Valve Product Matrix

Configurable Valves for General Applications—valves that are built to order

VALVE TYPE	MATERIAL	PRESSURE	PIPE SIZE	SERIES	PAGE
Direct Lift	Bronze	1000	¾″–1″	3000	24
		1500	¼″–½″	3000	24
	Stainless	3000	¼″–⅜″	14000	44
		5000	⅛″–¼″	1000	18
		6000	¼″–1″	16000	51
		10,000	⅛″–½″	2000	21
Pilot-piston	Bronze	300	¼″–1½″	500	14
		500	¼″–1½″	4000	27
		500	2″–3″	5000	27
		1000	¾″–1½″	6000	31
		1500	¼″–½″	6000	31
		3000	⅜″–1″	12000	39
	Stainless	1500	1¼″–2″	8000	36
		4000	¼″–1½″	8000	36
		6000	⅛″–½″	7000	34
Semi-direct	Bronze	300	¼″–1½″	15400	46
		500	2″–3″	30400	55
		1000	¾″–1½″	30400	55
		1500	¼″–½″	30400	55
	Stainless	1500	¼″–1″	15800	49
		3000	¼″–2″	30800	59

Configurable Valves for Special Applications—valves that are built to order

VALVE TYPE	MATERIAL	PRESSURE	PIPE SIZE	SERIES	PAGE
3-Way Direct Lift	Stainless	2500	¼″–½″	13000	41
High Temp Direct Lift	Stainless	2500	⅛″–1″	50000	68
Fast Response Pilot-piston	Stainless	2000	1¼″–2″	35800	62
		1500	½″–1″	35800	62
High Temp Semi-direct	Stainless	2500	¼″–1½″	40000	65

Specific Purpose Valves—valves that are pre-built for common applications

VALVE TYPE	MATERIAL	PRESSURE	PIPE SIZE	SERIES	PAGE
Steam Pilot-piston	Bronze	125	¼″–1½″	HS	10
Air Water Oil Pilot-piston	Bronze	250	¼″–2″	JJ	8
CO_2 Pilot-piston	Stainless	350	½″	15–794	12

Explanation of Product Matrix

To facilitate understanding the scope of the ATKOMATIC product line, the valves can be divided into 3 basic valve design categories as follows: 1) Direct lift valves 2) Pilot operated valves 3) Semi-direct lift valves

Each of these basic valve types is appropriate to use in different types of customer's systems.

Direct lift valves are applicable where large flow volumes are not required and pressures range from medium to very high. Because direct lift valves utilize the solenoid force to directly effect the opening of the flow orifice against line pressure, the are restricted to relatively small flow capacities. See page 21 of the Atkomatic Technical Manual for a complete description of operation. Typical line sizes are 1/8″ to 3/8″ with flow orifices ranging from 0.047 (3/64″) to 0.188 (3/16″). Application examples include direct injection of an additive into a process, high pressure cleaning, low volume bleeding operations, high pressure hydraulic systems, etc.

Pilot operated valves are used where a flow producing a minimum pressure drop is always present in a system or in systems where the valves full flow capacity is not required under low flow conditions. The solenoid in these valves is used to open a small internal pilot orifice that unbalances the valves piston thus opening a relatively large flow area. See pages 21-23 of the Atkomatic Technical Manual for a complete description of operation. A pressure differential of 5 psi minimum is required to open (and maintain open) these types of valves. Sizes are available from ¼″ to 3″ and are fully ported (internal flow areas are equal to or greater than the connecting pipe). Application examples include container filling, chemical process, fluid transfer in systems where flow is constant, etc.

Semi-direct lift valves are utilized where it is desired to have the valve function independent of system flow (operation down to 0 psi or where flow may not be sufficient to produce a 5 psi differential across the valve). These valves function in a similar manner to pilot operated valves but have a mechanical linkage between the piston and the solenoid plunger that holds the valve open. See page 22 of the Atkomatic Technical Manual for a complete description of operation. Semi-direct lift valves are available in line sizes of ¼″ to 3″ and are also fully ported. Application examples include tank venting to atmospheric pressure or 0 psi, charging a tank to a pressure equal to supply pressure, processes where flow is variable and might be insufficient to provide a 5 psi differential, vacuum systems, pump inlet lines, etc.

Within each of these categories are valves of 2 basic materials of construction: bronze and stainless steel, each serving different fluid media. In addition, the pressure capabilities vary with different valve series within each of the design type categories and material of construction subcategory.

Most of the valves in the product line are configurable, meaning that they can be constructed to meet a variety of application conditions by varying their internal components.

Explanation of Product Matrix

The configurable valve series are:

Direct Lift Design

Bronze	Stainless
3000 Series, 0 to 1500 psi (0 to 104 bar)	14000 Series, 0 to 3000 psi (0 to 207 bar)
	1000 Series, 0 to 5000 psi (0 to 345 bar)
	16000 Series, 0 to 6000 psi (0 to 414 bar)
	2000 Series, 0 to 10,000 psi (0 to 690 bar)

Pilot-piston Design

Bronze	Stainless
500 Series, 5 to 300 psi (0.4 to 10.4 bar)	8000 Series, 5 to 4000 psi (0.4 to 34.5 bar)
4000 Series, 5 to 500 psi (0.4 to 35.4 bar)	7000 Series, 5 to 6000 psi (0.4 to 414 bar)
5000 Series, 5 to 500 psi, 2 to 3″ sizes (0.4 to 34.5 bar)	
6000 Series, 5 to 1500 psi (0.4 to 104 bar)	
12000 Series, 5 to 3000 psi (0.4 to 207 bar)	

Semi-direct Lift Design

Bronze	Stainless
15400 Series, 0 to 300 psi (0 to 10.4 bar)	15800 Series, 0 to 1500 psi (0 to 104 bar)
30400 Series, 0 to 1500 psi (0 to 104 bar)	30800 Series, 0 to 3000 psi (0 to 207 bar)

There are some valves that do not fit neatly into this progression that address specific marketplace needs. These valves are also configurable and include:

13000 Direct Lift 3-Way Valve, stainless steel, 0 to 2500 psig (0 to 173 bar)
35000 External Pilot Operated, stainless steel, 0 to 2000 psig (0 to 138 bar), rapid closure
40000 Semi-direct Lift, stainless steel, 0 to 2500 psig (0 to 173 bar), elevated media temperatures to 750° F (399° C)
50000 Direct Lift, stainless steel, 0 to 3000 psig (0 to 207 bar), elevated media temperatures to 750° F (399° C)

A few of the valves are designed to meet specific usage's and are always built with the same configuration of internal parts.

The specific usage valves are currently: JJ Series, general purpose air, water, and oil, 5 to 250 psig
HS Series, steam, 5 to 125 psi
15–794 Series, liquid CO_2, 5 to 350 psi

All of these valves are currently pilot-piston operated. They are designed to cover specific and/or broad ranges of applications such that they can be conveniently stocked by distribution for rapid delivery.

These specific usage valves may be added to or removed as the demand for them changes.

These valve series are available in either normally open or normally closed configurations.

SERIES	NORMALLY CLOSED CATALOG NUMBER PREFIX	NORMALLY OPEN CATALOG NUMBER PREFIX	PAGE
500	5*x*0	5*x*1	14
3000	3*x*00 & 3*x*08	3*x*01	24
4000	4*x*00 & 4*x*08	4*x*01 & 4*x*07	27
5000	5*x*00 & 5*x*08	5*x*01 & 5*x*07	27
6000	6*x*00	6*x*01	31
8000	8*xx*0	8*xx*1	36
13000*	131*x*0	132*x*0	41
15400	154*x*0 & 154*x*8	154*x*1 & 154*x*7	46
16000	16*x*00	16*x*01	51
30400	314*x*0	324*x*0	55
30800	318*x*0 & 318*x*1	328*x*0 & 328*x*1	59
35800	358*xx*–O	358*xx*–P	62
40000	418*x*0	428*x*0	65
50000	50*xx*0	50*xx*1	68

** The 13000 Series is also available in a distributor version which has a catalog number prefix of 133x0 and is described on page 49.*

Notes:

1. *The pressures given above are the maximum for the various valve series, actual operating pressure will vary with coil voltages and fluid media (and in some cases valve size).*
2. *Normally open valves are rated for intermittent duty only unless other operational parameters (such as voltage, ambient temperature, fluid temperature, etc.) are at their nominal values.*