# Figure 5700

# Solenoid Control Valve

The GA Industries Figure 5700 Solenoid Operated Control Valve is designed to be either fully open or fully closed in response to an electrical signal to the solenoid pilot assembly. This valve is equipped with a 3-way electrical solenoid-operated pilot that can be plumbed to be normally closed (energize to open) or normally open (energize to close) providing main valve on/off capabilities.

#### **Standards Compliance:**

- ANSI/AWWA C530 compliant
- NSF-61 Certified for Contact with Drinking Water
- NSF-372 Certified Lead Free (0.25% max weighted avg lead content)

#### Materials:

Main Valve Body	Ductile Iron ASTM A536
Main Valve Bonnet	Ductile Iron ASTM A536
Disc Guide	Stainless Steel
Seat	Stainless Steel
Disc	Buna-N Rubber
Diaphragm	Nylon Reinforced Buna-N
Stem	Stainless Steel
Spring	Stainless Steel
Coating	NSF-61 Certified Fusion Epoxy

### **Standard Features**

- Fusion Bond Epoxy Coated, NSF-61
- · Pilot Assembly
  - 120VAC Brass Body Watertight Solenoid (200 PSI Maximum Differential Pressure)

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- Accelerator Pilot (4" to 16")
- Wye Strainer
- Isolating Valves
- Copper Tubing and Brass Fittings
- Water Temperature 33 140F

#### Schematic Diagrams

- 1. Main Valve
- 2. Isolation Valves
- 3. Wye Strainer
- 4. 3-Way Solenoid Pilot
- 5. Accelerator Pilot





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Data Sheet GA-5700-0721

**Options** (Add suffix letters to Figure 5700) Example: 5700R-G-00-NC-CL-OP

Body Configuration (See Table for Availability)

- G Globe Body
- A Angle Body
- R-G Reduced Port Globe Body

Connections (See Table for Availability)

- 00 NPT Threaded
- 15 ANSI Class 150 Flanges
- 30 ANSI Class 300 Flanges

#### **Solenoid Characteristics**

- NC Normally Closed, Opens When Energized
- NO Normally Open, Closes When Energized
- NS If not 120VAC/60Hz, Specify Voltage, Hertz and AC or DC
- MO Manual Operator on Solenoid

#### **Optional Features**

- CX Check Feature (Closes Main Valve Upon Pressure Reversal
- CL Closing Speed Control (Standard 8" to 16")
- DR Atmospheric Drain
- OP Opening Speed Control
- PI Visual Position Indicator
- LH Pilot System Mounted on Left Side Looking at Inlet
- PW Separate Power Water
- S9 Stainless Steel Solenoid Pilot, Controls and Piping

BODY	CONFIGURATIONS	GLOBE ST	ANGLE STYLE				
END CONNECTION	PRESSURE RATING	FULL PORT	REDUCED PORT	BODY			
Threaded	400 psi max.	1 1/4"-3"	n/a	1 1/4"-3"			
Flanged	ANSI Class 150, 250 psi max.	1 1/0" 16"	2" 10"	1 1/2" 10"			
Flaligeu	ANSI Class 300, 400 psi max.	0, 400 psi max.		1 1/2 -10			
Grooved	300 psi max.	1 1/2"-10"	n/a	1 1/2"-10"			
MINIMUM INLET PRESSURE 10 PSI							

3 inch and Smaller

#### Globe and Angle Main Valve Dimensions

DIM							VALVE S	IZE INCHI	ES (mm)				
DIN	FULL FURT	1 ¼ (32)	1 ½ (38)	2 (50)	2 1⁄2 (65)	3 (80)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)
	Threaded	7 1⁄4	7 1⁄4	9 7/16	11	12 ½							
A	Class 150 Flange		8 1⁄2	9 3/8	11	12	15	20	25 3/8	29 ¾	34	39	41 3/8
	Class 300 Flange		9	10	11 5/8	13 1⁄4	15 5/8	21	26 7/16	31 1/8	35 ½	40 1⁄2	43 1⁄2
В	Diameter	5 5/8	5 5/8	6 3⁄4	8	9 3/16	<b>11</b> 11/16	15 ¾	20 1/8	23 11/16	27 1/2	31 ¾	34 ½
С	Maximum	5 3⁄4	5 <sup>3</sup> ⁄4	6 3/16	7 3/8	8	10 3/16	12 5/16	<b>15</b> 9/16	17 5/8	20 3/16	22 13/16	25 7/8
	Threaded	<b>1</b> 3/8	1 3/8	1 3⁄4	2 1/8	2 9/16	3 7/16	5	5	5 13/16	6 3⁄4	8 7/8	8 13/16
	Class 150 Flange		2 1/2	3	3 1/2	3 3⁄4	4 1⁄2	5 1⁄2	6 3⁄4	8	9 1⁄2	10 ½	11 3⁄4
	Class 300 Flange		3	3 1⁄4	3 3⁄4	4 1/8	5	6 1⁄4	7 1⁄2	8 3⁄4	10 1⁄4	11 ½	12 3⁄4
E	NPT Body Tap	3/8	3/8	3/8	1/2	1/2	3⁄4	3⁄4	1	1	1	1	1
F	NPT Cover Plug Tap	1/2	1/2	1⁄2	1/2	1⁄2	3⁄4	3⁄4	1	1	1	1	1
G	NPT Cover Tap	3/8	3/8	3/8	1/2	1/2	3⁄4	3⁄4	1	1	1	1	1
	Threaded	3 1⁄4	3 1⁄4	4 3⁄4	5 1⁄2	6 1⁄4							
н	Class 150 Flange		4	4 3⁄4	5 1/2	6	7 1⁄2	10	<b>12</b> 11/16	14 7/8			
	Class 300 Flange		4 1⁄4	5	6	6 7/16	8	10 ½	13 ¼	<b>15</b> 9/16	]		
	Threaded	<b>1</b> 15/16	<b>1</b> 15/16	3 1⁄4	4	4 1/2					•		
J	Class 150 Flange		4	3 1⁄4	4	4	5	6	8	8 5/8	]		
	Class 300 Flange		4 1⁄4	3 1/2	4 5/16	4 7/16	5 5/16	6 1⁄2	8 1/2	9 5/16	1		
Valve	e Stem Internal Thread	10-32	10-32	10-32	10-32	1⁄4-20	1⁄4-20	1⁄4-20	3/8-16	3/8-16	3/8-16	3/8-16	3/8-16
	Stem Travel (in)	7/16	7/16	3⁄4	7/8	1	<b>1</b> 3/16	1 3/4	2 3/8	2 13/16	3 7/16	3 13/16	4 5/16
	Approx. Wt. (lbs)	22	26	36	55	70	130	240	440	720	820	1200	1550

#### **Reduced Port Main Valve Dimensions**

		VALVE SIZE INCHES (mm)								
DIM		3 (80)	4 (100)	6 (150)	8 (200)	10 (250)				
	Class 150 Flange	10 1⁄4	14	17 3⁄4	21 7/16	26				
A	Class 300 Flange	11	14 ½	<b>18</b> 11/16	22 7/16	27 7/16				
В	Diameter	6 3⁄4	9 3/16	<b>11</b> 11/16	15 ¾	20 1/8				
С	Maximum	6 3/8	8 7/16	12 5/16	13 ¼	16 ¾				
	Class 150 Flange	3 3⁄4	4 1/2	5 1/2	6 3⁄4	8				
	Class 300 Flange	4 1/8	5	6 1⁄4	7 1⁄2	8 3⁄4				
E	NPT Body Tap	3/8	1/2	3⁄4	3⁄4	1				
F	NPT Cover Plug Tap	3/8	1/2	3⁄4	3⁄4	1				
G	NPT Cover Tap	3/8	1/2	3⁄4	3⁄4	1				
Valve Stem Internal Thread		10-32	1⁄4-20	1⁄4-20	3/8-16	3/8-16				
	Stem Travel (in)	3⁄4	1	<b>1</b> 1/5	1 3⁄4	2 3/8				
Ар	prox. Weight (lbs)	35	80	140	275	480				



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**Globe Style Body** 

Angle Style Body



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**Reduced Port Body** 

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**Globe Pilot System Dimensions** 

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Angle Pilot System Dimensions

#### Pilot System Dimensions

PILOT SYSTEM DIMENSIONS			VALVE SIZE INCHES (mm)											
	DIM		1-1/4 (32)	1-1/2 (40)	2" (50)	2-1/2" (65)	3" (80)	4" (100)	6" (150)	8" (200)	10" (250)	12" (300)	14" (350)	16" (400
	Х	Max. (inches)	8 1/8	8 1/8	8 1/8	8 1/8	8 5/8	13	13 3/16	15	16	20	23	26
Full Port Body	Y	Max. (inches)	4 1/8	4 1/4	4 1/4	5 1/4	5 1/4	5 13/16	7 7/8	10	12	14	16	17 1/
Douy	Z	Max. (inches)	7	6 7/8	7	7	7 1/2	11	12	<b>14</b> 1/4	15 1/2	18	20	21 1/
Reduced	Х	Max. (inches)					8 1/8	8 5/8	13	13 3/16	15			
Port	Y	Max. (inches)	]				4 1/4	5 1/4	5 13/16	7 7/8	10			
Body	Z	Max. (inches)	]				7	7 1/2	11	12	<b>14</b> 1/4	]		
	Х	Max. (inches)	8 1/2	8 1/2	8 1/2	8 1/2	9	13 1/2	13 1/2	15 1/2	<b>16</b> 1/2	]		
Angle Body	Y	Max. (inches)	5	5	5	5	5	5 13/16	7 7/8	10	12	]		
,	Z	Max. (inches)	7 1/2	7 1/2	7 1/2	7 1/2	8	11 1/2	12 1/2	15	16			

#### **Flow Characteristics**

Full Port Globe and Angle Valve size	inches (mm)	1 1/4 (32)	1 1/2 (40)	2 (50)	2 1/2 (65)	3 (80)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)
Reduced Port Globe Valve Size	inches (mm)			3 (80)		4 (100)	6 (150)	8 (200)	10 (250)				
Suggested Flow	Max. Continuous	93	125	210	300	460	800	1800	3100	4900	7000	8400	11000
(GPM)	Max Intermittent	120	160	260	375	600	1000	2250	4000	6150	8700	10500	13800
	Min. Continuous	10	10	15	20	30	50	115	200	300	435	530	690
	Max. Continuous	6	8	13	19	29	50	113	195	309	550	665	870
Suggested Flow (Liters/sec)	Max. Intermittent	7.6	10	16.4	23	37	62	142	246	388	440	530	95
	Min. Continuous	.6	.6	0.9	1.3	1.9	3.2	7.2	13	19	28	33	43

Suggested flow calculations are based on flow through Schedule 40 Pipe. Maximum Continuous flow is approx. 20 ft./sec (6.1 meters/sec) & Maximum Intermittent is approx. 25 ft./sec (7.6 meters/sec).

#### Operation

The Figure 5700 is supplied with an electrical-actuated pilot assembly. This pilot has two basic parts: 1) the solenoid, or coil, itself, and 2) the pilot valve that channels flow of the liquid being handled. These two parts combine to form a single unit called the "Solenoid Controlled Pilot".

**Operating Sequence:** 

Assuming the use of a NORMALLY CLOSED (energized to open) 3-way Solenoid Pilot Valve:

- a) The sequence begins with the solenoid de-energized. The pilot connects inlet pressure to the main valve cover holding the main valve closed.
- b) When the solenoid is energized: the pilot valve switches allowing pressure in the cover to be vented downstream. This enables inlet pressure to open the main valve.
- c) When the solenoid is de-energized, the pilot valve returns to its original position, connecting the cover back to inlet pressure which closes the main valve. Pilot and valve are now ready for the next sequence.

#### **Specifications**

The Solenoid Control Valve shall be a single seated, line-pressure-operated, diaphragm-actuated, pilot-controlled globe or angle valve. The valve shall seal by means of a corrosion resistant seat and resilient, rectangular seat disc. These and other parts shall be replaceable in the field; all such service and adjustments to be possible without removing the valve from the line. The stem of the basic valve shall be guided top and bottom by integral bushings. The basic valve and its pilot control system shall contain no packing glands or stuffing boxes. The diaphragm shall not be used as a seating surface, nor shall pistons be used as an operating medium. All internal and external ferrous surfaces shall be coated with a high-quality, FDA Approved blue fusion epoxy coating. The valve shall be certified to NSF/ANSI Standard 61. The Solenoid Control Valve shall be a VAG/GA Industries Figure 5700

Job Name	Contractor	
Job Location	Engineer	



## **BODY MINIMUM FRICTION LOSS**

Note: If the valve is to be used for continuous flow, supply adequate back pressure to operate the valve below the "Damage Zone" shown on the "Pressure Reduction Limit" chart. If the valve discharges to atmosphere adequate back pressure is very important, contact VAG/GA Industries for assistance.