CLARK SOLUTIONS

Model 1314, 2-Way, Normally Closed Solenoid Valve

3/4 to 2" Pipe Size, Piloted and Partially Piloted Operation

DESCRIPTION

Model 1314 two-way normally closed solenoid valves are available in bronze, 304 or 316 stainless steel bodies. A variety of seal and seat material including Acrylo-Nitrile, Neoprene®, Ethyl-propylene, Viton®, and Teflon® satisfy many general industry applications.

The valves employ a choice of internally solenoid piloted operations dependent on system pressure requirements. A choice of solenoids cover a range of ambient temperatures and operating voltages.

Options include weather proof housing and manual override.

File LR87427 2M - LR108921-1

SPECIFICATIONS

GENERAL

Operation: Normally closed
Valve Body Material: Bronze, AISI304 Stainless Steel, AISI316 Stainless Steel
Valve Seals & Seats: Table 2
Connections: BSP or NPT
Valve Life: > 1,000,000 cycles, field rebuild kits available
Operating Voltage- 12V, 24V, 110V, 220V, 240V AC/DC 50/60Hz
Standard Solenoid Housing: Iron, 3/4 NF connector
Weather Proof Solenoid Housing: NEMA 4X, Iron Epoxy Paint, 1/2 " BSP or NPT connector
Power Consumption:
- Class F coil to 80°C: 50 Hz, 28 W; 60 Hz, 30 W; DC, 48 W
- Class H Coil to 180°C: 50 Hz, 28 W; 60 Hz, 30 W; DC, 48 W

Options: Manual operation

Table 1

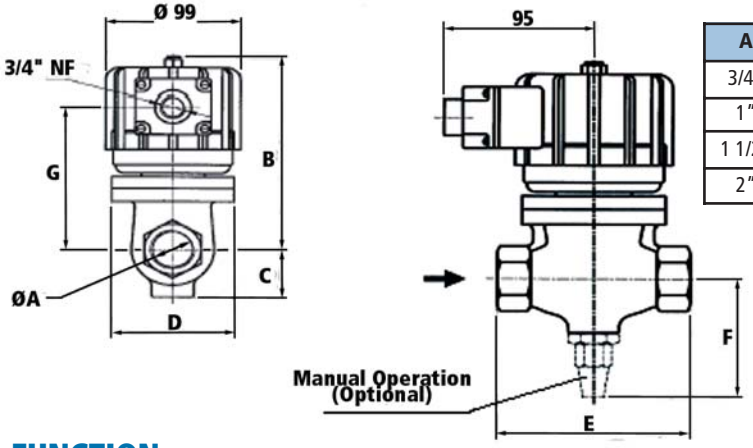
Wetted Materials						
Body	**Plunger**	**Plunger Tower**	**Springs**	**Diaphragm**	**Inner-Diaph. Material**	**Piston**
Bronze	AISI 430F	304L or 305 SS	Copper	See Table 2	-	AISI 304
AISI 304	AISI 430F	304L or 305 SS	Silver & 302 SS	See Table 2	AISI 304	AISI 304
AISI 316	AISI 430F	304L or 305 SS	Silver & 302 SS	See Table 2	AISI 316	AISI 304

Table 2

Seat Material	**Acrylo Nitrile**	**Neoprene®**	**Ethyl-propylene**	**Viton®**	**Teflon®**
Maximum Temperature	+80°C	+80°C	+150°C	+180°C	+180°C
Uses	Water, air, light oils, kerosene. Low and medium vacuum.	Oxygen, alcohol, argon, other non-corrosive light gases and liquids. Freon 12.	Water steam, hot water, acetone.	Benzene, naphtha, aromatics, etc.. Hot gases. High vacuum.	Steam, hot oils, corrosive fluids.

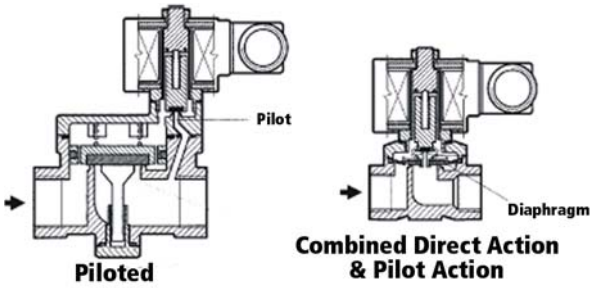
Connection (NPT or BSP)	**Orfice Dia. (mm)**	**Cv Coef. (GPM)**	**Kv Coef. (m^3/h)**	**Weight (kg)**
Bronze body - Combined Direct/Piloted - Minimum differential pressure: 0 bar - Maximum differential pressure: 7 bar (101.5 PSID)				
3/4"	19	7.02	6	4
1"	26	11.70	10	4.9
1 1/2"	32	17.55	15	6.5
2"	38	26.91	23	7.3
Bronze body - Piloted - Minimum differential pressure: 0.1 bar - Maximum differential pressure: 15 bar (217.7 PSID)				
3/4"	19	7.02	6	4
1"	26	11.70	10	4.4
1 1/2"	32	17.55	15	6.5
2"	38	21.91	23	7.3

DIMENSIONS (MM)



A	B	C	D	E	F	G
3/4"	150	32	76	100	80	113
1"	157	41	90	122	89	120
1 1/2"	173	49	100	139	97	136
2"	180	51	110	149	100	143

FUNCTION



Piloted valves use the fluid pressure to assist in opening and closing the valve, allowing the valve to operate against higher pressures than a direct acting valve.

When the pilot valve is closed, the pressure builds up via a small passage from the upstream side of the valve piston/seat. The valve seat is also acted on by a spring.

When the pilot valve opens, a passage that bypasses the valve piston/seat and connects downstream of the piston/seat is opened, relieving pressure from the top of the valve piston/seat. The inlet fluid pressure lifts up the piston to open the valve.

Flow Calculation, Liquids:

$$Q=Cv\sqrt{\frac{DP}{G}}$$

Q= Flow Rate, GPM (U.S.A.)
Cv= Valve Flow Coefficient
DP= Valve Pressure Drop, PSID
G= Specific Gravity of Liquid (= 1.0 for Water)

ORDERING INFORMATION

SELECT ITEM FROM EACH COLUMN IN CHART BELOW FROM LEFT TO RIGHT
EXAMPLES: 1314IV06-TS30H110V
Y1314BN08ATS30F220V

Model Number Information								
Model	**Body Material**	**Seat & Seal Material**	**Connection**	**Valve Actuation**	**Connection Threads**	**Coil Type**	**Voltage**	**Options**
1314	B=Bronze S= 304 SS I= 316 SS	A= Acrylo-Nitrile N= Neoprene E= Ethylpropylene V= Viton ST= Teflon	06= 3/4" 08= 1.0" 12= 1 1/2" 16= 2.0"	- = Fully Piloted A= Combined Piloted & Direct Acting	- = BSP T= NPT	S28F= AC, 50 Hz, 0-80°C S28H= AC, 50 Hz, 0-180°C S30F= AC, 60 Hz, 0-80°C S30H= AC, 60 Hz, 0-180°C S48H= DC, 0-180°C	12V= 12V 14V= 14V 24V= 24V 110V= 110V 220V= 220V 240V= 240V	Prefix Y= Weather Proof Housing Suffix M= Manual Operation

INSTALLATION RECOMMENDATIONS

1) Place a strainer with a porosity $\leq$ 100µ upstream of valve (see Clark Solutions Model 1359 Y Strainer).
2) Mount the valve only on a horizontal pipeline with the coil upright.
3) The valve input pressure must always be equal or greater than the output pressure.