

R. L. Deppmann Triple Duty Valve Sizing Suggestions (Revision 2012a) By Norman Hall

ITT Bell and Gossett manufactures two different ports for most sizes of straight pattern triple duty valves. The following selection table is provided to assist in choosing the correct model. Please note that this table is created by RL Deppmann and is not intended to represent the opinion of Xylem B&G.

Basis for selection: The triple duty valve is a combination check, balance, and shutoff valve. The sizing decisions in the table are based on its ability to perform as a balancing device. The RLD maximum suggested flow is selected to provide a maximum pressure drop of five feet when pumping water. Of course the valve may be installed for higher flow rates as long as the higher pressure drop is acceptable. The minimum flow is based on a pressure drop of 25 feet when the valve is throttled to 20% open (50% for 3DV). This assures its ability to be used as a balance valve. ASHRAE 90.1 requires impeller trimming or speed change if the lost HP across the throttled valve becomes too great. In most cases a throttled condition with 25 feet pressure drop would be used for balancing and commissioning with an impeller trim at a later date.

Selection Chart

Model Number	Pipe Size	Pattern	C _v	RLD Suggested Minimum Flow	RLD Suggested Maximum Flow
3DV-1	1"	Straight	9	3	13
3DV-1-1/4	1-1/4"	Straight	14	6	22
3DV-1-1/2	1-1/2"	Straight	25	9	36
3DV-2	2"	Straight	28	5	41
3DS-3B	3"	Straight	118	90	174
3DS-4B	4"	Straight	191	150	281
3DS-5B	5"	Straight	360	230	530
3DS-6B	6"	Straight	556	360	818
3DS-8B	8"	Straight	748	520	1100
3DS-10B	10"	Straight	1169	850	1720
3DS-12B	12"	Straight	1992	1400	2920
3DS-14B	14"	Straight	2669	2000	3926
3DS-16B	16"	Straight	3368	2000	4955
3DS-2S	2"	Straight	77	40*	115
3DS-2-1/2S	2-1/2"	Straight	117	100	170
3DS-3S	3"	Straight	191	150	280
3DS-4S	4"	Straight	336	250	490
3DS-5S	5"	Straight	497	375	735
3DS-6S	6"	Straight	701	500	1050
3DS-8S	8"	Straight	1079	750	1580
3DS-10S	10"	Straight	1826	1000	2700
3DS-12S	12"	Straight	1826	1500	3640
3DS-14S	14"	Straight	2430	2000	4750

* 2" minimum flow based on 10% open valve. 3DV based on 50% open valve. All others based on 20 percent open

Performance specifications should include the limitations of 5 Feet maximum pressure drop full open at design flow rate. Submit a "B" valve unless the flow rate requires you to use an "S" valve.