

Victaulic FireLock® Automatic Sprinklers

⚠ WARNING



- Read and understand all instructions before attempting to install any Victaulic FireLock® Automatic Sprinklers.
 - Wear safety glasses, hardhat, and foot protection.
 - These installation and maintenance instructions are intended for an experienced, trained installer. The user must understand the purpose of these products, common industry standards for safety, and the potential consequences of improper product installation.
- Failure to follow these instructions could cause improper sprinkler operation, resulting in death, serious personal injury, or property damage.

IMPORTANT INFORMATION

- Victaulic FireLock® Automatic Sprinklers must be installed according to current, applicable Factory Mutual (FM) standards, VdS standards, CEA 4001 standards, National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards. Deviations from these standards or alterations to sprinklers (including painting and coating) will void any Victaulic warranty. In addition, installations must meet provisions of the local authority having jurisdiction and local codes, as applicable.
- Refer to the specific product submittal for applications and listing information. These submittals are located in Section 40 of the Victaulic G-100 Catalog or on the Victaulic website at www.victaulic.com.
- Transport and store sprinklers in their original packaging. Store sprinklers in a cool, dry place. **DO NOT** empty sprinklers into bags or buckets, because damage may occur.
- **DO NOT** install sprinkler system piping through heating ducts. **DO NOT** connect sprinkler system piping to domestic hot water systems. **DO NOT** install sprinklers where they will be exposed to temperatures that exceed the maximum ambient temperature rating for the sprinkler.
- **DO NOT** install sprinklers that have been dropped or struck by another object, even if they do not appear damaged. Never install glass bulb sprinklers if the bulb is cracked or if there is a loss of liquid from the bulb. Discard and replace any sprinklers that are damaged or show signs of corrosion.
- Before installation, verify that the sprinkler is the proper model, orifice size, and temperature rating for the intended service.
- Protect wet piping systems from freezing temperatures.
- Size the piping system to provide the minimum required flow rate for the sprinkler system.
- To avoid product damage, install sprinklers into the fittings only after the sprinkler system piping is in place.
- Flush the system to remove foreign material. Continue to flush the system until water runs clear.
- **DO NOT** paint, coat, plate, or alter sprinklers. Sprinklers that have been altered from their manufactured condition may not function properly and will void any agency listings and/or approvals.
- **DO NOT** test sprinklers with a heat source. The glass bulb can weaken or shatter if exposed to a heat source during testing.
- **DO NOT** clean sprinklers with soapy water, detergents, ammonia, cleaning fluids, or other chemicals. Remove any dust, lint, etc. with a soft, dry cloth.
- Sprinklers that have operated cannot be reassembled or reused. When replacing sprinklers, use new sprinklers of the same type, orifice, temperature, and response.
- Inspect sprinklers on a regular basis for corrosion, mechanical damage, obstructions, etc. The frequency of inspections may vary due to corrosive atmospheres/water supplies and activities around the sprinklers.
- **DO NOT** hang anything from or attach anything to sprinklers. Obstructing the discharge pattern will prevent the sprinkler from operating properly.
- If construction is altered, refer to applicable standards to determine if additional sprinklers are required.
- The owner is responsible for maintaining the fire protection system in proper operating condition.
- For minimum maintenance and inspection requirements, refer to NFPA 25 and the NFPA pamphlet that describes the care and maintenance of sprinkler systems. In addition, the authority having jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

VdS APPROVAL INFORMATION

SIN	Approval Number	EC Certificate of Conformity
V2703	G 402 0046	0786-CPD-40235
		0786-CPD-40004
V2704	G 402 0043	0786-CPD-40258
		0786-CPD-40001
V2725	G 402 0048	0786-CPD-40262
		0786-CPD-40006
V2726	G 402 0045	0786-CPD-40260
		0786-CPD-40003
V2727	G 402 0047	0786-CPD-40261
		0786-CPD-40005

VdS APPROVAL INFORMATION

SIN	Approval Number	EC Certificate of Conformity
V2728	G 402 0044	0786-CPD-40259
		0786-CPD-40002
V3401	G 402 0051	0786-CPD-40236
		0786-CPD-40009
V3402	G 402 0049	0786-CPD-40263
		0786-CPD-40007
V3423	G 402 0052	0786-CPD-40265
		0786-CPD-40010
V3424	G 402 0050	0786-CPD-40264
		0786-CPD-40008

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STANDARD SPRINKLER INSTALLATION

⚠ WARNING



- Wear safety glasses to protect eyes in the event a glass bulb fractures, pipe dope spatters, or other potential hazards occur.

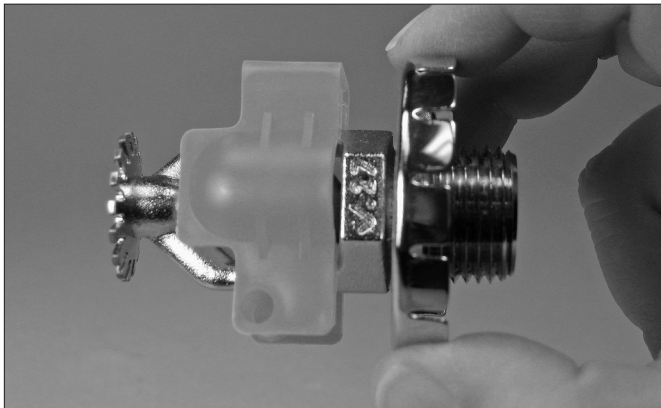
Failure to follow this instruction could result in serious personal injury.

⚠ WARNING

- Sprinklers are shipped with bulb protectors, which protect glass bulbs from damage during shipment and installation.
- Sprinklers cannot operate properly with bulb protectors in place.
- Bulb protectors must be removed from all sprinklers before the sprinkler system is placed in service.
- DO NOT** use any tools to remove bulb protectors.

Failure to remove bulb protectors from all sprinklers before the system is placed in service will cause improper sprinkler operation, resulting in death, serious personal injury, or property damage.

- Inspect the sprinkler for any signs of physical damage. Inspect the glass bulb for cracks and loss of fluid. **DO NOT** install a sprinkler that has been dropped or damaged during handling.

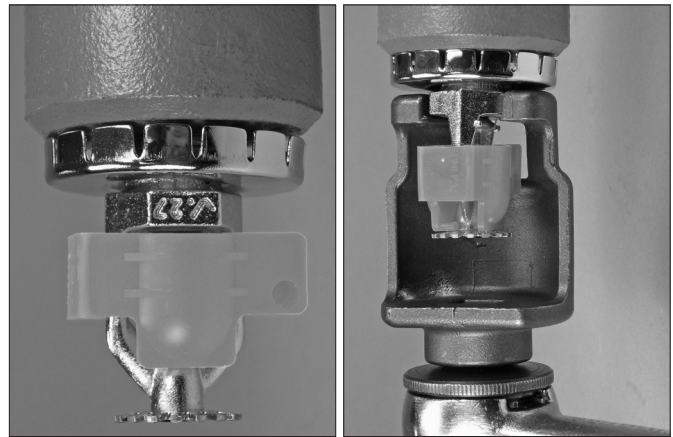


- FOR RECESSED PRODUCT:** Install the recess collar onto the sprinkler. Make sure the collar is tightened completely up against the wrench boss, as shown above.
- Apply two to three wraps of tape or a non-hardening pipe-joint compound to the male threads only.

⚠ WARNING

- DO NOT** allow sealing material to enter the sprinkler's orifice.
- DO NOT** allow sealing material to contact the bulb or seal.
- Make sure the wrench engages **ONLY** the wrench boss of the sprinkler and not the frame, deflector, or bulb.
- DO NOT** handle sprinklers by the deflector.
- DO NOT** exceed the assembly torque specified in these instructions.

Failure to follow these instructions could cause improper sprinkler operation, resulting in death, serious personal injury, or property damage.



- Install the sprinkler in its intended orientation only. Thread the sprinkler into the fitting by hand.
- Tighten the sprinkler into the fitting by using the proper model wrench (refer to "Available Wrenches" table below). Make sure the wrench engages **ONLY** the wrench boss of the sprinkler. **DO NOT** engage the wrench on the frame, deflector, or bulb. To obtain a proper seal, tighten the sprinkler securely to prevent leakage. **DO NOT** exceed the maximum assembly torque values listed in the "Maximum Assembly Torque Values" table below.
- FOR RECESSED PRODUCT:** Install the escutcheon by centering it over the sprinkler. Push the escutcheon onto the recess collar until it contacts the ceiling.

MAXIMUM ASSEMBLY TORQUE VALUES

Orifice Size	Maximum Torque ft-lbs/N•m	Orifice Size	Maximum Torque ft-lbs/N•m
½-inch NPT	14	1-inch NPT	30
	19		41
¾-inch NPT	20		
	27		

AVAILABLE WRENCHES

Frame	Wrench Style/Wrench Model			
Style	Open End	Recessed	Concealed	Tee-Handle
V25	V27	-	-	-
V27	V27	V27-2	V39	-
V29	-	-	-	V29-1
V33	-	-	V33	-
V34	V34	V34	-	-
V36	V36	V36	V36	-
V38	-	-	V38-4	V38-5
V39	-	-	V39	-
V44	V44	-	-	-
V46	V46	-	-	-
K1	V34	-	-	-
V10	Use any commercially available wrench			

HOLE SIZES FOR ESCUTCHEONS

Sprinkler Model(s)	Hole Sizes for Escutcheons - inches/millimeters	
	Minimum	Maximum
V24/V27/V34/V36 Recessed	2 51	2 3/8 60
V27 Concealed	2 3/8 60	2 15/16 71
V31/V33 Concealed	2 3/8 67	2 3/4 70
V36 Plain, Extended, and Flush	1 1/2 38	2 1/2 63
V36 Sleeve/Skirt	1 3/4 44	2 1/2 63
V38 Concealed	2 3/8 60	2 11/16 68

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BULB PROTECTOR REMOVAL

⚠ **WARNING**

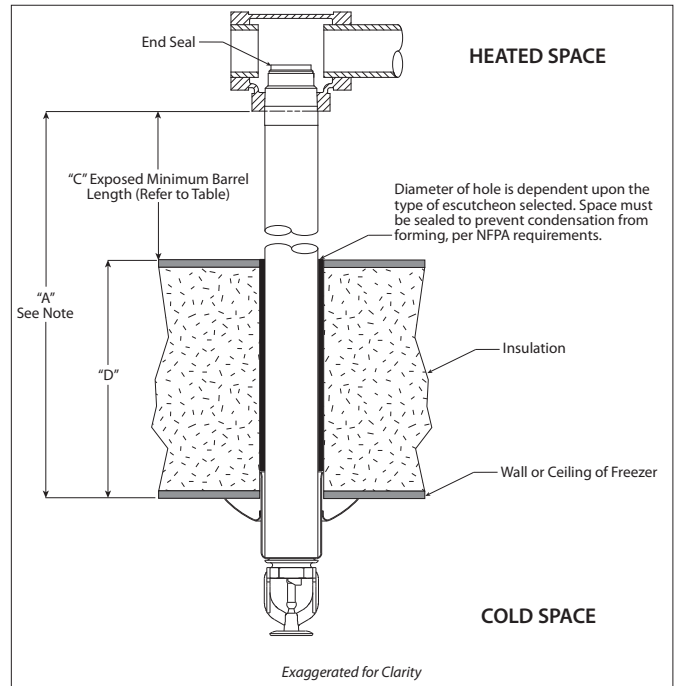
- Sprinklers cannot operate properly with bulb protectors in place.
- Bulb protectors must be removed from all sprinklers before the sprinkler system is placed in service.
- DO NOT use any tools to remove bulb protectors.

Failure to remove bulb protectors from all sprinklers before the system is placed in service will cause improper sprinkler operation, resulting in death, serious personal injury, or property damage.

- Remove the bulb protector from all sprinklers carefully by hand before the sprinkler system is placed in service.
- Bulb protectors on all upright sprinklers, or on any sprinklers installed more than 10 feet/3 m above the floor, can be removed immediately following installation.

DRY SPRINKLER INSTALLATION

- Victaulic FireLock Dry Sprinklers must be installed in accordance with NFPA 13 requirements.
- Apply two to three wraps of tape or a non-hardening pipe-joint compound to the male threads only.
- For proper installation, dry sprinklers should be installed by using a pipe wrench on the outside of the tube closest to the threads. When this is not possible, the proper sprinkler wrench can be used with extreme care for lengths up to 18 inches/457 mm.
- DO NOT** use excessive torque during installation. Excessive torque can distort the sprinkler frame. When a Model V36 sprinkler wrench is used, do not exceed 30ft-lbs/41 N•m. When a pipe wrench is used on the outer tube, do not exceed 40ft-lbs/54 N•m.
- Dry sprinklers **MUST** be installed only into the outlet of a cast or malleable iron tee that meets the dimensional requirements of ANSI B16.3 and ANSI B16.4, Class 125 and Class 150. For these and other fittings, the dry sprinkler should be installed into a sample fitting to confirm proper engagement. Refer to the drawing in the following column for proper dry sprinkler/fitting engagement.
- FOR WET SYSTEMS ONLY:** Dry sprinklers can be installed into the outlets of Style 920/Style 920N Mechanical-T Bolted Branch Outlets and Style 922 FireLock® Outlet-T products in wet systems only.
- DO NOT** install dry sprinklers into couplings or threaded elbows. In addition, **DO NOT** install dry sprinklers into any fitting that interferes with thread penetration. **NOTE:** The end seal of the dry sprinkler **MUST NOT** bottom out in the fitting.
- In areas subject to freezing temperatures, **DO NOT** install dry sprinklers into fittings that allow condensation to form above the seal.



TYPICAL SLEEVE AND SKIRT CONFIGURATION FOR EXAMPLE ONLY – REFER TO THE SPECIFIC PRODUCT SUBMITTAL FOR COMPLETE INFORMATION

NOTE: The “A” dimension of a dry sprinkler, which extends into a freezer from a wet piping system, must take into account the wall or ceiling thickness of the freezer. The minimum length of the dry sprinkler should not be less than the lengths specified in the following table, plus the thickness of the freezer’s wall or ceiling (“A” = “C” + “D”).

Refer to the drawing above for a representation of the “A” dimension. **DO NOT** attempt to modify dry sprinklers, since they are manufactured to this specific “A” dimension.

The following table is used when the ambient temperature is maintained between 40° F/4° C and 60° F/16° C around the wet piping system.

Exposed Barrel Ambient Temperature (°F/°C)

Ambient Temperature Exposed to Discharge End of Sprinkler °F/°C	“C” – Exposed Minimum Barrel Length inches/mm		
	40° F/4° C	50° F/10° C	60° F/16° C
40	0	0	0
4	0	0	0
30	0	0	0
-1	0	0	0
20	4	0	0
-7	102	0	0
10	8	1	0
-12	203	25	0
0	12	3	0
-18	305	76	0
-10	14	4	1
-23	356	102	25
-20	14	6	3
-29	356	152	76
-30	16	8	4
-34	406	203	102
-40	18	8	4
-40	457	203	102
-50	20	10	6
-46	508	254	152
-60	20	10	6
-51	508	254	152

NOTE: Exposed minimum barrel lengths are inclusive up to 30-mph/48-kph wind velocities

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SPRINKLER GUARD INSTALLATION

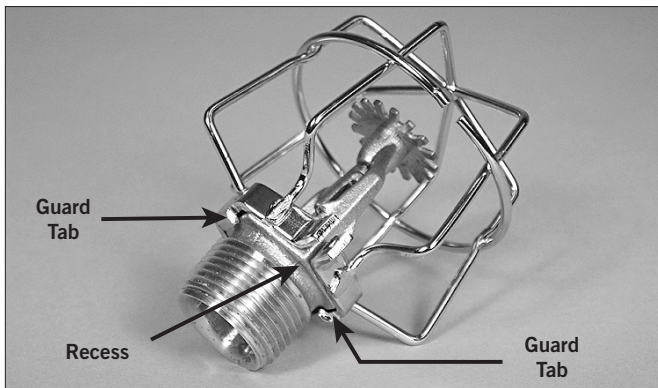
⚠ WARNING

- Sprinkler guards must be installed **AFTER** the sprinkler is installed properly into the fitting and before the system is tested.
- Avoid damage to the frame, deflector, and bulb while installing sprinkler guards.

Failure to follow these instructions could cause improper sprinkler operation, resulting in death, serious personal injury, or property damage.

NOTICE

- The photo below shows the clarity of guard and sprinkler features **ONLY**. The sprinkler must be installed into the system before the guard is installed.



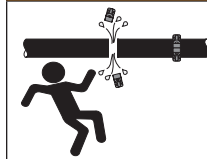
1. Install the guard onto the sprinkler. Make sure the tabs on the guard engage the recess between the wrench boss and the threads of the sprinkler.
2. Insert the two screws (provided) and tighten evenly.

TESTING SPRINKLER SYSTEMS

The entire sprinkler system must be tested in accordance with appropriate standards (NFPA 13, NFPA 25, etc.) after the installation is complete. In addition, the authority having jurisdiction in the local area may have additional maintenance, testing, and inspection requirements that must be followed. **NOTE:** A successful test is not a substitute for proper system installation and maintenance.

SPRINKLER REPLACEMENT

⚠ WARNING



- Depressurize and drain the piping system before attempting to remove and replace any Victaulic sprinklers.
- Maintenance activities take the fire protection system out of service.
- Before servicing or testing the system, notify the authority having jurisdiction that the system is being taken out of service.
- A fire patrol should be organized for the affected area.

Failure to follow these instructions could result in death, serious personal injury, or property damage.

1. **WHEN REPLACING SPRINKLERS, THE SYSTEM MUST BE REMOVED FROM SERVICE.** Notify the authority having jurisdiction in the affected area and organize a fire patrol.
2. Refer to the appropriate installation, maintenance, and testing manual for the system valve.
3. Relieve all pressure and drain all water from the system.
4. Remove the old sprinkler by using the proper sprinkler wrench. Install the new sprinkler in accordance with the instructions in the "Standard Sprinkler Installation" section on page 2 or the "Dry Sprinkler Installation" section on page 3. Make sure sprinklers are replaced with the proper model, style, orifice size, temperature rating, and response.
5. Place the system back in service by following the instructions in the appropriate installation, maintenance, and testing manual for the system valve.
6. Check the system for leaks. Repair any leaks immediately.
7. **SPRINKLER SYSTEMS THAT HAVE BEEN SUBJECTED TO A FIRE MUST BE RETURNED TO SERVICE AS SOON AS POSSIBLE.** The entire system must be inspected for damage and obstructions. Any damaged system components or any sprinklers that have operated must be replaced. Sprinklers that have been exposed to corrosive, combustible products or high ambient temperatures must be replaced. Contact the authority having jurisdiction in the local area for replacement requirements.