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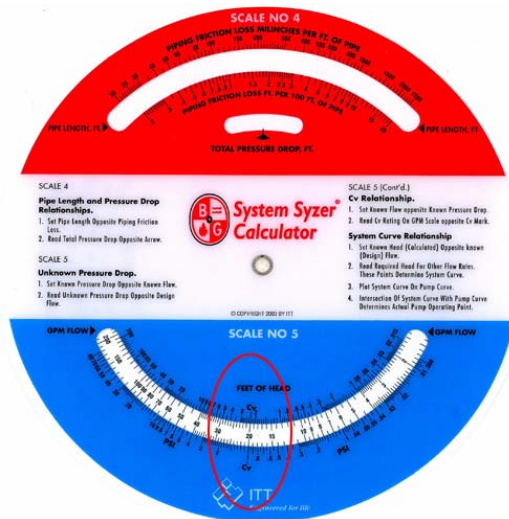
January 25, 2010 ~ Monday Morning Minutes:

The Bell and Gossett System Syzer® – a few other uses

The ITT Bell and Gossett system syzer has a scale 5 which may be used to determine pressure drop in a hydronic system when the C_v (called C sub V) of a valve or device is known. The C_v is the water flow, in gallons per minute (GPM), which causes a 1 PSI pressure drop.

If a hydronic control valve has a C_v of 20, then the valve will have a pressure drop of 1 PSI, when 20 GPM flows through it. So the units of C_v are GPM. Let's use scale 5 of the B&G System Syzer® to find the flow rate if we have 5 PSI pressure drop across this valve, which has a C_v of 20. Remember, in field measurements, that the C_v was determined with the device full open. Any field measurements, in which you use C_v , should have full possible flow, so drive the controls full open when measuring.

Rotate the scale so that the C_v line, in the blue area, is lined up with 20 in the white section. Now you can look at any flow rate in the white area and find the pressure drop, in feet, above it and PSI below it. In our example, with 5 PSIG pressure drop across the valve, we see the flow rate will be about 47 GPM.



Conversely, if you know the flow and head of a device and you are asked about the C_v , you may use scale 5 to find it. Let's assume you know a coil has a pressure drop of 6 feet at 200 GPM. What is the C_v of the coil? You guessed it! Take scale 5 and rotate until 200 GPM in the white section lines up with 6 feet above it in the blue area. Make sure you don't mix up feet and pounds. Now read the C_v in the white area. It is about 122. The electronic version of the System Syzer will give you exact numbers.

Next week we will use scale 5 of the system syzer in a pumping application...

If you would like to download the electronic system syzer go to <http://www.bellgossett.com/BG-SystemSyzer.asp>

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