Northborough Fire Department in Service Training

Lesson 3 – In Line Pumping Using the Hydrant Assist Valve

Objective

Pump a LDH supply line using the HAV simulating pumping a long hose lay

Equipment needed

Engine, - HAV, 2 lengths of LHD, Master Stream Appliance with pressure gauge, 2 – 4 inch snakes.

Important points to discuss

Building on lesson 2, discuss the need to pump 4 inch LDH at the 1000 ft interval in order to overcome friction loss so as to properly supply a fire scene requiring a long hose lay. Discuss the fact that 4 inch LDH has a maximum carrying capacity of 1000 gpm, and that the friction loss at this gpm will be 20 psi of loss for every 100 feet of hose. Note that the maximum pressure LDH may be pumped at is 185 psi. Further discuss the limitations of pumping from a static source (drafting) vs. a pressure source (hydrant). Note the approximate gpm's and the friction loss rates to determine how much water can be delivered.

500 GPM – 5 psi per 100 ft

700 GPM – 10 psi per 100 ft

1000 GPM – 20 psi per 100 ft

Pumping 1000 feet of LDH at 185 psi will yield approximately 850 – 900 GPM depending on elevation.

In order to use the HAV to in line pump, an adapter must be used. Theses adapters are located in the pump compartments of all large apparatus. The adapter is a 4 ½ inch thread to stortz connection and is simply threaded into the end of the HAV that would normally thread onto a hydrant. The process for pumping the HAV is the same procedure as pumping the valve when it is on the hydrant. See figure 1.