

SECTION 9

AMERICAN Restrained Joint Pipe





AMERICAN Fast-Grip® Gasket

Assembly Instructions

Assembling pipe and fitting joints using Fast-Grip gaskets is simple. It is very similar to the assembly of Fastite joints shown in Section 2. Fast-Grip gaskets may be used in lieu of standard Fastite gaskets in the bells of Fastite and Flex-Ring joint pipe and fittings where easy, field-adaptable restraint is desired.



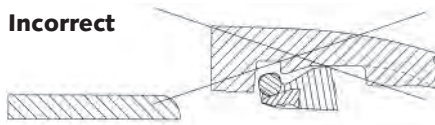
1. Cleaning of Socket and Spigot

Clean the socket and plain end thoroughly, removing any mud, sand, gravel, ice, frozen material, or other matter that could prevent a proper joint seal. Material in the gasket grooves may cause the gasket to protrude into the path of the entering spigot. Therefore, **it is important that all joint recesses be kept clean during insertion of the gasket and assembly of the joint to prevent gasket dislodgment and/or subsequent leakage.**

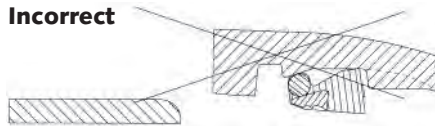
cold weather conditions, gaskets should be warmed before installing. (One way to keep gaskets warm is to keep them in a truck or heated vehicle cab until they are ready to be used.)



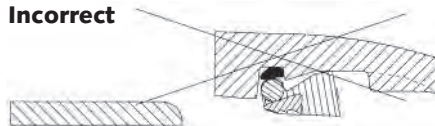
Incorrect



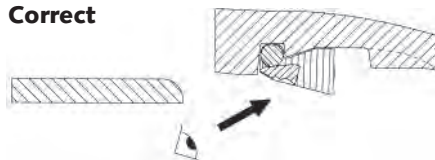
Incorrect



Incorrect



Correct



2. Placement of Gasket

Wipe the gasket clean. After flexing one or more "loops" in the gasket, insert the gasket in the gasket recess of the socket with the large sealing end of the gasket toward the rear of the socket. The center of the gasket loops should be positioned between tooth locations. Press the gasket into the mating socket recesses, so the metal-carrying retainer end of the gasket is seated completely and uniformly in the socket groove. **Take care that no gasket loops or bulges protrude into the path of the entering pipe spigot.** In extremely

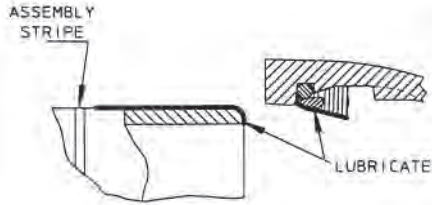




AMERICAN Fast-Grip® Gasket

Assembly Instructions—Continued

deflected position.



3. Lubrication of the Joint

With a clean brush, apply a liberal amount of regular Fastite lubricant completely **over the end of the pipe, the spigot radius, and the outer surface of the pipe up to the assembly stripe.** Also apply lubricant completely over the exposed inner surface of the gasket. AMERICAN supplies an extra 10% of lubricant to be used with the Fast-Grip joints to ensure ease of assembly. **Use only lubricant provided by AMERICAN.** For underwater conditions, special AMERICAN underwater lubricant is recommended and is available upon request.

4. Initial Placement of Bevel End Into Socket

The spigot end of the pipe should be in reasonably straight alignment before it is placed into the socket. Center the spigot in the gasket so it makes firm and even contact with the inner surface of the gasket. Do not place pipe spigot in socket while in a substantially



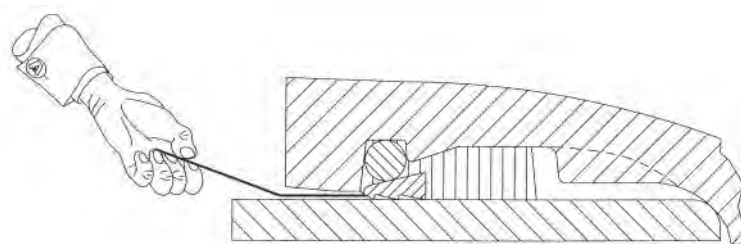
5. Complete Assembly of Plain End Into Socket

For 4"-18" sizes, simply push the bevel end into the bell until it contacts the rear of the socket. Desired joint deflection may then be set.



If the joint is to be deflected less than 2 1/4° for 20", 1 3/4° for 24", and 1° for 30", simply push the pipe spigot until it contacts the back of the socket and deflect. If the joint is to be deflected greater than these amounts, push the pipe spigot into the bell (while in straight alignment) only until the leading edge of the factory-applied yellow assembly stripe is even with the face of the bell. The desired deflection up to the maximum may then be set.

Abnormal joint assembly loads or behavior, such as unexplained exposure of the assembly stripe outside the bell, may indicate improper cleaning, gasket insertion, spigot placement, or lubrication. In any joint assembly, **a thin feeler gauge passed between the bell and spigot all around the assembled joint can be used to confirm correct gasket placement.** (See figure below.) Any joint with apparent problems should be disassembled and corrected before filling and testing the pipeline. (See Disassembly Instructions.)





AMERICAN Fast-Grip® Gasket

Assembly Instructions—Continued

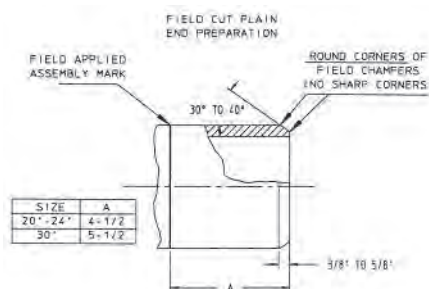
Field-Cut Pipe

When pipe is cut in the field, the cut end must be properly prepared prior to assembly. In 18" and larger sizes, the ordering and use of a few select pipes that have been "gauged full length" at the factory should be considered when field cuts are anticipated.

Using a portable grinder or other suitable device, place an approximately 3/8" - to 5/8"-long smooth assembly chamfer or bevel on the outside end of the pipe. This bevel should make an angle of 30-40° with the axis of the pipe. Care should be taken to ensure that all corners are rounded and no sharp edges remain that might damage or dislodge the gasket.

If deflection greater than 2 1/4°, 1 3/4°, and 1° is required for 20", 24", and 30", respectively, place an

assembly mark on the spigot as shown. The spigot should be inserted into the bell during assembly only until the mark becomes even with the bell face. Spigot insertion to the field-applied assembly mark will result in a space between the spigot and the back of the socket.



Allowable Joint Deflection for 4"-30" Fastite† Ductile Iron Pipe with Fast-Grip Gaskets



Size In.	Nominal Laying Length ft.	Maximum Recommended Deflection	
		X Offset per 20' Length (in.)	Y Deflection Angle
4	18	19	5°
6	20	21	5°
8	20	21	5°
10	20	21	5°
12	20	21	5°
14	20	17	4°
16	20	12	3°
18	20	12	3°
20*	20	12	3°
24*	20	12	3°
30*	20	10	2 1/2°

† Allowable deflection for Flex-Ring sockets with Fast-Grip gaskets is the same as above for Fastite.

* Allowable deflection for 20", 24", and 30" Fastite AWWA C110 fitting joints with Fast-Grip gaskets 2 1/4°, 1 3/4°, and 1°, respectively.

Assembly of Fittings

Pipe and fittings joints can be easily assembled with current tools and methods used for many years in the assembly of Fastite joints. A line of "assembly yokes" and associated rigging for 4"-16" sizes are

available that allow easy assembly of fitting configurations, such as 90° bends, etc. Field rigging for larger-sized fitting assemblies can normally be accomplished with common grab chains, wire rope choker cables, etc. as per photographs in Section 4.



AMERICAN Fast-Grip® Gasket

Assembly Instructions—Continued

*Fast-Grip gasketed joints requiring a particular orientation (such as with bends) should be assembled in the intended service position. In some instances, this may be accomplished more easily by first assembling the bend on a pipe above the trench. The jointed bend and pipe may then be lowered (orienting as required) and assembled into place. **Relative rotation of joint members to one another after assembly is not recommended as it could cause damage or leakage.***

See Push-On Fittings Assembly Instructions in Section 4.



Disassembly Instructions

Fast-Grip gasket joints may normally be disassembled if required. Disassembly kits, consisting of a steel shim holder and special high-strength steel disassembly shims, are required for this operation and are available from AMERICAN. For easier disassembly of a joint that has been subjected to separating thrust or movement, first push the spigot back into the rear of the socket to “unwedge” the teeth.



Using gloves to protect hands from sharp edges, insert a shim fully into the groove in the shim holder.

Starting at the bottom of the joint, carefully drive the disassembly shim past the gasket between the outside of the spigot and the gasket by striking the holder with a hammer. Remove the holder from the shim, and progressively place other shims in this manner all around the joint.

Shims should be in contact with one another to ensure all teeth are disengaged from the spigot. Overlapping of some shims may be required to dislodge all teeth. After all shims are in place, pull or jack the spigot



out of the socket. Very tight joints may have to be separated by cutting pipe. The reuse of Fast-Grip gaskets after disassembly is not advised.

Joint Extension After Installation

The Fast-Grip gasket locking mechanism is activated by relative movement between the spigot and socket. The joint thus allows for movement, joint take-up, and substantial flexibility after installation. Joints may be extended after assembly to minimize joint take-up in test or service and for further assurance of correct joint locking. This may be accomplished by pulling or jacking the spigot away from the socket until firm resistance is encountered. This will not prevent proper joint deflection. In vertical applications such as exposed risers, standard (weld bead) Flex-Ring joints that also should be effectively extended and braced in original installation are recommended instead of Fast-Grip gaskets.



In most underground installations, including most restrained bend locations, joint take-up is advantageous in that increased thrust-resisting soil forces are generated. Also, expansion and contraction due to temperature variations may be accommodated without excessive stress in the pipe members. The amount of joint take-up or line movement in buried restrained pipelines is substantially limited by the surrounding soil. Therefore, system security and safety is maximized by filling and testing restrained sections of pipelines after backfilling.

In any application where axial movement may be undesirable, such as certain bridge crossings, certain other exposed piping applications, or certain connections of restrained pipe sections at angles to rigid piping, special provisions, including effective joint extension, may be necessary to control unacceptable pipeline movement. Depending on job conditions and restrained pipe length, cumulative joint take-up can be substantial, particularly in exposed or unburied piping applications.