

Approved Materials List

Town Of Highland Park



Approved Materials List 2022



Explanation of Handbook and Its Intended Use

This Handbook was compiled to serve as a guide to Public Works, Engineering Inspectors, and other Public Officials within the Town of Highland Park organization. Hopefully, it will help answer questions about acceptable fittings and equipment used in the water utilities distribution system, sewer collections system, stormwater collection, and street lighting which are frequently asked by citizens, plumbers, and contractors.

The acceptable brand and models section on each item listed is complete to the best of our knowledge. We do anticipate, in the future, there will be additions and deletions to these lists in which case revisions will be made available.

Town of Highland Park
Public Works

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- P-42 2 Bolt Coupling Sleeves
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- P-48 Standard Bolt Down Sanitary & Storm Sewer Rings & Covers
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- P-50 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-51 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-52 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-53 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-54 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-55 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-56 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-57 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-58 Composite Bolt Down Sanitary & Storm Sewer Rings & Covers
- P-59 Manhole Riser Rings and Slope Rings
- P-60 Standard Sanitary Sewer Manhole Rings & Covers
- P-61 Manhole Inflow Stoppers
- P-62 Standard Sanitary Sewer Field Cleanout
- P-63 Sanitary Sewer Pipes
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- P-65 Two-Way Cleanout Caps For Private Lateral Lines
- P-66 Sanitary Sewer Taps
- P-67 Curb Inlet Manholes
- P-68 Curb Drains
- P-69 Other Supplies
- P-70 Other Supplies
- P-71 Other Supplies

Note: All parts must be domestic USA made

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Compression Angle Curb Stop

(Must have Lock-wing)

Compression angle curb stop with attached flange.

Description:

- Inlet: Compression Connection
- Outlet: 2 Bolt Meter Flange
- Size: 1.5" & 2" only
- Ball Valve only

Acceptable Brands and Models:

- Mueller: B-24276N



B-24276N

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Compression Angle Curb Stop

(Must have Lock-wing)

Description:

- Inlet: Compression Connection
- Inlet Size: 1"
- Outlet: 1" Meter Swivel Nut
- Ball Valve only

Acceptable Brands and Models:

- Mueller: 1'- B-24258N for copper pipe, B-24259N for poly pipe with stainless steel stiffener



B-24258N
Copper



B-24259N
Poly

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Compression Corporation Stop

(I.P. Threads)

Description:

- Inlet: International Pipe Threads (Male)
- Outlet: Compression Connector
- Sizes: 1", 1.5", 2"
- Ball Valve only

Acceptable Brand and Models:

- Mueller: B-25028N for copper pipe; B-25029N for poly pipe with stainless steel stiffener



B-25028N
Copper



B-25029N
Poly

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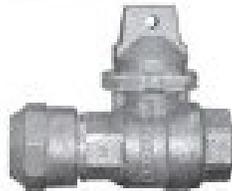
Compression Curb Stop - Straight

Description:

- Inlet: Compression Connection
- Outlet: Inside I.P. Thread (Female)
- Sizes: 1", 1.5", 2"
- Ball Valve only

Acceptable Brands and Models:

- Mueller: B-25163N for copper pipe, B-25171N for poly pipe with stainless steel stiffener



B-25163N
Copper



B-25171N
Poly

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Meter Yoke & Offset Relocator

(Meter Loop)

Description:

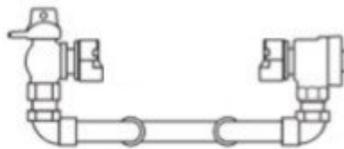
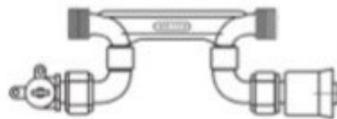
- Copper meter yoke or offset relocator with horizontal inlet and outlet with M.I.P. meter thread ends with lock wing Mueller 300 ball angle meter valve
- Size: 5/8", 3/4", 1" only
- Special Note: Yoke shall be equipped with a lock wing stop.

Acceptable Brands and Models:

- Mueller: B-2434N, B-24118N, (Offset relocator) B-2446N



**M.I.P. thread ends
(H-1434N shown)**



Offset Relocator

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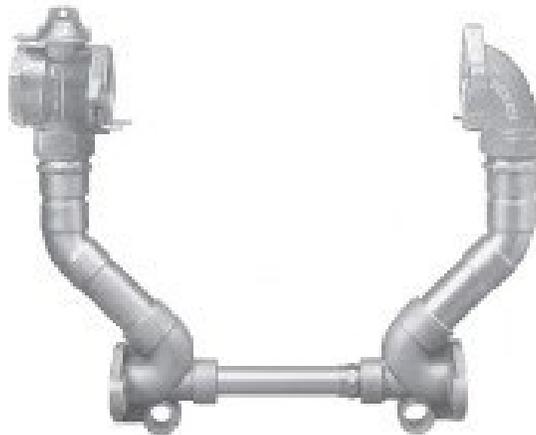
Meter Resetter 1 1/2" and 2" *(Riser)*

Description:

- Copper meter resetters with horizontal inlet & outlet with lock wing Mueller 300 ball angle meter valve with meter flange x 90°-meter flange elbow

Acceptable Brands and Models:

- Mueller: B-2424N



B-2424N

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Miscellaneous Meter Fittings

Description:

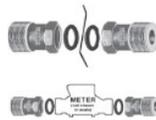
- All brass fittings and washers/gaskets not shown or described shall be Mueller
- All Flange bolts shall be stainless steel, no exception

Acceptable Brand and Models:

- Meter bushing: Mueller: H-10889N, H10889N-00, H10879N
- Meter Washers: Mueller: H-10893, H10895
- Meter Flange Gaskets: Mueller: H-10129-GN
- Meter Flange (heavy duty): Mueller: H10129-HN
- Straight Meter Coupling (meter tail): Mueller: H-10890N
- Compression x Compression 90: Mueller: H-15526N
- Compression IPS PE pipe x F.I.P. thread: Mueller: H-15454N
- Compression CTS x Compression CTS: Mueller: H-15403N



Meter bushing with rubber washer
Used on threaded ends of 5/8 x 3/4 or 3/4 meters to adapt to 1" meter thread size (1-1/4")
H-10889: for saddle nuts
H-10889-99000: for plain nuts



Meter bushing with rubber washer (complete for both ends)
Used on threaded ends of 5/8x3/4 meter to adapt to 1" meter thread size (1-1/4") and standard length.

	H-10889N		H-10889N-00	
Catalog size	3/4" x 1"		3/4" x 1"	
Meter size	5/8" x 3/4", 3/4"		5/8" x 3/4", 3/4"	
Length	1-1/4"		15-16"	

H-10879N								
Catalog size	5/8" x 3/4"	5/8" x 1"	5/8" x 3/4" x 1"	3/4" x 1"	5/8" x 3/4" x 1/2"	1" x 1"	1" x 2"	1 1/2" x 2"
Meter size	5/8"	5/8"	5/8" x 3/4"	3/4"	5/8" x 3/4"	1"	1"	1 1/2"
Length	1.019"	2.062"	2.062"	1.13"	1.019"	1"	3"	1.675"



Meter coupling washer
H-10893: Fiber washer

H-10893

Catalog size	5/8"	3/4"	1"	1-1/4"	1-1/2" **	2" **
Meter size	5/8"	5/8" x 3/4", 3/4"	1"	1-1/4"	1-1/2"	2"

** Flange gasket for 1-1/2" and 2" sizes.



Meter coupling washer
H-10895: Rubber washer

H-10895

Catalog size	5/8"	3/4"	1"	1-1/4"	1-1/2" **	2" **
Meter size	5/8"	5/8" x 3/4", 3/4"	1"	1-1/4"	1-1/2"	2"

** Flange gasket for 1-1/2" and 2" sizes.



Meter flange gasket
Meter flange gasket - rubber, drop-in

H-10129-GN

Catalog size	1-1/2"	2"
Meter size	1-1/2"	2"
Tubing size	1-1/2"	2"



Meter flange - heavy duty
Heavy-duty FIP meter flange - excludes bolt or gasket

H-10129-HN

Catalog size	1-1/2"	2"
Meter size	1-1/2"	2"
Tubing size	1-1/2"	2"



H-10890N

Straight meter coupling
MIP x meter swivel nut
Tailpiece machined inside and outside.

Other lengths are available—contact
MUELLER Customer Service Center for
details

Catalog size	5/8x1/2	5/8x3/4x3/4	1
Meter size	5/8	5/8x3/4, 3/4	1
Length	2-3/8	2-1/2	
Thread size	1/2	3/4	1

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Fire Hydrants

Description:

- Valve Opening Size: 5 1/4"
- Inlet Connection Size: 6" M.J.
- 3-way Hose Connection: 2 each 2 1/2" I.D. hose nozzles and 1 each 4" I.D. pumper nozzle
- Size of Operating Nut: 1 1/4"
- Shape of Operating Nut: Pentagon
- Direction of Opening: Counter-Clockwise
- Hose Nozzle Threading: National Standard Thread
- Special Note- All fire hydrants shall be self-oiling with "O" Ring Seals and meet all AWWA Specifications.

Acceptable Brands and Models:

- Mueller "Super Centurion": A-423 Super Centurion 250, Sentryx Software enabled Super Centurion, Super Centurion Fire Hydrant with Hymax Grip Restraint
If Mueller is proven unavailable-
- Clow "Medallion": F2545, Ihydrant
If Mueller and Clow are proven unavailable-
- EJ: WaterMaster® Fire Hydrants

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Fire Hydrants

NOTE: SIZE AND STYLE OF OPERATING NUT, SHOE SIZE, AND THREADING OF NOZZLES IS PER CUSTOMER SPECS.

APPROXIMATELY 17 1/4 TURNS TO OPEN OR. NUT DIMENSIONS PER CUSTOMER SPECS.

5 1/4" A423 SUPER CENTURION 250" W/ TWO HOSE NOZZLES & ONE PUMP-UP NOZZLE - 250 P.S.I. W.P. - 500 F.S.I. (H.S.I. 198" STYLE.

ITEM	DESCRIPTION	RECOMM. QTY.	QTY.	REMARKS
1	OPERATING NUT	1	1	300 WATER VALV
2	W.P. RING	1	1	300 WATER VALV
3	HOSE DOWN NUT	1	1	300 WATER VALV
4	HOSE DOWN NUT	1	1	300 WATER VALV
5	ANTI-FRCTION WASHER	1	1	300 WATER VALV
6	ANTI-FRCTION WASHER	1	1	300 WATER VALV
7	HOSE FILTER PLUG	1	1	300 WATER VALV
8	HOSE FILTER PLUG	1	1	300 WATER VALV
9	HOSE FILTER PLUG	1	1	300 WATER VALV
10	HOSE FILTER PLUG	1	1	300 WATER VALV
11	HOSE FILTER PLUG	1	1	300 WATER VALV
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96	HOSE FILTER PLUG	1	1	300 WATER VALV
97	HOSE FILTER PLUG	1	1	300 WATER VALV
98	HOSE FILTER PLUG	1	1	300 WATER VALV
99	HOSE FILTER PLUG	1	1	300 WATER VALV
100	HOSE FILTER PLUG	1	1	300 WATER VALV

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Fire Hydrants

SENTRYX™ SOFTWARE ENABLED
SUPER CENTURION® HYDRANT

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9.1

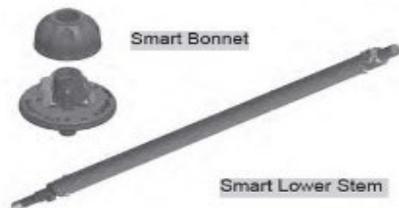
Shaded area indicates change Rev.5-21



- Sentryx software enabled Super Centurion hydrants have many of the features and nozzle configurations of the Super Centurion hydrants available since 1975. See page 9.5 for details.
- Meets AWWA C502 Flow Loss Requirements.
- Hydrant meets AWWA C502 for 350psi Pressure Rating.
- Pressure Sensor 0-250psi Rating.
- Provided with both the Pressure Monitoring and Leak Monitoring (technologies can be provided individually).
- Utilizes Sentryx web based Water Intelligence platform to view pressure and leak detection.
- Wireless communication internal to the hydrant making installation, repair, operation, and maintenance similar to a standard Centurion hydrant.
- Pressure Monitoring System
 - Pressure monitoring sensor provides data with hydrant in the closed position.
 - Data is transmitted via cellular service to the Sentryx Intelligence Platform eliminating need to deploy personnel for device reading.
 - Multiple modes of operation are available with user configurable thresholds.
 - Receive alerts (email or text) when thresholds are exceeded.
- Leak Monitoring
 - Acoustic sensors integrated into the Super Centurion pumper nozzle cap are capable of detecting noise generated by pipe leaks.
 - Leak monitoring empowers utilities with visibility to emerging leaks enabling proactive customer communication and repairs.
 - Leak monitoring systems are designed for each pipe network to deliver visibility to critical pipe assets.
 - Data is transmitted via cellular service to the cloud based Sentryx Intelligence Platform.
- Sentryx Water Intelligence Platform
 - Scalable, web-based, software to display leak detection and pressure monitoring data in a single easy to use graphical user interface.
 - Fully hosted software means there are no updates or software to install. Users access Sentryx software intelligence platform from any internet-connected computer using any modern browser like Chrome, Safari, or Edge.
 - Access historical data for up to two years within the user interface.
 - Data and user access is protected by multiple levels of security to help protect data and control access.

Sentryx Software Enabled Centurion Kit

- Available for Centurion hydrants manufactured 1975 to present.
- Includes all parts needed to convert a Centurion hydrant to a Sentryx Software Enabled Centurion hydrant.
- Currently available on hydrants 3'0" to 7'0" bury depths.



Pat. www.muppat.com

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Fire Hydrants

9.10

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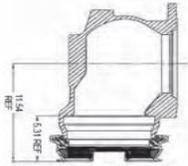
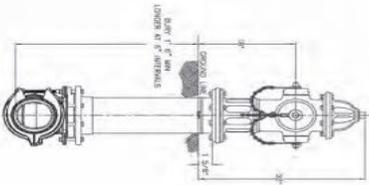
MUELLER® SUPER CENTURION®
FIRE HYDRANT WITH
HYMAX GRIP® RESTRAINT

Rev: 11-20

- 1 10 year limited warranty on mechanical and workmanship
- 2 Meets all applicable parts of ANSI/AWWA C202 Standard
- 3 Post Type dry barrel design
- 4 Dry top design with O-ring sealed oil reservoir
- 5 Traffic feature with stainless steel stem coupling
- 6 Encapsulated, reversible, compression-type main valve doors with pressure for positive seal, it is made of rubber and is conveniently reversible, providing a space for long service life.
- 7 Operating nut available in wide variety of shapes and sizes – open left or right
- 8 Field replaceable hose and pumper nozzles
- 9 Hose and pumper nozzles have large radius, full flow openings for low friction loss
- 10 Dual bronze drain valves provide effective barrel drainage
- 11 200 psig (1725 kPa/17 barg) maximum working pressure, 500 psig (3450 kPa/35 barg) static test pressure
- 12 Easy-to-access top-kicking ball
- 13 Pressure-assist gasket and restraint technology
- 14 Works with Ductile Iron, Cast Iron, PVC, and HDPE (silicones recommended)
- 15 Dynamic deflection up to 4 degrees per grip joint end
- 16 Size 5-1/2" - Elbow shoe
- 17 Size 4-1/2" - Elbow shoe



Dimensions



MUELLER® SUPER CENTURION®
FIRE HYDRANT WITH
HYMAX GRIP® RESTRAINT

MUELLER

9.11

Hymax Grip Restraint parts

ID	Description	Material	Material Standards
1	Nuts, Bolts, & Washers	304 Stainless Steel Flocked Thread & Anti-Couling coating	AISI 304 Stainless Steel
2	Special Spacers	304 Stainless Steel	ASTM A304 - C78
3	Gasket Bridge	304 Stainless Steel	ASTM A240 / A480
4	End Ring	Ductile Iron	ASTM A536
5	O-Rings	Advanced, Metal Injection Molding (MIM), hardened & coated	-
6	Gasket	EPTM	ASTM D2000



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Gradelok

Description:

Gradelok brand to be used when setting fire hydrants to acquire proper grading.

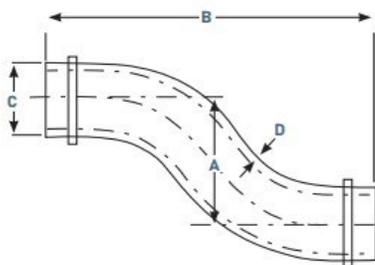


Need to Raise or Lower the Hydrant? ▲

Just rotate the Gradelok® to allow the break flange to be at the proper grade.

AVAILABLE SIZES

	6" x 6"	6" x 12"	6" x 24"	6" x 6" M.J.	6" x 12" M.J.	6" x 24" M.J.
wt (lbs.)	72	100	140	76	106	140
A	6"	12"	24"	6"	12"	24"
B	18"	30"	41"	18"	30"	41"
C	6.90"	6.90"	6.90"	6.90"	6.90"	6.90"
D	.37"	.37"	.37"	.37"	.37"	.37"

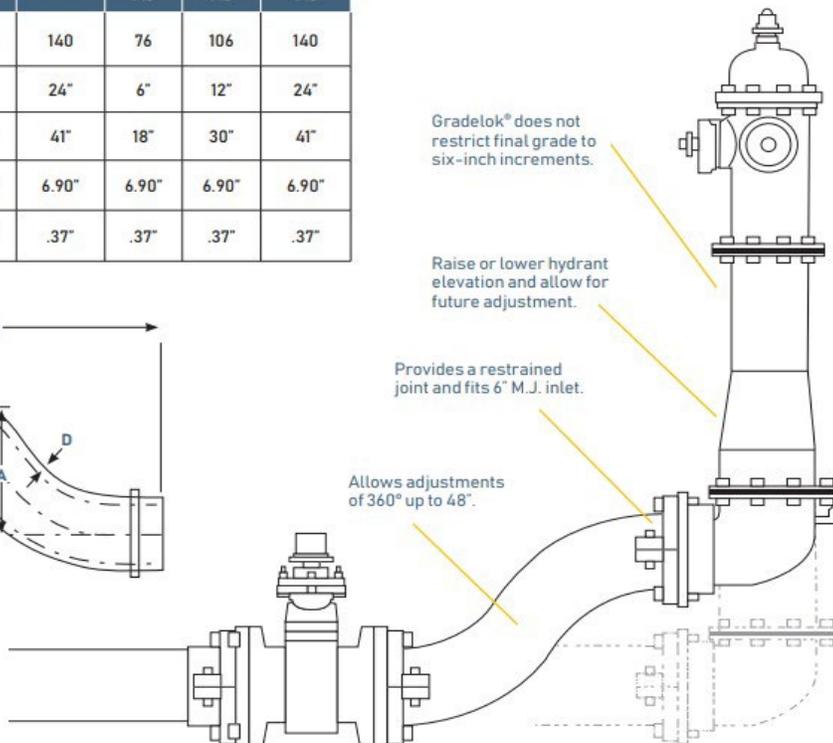


Gradelok® does not restrict final grade to six-inch increments.

Raise or lower hydrant elevation and allow for future adjustment.

Provides a restrained joint and fits 6" M.J. inlet.

Allows adjustments of 360° up to 48".



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Resilient Seated Gate Valves

Description:

- R.S.G.V. shall have a non-rising bronze stem “O” ring seal, stainless steel or plated steel bolts, and nuts on the “O” ring plate, neck flange, and the head bolt. The wedge is to be rubber or epoxy coated, approved for potable water. The body and operating nut are to be of iron.

Sizes:

- 4” thru 12”

Acceptable Brands and Models:

- Mueller: A-2361
- If Mueller is proven to be unavailable-
- Clow: C-509 2639/2640
 - American Flow Control: Series 2500
 - EJ: Flow Master
 - M&H: Style 4067



Mueller valve pictured

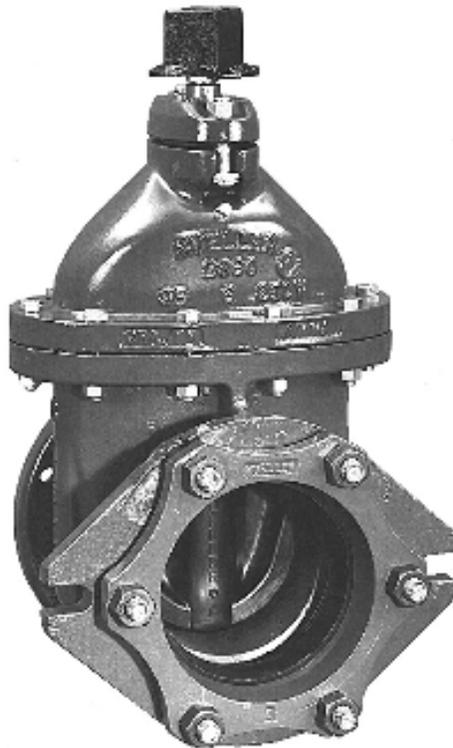
Approved Materials List 2022



Tapping Valves

Acceptable Brands and Models:

- Mueller: T-2360
- If Mueller is proven unavailable-
- M&H: 4751-01
 - Clow: F-5093 (Double Disk)
 - Waterous: Series 2500



Mueller valve pictured

Approved Materials List 2022



Tapping Sleeves Iron/C900 Pipe

***NOTE: Keep in mind that all A.P. taps should be at least one pipe size smaller than the pipe being tapped. ***

Acceptable Brands and Models:

- Mueller: H-615
- If Mueller is proven unavailable-
- M&H: 1174
 - Clow: F-5205
 - Waterous: A-212/Series 2800C
 - Tyler Union: 5-140-CI
 - Romac: SST, SST III



Mueller sleeve Top

Approved Materials List 2022



Tapping Sleeves HDPE Pipe

NOTE: Keep in mind that all A.P. taps should be at least one pipe size smaller than the pipe being tapped. Tapping Sleeve for HDPE shall have spring washers

Acceptable Brands and Models:

- Romac: SST-H



SST-H

Stainless steel tapping sleeve with full circumferential seal

Nominal Sizes

4 - 12 inches

Working Pressure

Up to 150 psi.

Pipe Compatibility

For use on HDPE pipe with a minimum wall thickness of SDR17

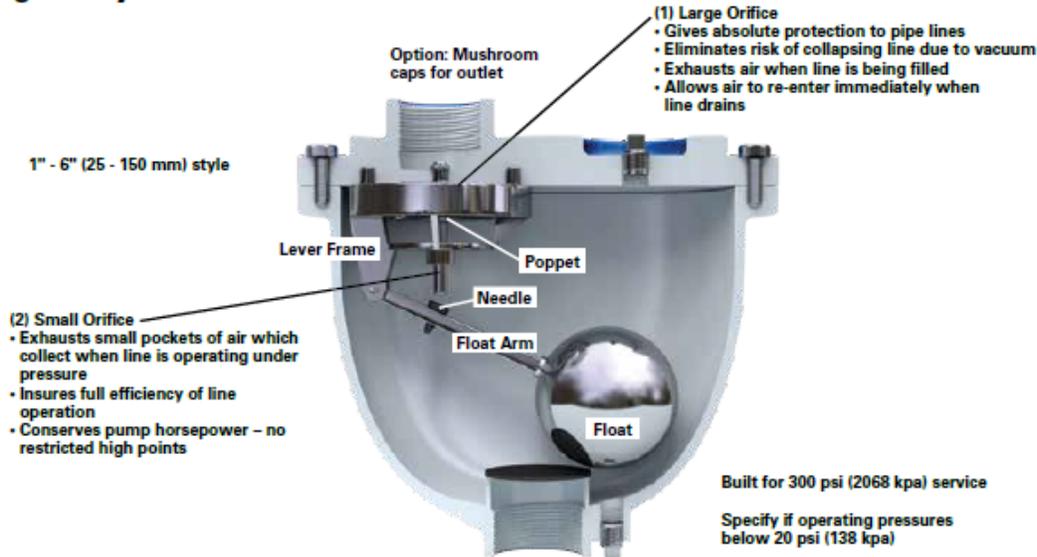
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Air Relief Valve

APCO Combination Air Valves

Single Body Double Orifice



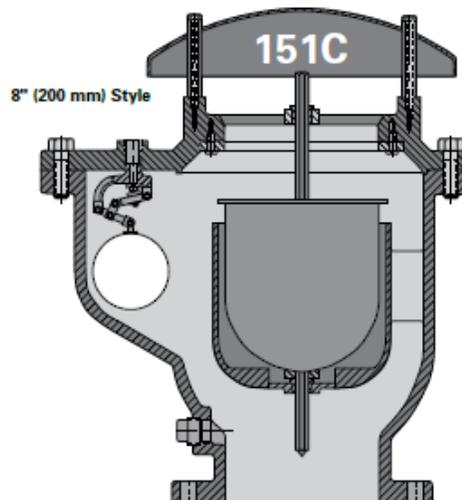
Materials Used in Both Style Combination Air Valves

Body, Cover, 1" - 4" (25 - 100 mm)	Ductile iron
Body, Cover, 6" - 8" (150 - 200 mm)	Cast iron
Float.....	Stainless steel
Seat	Buna-N
Lever Frame 1" - 4" size (25 - 100 mm)	Delrin
Lever Frame 6" - 8" size (150 - 200 mm) ...	Cast iron
All other internal parts stainless steel or bronze	

Bronze components meet current lead-free requirements.

Manufactured to AWWA C-512

ISO flange connections available



Approved Materials List 2022



Air Relief Valve

Sizing

1" (25 mm) 143C

Photo on previous page*

Physical Dimensions
Height - 10" (254 mm)
Width - 7" (178 mm)
Length - 11" (279 mm)
Weight - 35 lbs. (16 kg)

Inlet/Outlet
1" (25 mm) pipe thread

* Except poppet

125 & 250 lb. flanges
also available

2" (50 mm) 145C

Photo on previous page

Physical Dimensions
Height - 12.25" (311 mm)
Width - 8" (203 mm)
Length - 14" (356 mm)
Weight - 75 lbs. (34 kg)

Inlet/Outlet
2" (50 mm) pipe thread

125 & 250 lb. flanges
also available

3" (80 mm) 147C

Photo on previous page

Physical Dimensions
Height - 15.5" (394 mm)
Width - 10" (254 mm)
Length - 16" (406 mm)
Weight - 100 lbs. (45 kg)

Inlet/Outlet
3" (80 mm) pipe thread

125 & 250 lb. flanges
also available
Height flanged 16.5" (419 mm)

4" (100 mm) 149C

Photo on previous page

Physical Dimensions
Height - 17.125" (435 mm)
Width - 11" (279 mm)
Length - 18" (457 mm)
Weight - 170 lbs. (77 kg)

Inlet/Outlet
4" (100 mm) pipe thread

125 & 250 lb. flanges
also available
Height flanged 19" (483 mm)

6" (150 mm) 150C

Photo on previous page

Physical Dimensions
Height - 27.25" (692 mm)
Width - 13" (330 mm)
Length - 18.375" (467 mm)
Weight - 205 lbs. (93 kg)

Inlet
125 & 250 lb. flange

Outlet options
- Plain with hood
- Threaded
- Flanged

8" (200 mm) 151C

Drawing on previous page

Physical Dimensions
Height - 25.75" (654 mm)
Width - 17.5" (445 mm)
Length - 22.25" (565 mm)
Weight - 300 lbs. (136 kg)

Inlet
125 & 250 lb. flange

Outlet options
- Plain with hood
(as shown)
- Flanged

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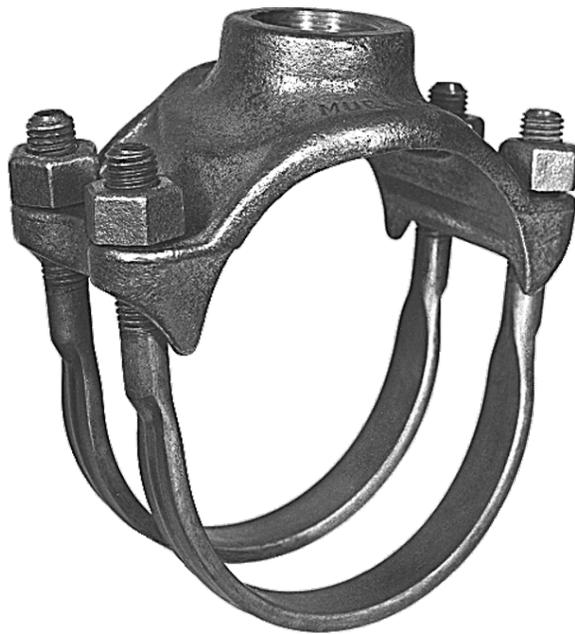
Service Saddles Iron/C900 Pipe

Description:

- Service Saddle to install corporation stop. Double strapped, brass only, no exceptions
- IP thread only

Acceptable Brands and Models:

- Mueller: BR2B
- Romac: 202B



Approved Materials List 2022



Service Saddles HDPE Pipe

Description:

- Service Saddle to install corporation stop. Double strapped, spring washers, no exceptions
- IP thread only

Acceptable Brands and Models:

- Romac: 202N-H



202N-H

Nylon coated service saddle with stainless steel straps.

Nominal Sizes

2" - 12"

Working Pressure

Up to 150 psi

Pipe Compatibility

For use on HDPE pipe with a minimum wall thickness of SDR26

Approved Materials List 2022



Small Gate Valves

Description:

- Gate valve bronze alloy. The handwheel and handwheel nut will be constructed of non-ferrous metal. The disc will be of the solid wedge type with a square pattern. The valve will be threaded.

Sizes:

- 1" thru 2"

Acceptable Brands & Models:

- Nibco: T-131; T-133 (Threaded)
- Other brands are acceptable but must be approved by Public Works Superintendent



Nibco part pictured

Approved Materials List 2022



Stainless Steel Water Main Repair Clamps w/ I.P. Iron/C900 Pipe *(only used for repairs)*

Description:

- Full stainless steel clamp with 2" I.P. service outlet

Acceptable Brands and Models:

- Mueller: 549-2", 543-1", 541-3/4"
- Smith & Blair: 264
- Romac: SS1, SS2, SS3



Smith & Blair Pictured

Approved Materials List 2022



Stainless Steel Water Main Repair Clamps Iron/C900 Pipe *(only used for repairs)*

Description:

- Full stainless steel clamp

Acceptable Brands and Models:

- Mueller: 540
- Smith & Blair: 261
- Romac: SS1, SS2, SS3



Smith & Blair Pictured

Approved Materials List 2022



Stainless Steel Water Main Repair Clamps HDPE Pipe

(only used for repairs)

Description:

- Full stainless steel clamp with spring washers

Acceptable Brands and Models:

- Romac: SS1-H, SS2-H, SS3-H



Romac SS1-H Pictured

Approved Materials List 2022



Stainless Steel HDPE Pipe Stiffening Inserts

(used for all connections)

Acceptable Brands and Models:

- Romac: HDPE Pipe Stiffening Insert

***NOTE: You must know the SDR of the pipe before ordering for pipe larger than 12". ***
(Instructions for installation on P- 28,29,30,31)

www.romac.com • 1-800-426-9341

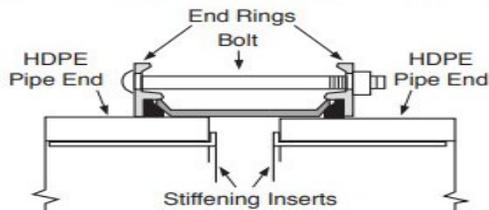
HDPE

HDPE FOR HIGH DENSITY POLYETHYLENE PIPE  MADE IN U.S.A.

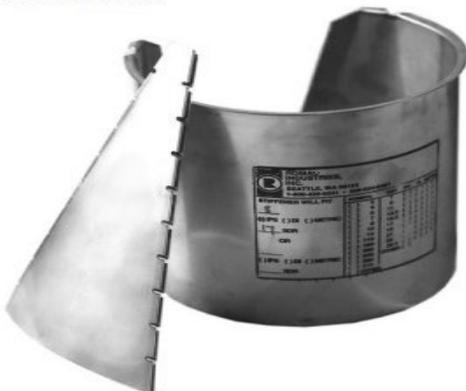
STIFFENING INSERTS

MATERIAL SPECIFICATIONS

Romac's specially designed Stiffening Inserts provide circumferential inside support of pipe ends to allow use of couplings on HDPE Pipe. The stiffening inserts are constructed of stainless steel per ASTM A240, type 304 (optional 316). The thin, yet strong wall reinforces the pipe without disturbing the flow characteristic of the medium.



SIZES 4" – 12" (PGS. 9-6 & 9-7)
FEATURE A WEDGE INSERT FOR INSTALLATION
(SEE PHOTO ABOVE).



SIZES 14" – 36" (PG. 9-8)
ARE CUSTOM MOLDED TO THE ACTUAL PIPE I.D. AND HAVE A TAPERED EDGE FOR EASE OF INSTALLATION.



- Flexible couplings do not provide protection against possible pullout of pipe ends in unrestrained conditions.
- Romac couplings are not to be used on HDPE pipe with an SDR greater than 32.5.
- Romac only warrants the use of Romac stiffeners with Romac couplings.

Approved Materials List 2022



Stainless Steel HDPE Pipe Stiffening Inserts

(used for all connections)



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INDUSTRIES,
INC.**

INSTALLATION INSTRUCTIONS

Read installation instructions first before installing. Check parts to ensure that no damage has occurred during transit and that no parts are missing. Also check the diameter of the pipe and the range marked on the clamp to ensure you have the proper size.

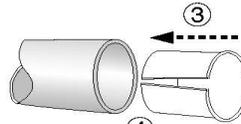
LIMITATIONS: For product limitations see reverse side. For more detailed information see the HDPE Products section of the Romac Product Catalog, or phone Romac Engineering Department at 1-800-426-9341.

Stiffeners with couplings for HDPE Pipe

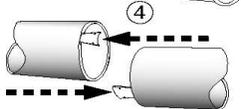
Step 1 • Clean pipe ends for a distance of 2" greater than length of the coupling when centered over the joint.

Step 2 • Check area where gaskets will seat to make sure there are no dents, projections, gouges, etc., that will interfere with the gasket seal.

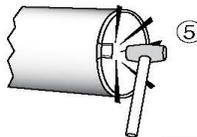
Step 3 • Insert a stiffener into the HDPE pipe ends to be joined so that the stiffener lip touches the pipe end. See reverse side for limitations based on SDR.



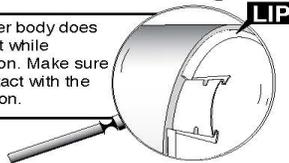
Step 4 • Insert wedges into stiffeners making sure wedges are not directly opposed.



Step 5 • Fix wedges firmly in stiffener by striking with a rubber hammer so that no gap exists between the back of the wedge and the inside of the pipe.

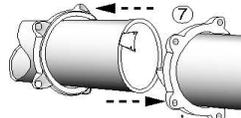


NOTE: Make sure the stiffener body does not derail from the wedge slot while hammering wedge into position. Make sure the stiffener lip comes in contact with the end of the pipe after installation.

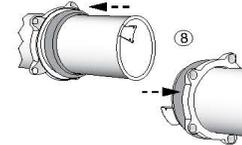


Step 6 • Place a reference mark on the pipe an equal distance from each pipe end for centering coupling over the pipe ends. There should be a minimum of 2" inches of pipe insertion per coupling end.

Step 7 • Place one end ring on each pipe end.

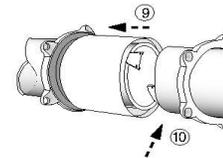


Step 8 • Place one gasket next to each end ring with beveled edge toward the pipe end.



Step 9 • Slide center ring onto one of the pipes.

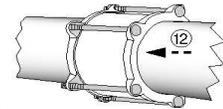
Step 10 • Bring the other pipe into position. Wedge should not contact opposite pipe.



NOTE: For installations like MJ and socket-type fittings, where the pipe end may bottom out, the wedge may extend past the pipe end. Once the wedge is installed properly, it is common practice to bend over (or cut off) any portion of the wedge which extends past the pipe end.

Step 11 • The center ring should be centered such that the space between the OD of the pipe and the ID of the center ring is even all around the pipe. Slide gaskets into position with the beveled edge engaging the flared end of the center ring.

Step 12 • Slide the end rings into position against the gaskets. Check coupling for proper positioning over pipe ends using reference marks (See Step 3).



Warning: Make sure the position of the coupling gasket is not positioned past the stiffener.

Step 13 • Insert bolts into end rings and tighten. Bolt tightening should be done evenly, alternating to diametrically opposite positions at approximately 20 ft-lbs increments. For best results, wait 10 minutes and retighten bolts to proper torque.

Nom. Pipe Diameter	Bolt Size	Maximum Torque
3" - 12"	5/8"	40 ft-lbs.

Note:
40 ft-lbs. torque = 12" wrench w/40 lbs. force

After pipe is pressurized, check for leakage and tighten as necessary.

Note: Flexible Couplings do not provide protection against possible pullout of pipe ends in unrestrained conditions.

Document # 20-9-0024 09.19.2011

Approved Materials List 2022



Stainless Steel HDPE Pipe Stiffening Inserts

(used for all connections)



INSTALLATION INSTRUCTIONS

Stiffeners with Couplings for HDPE Pipe

PRECAUTIONS

1. Check diameter of pipe to make sure you are using the correctly sized coupling.
2. Clean pipe to remove as much dirt and corrosion as possible from the surface.
3. Make sure no foreign materials stick to the gasket as it is brought around the pipe, nor become lodged between gasket and pipe as nuts are tightened.
4. Avoid loose fitting wrenches, or wrenches too short to achieve proper torque.
5. Keep threads free of foreign material to facilitate tightening.
6. Bolts are often not tightened enough when a torque wrench is not used. Take extra care in this situation to make sure proper tightening occurs.
7. Always pressure test for leaks before backfilling.
8. Backfill and compact carefully around coupling.
9. Make sure the coupling gasket does not extend past the edge of the stiffener after final assembly.
10. When reinstalling parts with stainless steel hardware there may be a loss in pressure holding ability due to worn or damaged threads during the original installation.

COMMON INSTALLATION PROBLEMS

1. Bolts are not tightened to proper torque.
2. Rocks or debris between pipe and gasket.
3. Dirt on threads or bolts or nuts.
4. Not using stiffeners when coupling HDPE.

PRODUCT LIMITATIONS

High Density Polyethylene Pipe (HDPE) has a lower modulus of elasticity and higher coefficient of thermal expansion than other pipe materials. These properties cause HDPE pipe to expand and contract much more from changes in temperature and/or pressure than other piping materials. Because of these and other properties, great care must be taken when installing conventional fitting on HDPE.

HDPE LIMITATIONS:

- Romac only warrants the use of Romac Stiffeners with Romac 501 Couplings with 7" long center rings and Romac Flanged Coupling Adapters
- Pipe must be manufactured in accordance with AWWA Standard C906-90.
- Operating temperatures are limited to 85° F maximum and 32° F minimum.
- Operating pressure is limited to 150 psi or the rating of the pipe, whichever is less.
- Pipe systems must be designed to compensate for pipe movement so as to prevent fittings from migrating or rotating on the pipe.
- Products are intended for use in underground service only.
- Products are not to be used on pressurized HDPE pipe with an SDR greater than 32.5.



ROMAC CANNOT WARRANT PRODUCTS USED IN APPLICATIONS THAT ARE OUTSIDE ONE OR MORE OF THESE LIMITATIONS. CONTACT ROMAC'S ENGINEERING DEPARTMENT AT 1-800-426-9341 IF YOU HAVE QUESTIONS ABOUT THE USE OF OUR PRODUCTS ON HDPE PIPE.

HDPE PRECAUTIONS:

Try always to install fittings when pipe is at its coldest.
This product is designed for a 53° F temperature range maximum.

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Stainless Steel HDPE Pipe Stiffening Inserts

(used for all connections)

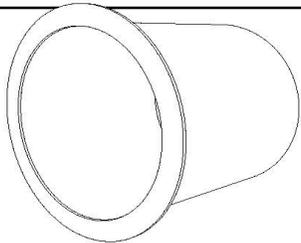


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INC.**

INSTALLATION INSTRUCTIONS

Read installation instructions first before installing. Check parts to ensure that no damage has occurred during transit and that no parts are missing. Also check the diameter of the pipe and the range marked on all parts to ensure you have the proper size.

LIMITATIONS: For product limitations see reverse side. For more detailed information see the HDPE Products section of the Romac Product Catalog, or phone Romac Engineering Department at 1-800-426-9341.



HDPE Pipe End Stiffeners (14" and Larger)

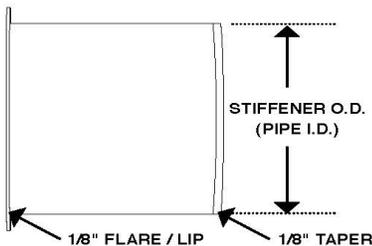
Step 1 • Clean pipe ends the distance equal to the length of the mechanical fitting to be installed.

*Prepare the HDPE pipe ends and measure I.D. of pipe to verify the correct size Stiffener. The outside diameter of the Stiffener will be equal to the HDPE Manufacturers published average inside diameter of the pipe.

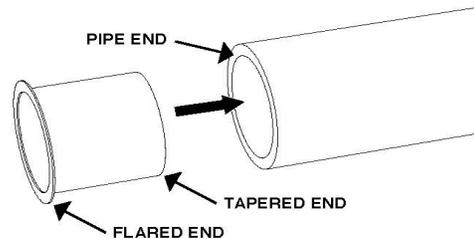
Step 2 • Inspect the pipe surface where the mechanical fitting will be installed. Make sure there are no gouges, bumps or areas that will interfere with the gasket seal.

Check for any special handling requirements or limitations of the fitting on HDPE pipe.

Romac HDPE Pipe End Stiffeners are designed for use with mechanical couplings, clamps and fittings where stiffening of the pipe is necessary for proper gasket seal. Caution needs to be taken to prevent (1) shear loading on the joint, (2) migration of the stiffener out of the end of the pipe from lack of a back load on stiffener rim or load on the stiffener.



Step 3 • Place the tapered end of the stiffener into pipe end.



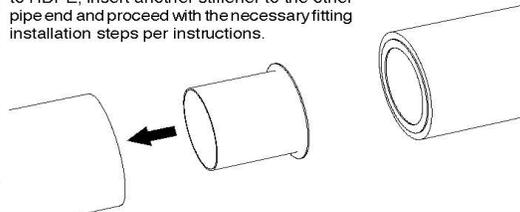
To ease installation, the stiffener can be lubricated with water or soapy-water. **DO NOT USE PIPE LUBRICANT.**

Insert stiffener into the pipe until the Flared End contacts the pipe end.

To properly seat the stiffener it may be necessary to gently tap the flare face with a rubber mallet or lay a flat piece of wood across the diameter of the stiffener and tap with a heavy object. Take care not to damage the stiffener.

In applications where the HDPE pipe end has been cut and the I.D. has "necked down", bevel the I.D. of the pipe to open the I.D. for ease of installation.

Step 4 • For applications joining HDPE to HDPE, insert another stiffener to the other pipe end and proceed with the necessary fitting installation steps per instructions.



Document # 20-9-0040 08.13.2012

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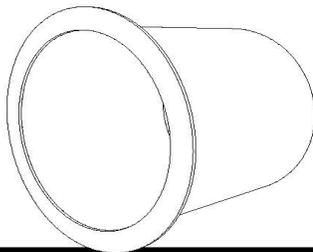


Stainless Steel HDPE Pipe Stiffening Inserts

(used for all connections)



INSTALLATION INSTRUCTIONS



HDPE Pipe End Stiffeners (14" and Larger)

PRECAUTIONS

1. Check inside and outside diameter of pipe to make sure you are using the correct size parts.
2. Clean pipe to remove as much dirt and corrosion as possible from the surface.
3. Always pressure test for leaks before backfilling.
4. Make sure gaskets do not extend past the edge of the stiffener after final assembly.

PRODUCT LIMITATIONS

High Density Polyethylene Pipe (HDPE) has a lower modulus of elasticity and higher coefficient of thermal expansion than other pipe materials. These properties cause HDPE pipe to expand and contract much more from changes in temperature and/or pressure than other piping materials. Because of these and other properties, great care must be taken when installing conventional fitting on HDPE.

HDPE LIMITATIONS:

- Pipe must be manufactured in accordance with AWWA Standard C906-90.
- Operating temperatures are limited to 85° F maximum and 32° F minimum.
- Operating pressure is limited to 150 psi or the rating of the pipe, whichever is less.
- Pipe systems must be designed to compensate for pipe movement so as to prevent fittings from migrating or rotating on the pipe.
- Products are intended for use in underground service only.
- Products are not to be used on pressurized HDPE pipe with an SDR greater than 32.5.



ROMAC CANNOT WARRANT PRODUCTS USED IN APPLICATIONS THAT ARE OUTSIDE ONE OR MORE OF THESE LIMITATIONS. CONTACT ROMAC'S ENGINEERING DEPARTMENT AT 1-800-426-9341 IF YOU HAVE QUESTIONS ABOUT THE USE OF OUR PRODUCTS ON HDPE PIPE.

HDPE PRECAUTIONS:

Try always to install fittings when pipe is at its coldest.
This product is designed for a 53° F temperature range maximum.

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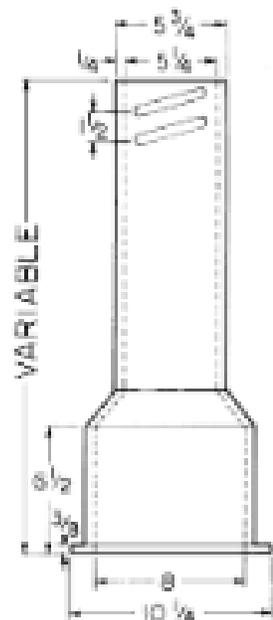
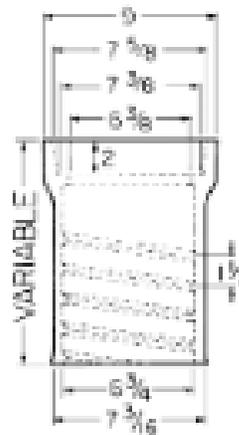
Adjustable Valve Boxes With Lids

Description:

- Screw type adjustable valve box with lid.
- Must be marked "WATER"

Acceptable Brands and Models:

- Bass & Hays: BH2436S (24"-36"); BH1824S (18"-24")
- Tyler Union: 6850 (10T+15B 19"-22")
- EJ: 8550 Series, 8560 Series



5008

Bass & Hayes pictured

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Valve Boxes & Lids

Description:

- Standard valve box “Dallas Shorty”
- Must be marked “WATER”
- Must be marked “SEWER” when used for clean-out boxes

Acceptable Brands & Models:

- Bass & Hayes: B&H3401 “Shorty”
- EJ: Self-Level Valve Top (for asphalt applications)

NOTE: When used instead of an adjustable valve box, the pipe used for the stack shall be C900 pipe with a bell on the end sitting over the valve



A small, square logo or mark located at the bottom right of the page, below the valve box image. It contains some illegible text or a symbol.

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Valve Boxes & Lids

Water Distribution Solutions

Valve Boxes

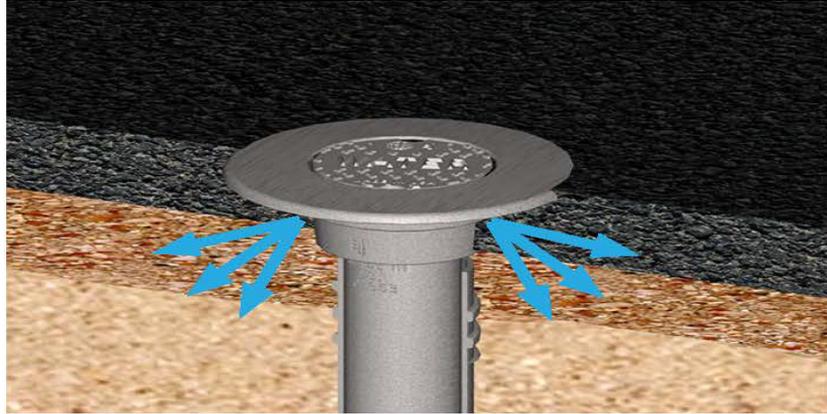
SELFLEVEL® VALVE BOX TOP

Increase driveability and extend road life with SELFLEVEL valve tops. Designed to prolong asphalt life by reducing cracking, and reduce snow plow damage, the SELFLEVEL valve box top is supported by and moves with the surrounding road surface. This allows it to remain flush with the road surface.

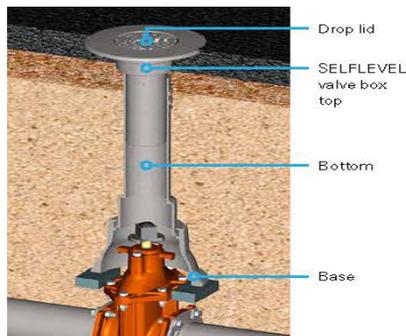
Lasting longer than traditional valve box tops and risers in situations where there can be frost heave and natural road settling, this "floating" affect also helps prevent road damage and protects by dispersing traffic vibrations and shock throughout the road surface.

Standard Features

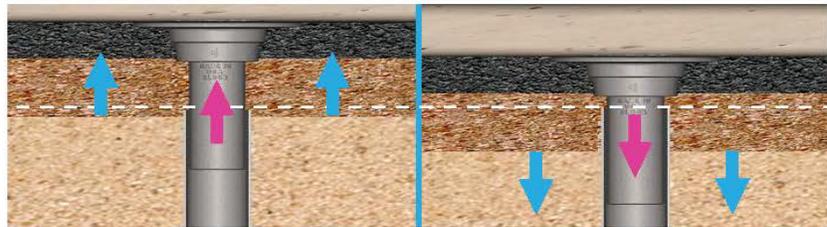
- Heavy duty
- Accommodates 2" through 12" valves
- 4" clear opening
- Frame fits with locking and non-locking 6800 series lids
- ASTM A48, Class 35B
- 85% minimum recycled content
- Made in USA



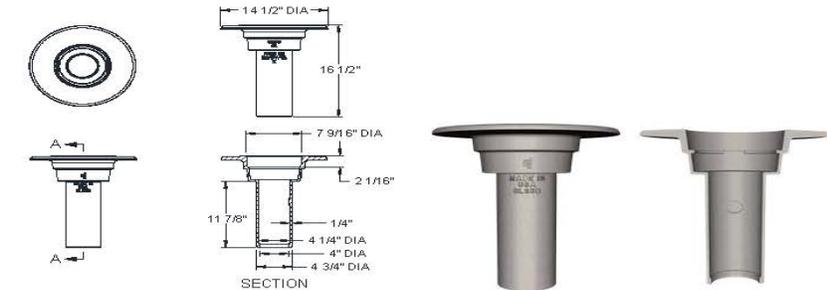
Once installed, the unit will continue to move with the road surface. The road surface aids in absorption of traffic vibration and shock.



The SELFLEVEL valve box top is used with drop lid, bottom, and base to provide the complete solution for valve box access.



The valve box top stays level with the road surface, even when the road heaves due to extreme temperature changes or settling of the pavement. Pavement around the valve box stays smooth for years to come.



85558008 SELFLEVEL valve box top dimensions

Side view

Cross section view

Note: It is recommended to use the SELFLEVEL valve box top with valve box bottoms and extensions to reduce infiltration and debris.

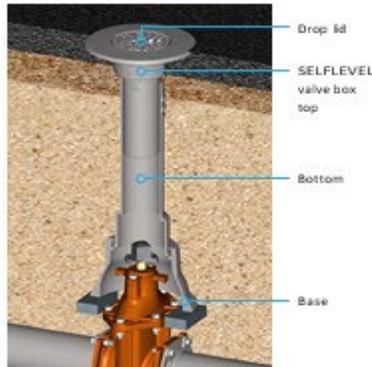
Approved Materials List 2022



Valve Boxes & Lids



SELFLEVEL® Valve Box Top – Installation Guidelines



Step 1: Install Valve Box Base/Bottom

Install the valve box base and/or bottom section above the valve. Install the SELFLEVEL® valve box top into valve box bottom. The valve box bottom should be set 7" to 13" below finished grade.

Step 2: Compact Backfill

Backfill per local specifications. To ensure proper movement of the valve box top, the assembly should be plumb.



Step 3: Asphalt (Top Course)

Pave over SELFLEVEL valve box top.
Note: Make sure the location is marked.



Step 4: Lift Valve Box Top

Remove asphalt from valve box top. Lift valve box top to 1 1/2" above asphalt with a pick axe and/or shovel. Pack asphalt under flange until valve box top remains 1 1/2" above asphalt.



Step 5: Clean cover

Clean cover as needed.



Step 6: Compacting

When compacting, start with outside perimeter, working the asphalt to the center. After final compacting, the SELFLEVEL valve box top and cover should only rest on the road surface and not on the valve box bottom.

Approved Materials List 2022



Boundary Valve Box & Lid

Description:

- Mark V Series Triangle Valve Box
- Must be marked "WATER"
- Lid must be blue in color and have a locking lid.
- These valve boxes will only be used for boundary valves with Utilities Superintendent's approval.

Acceptable Brands and Models:

- Bingham & Taylor
NOTE: The Town does not currently have boundary valves



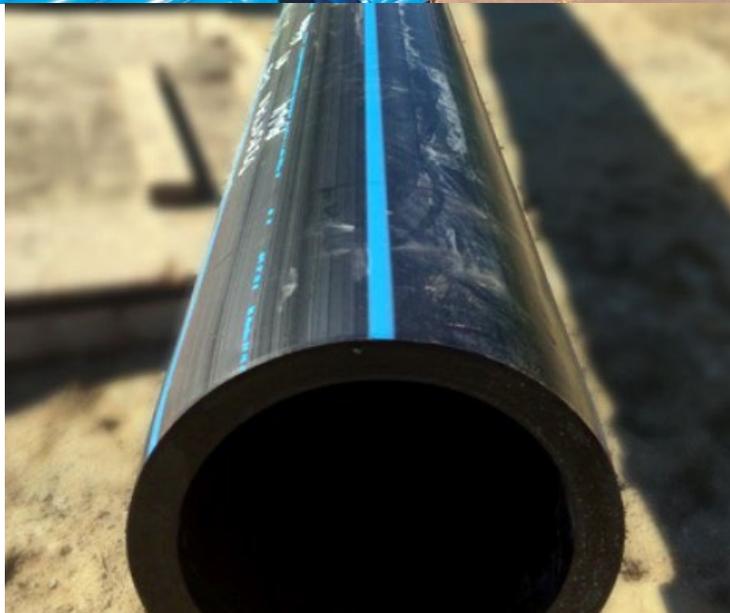
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Water Main Pipes

Description:

- AWWA C-900 PVC Pressure Pipe (Blue in color)
- HDPE DR11 (Black with Blue Stripe and clear lettering noting wall thickness)



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Water Retaining Glands and Flanges

Description:

- Domestic Retaining Glands used for Pipe Fittings, Valves, and Fire Hydrants
- 304 Stainless Steel Bolt kits unless otherwise approved by Public Works Superintendent

Acceptable Brands and Models:

- Megalug:
 - EBAA
- Full Face Flange Gasket
 - White Rhino
- Mechanical Joint Gasket
 - Romac
 - Tyler Union
 - White Rhino



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Water Main Fittings

Description:

- Ductile iron water main fittings that are used with AWWA C-900 Pressure Pipe
- Black Coated
- Full Body

Acceptable Brands:

- Tyler Union



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2 Bolt Coupling Sleeves w/ Grippers

(only used for repairs)

Description:

- One piece, for stab-fit installations
- COMPATIBILITY: Ductile iron, cast iron (class A, B, C & D), PVC IPS size (Sch 40, Sch 80 and SDR 21), PVC C900 & C909 & HDPE with stiffener
- Sizes: 4" to 12"
- Must be approved by Public Works Superintendent for contractor use.

Acceptable Brands & Models:

- Romac: Alpha Series



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2 Bolt Coupling Sleeves

(only used for repairs)

Description:

- One piece, for stab-fit installations
- COMPATIBILITY: Steel, cast iron, asbestos cement, plastic, and other types of pipe.
- Sizes: 4" to 12"
- Must be approved by Public Works Superintendent for contractor use

Acceptable Brands & Models:

- Romac: Macro Series
- Smith-Blair: Model 421



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Water Service Lines

Description:

- 250 PSI meeting AWWA C901 standard
- Iron Pipe Size (IPS), Controlled Outside Diameter
- Factory installed tracer wire
- **Blue in color ONLY**
- 304 Stainless steel insert stiffeners are required for connections

Acceptable Brands & Models:

- Endot: Endotrace HDPE Polyethylene Tubing

ENDOTRACE
TRACEABLE TUBING

Taking pipe detection to a whole new level.

ENDOT's EndoTrace makes water pipe a snap to find. EndoTrace™ consists of EndoPure polyethylene water pipe together with factory-installed tracer wire. Combined, they form a one-step, easy-to-install system that speeds traceable water service tubing installation.

- ENDOT's NSF Certified EndoPure Tubing and HDPE coated tracer wire form the system
- Two independent, spirally wound, polypropylene tape layers hold the wire to the tubing to ensure a long lasting installation
- The system eliminates the need to hand tape wire to the tubing
- Reduces labor costs of service tubing installations requiring a tracer wire
- EndoPure pipe and tubing has consecutive footage marks
- The wire will not interfere with the installation of fittings, or with the use of fusion equipment
- Meets the National Plumbing Code requirement 2.6.6.1 for tracer wire on underground non-metallic water service tubing
- Available in 3/4" through 2", and as IPS or CTS sizing

ENDOT

ENDOT INDUSTRIES, INC.
60 Green Pond Road
Rockaway, NJ 07866
www.endot.com
info@endot.com
1-800-44ENDOT

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Water Service Line Stiffeners

Description:

- Stainless steel inserts for copper tube size polyethylene. Made of 304 stainless steel.

Accepted Brands & Models:

- Mueller: Stainless steel insert
- Ford: Stainless steel insert
- A Y McDonald: Stainless steel insert



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Meter Boxes

Description:

- Meter Boxes will say "Water Meter" on the lid. All Meter Boxes and Lids must be black in color
- Any meters boxes used in concrete must be traffic rated
- Any Traffic rated box must be approved by Public Works Superintendent

Acceptable Brands:

- DFW Plastics Inc.
- Bass and Hayes
- Sigma

Box Model:

- P34PD18-DAL 18X18 METER BOX
3/4" " 1" DALLAS SPEC
- DFW 2418FR BODY W/CI RING
24"X18" ROUND BLACK BODYW/CI RING
- DFW38F-18-1BA
- DFW2818F-DR-1BF DEEP

Lid Model #:

- DFW20AMRI-1BA-LID
- DFW38C-1BA-LID
- DFW20AMRD-1BF DEEP LID

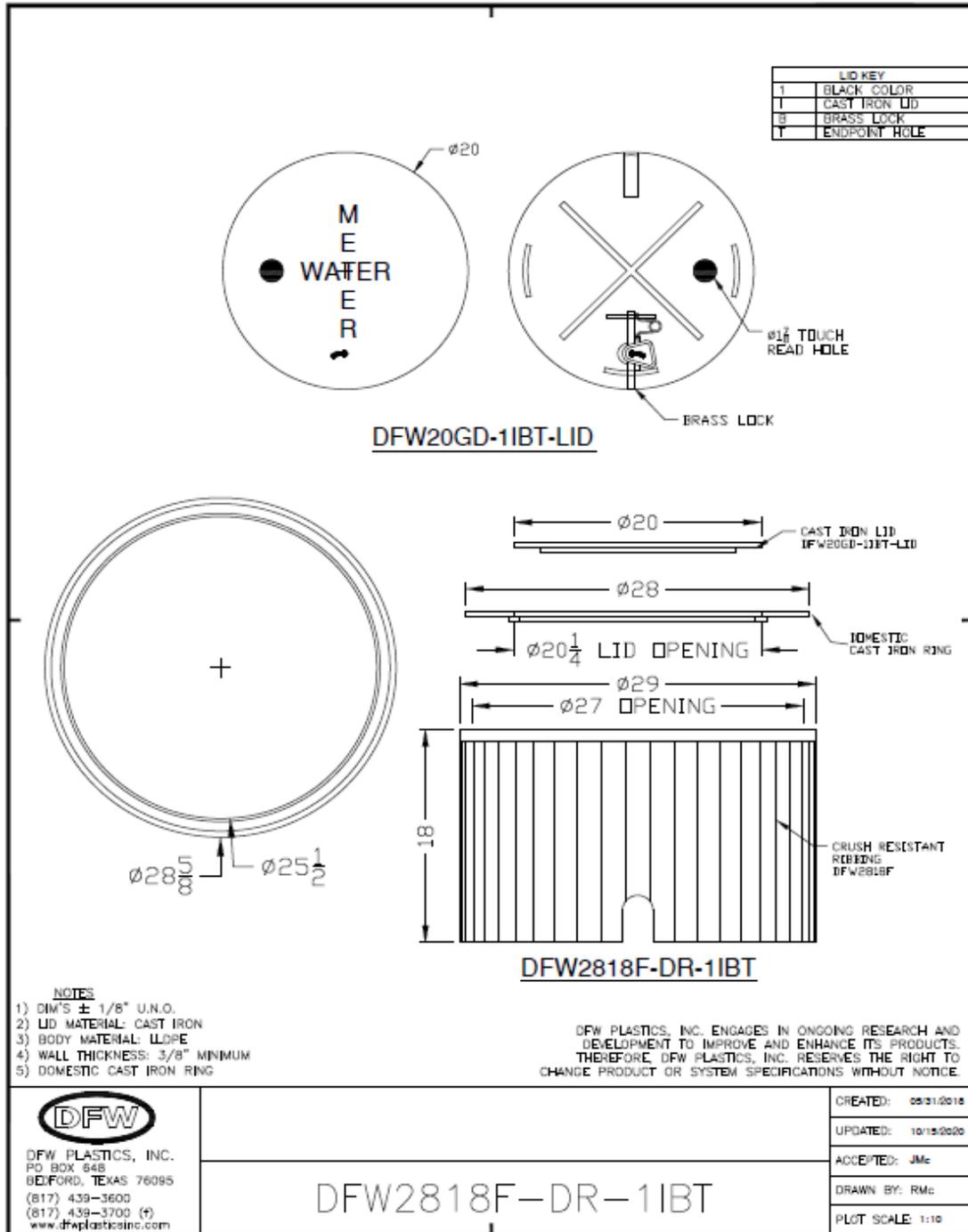
Concrete Application

- DFW1324WBC-18-BODY
- DFW1324C-1BA-LID

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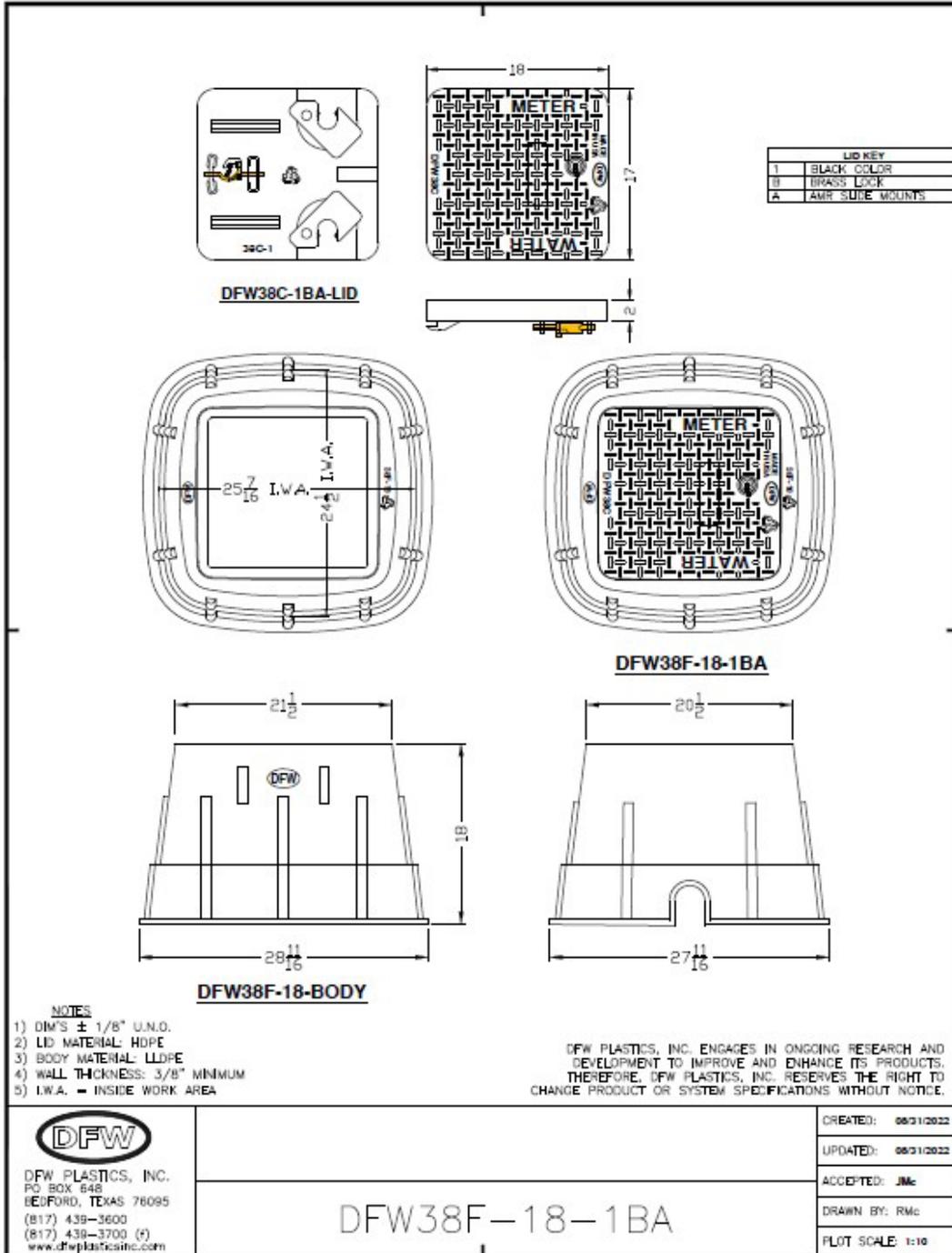
Meter Boxes



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Meter Boxes



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Standard Bolt Down Sanitary & Storm Sewer Rings & Covers

Description:

- Sanitary & Storm Sewer bolt down manhole lid and ring with neoprene gasket
- 24" Lid and ring for replacement on existing manholes. 30" Lid and ring for all new construction.
- Must be labeled "Storm Sewer" for storm sewer applications
- Must be labeled "Sanitary Sewer" for sanitary sewer applications

Acceptable Brands and Models:

- Bass & Hayes: 24"-380-24P; 30"- VRM-30
- EJ: DUOSEAL DI SW L8 ASY UND, V1600-4 1810A2VH DI BLT2 SW UND



24" Bass & Hayes up, 30" Bass & Hayes lower



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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

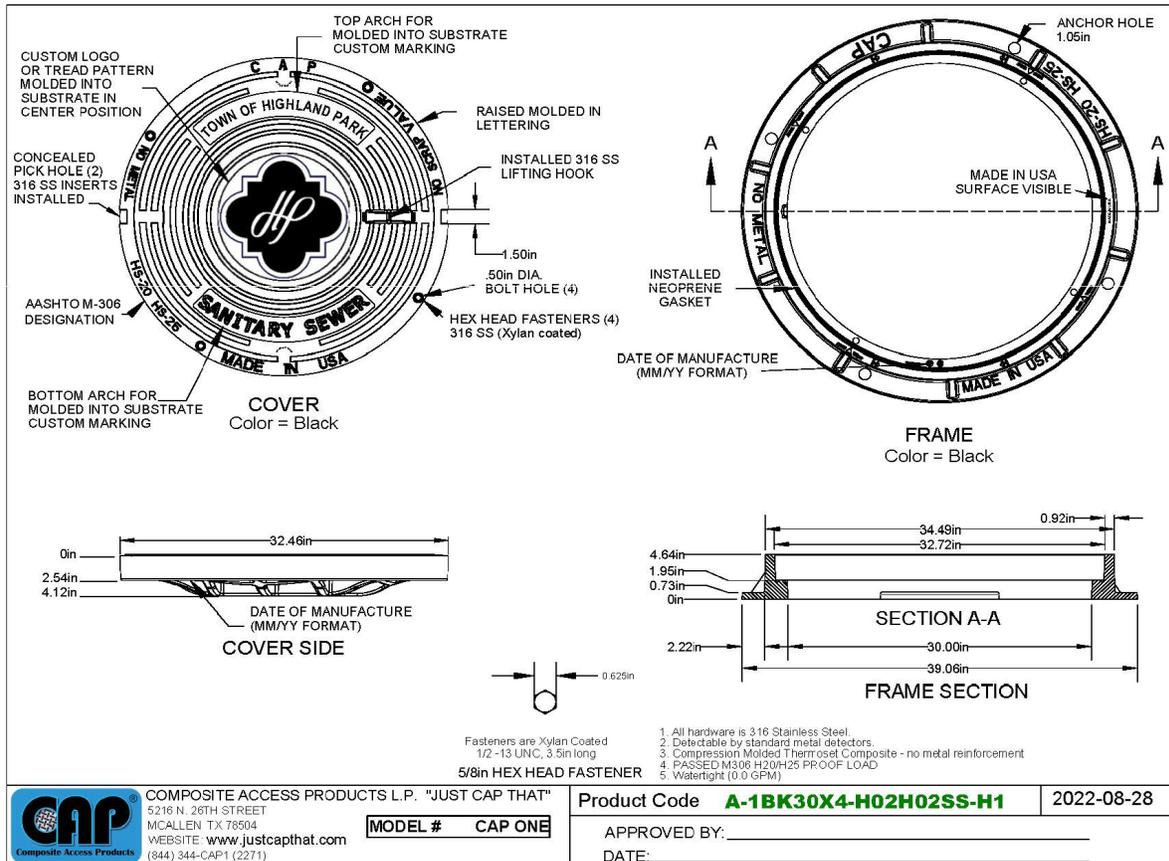
Description:

- Composite Sanitary Sewer bolt down manhole lid and ring with neoprene gasket
- 30" Lid and ring for all new construction
- For use with Storm Sewer junction boxes in the road
- Must be labeled "Storm Sewer" for storm sewer applications
- Must be labeled "Sanitary Sewer" for sanitary sewer applications

Acceptable Brands and Models:

- CAP Model: CAP ONE A-1BK30X4-H02SS-H1

Note: All manhole adjustment rings must use Ladtech HDPE Riser and leveling rings
See P- 50-58 for installation instruction



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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

Installation Guide and Detail for CAP Composite Cover and Frames

Note: The information that follows is intended for general informational purposes only and does not necessarily represent appropriate advice for your specific application as each individual application has its own variables: e.g. climate, temperature, soil, chemical exposures, grade. Consult with your contractor, engineer, and other required professionals for your application.

- 1) Avoid transporting products across bumpy terrain at a speed that causes the product to bounce in or discharge from the vehicle. Excessive travel bouncing of the product can cause damage. Impacts from cover and frame assemblies falling out of vehicles, backhoe strikes, or blows from other heavy machinery before installation can damage the cover and frame. Improper handling voids warranties.
- 2) Measure the diameter of the clear opening of the access hole to ensure that the diameter of the hole is not larger than the interior diameter of the access hole frame. Do not have frame bottom without ground underneath it (i.e. the frame ledge is suspended over air). The frame must fully rest on the ground or riser rings for proper support. Select the proper diameter frame and cover for the diameter of the access hole.



- 3) You may need to cut into the concrete or asphalt with a jackhammer, pick, or saw. Remove the current cover and frame. The old cover and frame may be very heavy depending on the size. You may need some help or tools to move it safely. Always bend knees when lifting.



- 4) Inspect the access hole opening and remove any dirt, grease or other debris from the access hole opening and support.

- 5) Measure the depth of the hole top to the ground level. The depth should be deeper than the height of the frame and cover.

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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

6) Lay a layer of sealing product on the top of the access hole. Some use a butyl mastic tape, M1 adhesive, or RAM NEK between cover and supporting surface.

Frame Cross-section	M1 Adhesive	
 Riser Ring(s) Cross-Section		

7) If riser rings are used, CAP's will work with concrete, brick and polymer types (e.g. Ladtech, Cretex). CAP does not endorse a specific riser types and this is the utility's preference. The same adhesive sealants can be used between riser rings (M1 Adhesive, RAM NEK, Butyl mastic tape). With brick or other rough/uneven surfaces, a thin layer of mortar/concrete should be applied to smooth the top surface of the riser material before attaching the seal. Follow riser ring manufacturer's instruction for using preferred adhesive sealant between riser rings.

8) Use riser rings in contact with the frame that have a clear opening equal or less than the clear opening of the frame for complete support. Avoid installing covers with clear openings less than the supporting surface as loads from traffic will not be fully supported.

Avoid Using Riser Rings with Larger Clear Opening than Frame Clear Opening – Frame and Cover Will Not Be Completely Supported. Unsupported Frames May Not Resist Traffic Loads



Photo Shows a Riser Ring with a Larger Clear Opening than the Frame Clear Opening

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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

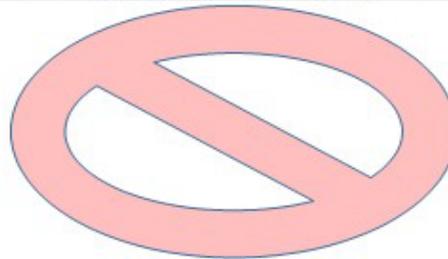
9) Make sure each additional riser section is plumb as installed before installing the next riser, cone or cap.



10) If using concrete, mix cement and water per instructions on the bag.

11) Make sure the frame is level with the slope of your surrounding concrete or asphalt (concrete is preferred for in-road). **WARNING: DO NOT USE SMALL PIECES OF WOOD, ROCK, CONCRETE, BRICK OR OTHER MATERIAL TO "SHIM" UNDER A SECTION OF THE FRAME OR POLYMER RISER RINGS TO ACHIEVE A DESIRED SLOPE. USE ANGLED ADJUSTMENT RINGS TO EVEN COVERS WITH THE ROAD GRADE. POINT FORCES FROM SMALL SHIMS MAY DAMAGE PRODUCT.**

12) If riser rings are not used, lay a bed of concrete around the hole. The ring should be wide enough to fit under the flange bottom of the frame. Place the flange directly on the wet concrete ring. You can push the flange down by hand to set it into the concrete. If you use a tool to set the flange into the concrete, use a rubber mallet or blunt end, NOT a sharp metal hammer like the operator in the right of the photo below. Do not use heavy equipment (e.g. backhoe) to press or hit the cover into the concrete.



13) Holes in the frame flange can be used to anchor with bolts into the riser rings or concrete below. This is not mandatory, but the holes in the frames allow for this option. (See end of instructions)

14) Fill in around the frame with more wet concrete until the concrete is level to the top of the frame. **IMPORTANT: Make sure to wipe all wet concrete off the inside of the frame walls and seat. If concrete cures with the cover on, it will be difficult to remove the cover, and the cover also will not sit flat. WARNING: A COVER PROPPED UP BY CONCRETE OR OTHER DEBRIS GIVES A POTENTIAL CATCH POINT THAT COULD LEAD TO COVER EJECTION AND ALSO MAY NOT BE PROPERLY FASTENED TO THE FRAME.**

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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers



15) IMPORTANT: It is critical to clean the notches on the frame inside bottom from any curing concrete, debris, or other obstruction. If these frame notches are filled in with concrete or other materials, the latch for the cover lock will not be able to engage into the frame notch to lock to the frame. **WARNING: DISGENAGED PADDLE LOCKS OR UNBOLTED COVERS WITH DEBRIS, CONCRETE, OR OTHER MATTER IN BETWEEN THE FRAME LEDGE AND COVER PROPPING THE COVER EDGE ABOVE THE FRAME INCREASES RISK OF COVER EJECTION FROM THE FRAME IN TRAFFIC.**

Note: Some installers prefer a square of concrete around the frame and some a circle (the theory is that the corners of the concrete bed in a square create a “stress point” where a circle does not). Some also use rebar, create expansion joints or other techniques. Some recommend 5000 psi concrete a minimum of 12 inches from the frame edge, at least 6 inches deep, using #4 rebar 12 inches on center. Allow 24 hours for concrete to cure before allowing traffic contact (refer to concrete mix instructions).

In-Road Examples

Square Concrete Support



Circle Concrete Support



Circle with Expansion Joints



Note: Off-road some will simply backfill with dirt, raise with concrete to avoid lawnmower impact, or raise several feet to prevent water inflow.

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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers



Secure Base Around Manhole for Off-Road Tripod Use



Note: If tripod use is planned for entering and exiting the manhole, it is advisable to have a solid supporting surface large enough for the tripod base. Tripods may not be secure on dirt or soft ground. Some municipalities specify 12 feet by 12 feet of concrete around manholes.

NOT PROPER INSTALL



Note: Improper install can reduce product life and voids warranty. Municipalities are responsible for training contractors on correct installation procedures. Applying the surrounding concrete too shallow could cause cracks and expose the frame edges to side impact. Frame edges should be flush or slightly below grade – Areas with freezing will need to determine the depth below grade to allow for ice heaving.

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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

16) If the cover has bolt down or locking features, visually locate the receiving bolt holes on the frame ledge. Align bolt holes on the cover with the receiving hole locations. Place the cover on the frame properly aligned.

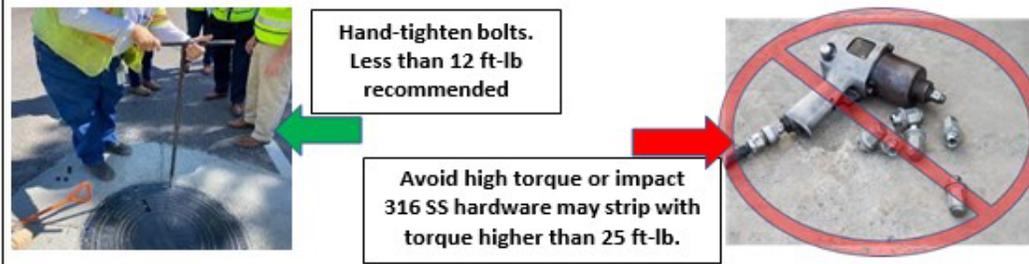
17) Be careful with fingers when inserting covers into frames. When possible, place the cover into the frame so that one edge rests on the frame top and push the cover in the remaining amount with a tool (or the base of your steel-toed footwear). Fingers and hands need to be kept clear of the cover when it falls into the frame seat to avoid injury.



You may need to rotate the cover if the holes and hardware do not line up. The frame has shapes (triangles, stars) that indicate where the bolt holes should be aligned to have the cover and frame holes centered on each other. The frame also has indicators for paddle lock notches.



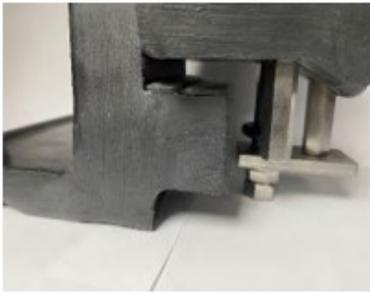
18) Once in the hole, tighten all the bolts or paddle locks. **WARNING: DO NOT HAMMER THREADED BOLTS INTO THE BOLT HOLES. HAMMERING THE BOLTS INTO THE HOLES INSTEAD OF SCREWING COULD DISLODGE THE RECEIVING NUT IN THE FRAME AND DAMAGE THE THREADS.** Paddle locks may need to be pressed down and then rotated to engage the frame. A mark on the head of the paddle will point away from the cover center and toward the frame wall when the latch is locked. This mark is in the same direction as the paddle underneath to cover.



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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

<p>Push down and turn to lock and unlock.</p>	<p>Frame/Cover Cross Section – Paddle Lock Latch Engaged</p>
	 <p>Concrete or other debris in frame notch could block and prevent proper latch engagement</p>
<p>PADDLE LOCK NOT ENGAGED TO FRAME - UNLOCKED</p>	
	
<p>19) The mark on the paddle lock head will point away from the center when engaged. This photo shows a disengaged paddle lock as the notch is not pointing toward the outside of the cover. Push down and turn until the notch is closest to the outside of the cover. WARNING: A DISGENAGED PADDLE LOCK(S) OR UNBOLTED COVERS WITH DEBRIS, CONCRETE, OR OTHER MATTER ON THE FRAME LEDGE UNDER THE COVER PROPPING THE COVER EDGE ABOVE THE FRAME CAN LEAD TO POTENTIAL EJECTION OF COVER FROM FRAME IN THE STREET.</p>	
<p>20) DO NOT OVERTIGHTEN STAINLESS STEEL BOLTS FOR THE THREADED BOLT OPTION. OVERTIGHTENING WILL STRIP THREADS. MAXIMUM TORQUE APPLIED SHOULD BE NO MORE THAN 20 FT.LB. HAND TIGHTEN OR USE TORQUE LIMITED TOOL. OVERTIGHTENING BOLTS VOIDS WARRANTY.</p>	
<p>21) After fastening the cover to the frame with either the paddle lock or bolts, insert the rubber dirt shield over the hardware into the hardware hole. Push in the center of the rubber cover so that it forms a tight seal and does not drop out.</p>	

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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers



22) Allow the concrete to cure for at least 24 hours before driving a vehicle over it. Follow instructions and warnings on your concrete product packaging. Wipe off excess concrete or asphalt from cover surface for maximum tread efficiency and to avoid sticking the cover shut.



Clean Surfaces of Concrete/Asphalt



Note: Many other products and methods that can be used to reduce infiltration and provide other benefits. This guideline is intended to represent the optimum method for installing utility access covers. The life and performance of any access cover depends on proper installation.

23) For attaching sensors or other technology to the underside of the cover, CAP covers have attachment points molded into the cover bottom. It is recommended to request anchors in the PO so that the manufacture attaches the 316 stainless threaded anchors designed to securely hold objects up to 50 lbs per point. These anchors also can be ordered separately and attached at the job site. It is recommended to bolt technology to at least one hole and tether with a wire cable to a second hole for a safety connection.



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Composite Bolt Down Sanitary & Storm Sewer Rings & Covers

Anchoring Cover and Frame to Prevent Surcharge

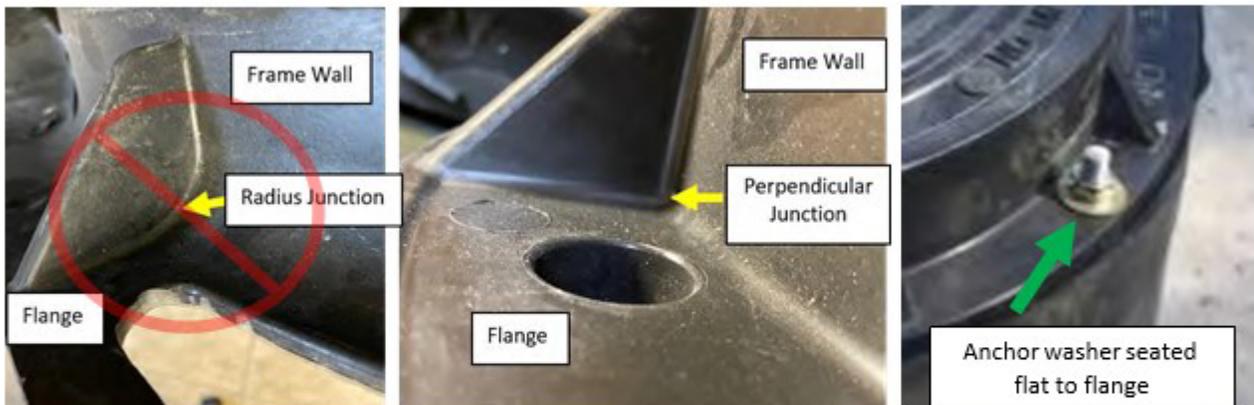


1. Mark holes in the ground using the frame anchor holes as the template. Insert anchors (e.g. Redhead) at the anchor hole locations. Attach threaded rods.

2. Drill holes in grade/riser rings and insert rings on rods. Use butyl mastic tape between each ring per manufacturer recommendation.

3. Mount the frame on the rods through the anchor holes. Use same butyl mastic to seal the frame bottom to the grade/riser rings.

4. Cut rods to eliminate extra rod and tighten with nuts.



CAP frame flanges are perpendicular to the vertical frame wall. This allows for a washer to sit flat under the nut on the threaded rod used for anchoring the assembly. Non-perpendicular (radiused) flange-wall junctions can tilt the washer with one side propped up on the vertical wall joint.

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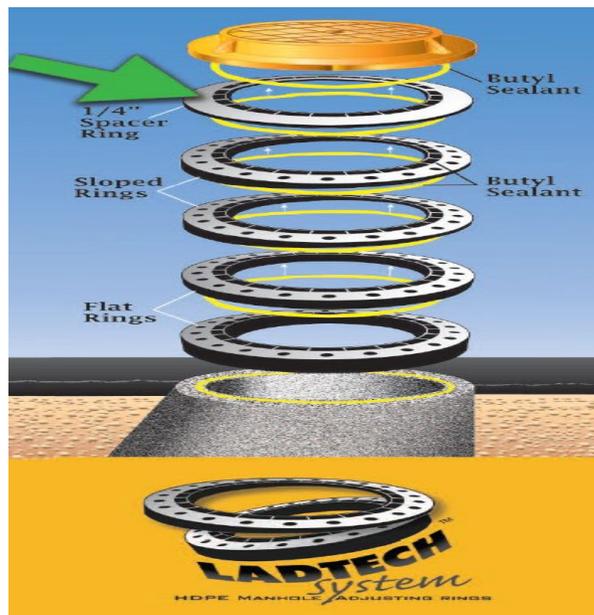
Manhole Riser Rings and Slope Rings

Description:

- The Recycled HDPE Polyethylene Manhole Adjustment Rings shall be a circular one-piece injection molded ring.
- Recycled HDPE Polyethylene Manhole Adjustment Rings shall provide a bearing surface on which a standard manhole ring and cover casting may be supported and adjusted to grade. The complete adjustment system shall consist of the rings, bonded to the structure, casting, and one another by means of an approved butyl rubber sealant furnished by the ring manufacturer designed to prevent infiltration and/or exfiltration through the adjustment section between the manhole cone and the base of the ring and cover manhole casting.
- Sealant: Sealant shall be M1 Adhesive, RAM NEK or Butyl Matic Tape with a Service temperature range from -15 to 2000 F.
- Class: The manhole grade adjustment rings shall be manufactured in one class of load rating. This class shall be H-25 wheel load (minimum 21,280 pounds dynamic wheel load). Manufacturer on request shall provide documentation of testing by an Independent Testing Laboratory

Acceptable Brands and Models:

- Ladtech
- Cretex



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Standard Sanitary Sewer Manhole Rings & Covers

(Non-Bolt Down)

Description:

- Sanitary Sewer manhole standard ring and lid
- 24" Lid and ring for replacement on existing manholes. 30" Lid and ring for all new construction
- Must have a manhole inflow stopper insert

Acceptable Brands and Models:

- Bass & Hayes 24"-300-24; 30"- VRM-30
- EJ



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24" Bass & Hayes up, 30" Bass & Hayes lower



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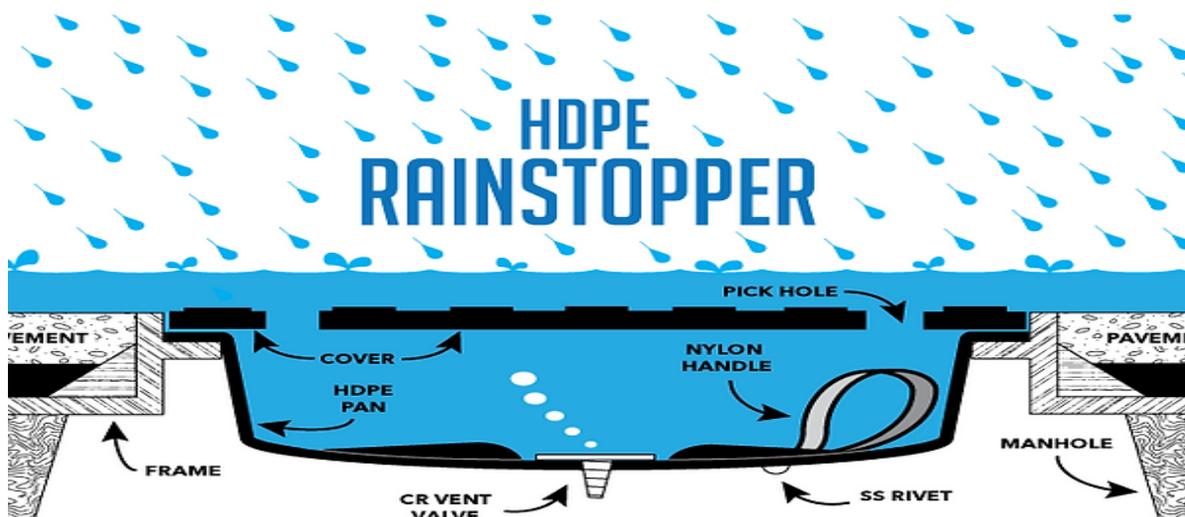
Manhole Inflow Stoppers

Description:

- HDPE manhole insert pan
- 1" wide woven polypropylene lift strap
- Ventilation for sewer gas
- For use in conjunction with Standard Manholes

Acceptable Brands and Models:

- No Flow In Flow
- Rainstopper



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Standard Sanitary Sewer Field Cleanout

Description:

- Standard cast iron cleanout boot for wye-type cleanout. Boot and Lid.

Acceptable Brands and Models:

- Bass & Hayes: 339



BH339



BH339

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Sanitary Sewer Pipes

Description:

- SDR35 sewer pipe for non-pressure gravity mains
- Green in color
- Gasketed bell



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Sanitary Sewer Fittings & Adaptors

Description:

- Assorted bends and fittings for SDR35 PVC sewer pipe
- Rubber adaptors must have stainless steel shear ring and clamp bands connecting laterals
- Couplings must have stainless steel shear ring and clamp bands
- No Glue fittings
- No 90-degree bends

Accepted Brands and Models:

- IPEX: all SDR35 gasketed fittings
- Fernco: Fernco Strong Back RC 5000 Series
- Romac: Transition Clamp



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Two Way Clean Out Caps For Private Lateral Lines

Description:

- Steel cleanout covers with O-ring gasket and stainless steel hex head bolts.

Acceptable Brands and Models:

- Bass and Hayes: BH-404 clean out body and lid (all applications)
- SR (Stan Roberts & Associates): CIG-1504 cast iron lid/plastic body hybrid (**DIRT ONLY**)

BH 404 Lid Sanitary Sewer Lateral



Cast iron replacement lid for the BH 404® lateral cleanout. Complete unit & replacement parts all stock items. H-20 traffic rated when used with a genuine BH 404® lateral cleanout body that is properly installed in reinforced concrete. Uncoated cast gray iron. ASTM A48 CL30 or better. AASHTO M306. Other lettering, special lettering & LOGOs may be available. Made In USA. LEED® certifications available on request.



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Sanitary Sewer Taps

Description:

- Adaptors to tie in new service or repair service taps.

Acceptable Brands and Models:

- Romac: Style CB, Style BP
- Fernco: Flexible tap saddle



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Curb Inlet Manholes

Description:

- For use with curb inlets
- Coated cast gray iron, ASTM A48 CL35B or better, AASHTO M306-10 (M105)
- 24" diameter, 4" tall
- Locking lid
- Must say "Storm Drain"

Acceptable Brands and Models:

- Bass and Hayes: 226L Inlet Ring, 226L Bass Storm Drain, 226L Storm Drain



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Curb Drains

Description:

- For use in repairing existing and new stormwater curb drains.

Acceptable Brands and Models:

- Bass & Hayes: 7262 T Storm Curb Throat
- EJ: EJ 00726253



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Other Supplies

Resilient Wedge Large Gate Valves (14" or larger. Mueller or Clow unless otherwise approved by Public Works Superintendent)	
14" Gate Valve Vertical Series 2500 RW FLG X FLG	18" Gate Valve Vertical Series 2500 RW MJ X MJ with 3" Bypass
14" Gate Valve Vertical Series 2500 RW MJ X FLG	18" Gate Valve Horizontal Series 2500 RW FLG X FLG with No Bypass
14" Gate Valve Vertical Series 2500 RW MJ X MJ	18" Gate Valve Horizontal Series 2500 RW MJ X FLG with No Bypass
16" Gate Valve Vertical Series 2500 RW FLG X FLG with No Bypass	18" Gate Valve Horizontal Series 2500 RW MJ X MJ with No Bypass
16" Gate Valve Vertical Series 2500 RW MJ X FLG with No Bypass	18" Gate Valve Horizontal Series 2500 RW FLG X FLG with 3" Bypass
16" Gate Valve Vertical Series 2500 RW MJ X MJ with No Bypass	18" Gate Valve Horizontal Series 2500 RW MJ X FLG with 3" Bypass
16" Gate Valve Vertical Series 2500 RW FLG X FLG with 3" Bypass	18" Gate Valve Horizontal Series 2500 RW MJ X MJ with 3" Bypass
16" Gate Valve Vertical Series 2500 RW MJ X FLG with 3" Bypass	20" Gate Valve Vertical Series 2500 RW FLG X FLG with No Bypass, Non-Geared
16" Gate Valve Vertical Series 2500 RW MJ X MJ with 3" Bypass	20" Gate Valve Vertical Series 2500 RW MJ X FLG with No Bypass, Non-Geared
16" Gate Valve Horizontal Series 2500 RW FLG X FLG with No Bypass	20" Gate Valve Vertical Series 2500 RW MJ X MJ with No Bypass, Non-Geared
16" Gate Valve Horizontal Series 2500 RW MJ X FLG with No Bypass	20" Gate Valve Vertical Series 2500 RW FLG X FLG with No Bypass, Geared
16" Gate Valve Horizontal Series 2500 RW MJ X MJ with No Bypass	20" Gate Valve Vertical Series 2500 RW MJ X FLG with No Bypass, Geared
16" Gate Valve Horizontal Series 2500 RW FLG X FLG with 3" Bypass	20" Gate Valve Vertical Series 2500 RW MJ X MJ with No Bypass, Geared
16" Gate Valve Horizontal Series 2500 RW MJ X FLG with 3" Bypass	20" Gate Valve Vertical Series 2500 RW FLG X FLG with 3" Bypass, Non-Geared
16" Gate Valve Horizontal Series 2500 RW MJ X MJ with 3" Bypass	20" Gate Valve Vertical Series 2500 RW MJ X FLG with 3" Bypass, Non-Geared
18" Gate Valve Vertical Series 2500 RW FLG X FLG with No Bypass	20" Gate Valve Vertical Series 2500 RW MJ X MJ with 3" Bypass, Non-Geared
18" Gate Valve Vertical Series 2500 RW MJ X FLG with No Bypass	20" Gate Valve Vertical Series 2500 RW FLG X FLG with 3" Bypass, Geared
18" Gate Valve Vertical Series 2500 RW MJ X MJ with No Bypass	20" Gate Valve Vertical Series 2500 RW MJ X FLG with 3" Bypass, Geared
18" Gate Valve Vertical Series 2500 RW FLG X FLG with 3" Bypass	20" Gate Valve Vertical Series 2500 RW MJ X MJ with 3" Bypass, Geared
18" Gate Valve Vertical Series 2500 RW MJ X FLG with 3" Bypass	20" Gate Valve Horizontal Series 2500 RW FLG X FLG with No Bypass, Non-Geared

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Resilient Wedge Large Gate Valves	
<i>(14" or larger. Mueller or Clow unless otherwise approved by Public Works Superintendent)</i>	
20" Gate Valve Horizontal Series 2500 RW MJ X FLG with No Bypass, Non-Geared	24" Gate Valve Vertical Series 2500 RW FLG X FLG with 3" Bypass, Geared
20" Gate Valve Horizontal Series 2500 RW MJ X MJ with No Bypass, Non-Geared	24" Gate Valve Vertical Series 2500 RW MJ X FLG with 3" Bypass, Geared
20" Gate Valve Horizontal Series 2500 RW FLG X FLG with No Bypass, Geared	24" Gate Valve Vertical Series 2500 RW MJ X MJ with 3" Bypass, Geared
20" Gate Valve Horizontal Series 2500 RW MJ X FLG with No Bypass, Geared	24" Gate Valve Horizontal Series 2500 RW FLG X FLG with No Bypass, Non-Geared
20" Gate Valve Horizontal Series 2500 RW MJ X MJ with No Bypass, Geared	24" Gate Valve Horizontal Series 2500 RW MJ X FLG with No Bypass, Non-Geared
20" Gate Valve Horizontal Series 2500 RW FLG X FLG with 3" Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 RW MJ X MJ with No Bypass, Non-Geared
20" Gate Valve Horizontal Series 2500 RW MJ X FLG with 3" Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 RW FLG X FLG with No Bypass, Geared
20" Gate Valve Horizontal Series 2500 RW MJ X MJ with 3" Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 RW MJ X FLG with No Bypass, Geared
20" Gate Valve Horizontal Series 2500 RW FLG X FLG with 3" Bypass, Geared	24" Gate Valve Horizontal Series 2500 RW MJ X MJ with No Bypass, Geared
20" Gate Valve Horizontal Series 2500 RW MJ X FLG with 3" Bypass, Geared	24" Gate Valve Horizontal Series 2500 RW FLG X FLG with 3" Bypass, Non-Geared
20" Gate Valve Horizontal Series 2500 RW MJ X MJ with 3" Bypass, Geared	24" Gate Valve Horizontal Series 2500 RW MJ X FLG with 3" Bypass, Non-Geared
24" Gate Valve Vertical Series 2500 RW FLG X FLG with No Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 RW MJ X MJ with 3" Bypass, Non-Geared
24" Gate Valve Vertical Series 2500 RW MJ X FLG with No Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 RW FLG X FLG with 3" Bypass, Geared
24" Gate Valve Vertical Series 2500 RW MJ X MJ with No Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 RW MJ X FLG with 3" Bypass, Geared
24" Gate Valve Vertical Series 2500 RW FLG X FLG with No Bypass, Geared	24" Gate Valve Horizontal Series 2500 RW MJ X MJ with 3" Bypass, Geared
Double Disc Large Valves	
<i>(20" or larger. Mueller or Clow unless otherwise approved by Public Works Superintendent)</i>	
20" Gate Valve Vertical Series 2500 DD FLG X FLG No Bypass, Non-Geared	20" Gate Valve Horizontal Series 2500 DD MJ X FLG No Bypass, Geared
20" Gate Valve Vertical Series 2500 DD MJ X FLG No Bypass, Non-Geared	20" Gate Valve Horizontal Series 2500 DD MJ X MJ No Bypass, Geared
20" Gate Valve Vertical Series 2500 DD MJ X MJ No Bypass, Non-Geared	20" Gate Valve Horizontal Series 2500 DD FLG X FLG with 3" Bypass, Non-Geared
20" Gate Valve Vertical Series 2500 DD FLG X FLG No Bypass, Geared	20" Gate Valve Horizontal Series 2500 DD MJ X FLG with 3" Bypass, Non-Geared
20" Gate Valve Vertical Series 2500 DD MJ X FLG No Bypass, Geared	20" Gate Valve Horizontal Series 2500 DD MJ X MJ with 3" Bypass, Non-Geared

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20" Gate Valve Vertical Series 2500 DD MJ X MJ No Bypass, Geared	20" Gate Valve Horizontal Series 2500 DD FLG X FLG with 3" Bypass, Geared
20" Gate Valve Vertical Series 2500 DD FLG X FLG with 3" Bypass, Non-Geared	20" Gate Valve Horizontal Series 2500 DD MJ X FLG with 3" Bypass, Geared
20" Gate Valve Vertical Series 2500 DD MJ X FLG with 3" Bypass, Non-Geared	20" Gate Valve Horizontal Series 2500 DD MJ X MJ with 3" Bypass, Geared
20" Gate Valve Vertical Series 2500 DD MJ X MJ with 3" Bypass, Non-Geared	24" Gate Valve Vertical Series 2500 DD FLG X FLG No Bypass, Non-Geared
20" Gate Valve Vertical Series 2500 DD FLG X FLG with 3" Bypass, Geared	24" Gate Valve Vertical Series 2500 DD MJ X FLG No Bypass, Non-Geared
20" Gate Valve Vertical Series 2500 DD MJ X FLG with 3" Bypass, Geared	24" Gate Valve Vertical Series 2500 DD MJ X MJ No Bypass, Non-Geared
20" Gate Valve Vertical Series 2500 DD MJ X MJ with 3" Bypass, Geared	24" Gate Valve Vertical Series 2500 DD FLG X FLG No Bypass, Geared
20" Gate Valve Horizontal Series 2500 DD FLG X FLG No Bypass, Non-Geared	24" Gate Valve Vertical Series 2500 DD MJ X FLG No Bypass, Geared
20" Gate Valve Horizontal Series 2500 DD MJ X FLG No Bypass, Non-Geared	24" Gate Valve Vertical Series 2500 DD MJ X MJ No Bypass, Geared
20" Gate Valve Horizontal Series 2500 DD MJ X MJ No Bypass, Non-Geared	24" Gate Valve Vertical Series 2500 DD FLG X FLG with 3" Bypass, Non-Geared
20" Gate Valve Horizontal Series 2500 DD FLG X FLG No Bypass, Geared	24" Gate Valve Vertical Series 2500 DD MJ X FLG with 3" Bypass, Non-Geared
24" Gate Valve Vertical Series 2500 DD MJ X MJ with 3" Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 DD MJ X MJ No Bypass, Geared
24" Gate Valve Vertical Series 2500 DD FLG X FLG with 3" Bypass, Geared	24" Gate Valve Horizontal Series 2500 DD FLG X FLG with 3" Bypass, Non-Geared
24" Gate Valve Vertical Series 2500 DD MJ X FLG with 3" Bypass, Geared	24" Gate Valve Horizontal Series 2500 DD MJ X FLG with 3" Bypass, Non-Geared
24" Gate Valve Vertical Series 2500 DD MJ X MJ with 3" Bypass, Geared	24" Gate Valve Horizontal Series 2500 DD MJ X MJ with 3" Bypass, Non-Geared
24" Gate Valve Horizontal Series 2500 DD FLG X FLG No Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 DD FLG X FLG with 3" Bypass, Geared
24" Gate Valve Horizontal Series 2500 DD MJ X FLG No Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 DD MJ X FLG with 3" Bypass, Geared
24" Gate Valve Horizontal Series 2500 DD MJ X MJ No Bypass, Non-Geared	24" Gate Valve Horizontal Series 2500 DD MJ X MJ with 3" Bypass, Geared
24" Gate Valve Horizontal Series 2500 DD FLG X FLG No Bypass, Geared	
24" Gate Valve Horizontal Series 2500 DD MJ X FLG No Bypass, Geared	