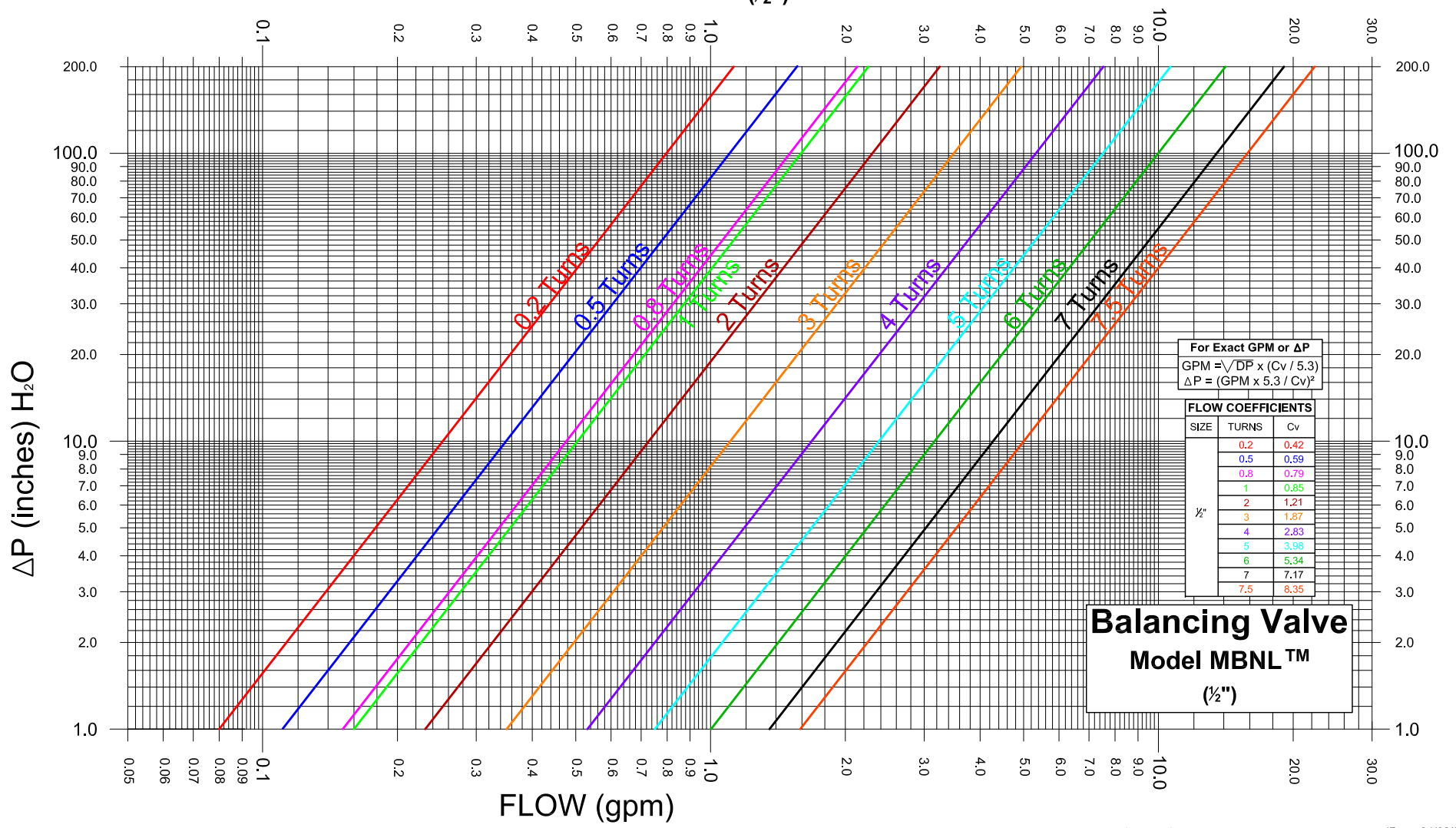




# Lead Free Globe Style Balancing Valve Model MBNL™ Flow Chart (½")

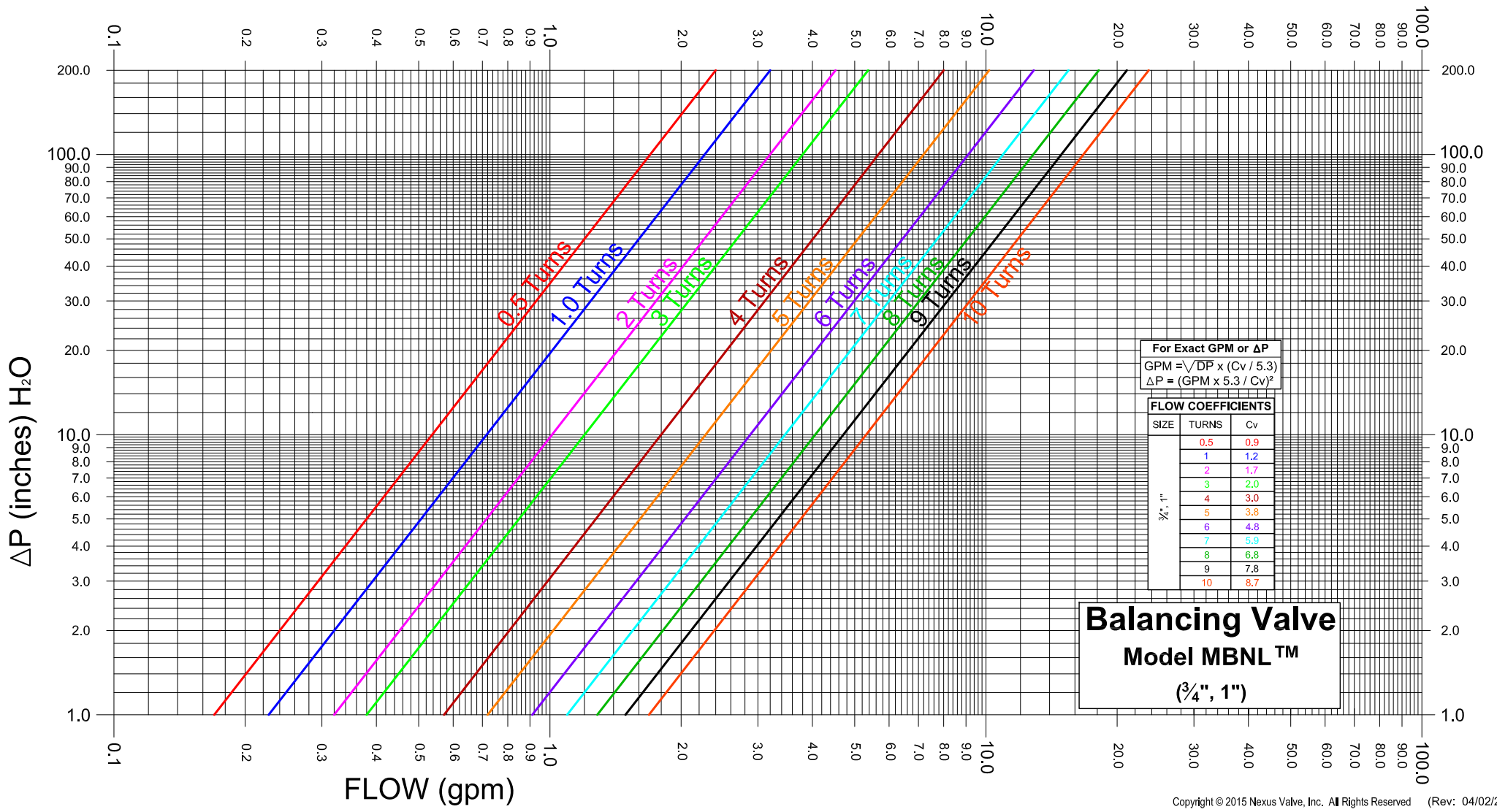




# Lead Free Globe Style Balancing Valve Model MBNL™

## Flow Chart

(3/4", 1")



**Balancing Valve**  
**Model MBNL™**  
 (3/4", 1")



# UltraMBNL™ - Multiturn Balancing Valve

## Calculations

(1/2", 3/4", 1")

### Cv Values for UltraMBNL Handle Turns

Turns	MBNL1	MBNL2
	Valve Sizes	
	1/2"	3/4", 1"
0.2	0.42	0.35
0.3	0.46	0.60
0.4	0.54	0.82
0.5	0.59	0.90
0.6	0.63	0.97
0.7	0.73	1.05
0.8	0.79	1.12
0.9	0.85	1.20
1.0	0.85	1.27
1.5	0.95	1.58
2.0	1.21	1.73
2.5	1.55	2.01
3.0	1.87	2.28
3.5	2.33	2.59
4.0	2.83	2.95
4.5	3.34	3.34
5.0	3.98	3.81
5.5	4.59	4.30
6.0	5.34	4.82
6.5	6.26	5.30
7.0	7.17	5.87
7.5	8.35	6.27
8.0	-	6.80
8.5	-	7.26
9.0	-	7.74
9.5	-	8.31
10.0	-	8.74

### How to calculate the Flow through UltraMBNL using: Cv values

1. Select column MBNL1 or MBNL2 for the valve being used
2. Read the Handle Turns counter on the valve
3. Scan the MBNL column for your valve and regard the Cv value for your turns
4. Use the following equations to calculate flow

If PSID is in pounds/square inch

$$GPM = Cv \cdot \sqrt{\Delta P_{PSI}}$$

If PSID is in Inches of Water

$$GPM = \sqrt{\Delta P_{inH_2O}} \cdot Cv / 5.3$$

### How to determine UltraMBNL Handle Turns using: GPM and Pressure Differential (ΔP)

1. If GPM and required pressure drop is known, calculate the required Cv using the following equations:

If PSID is in pounds/square inch

$$Cv = GPM / \sqrt{\Delta P_{PSI}}$$

If PSID is in Inches of Water

$$Cv = GPM \cdot 5.3 / \sqrt{\Delta P_{inH_2O}}$$

2. Locate Column for Valve being used
3. Scan down column until closest Cv is located
4. Read Turn number in first column