

# AVK Gate Valves and Hydrants for Polyethylene Pipe Distribution Systems



Save Time, Money, and Water



## AVK Gate Valves with Polyethylene Ends: the Natural Choice



*PE-pipes are mounted on the valve (above).  
Steel sleeves compress the pipe into the valve,  
providing tensile strength (below).*



The AVK Series 66 is designed especially for use in polyethylene water distribution systems. The valve is identical to our premier resilient wedge gate valve with one exception: the PE-pipe stubs are already mounted. This means lower installation costs and leak proof joints.

The AVK Series 66 valves range from 4" to 12" — all utilizing the same high quality valve design and PE-pipe connection — and all providing maximum security for your PE pipe distribution system.

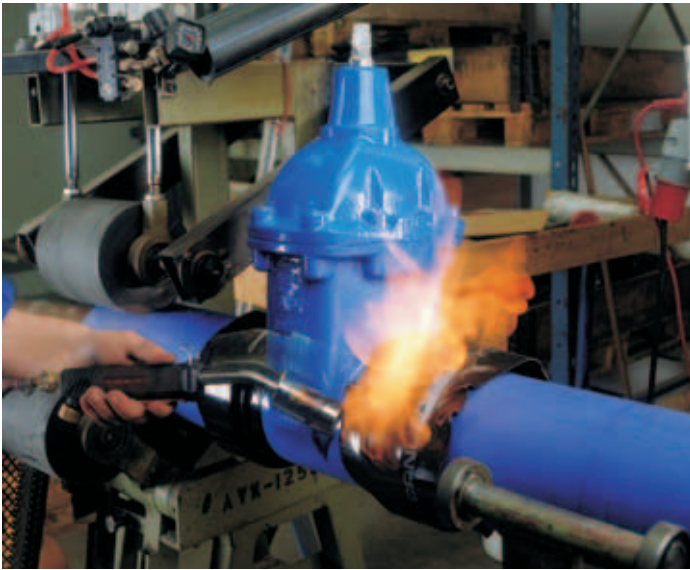
**The valve to pipe-stub connection is an innovative design — ensuring 100% drop-tight seal with a higher strength than the PE-pipe itself.**

A section of standard PE-pipe is pressed directly onto the grooved valve end. The patented grooving is combined with a high-strength steel compression ring which presses the PE-pipe into the grooves on the valve end. The entire joint is then protected by a heat activated polyolefin covering thus ensuring the joint is protected from corrosion.

The patented joint system has been used and proven worldwide for both gas and water installations.

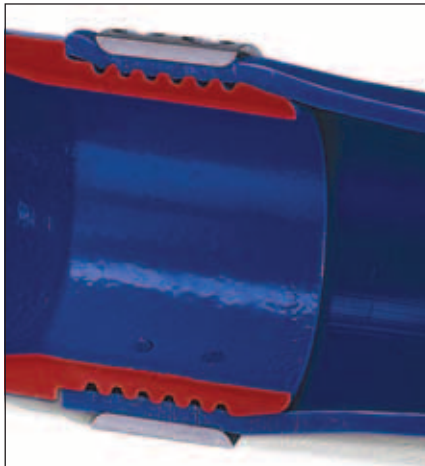
Water demands are increasing. New supplies are growing scarce. Water utilities must ensure that every drop is delivered to their customers — demanding leak free pipelines and complete integrity of their distribution systems. If PE is your pipe of choice, then the **AVK Series 66 is your valve**. The AVK gate valve with PE-ends pre-mounted on the valve by the unique AVK coupling system is the natural choice for valves used in PE pipe systems.





The joint is protected by a polyolefin covering, meeting the requirements of AWWA C216.

The PE-coupling has, as minimum, the same strength as the pipe.



### Ease of Installation and Alignment

Because of the flexibility of the PE pipe and the high strength valve-to-pipe connection, a long pipeline can be assembled above ground with the valves already installed. The PE pipe stubs are mounted with the pipe markings in the 12:00 o'clock position — to help indicate the proper orientation of the valves. Once the pipeline is assembled, place it in the trench.

### Benefits of the AVK Series 66 Gate Valve:

- The valve can be installed using electro-fusion couplings or by welded butt fusion ensuring fast, effective and secure pipe joints.
- Boltless assembly means corrosion-free joints.
- The patented valve to pipe joint is water-tight and high strength — *stronger than the pipe itself!*
- A smooth, straight bore means low head loss.
- Since the valve-to-pipe joint develops high strength, the joint can resist high thrust loads.
- Optimum corrosion protection and finish ensured by the heat activated polyolefin covering, meeting the requirements of AWWA C216.
- Complete flexibility when choosing pipe materials — connection to all types of PE-pipe possible.
- Pipe stubs comply with AWWA C906 and are NSF 61 certified.



Installation of a PE-pipeline with AVK gate valves.



## A Complete Range of AVK Valves and Hydrants with PE-ends for your Utility

### The Advantage of AVK Valves:

- Fully EPDM encapsulated wedge ensures drop tight sealing and corrosion resistance.
- The guides in the wedge and valve body ensure low operating torque under all flow conditions.
- The countersunk bonnet bolts are completely encircled by the bonnet gasket and sealed with hot melt — preventing corrosion.
- The recessed bonnet gasket ensures optimum water tightness.
- The stainless steel stem with rolled thread and wedge stop ensures reliable and safe operation.
- Three independent stem seals provide triple security.
- The electrostatically applied fusion bonded epoxy coating complies with AWWA C550 and NSF 61 — ensuring corrosion protection.
- These valves are also available with a unique external polyurethane coating for added corrosion protection.



*For increased corrosion protection, valves can be coated with polyurethane.*



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**AMERICAN AVK COMPANY**  
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# Sample Specifications for Valves with PE End Connections

## General

The valve shall be a ductile iron body and bonnet, non-rising stem, open left, resilient seated, with AWWA standard 2" square operating nut and shall be protectively coated inside and outside as specified. Where applicable, valves shall comply with the AWWA C515 standard except where modified and/or augmented in these specifications. All bolting shall be stainless steel AISI grade 304. If nuts are used on the bolts, the nuts shall be 304 stainless steel and the bolt threads shall be coated with an anti-galling compound. Valves shall be Model 66 series as manufactured by American AVK or approved equal.

## Resilient Gate

The valve gate shall be ductile iron, fully encapsulated with EPDM rubber, and shall be capable of a drip-tight shutoff with flow in either direction. The resilient rubber material shall be permanently vulcanized to the gate.

## Stems

Valve stems shall be made of stainless steel or bronze with a minimum yield strength of 40,000 psi. Bronze valve stems shall contain no more than 5% zinc, no more than 2% aluminum, and no more than 1% lead.

## Seals and Gaskets

Valve stem seals shall be an o-ring type with not less than one o-ring below the thrust collars and two o-rings above the thrust collars. If an o-ring groove is cut into the stem the diameter of the groove shall not be less than the root diameter of the stem threads. O-rings and gaskets shall be made of an NBR rubber to help prevent the effects of permeation. Bonnet gaskets shall be an o-ring type that completely encircle each individual bonnet bolt so that the bolts are isolated from internal or external water sources.

## End Connections

The end connections of the valve body shall be a male barbed spigot. The polyethylene pipe shall be pressed onto the barbed spigot and secured in place with a steel compression sleeve that locks the pipe to the barbed spigot. The internal diameter of the steel compression sleeve shall be machined to match the compression requirements for the specified SDR of the pipe stub. After installation the steel compression sleeve shall be covered with a "heat activated shrink tube" to prevent corrosion. The assembled valve-to-pipe-stub connection shall be capable of withstanding an internal pipe pressure that is, at a minimum, equal to twice the working pressure rating of the installed PE pipe without any signs of loosening or leakage.

## Polyethylene Pipe Stubs

The polyethylene (PE) pipe stub installed on the valve shall be \_\_\_ (DI or IPS) sized, with a SDR \_\_\_ wall thickness. The PE pipe stub attached to the gate valve shall be made of (HDPE) PE3408 material according to ASTM D3350, certified to the NSF 61 standard, and meet the requirements of AWWA C901 or C906. The PE pipe stub shall contain a minimum 2% carbon black to protect against ultraviolet degradation during storage. Colored stripes are allowed on the pipe exterior for identification purposes. Scratches or gouges in the PE pipe surface that are more than 10% of the wall thickness in depth shall result in rejection of the valve.

## Protective Coatings

The exposed ferrous surfaces shall be coated with a fusion bonded epoxy that shall be certified to the NSF 61 standard. The valve shall be coated inside and outside to meet the requirements of AWWA C550.

## Warranty

The valve manufacturer shall provide a 10-year limited warranty.

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# Sample Specifications for Dry Barrel Fire Hydrants with PE End Connections

## General

Hydrants shall meet or exceed ANSI / AWWA C502 (latest edition). Rated working pressure shall be 250 psi. After assembly all hydrants shall be tested to 500 psi.

Hydrant barrels, nozzle section, bonnet, inlet shoe, and bury section shall be made of ductile iron.

The hydrant main valve shall be a one-piece ductile iron core fully encapsulated with EPDM rubber. It shall be a compression-close type design, opening against and closing with the water pressure. All working parts shall be removable without digging.

The seat ring and drain ring shall be made of bronze. The drain channel shall be 360-degrees with two outlet ports. The outlet ports shall be provided with internally threaded bronze bushings to allow external plugging if necessary. All hydrants shall be of the traffic breakaway type and allow 360-degree rotation of the hydrant to position the pumper nozzle in the desired direction.

Nozzles shall be of the ¼ turn bayonet lug style, secured with a stainless steel locking screw, allowing ease of change in case of damage to the nozzle. Storz nozzles, if used, shall be made of bronze.

To help prevent cross-threading a Higbee cut (blunt start) will be provided on the lead thread of the outlet nozzles, nozzle caps, seat ring, drain ring, and thrust nut.

Hydrants shall be model 2700 or 2780 series as manufactured by American AVK or an approved equal.

## Nuts

Operating nuts shall be one-piece bronze design with upper and lower anti-friction washers for ease of operation. A protective weathershield shall be installed over the operating nut.

## Stems

The upper stem rod, extension stem rods, breakable and extension couplers, and all coupler pins shall be made of stainless steel for corrosion resistance.

## Lubrication Reservoir

The lubrication reservoir shall be cast as part of the upper section of the hydrant and shall provide a watertight seal against the stem by means of two o-rings in the bottom of the reservoir. A facility shall be provided (oil plug or grease nipple) to add oil or grease to the reservoir without disassembly of the hydrant. The reservoir shall be either oil or grease filled by the manufacturer prior to shipment.

## Drains

The hydrant shall be equipped with drains capable of being plugged internally if necessary. The main valve shall provide complete closing of the drains after 4 to 5 turns of the operating nut in the opening direction. During the initial stages of opening the drains shall momentarily flush outward, to remove any debris in the drain ports, in order to provide complete draining upon closing of the hydrant main valve.

## Connection

The inlet shoes shall be a PE configuration. The inlet connection shall be a male barbed spigot. The polyethylene pipe shall be pressed onto the barbed spigot and secured in place with a steel compression sleeve that locks the pipe to the barbed spigot. The internal diameter of the steel compression sleeve shall be machined to match the compression requirements for the specified SDR of the pipe stub. After installation the steel compression sleeve shall be covered with a "heat activated shrink tube" to prevent corrosion. The assembled valve-to-pipe-stub connection shall be capable of withstanding an internal pipe pressure that is, at a minimum, equal to twice the working pressure rating of the installed PE pipe without any signs of loosening or leakage.

## Polyethylene Pipe Stub

The polyethylene (PE) pipe stub installed on the hydrant shall be \_\_\_ (DI or IPS) sized, with a SDR \_\_\_ wall thickness. The PE pipe stub attached to the hydrant shall be made of (HDPE) PE3408 material according to ASTM D3350, certified to ANSI/NSF 61, and meet the requirements of AWWA C901 or C906. The PE pipe stub shall contain a minimum 2% carbon black to protect against ultraviolet degradation during storage. Colored stripes are allowed on the pipe exterior for identification purposes. Scratches or gouges in the PE pipe surface that are more than 10% of the wall thickness in depth shall result in rejection of the hydrant.

## Protective Coatings

All ferrous parts, except the bury pipe and those parts made of stainless steel or protected by a heat shrinkable polyolefin coating, shall be fusion-bonded epoxy coated and lined. The bury pipe shall be bitumen coated and lined. All coatings shall be applied in accordance with ANSI / AWWA C550 (latest edition).

## Warranty

The hydrant manufacturer shall provide a 10-year limited warranty.

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