

## Common Water Works Industry Terminology

**Asbestos-Cement Pipe** - Pipe manufactured using a combination asbestos fibers and cement. Asbestos-cement (AC) pipe was used extensively in the mid-1900s in potable water distribution systems, particularly in the western United States. It should be noted that asbestos-cement pipe generally has an outside diameter that is larger than other pipe of the same nominal size. Over time, AC pipe undergoes gradual degradation in the form of corrosion (i.e., internal calcium leaching due to conveyed water and/or external leaching due to groundwater). Such leaching leads to reduction in effective cross-section, which results in pipe softening and loss of mechanical strength. AKA Transite.

**Adapter Flange** - Used to adapt a plain-end pipe to a product that has a flange on it, such as valves, pumps and meters. It is ideal for projects that involve retrofitting or renovation of existing piping systems. Also known as: flange adapter.

**Anchor Studs** - Partially threaded metal rods that anchor a coupling to pipe. Anchor studs are a common method used to restrain axial pipe movement in couplings.

**Arch Base Pattern Curb Box** - A tubular cast iron and steel device that provides access for operation of a curb stop. For use with Curb Stops in sizes 1 inch and smaller.

**Ball Valve** - Any valve that utilizes a ball to control water flow. Ball valves are ideal for use in water service lines because of their tightness in both directions at all pressures. They are easy turning, nonbinding, and offer minimum pressure loss. Ball valves are best operated fully open or fully closed. There are straight and angle ball valves.

**Ball Meter Valve** - Any meter valve that utilizes a ball to control water flow. A ball meter valve has a swivel meter nut or meter flange for connection to meters. Ball meter valves are made in straight and angle configurations and are available with inlet connections for a variety of service line materials.

**Ball Service Valve** - Any service valve that utilizes a ball to control water flow. Ball valves offer many advantages when used in a 3/4" service line. Smooth, tapered water passages result in excellent flow characteristics.

**Bell Joint Leak Clamp** - Consists of two split ductile iron or steel rings that can be assembled around an existing water main bell joint. Connecting rods are tightened causing the ductile iron rings to compress a rubber gasket over a bell and spigot joint thus stopping the leak. Also known as: bell joint clamp.

**BH Valve** - A 5/8" valve that utilizes a ball to control water flow. Designed for use as a curb stop, the BH valve is strong and rugged valve offering a fine replacement for inverted key and plug style valves.

**Bolted Coupling** - A device consisting of a cast iron or fabricated steel center sleeve, two end rings, rubber gaskets and hardware designed for joining water main pipe. Also known as: Dressers, Joiners and Pipe Connectors.

**Branch (of a pipe line)** - An added on main or service. Any part of a piping system that stems from a water main.

**Branch Assembly** - Converts one service line into two-meter settings. There are branch assemblies that incorporate ball valve and key valves.

Bushing (of a pipe fitting) - A fitting that is attached by means of internal and external threads to a pipe or fitting to increase or reduce its size.

**Calibrated Testing Tanks** - Water tanks specifically designed and carefully manufactured to provide an accurate volume against which meter registration is compared in testing.

Cartridge Style Dual Check Valve - A valve constructed with two discs which open in the direction of the desired flow and close if and when water flow reverses. Cartridge dual check valves can be added as integral parts of coppersetters, pit setters or iron yokes.

Cast Coupling - Made up of ductile iron center sleeve and end rings, rubber gaskets and fasteners. Cast couplings are used to repair split pipe, to couple different types of pipe, to install (cut-in) hydrants and valves, and to connect misaligned pipe. Other terms for cast couplings are: repair couplings and dressers.

Cast Iron Pipe - Water main pressure pipe manufactured from grey iron. No longer manufactured in North America.

Check Valve - A valve designed to allow water flow in the direction only. If the water flow changes direction the check valve closes, stopping the reverse flow of water.

Closed Cell Insulating Disc - Insulating discs are made of a dense foam rubber and provide extra protection against meter freeze-up. Insulating discs are inserted into a meter pit to a position just above the meter. Warm air rising from the bottom of the pit is trapped by the insulating disc and prevents the meter from freezing. The close cell material resists moisture absorption.

Copper Tube - Copper tubing is widely used as a service line and the outside diameter is closely held by manufacturers. The outside diameter of copper tubing has become a standard in the industry and is known as "copper tube size." Also known as CTS (Pack Joint coded CTS).

C900 Pipe - This PVC (polyvinyl chloride) pipe is the same diameter as ductile iron pipe. C900 is manufactured with the following pressure ratings (PR); DR 14 PR 305 psi, DR 18 is PR 235 psi and DR 25 is PR 160 psi.

Compression Fitting - A fitting or coupling that provides a water tight seal by means of a compressed rubber gaskets against the pipe or tubing.

Compression Valve - Any valve that utilizes mechanical pressure applied by means of a screw-like device to control water flow. These are often placed at the yoke outlet as customer service valves.

Coppersetter - Complete meter setting device manufactured from copper tubing and waterworks brass components for new meter installations. Coppersetters place meters from 3" to 36" or more above the service line. They are made in several types, for connection into new or existing service lines. Also known as: meter caddies, meter setters, meter yokes, risers.

Corporation Stop - A valve placed at the water main which is used as a shut off valve for the service line. This valve is typically only used during the tap of the water main. Corporation Valves are also known as: bull heads, corp cocks, corp stops, corporation valves, farrels, feeder Valve, Furrows, Key Corp Cut Offs, Main Cocks, Plugs, Service Connections, Service Stops and Tappers.

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**Coupling** - A fitting used to connect pipes. Pipes can be of different sizes and types.

**Crescent Box** - Made of cast iron and consists of a base section, an upper and lower barrel section and a lid. These are installed in the service line as a unit. The meter can be inserted either during or after installation. These boxes come equipped with straight inlet and outlet connections only. Height of a Crescent Box can be adjusted in the field by screwing the upper barrel section up or down.

**Cross Connection** - The occurrence of a connection to a potable water distribution system causing contamination by non-potable water or other liquid material.

**Curb Box** - A tubular iron device that provides access for operation of a curb stop. Consists of a lid with a brass pentagon head plug, an adjustable upper section that facilitates a range of lengths and the curb box base. This base fits over ball valve curb stop. The lid and the base are made of cast iron and the upper sections are steel pipe. The base section increases the overall height of the curb box by 5". Curb boxes are available in an arch pattern or Minneapolis pattern.

**Curb Stop** -A valve placed between the water main and the water meter. This valve is typically placed in the yard and is used to control water service without the need to enter a customer's house. Curb Stops are also known as: curb valve, roundways, service cock, shut-offs.

**Curb Valve** - See Curb Stop.

**Cut-In Check Valve Assemblies** - Check Valves that are retrofitted on existing setters without soldering, flaring or threading.

**Cut-In Coupling** - A coupling that allows the joining of pipe where the gap between the pipe ends is smaller than the final coupling width.

**Direct Tap** - An operation that involves drilling a hole into a pipe and threading the hole to accept a corporation stop for a new service.

**Distribution System** - A network of piping through which water is distributed to the end user. Common sizes of pipe used in distribution systems are 6", 8" and 12".

**Double Gulfbox** - A cast iron meter housing that holds two 5/8" or 5/8" x 3/4" modern magnetic or multi-jet meters measuring not over 5" above center line nor more than 2-1/4" below center line. The Double Gulfbox is installed in the service line as a single unit.

**Double Lid Cover** - water meter pit cover equipped with an outer and inner lid. The inner lid provides greater frost protection for meters. Extra depth, sloping skirt, and a 411 dead air space combine to reduce heat loss.

**Dual Check Valve Coppersetter** - A waterworks brass meter setting device with an integral dual check valve. Located at the outlet of the meter, they are practical and inexpensive solutions to several potential backflow

problems. Checks are spring loaded, of brass, plastic and stainless steel construction, and have a removable top or back cap for in-line maintenance purpose.

**Ductile Iron Pipe** - O.D. controlled water main pressure pipe manufactured from 60/42/10 ductile iron. Since its introduction into the market place in 1955, ductile iron pipe is one of the most common piping materials for modern water and wastewater systems. More than four decades of field experience have proven its strength, durability, and reliability for transporting raw and potable water, sewage, slurries, and process chemicals. Ref: [www.dipra.org/ductile](http://www.dipra.org/ductile) (Ductile Iron Pipe Research Association)

**Elbow (piping)** - A pipe fitting designed to connect two pieces of pipes at a specific angle, commonly 90° or 45°. Elbows are also referred to as: "ells."

**Expansion Joint** - A fabricated steel coupling used for piping projects to allow for thermal expansion and contraction.

**Expansion Connection** - A device that utilizes mechanical pressure and gaskets for a water tight installation of a water meter. Included in every Ford meter box. Screwed onto one end of a meter, it expands by turning the handwheel to make compression joints dependably and permanently water-tight against the fixed rubber gaskets in yoke ends. Since an expansion connection is required to complete the installation the service is automatically sealed, preventing the unauthorized use of water. Also known as: Spanners, Spinners and Wheels.

**Flanged Coupling Adapter** – A ductile iron or fabricated steel coupling used to join plain end pipe to flanged fittings.

**Flanged Pipe** - Pipe that is manufactured with a flange on one or both ends. Sections of flanged pipe are joined together with bolts and nuts and a flange gasket.

**Flat Meter Box Cover** - Cast iron meter pit cover consisting of a lid and a mounting ring. Designed for shallow settings, where the insulation properties of a "hat shaped" design are not necessary. These covers offer the protection of sturdy cast iron construction at an economical price.

**Flanged Joints** - Connections, fittings and pipe sections manufactured with flanges on both ends. Such joints are used in treatment plants and pumping stations, where pipe movement must be restrained. Flanged joints have machined flange surfaces and are bolted together with a gasket positioned between them. Flanged joints are not designed to be used in underground applications as they cannot flex in the event of ground movement.

**Grip Joint** - One-step compression coupling for water service fittings and valves.

**Gulfbox** -A shallow water meter setting device made up of two iron castings - the body casting and a locking lid. Three brass items complete the unit: Inlet and outlet pieces and an expansion connection. The Gulfbox is used in moderate and warm climates. The long Gulfbox will accommodate a cartridge style dual check valve.

**Indianapolis Bench** -A water meter testing machine that utilizes hydraulic pressure to connect meters to be tested. Units or spaces for 10 or 12 meters. Also see Test Bench.

**Insert Stiffener** - Solid tubular 304 stainless steel piece used to prevent collapse of service line pipe inside compression fittings. Insert stiffeners are flanged to maintain proper position within the service line. These are commonly used with flexible wall plastic pipe and HDPE.

**Insulating Boot** - A rubber sleeve used when applications require electrical isolation of main line piping from attached couplings. The boot fits over the end of one or both of two plain end pipes to be joined and electrically insulates the pipes from each other and from the attached couplings.

**Inverted Key Valve** - Service valves that use a spring-loaded key to control water flow.

**Ductile Iron Service Saddle** - A device that fastens around water main pipe to facilitate tapping with a corporation stop and drilling machine. Iron tapping saddles are used on asbestos cement, cast or ductile iron and PVC pipe. They offer a simple yet reliable means of tapping water main pipe.

**Key Valve** - Service valve, meter valve or curb stop that utilizes a key or inverted key to control the flow of water.

**Lifter Worm Lock** - A device made of hard cast iron that applies powerful screwjack pressure to open frozen or stuck meter pit cover lids. A special key attaches itself to the forged silicon bronze pentagon bolt on the worm lock, forming a lifter handle for the lid, then automatically disengages from the lid as the cover is locked.

**Linesetter** - Economical meter setting device used to support the meter and speed meter change out in areas where shallow service line depths are possible. The short rise provided by the Linesetter helps to keep the meter out of the dirt at the bottom of the meter box, and the setter body supports the service line.

**Lok-Pak Meter Coupling** - Tapped or flanged couplings for 1-1/2" and 2" meters utilizing Pack Joint compression fittings to connect meters with copper, plastic or iron pipe. These simplify the installation of 1-1/2" and 2" water meters and facilitate changing the meter. They provide adjustability of spacing for the meter, and a measure of flexibility in the piping. Joints are dependably and permanently watertight and eliminate pipe threading and/or tube flaring.

**Long Yokebox** - Made of cast iron and used in moderate to warmer climates. It provides automatic spacing and alignment for the meter and the cartridge style dual check valve, which can be inserted at any time during or after the installation of the meter box.

**Lug-Style Restrainer** - A restraint device that has projections (lugs) that are used for connection. All FMB restraints have t-bolt or tie rod lugs.

**Mechanical Joint** - One of the most common pipe joining mechanisms. Developed in the 1920's for the gas industry. These have special bells fitted with rubber gaskets. A bolt-on gland applies pressure on a gasket to form a water tight seal. Allows joint assembly with deflection. Governed by AWWA C111.

**Meter Box Cover Key** - Key for the meter box cover that latches onto the pentagon bolt to lock and unlocks the lid.

**Meter Box Cover and Valve Key** - Key that will lock and unlock a meter box lid. After the lid has been unlocked, the key can be used to open and close the valve inside.



**Meter Coupling** - A meter coupling connects meters to iron, copper or plastic service lines, old or new. Other names for the meter coupling are: meter spud, pigtail, spud, and tailpiece.

**Meter Pit Insulating Blanket - Fill** -A piece of material made to fit into a meter pit and drape over the meter setting. Meter pit insulating blankets help to prevent meter freeze-up by trapping heat from the base of the meter pit and concentrating this heat around the meter.

**Meter Pit Setter** -A pre-manufactured water meter setting consisting of a PVC pit tile, copper risers and meter couplings or valves. Constructed of high-quality PVC pipe, the plastic pit setter has the service lines attached firmly to the pit walls, with all the valves and meter coupling materials necessary to install the meter as part of the total package. The most important job that the pit setter in northern climates does is to prevent meter and service line freeze-up during the winter months. The meter pit depth needs to be below the deepest frost penetration line.

**Meter Setter** - Also known as a loop and yoke.

**Meter Vice** - A vice to firmly hold meters from 5/8" to 1" in size and facilitates repair work.

**Minneapolis Base** - Extension type curb box for Minneapolis pattern curb stop. For use with curb stops in sizes 3/4 inch through 2 inch.

**Monitor Cover** - Cast iron meter pit cover designed for use on large tiles where a large lid opening is desired. The Monitor cover consists of a flange casting to fit on the tile, a ring which is centered in place on the flange by a circular bead, and a top lid with a lifter worm lock.

**Multiple Y Branch** - A fitting that splits a single water line into multiple services. Also known as a Christmas tree.

**Pack Joint Coupling** - A service line compression coupling that utilizes Pack Joints to provide a water tight seal. Pack Joint couplings make a tight, permanent joint on copper, plastic or iron pipe without flaring, soldering or threading. They provide adjustability for inaccuracies in pipe length and alignment.

**PB Pipe** - Pipe manufacture from polybutylene, a plastic resin widely used for water pipe from 1978 until 1995. PB pipe is usually flat gray or flat white in color. Relatively inexpensive and easy to install, PB pipe was once thought of as a good alternative for copper tubing. Polybutylene pipe used for underground water mains is usually blue, but gray or black PB pipe does exist and should not be confused with polyethylene pipe.

**Pentagon Bolt** - A bolt with a 5-sided head used to lock or unlock a meter box cover. A special key is required to lock and unlock the lid.

**PE Pipe** - Polyethylene pipe is a flexible pipe which is used in a variety of water works applications. Because PE pipe will expand and contract easily with temperature this pipe is not recommended for use with hot water. In larger sizes supplied as HDPE. Should not be used for long term service aboveground.

**Pipe Stop** - A metal surface inside a coupling that prevents pipe or tubing from sliding completely through the coupling.

**Pit Setter** - Constructed of high-quality PVC pipe, a pit setter has the service lines attached firmly to the pit walls, with all the valves and meter coupling materials necessary to install the meter as part of the total package. The most important job that a pit setter in northern climates does is to prevent meter and service line freeze-up during

the winter months. The meter pit depth needs to be below the deepest frost penetration line. Also known as; Crocks, Cans, Meter Tile and Vaults.

**Plastic Tubing** - Flexible water service tubing in what is referred to as "copper tube size."

Plastic Tube refers to any plastic with the same outside diameter as corresponding sizes of copper tube such as PET - Polyethylene tubing. Also known as CTS (Pack Joint coded CTS).

**Plastic Pipe** - Flexible water service pipe in what is referred to as "pipe size." Plastic Pipe refers to any pipe having the same inside diameter as corresponding sizes of standard iron pipe such as PEP - Polyethylene Pipe. Also known as PEP (Pack Joint coded PEP).

**Plug Valve** - See Key Valve.

**Potable water** - Water that has been determined to be free of unacceptable levels of contamination by chemicals and/or minerals, and approved for consumption.

**Protector Meter Box** - A cast iron meter box designed for installation of 1-1/2" and 2" water meters in warm climates with minimal frost problems. It provides maximum security for 1-1/2" and 2" meters. Constructed of quality cast iron, this meter box eliminates problems caused by lid or box breakage.

**Push-On Joint** - Push-on joints are constructed with a special bell and supplied with a gasket that is lubricated and inserted in the field when the pipe is about to be joined. The spigot end of the joining pipe should be beveled or it may cause damage to the gasket during installation. Once the joint is assembled a tight seal is made when the water is turned on and internal water pressure compresses the gasket against the outside of the spigot end of the pipe and the inside of the push-on fitting.

**PVC Pipe** - Polyvinyl chloride pipe is rigid plastic pipe and is used for a variety of fluids including water, gas and sewage. Typically supplied in IPS and Cast Iron OD pipe sizes. Also further processed to provide PVC – molecularly oriented PVC pipe.

**PVC Coupling Leak Clamp** - A pipe repair clamp fitted with a stepped gasket designed to seat firmly on solvent weld couplings. Attached bolts are tightened and this repairs leaking solvent welds on PVC pipe.

**Quick Joint Coupling** - A one-step compression coupling designed and manufactured for copper or for copper tube size SDR 9 Polyethylene plastic. Quick Joint couplings should be used with a solid tubular metal insert to prevent service line material collapse.

**Reducing Coupling** - An iron or fabricated steel coupling designed to connect different size water main pipes.

**Repair Clamp** - A device that consists of a stainless steel band and a gasket that is wrapped around a leaking section of pipe and secured and tightened with attached bolts. Repair clamps can be used to repair a wide variety of leaks and water utilities usually keep several different sizes on hand for the different types of pipe in their water distribution systems. Repair clamps are also referred to as: Band Aids, Crack Wraps, Handi-Bands, Repair Bands, Repair Sleeves and wrap-arounds.

**Resetter** - Complete meter setting device for existing meter installations which place meters from 3 inches to 36 inches or more above the service line. They are made in several types, for connection into new or existing service

lines. Connect between old meter couplings to raise and improve meter settings. Also known as risers and re-locators.

**Restrained Casing Spacer** - A device that provides mechanical pull-out restraint and pipe support. Restrained casing spacers offer full circumferential contact and support of the pipe wall. Supports the weight of the pipe barrel and the water it is carrying.

**Restrainer Assembly** - A device that prevents pipe movement caused by expansion and contraction, pressure surges, water hammer, and unstable ground conditions.

**Restraint Devices** - Devices that restrain pipe joints of PVC pipe in new installations. Takes the place of concrete thrust restraints.

**Retrosetter** - A copper tubing and waterworks brass device for installing check valves in existing water meter settings. Each style retrosetters designed for a specific application. The retrosetter helps to solve check valve installation problems due to existing meter setting space constraints.

**Saddle** - Used to install corporation stops on virtually all types of water main pipe including Iron, PVC, and Asbestos-Cement. Saddles are constructed of ductile iron, brass, or stainless steel and are available in all the popular sizes and for most metric-sized pipe.

**Saddle Nut** - Meter coupling nut with a supporting lip to hold the meter when it is lowered into position. Threads in the nuts are automatically lined up with the meter spuds for easy starting. Gaskets are held in place and prevented from dropping while the nuts are started.

**SDR** - The Standard Dimensional Ratio is used to calculate the wall thickness. Example: SDR-18, 8" pipe has an outer diameter of 8.63 inches.  $SDR-18 \times 8.63" = 155.34$  has a wall thickness of  $8.63 / 18 = .48$  inches

**Service Line** - The pipe or tubing that connects a water main to the end user. Also called a "water service."

**Single Check Valve** -A valve which has been design to allow water to flow in one direction and to automatically close if the water flow reverses. This is used where an approved backflow preventer is not desired or required. A single check valve provides deterrence against hot water backflow from a water heater, which could damage the working parts of a water meter. They also keep water from the house plumbing from flowing into a meter pit or onto a basement floor when a meter is removed from service. Can be an integral part of a coppersetter, customsetter, or iron yoke.

**Single Lid Cover** - Water meter pit cover with one lid. Inset lids enhance lid stability and allow flush installations with the surface of the sidewalk or lawn.

**Snap Clamp** - Small repair clamp designed to repair pinholes and other small leaks that do not require a full gasket seal.

**Spigot (of pipe)** - The plain end of pipe which is inserted into the pipe bell end for a water tight seal.

**Standard Test Bench** -A water meter testing machine that utilizes mechanical pressure to connect meters to be tested. These benches are available for holding from one to eight meters. Also see Test Bench.



Steel Expansion Joint - Fabricated steel coupling used for piping projects to allow for thermal expansion and contraction.

Steel Flanged Coupling Adapter - Fabricated steel coupling used to join plain end pipe to flanged fittings, such as meters or valves.

Steel Weld-on Tapping Sleeve - Fabricated steel tapping sleeve designed for field welding to steel pipe.

**Tandem Coppersetter** - A copper tubing and waterworks brass device designed to accommodate a water meter and a pressure regulator. Designed to solve problems resulting from above-normal water pressure. It holds a pressure regulator just ahead of the water meter.

Tap Location - The suggested location for a tap on a main, usually at an angle of about 45° from the top of the main.

Tapping Sleeve - A two or three-part fitting manufactured to fit on existing water main of specified size and designed for connection of a tapping machine. A tapping sleeve makes it possible to tap a main while it is under pressure or "hot".

Tee Connection - A "T" shaped fitting used to make a 90° branch off of a water main.

Test Bench - A machine designed to test water meters. It checks the registration of the meter against the actual volume of water passing through the meter, as measured in an accurate volumetric tank or weighed on accurate scales.

Test Valve - A valve that allows checking meter operation, relieve pressure, or drain lines on yokes.

Tester Clamp - A device that adapts any Standard Bench or 1" Indianapolis Bench to test 1-1/4", 1-1/2" and 2" meters at minimum and intermediate flow tests.

Testrate Indicator - A special Rotameter designed for use in water meter testing. It consists of a tapered, calibrated clear glass tube in which a stainless steel rotor is free to move up and down on a stainless steel guide in the center of the tube.

Transition Coupling - A pipe coupling made of iron provides a convenient method of joining two pipes of the same nominal size but with different O.D.s.

**U-Branch Assembly** - Converts one service line into two meter settings. Also known as a bullhead.

**Wedge Action Retainer Gland** - Restraining gland that incorporates a number of individually activated wedges located around the circumference of the pipe. When the wedge-activating screws are tightened, the teeth on the bottom of each wedge lock onto the pipe surface. If external forces cause the pipe to move, the wedge teeth remain locked on the pipe and the wedge moves against the activating screw.

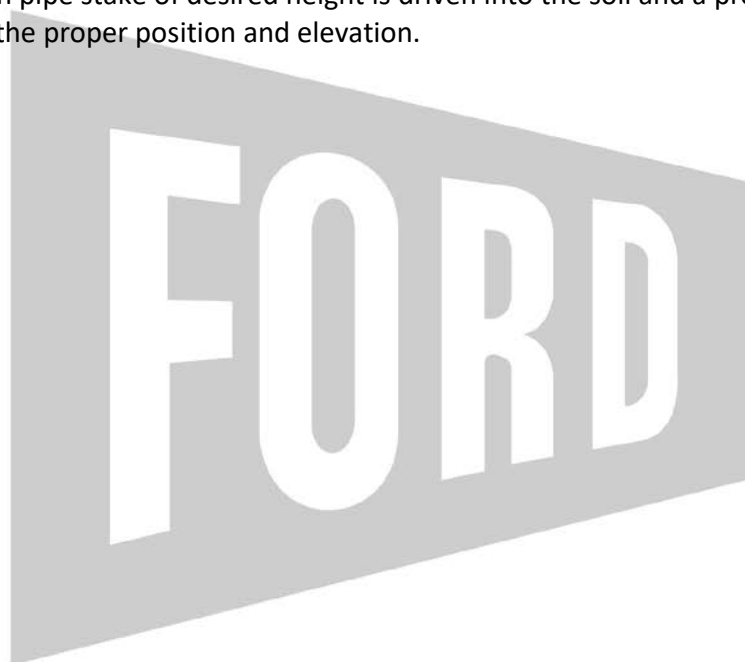
Wrap Clamp - Small repair clamp that repairs pinholes and other small leaks like the Snap Clamps only with the assurance of 360° gasket coverage.

**Yoke** -A metal device manufactured to provide a convenient and durable setting for water meters and make meter change-out easier. The iron yoke becomes a permanent part of the piping structure, holding the inlet and outlet pipes braced and correctly spaced.

**Yoke Bar** - An iron bar with inlet and outlet valves or connections attached for setting a water meter. Also known as iron cradles, meter sticks.

**Yokebox** -A compact meter setting device for moderate and warm climates made out of cast iron. Complete, compact meter-setting packages, which are installed as a unit are made in three depths with dimensions of 5", 8", or 10" from ground surface to the center line of the meter. The base keeps out dirt, mud, and pests, resulting in a cleaner meter. Holes in the base provide drainage.

**Yoke Piece Support Prongs** - When a riser Yoke is connected to a plastic pipe or tubing service line, support of the Yoke is necessary. A 3/4" iron pipe stake of desired height is driven into the soil and a prong on the Yoke is inserted to hold the meter setting in the proper position and elevation.



# FORD METER BOX