

# SUPERVISORY COCK VALVES, ELECTRIC INTERLOCKING FUEL GAS AND FUEL OIL COCKS - FIGURE 1051

The Jamesbury® Figure 1051 Supervisory Cocks are FM (Factory Mutual) approved to provide shutoff and position indication for proper fuel light-off of either fuel oil or gas burners. Developed for use with semi-automatic or manual safety interlock burner management systems, these electric interlocking cocks indicate the burner cock is closed before the light-off sequence can begin.

Figure 1051 Supervisory Cocks allow fast actuation, have low turning torque, and feature reliable, tight sealing for critical fuel control applications. Should the valve be accidentally moved out of the full closed position, the “not closed” condition is signalled to the safety interlock system. Closing the valve requires only a quick quarter turn of the handle. For added protection, the position of the valve handle gives visual “at a glance” indication of open or closed position.

Limit switches on these cocks are contained in a compact die cast aluminum housing – all moving parts are enclosed to protect the switches from moisture and corrosion, tampering or accidental change. The limit switch housing assemblies are also FM approved to NEMA 4, 4X, and 6; Class I, Div. 1, Groups B, C, & D; Class II Div. 1, Groups E, F & G for watertight and explosion proof hazardous location service.

Figure 1051 Supervisory Cocks are available with either screwed or socket weld ends in sizes 1/2" through 2" (DN 15 – 50). Materials include carbon steel or 316 stainless steel. ANSI Class 150, 300 & 600 flanged design Supervisory Cocks are available in sizes 1/2" through 6" (DN 15 – 150). All valves have low



coefficient of friction seats that assure consistently low operating torque. Flexible-lip valve seats are self-compensating for wear and provide tight shutoff. No injection of lubricants or sealants is ever necessary.

Valve assemblies are available with several different limit switch arrangements, using either single pole double throw (SPDT) or double pole double throw (DPDT) switches, rated as follows:

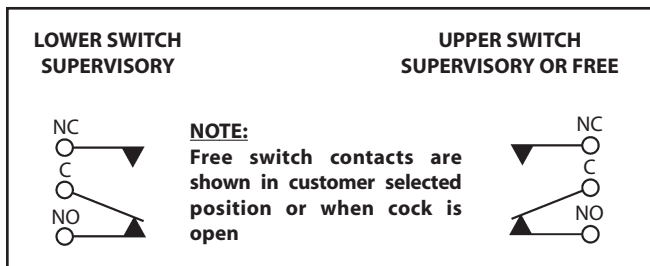
Switch Ratings in Amperes			
Voltage	QZM2VB1DSS (SPDT)	QZM14B1DSS (DPDT)	QZP2HB1DSS (Hermetically sealed SPDT)
125V AC	10	4.5	.30
250V AC	10	4.5	–
125V DC	.50*	–	–

\* Not recommended for electrical circuits operating at less than 20mA @ 24 VDC

## SWITCH ARRANGEMENTS

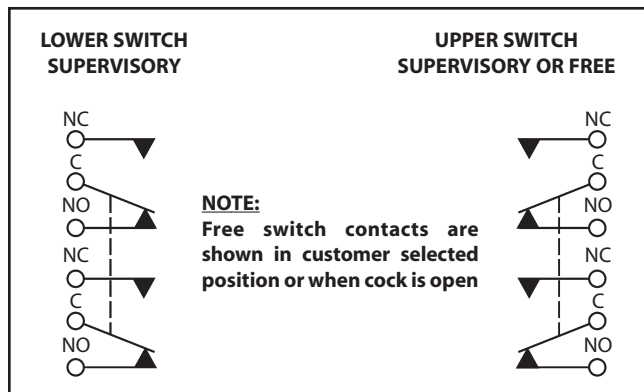
Contacts of each switch are in position shown when valve is closed

### SPDT Switch Contact Schematic



Available switch combinations are shown in the "How to Order" table. Switches designated as "supervisory" are set so that they are actuated only when the valve is in the fully closed position. They are then secured to avoid accidental relocation and marked to show any attempts at tampering. Switches indicated as "free" for use with indicator lights or other control or sequencing purposes, are normally set to close when the valve is fully open, and may be adjusted to

### DPDT Switch Contact Schematic



operate at any valve position (DPDT switches can be adjusted only for the end of travel, i.e., valve full open or valve full closed).

## SPECIFICATIONS

### Maximum Operating Pressure Ratings

Figure 1051 Supervisory Cocks are rated for service based on FM approval tests as shown to the right. Approval is for use where the fluid temperature does not exceed 250°F

(121°C) and the ambient temperature does not exceed 125°F (51.7°C).

MAXIMUM OPERATING PRESSURE – psi				
Valves Size - in	Eliminator™ Screwed End Valves	Series 4000 Screwed End Valves and Socket Weld Valves		Series 7150 ANSI Class 150 Series 7300 & 7305 ANSI Class 300 Flanged Valves
		Delrin® Seats	Xtreme® Seats	
1/2	1200	2250	1200	285
3/4	1200	2250	1200	285
1	1200	2250	1200	285
1-1/4	1200	2250	1200	285
1-1/2	1200	2250	1200	285
2	1200	2250	1200	285
3	–	–	–	285
4	–	–	–	285
6	–	–	–	285*

MAXIMUM OPERATING PRESSURE – bar				
Valves Size - DN	Eliminator Screwed End Valves	Series 4000 Screwed End Valves and Socket Weld Valves		Series 7150 ANSI Class 150 Series Series 7300 & 7305 ANSI Class 300 Flanged Valves
		Delrin Seats	Xtreme Seats	
15	83	155	83	19.6
20	83	155	83	19.6
25	83	155	83	19.6
32	83	155	83	19.6
40	83	155	83	19.6
50	83	155	83	19.6
80	–	–	–	19.6
100	–	–	–	19.6
150	–	–	–	19.6*

\* ANSI Class 150 Only

### Flow Data

The table below provides flow coefficients of the Supervisory Cocks covered in the bulletin. The Cv values represent the flow of water at +60°F through the valve in U.S. gallons per minute at a pressure drop of 1psi. The metric

equivalent, Kv, is the flow of water at 16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm<sup>2</sup>. To convert Cv to Kv multiply by 0.8569.

Eliminator			Series 4000 Valves				Series 7000 Flanged Valves		
Valve Size inches	Cv	Length of Equivalent Pipe (feet)	Valve Size inches	Standard Port		Full Port	Valve Size inches	Cv	Length of Equivalent Pipe (feet)
				Cv	Equivalent Pipe (feet)	Equivalent Pipe (feet)			
1/2	8.3	3.7	1/2	13	.13	.13	1/2	9	3.5
3/4	14	6.0	3/4	33	1.0	.19	3/4	19	4.6
1	35	3.3	1	44	2.0	.24	1	45	2.0
1-1/4	55	5.9	1-1/4	46	7.7	.27	1-1/2	125	2.6
1-1/2	94	4.6	1-1/2	95	9.2	.31	2	165	5.4
2	115	11.0	2	111	11.3	-	3	350	9.0
-	-	-	-	-	-	-	4	550	14.0
-	-	-	-	-	-	-	6	765	61.0

Eliminator			Series 4000 Valves				Series 7000 Flanged Valves		
Valve Size DN	Cv	Length of Equivalent Pipe (m)	Valve Size DN	Standard Port		Full Port	Valve Size DN	Cv	Length of Equivalent Pipe (m)
				Cv	Equivalent Pipe (m)	Equivalent Pipe (m)			
15	7.1	1.13	15	11	0.04	0.04	15	8	1.07
20	12	1.83	20	28	0.30	0.06	20	16	1.40
25	30	1.01	25	38	0.61	0.07	25	39	0.61
32	47	1.80	30	39	2.35	0.08	40	107	0.79
40	81	1.40	40	81	2.80	0.09	50	141	1.65
50	99	3.35	50	95	3.44	-	80	300	2.74
-	-	-	-	-	-	-	100	471	4.27
-	-	-	-	-	-	-	150	656	18.59

### DIMENSIONS

**1/2" – 2" (DN 15 – 50)  
Screwed End Eliminator**

VALVE SHOWN IN OPEN POSITION

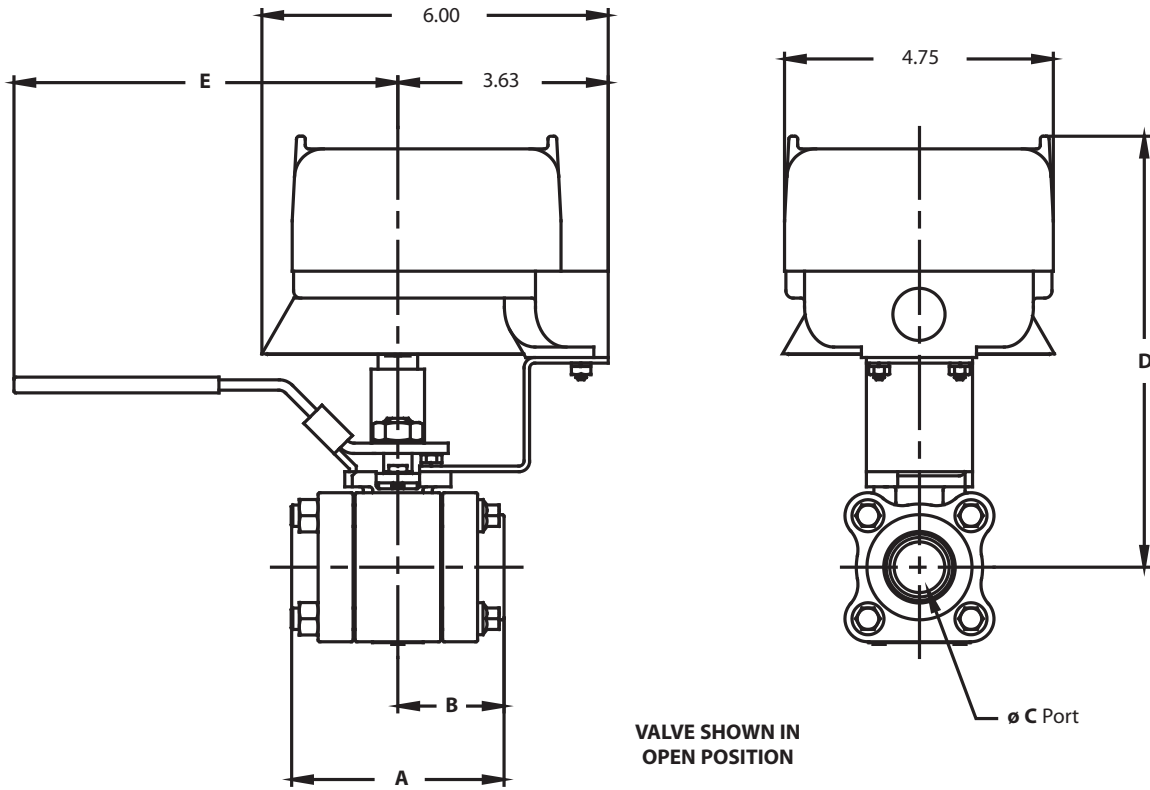
Screwed End Eliminator – inches						
Valve Size inches	A	B	C	D	E	F
	1/4-1/2	2.62	1.34	1.13	0.50	6.55
3/4	3.00	1.50	1.38	0.69	6.70	5.00
1	3.55	1.78	1.75	0.88	6.88	7.50
1-1/4	4.00	2.00	2.00	1.00	7.00	7.50
1-1/2	4.38	2.19	2.31	1.25	6.24	8.25
2	5.50	2.75	2.81	1.50	6.43	8.25

Screwed End Eliminator – mm						
Valve Size DN	A	B	C	D	E	F
	8-15	67	34	29	13	166
20	76	38	35	18	170	127
25	90	45	44	22	175	191
32	102	51	51	25	178	191
40	111	56	59	32	158	210
50	140	70	71	38	163	210

**DIMENSIONS**

**1/2" – 2" (DN 15 – 50)  
Screwed End and Socket Weld  
Series 4000 Valves**

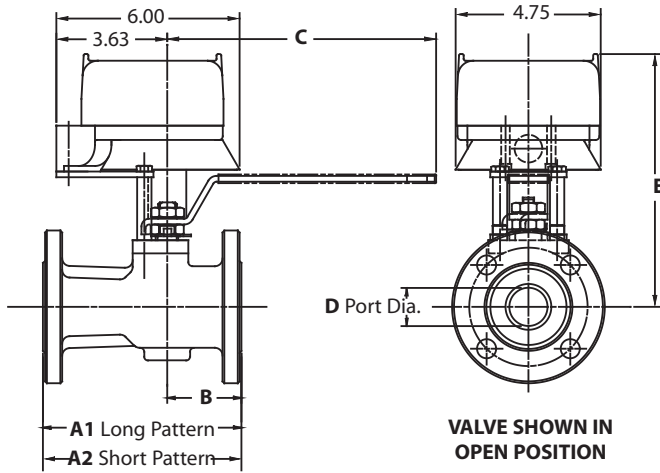


Screwed End Series 4000 – inches					
Valve Size inches	A	B	C	D	E
<b>REDUCED PORT</b>					
1/2	2.59	1.29	0.50	6.55	5.00
3/4	3.01	1.50	0.69	6.70	5.00
1	3.69	1.85	0.88	6.88	7.50
1-1/4	4.22	2.11	1.00	7.00	7.50
1-1/2	4.58	2.29	1.25	6.24	8.25
2	5.11	2.55	1.50	6.43	8.25
<b>FULL PORT</b>					
1/2	2.59	1.29	0.50	6.55	5.00
3/4	3.69	1.85	0.88	6.88	7.50
1	4.22	2.11	1.00	7.00	7.50
1-1/4	4.58	2.29	1.25	6.24	8.25
1-1/2	5.11	2.55	1.50	6.43	8.25

Screwed End Series 4000 – mm					
Valve Size DN	A	B	C	D	E
<b>REDUCED PORT</b>					
15	66	33	13	166	127
20	76	38	18	170	127
25	94	47	22	175	191
32	107	54	25	178	191
40	116	58	32	158	210
50	130	65	38	163	210
<b>FULL PORT</b>					
15	66	33	13	166	127
20	94	47	22	170	191
25	107	54	25	175	191
32	116	58	32	158	210
40	130	65	38	163	210

**DIMENSIONS**

**1/2" – 2" (DN 15 – 50)  
ANSI Class 150 Flanged  
Series 7150, 730S & 7300 Valves**



**VALVE SHOWN IN OPEN POSITION**

7150 ANSI CLASS 150, FLANGED – inches					
Valve Size inches	A	B	C	D	E
1/2	4.25	1.94	5.00	0.50	6.55
3/4	4.63	2.00	5.00	0.69	6.70
1	5.00	2.19	6.50	0.88	7.00
1-1/2	6.50	2.65	8.00	1.25	6.24
2	7.00	2.64	8.00	1.50	6.24

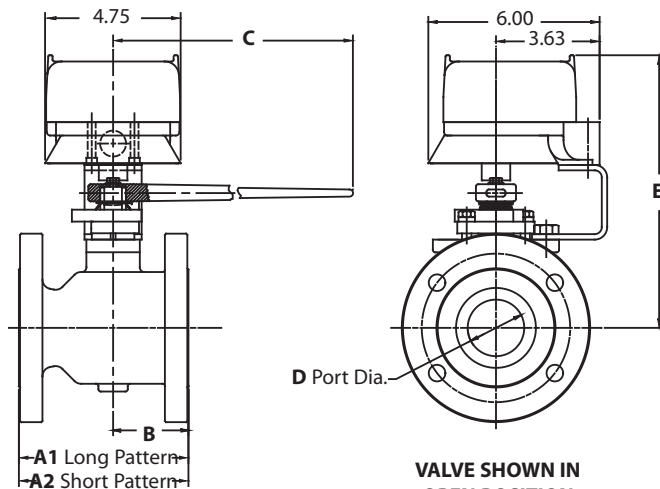
730S / 7300 ANSI CLASS 300, FLANGED – inches						
Valve Size inches	7300 A1	730S A2	B	C	D	E
1/2	5.50	4.25	1.94	5.00	0.50	6.55
3/4	6.00	4.63	2.00	5.00	0.69	6.70
1	6.50	5.00	2.19	6.50	0.88	7.00
1-1/2	7.50	6.50	2.65	8.00	1.25	6.24
2	8.50	7.00	2.64	8.00	1.50	6.24

7150 ANSI CLASS 150, FLANGED – mm					
Valve Size DN	A	B	C	D	E
15	107	49	127	13	166
20	118	51	127	18	170
25	125	56	165	22	178
40	163	67	203	32	158
50	175	67	203	38	158

730S / 7300 ANSI CLASS 300, FLANGED – mm						
Valve Size inches	7300 A1	730S A2	B	C	D	E
15	138	107	49	127	13	166
20	150	118	51	127	18	170
25	163	125	56	165	22	178
40	188	163	67	203	32	158
50	213	175	67	203	38	158

**3", 4" and 6" (DN 80, 100 and 150)  
ANSI Class 150 Flanged  
Series 7150, 730S & 7300 Valves**



**VALVE SHOWN IN OPEN POSITION**

ANSI CLASS 150, FLANGED – inches					
Valve Size inches	A	B	C	D	E
3	8.00	3.75	14.0	2.31	10.05
4	9.00	4.00	14.0	3.00	10.54
6	10.50	6.75	19.9	4.00	12.50

ANSI CLASS 300, FLANGED – inches						
Valve Size inches	A1	A2	B	C	D	E
3	11.12	8.00	3.75	14.0	2.31	10.05
4	12.00	9.00	4.00	14.0	3.00	11.68

ANSI CLASS 150, FLANGED – mm					
Valve Size DN	A	B	C	D	E
80	200	94	350	58	252
100	225	100	350	75	264
150	263	169	498	100	313

ANSI CLASS 300, FLANGED – mm						
Valve Size DN	A1	A2	B	C	D	E
80	278	200	94	350	58	252
100	300	225	100	350	75	292

## HOW TO ORDER JAMESBURY SUPERVISORY COCKS

The Supervisory Cock figure designation is made up of numbers and letters that describe all features of the available variations of the cock. Coding is as follows:

1	2	3	4	5	6
5	7	E	3	X	B

**Note:** When ordering 1/2" (DN 15) Series 4000 valves always use the style codes shown above for standard port types even though this size is Full Port design.

**Example:** A 1-1/2" (DN 40) Supervisory Cock in Series 4000 standard port screwed end design in carbon steel with 316 stainless steel trim, with two supervisory double pole double throw limit switches, *Xtreme* seats and ANSI rating has the designation Figure 1051-57E3XB.

1	Size	1	2	3	4	5	6	7	8	9
	inches	1/2	3/4	1	1-1/4	1-1/2	2	3*	4*	6*
	DN	15	20	25	32	40	50	80	100	150

2	Body Style
2	Series 7150 ANSI class 150 flanged 1/2"-6" (DN 15-150)
E	Eliminator 1/2"-2" (DN 15-20)
7	Series 4000 std. port screwed end 1/2"-2" (DN 15-50)
8	Series 4000 full port screwed end 1/2"-1 1/2" (DN 15-40)
9	Series 4000 std. port socket weld 1/2"-2" (DN 15-50)
0	Series 4000 full port socket weld 1/2"-1 1/2" (DN 15-40)
C	Type 7305 ANSI Class 300 flanged 1/2"-4" (DN 15-100)
D	Type 7300 ANSI Class 300 flanged 1/2"-4" (DN 15-100)

3	Body Trim Materials
D	316 Stainless steel
E	Carbon steel with 316 stainless trim
F	Carbon steel with 316 stainless steel ball & 17-4 PH stem
G	316 Stainless steel body & ball with 17-4 PH stem

4	Switch Arrangement
1	SPDT-2 supervisory QX2VB02SDM
2	SPDT-1 supervisory, 1 free, QX2VB02SDM
3	DPDT-2 supervisory, QX14B02SDM
4	DPDT-1 supervisory, 1 free, QX14B02SDM
6	SPDT-1 supervisory, 1 free, hermetically sealed QX2HB02SDM
7	SPDT-2 supervisory hermetically sealed QX2HB02SDM

5	Seat Material
T	PTFE **
X	<i>Xtreme</i>
R	Delrin ††

6	Special Service
S	Standard - CWP rated 4000 series or <i>Eliminator</i>
B	ANSI 4000 Series or <i>Eliminator</i>

\* Available in flanged design only

\*\* 3" (DN 80) & larger 7000 Series only

†† Use only for 4000 Series

Subject to change without prior notice.

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