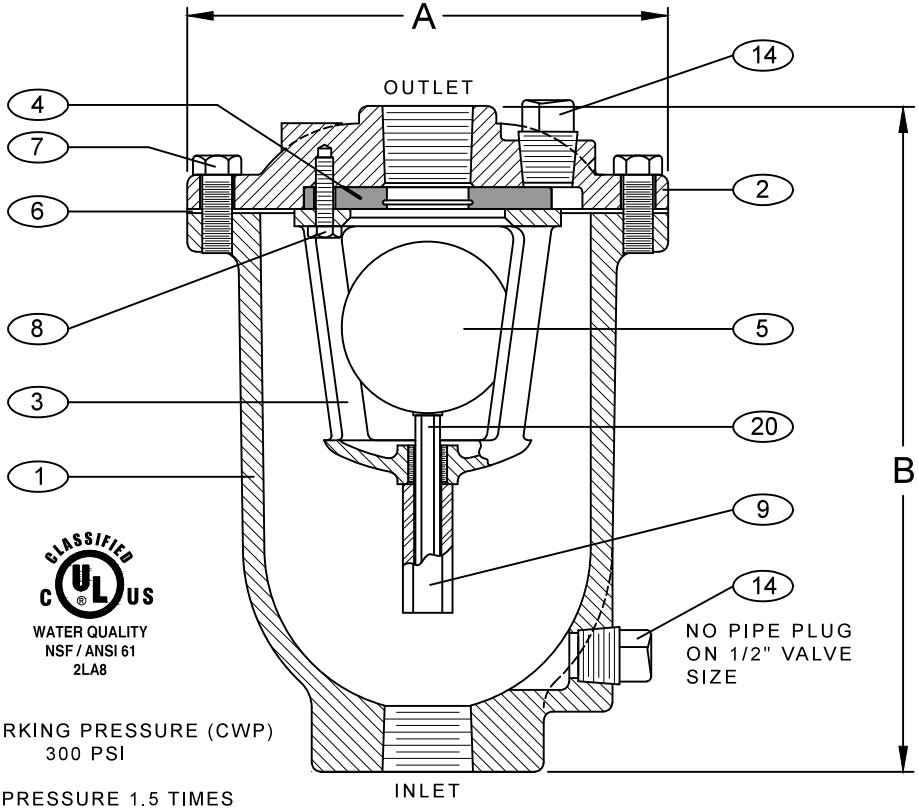


CLASSIFIED
C UL US
WATER QUALITY
NSF / ANSI 61
2LA8

COLD WORKING PRESSURE (CWP)
300 PSI

TEST PRESSURE 1.5 TIMES
COLD WORKING PRESSURE

SEE DRAWING NO. VM-100S-M FOR STANDARD MATERIALS OF CONSTRUCTION.
SEE DRAWING NO. VM-100SDISV-M FOR SUPER VALVE MATERIALS OF CONSTRUCTION.

VALVE SIZE	MODEL NUMBER	A	B	INLET SIZE	OUTLET SIZE
1/2"	100S	6.13	7.00	1/2" NPT	1/2" NPT
1"	101S	7.00	9.68	1" NPT	1" NPT
2"	102S	9.50	12.00	2" NPT	2" NPT
3"	103S	9.50	12.00	3" NPT	3" NPT

1	BODY	7	COVER BOLT
2	COVER	8	RETAINING SCREW
3	BAFFLE	9	GUIDE BUSHING
4	SEAT	14	PIPE PLUG
5	FLOAT	20	GUIDE SHAFT
6	GASKET		

Revised 8-19-14 (Rev 1)

AIR/VACUUM VALVE

DATE 3-2-12

VAL-MATIC VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-100S

AIR/VACUUM VALVE

1/2" to 3" SERIES NO. 100S

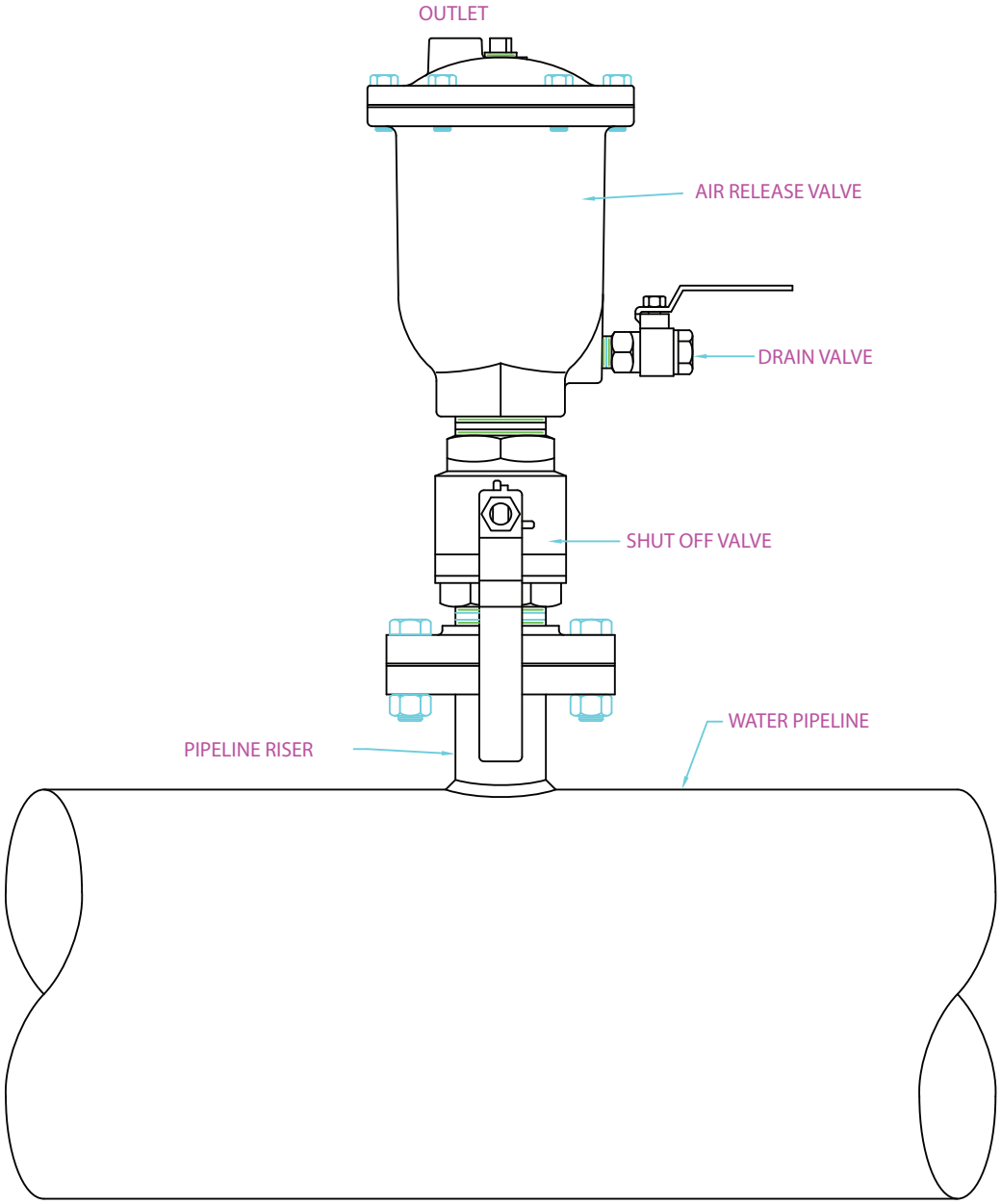
STANDARD MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
1	BODY	CAST IRON ASTM A126, CLASS B
2	COVER	CAST IRON ASTM A126, CLASS B
3	BAFFLE	DUCTILE IRON ASTM A536, GRADE 65-45-12
4	SEAT	BUNA-N
5	FLOAT	STAINLESS STEEL T316, ASTM A240
6	GASKET	COMPRESSED NON-ASBESTOS FIBER
7	COVER BOLT	ALLOY STEEL SAE, GRADE 5
8 *	RETAINING SCREW	STAINLESS STEEL T316, ASTM F593
9	GUIDE BUSHING	STAINLESS STEEL T316, ASTM A240
14	PIPE PLUG	STEEL
20	GUIDE SHAFT	STAINLESS STEEL T316, ASTM A240
23	SCREENED HOOD (OPTIONAL)	GALVANIZED IRON

* STAINLESS STEEL T316, ASTM F879 FURNISHED ON VALVE NO. 100 ONLY

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

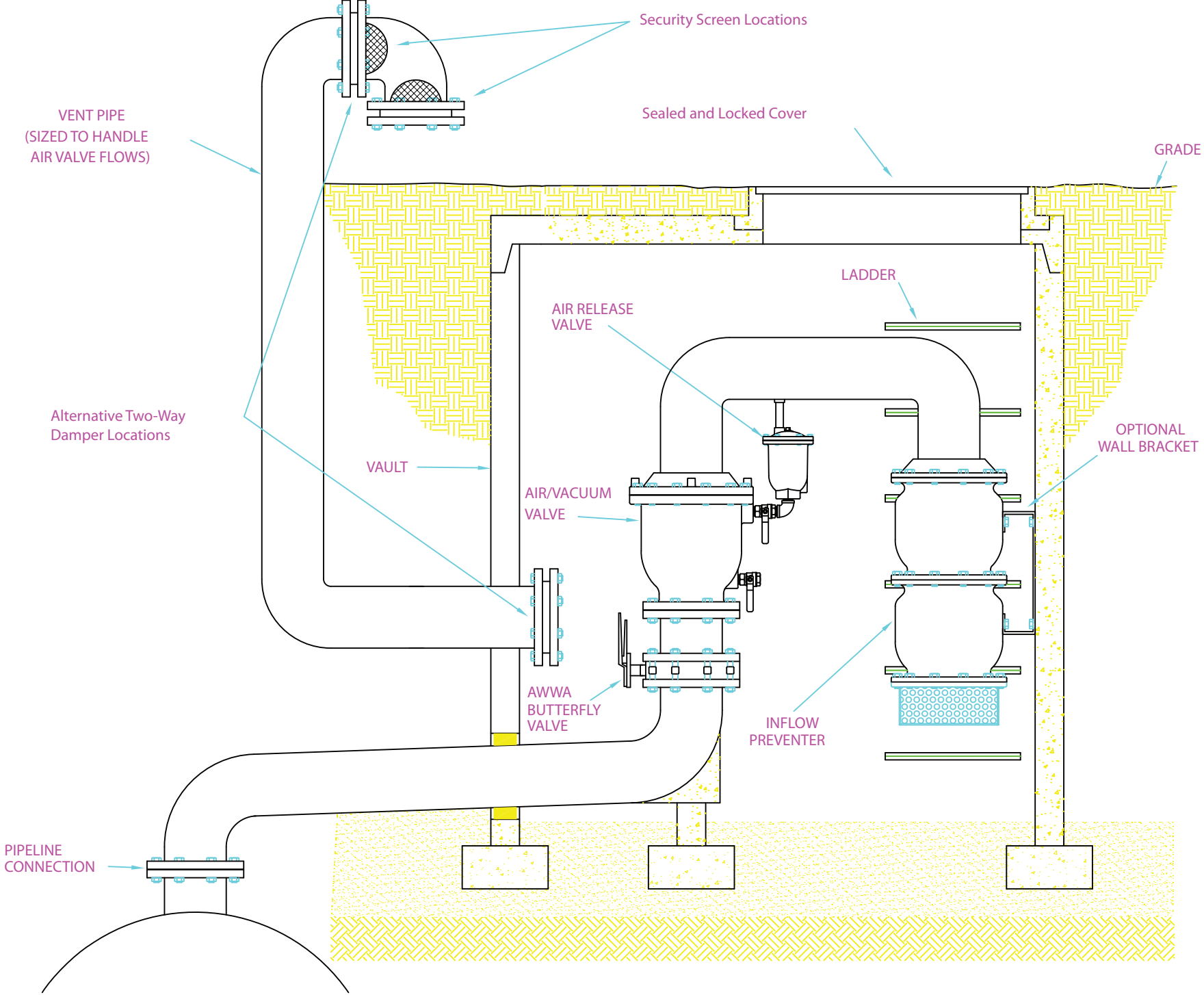
MATERIALS OF CONSTRUCTION	DATE 10/3/03
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. VM-100S-M



AIR RELEASE VALVE DETAIL

NO SCALE

VM-AV01-001-0



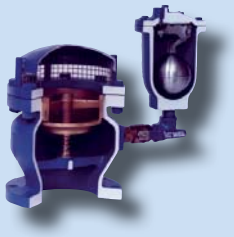
AIR VALVE VAULT INSTALLATION

(NO SCALE)

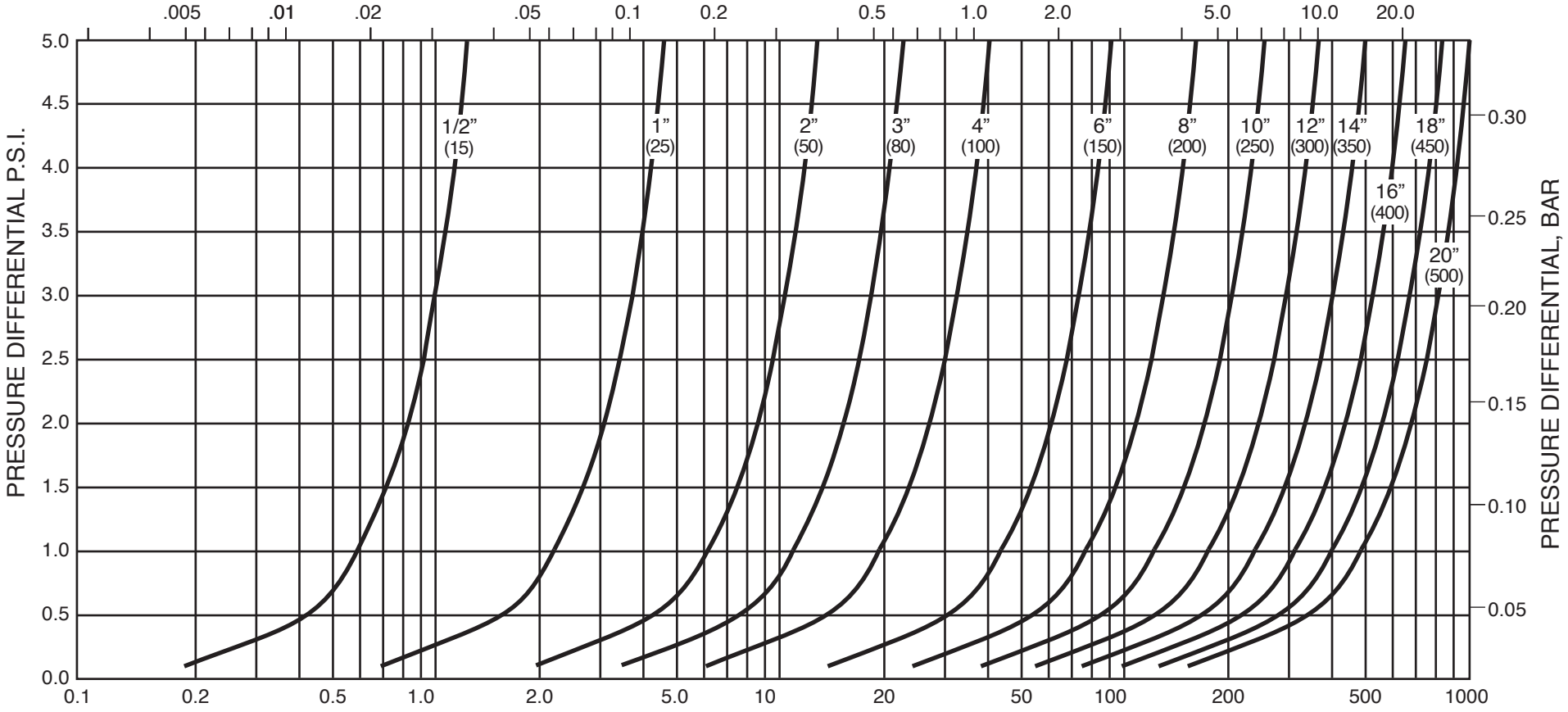
VM-VS01-001

Air Valves
(Air Vent Valves)
Applications & Functions

	Air Release Valve	Air/Vacuum Valve	Combination Air Valve	Surge-Suppression Air Valve	Vacuum Breaker Valve	Vacuum Priming Valve	Wastewater Air Release Valve	Wastewater Air/Vacuum Valve	Wastewater Combination Air Valve	Well Service Air Valve
APPLICATIONS										
Booster Pump Station	x		x	x						
Centrifugal Pump Volute	x					x	x		x	
Filter Backwash Piping	x		x	x	x		x			
Fire Pumps (FM Approved, UL Listed)	x									x
Force Main				x	x		x	x	x	
High Points	x	x	x	x	x		x	x	x	
Hydropneumatic Tanks	x									
Industrial Process Water	x	x	x	x	x		x	x	x	x
Lift Station						x	x	x	x	
Municipal Wastewater Collection							x	x	x	
Penstock					x					
Pressure Filters	x		x	x	x					
Pulp/Paper	x	x	x	x	x		x	x	x	
Pump Station High Points	x	x	x	x	x					
Slurries, Mining, Bottom Ash	x	x	x	x	x		x	x	x	
Storage Tank Valves			x	x	x					
Turbine Well Pump Discharge										x
Venturi Meters	x		x				x		x	
Water Distribution and Transmission	x	x	x	x	x					
FUNCTIONS										
Admitting Large Volumes of Air During Shut Down and Draining Operations (Power Failure)		x	x	x	x			x	x	x
Air Bound Pump Protection	x					x				
Air Related Head Loss Protection (Efficiency)	x		x	x			x		x	
Air Related Surge Protection		x	x	x	x		x	x	x	x
Column Separation		x	x	x	x			x	x	x
Control Air Valve Exhaust				x						x
Maintain Pipeline Efficiency	x		x	x			x		x	x
Maintain Pump Prime						x				
Regulated-Exhaust of Large Volumes of Air During Start-Up and Filling Operations				x						x
Vacuum Protection (Pipe Joints, Gaskets, Packing, Etc.)		x	x	x	x			x	x	x
Venting of Accumulated Air During System Operation	x		x	x		x	x		x	



FLOW OF AIR IN STANDARD CUBIC METERS PER SECOND

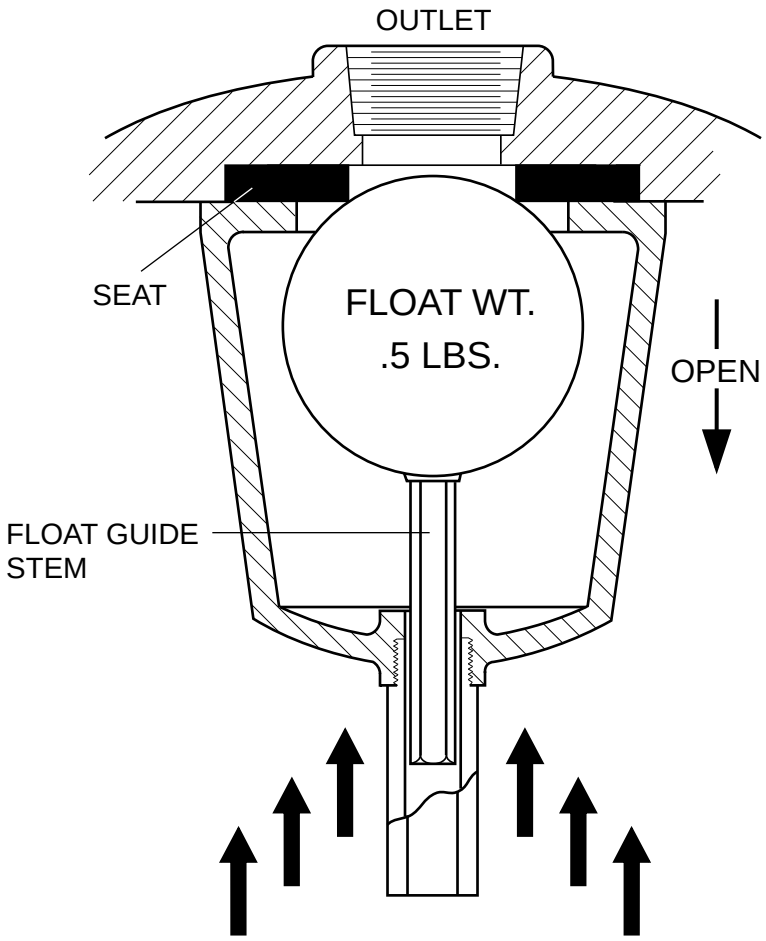


FLOW OF AIR THRU AN ORIFICE IN S.C.F.S.
(STANDARD CUBIC FEET OF FREE AIR PER SECOND)

Revised 4-9-15 (Rev 2)

VENTING CAPACITY FOR AIR/VACUUM VALVES, IN. (mm)	DATE 4-30-02
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. SS-1580

WHY AN AIR/VACUUM VALVE STAYS CLOSED UNDER PRESSURE



FORCE HOLDING FLOAT
AGAINST SEAT
OUTLET AREA X SYSTEM PRESSURE
3.14 X 100 = 314 LBS. OF FORCE

314 LBS. > .5 LBS.

CONCLUSION: VALVE WILL NOT OPEN UNDER SYSTEM PRESSURE

WHY AN AIR/VACUUM VALVE STAYS CLOSED UNDER PRESSURE	DATE 7-23-98
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. SS-1515