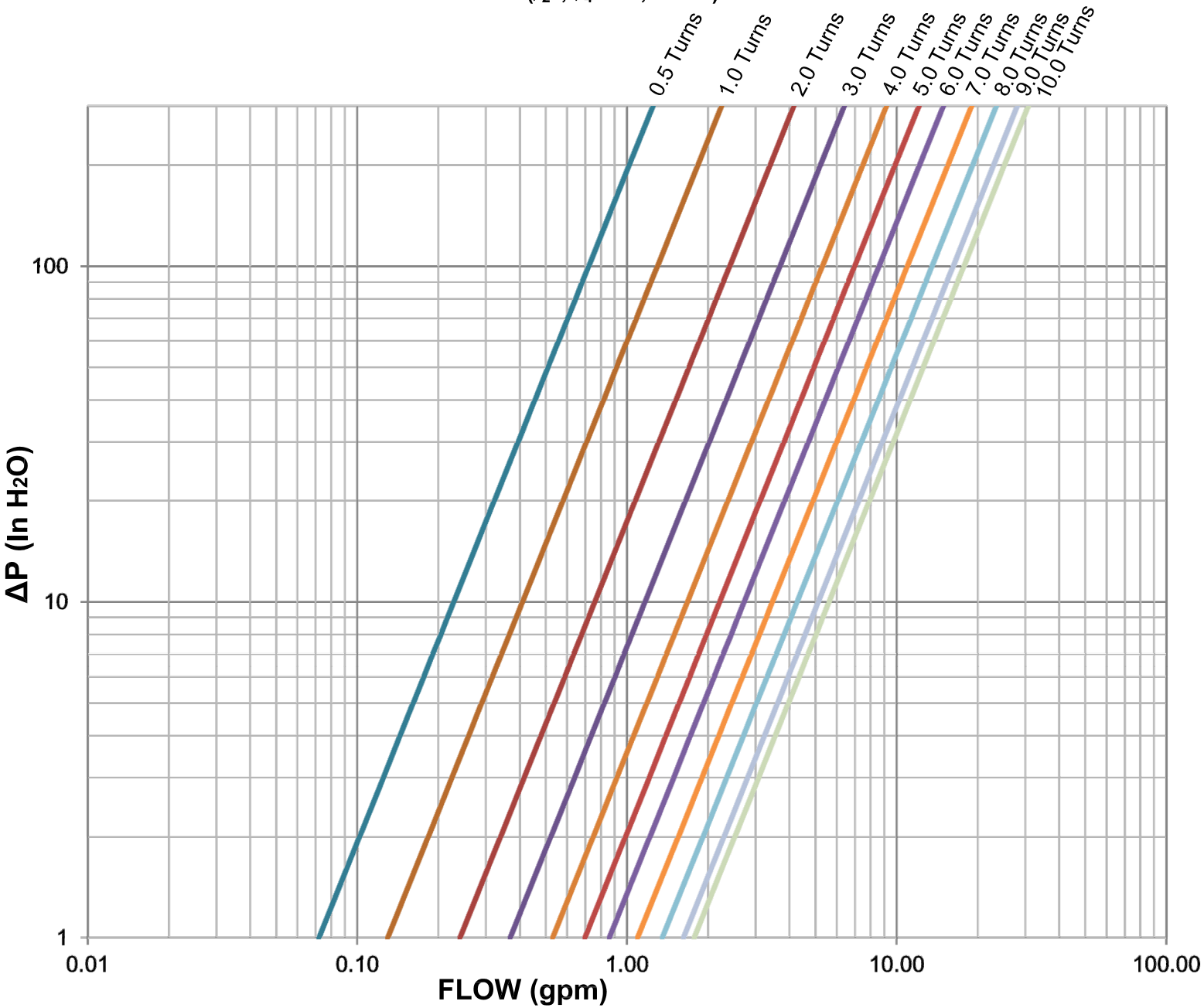
Multiturn Balancing Valve Model UltraMB™

Flow Chart

(½", ¾" LO, 1" LO)

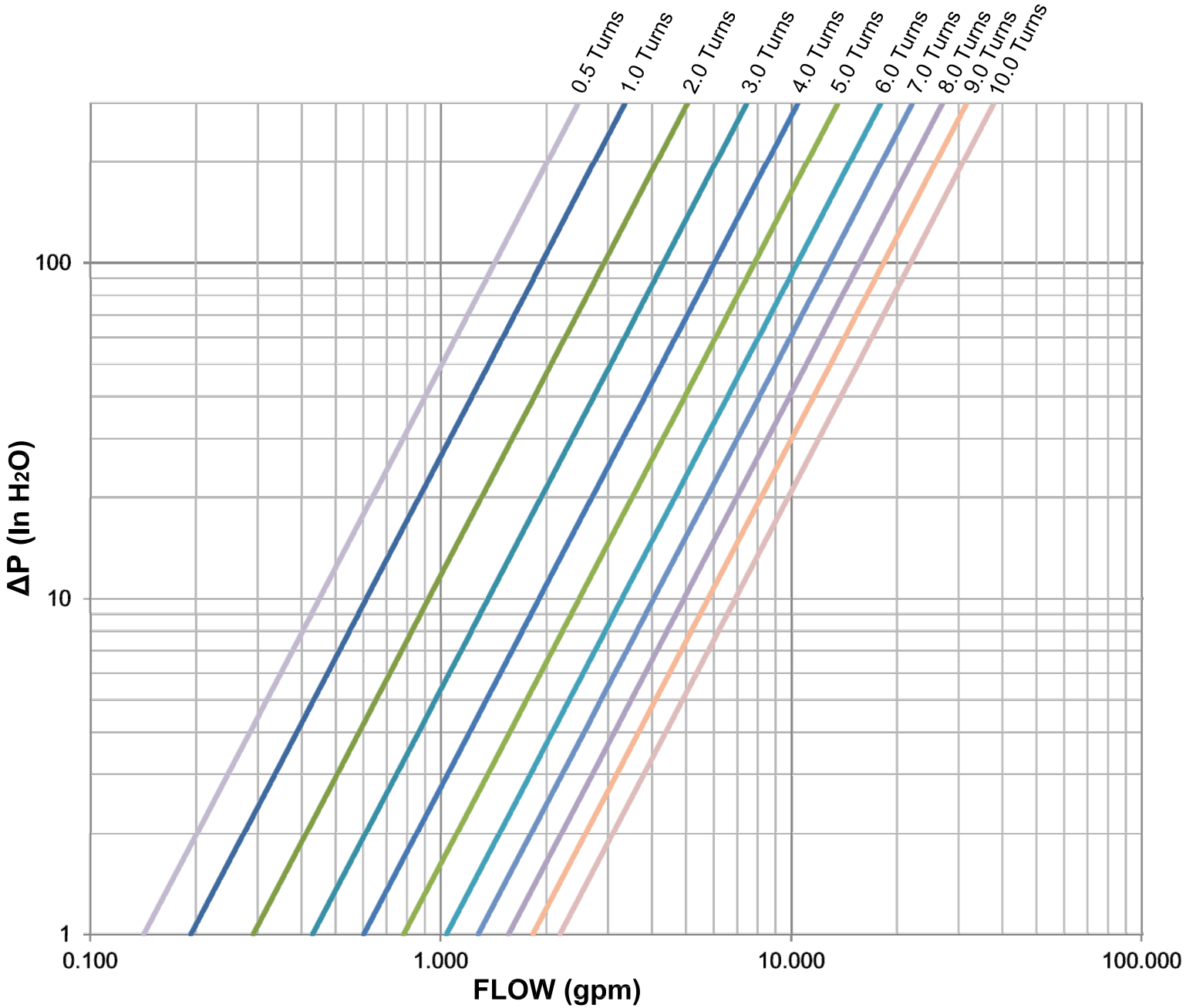


Copyright © 2009 Nexus Valve, Inc. All Rights Reserved (Rev: 11/07/13)

Multiturn Balancing Valve Model UltraMB™

Flow Chart

(¾" STD, 1" STD, 1¼" LO)

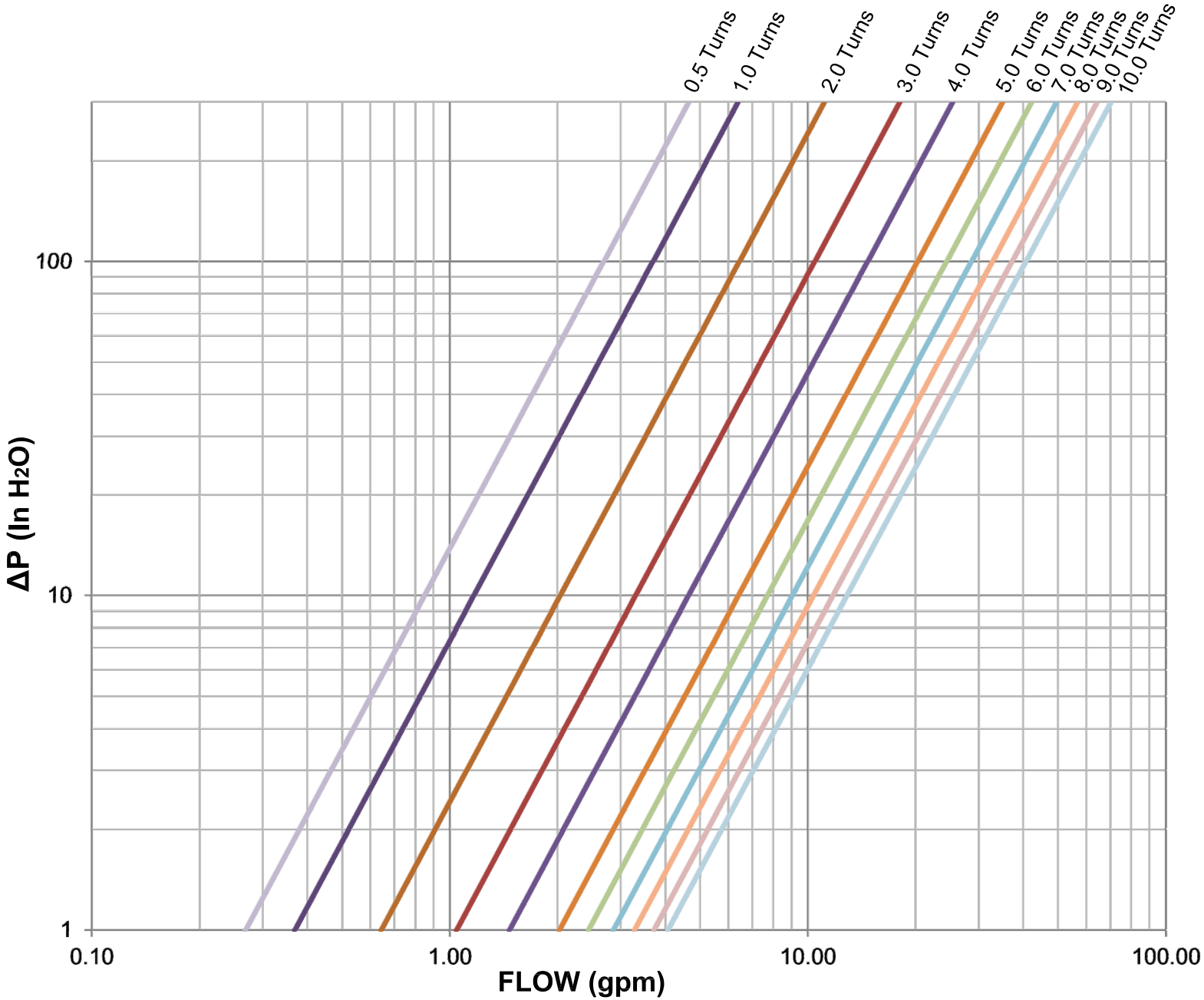


Copyright © 2009 Nexus Valve, Inc. All Rights Reserved (Rev: 11/07/13)

Multiturn Balancing Valve Model UltraMB™

Flow Chart

(1¼" STD, 1½")



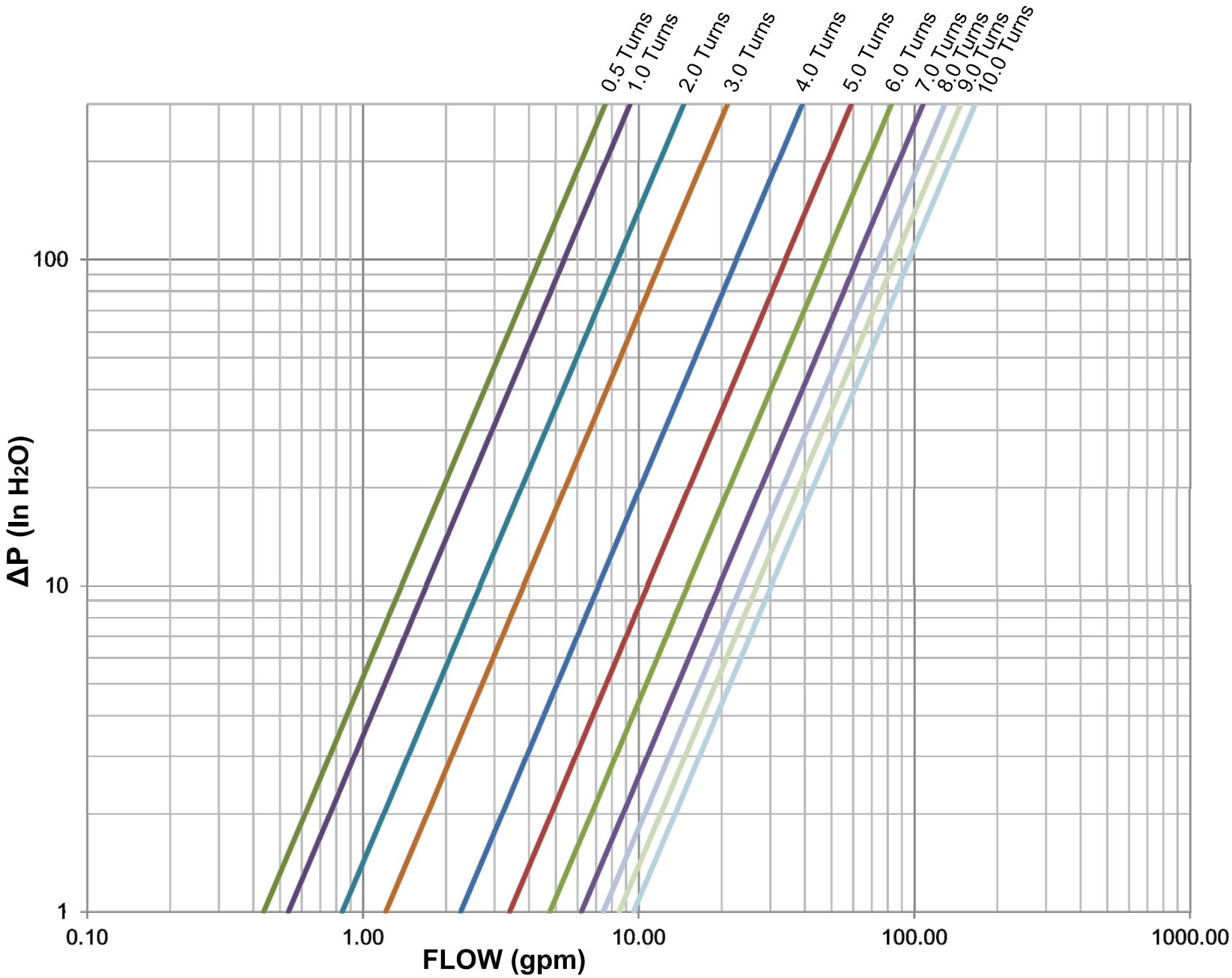
Copyright © 2009 Nexus Valve, Inc. All Rights Reserved (Rev: 11/07/13)

NEXUS

Multiturn Balancing Valve Model UltraMB™

Flow Chart

(2", 2½")



Copyright © 2009 Nexus Valve, Inc. All Rights Reserved (Rev: 11/07/13)

UltraMB™ - Multiturn Balancing Valve

Flow Chart

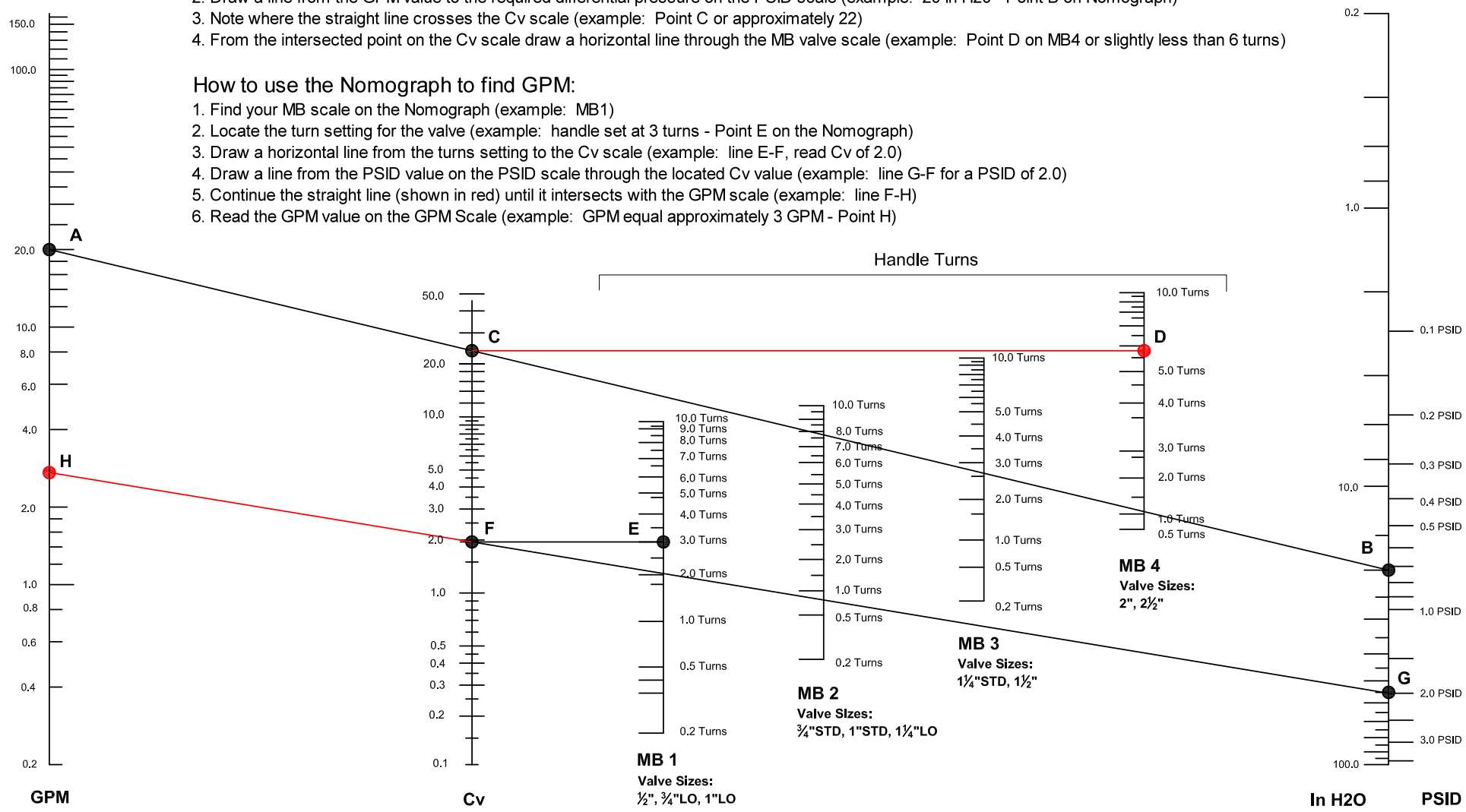
(½" thru 2½")

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

1. Find the required GPM on the GPM Scale (example: 20 GPM - Point A on Nomograph)
2. Draw a line from the GPM value to the required differential pressure on the PSID scale (example: 20 In H20 - Point B on Nomograph)
3. Note where the straight line crosses the Cv scale (example: Point C or approximately 22)
4. From the intersected point on the Cv scale draw a horizontal line through the MB valve scale (example: Point D on MB4 or slightly less than 6 turns)

How to use the Nomograph to find GPM:

1. Find your MB scale on the Nomograph (example: MB1)
2. Locate the turn setting for the valve (example: handle set at 3 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 2.0)
4. Draw a line from the PSID value on the PSID scale through the located Cv value (example: line G-F for a PSID of 2.0)
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 3 GPM - Point H)



Copyright © 2009 Nexus Valve, Inc. All Rights Reserved

(Rev: 11/08/13)

UltraMB™ - Multiturn Balancing Valve

Calculations

(½" thru 2½")

Cv Values for UltraMB Handle Turns

Turns	MB1	MB2	MB3	MB4
	Valve Sizes:			
	1/2", 3/4"LO, 1"LO	3/4"STD, 1"STD, 1-1/4"LO	1-1/4"STD, 1-1/2"	2", 2-1/2"
0.2	0.2	0.4	0.9	N/A
0.3	0.3	0.7	1.0	N/A
0.4	0.3	0.6	1.3	N/A
0.5	0.4	0.8	1.4	2.3
0.6	0.5	0.8	1.5	2.4
0.7	0.5	0.9	1.6	2.6
0.8	0.6	0.9	1.7	2.6
0.9	0.7	0.9	2.0	2.8
1.0	0.7	1.0	2.0	2.8
1.5	1.1	1.3	2.8	3.5
2.0	1.3	1.5	3.4	4.5
2.5	1.6	1.9	4.6	5.9
3.0	2.0	2.3	5.5	6.4
3.5	2.4	2.7	6.6	9.9
4.0	2.8	3.2	7.8	12.0
4.5	3.5	3.6	9.1	15.2
5.0	3.7	4.2	10.7	18.1
5.5	4.1	4.7	11.9	21.7
6.0	4.6	5.5	12.9	25.3
6.5	5.3	6.0	14.0	29.0
7.0	5.8	6.8	15.2	32.9
7.5	6.5	7.6	16.3	36.5
8.0	7.2	8.3	17.4	39.4
8.5	7.8	9.0	18.5	42.1
9.0	8.6	9.7	19.7	45.0
9.5	8.8	10.7	20.6	48.4
10.0	9.4	11.6	21.6	50.8

How to calculate the Flow through UltraMB using: Cv values

1. Select column MB1,MB2, MB3, MB4 for the valve being used
2. Read the Handle Turns counter on the valve
3. Scan the MB 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

$$GPM = \sqrt{\Delta P_{inH_20}} \bullet Cv / 5.3$$

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

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

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

Copyright © 2009 Nexus Valve, Inc. All Rights Reserved (Rev: 11/07/13)