

CARLIN VALVE MODEL CV45A

INSTRUCTION MANUAL

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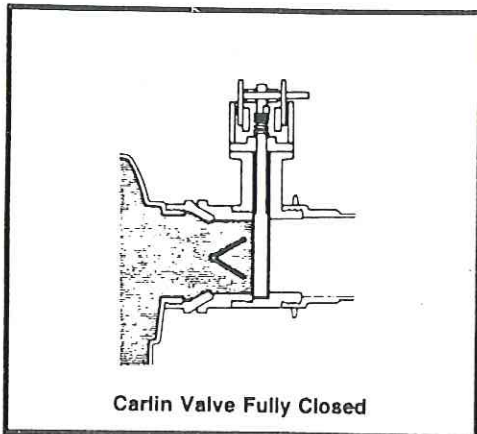
BEFORE USING THE CARLIN VALVE, PLEASE READ AND UNDERSTAND THE FOLLOWING SECTIONS. YOU WILL THEN BE ASSURED OF RECEIVING THE FULL BENEFIT OF THIS EQUIPMENT, TO INCLUDE THE FOLLOWING:

- * USE PERSONNEL MORE EFFECTIVELY BY TAKING THE HYDRANT PERSON TO THE FIRE SCENE WITH THE APPARATUS.
- * ELIMINATE WATER HAMMER FROM THE HYDRANT TO THE PUMPER BY FILLING THE HOSE IN A CONTROLLED MANNER.
- * PREVENT LAYING HOSE FROM A DRY, INOPERATIVE HYDRANT AS APPARATUS IS STILL AT THE HYDRANT WHEN IT IS OPENED.
- * CONTROL HYDRANT FLOW FROM THE FIRE SCENE USING WATER PRESSURE TO REMOTELY OPEN THE CARLIN VALVE.
- * OBTAIN STRAIGHTER HOSE LAYS AS THE WEIGHT OF THE WATER IN THE HOSE HELPS PREVENT THE ZIG-ZAGGING OF DRY HOSE.

HOW THE CARLIN VALVE WORKS:

The Carlin Valve is an automatic gate valve which, by using water pressure, will regulate the hydrant flow safely to fill the hose and then supply the pumper. The Carlin Valve functions by going through the following operating positions:

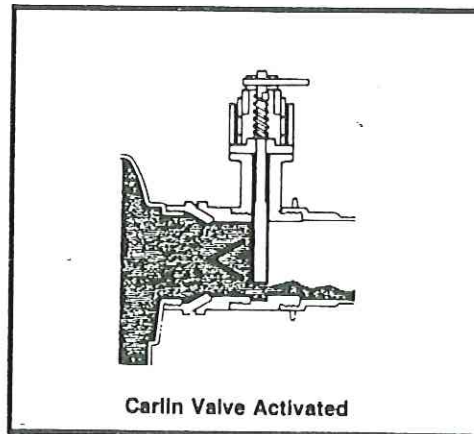
A



Carlin Valve Fully Closed

The hydrant can be opened immediately as the closed Carlin Valve prevents flow into the hose.

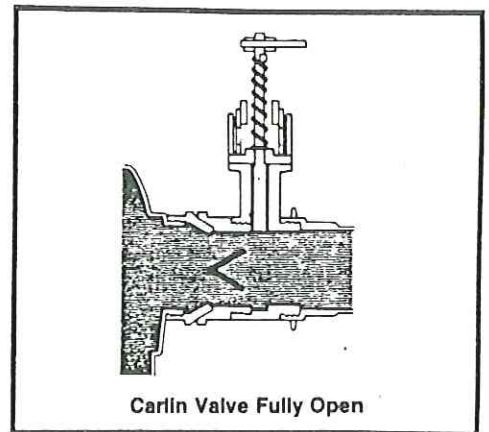
B



Carlin Valve Activated

When the activation lever is moved to the desired flow position, a controlled flow begins filling the hose.

C



Carlin Valve Fully Open

When pressure is equal in the hose and the hydrant, the Carlin Valve opens for full, unrestricted flow.

A

When placed on the hydrant, the Carlin Valve is in the CLOSED position with the supply hose already attached. Next the hydrant is opened, creating water pressure against the closed gate. Since there is not flow at this time, the hydrant can be opened quickly and easily without worry of water hammer.

B

As the valve gate is raised to a preset position (see calibration section), a precise controlled flow of water enters the hose. All personnel then ride the apparatus to the fire scene, and there the hose is broken out of the hose bed and is connected to the CLOSED suction inlet valve or a hose clamp is attached.

C

When the hose is totally filled with water, the water pressure in the hose, in the hydrant and in the Carlin Valve will equalize, causing the gate to rise to the OPEN position. The pump operator may now open the suction inlet valve to gain full access to the water capacity of the hydrant.

CAUTION: Your valve has been shipped in the armed position. DO NOT activate it unless it has water pressure against the gate or you hold the spring loaded gate shaft lever down before

CALIBRATING THE CARLIN VALVE:

Before using your Carlin Valve, it is necessary to calibrate the valve to your unique combination of hose type and size, hydrant pressure and average length of hose lay. Follow the steps below to accomplish this BEFORE putting the Carlin Valve in service. As your crew becomes more proficient, or if any of the above factors change (hose size, water system pressure, etc.), you should repeat this calibration procedure.

STEP 1

Attach the Carlin Valve to 100 feet of hose of the same size and type that will be used with the valve and lay out on level ground. Connect the Carlin Valve to a hydrant producing the typical pressure of your water system. Secure the other end of the hose with a cap, hose clamp or by attaching to a closed pumper intake valve.

STEP 2

Set the FAST-SLOW stop lever (E) in the middle of the position holes. Fully open the hydrant (NOTE: There may be a slight flow of water as air is expelled and the valve gate seats.) To start the controlled flow of water, release the safety catch (D) and move the cam lever (B) to the above stop position. You will immediately hear the water flow and note the hose beginning to fill with water.

STEP 3

Time the filling of the hose - 30 seconds for 100 feet of hose is a suggested fill rate. When the hose is full of water, it will begin to pressurize. Within a few seconds, the hose pressure will equalize with the hydrant pressure and the gate shaft lever (A) will pop up to the full open position.

STEP 4

To adjust the medium fill rate, it will be necessary to add or delete shims (K) to the underside of the gate shaft lever (A). Remove the 1/4" bolt (M) to adjust the shims. To increase the fill rate, add one thin shim at a time to the bottom of the gate shaft lever. (The shims on the top of the lever are stored and the ones on the bottom are used to adjust the flow rate.) To reduce the flow rate, remove shims from the bottom of the lever. Repeat steps 2 and 3 above until the desired fill rate is achieved.

CAUTION: Close the hydrant and bleed pressure from the hose before attempting any adjustments. Remove all water from the hose to obtain accurate fill rate timing.

ARMING THE VALVE:

The Model CV45A Carlin Valve is spring loaded in the "ARMED" position. To arm the valve, hold the safety stop (F) out of the way and push the gate shaft lever (A) down until it comes in contact with the roller (C). With the free hand, move the cam lever (B) until it is securely latched under the safety catch (D). The valve is now armed and ready for use.

OPERATION HINTS:

While every fire department operates somewhat differently from the next, most crews using the Carlin Valve are able to use one or more of the following hints for improved operations.

BEFORE LEAVING THE FIRE STATION

- * Carry the Carlin Valve in the hose bed or on the running board (mounting brackets are available) with the supply hose attached. The valve should be in the "ARMED" position.
- * If the valve has not been used for a week or more, lubricate the gate shaft with waterproof lubricant (see MAINTENANCE).

AT THE HYDRANT

- * Have the pumper pull past the hydrant towards the direction the hose will be laid to the fire.
- * Attach the Carlin Valve to the hydrant outlet that points toward the fire.
- * Pull at least 50 feet of hose from the hose bed and onto the ground at the hydrant. Enough hose should be pulled to allow adequate time for the hydrant man to return to the pumper after the valve has been activated. **NOTE: It is important that the apparatus begins laying hose before water filling the hose reaches the hose bed.**
- * To save time at the hydrant, have your hydrant man ride on the apparatus position closest to the hydrant. Have all necessary hydrant wrenches readily available.
- * Two firemen may be able to make a faster hydrant connection; however, one should return to the apparatus prior to activating the valve. (Various quick connect hydrant adapters are available from Hydra-Shield Manufacturing, Inc.)
- * With the Carlin Valve attached, the hydrant can be opened very quickly without risk of water hammer. When the hydrant is full open and the valve is ready for activation, move the cam lever to the appropriate "FAST-SLOW" position. The hydrant man can adjust the flow rate by about 30% by positioning the "FAST-SLOW" stop lever at various positions. A slower rate is desirable for short hose lays or when more time is desired.
- * It is not necessary to "wrap" the hydrant or straighten hose kinks before proceeding to the fire scene. The weight of water filling the hose will make straighter hose lays.
- * Should no water sound or hose filling be observed with the Carlin Valve in place and the hydrant is opened, the hydrant may be dry or inoperative. Disconnect and proceed to the next available hydrant.

AT THE FIRE SCENE

- * Immediately upon arriving at the fire scene, break (disconnect) the hose coupling closest to the hose bed. If it appears that the water is approaching and you need additional time, place the open hose butt on the street to flow, rather than chance charging the hose in the hose bed.
- * Connect the hose to a gated shut-off as soon as possible. The shut-off may be an intake valve on the pumper, a portable distribution manifold with separate valve controls or an approved hose clamp.
- * If the hose was disconnected too short to reach the pumper, attach a short length of hose to the pumper inlet. (It is desirable to carry a 25 foot or 50 foot length of hose for this purpose.) Make the short hose connection at the pumper first. If water filling the supply hose has already reached the open hose end, a wet connection can be made in the street. The short hose section will then fill prior to pressurizing the supply line and opening the Carlin Valve.
- * If you are ready to begin your attack on the fire but the supply line has not yet filled and pressurized, pump from the booster tank at first. Switch over to the hydrant supply line as soon as the hose is pressurized and the Carlin Valve opens.
- * If, after opening the supply line and pumping has started, the supply hose collapses, the suction inlet valve may have been opened too soon. Switch to the booster tank and close the suction inlet until you are sure the hose is fully pressurized (about 10 to 15 seconds) and the Carlin Valve has opened.
- * Always remember, use to your maximum advantage the additional person who now arrives and is available at the fire scene with the pumper.

AFTER THE FIRE

- * Inspect the valve components for evidence of physical damage. Do not place in service if swivels, fittings, valve gate, shaft, etc. are not functioning properly.
- * In most cases, the Carlin Valve is made ready for the next fire by emptying out the water, closing the gate and "ARMING" the valve.

MAINTENANCE:

The gate is *MOLY-COAT* lubricated. Although this is a semi permanent lubricant, we recommend applying some grease to the inside edges of both the male hose fitting and female hydrant fitting where they contact the gate.

- * Apply a little oil occasionally on the cam rollers (C).
- * In use, water will lubricate the O-rings for the gate shaft. Whenever you operate the valve gate dry for instruction or demonstration, first put some light grease on the gate shaft to lubricate the O-ring seal.

CARLIN AUTOMATIC HYDRANT VALVE

