

Aquamine® Products



WARNING



WARNING



- Read and understand all instructions before attempting to install any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection during installation.

Failure to follow these instructions could result in serious personal injury, improper product installation, and/or property damage.

IMPORTANT INFORMATION

DANGER



- Aquamine products must never be used for any type of compressed air or compressed gas applications. Compressed air and compressed gas pose a serious safety hazard due to the large amounts of stored energy they contain.
- The piping system must be designed to prevent air entrapment.

Failure to follow these instructions could cause Aquamine products to explode or create dangerous pressure surges, resulting in death, serious personal injury, and property damage.

1. DO NOT use Aquamine products for any type of compressed air or compressed gas applications. Compressed air and compressed gas pose a serious safety hazard due to the large amounts of stored energy they contain. A sudden release of compressed air or gas can shatter Aquamine products, sending shards at high velocity into the immediate area.
2. Water is approximately five times more dense than air at 100 psi/689 kPa/6.9 Bar. Pressure surges, up to 15 times the operating pressure, have been recorded when entrapped air is vented rapidly under pressure. These pressure surges are known as "air hammer," which is a dangerous condition that may cause Aquamine products to explode.
3. The piping system must be designed to prevent air entrapment, which can be accomplished by installing properly-sized air release devices.

SPLINE INFORMATION

The information provided below is important for determining if the correct spline is being used for the application.



Spline Detail for 2-inch/60.3-mm Class 250 Product through 8-inch/219.1-mm Class 200 Product or Lower
(Not to Scale)



Spline Detail for "HP" Designated Product and 10 – 12-inch/273.0 – 323.9-mm Product
(Not to Scale)

Coupling Size	Dimensions – inches/millimeters		
	Nominal Size inches/Actual mm	Cross Section	Spline Length ($\pm \frac{1}{4}$ inch/6.4 mm) inches/mm
2 60.3		ROUND	10.5 267
3 88.9		ROUND	16 406
4 114.3		ROUND	18 457
4 HP 114.3 HP		SQUARE	18 457
6 168.3		ROUND	24 610
6 HP 168.3 HP		SQUARE	24 610
8 219.1		ROUND	32 813
8 HP 219.1 HP		SQUARE	32 813
10 273.0		SQUARE	39 991
12 323.9		SQUARE	46 1168

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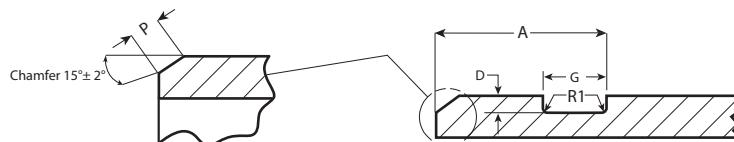
CUTTING AND GROOVING AQUAMINE PIPE

Aquamine pipe is shipped in 20-foot/6-m lengths. If necessary, Aquamine pipe can be square cut and then grooved on a lathe. **NOTE:** The maximum allowable tolerance from square-cut pipe ends is 0.030 inch/0.8 mm. The "Aquamine Pipe Details" table, shown below, must be followed to ensure pipe is prepared properly.

NOTICE

The following pipe sizes have thickened ends. DO NOT cut and groove pipe outside of the thickened ends, since reduced pressure rating will result.

2-inch/60.3-mm (SDR 17), 2-inch/60.3-mm (SDR 21), 3-inch/88.9-mm (SDR 17), 3-inch/88.9-mm (SDR 21), 4-inch/114.3-mm (SDR 21), and 4-inch/114.3-mm (SDR 26)



AQUAMINE PIPE DETAILS

Nominal Pipe Size inches/Actual mm	SDR Designation	Maximum Working Pressure Rating psi/kPa*	Dimensions – inches/mm											
			"P" Bevel		"D" Groove Depth			"G" Groove Width			"R1" Groove Radii	"A" Pipe End to Back of Groove		
			Minimum	Maximum	Basic	Maximum	Minimum	Basic	Maximum	Minimum		Basic	Maximum	Minimum
2 1/2 60.3 1/2	SDR 17	250 1725	0.125 3.2	0.187 4.7	0.100 2.5	0.110 2.8	0.090 2.3	0.250 6.4	0.265 6.7	0.235 6.0	0.060 1.5	1.750 44.5	1.765 44.8	1.735 44.1
2 1/2 60.3 1/2	SDR 21	200 1380	0.125 3.2	0.187 4.7	0.100 2.5	0.110 2.8	0.090 2.3	0.250 6.4	0.265 6.7	0.235 6.0	0.060 1.5	1.750 44.5	1.765 44.8	1.735 44.1
3 1/2 88.9 1/2	SDR 17	250 1725	0.125 3.2	0.187 4.7	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	2.500 63.5	2.515 63.9	2.485 63.1
3 1/2 88.9 1/2	SDR 21	200 1380	0.125 3.2	0.187 4.7	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	2.500 63.5	2.515 63.9	2.485 63.1
4 114.3	SDR 12.4	350 2415	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
4 114.3	SDR 17	250 1725	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
4 1/2 114.3 1/2	SDR 21	200 1380	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
4 1/2 114.3 1/2	SDR 26	160 1105	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
6 168.3	SDR 12.4	350 2415	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
6 168.3	SDR 17	250 1725	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
6 168.3	SDR 21	200 1380	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
6 168.3	SDR 26	160 1105	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.350 8.9	0.375 9.5	0.325 8.3	0.060 1.5	3.000 76.2	3.015 76.6	2.985 75.8
8 219.1	SDR 12.4	350 2415	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.500 12.7	0.520 13.2	0.480 12.2	0.060 1.5	3.100 78.7	3.115 79.1	3.085 78.4
8 219.1	SDR 17	250 1725	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.500 12.7	0.520 13.2	0.480 12.2	0.060 1.5	3.100 78.7	3.115 79.1	3.085 78.4
8 219.1	SDR 21	200 1380	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.500 12.7	0.520 13.2	0.480 12.2	0.060 1.5	3.100 78.7	3.115 79.1	3.085 78.4
8 219.1	SDR 26	160 1105	0.187 4.7	0.250 6.4	0.130 3.3	0.140 3.6	0.120 3.0	0.500 12.7	0.520 13.2	0.480 12.2	0.060 1.5	3.100 78.7	3.115 79.1	3.085 78.4
10 273.0	SDR 26	160 1105	0.625 15.9	0.687 17.4	0.200 5.1	0.210 5.3	0.190 4.8	0.500 12.7	0.520 13.2	0.480 12.2	0.100 2.5	3.500 88.9	3.520 89.4	3.480 88.4
12 323.9	SDR 26	160 1105	0.625 15.9	0.687 17.4	0.200 5.1	0.210 5.3	0.190 4.8	0.500 12.7	0.520 13.2	0.480 12.2	0.100 2.5	3.500 88.9	3.520 89.4	3.480 88.4

† These pipe sizes have thickened ends. DO NOT cut and groove pipe outside of the thickened ends. Victaulic offers plain-end couplings and adapters for these applications.

* Maximum working pressure at 73°F/23°C

"P" Bevel: The pipe end must be beveled to ease insertion past the Aquamine coupling seal and to prevent damage to the seal.

"D" Groove Depth: The groove depth shall not vary more than the tolerance listed.

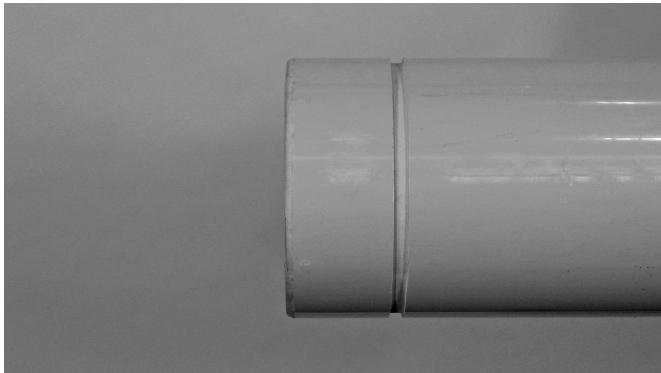
"G" Groove Width: The bottom of the groove must be free of loose dirt and debris that may interfere with Aquamine coupling spline insertion. Corners at the bottom of the groove must be radius according to the "R1" dimension listed in the table above.

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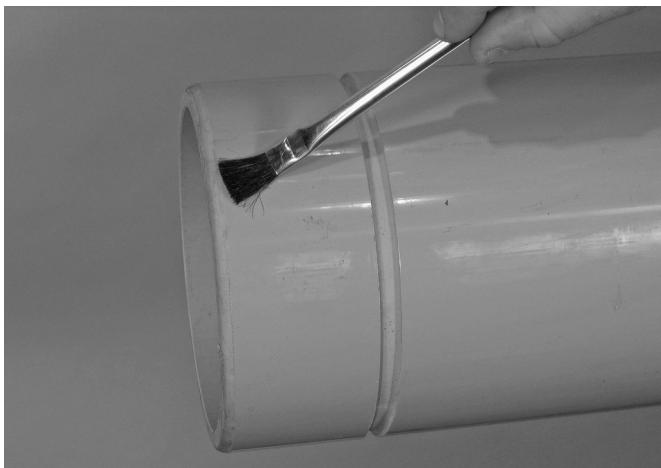
AQUAMINE PRODUCTS INSTALLATION



1. Check the coupling to ensure o-rings are seated properly inside the coupling, as shown above.

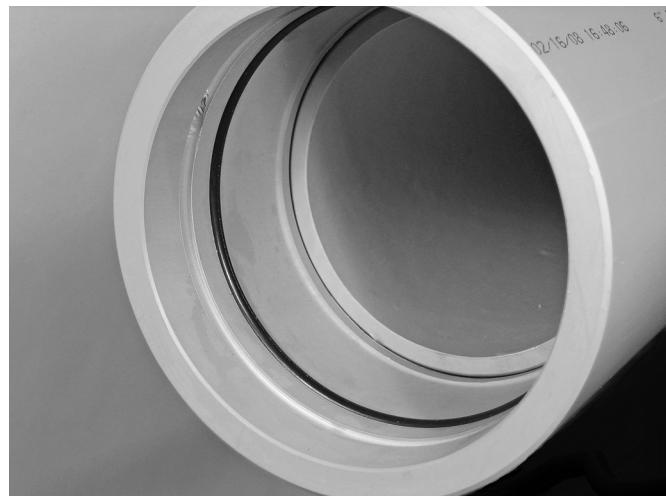
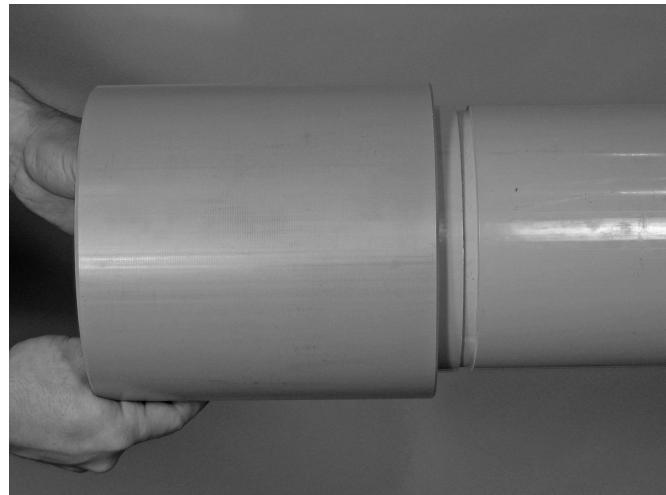


2. The outside surface of the pipe, from the pipe end to the groove, must be smooth and free from indentations and projections. All foreign material must be removed from the pipe end and groove to ensure a leak-tight seal.



3. If necessary, lubricate the leading edge of the pipe with a thin coat of silicone. Avoid getting excessive lubricant in the pipe grooves.

NOTE: The o-rings located inside the coupling are pre-lubricated.



4. Push the coupling onto the pipe end so that the spline hole is facing upward. Continue pushing the coupling onto the pipe end until the pipe end contacts the internal stop of the coupling and the spline hole aligns with the groove in the pipe. DO NOT use hammers or other tools to force the coupling onto the pipe end.

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NOTICE



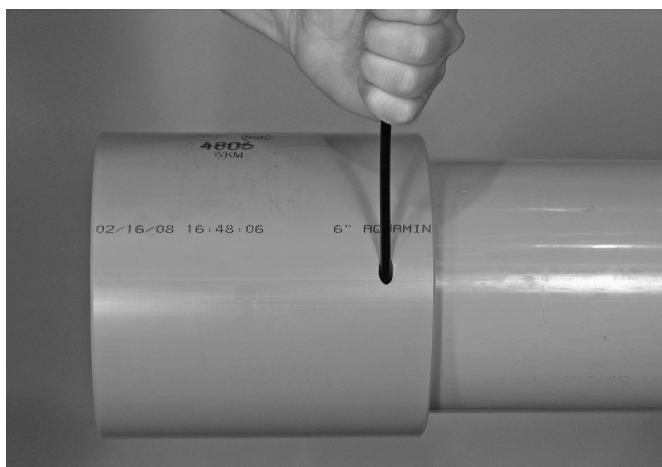
- A spline insertion tool is available and is recommended for ease of spline insertion.

5. Verify that the proper size and length spline is being used to install the coupling. Refer to the "Spline Information" section.

⚠ WARNING



- DO NOT use hammers to force the spline into the coupling. Failure to follow this instruction may cause product damage, resulting in joint failure, serious personal injury, and property damage.

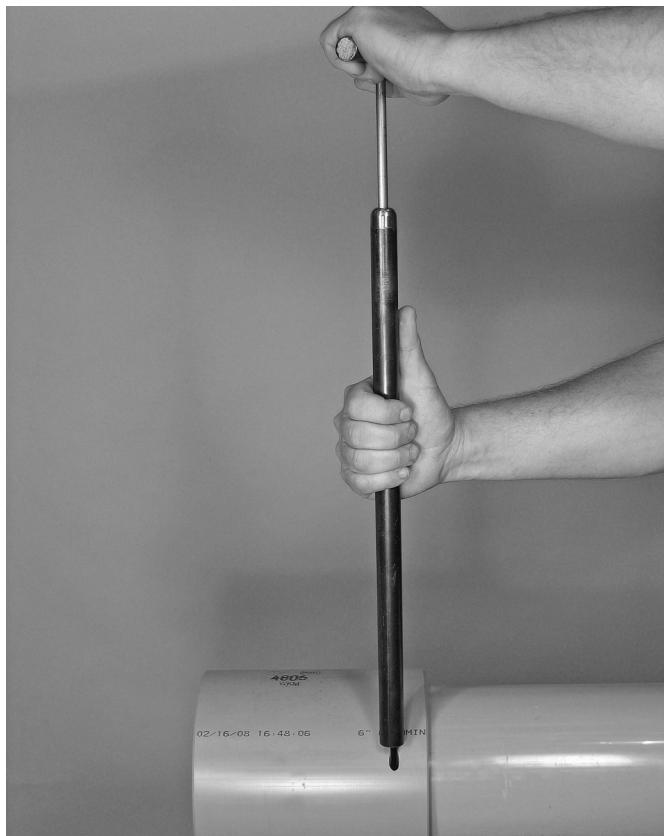


6. Insert the proper size and length spline (provided with the coupling) by hand into the spline hole of the coupling. Make sure the beveled end of the spline is the end inserted into the spline hole.

⚠ WARNING

- DO NOT use solvent cement to assemble Aquamine Spline Products. Aquamine Spline Products do not provide sufficient interference fit for assembly with solvent cement.

Failure to follow this instruction may cause joint failure, resulting in serious personal injury and property damage.



- Continue inserting the spline by hand or by using the spline insertion tool.
- If using the spline insertion tool: Pull the handle/plunger assembly upward, and place the open end over the spline. Slowly push down on the handle/plunger assembly, while holding the lower section of the spline insertion tool firmly, as shown above. DO NOT push down on the handle/plunger assembly too fast, and do not hold the tool at an angle.
- If inserting the spline by hand: Continue until the spline stops/meets resistance. DO NOT continue trying to insert the spline after achieving this resistance. **NOTE:** Approximately 3 inches/76 mm of the spline should be exposed.
- If inserting the spline with the spline insertion tool: Continue until the spline stops/meets resistance. DO NOT continue trying to insert the spline after achieving this resistance. The tool is designed so that the proper length of spline is left exposed (approximately 3 inches/76 mm).



The coupling shown above is installed correctly on Aquamine pipe.

For complete contact information, visit www.victaulic.com

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