



TECHNICAL DATA

SPEED CONTROL ASSEMBLY MODEL A-1

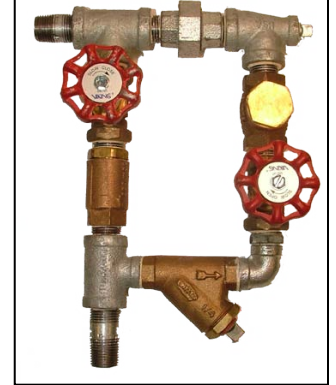
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

The Viking Speed Control Assembly provides adjustment of the opening speed of Viking Deluge Valves, and adjustment of both the opening and closing speed of Viking Flow Control Valves. Water hammer, which may result from the opening of a deluge valve or opening and closing of a flow control valve, may be reduced by adjusting opening and/or closing speed. Also, use of the speed control assembly, along with the Viking Pilot Pressure Regulating Valve, enables pressure regulation for reducing high water supply (inlet) pressures to lower outlet pressures.

The speed control assembly is factory assembled for easy installation, and is listed for optional use with Viking Deluge and Flow Control Valves equipped with Conventional Trim. The Viking Speed Control Assembly is required when a Viking Flow Control Valve is equipped with a Viking Pilot Pressure Regulating Valve.



2. LISTINGS AND APPROVALS:

UL Listed for use with UL Listed Viking Deluge Valves and Flow Control Valves equipped with Conventional Trim.



UL Listed as a required component when UL Listed Viking Flow Control Valves are equipped with the Viking Pilot Pressure Regulating Valve.



FM Approved - Deluge Sprinkler Systems, Preaction Sprinkler Systems, Refrigerated Area Sprinkler Systems, On-Off Multi Cycle Sprinkler Systems

3. TECHNICAL DATA

Specifications:

Water Working Pressure Rating: For use up to 250 PSI (17.2 bar)

Material Standards:

Refer to Chart in Figure 1.

Ordering Information:

Part Numbers: 08780 (Galvanized) or 11181 (Brass)

Shipping Weight: Approximately 6.8 lbs (3.1 kg)

Available since 1994.

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.

4. INSTALLATION

General Installation Instructions:

The Viking Deluge Valve or Flow Control Valve used must be trimmed with Conventional Trim and installed in an area not subject to freezing temperatures or physical damage. When corrosive atmospheres and/or contaminated water supplies are present, it is the owner's responsibility to verify compatibility with the Valve, Trim, Speed Control Assembly, and associated equipment.

For proper operation and approval, the Speed Control Assembly must be installed according to the appropriate Viking Deluge Valve or Flow Control Valve Trim Chart and Viking schematic drawings for the system being installed. Trim Charts are provided in the Speed Control Assembly Package.

1. Verify that the Viking Deluge Valve Trim or Flow Control Valve Trim used is Conventional Trim (Refer to Figure 2). If the trim has been installed, verify that it has been installed according to current trim charts.
2. Verify that the system is out of service and that the Deluge or Flow Control Valve Conventional Trim has been de-pressurized and properly drained.
3. On valves with trim installed, remove the pipe connecting the priming chamber to the trim by loosening the two unions provided.
4. Remove plastic thread protectors from the Speed Control Assembly.
5. Apply a small amount of pipe joint compound or tape to the external threads of all pipe connections required. Take care not to allow any compound, tape, or other foreign matter inside any of the nipples or openings of the Speed Control Assembly or other trim components.
6. Remove the union parts from the pipe removed in step 3 and install them on the 1/2" (15 mm) NPT nipples provided on the Speed Control Assembly.
7. Install the Speed Control Assembly as shown on the appropriate Viking Trim Chart provided in Figure 2.



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Hydrostatic Test:

⚠ CAUTION

When a Pressure Operated Relief Valve (PORV) is installed in the Deluge or Flow Control Valve trim, **DO NOT** subject the PORV to a 200 psi (13.8 bar) hydrostatic system test unless the 1/2" trim piping connecting the outlet chamber of the Deluge or Flow Control Valve to the operating (single ported) end of the PORV is disconnected and plugged during the test. Remove the plugs and re-connect the piping before placing the system in service.

4-A. PLACING IN SERVICE

A. PROCEDURE FOR DELUGE VALVES:

1. Adjust speed control to the initial setting for deluge valves:
 - a. Fully OPEN the needle valve controlling flow into the priming chamber. This needle valve is marked "SLOW CLOSE".
 - b. Fully CLOSE the needle valve controlling flow out of the priming chamber. (This needle valve is marked "SLOW OPEN".) Then partially open it, turning it approximately one and one-half turn counter-clockwise.
2. Place the system in service according to instructions printed in current Technical Data for the Viking Deluge Valve used.
3. Perform Trip Test to test the deluge valve opening speed with initial settings as described in step 1. (Opening the emergency release will trip the system.)

⚠ CAUTION

Performing a trip test results in operation of the Deluge Valve. Water will flow into the sprinkler piping and out of any open sprinklers. Take necessary precautions to prevent damage.

- a. Observe the time required for the deluge valve to open.
4. Reset the deluge valve according to instructions printed in current Technical Data for the valve used.
5. Adjustment procedure for deluge valves:

- a. If the opening speed observed in step 3 was too fast, turn the needle valve marked "SLOW OPEN" clockwise.

NOTE: Needle valves are modified to prevent complete closure. Fully closing the needle valves will not prevent the Deluge Valve from operating.

- b. If the opening speed was too slow, turn the needle valve marked "SLOW OPEN" counter-clockwise.
6. Repeat steps 3 through 5 until the desired operating speed is achieved.

B. PROCEDURE FOR FLOW CONTROL VALVES:

1. Adjust speed control to initial setting for flow control valves:
 - a. Fully CLOSE BOTH needle valves, then partially open them, turning both approximately one and one-half turns counter-clockwise.
2. Place the system in service according to instructions printed in current Technical Data for the Viking Flow Control Valve used.
3. Perform Trip Test to test the flow control valve operating speed with initial settings as described in step 1.

⚠ CAUTION

Performing a trip test results in operation of the Flow Control Valve. Water will flow into the sprinkler piping and out of any open sprinklers. Take necessary precautions to prevent damage.

- a. Observe the time required for the flow control valve to open.
4. Reset the releasing device used to trip the system.
 - a. Observe the time required for the flow control valve to reset.
5. Adjustment procedure for flow control:
 - a. If the opening speed observed in step 3 was too fast, turn the needle valve marked "SLOW OPEN" clockwise.

NOTE: Needle valves are modified to prevent complete closure. Fully closing the needle valves will not prevent the Flow Control Valve from operating.

- b. If the opening speed was too slow, turn the needle valve marked "SLOW OPEN" counter-clockwise.
- c. If the closing (resetting) speed observed in step 3 was too fast, turn the needle valve marked "SLOW CLOSE" clockwise.
- d. If the closing (resetting) speed was too slow, turn the needle valve marked "SLOW CLOSE" counter-clockwise.
6. Repeat steps 3 through 5 until the desired operating speed is achieved.



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5. OPERATION (Refer to Figure 1.)

The Viking Model A-1 Speed Control Assembly consists of a pre-assembled galvanized or brass pipe loop for installation between the priming chamber and trim of the Viking Deluge or Flow Control Valve used.

One leg of the loop is equipped with a check valve to allow flow into the priming chamber only. The other leg is equipped with a check valve that only allows flow out of the priming chamber.

Both legs are equipped with a special needle valve to adjust flow into or out of the priming chamber. The needle valves are modified to prevent complete closure, thus ensuring that fully closing the needle valves will not prevent the deluge valve or flow control valve from operating. An additional strainer is provided in the outlet leg of the assembly to prevent the possibility of contaminants entering release line devices.

With both needle valves fully opened, flow into the priming chamber will allow the valve to set at maximum speed and flow out of the priming chamber will allow the valve to trip at maximum speed. By partially or fully closing the appropriate needle valve, the setting and/or tripping speed can be reduced.

6. INSPECTIONS, TESTS, AND MAINTENANCE

After installation, the speed control assembly is considered a trim component of the valve on which it is installed. Refer to Maintenance instructions provided in Technical Data for the valve used. Observe and apply all notices, warnings, cautions, and recommended procedures pertaining to trim components for the valve used.

Perform all recommended inspections, testing, and maintenance procedures on a regular basis; at least as often as the minimum frequencies recommended in Technical Data for the valve used.

Strainer Maintenance Procedures: (Refer to Figure 1.)

NOTE: Flushing of strainer may be performed after the Deluge Valve or Flow Control Valve has operated. If the system is in operation when the strainer flushing plug is removed, water will flow from the opening.

1. To prevent operation of the deluge valve or flow control valve, verify that the main water supply control valve is closed.
2. Close the priming valve.
3. The speed control assembly and associated trim may be de-pressurized by temporarily opening the emergency release.
4. To flush the strainer screen:
 - a. Use the appropriate wrench to remove the strainer flushing plug.

⚠ CAUTION

Plug and trim may be pressurized.

- b. Open the priming valve. Allow water to flow from the opening until it appears clear and free of debris.
 - c. Close the priming valve.
 - d. Re-install the flushing plug.
5. To remove the strainer screen for inspection and cleaning:
 - a. Use the appropriate wrench to loosen and remove the brass hex bushing and sealing washer.
 - b. The strainer screen can be removed for inspection.

⚠ CAUTION

Hex bushing and trim may be pressurized.

- c. Flush the screen with fresh water until clean.
 - d. Place the metal sealing washer over the threads of the hex-bushing.
 - e. Carefully insert the screen into the seat provided in the hex bushing.
 - f. Install the hex bushing with the screen. Use the appropriate wrench. DO NOT over-tighten.
6. When strainer maintenance is complete, place the system in service according to instructions printed in current Technical Data for the Viking Flow Control Valve used.
 - a. Verify that the main water supply control valve and priming valve are open.

7. AVAILABILITY

The Viking Speed Control Assembly is available through a network of domestic and international distributors. See the Viking Corp. Web site for closest distributor or contact The Viking Corporation.

8. GUARANTEES

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



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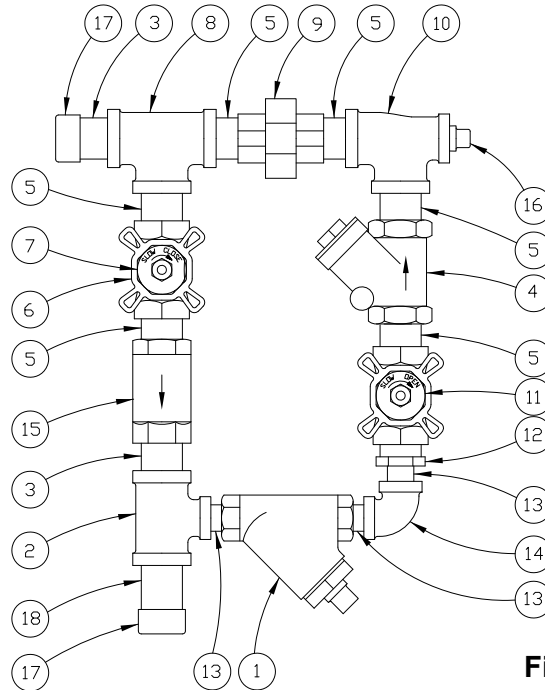


Figure 1 - Replacement Parts

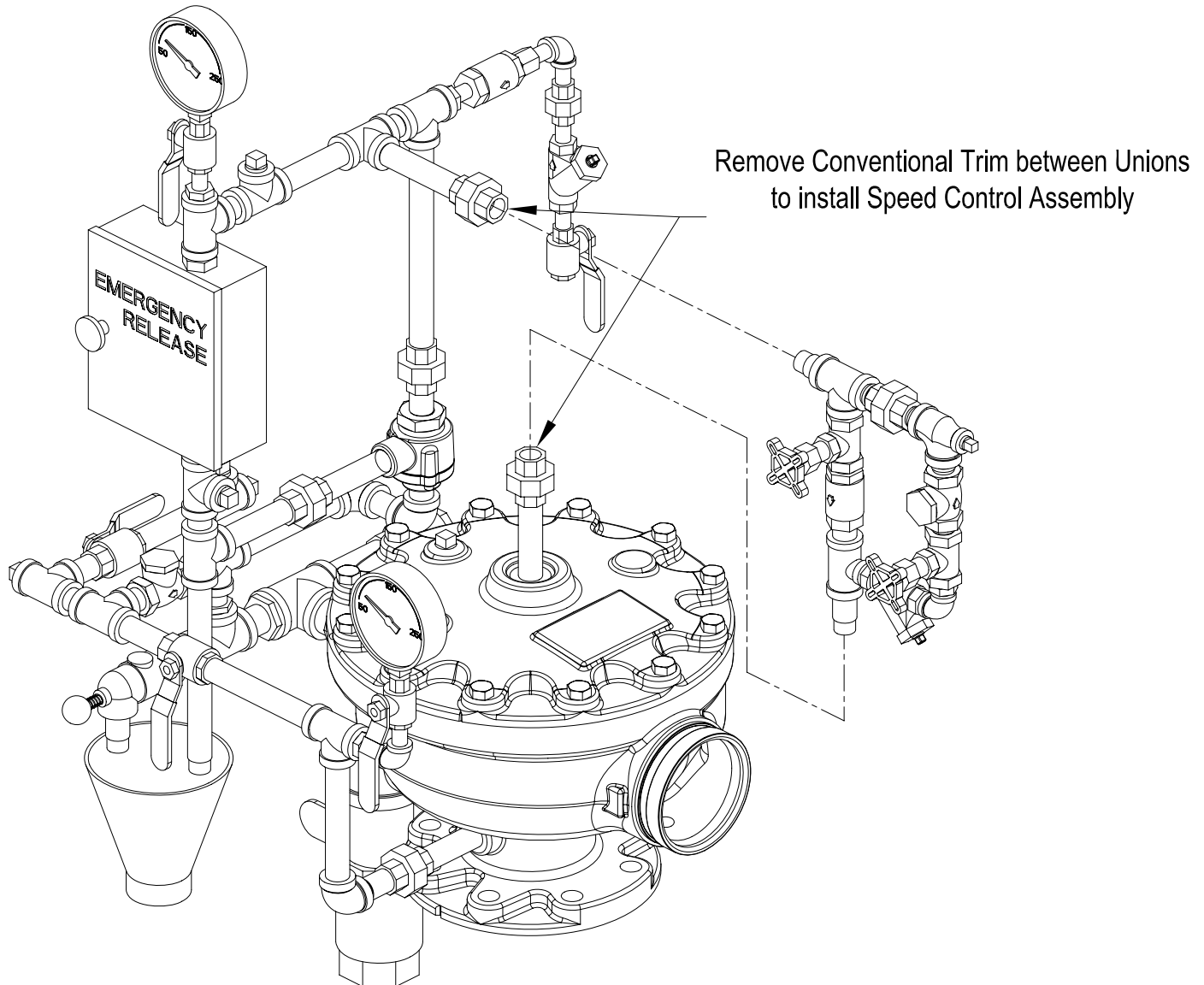
ITEM NO.	PART NUMBER		DESCRIPTION	MATERIAL		NO. REQ'D
	GALVANIZED	BRASS		GALVANIZED	BRASS	
1	01488A	01488A	1/4" Strainer	Bronze and Stainless Steel	Bronze	1
2	--	--	1/2" x 1/2" x 1/4" Tee	Galvanized Steel	Brass	1
3	--	--	1/2" x 1-1/2" Nipple	Galvanized Steel	Brass	2
4	03945A	03945A	1/2" Check Valve	Brass	Brass	1
5	--	--	1/2" x Clo. Nipple	Galvanized Steel	Brass	6
6	*	*	1/2" Releasing Speed Control Needle Valve	Bronze	Bronze	2
7	*	*	Label, Slow Close	Aluminum, Silk Screened	Aluminum, Silk Screened	1
8	--	--	1/2" x 1/2" x 1/2" Tee	Galvanized Steel	Brass	1
9	--	--	1/2" Union	Galvanized Steel	Brass	1
10	--	--	1/2" x 1/4" x 1/2" Tee	Galvanized Steel	Brass	1
11	*	*	Label, Slow Open	Aluminum, Silk Screened	Aluminum, Silk Screened	
12	--	--	1/2" x 1/4" Hex Bushing	Galvanized Steel	Brass	1
13	--	--	1/4" x Clo. Nipple	Galvanized Steel	Brass	3
14	--	--	1/4" x 90° Ell	Galvanized Steel	Brass	1
15	08431	08431	1/2" In-line Check Valve	Bronze	Bronze	1
16	--	--	1/4" Pipe Plug	Brass	Brass	1
17	--	--	Cap, Thread			2
18	--	--	1/2" x 2" Nipple	Galvanized Steel	Brass	1
--Indicates replacement part is not available.						
* Indicates replacement part only available in Sub-Assembly below.						
SUB-ASSEMBLY						
6, 7, 11	08791	08791	Replacement Needle Package			

VIKING[®]**TECHNICAL DATA****SPEED CONTROL ASSEMBLY
MODEL A-1**

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The Viking Speed Control Assembly may be used on Viking Angle Style Deluge or Flow Control Valves equipped with Conventional Trim installed according to the current conventional trim chart for the valve used. For Releasing Devices and modular trim, refer to current Technical Data for the releasing device used. Viking Deluge Valves, Flow Control Valves, Conventional Trim Packages, Releasing Devices, and the Speed Control Assembly must be ordered separately.



4" Model H Deluge Valve with Conventional Trim Shown.
Installation shown above is common to all sizes of Deluge and Flow Control Trim

Figure 2