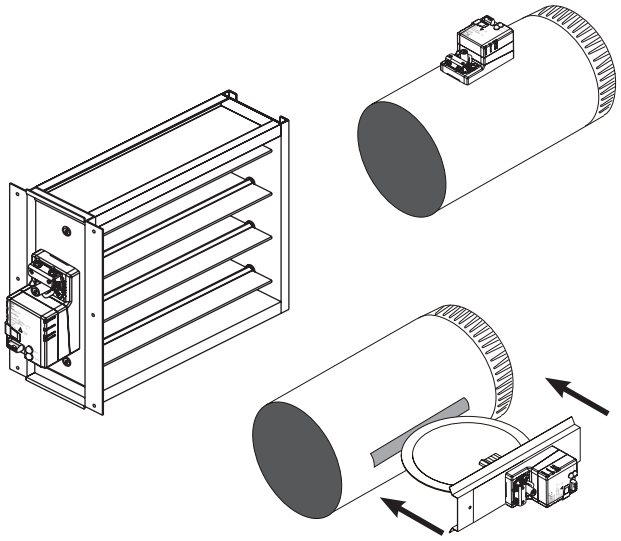


Installation Guide

Other Installation Guides may be necessary, based on system configuration. A list of other system components is shown below.

1	Thermostat (required) *ZONE950AC52ZA
2	Relay Panel – For use with 24V or communicating indoor unit and 24V controlled outdoor unit
3	Zone Panel (required)
4	Zone Sensor with Display (optional)
5	Zone Sensor (optional)
6	**Modulating Zone Dampers**

* A or T

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

IMPORTANT — This Document is customer property and is to remain with this unit.

These instructions do not cover all variations in systems or provide for every possible contingency to be met in connection with the installation. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to your installing dealer or local distributor.

Section 1. Safety

⚠ WARNING

This information is intended for use by individuals possessing adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

⚠ WARNING

LIVE ELECTRICAL COMPONENTS!
During installation, testing, servicing, and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

⚠ CAUTION

SAFETY HAZARD!
Sharp Edge Hazard. Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing. Personal injury may result.

Section 2. Identification

Verify damper model.

Using the nomenclature chart at the right, verify the model.

Damper Nomenclature

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Z	D	A	M	P	R	D	M	A	0	0	1	2	A	A

Brand
Z = Zoning

Damper

Model Series
RD = Round
RR = Retro-Fit Round
SM = Side Mount Rectangular
BM = Bottom Mount Rectangular

Modulating Damper (24 Volt, 60 Sec. Timing)

Major Design Modifications

Dimensions
0012 = 12" Round
1014 = 10" X 14" Rectangular (motor mounted on 2nd dimension)

Minor Design Change

Service Digit

Section 3. Specifications

Specification	Description
Product:	Damper Actuator
Power Supply:	24 VAC ± 20%
Power Consumption:	1.1 W
Transformer Sizing:	1.5 VA (Class 2 power source)
Torque:	18 in-lb
Running Time:	60 seconds, constant independent of load
Humidity:	5% to 95% RH non-condensing
Ambient Temperature:	-22°F to 140°F
Storage Temperature	-40°F to 176°F
Noise Level:	<35dB(A)

Section 4. Rectangular Damper Installation

A Verify damper size and net free area.

Table 1 shows damper sizes and net free area.

NOTE: Actuator is always located on the second dimension of the model number.

Example: ZDAMPSMMA14**12**A will have the actuator mounted on the 12” dimension.

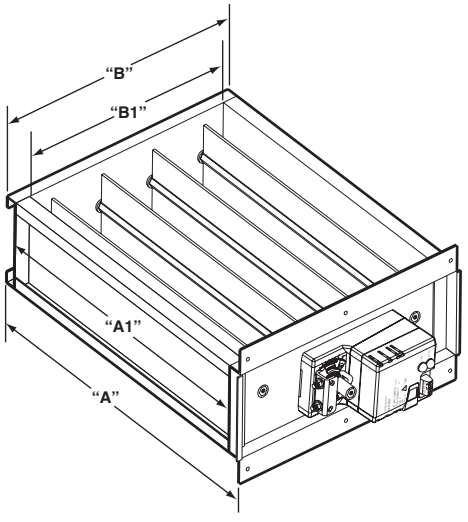


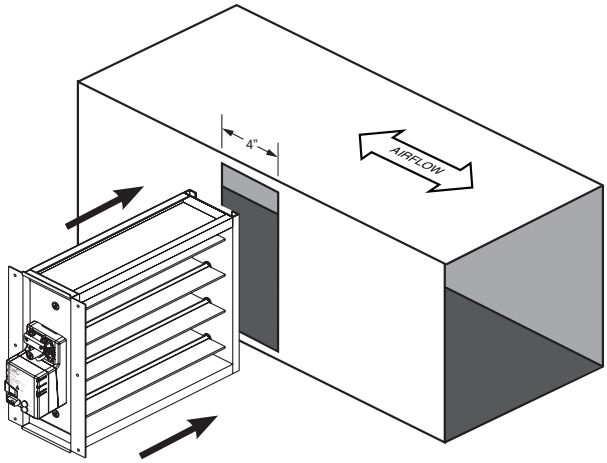
Table 1 - Rectangular Damper Sizes and Net Free Area (inches)

Listed Size Wide	Actual Outside Size A	Actual Inside Size A1	8	10	12	14	16	18	20	22	24	26	28	30	Listed Size High
			7.813	9.813	11.813	13.813	15.813	17.813	19.813	21.813	23.813	25.813	27.813	29.813	Act. Outside Size B
			5.813	7.813	9.813	11.813	13.813	15.813	17.813	19.813	21.813	23.813	25.813	27.813	Act. Inside Size B1
			3	3	4	5	6	7	7	8	9	10	11	11	No. of Blades
6	5.812	4.313	19.5	28.1	34.9	41.6	48.6	55.1	63.8	70.5	77.3	84.0	90.8	99.4	Free Area of Damper (sq. in.)
8	7.812	6.313	28.5	41.1	51.0	60.9	70.8	80.7	93.3	103.2	113.1	123.0	132.9	145.5	
10	9.812	8.313	37.5	54.2	67.2	80.2	93.2	106.3	122.9	135.9	148.9	162.0	175.0	191.6	
12	11.812	10.313	46.5	67.2	83.3	99.5	115.7	131.8	152.5	168.6	184.8	200.9	217.1	237.7	
14	13.812	12.313	55.6	80.2	99.5	118.8	138.1	157.4	182.0	201.3	220.6	239.9	259.2	283.8	
16	15.812	14.313	64.6	93.2	115.7	138.1	160.5	183.0	211.6	234.0	256.4	278.9	301.3	329.9	
18	17.812	16.313	73.6	106.3	131.8	157.4	183.0	208.5	241.1	266.7	292.3	317.8	343.4	376.0	
20	19.812	18.313	82.7	119.3	148.0	176.7	205.4	234.1	270.7	299.4	328.1	356.8	385.5	422.1	
22	21.812	20.313	91.7	132.3	164.2	196.0	227.8	259.6	300.3	332.1	363.9	395.8	427.6	468.2	
24	23.812	22.313	100.7	145.4	180.3	215.3	250.2	285.2	329.8	364.8	399.8	435.2	469.7	514.3	
26	25.812	24.313	109.8	158.4	196.5	234.6	272.7	310.8	359.4	397.5	435.6	473.7	511.8	560.4	
28	27.812	26.313	118.8	171.4	212.6	253.9	295.1	336.3	389.0	430.2	471.4	512.7	553.8	606.5	
30	29.812	28.313	127.8	184.4	228.8	273.2	317.5	361.9	418.5	462.9	507.3	551.6	596.0	652.6	

B Mount damper

NOTE: When installing a damper, choose a location that provides easy access to the actuator.

Always place the dampers as far away from the supply registers as possible. Air turbulence and air noise often increase as damper blades close. Placing the dampers away from the supply registers minimizes the impact of air turbulence into the home.



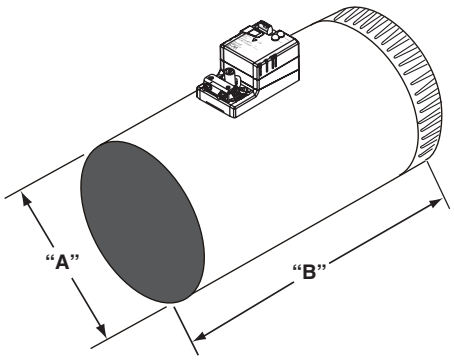
1) Verify that rectangular duct size, damper width, height and actuator location are suitable.
2) Cut a 4” wide rectangular opening in the side of the duct on which the actuator is to be mounted.
3) Slide in the damper and secure to the duct with sheet metal screws.

C Seal and support damper

To minimize air leakage, seal damper to duct work per local and national codes. In addition support ducts per local and national codes. Insulate damper to minimize heat transfer and condensation.

Section 5. Round Damper Installation

A Verify damper size

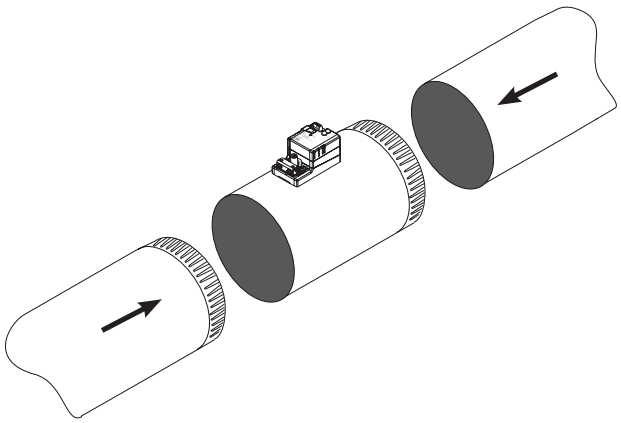


Nominal Dimensions (inches)		
Model	**A**	**B**
4"	4	12
5"	5	12
6"	6	12
7"	7	12
8"	8	12
9	9	12
10"	10	12
12"	12	14
14"	14	16
16"	16	20
18"	18	20
20"	20	20

B Mount damper

NOTE: When installing a damper, choose a location to easily see and access the damper.

Always place the dampers as far away from the supply registers as possible. Air turbulence and air noise often increase as damper blades close. Placing the dampers away from the supply registers minimizes the impact of air turbulence into the home.



Insert damper assembly between two pieces of ducting.

C Seal and support damper

To minimize air leakage, seal damper to duct work per local and national codes. In addition support ducts per local and national codes. Insulate damper to minimize heat transfer and condensation.

Section 6. Round Retrofit Damper Installation

A Verify damper size

Retrofit dampers are sized by diameter of round metal pipe and are available in whole-inch sizes from 4 to 10 inches.

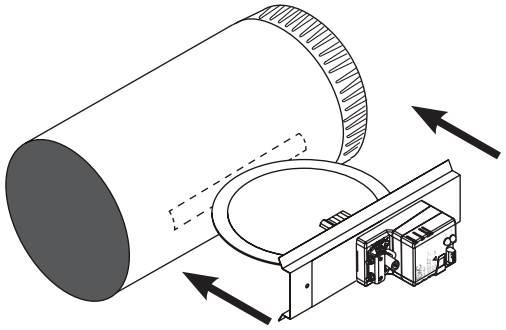
B Mount damper

NOTE: When installing a damper, choose a location that provides easy access to the actuator.

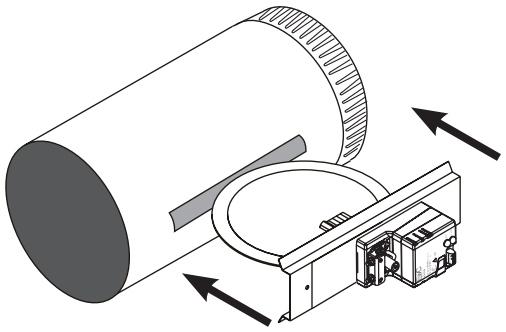
Always place the dampers as far away from the supply registers as possible. Air turbulence and air noise often increase as damper blades close. Placing the dampers away from the supply registers minimizes the impact of air turbulence into the home.

1) Determine the location in the round duct where the round retrofit damper is to be installed and apply the adhesive backed template in a lengthwise manner.
2) Drill a pilot hole in the center of the template and cut along the dashed lines on the template according to the size of the round duct to form a slot for the damper blade.
3) Make sure damper blade is parallel with the actuator mounting bracket (fully open position). If it is not parallel, use the manual gear release and move the damper blade until it is parallel. (for actuator operation, see next section).
4) Slip damper into slot in the round duct and position bracket so it is aligned with the duct.
5) Secure bracket to the duct with the sheet metal screws provided.

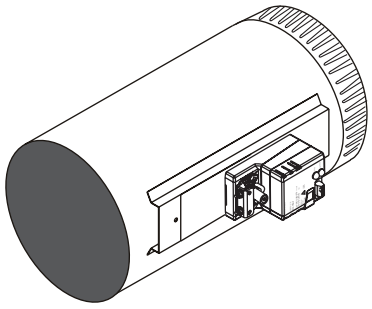
1, 2)



3, 4)



5)



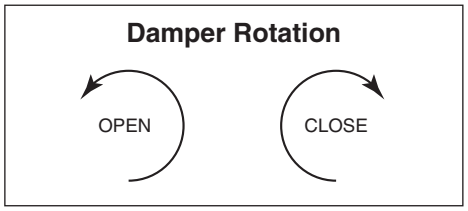
C Seal and support damper

To minimize air leakage, seal damper to duct work per local and national codes. In addition support ducts per local and national codes. Insulate damper to minimize heat transfer and condensation.

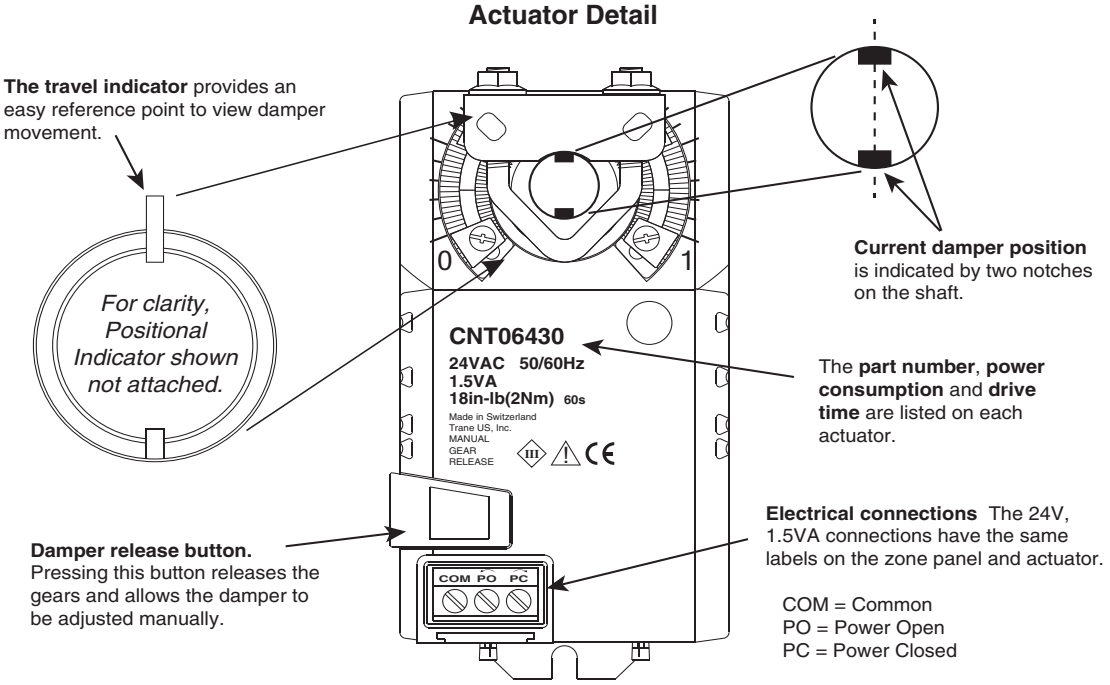
Section 7. Checkout and Wiring

A Check blade movement

Ensure the damper blades move freely without binding. Press the damper release button and rotate the damper open.



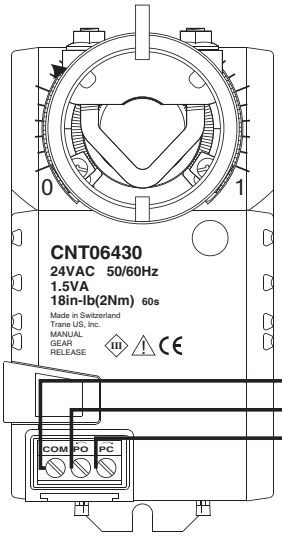
Actuator Detail



B Wire Damper to Zone Panel

Wire the damper to the zone panel as shown below, being sure to utilize the proper wire size.

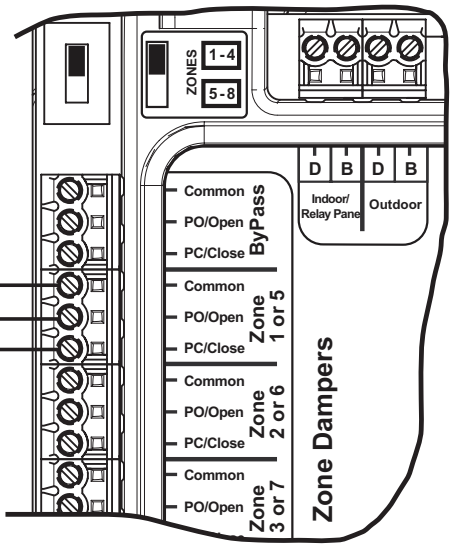
Damper Actuator

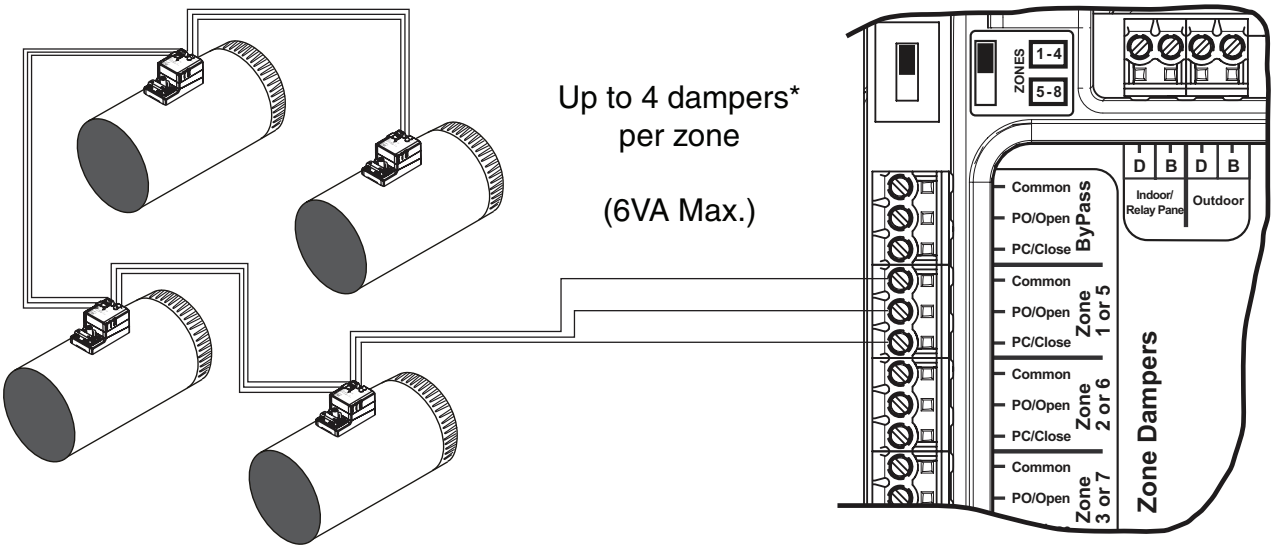


NEC Class II Control Wiring (24V)	
Wire Size	**Max. Wire Length**
18 AWG	150 ft
16 AWG	225 ft
14 AWG	300 ft

COM = Common
PO = Power Open
PC = Power Closed

Zone Panel





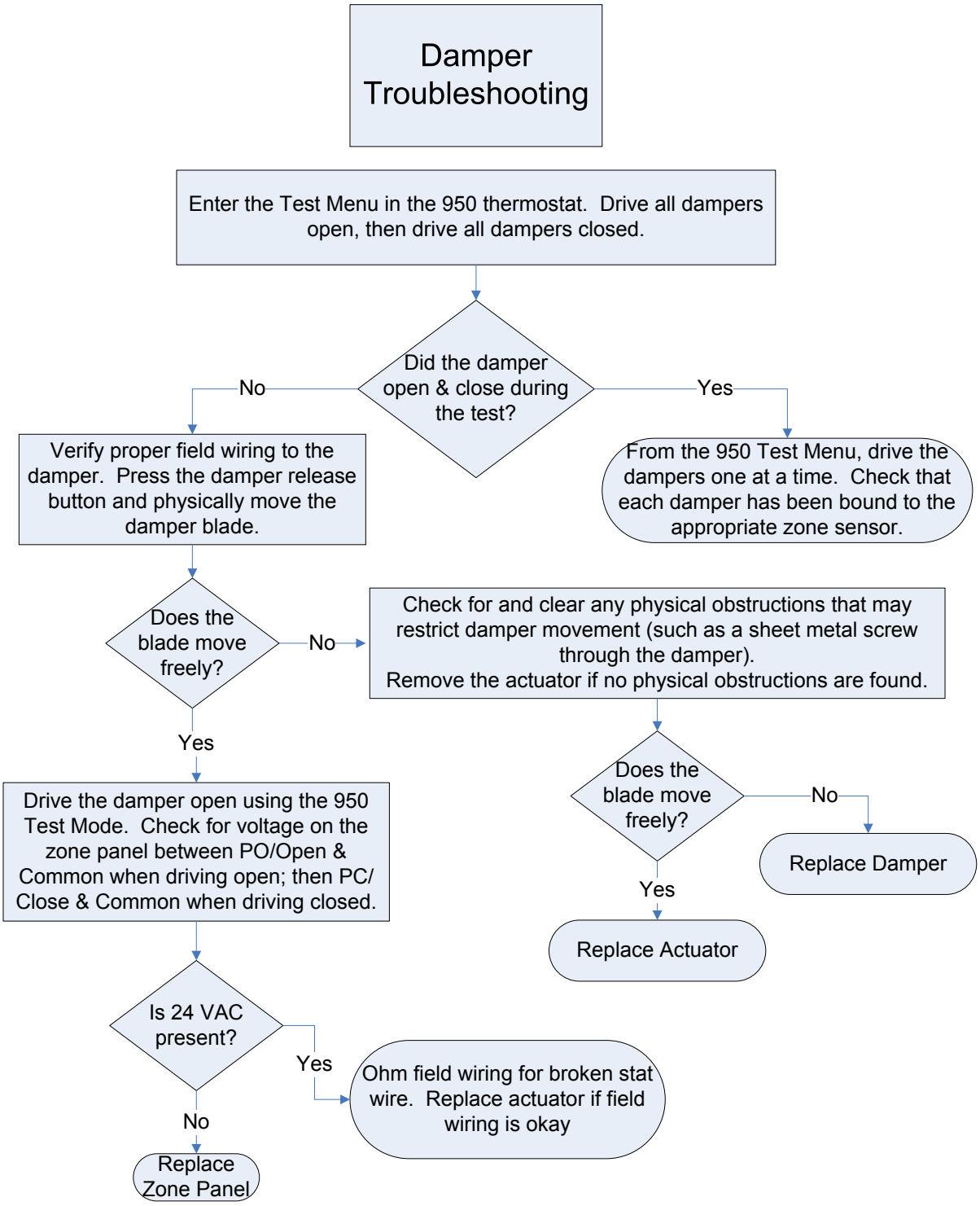
* This damper should not be used as a replacement option when replacing legacy 3VA dampers in a parallel environment (mixing 3VA & 1.5VA dampers on the same zone). These dampers can be applied to existing 3VA damper applications as long as they are on individual zones.

C Test Damper

A damper test can be performed by the 950 thermostat.

Enter the **Select Test Mode** screen by navigating to:

Home screen --> Menu --> Service --> Technician Access --> Proceed --> Test Mode --> Zoning



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