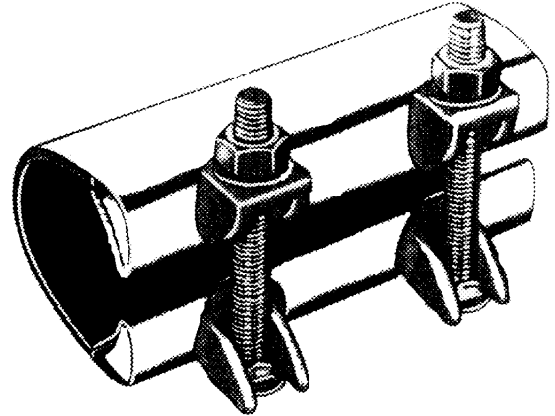
F 1.4

### Emergency Clamp – 1” x 6”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1” x 6”	073-05601	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	441-132-6-SS Style 118-0010 FSC – 13 x 6” 110-0132-6-SS 220-6-131 3151-AS 245-0132-06-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**



## Material Specifications

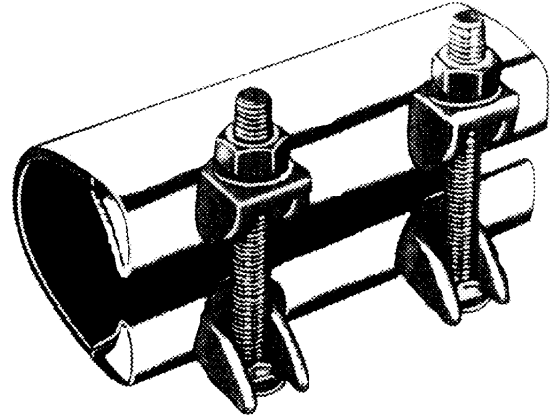
F 1.5

### Emergency Clamp – 1¼” x 3”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1¼” x 3”	073-05354	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>441-166-3-SS</b> Style 118-0013 FSC – 17 x 3” 110-0166-3-SS 220-3-166 3151-AS 245-0166-03-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

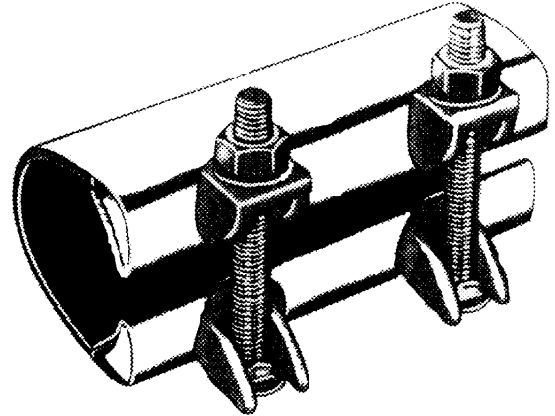
F 1.6

### Emergency Clamp – 1¼” x 6”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1¼” x 6”	073-05654	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>442-166-6-SS</b> Style 118-0014 FSC – 17 x 6” 110-0166-6-SS 220-6-166 3151-AS 245-0166-06-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

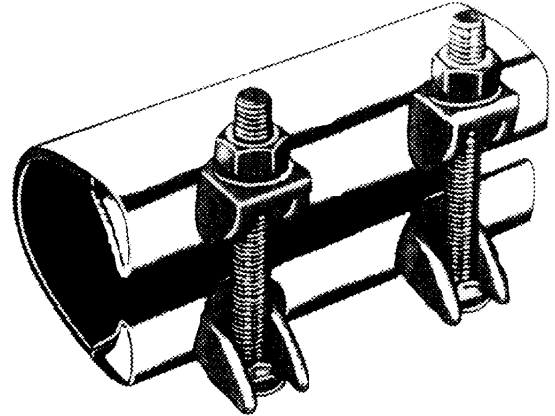
F 1.7

### Emergency Clamp – 1½” x 3”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1½” x 3”	073-05364	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	441-190-3-SS Style 118-0018 FSC – 19 x 3” 110-0190-3-SS 220-3-190 3151-AS 245-0190-03-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

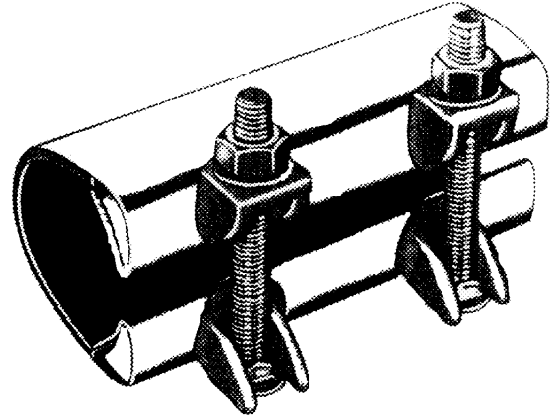
F 1.8

### Emergency Clamp – 1½” x 6”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1½” x 6”	073-05664	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	442-190-6-SS Style 118-0018 FSC – 19 x 6” 110-0190-6-SS 220-6-105 3151-AS 245-0190-06-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

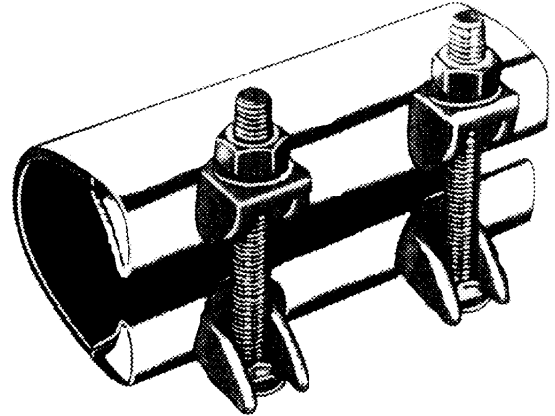
F 1.9

### Emergency Clamp – 2” x 3”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2” x 3”	073-05302	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	441-238-3-SS Style 118-0021 FSC – 24 x 3” 110-0238-3-SS 220-3-237 3151-AS 245-0238-03-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

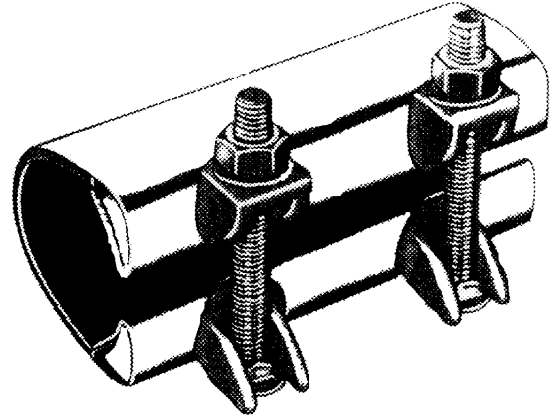
F 1.10

### Emergency Clamp – 2” x 6”

AKA

**Material:**

- Band:** Stainless steel – type 304.
- Lugs:** Malleable iron, ductile iron or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 60, neoprene or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2” x 6”	073-05002	APAC Products Dresser Mfg. Ford Meter Box  JCM Ind. Mueller Power Seal Smith-Blair	<b>442-238-6-SS</b> Style 118-0022 FSC – 24 x 6” or SS1-2.63 x 6” 110-0238-6-SS 220-6-237 3151-AS 245-0238-06-001

**Revision Date:** 10/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

F 1.11

### Emergency (HDPE) Clamp – 2” x 8”

AKA Repair Clamp

**Material:**

**Bands & Lugs:** Stainless steel – type 304 – ASTM A 240.

**Bolts & Nuts:** Stainless steel – type 304.

**Washers:** Flat washers – stainless steel – type 304. Spring washers – stainless steel.

**Gaskets:** Virgin SBR per ASTM D-2000 compounded for water service.

**Design:**

Single band.

**Special Features:**

Clamp must be designed for and have the appropriate O.D. range to repair IPS diameter, 2” SDR 11 HDPE pipe, O.D. 2.375”. Clamp shall be 8” wide



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”x 8”	073-05202	Romac	SS1-H-2.50 x 8”

**Origin Date:** 9/2/98 (DSW)  
**Revision Date:** 7/13/99 (RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

F 2.1

### Emergency Clamp – 3” x 10”

AKA

**Material:**

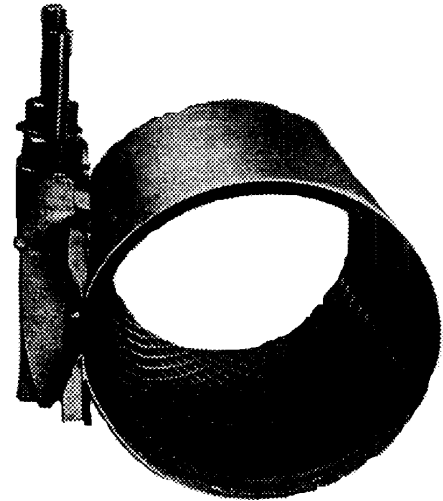
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must accommodate 3” galvanized pipe (Schedule 40). Clamp width of 9” to 11¼” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3” x 10”	073-05003	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	401-10-375 None SS1-3.70x10” None 500-9-346 None 226-035010-001

**Revision Date:** 10/30/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

F 2.2

### Emergency Clamp – 3” x 15”

AKA

**Material:**

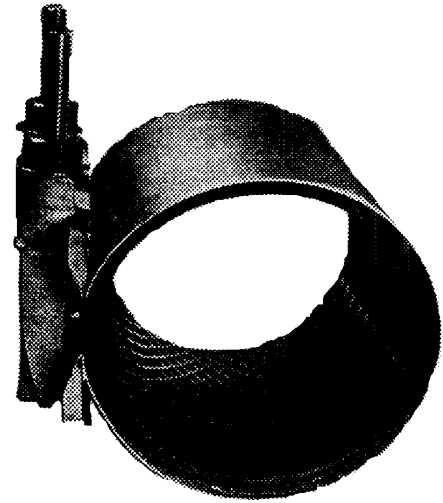
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must accommodate 3” galvanized pipe (Schedule 40). Clamp width of 16” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3” x 15”	073-05014	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	None None SS1-3.70x16” 131-0350-15 500-15-346 (3A)3121-AS 226-035015-001

**Revision Date:** 10/30/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

F 2.3

### Emergency Clamp – 4” x 10”

AKA

**Material:**

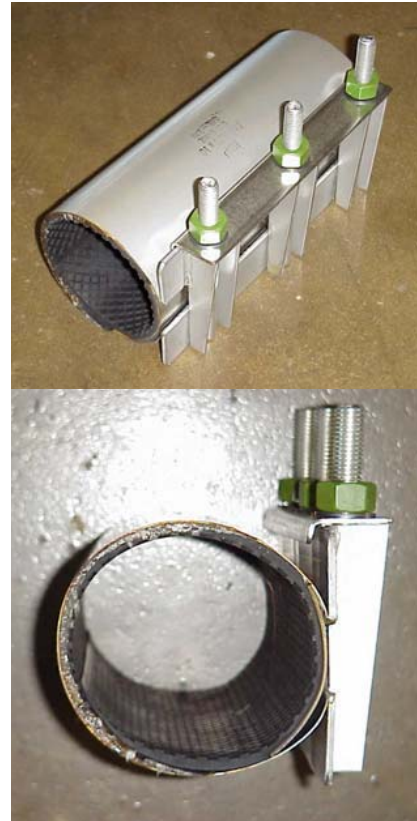
- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 10” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4” x 10”	073-05004	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-10-557-SS 361-0002-002 SS2-5.57 x 10” None 510-9-470 (4B) 3122-AS SS2-5.57 x 10” 227-048010-001

**Revision Date:** 1/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

F 2.3a

### Emergency (HDPE) Clamp – 4” x 12”

AKA Repair Clamp

**Material:**

**Bands & Lugs:** Stainless steel – type 304 – ASTM A 240.

**Bolts & Nuts:** Stainless steel – type 304.

**Washers:** Flat washers – stainless steel – type 304. Spring washers – stainless steel.

**Gaskets:** Virgin SBR per ASTM D-2000 compounded for water service.

**Design:**

Single band.

**Special Features:**

Clamp must be designed for and have the appropriate O.D. range to repair IPS diameter, 4” SDR 11 HDPE pipe, O.D. 4.50”. Clamp shall be 12” wide



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4”x12”	073-05204	Romac	SS1-H-4.50 x 12”

**Origin Date:** 9/28/98 (DSW)  
**Revision Date:** 7/13/99 (RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

F 2.4

### Emergency Clamp – 4” x 15”

AKA

**Material:**

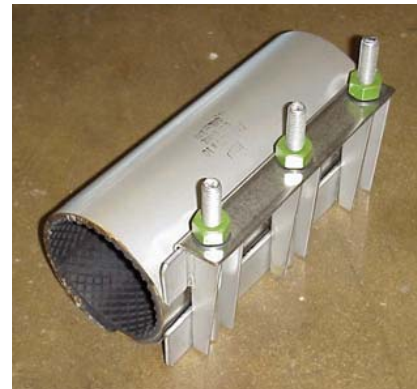
- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Minimum width of 15” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4” x 15”	073-05015	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-15-557-SS 361-0004-002 SS2-5.57 x 16” 102-0480-15-SS 510-15-470 (4B) 3122-AS SS2-5.57 x 16” 227-048015-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

F 2.5

### Emergency Clamp – 6” x 10”

AKA

**Material:**

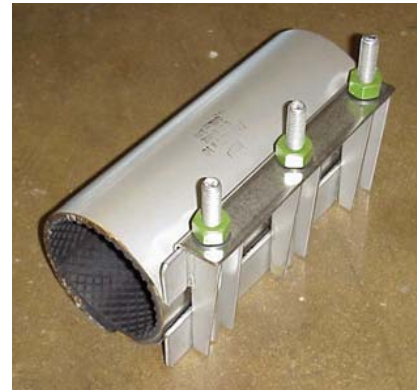
- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 10” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 10”	073-05006	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-10-764-SS 361-0008-002 SS2-7.64 x 10” None 510-9-675 (6B) 3122-AS SS2-7.64 x 10” 227-069010-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

F 2.6

### Emergency Clamp – 6” x 20”

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 20” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
6” x 20”	073-05007	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-20-764-SS 361-0011-002 SS2-7.64 x 20” 102-0690-18-SS 510-18-675 (6B) 3122-AS SS2-7.64 x 20” 227-069020-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
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COMMISSION**



## Material Specifications

F 2.7

### Emergency Clamp – 8” x 10”

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 10” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
8” x 10”	073-05008	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-10-979-SS 361-0014-002 SS2-9.79 x 10” None 510-10-888 (8B) 3122-AS SS2-9.79 x 10” 227-090510-001

**Revision Date:** 01-31-03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Material Specifications**

**F 2.8**

**Emergency Clamp – 8” x 20”**

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 20” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
8” x 20”	073-05009	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-20-979-SS 361-0017-002 SS2-9.79 x 10” 102-0905-18-SS 510-18-888 (8B) 3122-AS SS2-9.79 x 20” 227-090520-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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# Material Specifications

F 2.9

## Emergency Clamp – 10” x 10”

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 10” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
10” x 10”	073-05010	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-10-1224-SS 361-0020-002 None None 510-10-1105 (10B) 3122-AS None 227-111010-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
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## Material Specifications

F 2.10

### Emergency Clamp – 10” x 20”

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 20” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
10” x 20”	073-05011	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-20-1224-SS 361-0023-002 SS3-12.24 x 20” 102-1110-18-SS 510-18-1105 (10B) 3122-AS SS3-12.24 x 20” 227-111020-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

F 2.11

### Emergency Clamp – 12” x 10”

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp minimum width of 10” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12” x 10”	073-05012	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-10-1434-SS 361-0026-002 None None 510-10-1310 (12B) 3122-AS None 227-132010-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

F 2.12

### Emergency Clamp – 12” x 18”

AKA

**Material:**

- Bands:** Stainless Steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Single Band

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron, and asbestos-cement pipe. Clamp width of 18” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12” x 18”	073-05013	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Romac Smith-Blair	402-20-1434-SS 361-0029-002 SS3-14.34 x 20” 102-1320-18-SS 510-18-1310 (12B) 3122-AS SS3-14.34 x 20” 227-132020-001

**Revision Date:** 01/31/03 (RNK)  
11/9/98 (DSW)



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Material Specifications  
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COMMISSION**

# Material Specifications

F 2.13

## Full Circle Collar Leak Repair Clamp – 2”

AKA

**Material:**

**Bands:** Stainless Steel – type 304

**Bolts & Nuts:** High strength low alloy steel ASTM A325 or A242 with heavy semi-finished hexagon nuts ASTM A563.

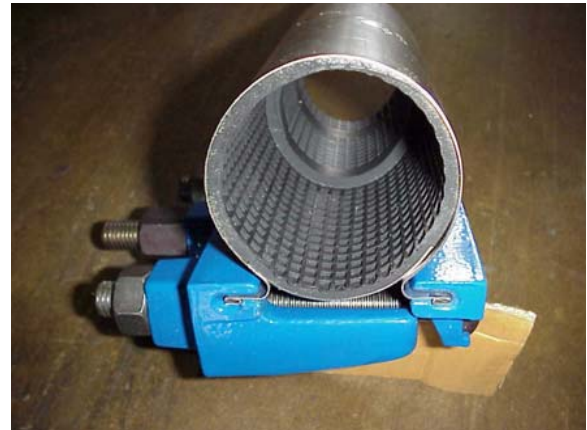
**Gasket:** Nitrile (Buna) lap type gasket with molded tapered ends to provide efficient equalized sealing at the lap joint on galvanized coupling to pipe connection. Off set gasket to fit pipe and coupling.

**Design:**

Single Band

**Special Features:**

Clamp must have an adequate O.D. range to repair Galvanized pipe.



**Size/Details**

2”

**OUC Item ID**

073-05200

**Manufacturer**

Smith-Blair

**Catalog Number**

229-000023807-000

**Revision Date:** 4/08/08 (RNK)

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## Material Specifications

F 3.1

### Emergency Clamp – 16” x 12”

AKA

**Material:**

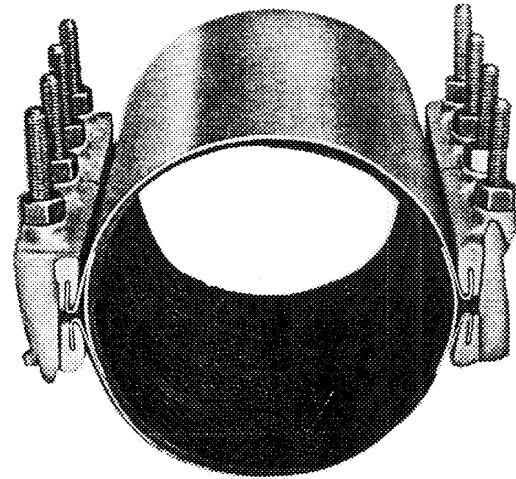
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and Class 100 asbestos-cement pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16” x 12”	073-05016	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	None None SS3-18.30 x 12” 102-1740-12-SS 510-12-1720 None None

**Revision Date:** 11/9/98 (DSW)



Material Specifications  
 Water Business Unit  
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 COMMISSION**



## Material Specifications

F 3.2

### Emergency Clamp – 16” x 20”

AKA

**Material:**

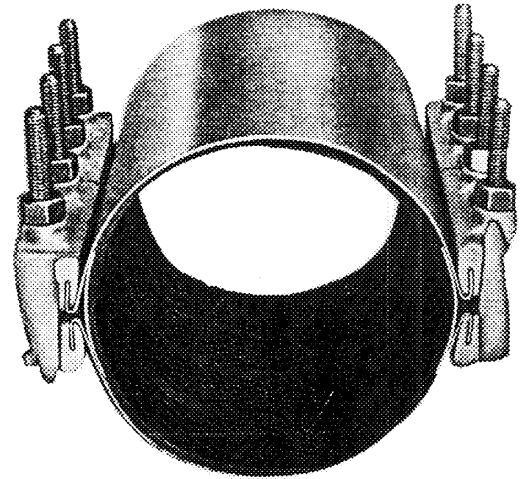
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and Class 100 asbestos-cement pipe. Clamp width of 18” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16' x 20"	073-05017	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	403-20-1857-SS None SS3-18.30 x 20" 102-1740-18-SS 510-20-1720 (16B) 3122-AS 228-20171520-001

**Revision Date:** 11/9/98 (DSW)



Material Specifications  
 Water Business Unit  
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 COMMISSION**

## Material Specifications

F 3.3

### Emergency Clamp – 20” x 12”

AKA

**Material:**

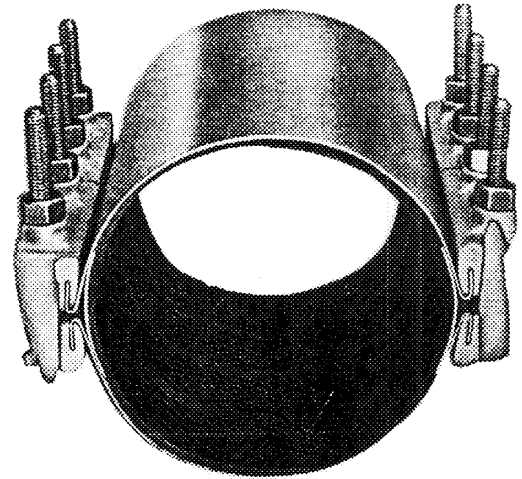
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and Class 100 asbestos-cement pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
20” x 12”	073-05020	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	None None SS3-22.80 x 12” 102-2160-12-SS 510-12-2145 None None

**Revision Date:** 11/9/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**



## Material Specifications

F 3.4

### Emergency Clamp – 20” x 18”

AKA

**Material:**

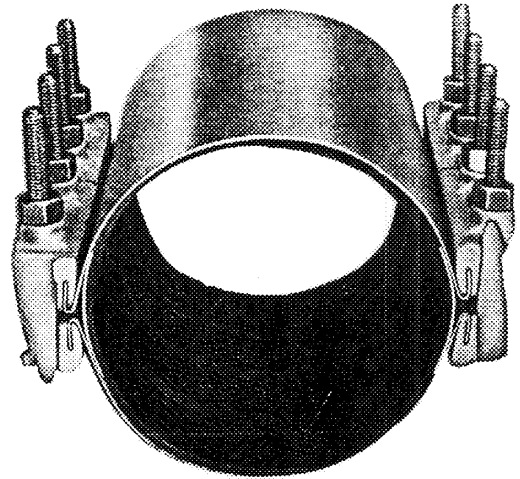
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and Class 100 asbestos-cement pipe. Clamp width of 20” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
20” x 18”	073-05021	APAC Products Dresser Mfg.  Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>403-20-2287-SS</b> 360-5541-007 for D.I. 360-5544-007 for Univ. SS3-22.80 x 20” 102-2160-18-SS 510-18-2145 (20A) 3122-AS 228-20215220-001

**Revision Date:** 11/9/98 (DSW)



Material Specifications  
 Water Business Unit  
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## Material Specifications

F 3.5

### Emergency Clamp – 24” x 12”

AKA

**Material:**

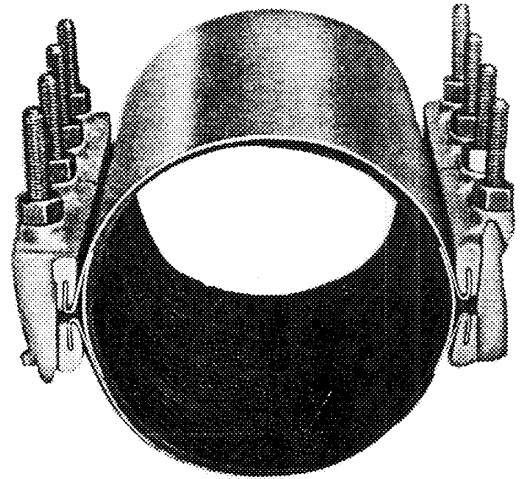
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and Class 100 asbestos-cement pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
24” x 12’	073-05024	APAC Products Dresser Mfg. Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	None None SS3-27.00 x 12” 102-2580-12-SS 510-12-2566 (24A) 3123-AS None

**Revision Date:** 11/9/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

F 3.6

### Emergency Clamp – 24” x 18”

AKA

**Material:**

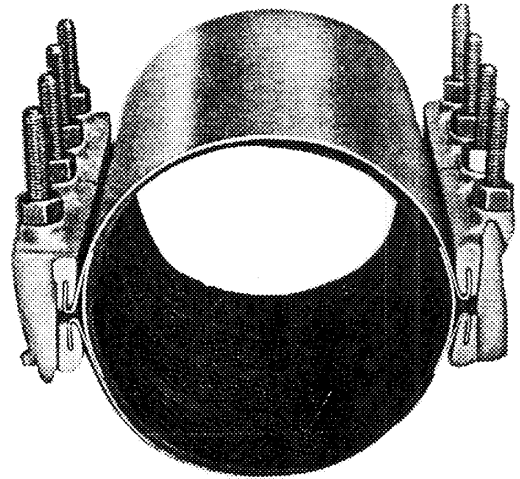
- Band:** Stainless steel – type 304
- Lugs:** Malleable iron, ductile iron, or stainless steel.
- Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.
- Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and Class 100 asbestos-cement pipe. Clamp width of 20” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
24” x 18”	073-05025	APAC Products Dresser Mfg.  Ford Meter Box JCM Ind. Mueller Power Seal Smith-Blair	<b>403-20-2680-SS</b> 360-5547-007 for D.I. 360-5550-007 for Univ. SS3-27.00 x 20” 102-2580-18-SS 510-18-2566 (24A) 3123-2566 228-30257020-001

**Revision Date:** 11/9/98 (DSW)



Material Specifications  
 Water Business Unit  
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# Material Specifications

F 3.7

## Emergency Clamp – Extended Length 30” Long

AKA

**Material:**

**Band:** Stainless steel – type 304

**Lugs:** Malleable iron, ductile iron, or stainless steel.

**Bolts & Nuts:** Carbon steel, electro-galvanized with di-chromate seal or stainless steel.

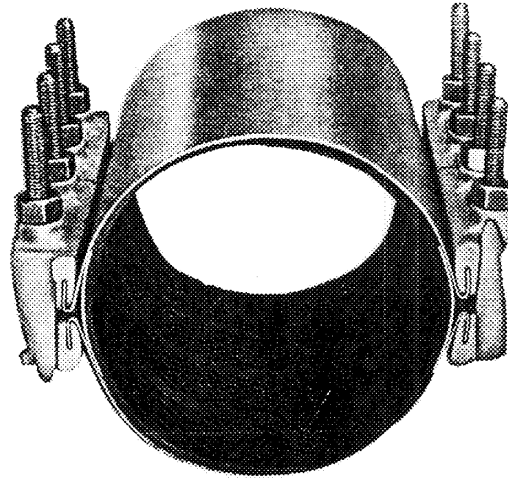
**Gasket:** Grade 30, neoprene or equal.

**Design:**

Double band.

**Special Features:**

Clamp must have an adequate O.D. range to repair all classes of cast iron, ductile iron pipe, and class 100 asbestos-cement pipe. Clamp width of 30” is acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16” x 30”	073-05026	JCM Repair Clamp	Model 102
20” x 30”	073-05027	Ford Repair Clamp	Model FS3
24” x 30”	073-05028	Dresser Mfg.	
30” x 30”	073-05029	Smith-Blair	
36” x 30”	073-05036	Mueller	
		Power Seal	
		Romac Industries	

**Revision Date:** 4/03/08 (RNK)  
12/15/99 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

F 4.1

### Bell Joint Leak Clamp – 4” thru 12”

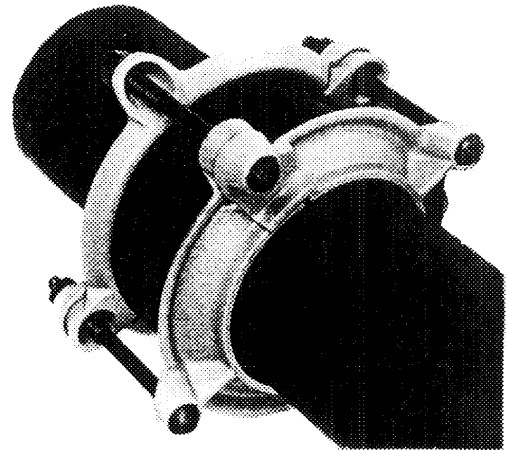
AKA

**Material:**

**Bell & Spigot Ring:** Ductile iron.  
**Bolts & Nuts:** High strength, low alloy steel with heavy, semi-finished hexagon nuts conforming to ANSI/AWWA C111/A21.11-85 and the latest revisions thereto.  
**Gaskets:** Grade 60, compounded to resist oil, natural gas, acids, alkalies, hydrocarbon fluids, water and other chemicals.

**Special Features:**

Clamp must fit both caulked and rubber ring joints for all classes of cast iron and ductile iron pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	073-05904	Romac	<b>516-5.00 (4")</b>
6"	073-05906		516-7.10 (6")
8"	073-05908		516-9.30 (8")
10"	073-05910		516-11.40 (10")
12"	073-05912		516-13.65 (12")
			Smith-Blair
			274-0690-000 (6")
			274-0905-000 (8")
			274-1110-000 (10")
			274-1320-000 (12")

**Revision Date:** 11/13/98 (BK)



Material Specifications  
 Water Business Unit  
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 COMMISSION**

## Material Specifications

F 4.2

### Bell Joint Leak Clamp – 16” thru 24”

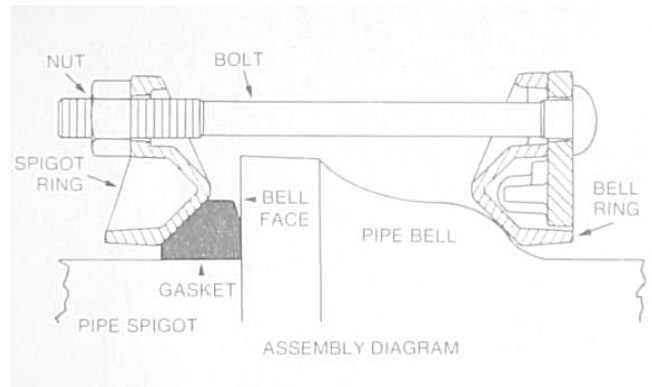
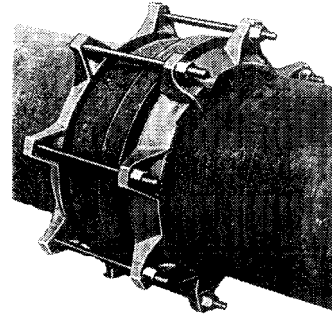
AKA

**Material:**

**Bell & Spigot Ring:** Ductile iron.  
**Bolts & Nuts:** High strength, low alloy steel with heavy, semi-finished hexagon nuts conforming to ANSI/AWWA C111/A21.11-95 and the latest revisions thereto.  
**Gasket:** Grade 60, compounded to resist oil, natural gas, acids, alkalies, hydrocarbon fluids, water and other chemicals.

**Special Features:**

Clamp must fit both caulked and rubber ring joints for all classes of cast iron and ductile iron pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
16"	073-05916	Smith-Blair	<b>274-1740-000 (16")</b>
20"	073-05920		274-2160-000 (20")
24"	073-05924		274-2580-000 (24")

**Revision Date:** 2/24/00 (RNK)  
11/13/98 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

# Section G — Contents

1

## Small Service Tubing, Valves & Fittings

G 1.1	Tubing – Copper - $\frac{3}{4}$ " (O.D.) & 1" (O.D.)	12/98
G 1.2	Tubing – Copper – (40' Coil) – 2" (O.D.)	12/98
G 1.3	Tubing – Copper – (20' Straight) 2" (O.D.)	4/00
G 2.1	Ell – Brass - $\frac{3}{4}$ " & 1" (FIPT x FIPT)	4/01
G 2.3	Ell – Brass Street - $\frac{3}{4}$ " thru 2" (FIPT x MIPT)	12/98
G 2.4	Ell – Brass Reducing (FIPT x FIPT)	12/98
G 3.1	Bend – 45° - Brass – $\frac{3}{4}$ " thru 2" (FIPT X FIPT)	12/98
G 4.1	Tee – Brass Svc. Ftg. - $\frac{3}{4}$ " thru 2" (Comp.)	10/04
G 4.3	Tee – Brass Svc. Ftg. - 2" x 2" x $\frac{3}{4}$ " & 1" (Comp x Comp x FIPT)	10/04
G 4.4	Tee – Brass Svc. Ftg. - 2" x 2" x $\frac{3}{4}$ " & 1" (Comp x Comp x CC)	10/04
G 4.8	Tee – Brass Svc. Ftg. – 1 $\frac{1}{4}$ " thru 3"	5/02
G 5.1	Y Branch - Brass Svc. Ftg. - $\frac{3}{4}$ " x $\frac{3}{4}$ " x 1" (Comp.)	10/04
G 6.1	Cross – Brass - $\frac{3}{4}$ " thru 2"	4/01
G 7.1	Nipple – PVC Schedule 80 1 $\frac{1}{2}$ ", 2" x 6"	10/01
G 7.2	Nipple – Brass - $\frac{3}{4}$ " x Close thru 6"	4/01

# Section G

## Contents (cont'd.)

2

### Small Service Tubing, Valves & Fittings

G 7.3	Nipple – Brass – 1” x Close thru 6”	4/01
G 7.4	Nipple – Brass - 1-¼” x Close thru 6”	4/01
G 7.5	Nipple – Brass – 1-½” x Close thru 6”	4/01
G 7.6	Nipple – Brass – 2” x Close thru 6”	4/01
G 7.7	Nipple – Brass – 3” x 4” thru 12”	6/01
G 8.1	Coupling – Galvanized (Comp) ¾” thru 2”	5/03
G 8.2	Coupling – Brass – (FIPT x FIPT) ¾” thru 2”	4/01
G 8.3	Reducer Coupling Brass 1”x ¾” thru 2”x 1½”	4/01
G 8.4	Meter Coupling – Brass ¾” & 1”	10/04
G 8.5	Coupling – Straight (Comp. x MIPT) - ¾” thru 2”	10/04
G 8.6	Coupling – Straight (Copper x FIPT) - ¾” & 1”	10/04
G 8.7	Coupling – Straight (Copper x MIPT) - ¾” & 1”	5/02
G 8.8	Coupling – Straight – (Lead x Copper) - ¾” & 1”	8/98
G 9.1	Union – 3 Part (Comp.) - ¾” thru 2” & 1” x ¾”	10/04
G 9.2	Union – 2 Part (Copper x Comp.) – ¾” & 1”	10/04
G 9.3	Union – 2 Part (FIPT x Comp.) - ¾” & 1”	10/04
G 9.4	Union – 2 Part (Copper) - ¾” & 1”	10/04
G 9.5	Union – Brass - ¾” thru 2”	4/01
G 9.6	Union – Ell (Comp.) ¾” thru 2”	10/04
G 9.7	Union – Ell (Copper) - ¾” & 1”	10/04
G 9.7a	Coupling – Ell (Lead x Copper) - ¾” & 1”	3/13
G 9.8	Union - 45° (Copper) - ¾” x 1”	4/99
G 9.9	Union - 45° (Copper x Comp.) - ¾” & 1”	9/01



## Section G Contents (cont'd.)

3

### Small Service Tubing, Valves & Fittings

G 10.1	Cap – Brass - 3/4” thru 2”	4/01
G 11.2	Bushing – Brass - 3/4” thru 2”	5/02
G 12.1	Plug – Brass - 3/4” & 1”	10/04
G 12.2	Plug – Brass - 3/4” thru 2”	5/02
G 13.1	Corporation Stop (C.C. x Comp.) - 3/4” & 1”	10/04
G 13.1a	Corporation Stop Pack Joint Fittings only	3/08
G 13.3	Corporation Stop (MIPT x FIPT) - 1-1/2” & 2”	10/04
G 13.4	Corporation Stop Ball Valve (MIPT x MIPT) 1 1/2”x 2”	10/04
G 14.1	Gate Valve – Screw – 1 1/2” & 2”	5/02
G 15.1	Curb Stop (Pack joint x FIPT) - 3/4” & 1”	10/04
G 15.2	Curb Stop (FIPT x FIPT) - 3/4” x 1”	10/04
G 15.3	Curb Stop (Copper x FIPT) – 3/4” x 4 1/8” & 1” x 5”	10/04
G 15.4	Curb Stop – Angle Ball (Comp. x FIPT) - 3/4” & 1”	10/04
G 15.5	Curb Stop – Angle Ball (Copper x FIPT) - 3/4” & 1”	10/04
G 16.1	Ball Valve w/Padlock Wing (FIPT x FIPT) – 2”	10/04
G 16.2	Meter Valve – Flanged Ball (FIPT x Flg.) – 1 1/2” x 2”	10/04
G 16.3	Meter Valve – Flanged Ball (Comp. x Flg.) – 2”	10/04
G 16.4	Meter Valve – Flanged Ball Angle (Comp. x Flg.) 2”	10/04
G 17.1	Meter Setter – Copper for 5/8” x 3/4” Meter	10/04
G 17.2	Meter Setter – Copper for 1” Meter	10/04
G 18.1	Inserts for CTS HPDE – 3/4” thru 2”	10/04
G 19.1	Washer, Black Rubber, 3/4” x 1/16” thru 1” x 1/16”	10/05



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# Material Specifications

G1.1

## Tubing – Copper - ¾” (O.D.) & 1” (O.D.)

AKA

**Material:**

Copper tubing conforming to federal specifications WW-T-99 (ASTM B88-47)

**Design:**

Soft annealed, type K, self-tempered, 250psi test. Size determined by outside diameter (O.D.)

**Special Features:**

Tubing must be delivered with circumference over the entire length sufficient to receive CTS fittings. Tubing may **not** be egg shaped, flattened or damaged in any way. Tubing shall be delivered in 100’ coils.

**No Illustration Available**

Size/Details	OUC Item ID	Manufacturer	Catalog Number
¾”	051-03034	Cerro Copper Products	
1”	051-03001	Howell Mueller Brass Reading	

**Revision Date:** 12/30/98 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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# Material Specifications

G 1.2

## Tubing – Copper - (40' Coil) 2" (O.D.)

AKA

**Material:**

Copper tubing conforming to federal specification WW-T-99 (ASTM B88-47).

**Design:**

Soft annealed, type K, self-tempered, 250 psi test. Size determined by outside diameter (O.D.).

**Special Features:**

Tubing must be delivered with circumference over the entire length sufficient to receive CTS fittings. Tubing may **not** be egg shaped, flattened or damaged in any way. Tubing shall be delivered in 40' coils.

**No Illustration Available**

**Size/Details**

OUC Item ID

Manufacturer

**Catalog Number**

2"

051-03020

Cerro Copper Products  
Howell  
Mueller Brass  
Reading

**Revision Date:** 12/30/98 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 1.3**

### Tubing – Copper – (20’ Straight) 2” (O.D.)

**AKA**

**Material:**

Copper tubing conforming to federal specifications WW-T-99 (ASTM B88-47).

**Design:**

Hard or Soft annealed, type K, self-tempered, 250 psi test. Size determined by outside diameter (O.D.).

**Special Features:**

Tubing must be delivered with circumference over the entire length sufficient to receive CTS fittings. Tubing may **not** be egg shaped, flattened or damaged in any way. Tubing shall be delivered in 20’ straights in wooden crates, no more than 9 straights per crate.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	051-03021	Cerro Copper Products Howell Mueller Brass Reading	
2”	051-03022		

**Revision Date:** 4/20/00 (RNK)  
12/30/98 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 2.1**

### Ell – Brass – (FIPT x FIPT) 3/4” & 2”

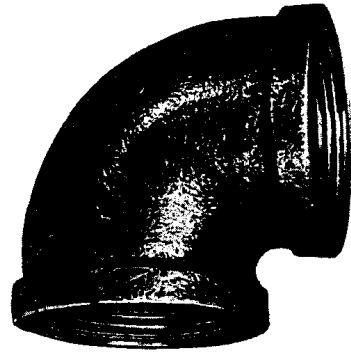
**AKA 90° Bend**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Threaded Pipe x Female Iron Threaded Pipe.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	075-09000	A. Y. McDonald	
1”	075-09001	Ford Meter Box	
1 1/4”	076-11054	Hays/Lee Brass	
1 1/2”	076-11032	James Jones	
2”	076-11002	Mueller Brass	

**Revision Date:** 04/12/01 (RNK)  
12/30/98 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 2.3**

### EII – Brass Street 3/4” thru 2” (FIPT X MIPT)

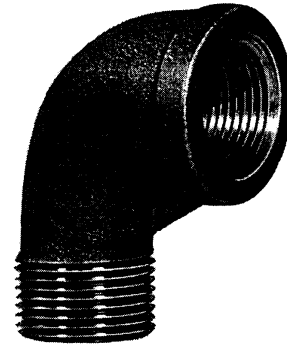
**AKA** Street EII

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	076-18034	Crane	
1”	076-18001	Grinnell	
1 1/4”	076-18054	Stanley G. Flagg	
1 1/2”	076-18032	Stockham Valves & Ftgs.	
2”	076-18002	U-Brand Union Fdry. Ward Mfg.	

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

**G 2.4**

### EII – Brass Reducing (FIPT x FIPT)

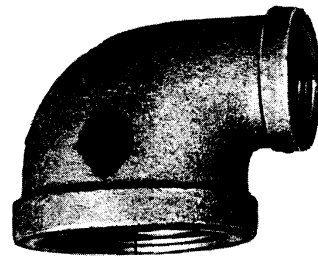
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1" x 3/4"	076-13074	Crane	
1 1/4" x 3/4"	076-13084	Grinnell	
1 1/4" x 1"	076-13094	Stanley G. Flagg	
1 1/2" x 3/4"	076-13098	Stockham Valves & Ftg.	
1 1/2" x 1"	076-13052	U-Brand	
1 1/2" x 1 1/4"	076-13114	Union Fdry.	
2" x 3/4"	076-13234	Ward Mfg.	
2" x 1"	076-13021		
2" x 1 1/4"	076-13134		
2" x 1 1/2"	076-13072		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 3.1**

### Bend – (45°) – Brass – ¾” thru 2” (FIPT X FIPT)

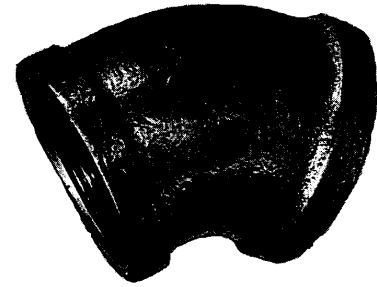
AKA

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
¾”	071-16134	Lee Brass	<b>60-290</b>
1”	071-16101	Merit Brass	
1 ¼”	071-16154	Missouri Pipe	
1 ½”	071-16164	Crane	
2”	071-06202	Grinnell Stanley G. Flagg Stockham Valves & Ftgs. U-Brand Union Fdry. Ward Mfg.	

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 4.1**

### Tee – Brass Svc. Ftg. (Comp.) - 3/4" & 3/4" x 3/4" & 1" & 2"

AKA

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Pack joint is the only acceptable style. Size is indicated as run (outlet x outlet) x branch (inlet).

**Connections:**

CTS (copper tubing size) compression joint on all ends.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4" x 3/4" x 1"	082-01601	A.Y. McDonald	4760-22
3/4" x 3/4" x 3/4"	082-01602	Ford Meter Box	T444-334
1" x 1" x 1"	082-01603	Mueller	H 15381 or P15381
2" x 2" x 2"	082-01605	Ford Meter Box	T444-777
		Cambridge Brass	T444-444 = 1" tee 150- B

**Revision Date:**

10/01/04 (RNK)
6/07/04 (RNK)
05/07/03 (RNK)
12/29/98 (DSW)



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Water Business Unit  
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## Material Specifications

**G 4.3**

### Tee – Brass Svc. Ftg. (Comp. x Comp. x FIPT) – 2” x 2” x ¾” & 1”

**AKA**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Pack joint is the only acceptable style. Size is indicated as run (inlet x outlet) x branch (outlet).

**Connections:**

CTS (copper tubing size) compression joint run inlet and outlet at each end, **FIPT** branch connection.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2” x 2” x ¾”	082-01606	Ford Meter Box	T441 – 773 (¾”)
2” x 2” x 1”	082-01607	Cambridge Brass	T441 – 774 (1”) 151-B F

**Revision Date:** 10/01/04 (RNK)  
09/25/01 (RNK)  
12/31/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 4.4**

### Tee – Brass Svc. Ftg. (Comp. x Comp. x C.C.) – 2” x 2” x ¾” & 1”

**AKA**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Pack joint is the only acceptable style. Size is indicated as run (inlet x outlet) x branch (outlet).

**Connections:**

CTS (copper tubing size) compression joint run inlet and outlet at each end, CC female branch connection.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2” x 2” x ¾”	082-01608	Ford Meter Box	T440-773 (¾”)
2” x 2” x 1”	082-01609	Cambridge Brass	T440-774 (1”) 151-B A

<b>Revision Date:</b>	10/01/04 (RNK)
	5/7/03 (RNK)
	9/25/01 (RNK)
	1/5/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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# Material Specifications

G 4.8

## Tee – Brass – 1¼” thru 3”

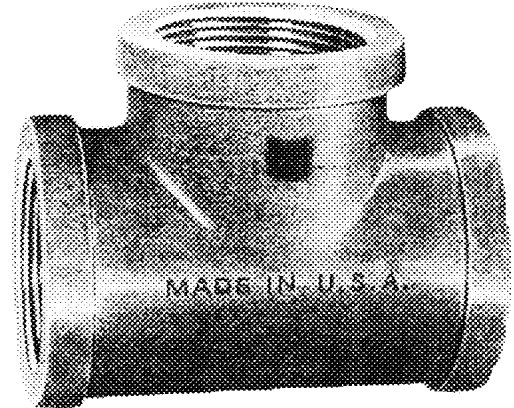
AKA

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
¾”	082-01550	Crane	
1”	082-01555	Grinnell	
1¼”	082-11125	Stanley G. Flagg	
1¼” x ¾”	082-11135	Stockham Valves & Fgts.	
1¼” x 1”	082-11101	U-Brand	
1½”	082-11150	Union Fdry.	
1½” x ¾”	082-11175	Ward Mfg.	
1½” x 1”	082-11151		
1½” x 1¼”	082-11145		
2”	082-11002		
2” x ¾”	082-11234		
2” x 1”	082-11201		
2” x 1¼”	082-11215		
2” x 1½”	082-11210		
3” x 2”	082-11332		

**Revision Date:** 6/31/02 (RNK)  
6/20/01 (RNK)  
4/18/01 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 5.1**

### Y Branch – Brass Service Ftg. (Comp.) 3/4" x 3/4" x 1"

AKA

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 Index 115 85-5-5-5) and latest revisions thereto.

**Design:**

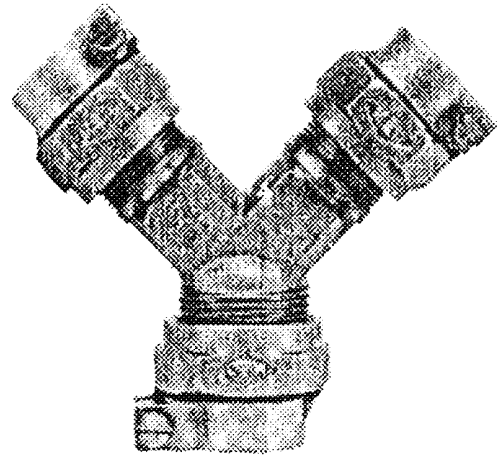
Service fitting must accommodate copper tubing. Size is indicated as outlet x outlet x inlet. Pack joint is the only acceptable style.

**Connections:**

CTS (copper tubing size) compression joint each end.

**Special Features:**

Stainless steel insert stiffener shall be furnished with each connection. Each stiffener (liner) must have one (1) flanged end to prevent liner from entering the tubing too much. Liner must be Mueller 504305 (3/4"), 504391 (1") or equal. Stainless steel P.E. to P.E. and/or (split) insert stiffeners are **not** acceptable. Plastic insert stiffeners are **not** acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4" x 3/4" x 1"	082-01734	A.Y. McDonald Ford Meter Box Hays Mueller Cambridge Brass	08YS22 Y44-243 5561CF H-15343 152-B B

**Revision Date:** 10/01/04 (RNK)  
7/01/02 (RNK)  
9/25/01 (RNK)  
01/04/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 6.1**

### Cross – Brass - 3/4” thru 2”

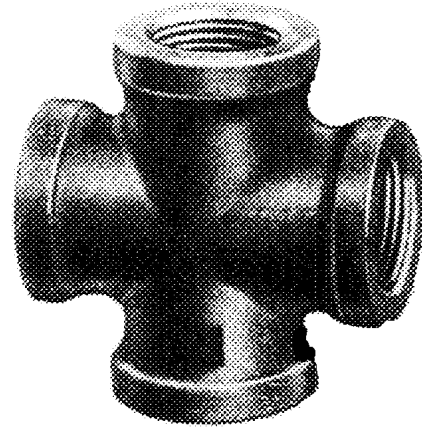
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	075-11034	Crane	
1”	075-11001	Grinnell	
1 1/4”	075-11054	Stanley G. Flagg	
1 1/2”	075-11064	Stockham Valves & Ftgs.	
2”	075-11002	U-Brand Union Fdry. Ward Mfg.	

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 7.1**

### Nipple – PVC Schedule 80 – 1 ½” & 2” x 6”

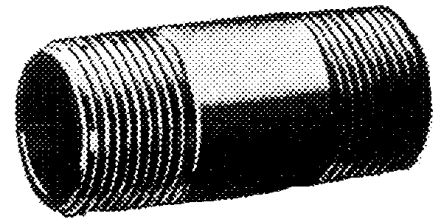
**AKA**

**Material:**

Schedule 80, PVC. Must be NSF – PW  
(National Sanitation Foundation – Potable  
Water) rated.

**Connections:**

Male Iron Pipe Thread x Male Iron Pipe  
Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2” x 6”	087-40556		
1 ½” x 6”	087-40456		

**Revision Date:** 10/08/01 (RNK)  
07/24/01 (RNK)



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Material Specifications  
Water Business Unit  
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## Material Specifications

**G 7.2**

### Nipple – Brass - 3/4” x Close thru 6”

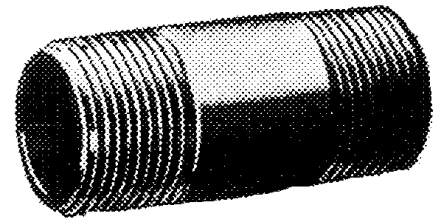
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Male Iron Pipe Thread x Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4” x Close	077-05000	Crane	
3/4” x 2 1/2”	077-05002	Grinnell	
3/4” x 3”	077-11130	Stanley G. Flagg	
3/4” x 3 1/2”	077-11135	Stockham Valves & Ftgs.	
3/4” x 4”	077-05004	U-Brand	
3/4” x 4 1/2”	077-11145	Union Foundry	
3/4” x 5”	077-11150	Ward Mfg.	
3/4” x 5 1/2”	077-11155		
3/4” x 6”	077-11106		

**Revision Date:** 9/06/01 (RNK)  
4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 7.3**

### Nipple – Brass – 1” x Close thru 6”

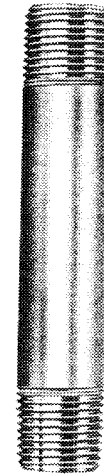
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Male Iron Pipe Thread x Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1” x Close	077-05001	Crane	
1” x 2½”	077-11325	Grinnell	
1” x 3”	077-11330	Stanley G. Flagg	
1” x 3½”	077-11335	Stockham Valves & Ftgs.	
1” x 4”	077-11340	U-Brand	
1” x 4½”	077-11345	Union Foundry	
1” x 5”	077-11350	Ward Mfg.	
1” x 5½”	077-11355		
1” x 6”	077-05006		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 7.4**

### Nipple – Brass – 1¼” x Close thru 6”

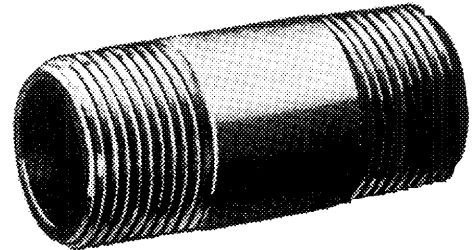
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Male Iron Pipe Thread x Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1¼” x Close	077-11500	Crane	
1¼” x 2½”	077-11525	Grinnell	
1¼” x 3”	077-11530	Stanley G. Flagg	
1¼” x 3½”	077-11535	Stockham Valves & Ftgs.	
1¼” x 4”	077-11540	U-Brand	
1¼” x 4½”	077-11545	Union Foundry	
1¼” x 5”	077-11550	Ward Mfg.	
1¼” x 5½”	077-11555		
1¼” x 6”	077-11560		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 7.5**

### Nipple – Brass – 1½” x Close thru 6”

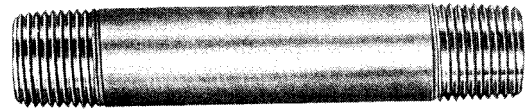
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Male Iron Pipe Thread x Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1½” x Close	077-11700	Crane	
1½” x 2½”	077-05015	Grinnell	
1½” x 3”	077-11730	Stanley G. Flagg	
1½” x 3½”	077-11735	Stockham Valves & Ftgs.	
1½” x 4”	077-11740	U-Brand	
1½” x 4½”	077-11745	Union Foundry	
1½” x 5”	077-11750	Ward Mfg.	
1½” x 5½”	077-11755		
1½” x 6”	077-11760		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 7.6**

### Nipple – Brass – 2” x Close thru 6”

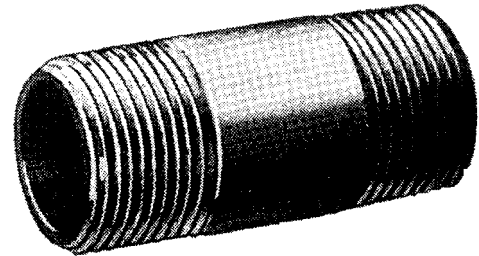
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Male Iron Pipe Thread x Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2” x Close	077-11900	Crane	
2” x 2½”	077-05020	Grinnell	
2” x 3”	077-11930	Stanley G. Flagg	
2” x 3½”	077-11935	Stockham Valves & Ftgs.	
2” x 4”	077-11940	U-Brand	
2” x 4½”	077-11945	Union Foundry	
2” x 5”	077-11950	Ward Mfg.	
2” x 5½”	077-11955		
2” x 6”	077-11960		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 7.7**

### Nipple – Brass – 3” x 4” thru 12”

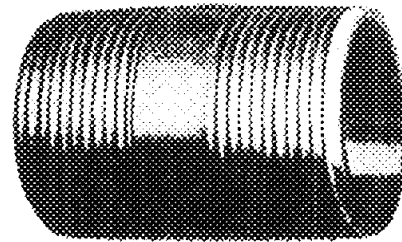
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

MIPT x MIPT (Male Iron Pipe Threading)



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3”x 4”	077-02304	Crane	
3”x 9”	077-02309	Grinnell	
3”x 12”	077-02312	Stanley G. Flagg Stockham Valves & Ftgs. <b>U-Brand</b> Union Fdry. Ward Mfg.	

**Revision Date:** 6/19/01 (RNK)  
10/97 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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# Material Specifications

**G 8.1**

## Coupling – Galvanized (Comp.) 3/4” thru 2”

**AKA** E-Z On, Dresser Coupling

**Material:**

**Sleeve:** Carbon steel tubing AISI C1010-15, long length.

**Retainer Cup:** Cold formed from strip steel.

**Gasket:** Grade 60 or equal.

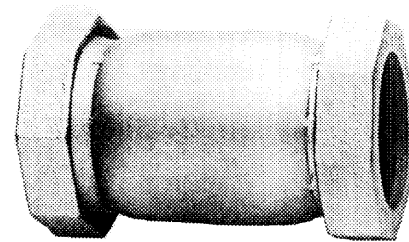
**Compression Nut:** Malleable iron ASTM A47-Grade 32510.

**Connection:** Compression x Compression.

**Special Features:**

Galvanized finish. Nominal pipe size to fit steel pipe O.D. as follows.

Size	O.D.
3/4”	1.050”
1”	1.315”
1 1/4”	1.660”
1 1/2”	1.900”
2”	2.375”



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	074-06034	APAC Products	None
1”	074-06001	Dresser Mfg.	65-0031-003 (3/4”)
1 1/4”	074-06054		65-0032-003 (1”)
1 1/2”	074-06064		65-0033-003 (1 1/4”)
2”	074-06002		65-0034-003 (1 1/2”)
			65-0035-003 (2”)
		Ford Meter Box	None
		Mueller	None
		Smith Blair	522-10501-003 (3/4”)
			522-13201-003 (1”)
			522-16601-003 (1 1/4”)
			522-19001-003 (1 1/2”)
			522-23801-003 (2”)
		Total Piping Solutions	
		Kraus Metals	

**Revision Date:** 5/8/03 (RNK)  
01/06/99 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**G 8.2**

### Coupling – Brass (FIPT x FIPT) - 3/4" thru 2"

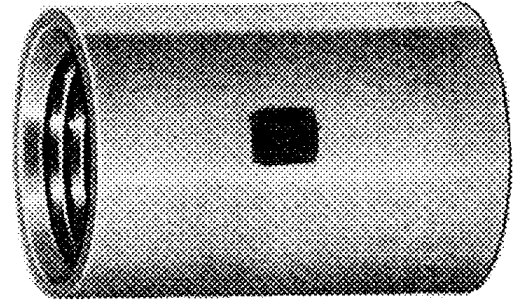
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	074-13034	Crane	
1"	074-13001	Grinnell	
1 1/4"	074-13054	Stanley G. Flagg	
1 1/2"	074-13032	Stockham Valves & Ftgs.	
2"	074-13002	U-Brand Union Fdry. Ward Mfg.	

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

**G 8.3**

### Reducer Coupling – Brass – 1” x 3/4” thru 2” x 1 1/2”

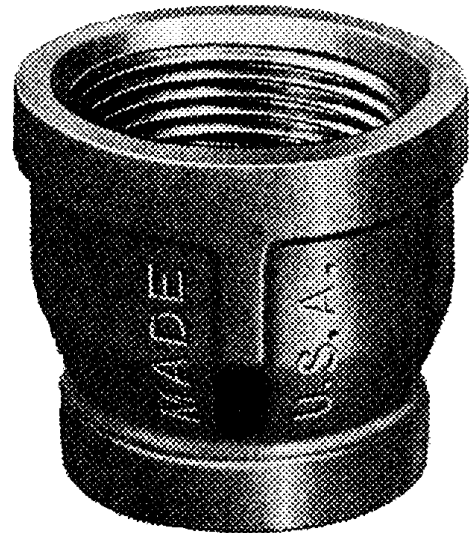
AKA

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1” x 3/4”	074-15074	Crane	
1 1/4” x 3/4”	074-15084	Grinnell	
1 1/4” x 1”	074-15094	Stanley G. Flagg	
1 1/2” x 3/4”	074-15052	Stockham Valves & Ftgs.	
1 1/2” x 1”	074-15104	U-Brand	
1 1/2” x 1 1/4”	074-15114	Union Fdry.	
2” x 3/4”	074-15234	Ward Mfg.	
2” x 1”	074-15124		
2” x 1 1/4”	074-15134		
2” x 1 1/2”	074-15144		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION



**Meter Coupling – Brass – 3/4” and 1”**

AKA

**Material and Design:**

Brass tailpiece and coupling nut conforming to ANSI/AWWA Standards C700-95, C800-89, and the latest revisions thereto.

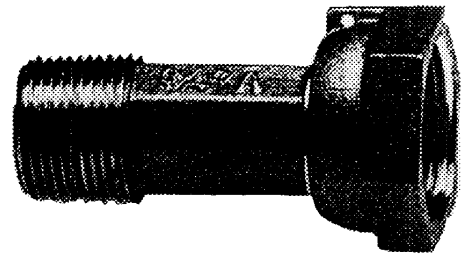
**Connections;**

**Tailpiece:** Shall have external taper pipe threads (MIPT) conforming to ANSI/ASME B1.20.1 and internal diameters that are approximately equal to the nominal thread size of the tailpiece.

**Coupling Nut:** Shall have internal straight threads conforming to ANSI/ASME B1.20.1.

**Dimensions:**

- 3/4” coupling for 5/8” x 5/8” meter – 3/4” MIPT Tailpiece with 1” coupling.
- 1” coupling for 1” meter – 1” MIPT Tailpiece with 1 1/4” coupling.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Standard Coupling for 5/8” x 3/4” meter 3/4” x 2” long	096-00002	Ford AY McDonald Sensus Generic Overseas	Meter couplings must be equal to Ford Meter Box Company straight meter couplings by male iron pipe thread, catalog # C38-23-2.5 for 5/8” x 3/4” meter and catalog # C38-44-2.625 for 1” meter and catalog # C38-23-2 for 5/8” x 3/4” meter and #C38-44 – 2 for 1” meter.
Standard coupling for 5/8” x 3/4” meter 3/4” x 2 1/2” long	096-00003		
Long coupling for 5/8” x 3/4” meter 3/4” x 3” long	096-00004		
Standard coupling for 1” meter 1” x 2 5/8” long	096-00001		
Standard coupling for 1” meter 1” x 2” long	096-00101		

**Revision Date:**  
 7/29/08 (RNK)  
 2/04/02 (RNK)  
 3/24/00 (RNK)  
 1/21/99 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

## Material Specifications

**G 8.5**

### Coupling Straight (Comp. x MIPT) 3/4", 1" & 2"

**AKA: Coupling Curb Stop Comp., Straight Male Coupling, Male Adapter**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and latest revisions thereto.

**Design:**

Pack joint is the only acceptable style.

**Connections:**

**Inlet:** CTS (copper tubing size) compression coupling.

**Outlet:** MIPT



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	074-01134	A. Y. McDonald	
1"	074-01101	Ford Meter Box	
2"	074-01102	Hays	
		James Jones	
		Mueller	J-2605
		Cambridge Brass	117-B M

**Revision Date:** 10/01/04 (RNK)  
 7/01/02 (RNK)  
 9/25/01 (RNK)  
 5/9/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

## Material Specifications

**G 8.6**

### Coupling – Straight – (Copper x FIPT) 3/4” & 1”

**AKA Copper Iron Coupling**

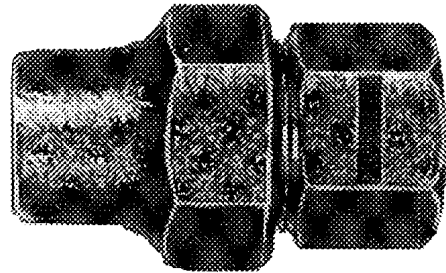
**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and latest revisions thereto.

**Connections:**

**Inlet:** Flared copper coupling.

**Outlet:** Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	074-02034	A. Y. McDonald	4754
1”	074-02001	Ford Meter box	C21-33 (3/4”) and C21-44 (1”) 5600
		Hays	J-1535
		James Jones	H-15450
		Mueller	117-C F
		Cambridge Brass	

**Revision Date:** 10/01/04 (RNK)  
2/3/99 (RNK)  
5/9/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

**G 8.7**

### Coupling – Straight – (Copper x MIPT) 3/4” & 1”

**AKA Coupling Curb Cock**

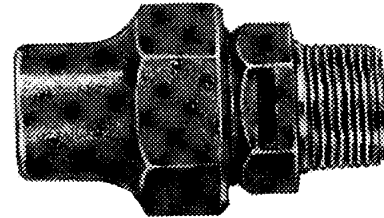
**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and latest revisions thereto.

**Connections:**

**Inlet:** Flared copper coupling.

**Outlet:** Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	074-01034	A. Y. McDonald	4753
1”	074-01001	Ford Meter Box	C28-33 (3/4”) & C28-44 (1”)
		Hays	5605
		James Jones	J-1531
		Mueller	H-15425
		Cambridge Brass	117-C M

**Revision Date:** 10/01/04 (RNK)  
 7/01/02 (RNK)  
 2/5/99 (RNK)  
 5/9/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

**G 8.8**

### Coupling – Straight – (Lead x Copper) – ¾” & 1”

**AKA**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62-Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

**Inlet:** Female extra strong (XS) lead flange thread.

**Outlet:** Copper flare nut.

**Special Feature:**

Appropriate gasket furnished with coupling.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
¾”	088-01400	Mueller	H-15505
1”	088-01450		

**Origin:** 5/02/03 (RNK)  
**Revision Date:** 8/27/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

**G 9.1**

### Union – 3 Part (Comp.) 3/4” thru 2” & 1” x 3/4”

**AKA Coupling**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62-Index 115 85-5-5-5) and latest revisions thereto.

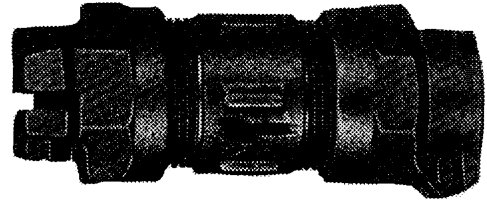
**Design:**

Must be straight design. Both grip joint and pack joint are acceptable.

**Connections:**

**Inlet:** CTS (copper tubing size) Compression Coupling.

**Outlet:** CTS (copper tubing size) Compression Coupling.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	093-01088	A. Y. McDonald	4758T
1”	093-01188		4758-22
2”	093-01288	Ford Meter Box	C44 Series
1” x 3/4”	093-01388		C44 – 34 - 1” x 3/4”
		Hays	5615CF (3/4”, 1” only) 5615CJ (3/4”, 1” only)
		James Jones	J-2609
		Mueller	H-15403

**Revision Date:** 6/07/04 (RNK)  
2/05/99 (RNK)  
5/02/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

**G 9.2**

### Union – 2 Part (Copper x Comp) - 3/4" & 1"

**AKA - Straight Coupling**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revision thereto.

**Design:**

Service fitting must accommodate copper tubing. Pack joint is the only acceptable style.

**Connections:**

**Inlet:** CTS type Flare nut with female thread.

**Outlet:** CTS (Copper tubing size) compression coupling.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	093-01087	McDonald	4754-22 (State size)
1"	093-01187	Ford	C04-33 = 3/4" C04-44 = 1"
		Jones	J-2607
		Cambridge Brass	117-B P

**Revision Date:** 10/01/04 (RNK)  
 3/12/04 (RNK)  
 7/01/02 (RNK)  
 1/22/02 (RNK)  
 9/25/01 (RNK)



Material Specifications  
 Water Business Unit  
 ORLANDO UTILITIES  
 COMMISSION

## Material Specifications

**G 9.3**

### Union - 2 Part (FIPT x COMP.) 3/4" & 1"

**AKA Straight Coupling**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85 –5-5-5) and the latest revisions thereto.

**Design:**

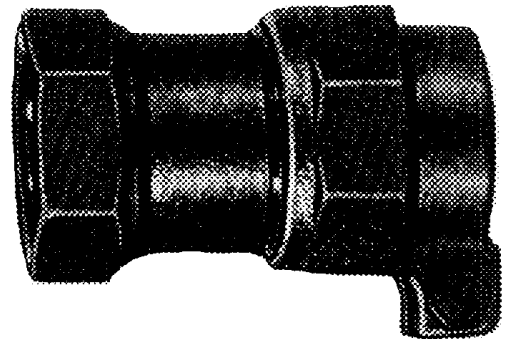
Service fitting must accommodate copper tubing. Both grip joint and pack joint are acceptable.

**Connections:**

Female Iron Pipe Thread x CTS (copper tubing size) Compression Coupling.

**Special Features:**

Stainless steel insert stiffener shall be furnished with compression connection. Stiffener (liner) must have on (1) flanged end to prevent liner from entering the tubing too much. Liner must be Mueller 504305 (3/4"), 504391 (1") or equal. Stainless steel P.E. to P.E. and/or (split) insert stiffeners are **not** acceptable. Plastic insert stiffeners are **not** acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	093-11078	A. Y. McDonald	4754-22
1"	093-11178	Ford Meter Box	C14-33 (3/4") C14-44 (1")
		Hays	5600CF
		Jones	J-2607
		Cambridge Brass	117-B F

**Revision Date:** 10/01/04 (RNK)  
 3/12/04 (RNK)  
 5/08/03 (RNK)  
 5/02/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
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# Material Specifications

G 9.4

## Union – 2 Part (Copper) 3/4” & 1”

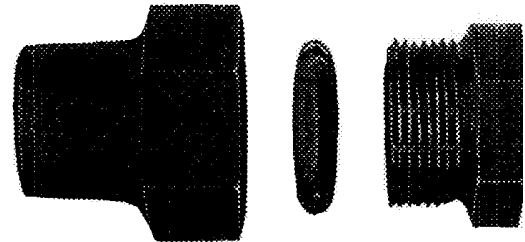
AKA

**Material:**

Brass conforming to ANSI/AWWA c 800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Flared Copper Coupling x Female Copper Flare Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	093-01077	A.Y. McDonald	4756
1”	093-01177	Ford Meter Box	CS22-33 (3/4”) CS22-44 (1”) 5610
		Hays	5610
		James Jones	J-1529
		Mueller	H15405
		Cambridge Brass	117-C P

**Revision Date:** 10/01/04 (RNK)  
2/5/99 (RNK)  
5/2/92 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 9.5**

### Union – Brass - 3/4” thru 2”

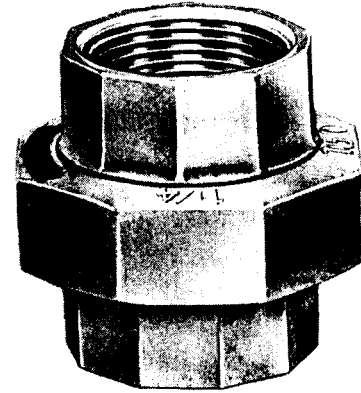
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	093-12075	Cerro Copper Products	
1”	093-12100	Howell	
1 1/4”	093-12125	Mueller Brass	
1 1/2”	093-12150	Reading	
2”	093-12200		

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

**G 9.6**

### Union – Ell (Comp.) - 3/4” thru 2”

**AKA**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115-85-5-5-5) and latest revisions thereto.

**Design:**

Pack joint is the only acceptable style.

**Connections:**

**Input:** CTS (copper tubing size)  
Compression Coupling.

**Output:** CTS (copper tubing size)  
Compression Coupling:



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	093-01090	A.Y. McDonald	105-B B
1"	093-01190	Ford	
2"	093-01290	Hays	
		James Jones	
		Mueller	
		Cambridge Brass	

**Revision Date:** 10/01/04 (RNK)  
 9/25/01 (RNK)  
 4/19/99 (RNK)  
 6/12/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

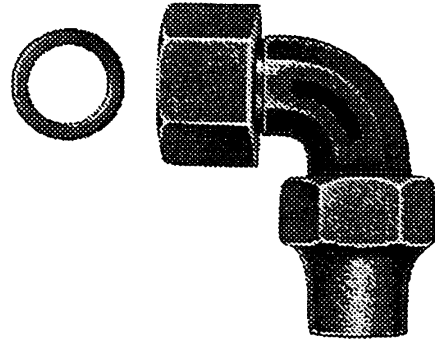
**G 9.7**

### Union – Ell (Copper) - 3/4” & 1”

**AKA**

**Material:**  
 Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**  
 Female swivel nut with inside Copper Service thread x Flared Copper Tube nut.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	093-01076	A. Y. McDonald	None
1”	093-01176	Ford Meter Box	L02-33S (3/4”) L02-44S (1”)
		Hays	None
		James Jones	None
		Mueller	H-15069
		Cambridge Brass	111-C P

**Revision Date:** 10/01/04 (RNK)  
 4/19/99 (RNK)  
 5/9/92 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

G 9.7a

### Coupling – Ell – (Lead x Copper) – 3/4” & 1”

AKA Quarter bend coupling; Union, Ell

**Material:**

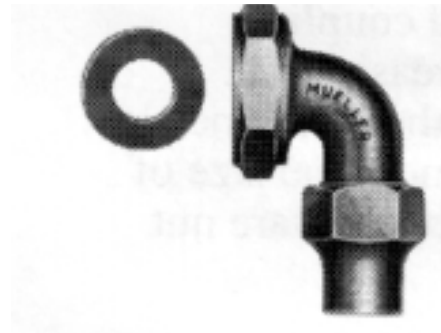
Brass conforming to ANSI/AWWA C800-89 (ASTM B62-Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female extra strong (XS) lead flange thread x copper flare nut.

**Special Feature:**

Appropriate gasket furnished with coupling.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	088-01500	Mueller	H-15513
1"	088-01590	Ford	L102-33S

**Origin:** 5/02/03 (RNK)  
**Revision Date:** 3/13/01 (RNK)  
8/27/98 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 9.8**

### Union - 45° - Copper - 3/4" & 1"

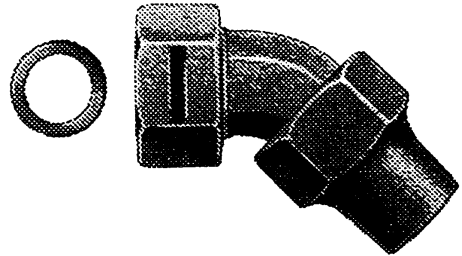
**AKA**

**Material:**

Brass conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revision thereto.

**Connections:**

Female swivel nut with inside Copper Service thread x Flare Copper tube nut.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	093-01075	A. Y. McDonald	None
1"	093-01175	Ford Meter Box	LAO2 – S
		Hays	None
		James Jones	None
		Mueller	H - 15064

**Revision Date:** 5/4/93 (DSW)  
4/19/99 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

**G 9.9**

### Union - 45° (Copper x Comp) - 3/4" & 1"

**AKA** □ Bend Companion Coupling

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5) and the latest revision thereto.

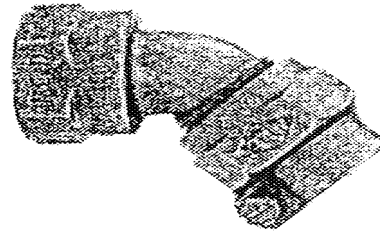
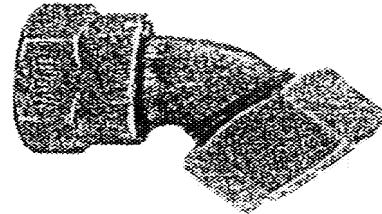
**Design:**

Service fitting must accommodate copper tubing. Pack joint is the only acceptable style.

**Connections:**

**Inlet:** Swivel nut with flare nut thread.

**Outlet:** CTS (Copper tubing size) compression coupling.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	093-01080	McDonald	4750ST or 4750S-22
1"	093-01180	Ford	LA04-33 S LA04-44 S

**Revision Date:** 5/02/03 (RNK)  
9/25/01 (RNK)  
4/20/00 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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# Material Specifications

G 10.1

## Cap – Brass - 3/4” through 2”

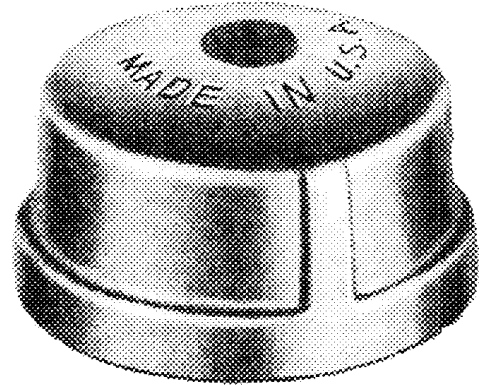
AKA

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	072-11034	Crane	
1"	072-11001	Grinnell	
1 1/4"	072-11054	Stanley G. Flagg	
1 1/2"	072-11064	Stockham Valves & Ftgs.	
2"	072-11002	U-Brand Union Fdry. Ward Mfg.	

**Revision Date:** 4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 11.2**

### Bushing – Brass - 3/4" x 1/2" thru 2" x 1 1/2"

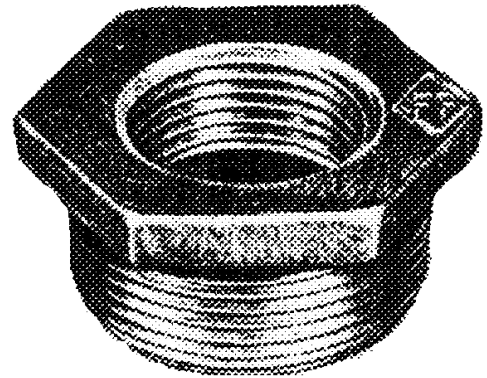
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5) and the latest revisions thereto.

**Connections:**

Iron pipe thread – inside and outside.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4" x 1/2"	086-11050	Crane	
1" x 1/2"	086-11150	Grinnell	
1" x 3/4"	086-05175	Stanley G. Flagg	
1 1/4" x 3/4"	086-11275	Stockham Valves & Ftgs.	
1 1/4" x 1"	086-11210	U-Brand	
1 1/2" x 3/4"	086-11375	Union Fdry.	
1 1/2" x 1"	086-11310	Ward Mfg.	
1 1/2" x 1 1/4"	086-11325		
2" x 3/4"	086-11475		
2" x 1"	086-11410		
2" x 1 1/4"	086-11425		
2" x 1 1/2"	086-11450		

**Revision Date:** 5/13/02 (RNK)  
4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 12.1**

### Plug – Brass - 3/4” and 2”

**AKA**

**Material:**

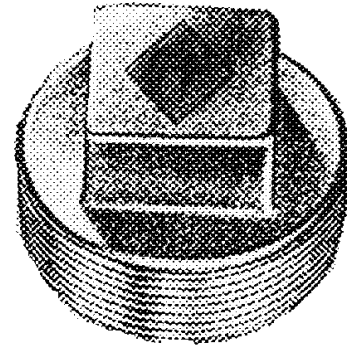
125 lb. brass made from **new production** having clean, sharp threads accurately cut to gauge.

**Design:**

Solid plug with square head.

**Connection:**

**Mueller (CC) thread.**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	078-03075	APAC Products	No number
1”	078-03001	A.Y. McDonald	3206
		Ford Meter Box	“Corporation Plug” (no number)
		Hays	5656
		James Jones	J-150
		Mueller	H-10033
		Smith-Blair	No number
		Cambridge Brass	98-A

**Revision Date:** 10/01/04 (RNK)  
 5/31/02 (RNK)  
 4/18/01 (RNK)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
**COMMISSION**

## Material Specifications

**G 12.2**

### Plug – Brass - 3/4” through 2”

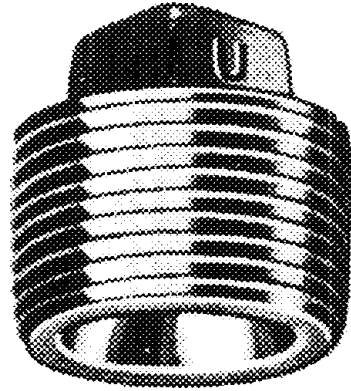
**AKA**

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Connections:**

Male Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”	078-11075	Crane	
1”	078-11001	Grinnell	
1 1/4”	078-11125	Stanley G. Flagg	
1 1/2”	078-11150	Stockham Valves & Ftgs.	
2”	078-11002	U-Brand Union Fdry. Ward Mfg.	

**Revision Date:** 5/31/02 (RNK)  
4/18/01 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

**G 13.1**

### Corporation Stop (C.C. x Comp.) - 3/4" and 1"

AKA Comp. Corporation

**Material:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Service fitting must accommodate copper tubing. Pack joint is the only acceptable style.

**Connections:**

C.C. (AWWA taper) x Compression Joint.

**Special Features:**

Stainless steel insert stiffener shall be furnished with compression connection. Stiffener (liner) must have one (1) flanged end to prevent liner from entering the tubing too much. Liner must be Mueller 504305 (3/4"), 504391 (1") or equal.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	088-01375	A.Y. McDonald	
1"	088-01310	Ford Meter Box	
		James Jones	J-3401
		Mueller	
		Cambridge Brass	302-A B

**Revision Date:** 10/01/04 (RNK)  
 5/31/02 (RNK)  
 9/25/01 (RNK)  
 1/25/99 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
 COMMISSION

## Material Specifications

**G 13.1a**

### Corporation Stop Pack Joint Connection – 3/4” & 1”

**AKA**

**General:**

For copper or plastic tubing there is a locking device, a split clamp, which is drawn down securely on the tubing or pipe by tightening a stainless steel screw.

**Connections:**

FIPT threads conforming to ANSI B2.1.

**Special Features:**

Must be delivered **individually wrapped one kit per package** with one pack joint nut, one Buna-N beveled gasket, one plastic gasket.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1”	088-01475	Mueller 1”	681922
3/4”	088-01410	Mueller 3/4”	681921
1”	088-01411	Mueller 1” gasket only	311694

**Revision Date:** 3/28/08 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 13.3**

### Corporation Stop Ball Valve (MIPT x FIPT) – 1½” and 2”

AKA

**Materials:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

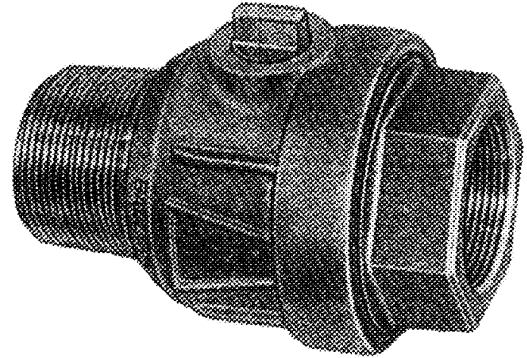
**Design:**

Full port ball valve or equal.

**Connections:**

**Inlet:** Male iron pipe thread.

**Outlet:** Female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1½”	088-01315	A.Y. McDonald	<b>3149B</b>
2”	088-01320	Ford Meter Box	FB-1700
		Hayes	4483
		James Jones	J-1931
		Mueller	B-20046
		Cambridge Brass	301-M F

**Revision Date:** 10/01/04 (RNK)  
1/22/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Material Specifications

**G 13.4**

### Corporation Stop Ball Valve (MIPT x MIPT) – 1½” and 2”

AKA

**Materials:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

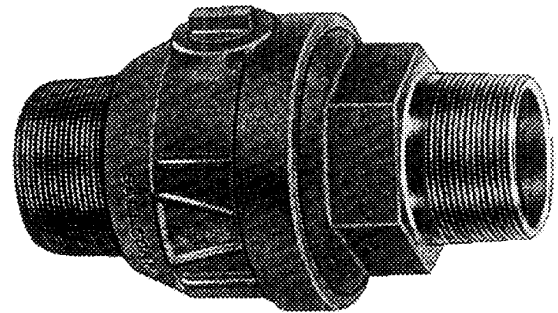
**Design:**

Full port ball valve or equal.

**Connections:**

**Inlet:** Male iron pipe thread.

**Outlet:** Male iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1½”	Non-stock	A.Y. McDonald	<b>3131B</b>
2”	Non-stock	Ford Meter Box	FB500
		Hayes	4480
		James Jones	J-1943
		Cambridge Brass	301-M M

**Revision Date:** 10/01/04 (RNK)  
1/22/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 14.1**

### Gate Valve – Screw – 1½” & 2”

**AKA**

**General:**

**Valve Body:** Cast iron (for buried service) conforming to ASTM A26 – Class B.

**Trim:** (seat ring, disc, and stem) – bronze.

**Design:**

Class 125, rising stem, inside screw.

**Connections:**

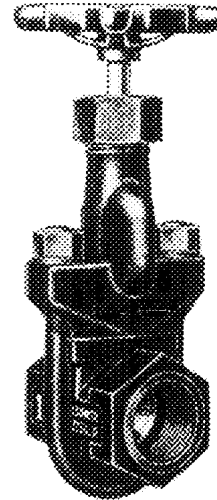
FIPT x FIPT – threads conforming to ANSI B2.1.

**Special Features:**

Must be delivered with plastic cups protecting the female iron pipe threading.

**NOTE:**

Laying length and bore of valve must be sufficient to allow tapping bit to engage properly.



**Size/Details**

**OUC Item ID**

**Manufacturer**

**Catalog Number**

1½”

063-01001

Crane

490

2”

063-01002

Lunkenheimer

1640

Jones

J-372

Matco

**Revision Date:**

2/13/08 (RNK)

5/31/02 (RNK)

10/2/98 (DSW)



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Material Specifications  
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## Material Specifications

**G 15.1**

### Curb Stop (Pack Joint x FIPT) - 3/4" and 1"

**AKA**

**Materials:**

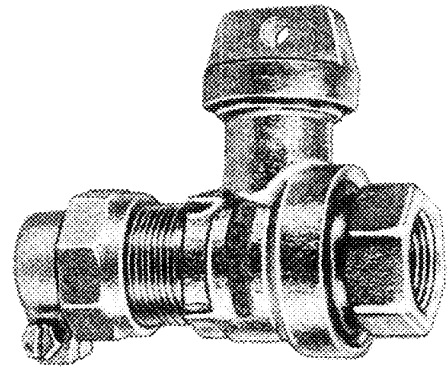
Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Full port ball valve or equal. Padlock wing required. Pack joint type compression coupling.

**Connections:**

**Inlet:** Pack joint type compression coupling.  
**Outlet:** Female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	090-01275	A.Y. McDonald	<b>6102W-22</b>
1"	090-01210	Ford Meter Box	B41-333W (3/4") B41-444W (1")
		Hays	4302CJ-W
		Mueller	P-25170
		Jones	J-1921W
		Cambridge Brass	2123-B F

**Revision Date:** 10/01/04 (RNK)  
 5/31/02 (RNK)  
 9/06/01 (RNK)  
 1/21/99 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

## Material Specifications

**G 15.2**

### Curb Stop (FIPT x FIPT) - 3/4" and 1"

**AKA**

**Materials:**

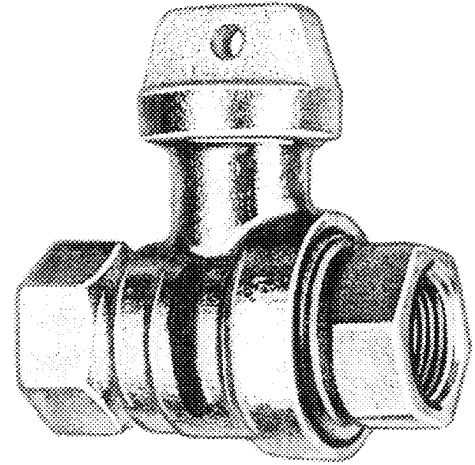
Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Full port ball valve or equal. Padlock wing required.

**Connections:**

Female iron pipe thread x female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	090-01075	A.Y. McDonald	<b>6101W</b>
1"	090-01001	Ford Meter Box	B11-333W (3/4") B11-444W (1")
		Hays	4300-W
		James Jones	J-1900W
		Mueller	P-20200
		Cambridge Brass	212-F F

**Revision Date:** 10/01/04 (RNK)  
1/21/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 15.3**

### Curb Stop (Copper x FIPT) - 3/4" and 1"

**AKA**

**Materials:**

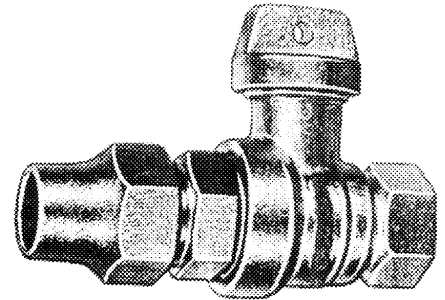
Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Full port ball valve or equal. Padlock wing required.

**Connections:**

**Inlet:** Flared copper tubing.  
**Outlet:** Female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4" x 4 1/8" Long	090-01175	A.Y. McDonald	<b>6102-W</b>
1" x 5" Long	090-01110	Ford Meter Box	B21-333W (3/4") B21-444W (1")
		Hays	4302-W
		James Jones	J-1901W
		Mueller	B-25166
		Cambridge Brass	212-C F

**Revision Date:** 10/01/04 (RNK)  
 7/01/02 (RNK)  
 1/04/02 (RNK)  
 1/21/99 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
 COMMISSION**

**Material Specifications**

**G 15.4**

**Curb Stop - Angle Ball - (Comp. x FIPT) - 3/4" and 1"**

AKA 90 degree Curb Stop Comp

**Materials:**

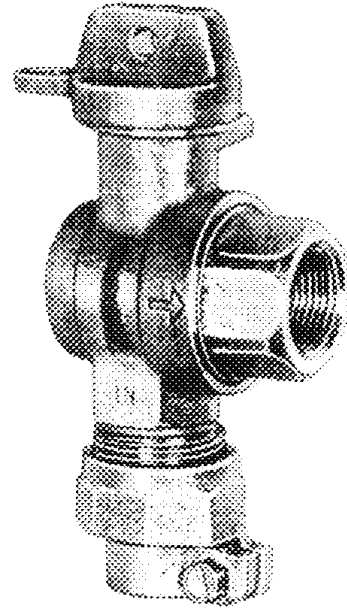
Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Full port ball valve or equal. Padlock wing required. Compression joint must accommodate copper tubing.

**Connections:**

**Inlet:** Compression joint.  
**Outlet:** Female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	090-02234	Ford Meter Box	BA41-333W (3/4")
1"	090-02210	Jones Cambridge Brass	BA41-444W (1") J-1969W 210-B F

**Revision Date:** 10/01/04 (RNK)  
 5/31/02 (RNK)  
 9/06/01 (RNK)  
 1/21/99 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

**G 15.5**

### Curb Stop - Angle Ball - (Copper x FIPT) - 3/4" and 1"

AKA Flare Curb Stop 90E

**Materials:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

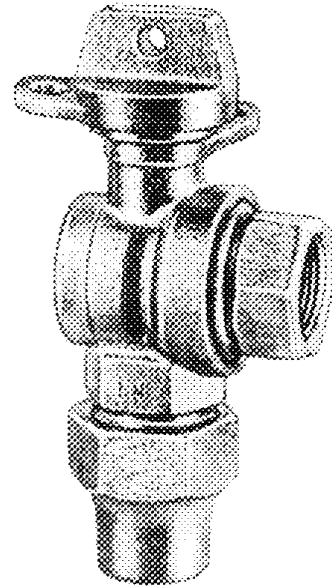
**Design:**

Full port ball valve or equal. Padlock wing required.

**Connections:**

**Inlet:** Flared copper fitting

**Outlet:** Female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	090-02134	Ford Meter Box	BA21-333W (3/4")
1"	090-02110	James Jones Mueller Cambridge Brass	BA21-444W (1") J-1965W B-24275 210-C F

**Revision Date:** 10/01/04 (RNK)  
5/31/02 (RNK)  
1/21/99 (DSW)



Material Specifications  
Water Business Unit  
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# Material Specifications

**G 16.1**

## Ball Valve w/Padlock Wing (FIPT x FIPT) – 2”

**AKA**

**Materials:**

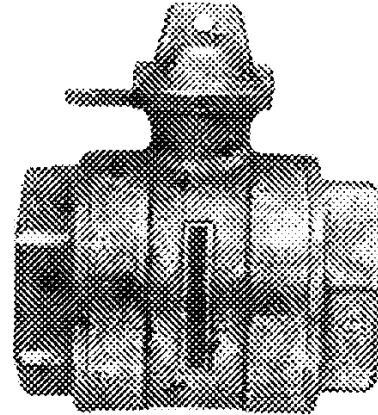
Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Full port ball valve or equal. Padlock wing required.

**Connections:**

Female iron pipe thread x female iron pipe thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	062-05020	Ford Meter Box Mueller Jones Cambridge Brass	B11-777W B-20200 J-1900W 212-F F

**Revision Date:** 10/01/04 (RNK)  
5/31/02 (RNK)  
1/21/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

**G 16.2**

### Meter Valve – Flanged Ball (FIPT x FLG) – 1½” and 2”

AKA Flanged Ball Valve

**Materials:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

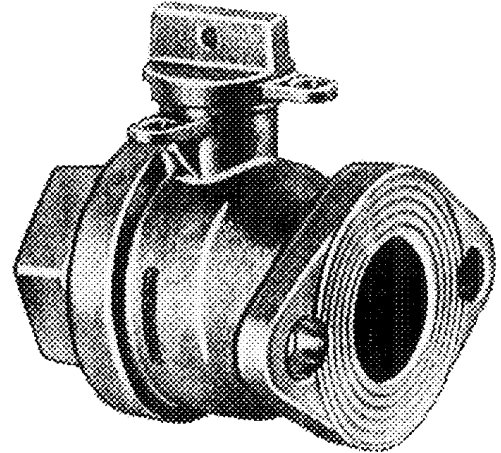
**Design:**

Full port ball valve or equal. Padlock wing required.

**Connections:**

**Inlet:** Female iron pipe thread.

**Outlet:** Flanged (to accommodate 1½” or 2” flanged meters).



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1½”	090-03015	A.Y. McDonald	6101MW
2”	090-03020	Ford Meter Box	BF-13-666W (1½”) BF-13-777W (2”)
		Mueller	B-24337
		Jones	J-1912W
		Cambridge Brass	212-F MF

**Revision Date:** 10/01/04 (RNK)  
5/31/02 (RNK)  
1/21/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
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## Material Specifications

**G 16.3**

### Meter Valve – Flanged Ball (Comp. x FLG) – 2”

AKA

**Materials:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

**Design:**

Full port ball valve. Tee valve head with padlock wing required. Must have 90E or quarter-turn check.

**Connections:**

**Inlet:** 2” CTS (copper tubing size) compression coupling. Both grip joint and pack joint are acceptable.

**Outlet:** 2” flange w/elongated bolt holes to accommodate 1½” or 2” flanged meters.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	090-03025	A.Y. McDonald Ford Meter Box James Jones Mueller Cambridge Brass	6100MWT 6100MW-22 BF43-777W J-1939 B-24335 212-B MF

**Revision Date:** 10/01/04 (RNK)  
4/21/00 (RNK)  
1/21/99 (DSW)



Material Specifications  
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## Material Specifications

**G 16.4**

### Meter Valve – Flanged Ball – Angle - (Comp. x FLG) – 2”

AKA

**Materials:**

Brass body conforming to ANSI/AWWA C800-89 (ASTM B62 – Index 115 85-5-5-5) and the latest revisions thereto.

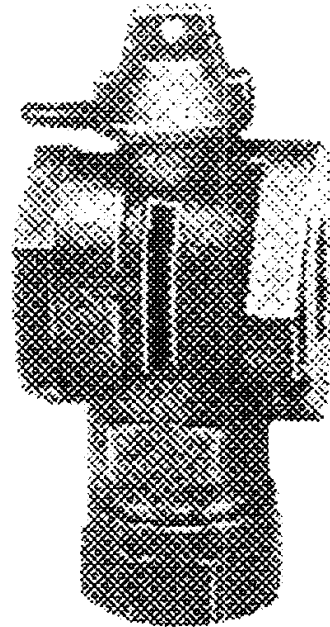
**Design:**

Full port angle ball valve. Tee valve head with padlock wing required. Must have 90E or quarter-turn check.

**Connections:**

**Inlet:** 2” CTS (copper tubing size) compression coupling. Both grip joint and pack joint are acceptable.

**Outlet:** 2” flange w/elongated bolt holes to accommodate 1½” or 2” flanged meters.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
2”	090-03030	A.Y. McDonald Ford Meter James Jones Mueller	None BFA43-777W J1975W B-24276 210-B MF

**Revision Date:** 10/01/04 (RNK)  
5/31/02 (RNK)  
1/21/99 (DSW)



Material Specifications  
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## Material Specifications

**G 17.1**

### Meter Setter – Copper for 5/8” x 3/4” Meter

**AKA** Riser

**General:**

Reseters must have swivel nut connections to accommodate 5/8” x 3/4” water meters. Assembly must be equipped with a curb stop with a padlock wing.

**Design:**

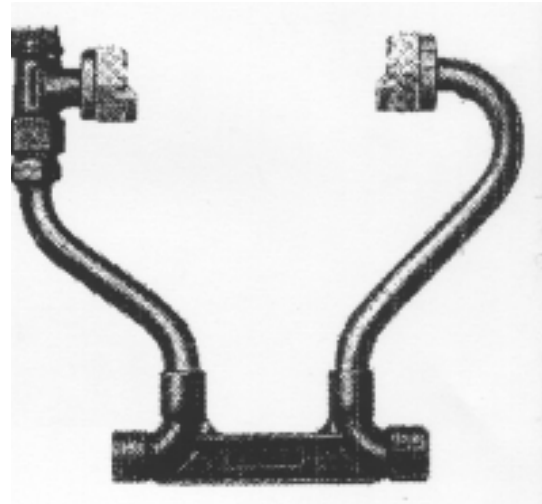
18” reseters must have a brass intermediate support bar.

**Connections:**

1” male meter thread x 1” male meter thread.

**Special Features:**

Gaskets for the meter connections are to be included and delivered with the reseters.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
7”	092-05007	A.Y. McDonald	18 Series
12”	092-05012	Ford Meter Box	V42 Series
18”	092-05018	Hays	R23 Series
		Mueller	H-14118
		Jones	J03 Series
		Cambridge Brass	6010 Series

**Revision Date:** 10/01/04 (RNK)  
 5/31/02 (RNK)  
 1/21/99 (DSW)



Material Specifications  
 Water Business Unit  
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## Material Specifications

**G 17.2**

### Meter Setter – Copper for 1” Meter

AKA Riser

**General:**

Reseters must have swivel nut connections to accommodate 1” water meters. Assembly must be equipped with a curb stop with a padlock wing.

**Design:**

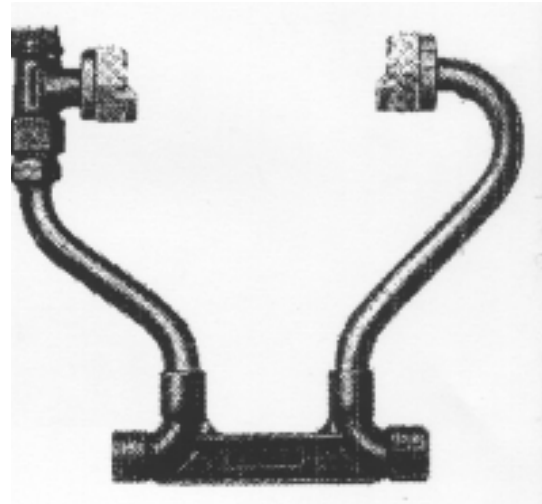
18” reseters must have a brass intermediate support bar.

**Connections:**

1¼” male meter thread x 1¼” male meter thread.

**Special Features:**

Gaskets for the meter connections are to be included and delivered with the reseters.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
12”	092-06012	Ford Meter Box	V44 Series
15”	092-06015	Hays	R23 Series
18”	092-06018	Mueller	H-14118
		Jones	J03 Series
		Cambridge Brass	6010 Series

**Revision Date:** 10/01/04 (RNK)  
 5/31/02 (RNK)  
 4/21/00 (RNK)  
 1/21/99 (DSW)



Material Specifications  
 Water Business Unit  
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## Material Specifications

**G 18.1**

### Insert – for CTS HDPE – 3/4” thru 2”

**AKA** Compression Insert; Stiffener; Liner

**Material:**

Stainless Steel

**Design:**

Plain End x flanged (or flared) to prevent improper insertion into the tubing. Insert shall be suitable for use with SDR 9, copper tubing size (CTS), high density polyethylene (HDPE) tubing.

**Special Features:**

Insert may not be P.E. x P.E. nor may it be a split insert. Plastic inserts are **not** acceptable.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4”(for .725-.753 I.D)	081-01034	Mueller	504281
1”(for .860-8.75 I.D)	081-01001	Mueller	504385
2”(for 1.624-1.653 I.D)	081-01002	Mueller Cambridge Brass	506141 86-

<b>Revision Date:</b>	8/5/08 (RNK)
	10/01/04 (RNK)
	10/6/99 (RNK)
	9/3/98 (DSW)



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Material Specifications  
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# Material Specifications

G 19.1

## Meter Washers 3/4" & 1"

AKA Meter Washers

**Material:**

Neoprene rubber washers.

**Special Features:**

Black Rubber in bags of 100 per bag.



**Size/Details**

**OUC Item ID**

3/4" x 1/16"

096-00006

3/4" x 1/8"

096-00008

1" x 1/16"

096-00007

1" x 1/8"

096-00008

**Manufacturer**

**Catalog Number**

HD Supply  
Waterworks

Flow Components

**Revision Date:** 5/31/07 (RNK)  
10/28/05 (RNK)



Material Specifications  
Water Business Unit  
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## Water Meters and Meter Boxes

<b>H 1.1</b>	Water Meter – $\frac{3}{4}$ ” & 1”	9/13
<b>H 1.2</b>	Water Meter – Turbine – 1 $\frac{1}{2}$ ” and 2” thru 10”	9/13
<b>H 1.3</b>	FireLine Meters – 4”, 6”, 8”, 10”	9/13
<b>H 1.4</b>	Gasket – Drop In 1 $\frac{1}{2}$ ” & 2”	4/99
<b>H 1.5</b>	Companion Flange 1-1/2” and 2”	4/99
<b>H 1.6</b>	Remote AMI Module	9/13
<b>H 1.7</b>	Pit AMI Module	9/13
<b>H 2.1</b>	Meter Box w/Cover – Plastic– Std.	9/13
<b>H 2.2</b>	Meter Box W/Cover – Backflow	9/13

## Water Meters and Meter Boxes

<b>H 2.3</b>	Meter Box w/Cover –Med.	9/13
<b>H 2.4</b>	Meter Box w/Cover –Spec. Irr. – Med.	9/13
<b>H 2.5</b>	Meter Box w/Cover – C.I. (Oval) – Std.	9/13
<b>H 2.6</b>	Meter Box w/Cover – C.I. – Med.	9/13
<b>H 3.1</b>	Meter Vault	3/01

# Material Specifications

H 1.1

## Water Meter – 3/4” & 1”

**AKA** Positive Displacement Meter

**General:**

Cold-water solid state electromagnetic flow water meter with no moving parts conforming to AWWA C700 and C710 latest revisions and ANSI/NSF 61 approved..

**Material:**

- Main Case:** Thermal plastic
- Dial Cover:** High Strength heat treated tamper resistant glass or equal glass product.
- Strainer:** Synthetic polymer
- Flowtube** – Polyphenylene sulfide alloy
- Electrode** – Silver/Silver Chloride
- Register:** 9 digit programmable LCD display, with forward/reverse flow, battery life and empty pipe indication. Register is to be AMR/AMI compatible

**Design:**

Tamperproof, magnetically coupled drive, hermetically sealed register with battery powered flow sensor with no moving parts,. System is to be designed for 200 psi. The register and measuring element housed in a thermal plastic non-removable external casing.

**Special Features:**

- Domestic manufacturing is preferred.
- Reclaimed meters are to be pantone in color



Size/Details	OUC Item ID	Manufacturer	Catalog Number
	Domestic/ Irrigation	Sensus - Iperl	
3/4”	096-11158		
1”	096-11011		
		Reclaimed	
		096-51158	
		096-51011	

**Revision Date:** 07/09/13 (SML)  
11/16/98 (RNK)



Material Specifications  
Water Business Unit  
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# Material Specifications

H 1.2

## Water Meter – Turbine – 1½” & 2” thru 10”

**General:**

Intermediate size cold-water type water meter conforming to AWWA C701 class II latest revisions and NSF/ANSI Standard 61.

**Material:**

**Main Case:** Fusion bonded epoxy coated ductile iron  
**Measuring Chamber:** Floating Ball Technology thermoplastic dynamically balanced impeller  
**External Nuts, Bolts, & Washers:** Brass.  
**Register Box Lid:** Bronze with no less than 57% copper content.  
**Dial Cover:** High strength heat treated glass or equal glass product.  
**Strainer:** Fusion bonded epoxy coated ductile iron, V shaped, open area minimum 2 times pipe area, SST Screen  
**Register:** Electronically sealed 9 digit register programmable LCD display, with forward/reverse flow, battery life and empty pipe indication. Register is to be AMR/AMI compatible

**Design:**

Tamperproof, magnetically coupled drive, hermetically sealed register with battery powered flow sensor with no moving parts,. System designed for 200 psi. The register and measuring element housed in a thermal plastic non-removable external casing.

**Connections:**

1-1/2” and 2” two bolt oval configuration companion flanges of dimensions shown in AWWA C700-95. 3” – 10” Class 125 ANSI B16.2 flanges.

**Special Features:**

Domestic manufacture is preferred.  
 Reclaimed meters are to be pantone in color



**Size/Details**

	OUC Item ID	
	Domestic/	Reclaimed
	Irrigation	
1½”	096-12015	096-33015
2”	096-03012	096-33102
3”	096-03103	096-33103
4”	096-03014	096-33104
6”	096-03016	096-33106
8”	096-03008	096-33108
10”	096-03410	

Manufacturer  
 Sensus OMNI T2

**Catalog Number**

**Revision Date:** 07/09/13 (SML)  
 12/3/98 (DSW)  
 07/09/13 (SML)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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**FireLine Meter 4” thru 10”**

**AKA**

**General:**

**General:**

Intermediate size cold-water displacement type water meter conforming to AWWA C703 class III latest revisions and NSF/ANSI Standard 61, UL listed and FM approved.

**Material:**

**Main Case:** Fusion bonded epoxy coated ductile iron  
**Measuring Chamber:** Floating Ball Technology thermoplastic dynamically balanced impeller  
**External Nuts, Bolts, & Washers:** Brass.  
**Register Box Lid:** Bronze with no less than 57% copper content.  
**Dial Cover:** High strength heat treated glass or equal glass product.  
**Strainer:** UL Listed and FM approved external fire service. Fusion bonded epoxy coated ductile iron, V shaped, open area minimum 4 times pipe area, SST screen and fasteners.  
**Register:** Electronically sealed 9 digit programmable LCD display, with forward/reverse flow, battery life and empty pipe indication. Register is to be AMR/AMI compatible

**Design:**

Tamperproof, magnetically coupled drive, hermetically sealed register with battery powered flow sensor with no moving parts. System designed for 200 psi. The register and measuring element housed in a thermal plastic non-removable external casing.

**Connections:**


Class 125 ANSI B16.2 flanges.

**Special Features:**

Domestic manufacture is preferred.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	096-03404	Sensus F2	
6"	096-03406		
8"	096-03408		
10"	096-03310		

<p><b>Revision Date:</b> 07/09/13 (SML) 8/24/99 (RNK)</p>	 <p><b>OUC</b> The <i>Reliable One</i>®</p>	<p>Material Specifications Water Business Unit <b>ORLANDO UTILITIES</b> COMMISSION</p>
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## Material Specifications

H 1.4

### Gasket, Drop In 1½” & 2”

AKA

**Material:**  
Special Red SBR.


**Design:**  
Full face, with a durometer reading of no less than 75.

**Special Features:**  
1/8” (3.18 mm) thick.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1 ½”	078-02191	Flow Components	FCI Part #30008686 – OUC #19-1½”
2”	078-02192		FCI Part #30008687 – OUC #19 – 2”

**Revision Date:** 4/16/99 (RNK)  
5/13/98 (DSW)

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## Material Specifications

H 1.5

### Companion Flange Slotted 1 1/2" & 2"

**AKA**

**Material:**

Two-bolt AWWA Class 125 oval flange type internal type threads conforming to ANSI B2.1. flanged ends are standard for 1-1/2 and 2" meters..

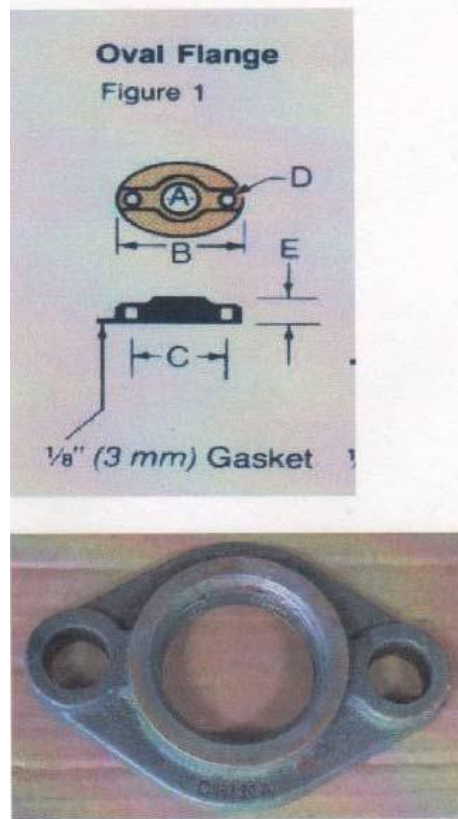
**Design:**

1-1/2" companion flange - OD 5-3/8" with bolt circle of 4", with 2 bolts. Bolt holes to be 11/16" with 5/8" bolts. Flange thickness is 1-1/8.

2" companion flange OD - 5-7/8" with bolt circle of 4-1/2", with 2 bolts. Bolt holes to be slotted with 3/4" bolts. Flange thickness is 1-1/4.

**Note:**

Must Use Drop in gasket with meter coupling..



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1 1/2"	078-02201	Ford	CF31-77 slotted 2"
2"	078-02202	Sensus AY McDonald	

**Revision Date:** 07/09/13 (SML)  
7/29/08 (RNK)  
6/18/08 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
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# Material Specifications

H 1.6

## Remote AMI Module

### AKA

#### Material:

Remote Housing will meet IP67

#### Design:

Compatible with all major brands of water meters. Module will be pipe mounted. Support 2 way communication. Built in security with AES. 128 bit encryption. Module will be compliant with FCC Rules, Part 15. Module will have a 902 to 928 MHz communication range. Module will have inline connector.

#### Note:



**Size/Details**  
Remote Module

OUC Item ID  
096-00022

Manufacturer  
Elster

**Catalog Number**  
EW10003000

**Revision Date:** 09/23/13 (SML)



Material Specifications  
Water Business Unit  
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# Material Specifications

H 1.7

## Pit AMI Module

### AKA

#### Material:

Housing will meet IP68

#### Design:


Compatible with all major brands of water meters. Module will be pipe mounted. Support 2 way communication. Built in security with AES. 128 bit encryption. Module will be compliant with FCC Rules, Part 15. Module will have a 902 to 928 MHz communication Range. Module will have inline connector.

#### Note:



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Pit Module	096-00023	Elster	EW202200000
Module Cover	096-00024	Elster	EW2000004000

**Revision Date:** 09/23/13 (SML)

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Water Business Unit  
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## Material Specifications

H 2.1

### Meter Box w/Cover -- Std.

AKA Small Box

**General:**

14¼” x 19½” (general bottom inside dimensions) x 12” deep.

**Material:**

**Body:** Body will be polymer concrete. Mouseholes are to be 3” wide by 4” high, centered on short sides. Body to have minimum 1 1/2 “ bottom flange to prevent settling.

**Cover:** 15 3/8” x 10” Cover will be polymer concrete with a 2 inch through hole with 3 ½ inch counter bore ¼” deep.

**Special Features:**

**Reclaimed:** The lid will be Purple

**Cover Markings:** WATER and OUC

**Packaging:** Meter boxes must be palletized and strapped for ease of handling and unloading.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Box and Cover			
Domestic and Irrigation	092-01016	Glasmaster	S101512F2N08-1
Reclaimed	092-51008	Glasmaster	S101212F2N08-2
Cover			
Domestic and Irrigation	092-01017	Glasmaster	S1015EN08-1-OUC
Reclaimed	092-51009	Glasmaster	S1015EN08-2-OUCR

**Revision Date:** 09/11/13 (SML)  
 5/03/03 (RNK)  
 3/06/01 (RNK)  
 1/31/00 (RNK)  
 12/4/98 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

H 2.2

### Meter Box w/Cover –Backflow – Std.

AKA Backflow Box

**General:**

12"x21½"x12" (general bottom inside dimensions).

**Material:**

**Body:** Body will be polymer concrete. Body will have a solid bottom. One side will have two 1-1/2" diameter rubber grommeted holes spaced 6-1/4" apart equidistant from center of side. Holes are to be centered 3-1/4" up from the inside bottom. Holes are to be suitable for nominal 1" type K copper pipe.

**Cover:** 13-3/4" x 23-1/4" Cover will be polymer concrete with a 2 inch through hole with 3 ½ inch counter bore ¼" deep

**Special Features:**

**Packaging:** Meter boxes must be palletized and strapped for ease of handling and unloading.

**Cover Marking:** WATER and OUC



Armorcast

Size/Details	OUC Item ID	Manufacturer	Catalog Number
Box and Lid	09201046	Armorcast	P6001868AB-OUC
Box			
12" x 21½" x 12"	092-01047	Armorcast	A60018668-OUC
12" x 21½" x 12"	092-01020	Glasmaster	J132412SZN08-1-213
Cover			
13 ¾" x 23 ¼"	092-01048	Armorcast	A6001866-H7-OUC
13 ¾" x 23 ¼"	092-01021	Glasmaster	S1324EN08-1-OUC

**Revision Date:** 07/09/13 (SML)  
6/02/04 (RNK)



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Water Business Unit  
ORLANDO UTILITIES  
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## Material Specifications

**H 2.3**

### Meter Box w/Cover –Med.

**AKA** Medium Box

**General:**

18" x 28" (general bottom inside dimensions)  
x 12" deep.

**Material:**

**Body:** Body will be polymer concrete. Mouseholes are to be 3" wide by 4" high centered on short sides. Body to have minimum 1 1/2 " bottom flange to prevent settling.

**Cover:** 13 1/2" x 23 1/8" Cover will be polymer concrete with a 2 inch through hole with 3 1/2 inch counter bore 1/4" deep.

**Special Features:**

**Reclaimed:** The lid will be Purple

**Cover Markings:** WATER

**Packaging:** Meter boxes must be palletized and strapped for ease of handling and unloading.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Box and Cover			
Domestic and Irrigation	092-01018	Glasmaster	S132412F2N08-1
Reclaimed	092-51010	Glasmaster	S132412F2N08-2
Cover			
Domestic and Irrigation	092-01019	Glasmaster	S1324EN08-1-OUC
Reclaimed	092-51011	Glasmaster	S1324EN08-2-OUCR

**Revision Date:** 6/28/13 (SML)  
5/02/03 (RNK)  
1/31/00 (RNK)  
12/4/98 (DSW)

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Water Business Unit  
**ORLANDO UTILITIES**  
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## Material Specifications

H 2.4

### Meter Box w/Cover –Spec. Irr. – Med.

**AKA** Irrigation Box

**General:**

18½” x 20 1/4” (general bottom inside dimensions)  
x 12” deep.

**Material:**

**Body:** Body will be polymer concrete. Mouseholes 3” wide by 4” high. Two mouseholes 7 ½” on center centered on short side and one on opposite side centered 3 ¾” from center of short side. Body to have minimum 1 1/2 “ bottom flange to prevent settling.

**Cover:** Cover will be polymer concrete. Two 2 inch through holes with 3 ½ inch counter bore ¼” deep.

**Design:**


Boxes and covers shall be tested to meet ASTM Standards C-857 A-8. Boxes and covers will meet the requirements of ANSI/SCTE 77 for Tier 8. All hardware to be stainless steel.

**Special Features:**

**Cover Markings:** WATER

**Packaging:** Meter boxes must be palletized and strapped for ease of handling and unloading.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Box 18 ½ x 20 1/4x12	092-01022	Glasmaster	S152012F2N08-1
Cover 14 ½” x 16 ½”	092-01023	Glasmaster	S1520EN08-1-OUC
<b>Revision Date:</b>	07/09/13 (SML) 5/02/03 (RNK) 1/31/00 (RNK) 12/8/98 (DSW)	 <b>The <i>Reliable One</i></b> ® <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="font-size: small;">Material Specifications Water Business Unit</div> <div style="font-weight: bold; font-size: small;">ORLANDO UTILITIES COMMISSION</div> </div>	

## Material Specifications

H 2.5

### Meter Box w/Cover – C.I. (Oval) – Std.

AKA

**General:**

10" (width) x 19" (length) x 10" or 9½" (depth).

**Material:**

**Body:** Cast iron with 4¾" x 2½" (approx.) pipe slot at each end.

**Cover:** Cast iron with ¾" side slots for easy angular removals. Bracing under cover must be of cross design. Oval design bracing is not acceptable. Lid to have a 2" diameter hole for AMI.

**Design:**

Oval shape.

**Special Features:**

**Cover Markings:** WATER METER

**Packaging:** Meter boxes must be palletized and strapped for ease of handling and unloading.

**Approval:** "Rome Oval" meter box is approved only when specified on bid.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Box and Cover 10" x 19" x 9½" or 10"	092-01013	Russell Pipe & Fdry.	<b>Small OrlandoMeter Box</b>
Cover only	092-01014	Russell Pipe and Fdry	Small Orlando Meter Box cover

<p><b>Revision Date:</b> 12/10/98 (DSW)</p>	 <p><b>The Reliable One</b>®</p>	<p>Material Specifications Water Business Unit <b>ORLANDO UTILITIES</b> COMMISSION</p>	
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## Material Specifications

H 2.6

### Meter Box w/Cover – C.I. – Med.

AKA

**General:**

14” (width) x 25½” (length) x 13” (depth).

**Material:**

**Body:** Cast iron with 4¾” x 2½” (approx.) pipe slot at each end.

**Cover:** Cast iron with ¾” side slots for easy angular removals from meter box. Bracing under cover must be of cross design and capable of handling traffic weights. Cover is to have 2” hole for AMI.

**Design:**

Rectangular shape for installation within concrete sidewalks and driveways.

**Special Features:**

**Cover Markings:** WATER METER, OUC, ORLANDO, FL

**Packaging:** Meter boxes must be palletized and strapped for ease of handling and unloading.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
Box and Cover 14” x 25½” x 13”	092-01050	Russell Pipe & Fdry.	Medium Rectangular Orlando Meter Box (per OUC specifications)
Cover Only 12 1/2” x 23 1/2”	092-02051	Russell Pipe & Fdry.	<b>Medium Rectangular</b> Orlando Meter Box Cover (per OUC specifications)

<p><b>Revision Date:</b> 07/09/13 (SML) 12/10/98 (DSW)</p>	 <p style="font-size: small;">Material Specifications Water Business Unit <b>ORLANDO UTILITIES COMMISSION</b></p> <p style="font-size: small;"><i>The Reliable One</i>®</p>
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# Material Specifications

H 3.1

## Meter Vault

AKA

**General:**

48" (width) x 78" (length) x 36" & 48" (depth).

**Material:**

**Body:** Polymer concrete and fiber reinforced polyester.

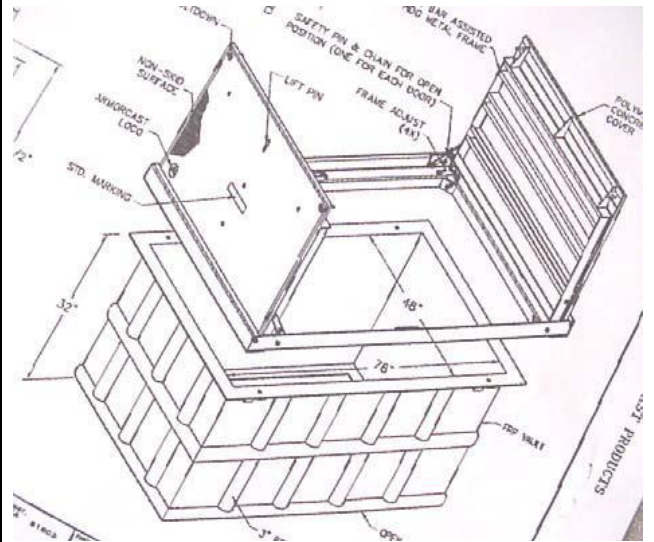
**Cover:** Polymer concrete top with fiber reinforced polyester reinforcing ribs. Two section cover must include 2 inch through hole and 3 inch 1/2" deep counterbore for AMI. Surface must be non-skid. Cover lift off slots must have plastic fills for high heel shoe safety.

**Bolts:** Stainless steel.

**Special Features:**

**Cover Markings:** OUC Water.

**Packaging:** Meter vaults must be delivered palletized and strapped, also complete with body, cover, and all required bolts and nuts.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
48" x 78" x 36"	092-03000	Armorcast Products Co	A6001448AX36MT
48" x 78" x 48"	092-03002		A6001448AX48MT

<b>Revision Date:</b>	3/06/01 (RNK)
	4/21/00 (RNK)
	12/11/98 (DSW)

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Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Backflow Preventers

<b>J 1.1</b>	Reduced Pressure Principle Backflow Preventer	<b>8/07</b>
<b>J 1.2</b>	Double Check Valve Assembly	<b>4/00</b>
<b>J 1.4</b>	Double Detector Check Valve Assembly	<b>4/00</b>
<b>J 1.5</b>	Backflow Preventer 1”	<b>8/07</b>
<b>J 1.6</b>	Backflow Preventer Repair Kits ¾” & 1”	<b>4/07</b>
<b>J 2.2</b>	Atmospheric Vacuum Breaker	<b>4/00</b>
<b>J 2.3</b>	Hosebibb Vacuum Breaker	<b>4/00</b>



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# Material Specifications

J 1.1

## Reduced Pressure Principle Backflow Preventer

AKA

**General:**

Reduced pressure principle backflow preventer approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or conforming to ANSI/AWWA C511 or ASSE Standard #1013 and the latest revisions thereto.

**Design:**

Mechanical, independently operating, hydraulically dependent relief valve located between two independently operating internally loaded check valves that are located between two tightly closed resilient-seated shutoff valves with four properly placed resilient seated test cocks.



**Connections:**

**Flange x Flange**

Size/Details	OUC Item ID	Manufacturer	Catalog Number
2"	062-09107	Watts 2"	009
4"	Non-Stock	Cla-Val	RP1 w/CDHS20
6"	Non-Stock	Febco	825
8"	Non-Stock	Hersey	6CM
10"	Non-Stock	Watts	909
		Ames	4000SS

**Revision Date:** 8/20/07 (RNK)  
5/02/03 (RNK)  
4/20/00 (RNK)  
1/8/99 (DSW)



Material Specifications  
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# Material Specifications

J 1.2

## Double Check Valve Assembly

AKA DC, DCVA, Backflow Preventer

**General:**

Double check valve assembly approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or conforming to ANSI/AWWA C510 or ASSE Standard #1015 and the latest revisions thereto.

**Design:**

Two internally loaded, independently operating check valves located between two tightly closed resilient-seated shutoff valves with four properly placed resilient seated test cocks.

**Connections:**

**Flange x flange**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	Non-Stock	Cla-Val	D
6"	Non-Stock	Febco	805Y
8"	Non-Stock	Hersey	#2
10"	Non-Stock	Ames	2000SS

**Revision Date:** 5/02/03 (RNK)  
 4/20/00 (RNK)  
 1/8/99 (DSW)



Material Specifications  
 Water Business Unit  
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**Double Detector Check Valve Assembly**

AKA DDC

**General:**

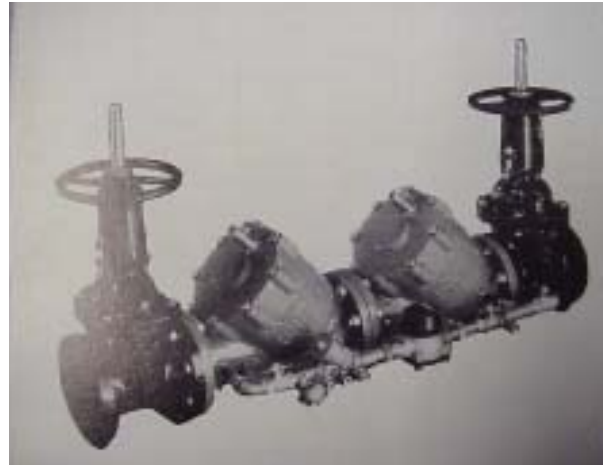
A mainline double check valve assembly with a metered double check valve assembly bypass, both devices being approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or conforming to ANSI/AWWA C510 or ASSE Standard #1015 and the latest revisions thereto.

**Design:**

The assembly will be configured in such a fashion as to protect against any backflow conditions as well as to register any leaks or unauthorized water use.

**Connections:**

**Flange x Flange**



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	Non-stock	Febco	806 DDC
6"	Non-stock	Hersey	DDC II
8"	Non-stock	Ames	3000SS
10"	Non-stock		

**Revision Date:** 5/02/03 (RNK)  
 4/20/00 (RNK)  
 1/11/99 (DSW)



Material Specifications  
 Water Business Unit  
**ORLANDO UTILITIES  
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# Material Specifications

J 1.5

## Backflow Preventer – 1”

AKA Top Access Double Check Valve

**General:**

Top entry replaceable seats and seat discs. Top entry cover(s) for access ease. Two full port resilient seated ball valves for shot-off valves. Stainless steel ball valve handles.

**Design:**

Two internally loaded, independently operating check valves located between two tightly closed resilient-seated shutoff valves with four properly placed resilient seated test cocks.

**Test Ports:**

**Test cocks are designed at an inclined angle or straight upward for top testing only. Male coupling with protective cap.**



**Size/Details**

OUC Item ID

1”

062-09101

**Manufacturer**

**Catalog Number**

Watts  
Wilkins  
Danfoss (Flomatic)  
AMES  
Combraco/Apollo

007  
950XLT  
D9101ESS  
2000B  
40105TC2

**Revision Date:** 8/20/07 (RNK)  
5/13/04 (RNK)



Material Specifications  
Water Business Unit  
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## Material Specifications

**J 1.6**

### Backflow Preventer Repair Kit – ¾” & 1”

**AKA**

**General:**

Repair kits may vary by manufacturers design. Must include a minimum of gaskets and/or o-rings for repair.

**Design:**

- Watts – M1 – 1” & ¾” same kit
- Watts - M3 - 1” & ¾” same kit
- Watts – 709 – ¾”
- Wilkins – 950 – 1” & ¾” same kit



Size/Details	OUC Item ID	Manufacturer	Catalog Number
1” & ¾”	062-09103	Watts	
	062-09104	062-09103	M1-887042-1”& ¾”
	062-09105	062-09104	M3-888552-1” & ¾”
	062-09106	062-09105	709-1”-889064
		Wilkins	
		062-09106	¾”-889065

**Revision Date:** 4/04/07 (RNK)



Material Specifications  
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## Material Specifications

J 2.2

### Atmospheric Vacuum Breaker

**AKA** AVB, Backflow Preventer

**General:**

Atmospheric vacuum breaker approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or conforming to ASSE Standard #1001 and the latest revisions thereto.

**Design:**

A pipe applied gravity operated automatic vent valve opening to atmosphere for the purpose of stopping back siphonage.

**Connections:**

Female Iron Pipe Thread x Female Iron Pipe Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	Non-stock	Febco	710
1"	Non-stock	Rainbird	AVB Series
1 1/4"	Non-stock	Watts	288A
1 1/2"	Non-stock	Ames	AVB
2"	Non-stock		

**Revision Date:** 5/02/03 (RNK)  
 4/20/00 (RNK)  
 1/11/99 (DSW)



Material Specifications  
 Water Business Unit  
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# Material Specifications

J 2.3

## Hosebibb Vacuum Breaker

AKA HBVB, Backflow Preventer

**General:**

Hosebibb vacuum breaker conforming to ASSE Standard #1011 and the latest revisions thereto.

**Design:**

A device that will attach to hose threaded outlets, consisting of a check valve member force loaded, or biased, to a closed position, and an atmospheric vent valve, or means, force loaded, or biased, to an open position when the device is not under pressure.

**Conditions:**

**Inlet:** Female Hose Thread.

**Outlet:** Male Hose Thread.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
3/4"	Non-stock	Febco Rainbird Watts	730 HVB-8A 8A

**Revision Date:** 4/20/00 (RNK)  
1/13/99 (DSW)



Material Specifications  
Water Business Unit  
ORLANDO UTILITIES  
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## Miscellaneous

<b>K 1.1</b>	Detector Check Valve – 4” through 10”	<b>4/00</b>
<b>K 2.1</b>	Sodium Hypochlorite – 10%	<b>1/99</b>
<b>K 3.1</b>	Pallet – Wooden	<b>1/99</b>
<b>K 4.1</b>	Hand Water Pump – 36”	<b>8/00</b>
<b>K 5.0</b>	Hydro Guard	<b>7/08</b>
<b>Exhibit PP</b>	Patch Paving & Concrete Work	<b>1/99</b>
<b>Exhibit QQ</b>	Soil Proctor & Density Tests	<b>1/99</b>

## Material Specifications

K 1.1

### Detector Check Valve – 4” through 10”

**AKA**

**General:**

Check valve conforming to ANSI/AWWA C508 and the latest revisions thereto.

**Material:**

Hot dipped galvanized or epoxy coated

**Design:**

Tapped and plugged to be used as a detector check, less meter.

**Connections:**

**Flange x Flange**

**Special Features:**

Gaskets, bolts, and nuts shall be included for both flanges.



Size/Details	OUC Item ID	Manufacturer	Catalog Number
4"	Non-stock	Ames	6" DCV – Galv. A 113-226
6"	062-01006		6" DCV – Epoxy A 113-216
8"	062-01008		8" DCV – Galv. A 113-226
10"	062-01010		8" DCV – Epoxy A 113-216
			10" DCV – Galv. A 113-226
			10" DCV – Epoxy A 113-216
		Febco	<b>Model 800 DC Galv. or Epoxy Coating</b>
		Hersey Mueller	<b>Model EDC III</b>
			A-2133-6 (Galvanized)
			A-2133-6-0032 (Epoxy)
		Viking	6" Part No. 03155A
			8" Part No. 03160A
			10" Part No. 02734A
			(E-2 Galv. or F-2 Epoxy)

**Revision Date:** 4/20/00 (RNK)  
1/13/99 (DSW)



Material Specifications  
Water Business Unit  
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## Material Specifications

K 2.1

### Sodium Hypochlorite 10%

AKA Chlorine, Bleach, NaOCL

**Standards:**

Liquid chemical solution must conform to AWWA Standards for Hypochlorites, ANSI/AWWA B300-92, the Water Chemicals Codex, 1982, and the latest revisions thereto. The vendor is expected to be knowledgeable of these and any other applicable standards.

**Type and Grade:**

Sodium hypochlorite – shall contain no less than 100g/L available chlorine (10 trade percent).

**Delivery:**

Chemical shall be delivered at 3812 Gardenia Ave., Orlando, FL 32809 in a suitably lined, thoroughly clean bulk tank truck. Deliveries will be made between 8:00 a.m. and 2:00 p.m., Monday through Friday **only**. Trucks arriving after 2:00 p.m. will not be allowed to unload. Water Distribution Division, (407) 244-8788, must be advised at least one hour prior to delivery of the estimated time of arrival and the chemical being delivered. Any cost or liability occurring as a result of improper notification shall be the responsibility of the vendor.

**Affidavit of Compliance:**

A signed statement that the chemical delivered is in compliance with this specification and AWWA B300-92 shall be submitted for each shipment of chemical. The statement shall include name and address of the manufacturer, date, place, and quantity of delivery and the amount invoiced. Shipments found not to be in conformance with this specification and AWWA B300-92 shall be replaced at no cost to OUC.

Size/Details	OUC Item ID	Manufacturer	Catalog Number

**Revision Date:**



Material Specifications  
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# Material Specifications

K 3.1

## Pallet – Wooden

### AKA

#### General:

Pallets shall meet the minimum manufactured standards of the National Wooden Pallet and Container Association (NWPCA), Washington, D.C. The manufacturer is to stencil wood species, manufacturer's name and date of manufacture on outside of one stringer, in letters no less than 1" high.

#### Material:

Lumber shall be Industrial (IND) Grade, Class B (Medium Density) Hardwood or better (Class C – Dense Hardwood). Stringers and deckboards shall be smooth sawn or surfaced to square edge, uniform dimensions subject to Standard tolerances. Nominal and surfaced dimensions shall be as follows:

	<u>Nominal</u>	<u>Surfaced (Min.)</u>
Deckboards	1" x 4"	13/16" x 35/8"
Stringers	2" x 4"	15/8" x 35/8"

Helically threaded nails shall be used with a nail length of 2.5 inch, wire diameter .120 inch, head diameter .281 inch, thread diameter .137 inch, minimum 4 flutes, thread angle 60-68°, hardened steel only. Fasteners per deckboard as per Standard, staggered pattern with heads flush and no protruding points.

#### Design:

Pallet style to be 2-way entry type, 4' double face, single wing, non-reversible, wooden pallet. Design allows 2-way entry by forklift and 2-way entry by straddle truck using single wing.

- A. All deckboards to be nominal 1 x 4 inches. Ten (10) top deckboards required, 40" length, spaced evenly, with end deckboards flush with stringer end. Six (6) bottom deckboards required, 32" length, flush with stringer.
- B. Stringers to be nominal 2 x 4 inches with 48" length. Three (3) stringers required, one centered and the outside two stringers to be 32" (outside dimension) providing 4" clear wing each side. **DO NOT NOTCH STRINGERS.**

Chamfers are not required. Pallets must be square with diagonal difference .72 inch or less.

**No Illustration Available**

**Revision Date:** 1/15/99 (DSW)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

# Material Specifications

K 4.1

## Hand Water Pump – 36”

AKA

**Material:**

High impact PVC, non-sparking, lightweight.

**Design:**

A general purpose pump for use in water transfer, needs no priming. 1 1/4” outlet hose, removable foot, self priming. For non-potable water only.

**Special Features:**

36” length, 1 3/4” diameter, 36” x 1 1/4” discharge hose.



**Size/Details**

36” length x  
1 3/4” diameter

**OUC Item ID**

098-09646

**Manufacturer**

Beckson Utility Pump

**Catalog Number**

136PF

**Revision Date:** 8/25/00 (RNK)



Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Material Specifications

K 5.0

### Hydro Guard Automatic Flushing Device

AKA

**Material:** The Hydro-Guard HG-1 features an atmospheric discharge with an air-gap to prevent backflow.

**Design:** Constructed of non-corrosive weather-resistant materials, weighing approximately 70 lbs. Contains 1 – control modules, 10 event battery operated programmer, 9 volt battery and built in sample port. 2-inch nylon glass reinforced solenoid operated valve, sample connection and external splash plate.



**Size/Details**

**OUC Item ID**

**Manufacturer**

**Catalog Number**

2"

Hydro Guard

HG - 1

**Revision Date:** 5/01/08 (RNK)

**OUC**   
The *Reliable One*®

Material Specifications  
Water Business Unit  
**ORLANDO UTILITIES**  
COMMISSION

## Patch Paving and Concrete Work

### Specification/Consideration To Bid

Contractors wishing to bid on the Patch Paving and Concrete Work contract must conduct Orlando Utilities Commission business out of a local Central Florida office with a local phone number. Contractors must provide proof of acceptable insurance coverage and maintain that coverage for the duration of the contract. Orlando Utilities Commission must be provided with copies of current City of Orlando and Orange County Occupational Licenses and a valid General Contractors license. Contractors must agree to and comply with all conditions outlined in the Orlando Utilities Commission General Conditions for Contracts.

### General

All road sub-base, soil cement, limerock base, asphaltic concrete surface, portland cement concrete pavement and driveway, sidewalk and concrete curb restoration must be accomplished in accordance with the best commonly acceptable practices AND the appropriate City, County, and/or State road construction requirements. All methods, procedures and equipment shall be safe and adequate for job completion. "Standard" restoration (roadway, sidewalk and driveway repairs or replacement, sodding, etc.) within the State or County rights of way must be accomplished in 30 days or less from notification. "Emergency" restoration must be done within 10 calendar days. Failure to comply with these limitations will be grounds for immediate contract termination. The contractor shall be responsible for all labor, materials, equipment and incidentals necessary to accomplish the patch paving and concrete restoration. The contractor shall also be responsible for scheduling and procurement of the necessary proctor and soil density tests as well as the replacement of necessary applicable highway markings as required. Proctor and soil density tests that are the result of contractor compaction error are the sole responsibility of the contractor.

### Regulation

The contractor must comply with all laws, ordinances, rules, regulations, standards and specifications applicable to the City of Orlando, Orange County, the State of Florida, and the federal government during the execution of work for Orlando Utilities Commission. All traffic control functions, including signs, flagmen and safety devices shall be the responsibility of the contractor and shall comply with DOT's "Manual on Traffic Control and Safety". All stop bars, crosswalks, skip lines, directional arrows, messages, reflective markers, etc. shall conform to the State of Florida DOT "Roadway and Traffic Design Standards".

Revision Date: 1/15/99 (DSW)



Consideration to Bid  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

**Patch Paving and Concrete Work**

**Inspection/Completion**

Material quality and project workmanship will be to the satisfaction of Orlando Utilities Commission, as determined by the OUC Inspector or designated representative. Private property shall be restored to both OUC's and the customer's satisfaction. Orlando Utilities Commission will obtain appropriate permits. The contractor shall be responsible for contacting the proper authorities when work is to be scheduled and/or inspected. The OUC Water Business Unit will provide the contractor with a copy of the Field Work Area Information Sheet. No payment shall be made until approval and applicable permit signatures by the appropriate governmental agencies (city, county, state, etc.), as well as the submitted quantities and measurements, are verified by Orlando Utilities Commission personnel. There shall be no billing until job completion, including site cleanup. Density test results shall be provided to OUC at the time of billing.

**Conditions**

This bid is not for an exclusive contract. The Orlando Utilities Commission reserves the right to separately bid other paving projects as needed. The Orlando Utilities Commission reserves the right to decide for itself, which is the lowest and most responsive and responsible bid. Orlando Utilities also reserves the right to add or decrease the estimated annual usage quantities without any change in quoted unit prices.

**Revision Date:** 1/15/99 (DSW)



Consideration to Bid  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**

## Soil Proctor and Density Tests

### Specification/Consideration To Bid

Contractors wishing to bid on the Soil Proctor and Density Tests contract shall conduct Orlando Utilities Commission business out of a local Central Florida office with a local phone number and personal assistance immediately available during normal Orlando Utilities' working hours. Contractors shall provide proof of acceptable insurance coverage and maintain that coverage for the duration of the contract. Orlando Utilities Commission shall be provided with copies of current City of Orlando and Orange County Occupational Licenses and a valid General Contractors license. Contractors shall agree to and comply with all conditions outlined in the Orlando Utilities Commission General Conditions for Contracts.

### General

All proctor moisture-density tests and field density tests shall be accomplished with the best commonly acceptable practices. Fieldwork for all routine proctor and density tests shall be accomplished within one (1) normal working day of notification. Failure to appear within 30 minutes of a pre-scheduled appointment for proctor and/or density tests shall result in back-billing charges to the contractor at a rate equal to stand-by time. Orlando Utilities Commission shall be notified within 48 hours, by fax of any test results failing to meet the minimum stated compaction requirements. All methods, procedures, and equipment shall be safe and adequate for job completion. The contractor shall be responsible for all labor, materials, equipment, and incidentals necessary to accomplish the proctor and density tests.

### Emergency Call Out

The contractor shall provide Orlando Utilities Commission with after-hour telephone and pager beeper numbers to be used in the event of an emergency. Fieldwork for all proctor and density tests required due to emergency water main breaks shall be accomplished within two (2) hours of notification. For billing purposes only, any work that must be accomplished between the hours of 6:00 p.m. and 6:00 a.m. or on weekends or holidays shall also be considered emergency call out.

### Regulation

The contractor must comply with all laws, ordinances, rules, regulations, standards and specifications applicable to the City of Orlando, Orange County, the State of Florida, and the federal government during the execution of work for Orlando Utilities Commission.

Revision Date: 1/15/99 (DSW)



Consideration to Bid  
Water Business Unit  
ORLANDO UTILITIES  
COMMISSION

## Soil Proctor and Density Tests

### Responsibility

The contractor agrees to indemnify and save harmless, Orlando Utilities Commission and/or its employees from and against all loss or expense (including costs and attorney's fees) by reason of any liability imposed upon Orlando Utilities Commission and/or its employees for damages because of bodily injury, including death at any time resulting from bodily injury, sustained by any person or persons or on account of damage to property, including the loss of use of that property, arising out of or in consequence of the performance of the proctor and/or density tests, whether such injuries or damages are due to or claimed to be due to the negligence of the contractor, his subcontractor, Orlando Utilities Commission or its employees, except for those injuries or damages caused by the sole negligence of the Orlando Utilities Commission and/or its employees.

### Completion/Billing

Orlando Utilities Commission shall make payment only for those line items listed on the approved purchase order. Stand-by time shall be any time in excess of 30 minutes during which the technician must wait to conduct tests due to delays by Orlando Utilities Commission personnel. Orlando Utilities Commission will not honor overtime or travel time charges for any reason. Proctor and density test results shall be provided to Orlando Utilities Commission at the time of billing. Billing will not be accepted without the proctor and density results for that billing. All billing shall be accomplished on a monthly basis. Invoices shall include the location, name of originator, arrival and departure times, and the number of tests conducted.

### Conditions

The Orlando Utilities Commission reserves the right to decide for itself which is the lowest and most responsive and responsible bid. Orlando Utilities also reserves the right to add or decrease the estimated annual usage quantities without any change in quoted unit prices.

**Revision Date:** 1/15/99 (DSW)



Consideration to Bid  
Water Business Unit  
**ORLANDO UTILITIES  
COMMISSION**