

ARMSTRONG

CBV Slide Rule Operating Instructions

1. To determine the flow measurement (in US GPM) in a pipe, insert an appropriate measuring device (e.g. a differential pressure meter) into the measuring ports in preparation for measuring the pressure drop across the circuit balancing valve (CBV). Note: this procedure applies to valves which are 2" diameter or less. For larger valves, see Step 5 below)
2. Using the Circuit Balancing Valve Slide Rule, turn the wheel of the slide rule until the hairline lines up with the valve handle position for the valve being measured. For example, for the slide rule shown in Figure A, the wheel is turned to the position corresponding to 1.7 turns on a 3/4" valve.
3. Take the pressure reading (in feet of water) using your pressure measurement device. For our example, let's say the pressure drop across the valve is determined to be 5 psi.
4. Using the slide rule, find the measured pressure reading value on the "Meter Gauge Scale", shown on Figure A, below. Line up this reading (which is 5 feet in our example shown in Figure A) with the reading on the adjacent "Flow Rate Scale", also shown on Figure A. The flow rate indicated is therefore 2.2 US GPM in our example. This is the calculated flow rate of the liquid moving through the valve.

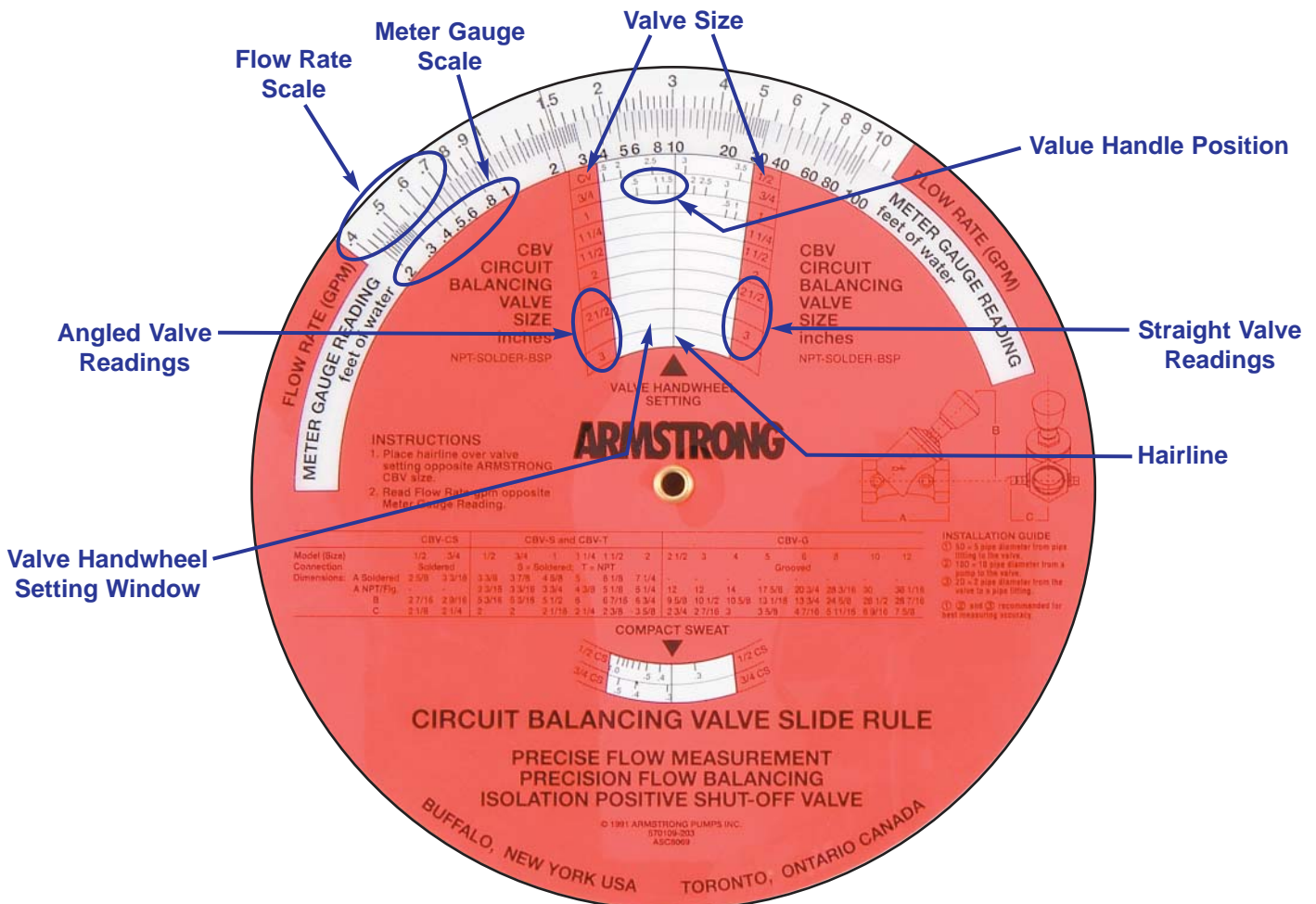


Figure A

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5. For valves larger than 2" diameter, the same basic procedure applies, with one additional consideration: that being whether the CBV is installed in the angled or straight pattern configuration. Armstrong CBVs from 2.5" to 12" can be installed in either the angled or straight pattern configuration, which has an impact on the pressure drop and hence fluid flow rate through the valves. It is therefore necessary to read the slide rule correctly, using the LEFT side of the valve handwheel setting window for determining ANGLED valve flow rates and the RIGHT side of the valve handwheel setting window for determining STRAIGHT valve flow rates (Refer to Figure B below). Although indicated on the back side of the wheel (which is used when working with 4" and larger valves), this difference of Right and Left side is not indicated on the front side of the wheel (which is used when working with 3" and smaller valves).

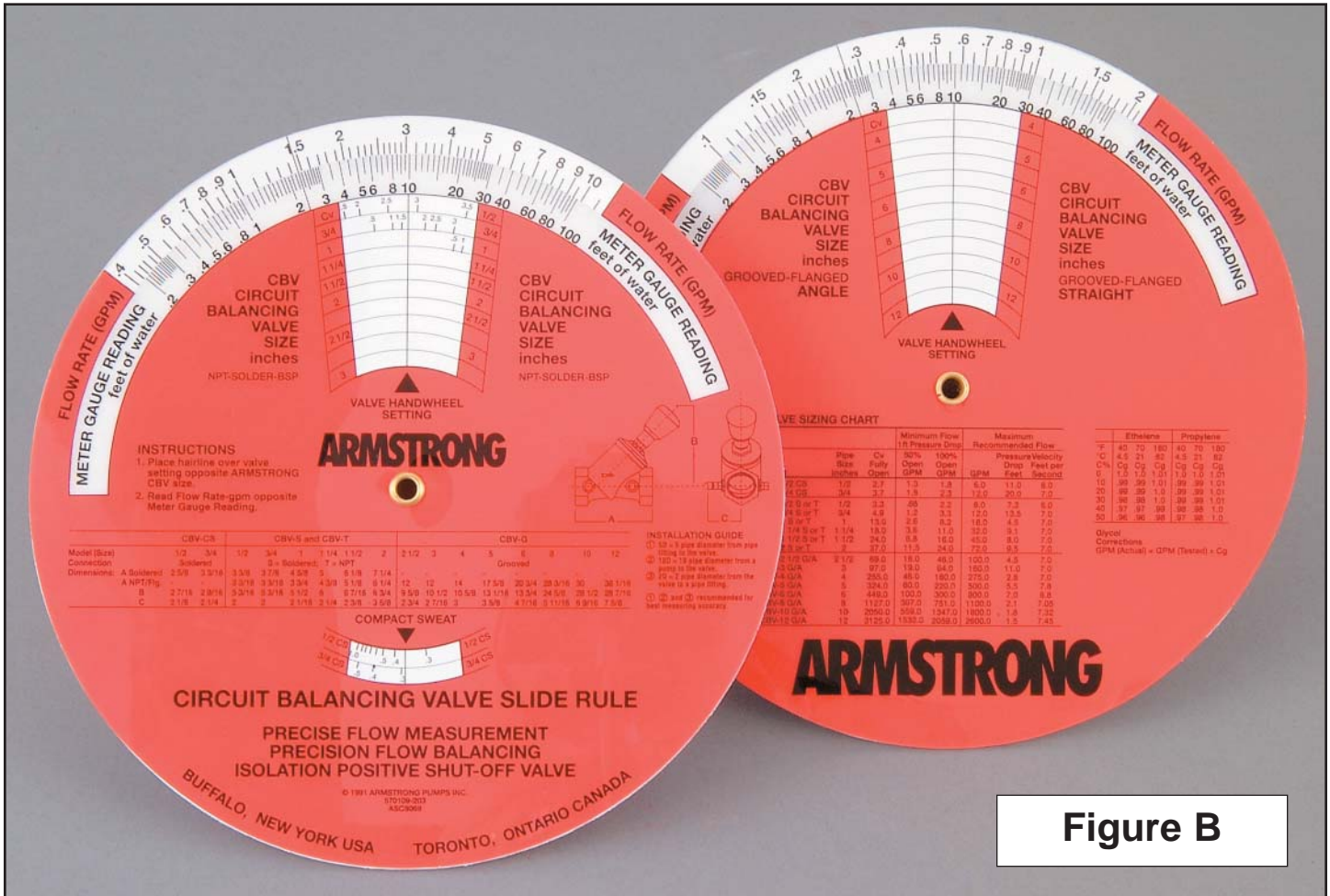


Figure B