

# THE EQUALIZER®

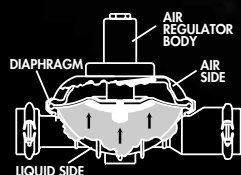
WILDEN AUTOMATIC SURGE DAMPENER



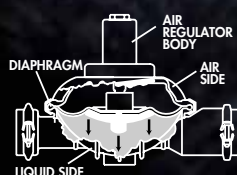
## SD SERIES

A compressed air line attached to the air regulator body sets and maintains pressure on the air side of the diaphragm. As a reciprocating pump begins its stroke, liquid discharge pressure increases which flexes the Equalizer® diaphragm inward (toward the air side). This action accumulates fluid in the liquid chamber (phase 1). When the pump redirects its motion upon stroke completion, the liquid discharge pressure decreases allowing the Equalizer® diaphragm to flex outward displacing the fluid into the discharge line (phase 2). This motion provides the supplementary pumping action needed to minimize pressure fluctuation.

### Phase 1



### Phase 2



### Materials of Construction, Wetted Housing

Material	Est. Shipping Weight			
	SD 1/2	SD1	SD2	SD3
Aluminum	3 lbs	18 lbs	27 lbs	-
316 Stainless Steel	5 lbs	23 lbs	44 lbs	81 lbs
Cast Iron	-	23 lbs	47 lbs	-
Polypropylene	2 lbs	18 lbs	28 lbs	-
PVDF	3 lbs	19 lbs	34 lbs	-
Carbon-Filled Acetal	2 lbs	-	-	-
PFA	4 lbs	21 lbs	-	-

### Materials of Construction, Non-Wetted Housing

Description	Material
Air Regulator Body (SD 1/2)	Polypropylene
Air Regulator Body (SD1 & SD23)	Glass-Filled Polypropylene
Air Chamber (SD1)	Mild Steel, PTFE Coated
Air Chamber (SD2)	PTFE Coated Cast Iron, Aluminum, 316 Stainless Steel
Air Chamber (SD3)	316 Stainless Steel

**WILDEN®**  
A DOVER COMPANY

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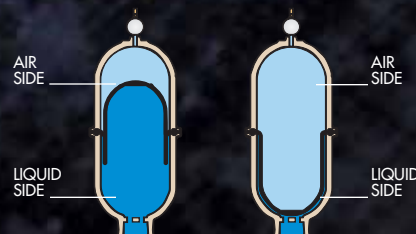
**BF  
SERIES**

## NEW ADDITIONS TO THE EQUALIZER® FAMILY

- 3/8" dampeners for 1/4" pumps
- 3" & 4" dampeners
- Bolted connections
- Flanged connections (ANSI & DIN)
- High pressure dampeners
- Food grade with Tri-clamp® Style
- Sanitary with Tri-clamp® Style
- Extended Teflon® family

## PRINCIPLES OF OPERATION

**BF** Equalizers® operate on the principle that volume is inversely proportional to pressure ( $P_1V_1=P_2V_2$ ). Compressed air or gas is introduced into the air chamber of the BF Equalizer® to a specified pressure. The gas is entrapped by the elastomeric bladder, which prevents contact between the process fluid and compressed gas. Without the bladder, the gas will dissolve into the fluid and cause product contamination. When a pulse is created, fluid enters the wetted chamber of the BF Equalizer®, displacing the bladder, compressing the gas and absorbing the shock. When the liquid pressure decreases, the gas expands, pushing the fluid back into the process line.



## AIR CONTROL OPTIONS

### MANUAL ADJUSTMENT

Manual BF Equalizer® models are equipped with a self-relieving regulator. It requires a permanent supply of compressed air and allows for easy adjustment of internal air pressure. This model can be used on the suction or discharge side of the pump. It is most effective when the air supplied is 4–6 psig below pump head pressure.

### AUTOMATIC

Automatic BF Equalizer® models are equipped with an automatic valve on the air chamber. The Automatic BF Equalizer® model requires a permanent supply of compressed air and is self-adjusting to varying system pressure. It is used on the discharge side of air-operated pumps in varying pressure systems where manual adjustments are not feasible.