

SECTION S905 - CUTTING-IN VALVE WITH VALVE BOX AND SLEEVE

S905-1 DESCRIPTION

Work consists of installation of cutting-in valve with valve box and sleeve(s) in existing water pipe, as required in Contract Documents and as directed by Project Manager.

Work and materials are to be in conformance with requirements of Section S900 General Water Provisions and S901 Water Main Pipe and Fittings.

S905-2 MATERIALS

S905-2.01 Cutting-In Valve

Cutting-in valve is to be resilient seat gate valve in conformance with requirements of Section S903 Resilient Seat Gate Valve with Valve Box, and is to include all hardware, glands and gaskets.

Cutting-in valve installed with cutting-in sleeve may require joints that are manufactured to fit over-sized cast iron water pipe.

S905-2.02 Cutting-In Valve - Furnished

Cutting-in valve complete with valve box, sleeve(s) and restraining device will be as furnished by Bureau of Water Materials and Equipment Section. Contractor is to pick-up complete cutting-in valve unit from Bureau of Water Materials and Equipment Section, 401 Dewey Avenue, Rochester, New York, (585) 428-7514. Bureau of Water Materials and Equipment Section requires a minimum of 2 working days advance notice to make arrangements for pick-up of complete cutting-in valve unit.

S905-2.03 Reuse Existing Resilient Seat Gate Valve

Existing resilient seat gate valve shall be reused only if it is in proper working order. Contractor shall supply all new hardware including bonnet bolts and nuts, valve boxes, gaskets, glands and gland hardware. All appurtenances shall be in conformance with the requirements of Section S903 Resilient Seat Gate Valve with Valve Box.

S905-2.04 Valve Box

Valve box is to be in conformance with requirements of Section S909 Water Valve Box.

S905-2.05 Sleeve - General

Sleeve is to be capable of being connected to either cast/ductile iron, PVC or HDPE water pipe.

For water pipe 12 inch in diameter and smaller, use cutting-in or solid sleeves.

For water pipe 16 inch and 20 inch in diameter, use solid sleeves.

For water pipe 24 inch and larger in diameter, use bolted sleeve type steel couplings.

S905-2.06 Cutting-In Sleeve

Cutting-in sleeve is to be made of ductile iron in conformance with requirements of AWWA C110, or approved equivalent, and is to include all hardware, glands and gaskets. One end of cutting-in sleeve is to be standard size plain end for mechanical joint pipe, other end is to be mechanical joint.

Glands equipped with set screws will not be acceptable as restraining mechanism.

S905-2.07 Solid Sleeve

Solid sleeve is to be standard or dual purpose ductile iron solid sleeve and is to include all hardware, glands and gaskets.

S905-2.08 Couplings

Bolted sleeve type steel couplings shall be in accordance with ANSI/AWWA C219, are to be capable of being connected to cast iron, ductile iron, PVC/PVCO or HDPE water pipe and shall be furnished with an epoxy coating, gaskets and fluorocarbon coated, cold formed, high strength low-alloy steel nuts and bolts.

Prior to backfilling, any uncoated hardware shall receive a brushed application of an approved bitumastic coating specifically manufactured for underground use or a petrolatum wax tape coating system.

S905-2.09 Water Pipe

Water pipe is to be in conformance with requirements of Section S901 Water Main Pipe and Fittings.

S905-3 CONSTRUCTION DETAILS

S905-3.01 General

Contractor is responsible to obtain actual outside diameter of existing water pipe to be cut for proper sizing of cutting-in sleeve(s).

Cutting-in valve, valve box, sleeve(s) and restraining device are to be installed in conformance with manufacturer's instructions and as approved by Project Manager.

Cutting-in valve is to be inspected and cleaned before installation to ensure that it is in proper working order.

The interior of all water main pipe, valves and fittings not receiving 24 hour chlorine disinfection contact time must be spray or swab disinfected with a 1 to 5 percent solution of chlorine no more than 30 minutes prior to installation. The interior and exterior of cut ends of existing pipe shall also be cleaned and disinfected.

Cutting-in valve is to be installed with stem in vertical position.

Installation and joints are to be watertight, both prior to and after making connection.

Cutting-in valve, sleeves, couplings and pipe, including mechanical joint glands, are to be wrapped with polyethylene encasement and sealed with polyethylene tape.

Special attention is to be paid to backfill material placed under cutting-in valve to ensure that it is well compacted for bedding cutting-in valve.

Valve box is to be carefully set over stem or beveled gear shaft. Valve box is to be braced to ensure that it remains in proper vertical position and centered on valve stem during and after backfilling operation. Valve box top section is to be adjusted for elevation, and base centered over operating nut. Top of valve box is to be flush with finished surface. Backfilling of trench is to be done in manner so as to avoid damage to cutting-in valve and valve box.

Prior to backfilling, water pipe is to be filled with potable water and installation tested for leaks under line pressure in presence of Project Manager.

Proper alignment and height of valve box is to be maintained until completion of Project.

S905-3.02 Reuse Existing Resilient Seat Gate Valve

Contractor is responsible for removing the existing valve and verifying that it is in proper working order. The gate shall be cleaned and inspected to insure that it is fully encapsulated with rubber over all ferrous surfaces and that rubber is securely bonded to the gate and free from defects. The valve stem shall be straight. The operating nut shall be turned through full open and full closed positions. The interior of the valve shall be examined for damage to the epoxy lining. Valves with damaged rubber on the gate, bent stems, that operate with difficulty or have significant damage to the interior epoxy lining shall not be reused. The valve exterior shall be examined for damage to the epoxy coating and repaired if necessary. Bonnet bolts and nuts and operating nut shall be examined for wear and corrosion and replaced if necessary using parts furnished by the valve manufacturer. Mechanical joint glands, gland gaskets and gland hardware shall be replaced. Verification is to be completed in the presence of the Project Manger or his representative, who must approve each valve before it is reinstalled.

After verification and making any necessary repairs, the valve shall be reinstalled.

S905-4 METHOD OF MEASUREMENT

Quantity to be measured for payment will be number of cutting-in valve units installed complete with valve box, sleeve(s) and restraining mechanism.

S905-5 BASIS OF PAYMENT

S905-5.01 General All Items

Unit price bid includes cost of: measuring, cutting, and removing section of existing water pipe; dewatering and cleaning existing water pipe; furnishing and using all temporary plugs and disinfectant to prevent contamination of existing water pipe; polyethylene wrap; maintaining proper alignment and height of valve box; pavement saw cutting; leak testing; bracing; connecting new water pipe to existing water pipe; and furnishing all labor, materials and equipment necessary to complete work.

Excavation, rock excavation, furnishing and placing of bedding and backfill materials, and surface restoration will be paid for under separate bid items.

S905-5.02 Cutting-In Valve

Unit price bid also includes cost of furnishing and installing cutting-in valve complete with valve box, sleeve(s), pipe, restraining devices.

S905-5.03 Cutting-In Valve - Furnished

Unit price bid also includes cost of picking-up and installing cutting-in valve complete with valve box, sleeve(s), pipe, restraining devices.

S905-5.04 Reuse Existing Resilient Seat Gate Valve

Unit price bid also includes cost of removing existing valve, inspection of valve to verify that it is in proper working order, any necessary repairs; furnishing and installing new mechanical joint glands, gland gaskets and hardware; and reinstallation of existing valve complete with valve box, sleeve(s), pipe, restraining devices.

Payment will be made under:

ITEM NO.	ITEM	PAY UNIT
S905.01XX	X" Cutting-in Valve with Valve Box and Sleeve(s)	Each
S905.02XX	X" Cutting-in Valve with Valve Box and Sleeve(s) (Furnished)	Each
S905.05XX	Reuse Existing XX" Resilient Seat Gate Valve with Valve Box and Sleeve(s)	Each

REVISED October 25, 2010