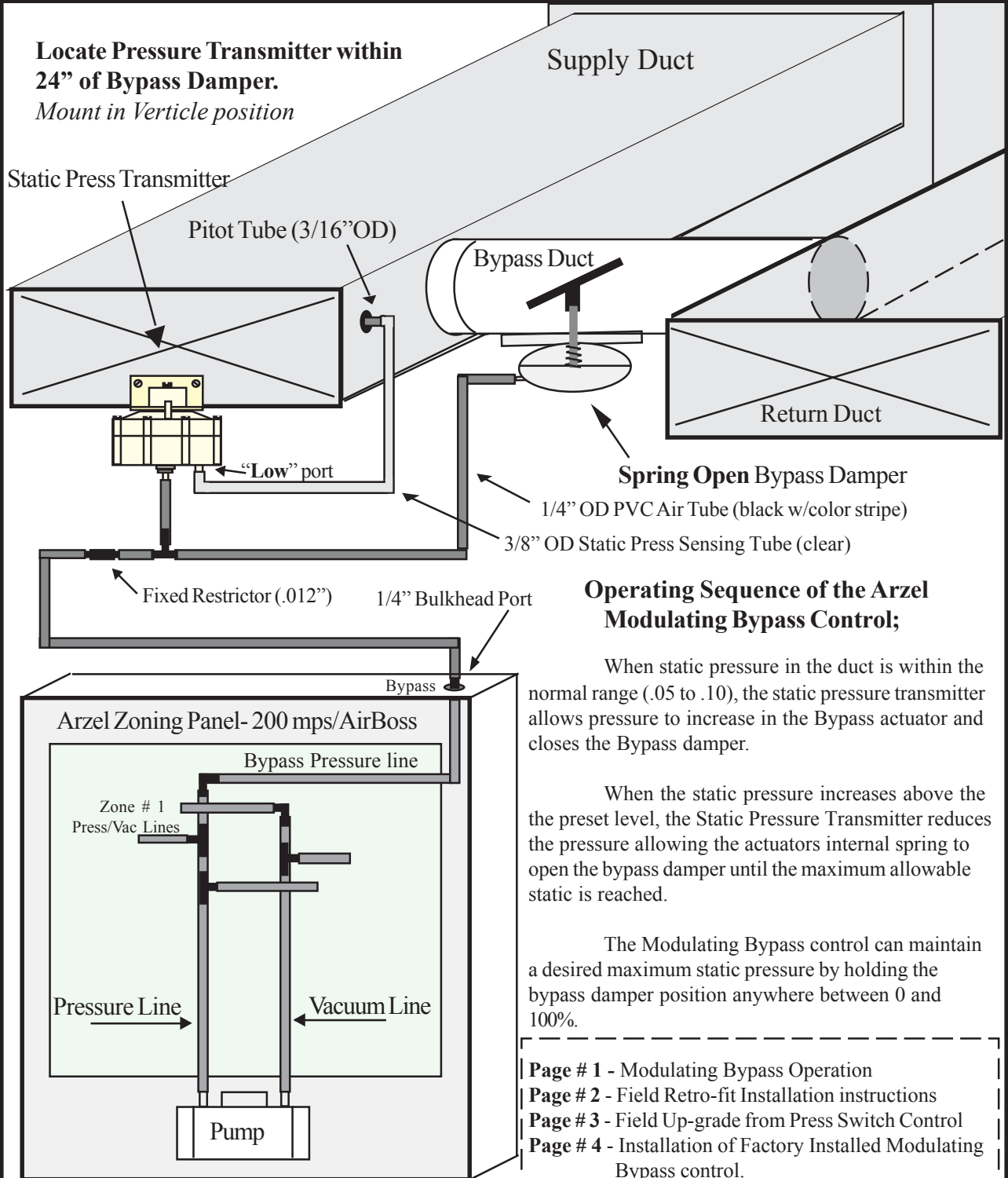


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## Modulating Bypass Control

Adjustable from .05" to .5" wc Static Pressure

Locate Pressure Transmitter within  
24" of Bypass Damper.  
Mount in Vertical position



### Operating Sequence of the Arzel Modulating Bypass Control;

When static pressure in the duct is within the normal range (.05 to .10), the static pressure transmitter allows pressure to increase in the Bypass actuator and closes the Bypass damper.

When the static pressure increases above the preset level, the Static Pressure Transmitter reduces the pressure allowing the actuators internal spring to open the bypass damper until the maximum allowable static is reached.

The Modulating Bypass control can maintain a desired maximum static pressure by holding the bypass damper position anywhere between 0 and 100%.

- Page # 1 - Modulating Bypass Operation
- Page # 2 - Field Retro-fit Installation instructions
- Page # 3 - Field Up-grade from Press Switch Control
- Page # 4 - Installation of Factory Installed Modulating Bypass control.

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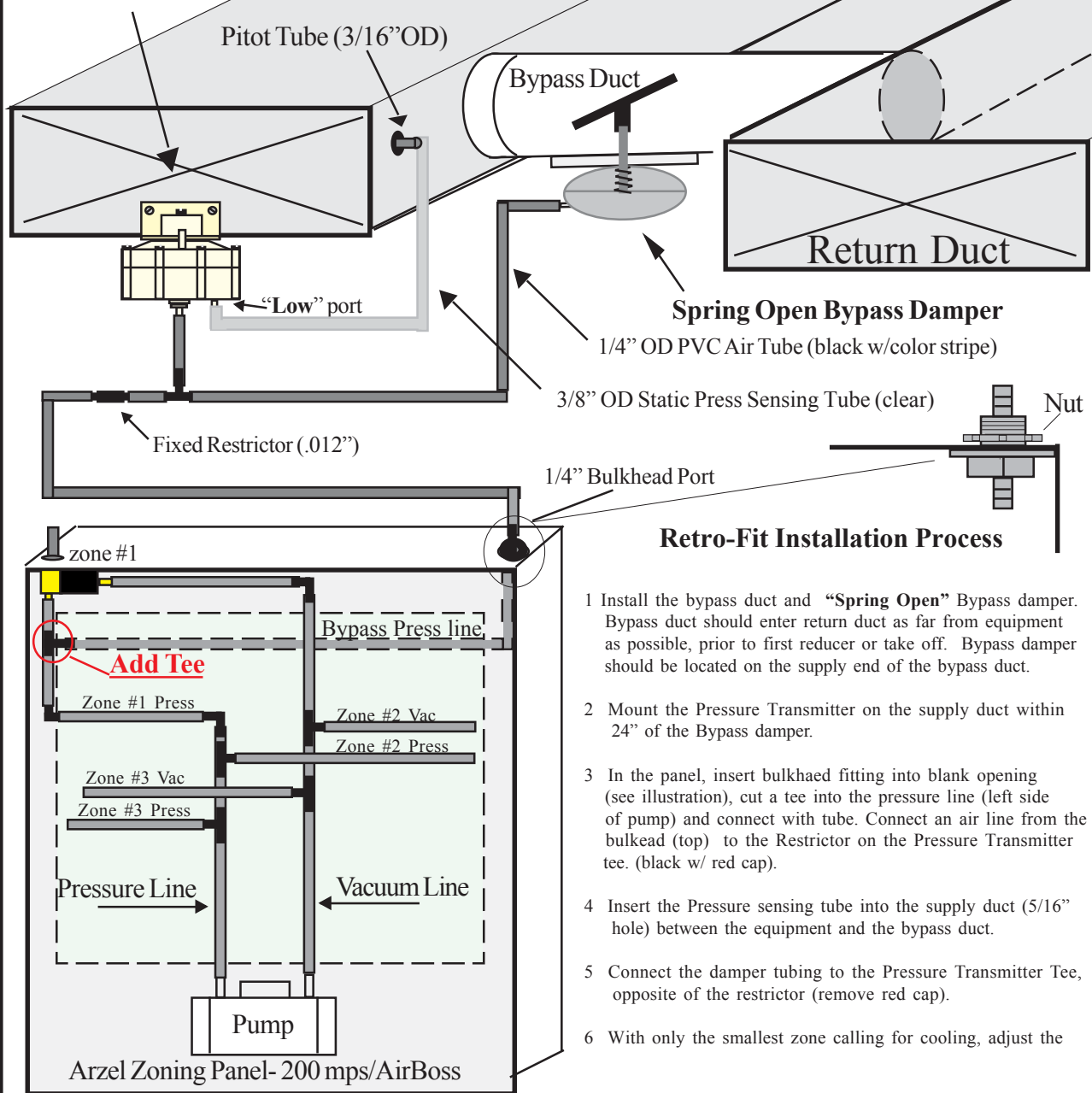
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## Modulating Bypass Control

### Field Retro-Fit Installation Instructions

Locate Pressure Transmitter within  
18" of Bypass Damper.

Mount in Vertical position  
Static Press Transmitter



#### Retro-Fit Installation Process

- 1 Install the bypass duct and "Spring Open" Bypass damper. Bypass duct should enter return duct as far from equipment as possible, prior to first reducer or take off. Bypass damper should be located on the supply end of the bypass duct.
- 2 Mount the Pressure Transmitter on the supply duct within 24" of the Bypass damper.
- 3 In the panel, insert bulkhead fitting into blank opening (see illustration), cut a tee into the pressure line (left side of pump) and connect with tube. Connect an air line from the bulkhead (top) to the Restrictor on the Pressure Transmitter tee. (black w/ red cap).
- 4 Insert the Pressure sensing tube into the supply duct (5/16" hole) between the equipment and the bypass duct.
- 5 Connect the damper tubing to the Pressure Transmitter Tee, opposite of the restrictor (remove red cap).
- 6 With only the smallest zone calling for cooling, adjust the

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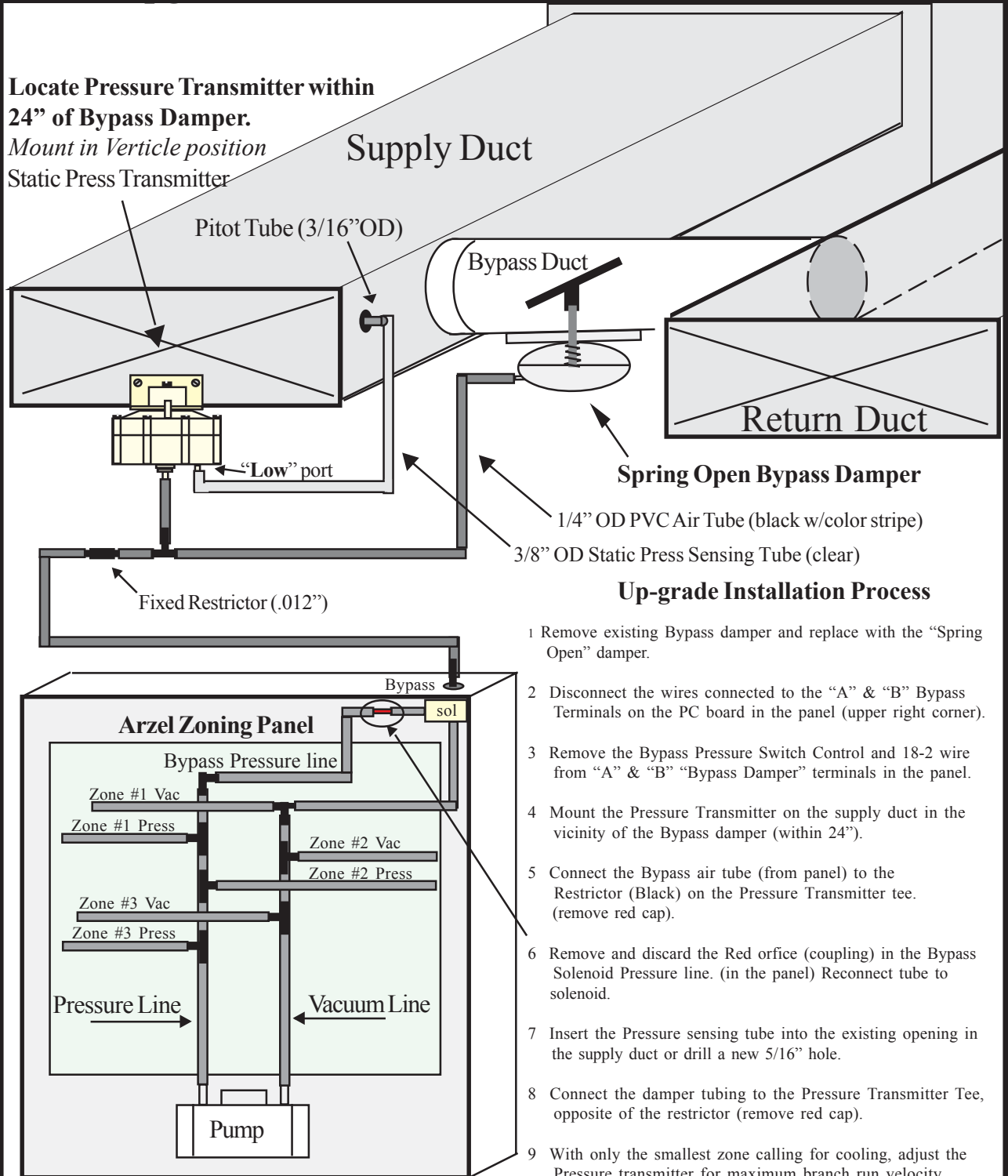
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## Modulating Bypass Control

### Field Upgrade from the "Pressure Switch" Bypass Control

Locate Pressure Transmitter within  
24" of Bypass Damper.

Mount in Vertical position  
Static Press Transmitter



#### Up-grade Installation Process

- 1 Remove existing Bypass damper and replace with the "Spring Open" damper.
- 2 Disconnect the wires connected to the "A" & "B" Bypass Terminals on the PC board in the panel (upper right corner).
- 3 Remove the Bypass Pressure Switch Control and 18-2 wire from "A" & "B" "Bypass Damper" terminals in the panel.
- 4 Mount the Pressure Transmitter on the supply duct in the vicinity of the Bypass damper (within 24").
- 5 Connect the Bypass air tube (from panel) to the Restrictor (Black) on the Pressure Transmitter tee. (remove red cap).
- 6 Remove and discard the Red orifice (coupling) in the Bypass Solenoid Pressure line. (in the panel) Reconnect tube to solenoid.
- 7 Insert the Pressure sensing tube into the existing opening in the supply duct or drill a new 5/16" hole.
- 8 Connect the damper tubing to the Pressure Transmitter Tee, opposite of the restrictor (remove red cap).
- 9 With only the smallest zone calling for cooling, adjust the Pressure transmitter for maximum branch run velocity without air noise at the registers.

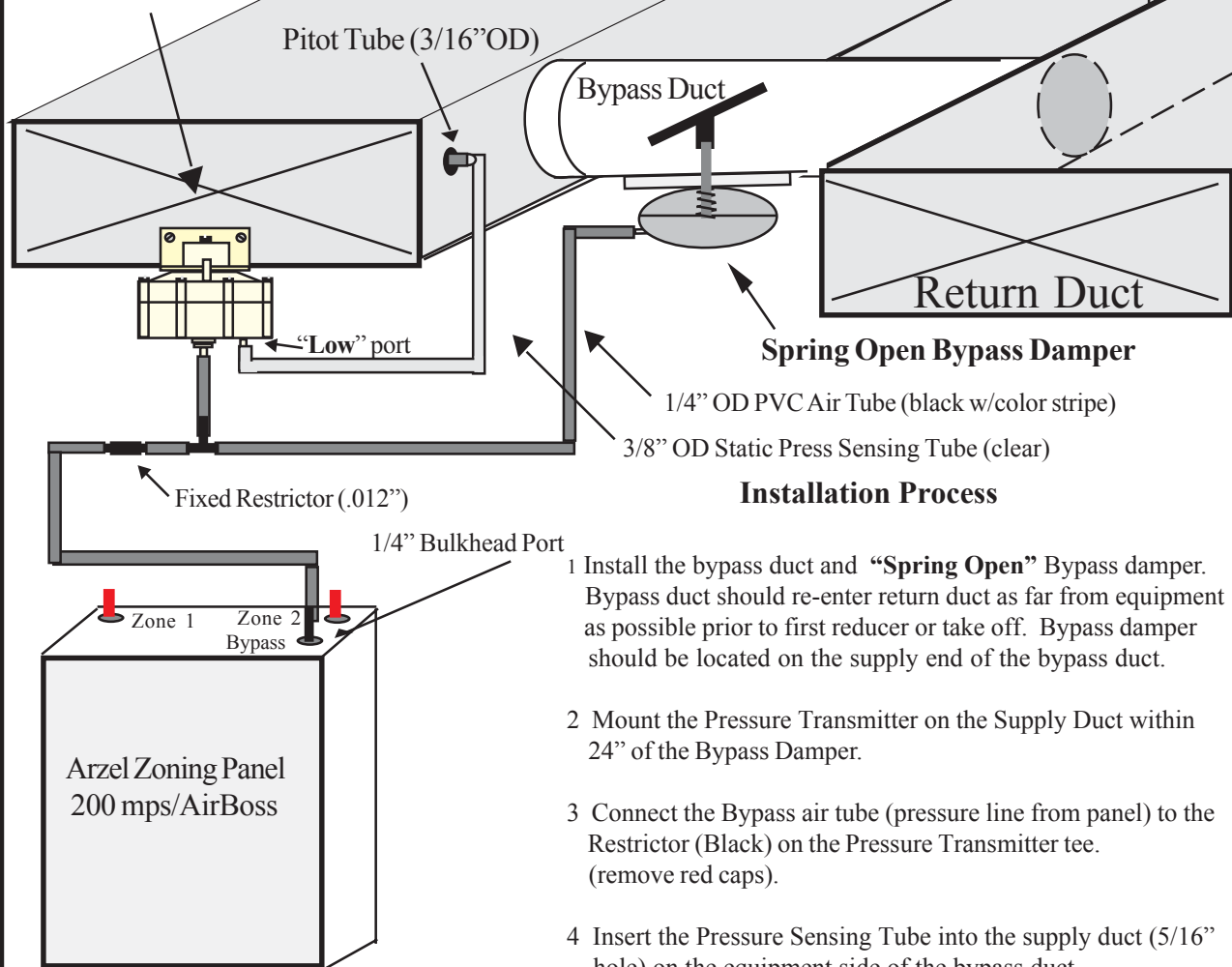
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## Modulating Bypass Control Installation and Set-Up Instructions

Locate Pressure Transmitter within  
24" of Bypass Damper.

Mount in Vertical position  
Static Press Transmitter



### Installation Process

- 1 Install the bypass duct and "Spring Open" Bypass damper. Bypass duct should re-enter return duct as far from equipment as possible prior to first reducer or take off. Bypass damper should be located on the supply end of the bypass duct.
- 2 Mount the Pressure Transmitter on the Supply Duct within 24" of the Bypass Damper.
- 3 Connect the Bypass air tube (pressure line from panel) to the Restrictor (Black) on the Pressure Transmitter tee. (remove red caps).
- 4 Insert the Pressure Sensing Tube into the supply duct (5/16" hole) on the equipment side of the bypass duct.
- 5 Connect the damper tubing to the Pressure Transmitter Tee, opposite of the restrictor (remove red cap).
- 6 With only the smallest zone calling for cooling, adjust the Pressure Transmitter (adj screw at the top, CW decreases static press, CCW increases static press) for maximum branch run velocity, with minimal air noise at the registers.

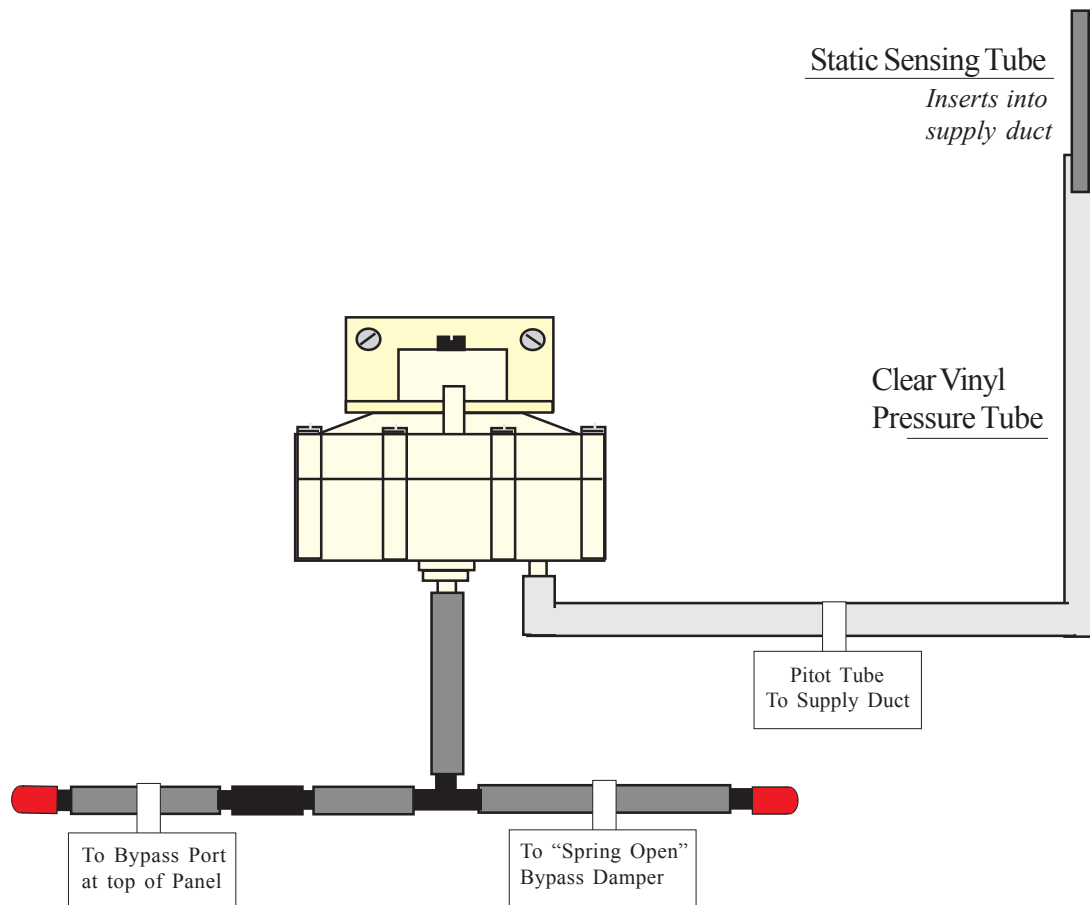
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## Modulating Bypass Control

### Tubing Diagram



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