

## ZL (ZERO LEAK) SERIES FRP DAMPER SPECIFICATION

### Dampers:

- A. ZL Series FRP Dampers shall be manufactured by Spunstrand® Inc. and fabricated with the same materials and specifications as the duct. Resin shall be Ashland Chemicals Hetron 992SB or Derakane 510 vinylester resin: 100 mil liners to be clear without antimony trioxide and fabricated to meet ASME RTP-1 visual level II acceptance quality. Structural layers to be filament wound with the same resin and include antimony trioxide for maximum fire retardancy. Unless otherwise specified, minimum wall thickness shall be .150" for 8" Ø thru 22"Ø, .200" for 24"Ø thru 36"Ø, .250" for 42"Ø thru 54"Ø, .375" for 60"Ø thru 72"Ø, .415 76"Ø thru 84"Ø, and .500 for 96"Ø. No resin, liner, or structural variations will be acceptable unless they exceed the minimum requirements. Blade shall be FRP one or two piece molded, depending on diameter, and include blade stiffeners as needed for proper blade stiffness. Damper blade shall be offset in the closed position to form a normal stop on wall of duct. The seating of the blade shall be independent of the shaft seal. A resilient rubber seat shall be permanently formed into the duct wall. The resilient seat to be butyl vinyl as standard with other optional seats available. Axle to be pultruded FRP made with same resin as the duct and continuous strand roving. Bearing to be Teflon® with machined in o-rings. External schedule 80 PVC packing glands with Teflon® packing are included as standard. Dampers, including all components other than mechanical operators to be manufactured by Spunstrand® Inc.
- B. All dampers shall be factory tested for full range of motion, blade fit, quality of each individual component, leakage tested with results documented and included in the fabricator's Quality Control Manual QC forms and procedures.
- C. Dampers come standard with flanges that require mating flanges on the connecting ductwork but can also be supplied with plain ends or in spool pieces. It is important to note that when supplied with plain ends the installer needs to take great care to keep excess resin away from the damper's moving parts while they are making joint connections. Dampers come as standard configuration with gear operators required for the additional torque created by the resilient seat.
- D. All Spunstrand® Inc. damper shafts are fabricated by pultruding vinylester resin and continuous strand roving. Stainless steel shafts are available as an option, but are not recommended in applications with high concentrations of acids or caustics.
- E. Motorized dampers are available with either pneumatic or electric actuators. Standard torque ratings available in 100, and up to 5,000 in/lb ratings. Positioners or other options and controls available upon request.

**SPUNSTRAND® INC. ZL SERIES FRP DAMPERS  
MODEL NUMBER DESIGNATIONS**

<b>DIAMETER</b>	<b>BODY CONSTRUCTION*</b>	<b>BLADE CONSTRUCTION</b>	<b>O-RING MATERIAL</b>
4" thru 96"	P - Polyester	1 - Polyester	1 - Neoprene
	V - Vinylester	2 - Vinylester	2 - Buna N
	E - Epoxy		3 - EPDM
	S - Same as Duct Spec <sup>(1)</sup>	3 - Epoxy	4 - Viton
<b>76"</b>	<b>V</b>	<b>2</b>	5 - Teflon® 6 - Fluorocarbon
			<b>3</b>

<b>F</b>	<b>B</b>	<b>BV</b>	<b>CS</b>
<b>BODY CONFIGURATION</b>	<b>SHAFT MATERIAL<sup>(3)</sup></b>	<b>SEAT MATERIAL</b>	<b>OPERATORS<sup>(1)</sup></b>
F - Flanged	A - Polyester	N - Neoprene V - Viton	G - Gear Operator
P - Plain Ends	B - Vinylester	E - EPDM	C - Chain Operator
	C - Epoxy	BV - Butyl Vinyl	MD - Motorized Operator
D - Located per Drawing	D - 316SS	S - Silicone B - Buna N	CS - Customer Supplied

Example above part number is:

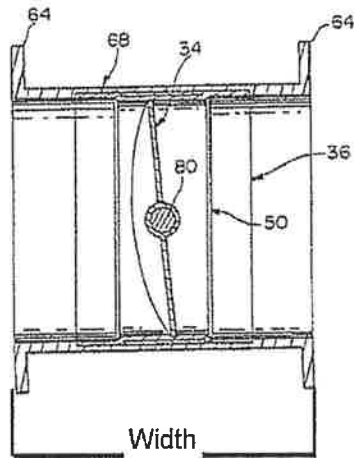
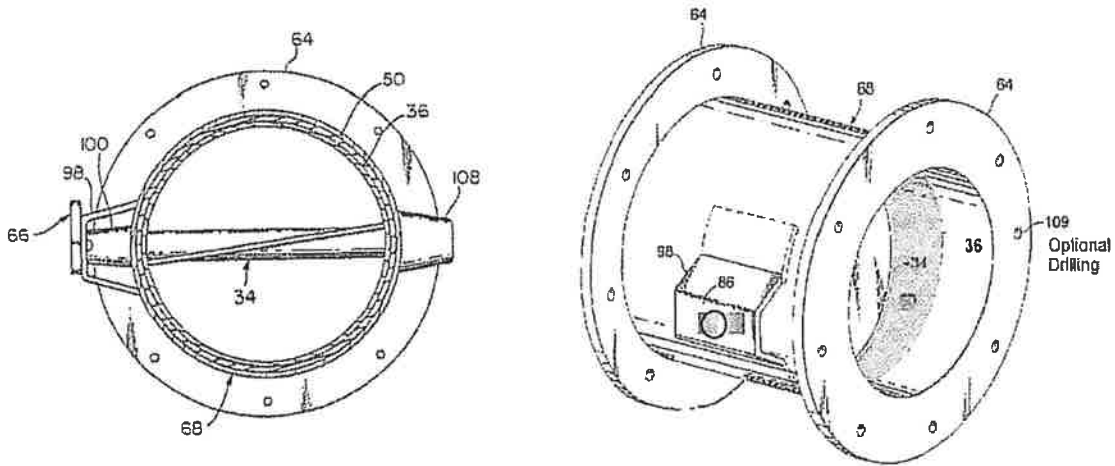
**ZL 76 F V B 2 BV 4 G**

*This part number designates a 76"Ø Zero Leak damper with a flanged vinylester body, a vinylester shaft and blade, Butyl Vinyl seat, Viton "O" Rings and a gear operator.*

\* Both polyester and vinylester are premium grade and fire retardant resins as standards.

1. Standard Liner construction is 100 mil minimum with ASME RTP-1 visual level II acceptance criteria, unless specified otherwise. ZL bearings are Teflon® with machined o-ring grooves. External schedule 80 PVC packing glands with Teflon® packing are also standard.
2. Motorized operators are available with either pneumatic or electric actuators. Standard motor torque ratings available in 100 up to 5,000 in / lb ratings. Positioners and other options or controls are available on request.

# ZL DAMPER DRAWING SPECIFICATION SHEET



PIECE #	DESCRIPTION
34	2 piece molded blade 4"Ø-30"Ø 1 piece molded blade 32"Ø - 96"Ø
36	100 mil RTP-1 liner
50	Resilient Seal Butyl Vinyl standard
64	FRP Flange
66	Gear or Motorized Operator
68	Filament wound structural wall
80	Blade encapsulated shaft
85	Shaft penetration
96	Mounting bracket
100	Schedule 80 PVC packing gland
108	Teflon™ bearing and shaft cap seal
<b>Width determined as below:</b>	
12" OAL	8" thru 24"Ø
15" OAL	26" thru 42"Ø
18" OAL	48" thru 60"Ø
24" OAL	72" thru 96"Ø

**RESIN TYPE:** [ ] VINYLESTER [ ] FACTORY MUTUAL **OPTIONAL SEAT:** [ ] VITON [ ] EPDM

CONSTRUCTION	BLADE THICKNESS	AXLE DIM.	BLADE STIFFENERS
4" thru 14"	.125	1.0"	0-1
16" thru 24"	.187	1.5"	2
30" thru 48"	.312	2.0"	3
54" thru 60"	.312	2.5"	3
72" thru 80"	.350	3.0"	3
84" thru 96"	.375	3.0"	4

SCALE	APPROVED BY	DRAWN BY
NTS	J.M.S.	W.K.G.
DATE	REVISED	
<b>SPUNSTRAND INCORPORATED FRP ZERO LEAK DAMPER</b>		
DRAWING NO.: DRP 103ZL		