

Controls and Valves for Industry

The Level Controller That Puts You In Complete Control.

Pneumatic Level Controller

Features

- Non-Bleed, reduces gas consumption
- Sealed and vented case reduces H₂S gas contamination
- Snap or throttle Pilot
- Field reversible, left hand or right hand, direct or indirect acting
- Adjustable level and span
- Stainless Steel bearings standard for improved repeatability and sensitivity.
- Horizontal or vertical displacer
- Interface control
- Carbon Steel body
- All Stainless Steel wetted internal parts
- NACE process standard
- Supply gas filter standard

Application

Now More Rugged Than Ever!

The Series 2001NB liquid level controller has been redesigned with a Die Cast Aluminum control box to provide a rugged and versatile unit that is ideal for use on compressor scrubbers, separators and any production or process units that require liquid level control.

WellMark's Pneumatic Level Controller Offers You Non-Bleed, Positive On/Off and Modulating Flow Action To Give You Complete Control of Your Liquids

Snap Acting Pilot • Non Bleed Positive On/Off Flow Action

The Snap Acting Pilot is comprised of two inner valves. Valve (1) admits system supply gas to output. Valve (2) controls system exhaust from output.

Valve (1) as shown in the closed position (Fig 1) is held closed by force exerted from supply gas. When upward Flapper Bar force transferred to Valve (2) is sufficient enough to overcome supply force, the ball snaps upward allowing supply gas to output port which operates the diaphragm motor valve (not shown nor included with the control).

The spherical end of valve (2) closes the exhaust port the instant the ball snaps upward and remains seated against supply pressure until force on the valve diminishes. As force is removed from valve (2), causing it to unseat, a simultaneous action occurs causing valve (1) to seat instantly closing the supply port to output and opening output to exhaust allowing the diaphragm motor valve to reverse it's action.

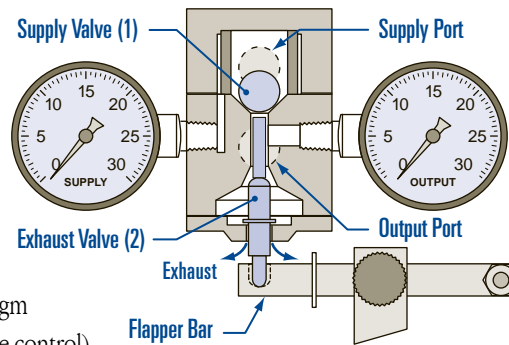


Fig 1

Throttle Pilot • Non Bleed Modulating Flow Action

The Throttle Pilot utilizes a diaphragm which creates a Forced Balance Pilot (Fig 2). Output pressure acts upon the diaphragm causing it to push back at the same force being applied to the lower seat. More force on the seat produces a proportionate increase in pilot pressure.

When the flapper bar of the control exerts upward force on the lower valve seat (3), it forces the lower seat closed against valve body and opens the supply valve (4).

Supply gas enters the system and pressures will increase until the control and diaphragm motor valve pressure equals the flapper bar force and produces a Forced System Balance.

The control will stay in this position until a decrease in the tank level reduces the force allowing exhaust, or an increase in the level produces an action as described. System supply gas does not flow while the pilot is in balance.

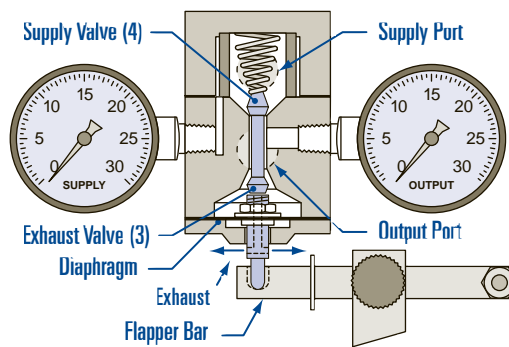
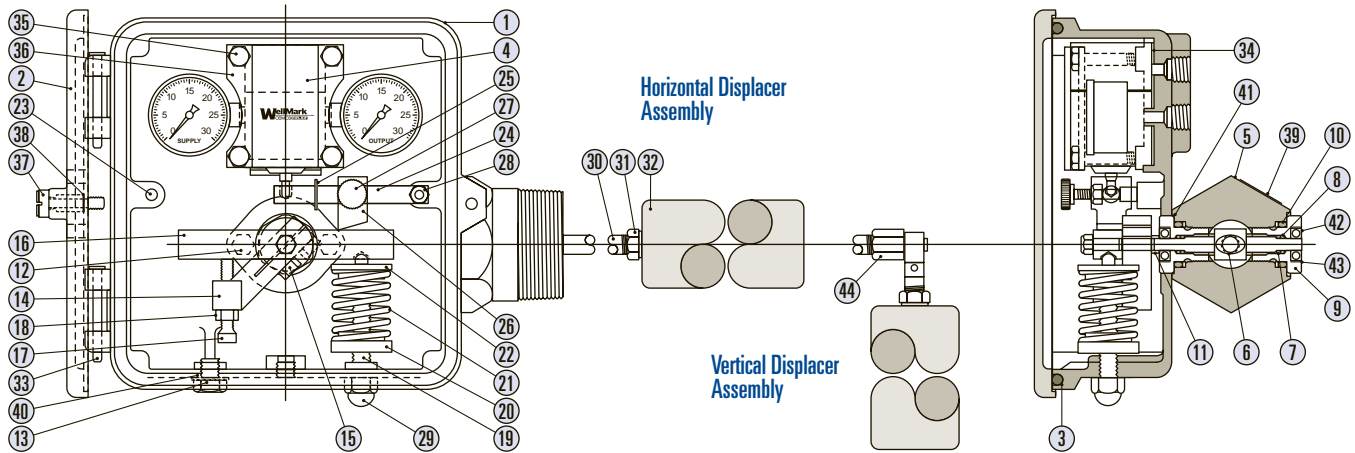


Fig 2

Specifications

Connection	Supply Required	Output	General
<ul style="list-style-type: none"> • 1/4" NPT Female 	<ul style="list-style-type: none"> • 3-15, 0-20..... 20-30 psig • 6-30, 0-30..... 35-40 psig 	<ul style="list-style-type: none"> • Throttle (Proportional) 3-15 psig 6-30 psig • Snap..... 0-20 psig 0-30 psig 	<ul style="list-style-type: none"> • Repeatability 1.0% of Full Scale • Dead Band 5.0% of Input Scale • Linearity..... 2.0% of Full Scale • Ambient Temp Effect 1.0% @ -40° F 3.0% @ +180° F • Specific Gravity4 Minimum • Temp. Limits -40° F Min. +200° F Max. • Pressure Rating 6000 psi



Parts List

Item	Part Name	Material	Qty.	Part No.
1	Control Box	Die Cast Aluminum	1	05012-4841
2	Cover	Polycarbonate	1	05012-4833
*3	Box Seal	Neoprene	1	06000-5097
*4	Snap Pilot Assy.	Aluminum & 316 S.S.	1	06500-5304
	Throttle Pilot Assy.	Aluminum & 316 S.S.	1	06500-5387
5	Body	ASTM A-108Gr. 1018	1	05011-4560
6	Pivot Shaft	ASTM A-276 Ty.316	1	05011-4511
*7	O-Ring	Viton®	2	05000-0769
*8	Back Up Ring	Teflon®	2	06000-1179
9	Shaft Retainer	ASTM A-276 Ty.316	2	05012-9389
*10	O-Ring	Viton®	2	05000-1155
11	Spacer	ASTM A-276 Ty. 316	1	05011-4495
12	Cap Screw	18-8 S.S.	2	05000-5578
13	Cap Screw	18-8 S.S.	1	05000-5453
14	Adjusting Bar	Aluminum	1	05011-4438
15	Cap Screw	18-8 S.S.	2	05000-2526
16	Torque Bar	Aluminum	1	05011-4545
17	Adj. Screw	ASTM A-276 Ty.316	1	05011-4537
18	Jam Nut	18-8 S.S.	1	05000-2559
19	Stud	18-8 S.S.	1	05011-4552
20	Lower Guide	Aluminum	1	05011-4529
21	Spring	ASTM A-313	1	06000-4157
22	Upper Guide	Aluminum	1	05011-4479

Item	Part Name	Material	Qty.	Part No.
23	Stud, Flapper Bar	ASTM A-276 Ty.316	2	05012-9371
24	Flapper Bar	ASTM A-276 Ty.316	1	05011-4404
25	Tru-Arc Ring	Ph 15-7 Mo	1	06000-1385
26	Fulcrum	Aluminum	1	05011-4412
27	Thumb Screw	S.S./Plastic	1	06500-5429
28	Ny-Loc Nut	Stainless Steel	2	05000-2567
29	Acorn Nut	Stainless Steel	1	05000-2575
30	Displacer Arm, Std.	ASTM A-276 Ty.316	1	06000-1534
	Displacer Arm, VF	ASTM A-276 Ty.316	1	05011-9296
31	Displacer Bushing	ASTM A-276 Ty.316	1	06000-5105
32	Displacer	PVC	1	05012-3561
33	Hinge pin	Steel plated	2	06000-7537
*34	Gasket	Neoprene	1	06000-4819
35	Cap Screw	18-8 S.S.	4	05000-5313
36	Pilot Clamp	304 S.S.	1	05012-6325
37	Panel Screw	Stainless Steel	1	06000-1153
38	Retainer	Stainless Steel	1	06000-2672
39	Serial Tag	Aluminum	1	06000-1922
*40	Thread Seal	Steel/Buna N	1	06000-0395
*41	O-Ring	Viton®	1	05000-5586
42	Bearing	Stainless Steel	2	06000-7552
43	Tolerance Ring	Stainless Steel	2	06000-7560
44	Adapter V.D. Assy.	ASTM A-276 Ty.316	1	06500-4350

*Recommended spare parts.

Repair Kits

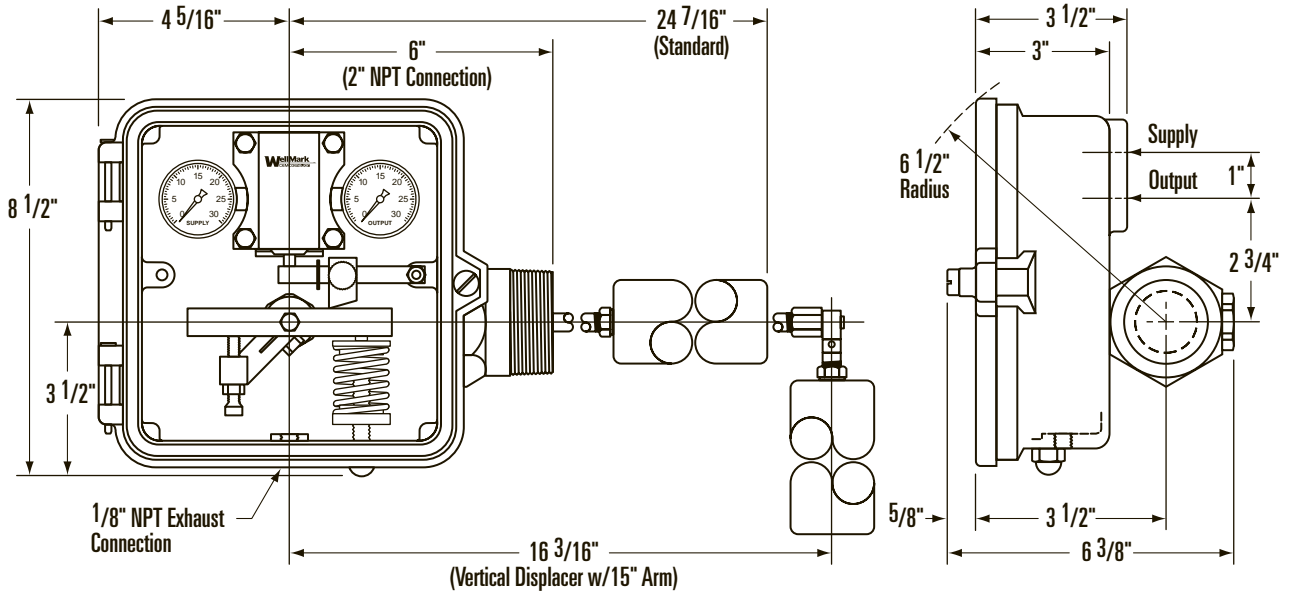
Charts indicate the Kit and Part Descriptions, the Quantities required and the Part Number for ordering.

Bar Flapper Kit	1	03500-1882
Nut	1	05000-2567
Retainer Ring	1	06000-1385
Flapper Bar	1	05011-4404
Clamp Kit	1	03500-1890
Cap Screw	4	05000-5313
Clamp	1	05012-6325

Shaft Retainer Kit	1	06500-5601
Shaft Retainer	1	05012-9389
Bearing	1	06000-7552
Tolerance Ring	1	06000-7560
Std. Fulcrum Kit	1	03500-1898
Fulcrum	1	05011-4412
Thumb Screw	1	06500-5429

Bar Adjusting Level Kit	1	03500-1906
Bar Adjusting Level	1	05011-4438
Jam Nut	1	05000-2559
Cap Screw	2	05000-2526
Adjusting Screw	1	05011-4537

Torque Bar Kit	1	03500-1914
Std. Torque Bar	1	05011-4545
Lock Nut	1	05000-2567
Sensitivity Scale	1	10739



Dimensional Data

WARNING

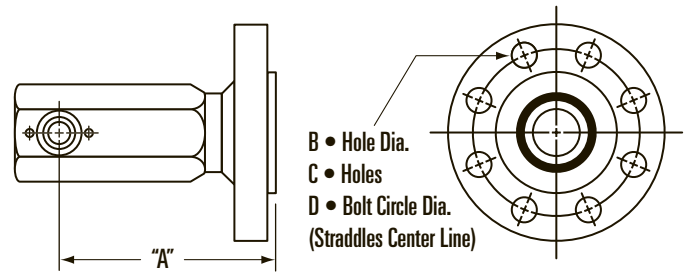
If gas supply is flammable or noxious, this product must be located in a well ventilated non-hazardous area or sealed and vented to a non-hazardous area.

Pilot Operating Pressure

Normal: 20-30 psi

Overpressure protection: Gauges are the limit factor

Maximum pressure without gauges-125 psig



2" Flange Connections

ANSI Class/Dimensions	A	B	C	D
150	6 1/2	3/4	4	4 3/4
300	6 1/2	3/4	8	5
400-600	6 1/2	3/4	8	5
900-1500	7 1/4	1	8	6 1/2

Available Options

Outside Cages

- Horizontal
- Vertical
- NPT
- Flanged
- Carbon Steel
- Stainless Steel
- NACE

Domes For Top Mount

- NPT
- Flanged
- Carbon Steel
- Stainless Steel
- NACE

Vibration Package

- Consult Factory

Marine Package

- Consult Factory

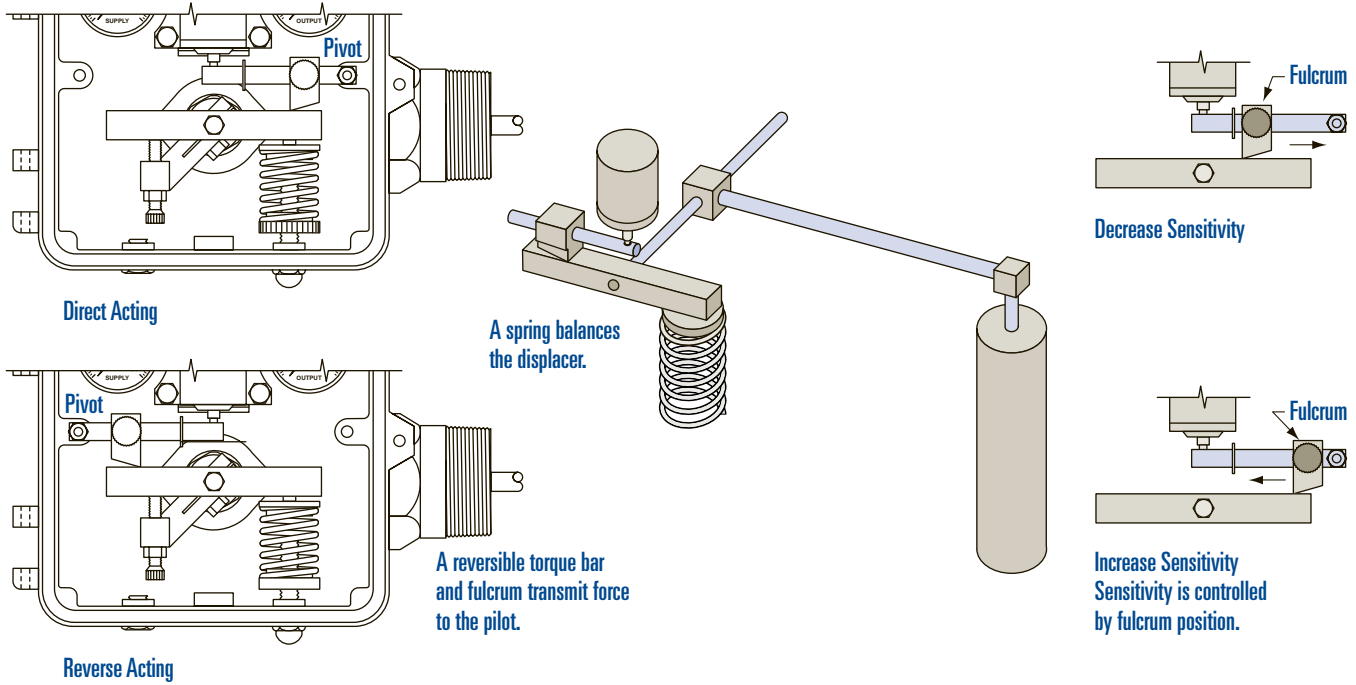
Snap Pilot Kit	1	03500-1163
Filter	1	06000-1526
Gasket	1	06000-1484
Pin w/Retainer Ring	1	05011-4461
	1	06000-1393
Ball	1	06000-1906

Throttle Pilot Kit	1	03500-1163
Filter	1	06000-1526
Gasket	1	06000-1484
Diaphragm	1	06000-1559
Seat	1	05011-4594

Throttle Pilot Kit Continued		
Flat Washer-Nylon	1	05011-4602
Jam Nut	1	05000-2559
Peanut	1	05011-4586
Spring	1	06000-1567

Always use genuine WellMark replacement parts for optimum performance.

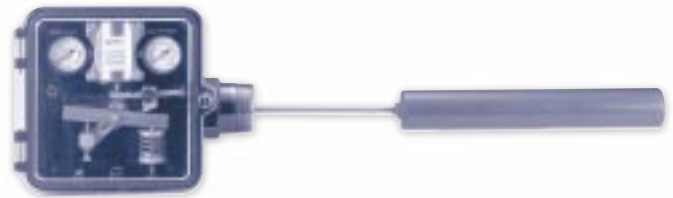
Flexible Design Meets Your Needs



Operating Instructions Included With Unit

Liquid Level Controller

- 20-30 psi supply pressure recommended



To Adjust Level

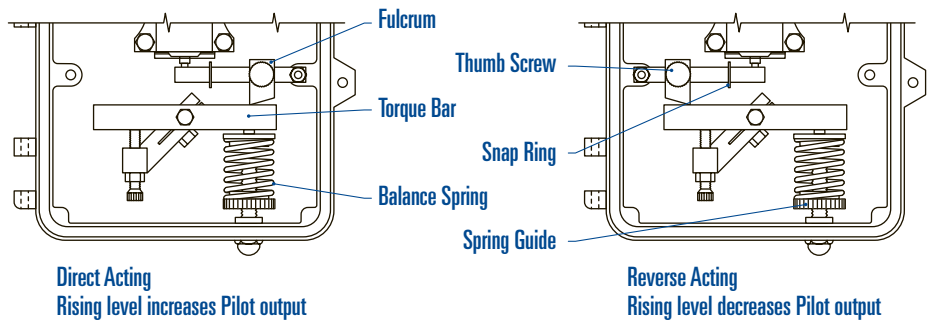
- Compress balance spring with spring guide to counterbalance weight of displacer.
- Make sure displacer arm is not resting against vessel nozzle by rocking torque bar.
- To Raise Level: Decrease spring compression
- To Lower Level: Increase spring compression

To Adjust Sensitivity

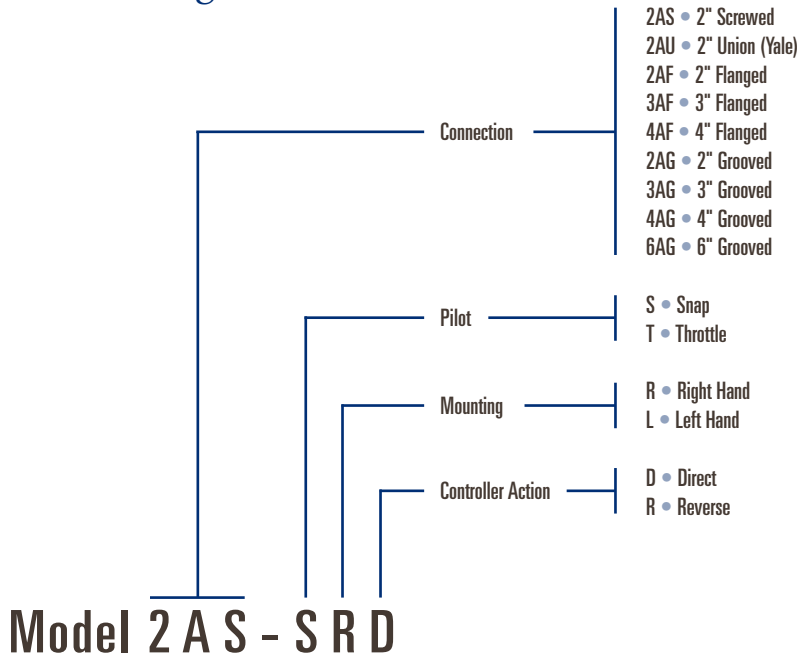
- Loosen fulcrum thumb screw
- To Increase Sensitivity: Slide fulcrum nearer snap ring
- To Decrease Sensitivity: Slide fulcrum away from snap ring

To Adjust for Interface

- Set sensitivity fulcrum close to snap ring. Reduce spring compression to allow lighter liquid to rise around displacer. After displacer is covered by lighter liquid, tighten the spring until snap or throttling occurs. Then back off the spring approximately one half turn.



Determining the Model Number



Other Information Required

- A • Body connection type, size and rating
- B • Fluid media
- C • Fluid temperatures-maximum and minimum
- E • Displacer size and material-Standard is 1 7/8" X 12" PVC, 1 7/8" X 12" Acrylic optional.
- V • Vertical Displacer
- F • Displacer arm length-Arm length is figured from center line of control box. 15" Standard on vertical displacer, 12 1/2" Standard on horizontal displacer. (Other lengths available upon application)

Models and Order Numbers

Model No.	Displacer Orientation	Order No.
2AS-SLD	Horizontal-Standard	03051-0118
2AS-SRD	Horizontal-Standard	03051-0100
2AS-TLD	Horizontal-Standard	03051-0290
2AS-TRD	Horizontal-Standard	03051-0126
2AS-SLD-VF	Vertical Displacer	03051-0167
2AS-SRD-VF	Vertical Displacer	03051-0209
2AS-TLD-VF	Vertical Displacer	03051-0217
2AS-TRD-VF	Vertical Displacer	03051-0332

Contact your WellMark representative today for more information.

Taking
Liquid Level
Management
To A
Higher Level