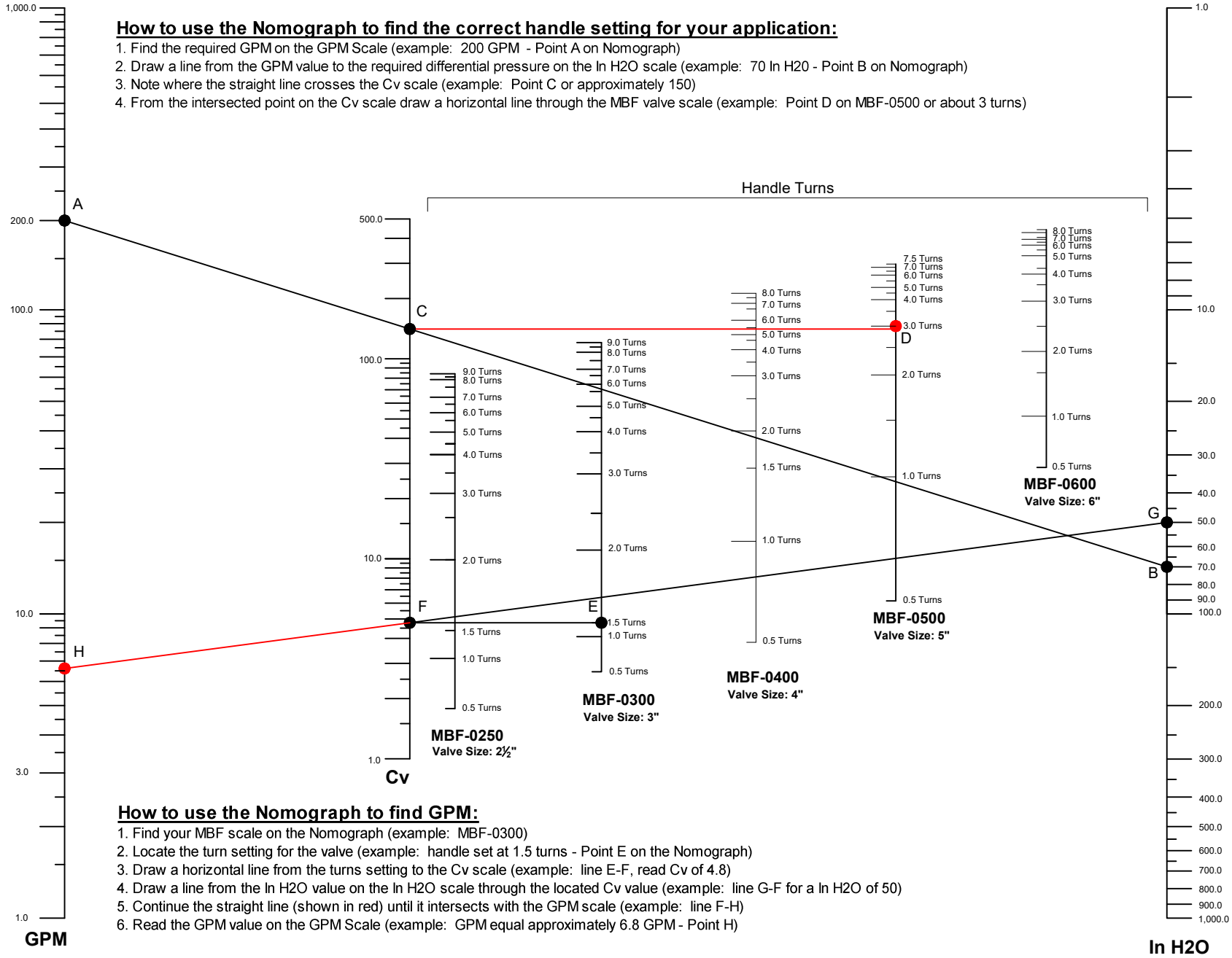
UltraMBF™ - Multiturn Balancing Valve Flow Chart

(2½" thru 6")

How to use the Nomograph to find the correct handle setting for your application:

1. Find the required GPM on the GPM Scale (example: 200 GPM - Point A on Nomograph)
2. Draw a line from the GPM value to the required differential pressure on the In H2O scale (example: 70 In H20 - Point B on Nomograph)
3. Note where the straight line crosses the Cv scale (example: Point C or approximately 150)
4. From the intersected point on the Cv scale draw a horizontal line through the MBF valve scale (example: Point D on MBF-0500 or about 3 turns)



How to use the Nomograph to find GPM:

1. Find your MBF scale on the Nomograph (example: MBF-0300)
2. Locate the turn setting for the valve (example: handle set at 1.5 turns - Point E on the Nomograph)
3. Draw a horizontal line from the turns setting to the Cv scale (example: line E-F, read Cv of 4.8)
4. Draw a line from the In H2O value on the In H2O scale through the located Cv value (example: line G-F for a In H2O of 50)
5. Continue the straight line (shown in red) until it intersects with the GPM scale (example: line F-H)
6. Read the GPM value on the GPM Scale (example: GPM equal approximately 6.8 GPM - Point H)

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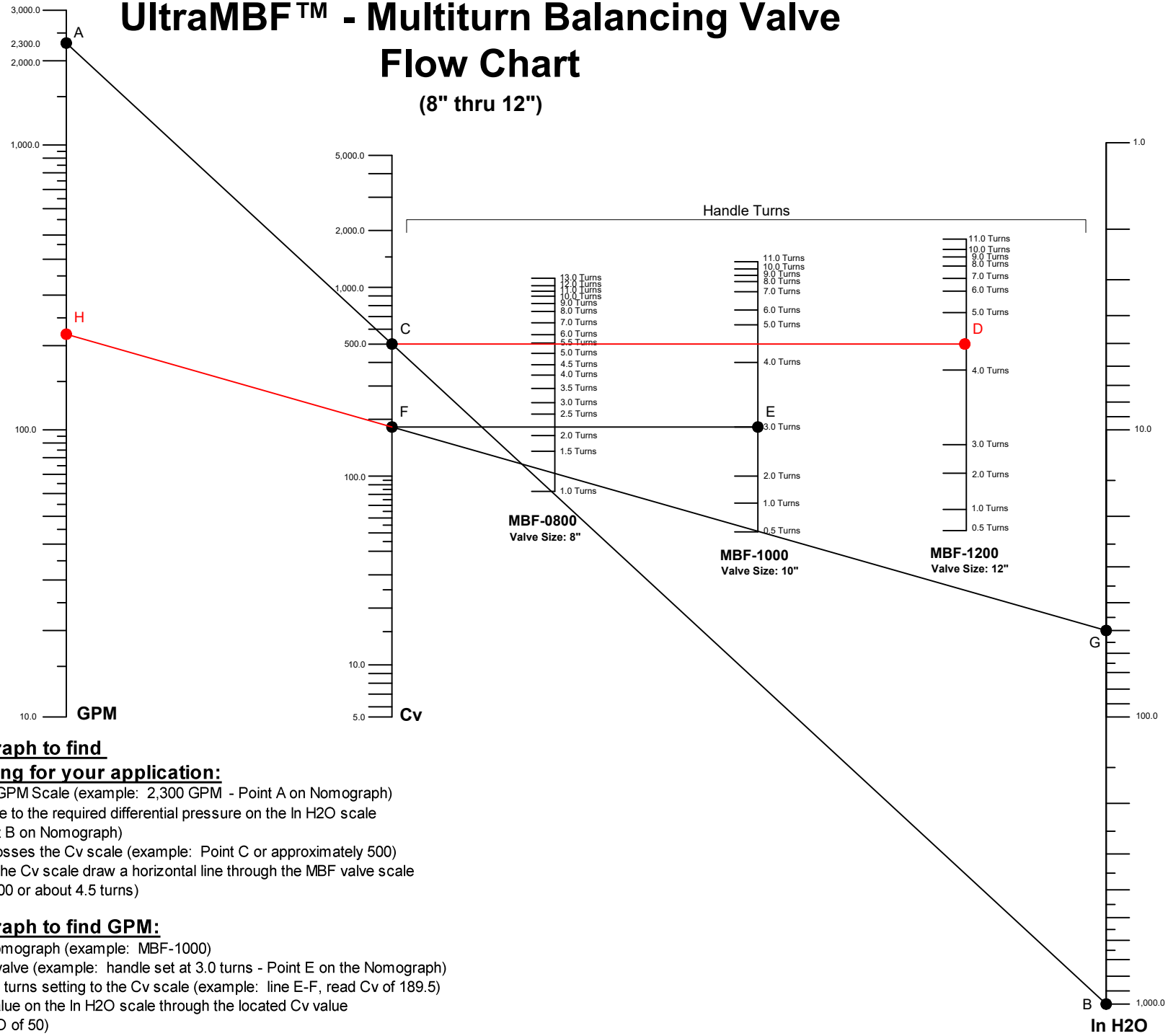
UltraMBF™ - Multiturn Balancing Valve Flow Chart

(8" thru 12")



How to use the Nomograph to find the correct handle setting for your application:

1. Find the required GPM on the GPM Scale (example: 2,300 GPM - Point A on Nomograph)
2. Draw a line from the GPM value to the required differential pressure on the In H2O scale (example: 1,000 In H20 - Point B on Nomograph)
3. Note where the straight line crosses the Cv scale (example: Point C or approximately 500)
4. From the intersected point on the Cv scale draw a horizontal line through the MBF valve scale (example: Point D on MBF-1200 or about 4.5 turns)

How to use the Nomograph to find GPM:

1. Find your MBF scale on the Nomograph (example: MBF-1000)
2. Locate the turn setting for the valve (example: handle set at 3.0 turns - Point E on the Nomograph)
3. Draw a horizontal line from the turns setting to the Cv scale (example: line E-F, read Cv of 189.5)
4. Draw a line from the In H2O value on the In H2O scale through the located Cv value (example: line G-F for a In H2O of 50)
5. Continue the straight line (shown in red) until it intersects with the GPM scale (example: line F-H)
6. Read the GPM value on the GPM Scale (example: GPM equal approximately 230 GPM - Point H)

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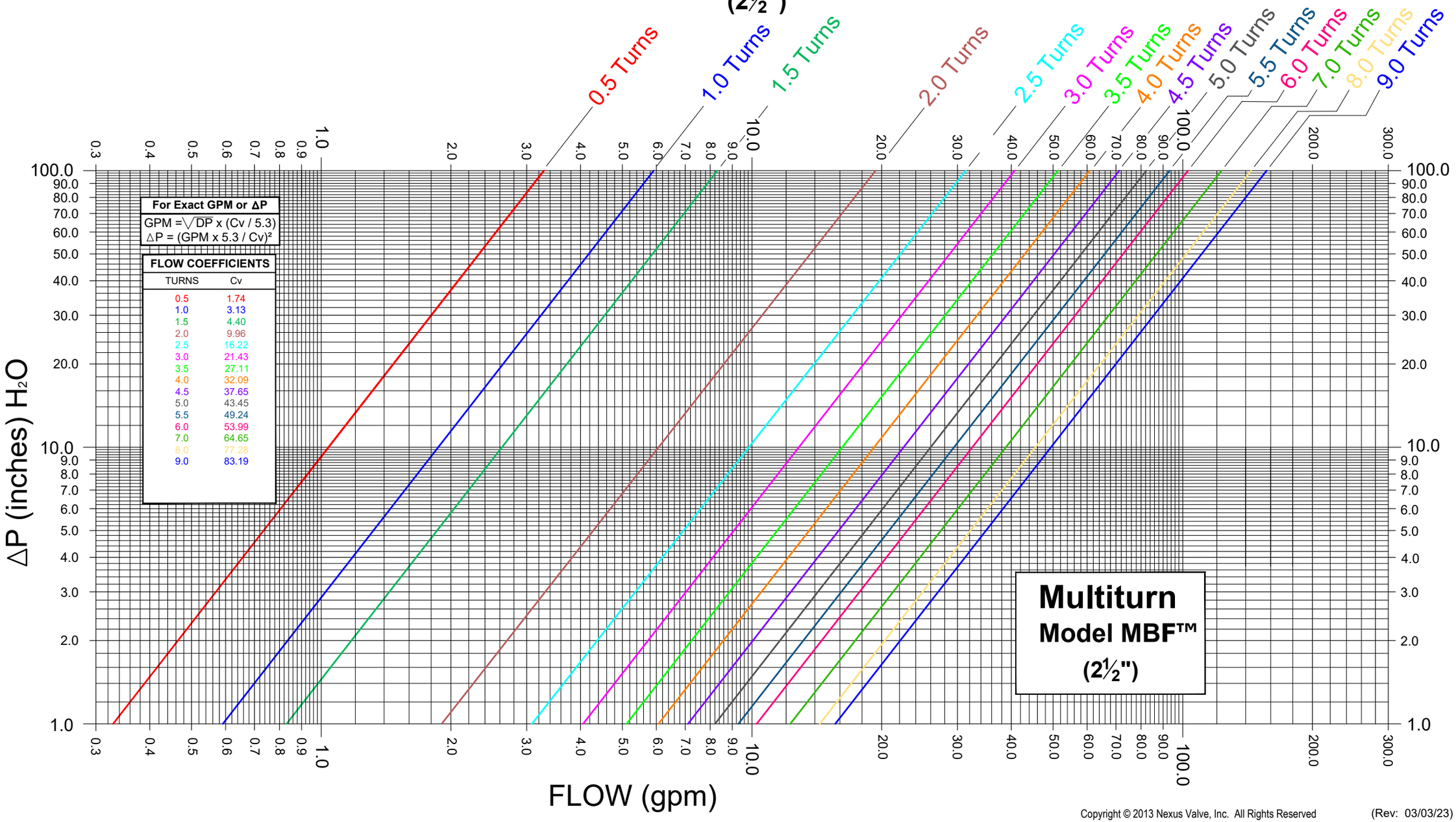
Multiturn Balancing Valve Model MBF™
Flow Chart
(2½")



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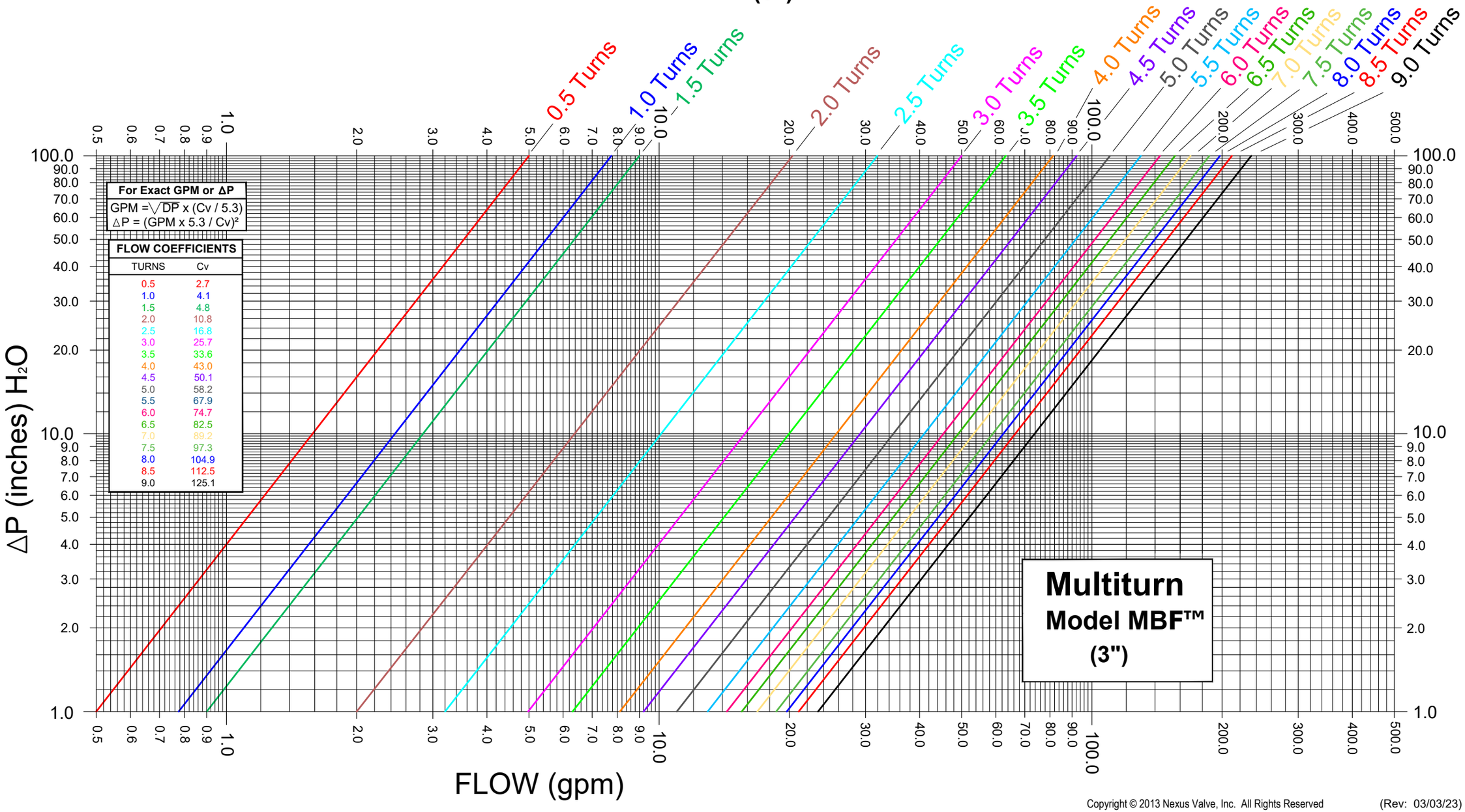
Multiturn Balancing Valve Model MBF™
Flow Chart
(3")



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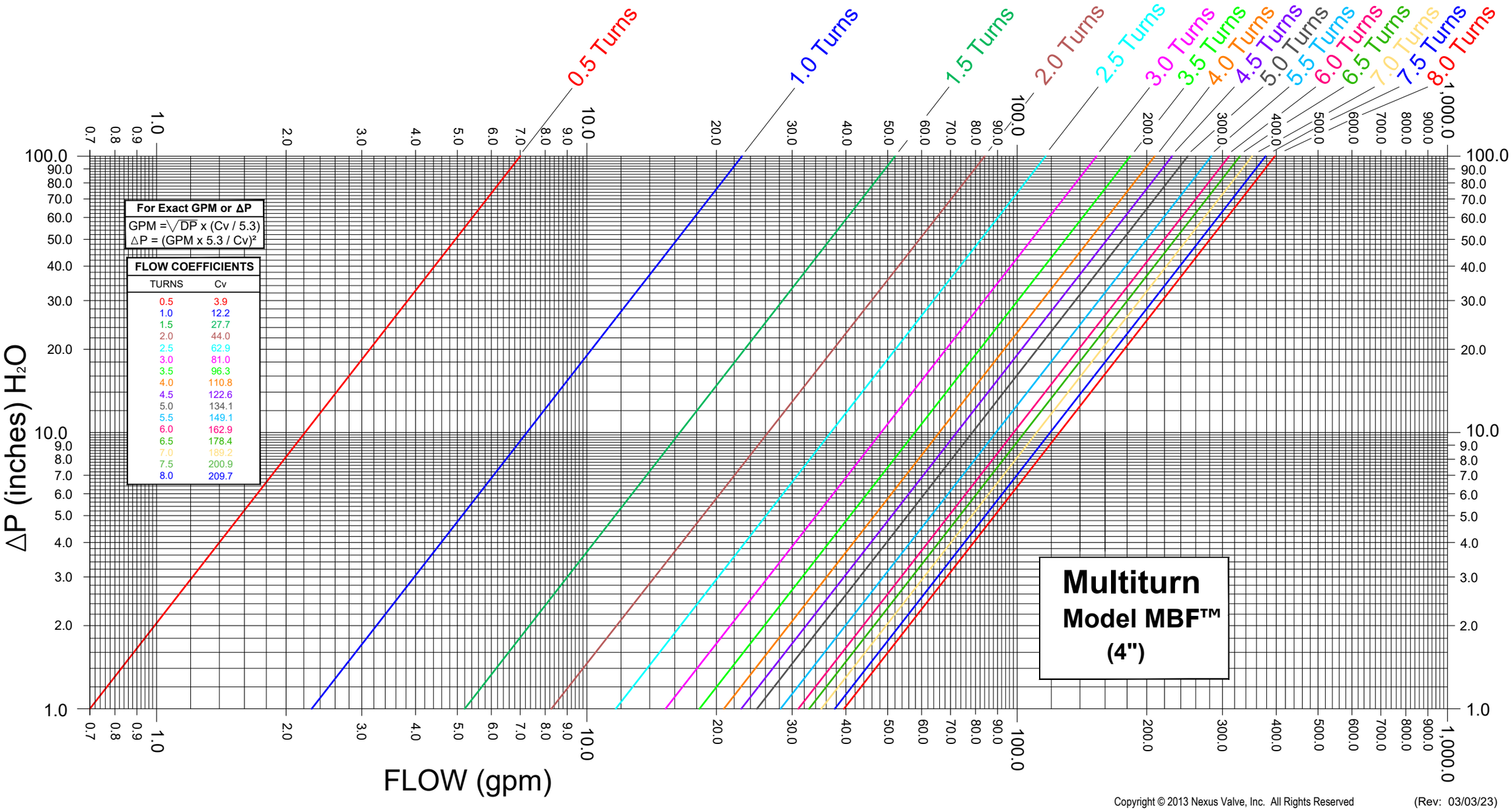
Multiturn Balancing Valve Model MBF™
Flow Chart
(4")



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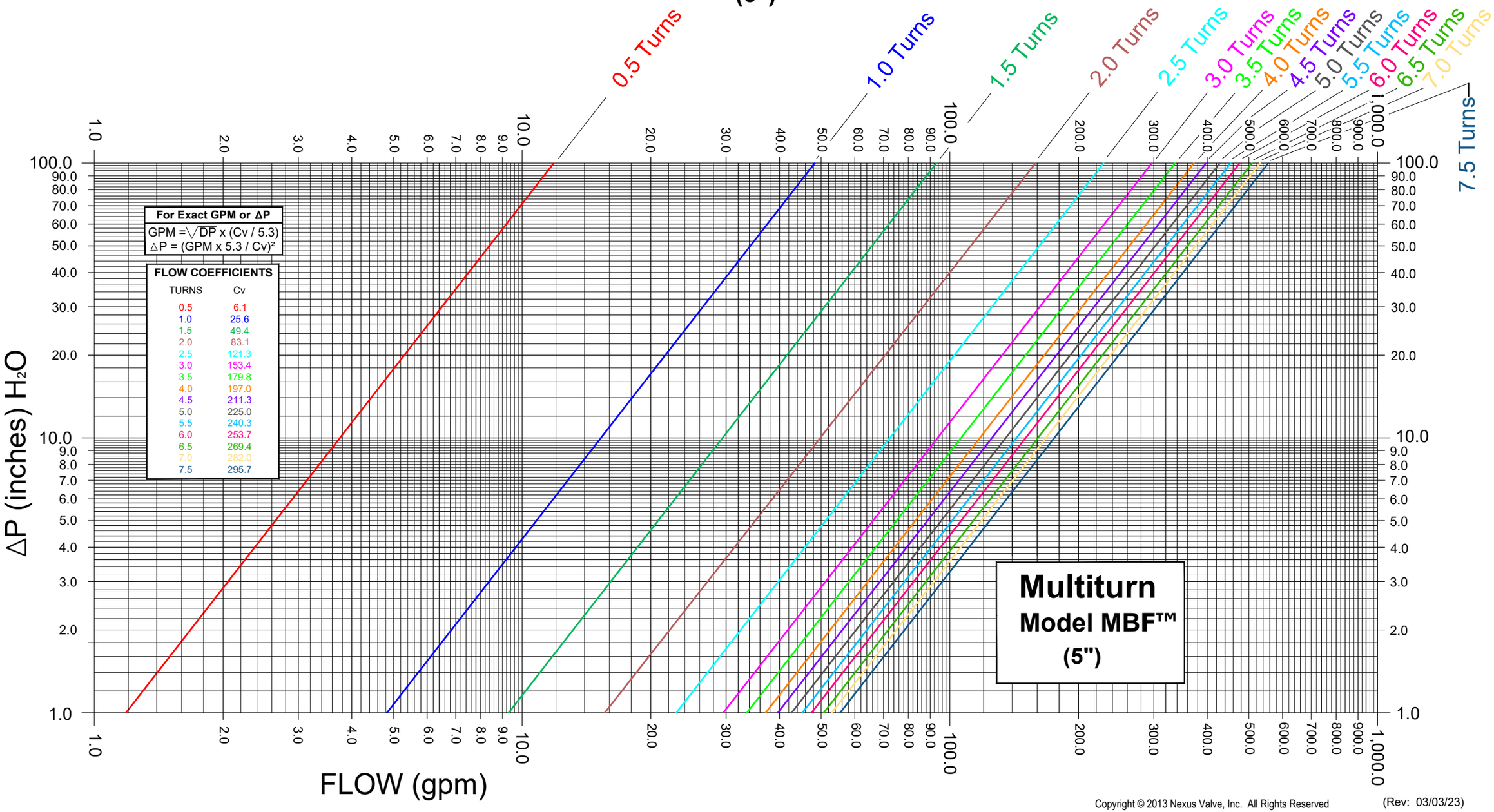
Multiturn Balancing Valve Model MBF™
Flow Chart
(5")



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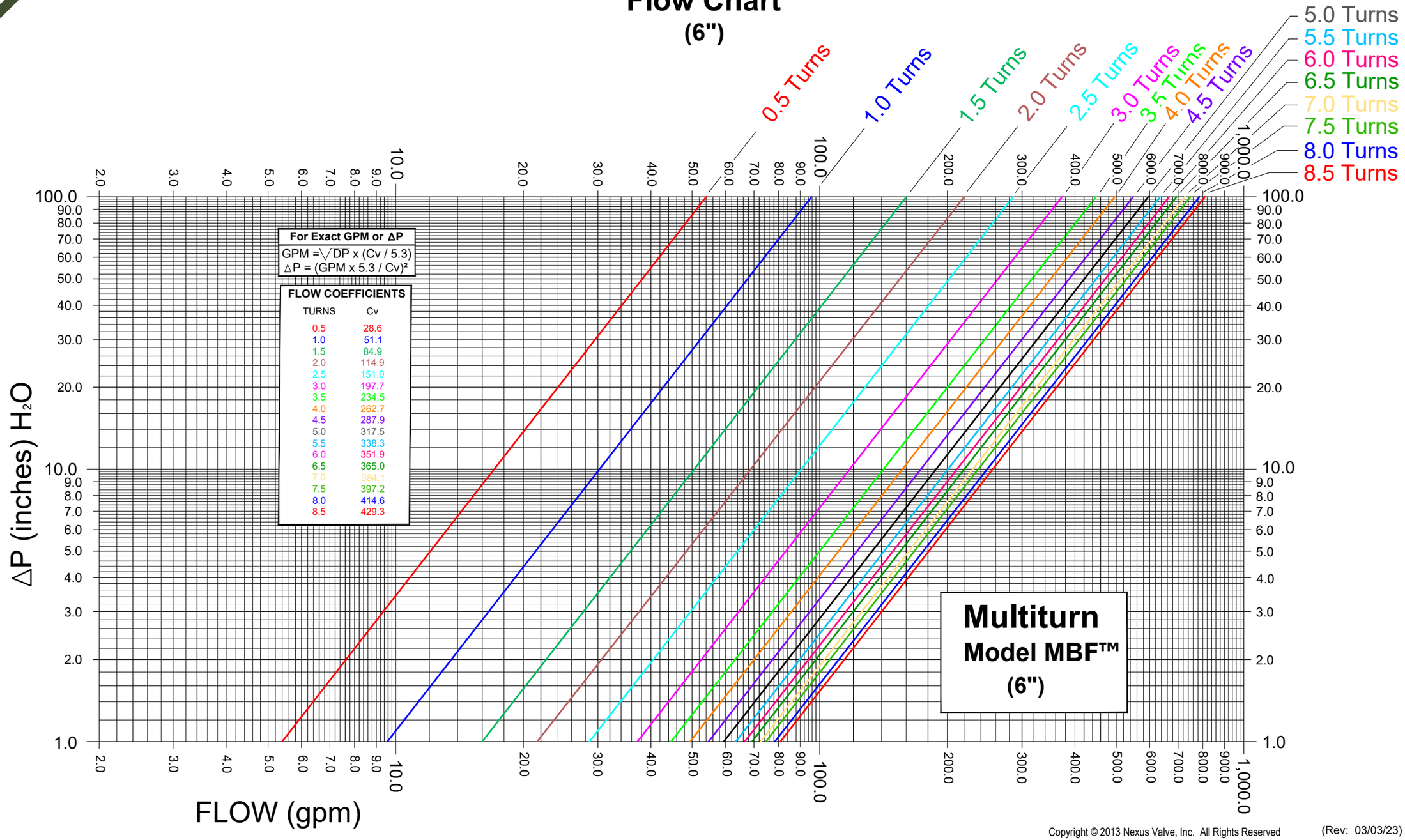
Multiturn Balancing Valve Model MBF™
Flow Chart
(6")



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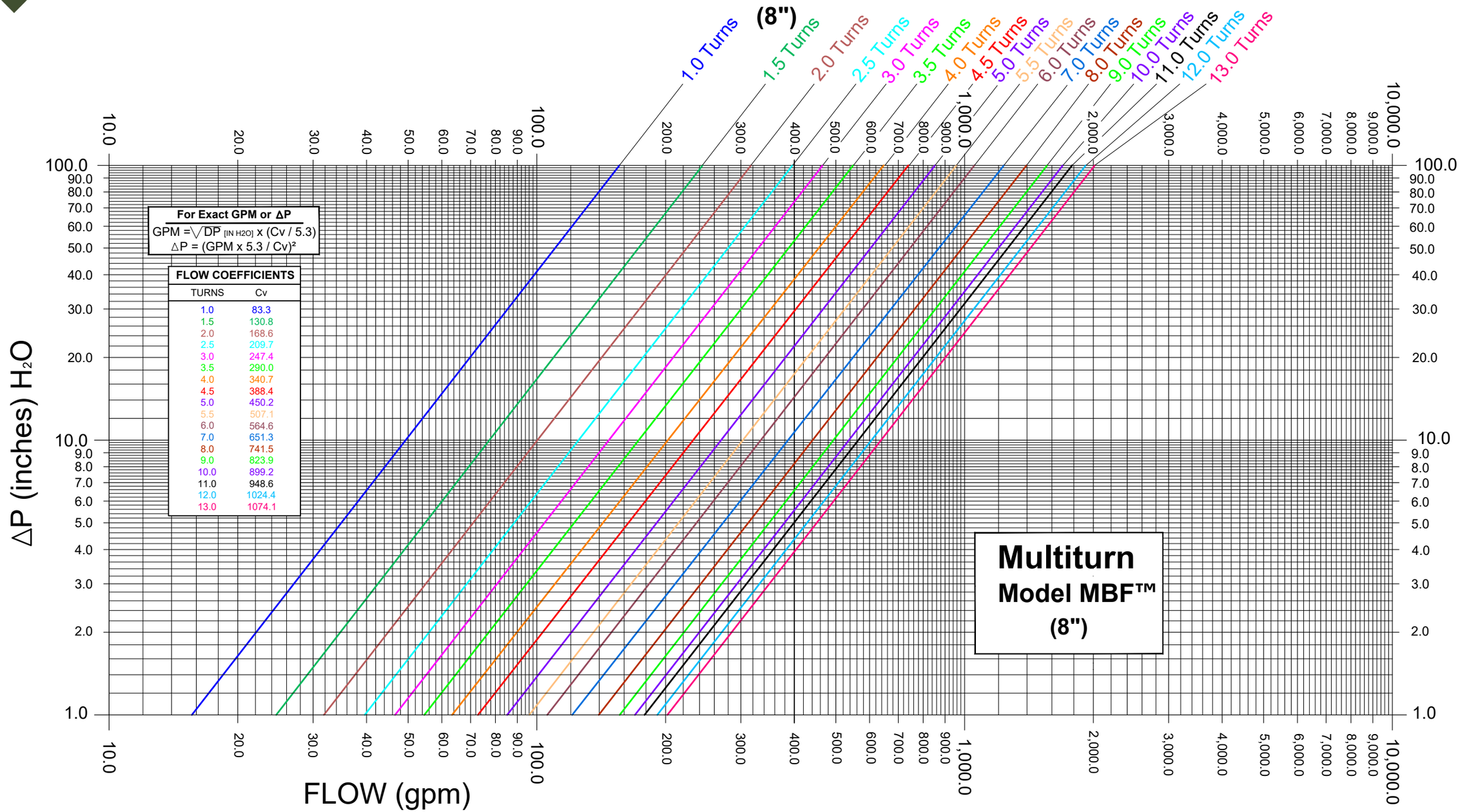
Multiturn Balancing Valve Model MBF™
Flow Chart
(8")



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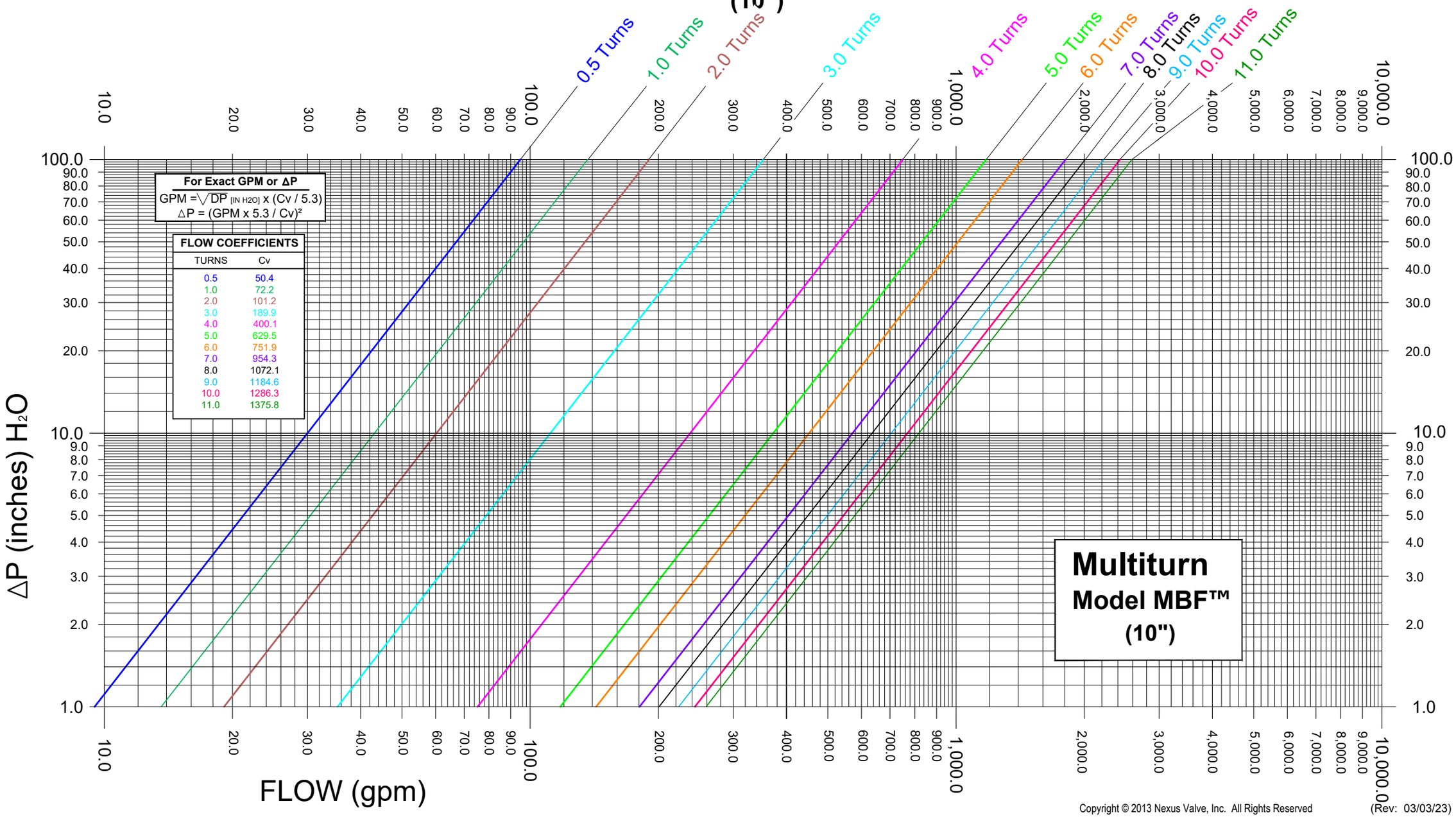
Multiturn Balancing Valve Model MBF™
Flow Chart
(10")



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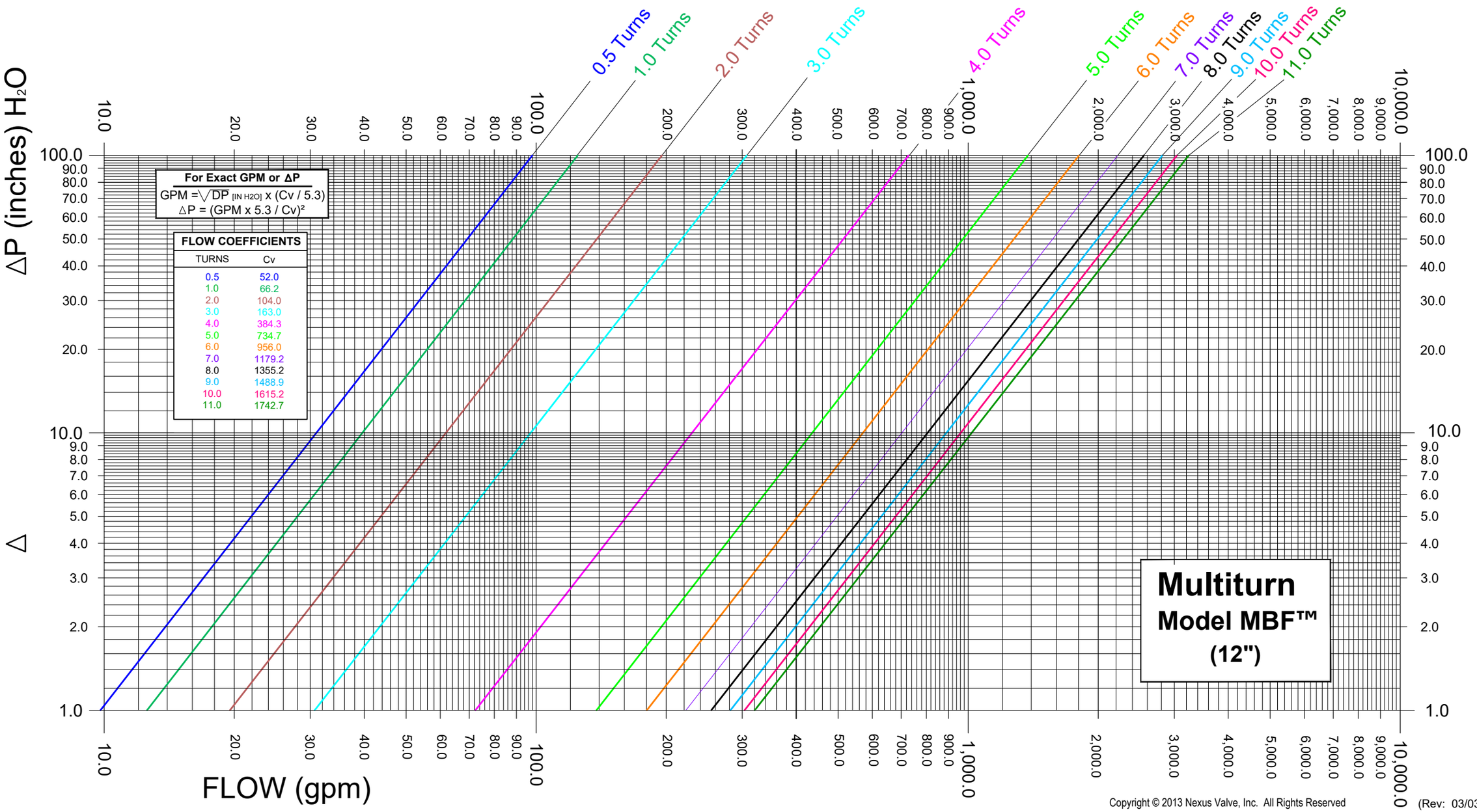
Multiturn Balancing Valve Model MBF™
Flow Chart
(12")



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UltraMBF™ - Multiturn Balancing Valve Calculations

(2½" thru 12")

Cv Values for UltraMBF Handle Turns

Turns	MBF-0250	MBF-0300	MBF-0400	MBF-0500	MBF-0600	MBF-0800	MBF-1000	MBF-1200
	Valve Sizes:							
	2-1/2"	3"	4"	5"	6"	8"	10"	12"
0.5	1.74	2.66	3.94	6.14	28.62	-	50.40	52.02
1.0	3.13	4.06	12.17	25.61	51.09	83.30	72.18	66.16
1.5	4.40	4.75	27.69	49.36	84.93	130.81	-	-
2.0	9.96	10.77	44.03	83.07	114.93	168.58	101.15	104.04
2.5	16.22	16.80	62.91	121.31	150.97	209.71	-	-
3.0	21.43	25.72	80.99	153.40	197.66	247.36	189.89	163.02
3.5	27.11	33.60	96.28	179.81	234.50	290.00	-	-
4.0	32.09	42.98	110.76	196.96	262.65	340.74	400.06	384.31
4.5	37.65	50.05	122.58	211.33	287.91	388.36	-	-
5.0	43.45	58.16	134.05	225.00	317.46	450.23	629.47	734.67
5.5	49.24	67.89	149.11	240.29	338.31	507.12	-	-
6.0	53.99	74.73	162.90	253.73	351.87	564.59	751.93	955.96
6.5	59.78	82.49	178.42	269.37	364.96	602.01	-	-
7.0	64.65	89.21	189.20	282.00	384.08	651.25	954.34	1179.22
7.5	72.18	97.32	200.90	295.67	397.17	696.32	-	-
8.0	77.28	104.85	209.71	-	414.55	741.50	1072.05	1355.21
8.5	81.33	112.50	-	-	429.26	790.86	-	-
9.0	83.19	125.13	-	-	-	823.88	1184.55	1488.92
9.5	-	-	-	-	-	869.99	-	-
10.0	-	-	-	-	-	899.19	1286.28	1615.20
10.5	-	-	-	-	-	922.82	-	-
11.0	-	-	-	-	-	948.55	1375.84	1742.65
11.5	-	-	-	-	-	984.69	-	-
12.0	-	-	-	-	-	1024.43	-	-
12.5	-	-	-	-	-	1057.22	-	-
13.0	-	-	-	-	-	1074.14	-	-

How to calculate the Flow through UltraMB using: Cv values

1. Select column MBF-0250,MBF-0300, …. thru MBF-1200 for the valve being used
2. Read the Handle Turns counter on the valve
3. Scan the MBF 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

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

If PSID is in Inches of Water

$$GPM = \sqrt{\Delta P_{in H_2O}} \bullet Cv / 5.3$$

How to determine UltraMB 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

$$Cv = GPM \bullet 5.3 / \sqrt{\Delta P_{in H_2O}}$$

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

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