

### Application

The ZG-JSA jack shaft adaptors are designed to be inserted into hollow jack shafts which have an outside diameter greater than 3/4 inch and provide a 3/4 inch shaft for mounting Belimo actuators.

Technical Data		ZG-JSA-1
Jack Shaft Size	Outside diameter	1.00"
	Inside diameter	3/4"
Weight		1.3 lbs.
Material		Cold rolled steel, nickel plated

Technical Data		ZG-JSA-2
Jack Shaft Size	Outside diameter	1-5/16"
	Inside diameter	1-3/32"
Weight		2.3 lbs.
Material		Cold rolled steel, nickel plated

Technical Data		ZG-JSA-3
Jack Shaft Size	Outside diameter	1.05"
	Inside diameter	27/32"
Weight		1.6 lbs.
Material		Cold rolled steel, nickel plated

**Dimensions (Inches [mm])**

	A (Diameter)	B (Diameter)	C	D
ZG-JSA-1	3/4"	3/4"	-	10-3/4"
ZG-JSA-2	1-1/16"	3/4"	6"	12-1/2"
ZG-JSA-3	13/16"	3/4"	6"	12-1/4"

Approximate

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## ZS-100 Weather Shield



### Application

The ZS-100 weather shield provides moderate protection to actuators which are mounted outdoors. This product is not designed as a water tight enclosure. The weather shield will work with all damper actuators.

### Installation

The ZS-100 weather shield is supplied disassembled. Supplying it in this manner makes it applicable to a wider range of field applications.

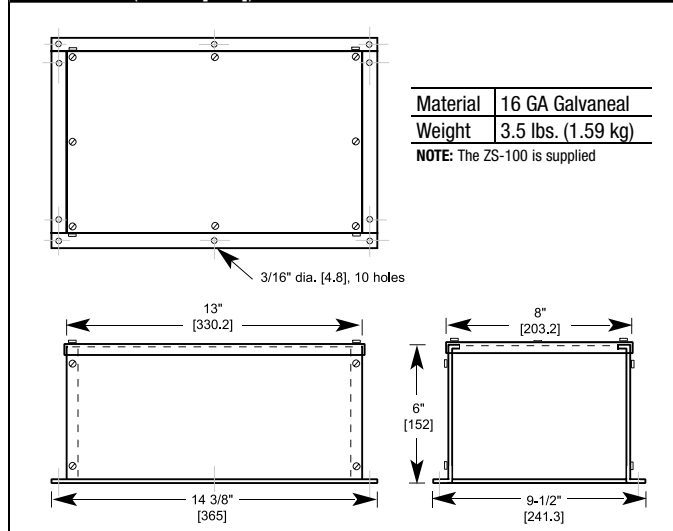
It may be assembled with 2 sides, 2 ends and the cover to completely conceal the actuator. A hole punch can be used to provide a hole to mount a wire conduit. A foam gasket is also provided to achieve a better seal between the cover and sides or from the base to the mounting surface.

If desired, a side or end can be deleted from the assembly to provide easy access from the bottom of the enclosure.

### Accessories

**ZS-101** Base mounting plate

### Dimensions (Inches [mm])



## ZS-150 Weather Shield



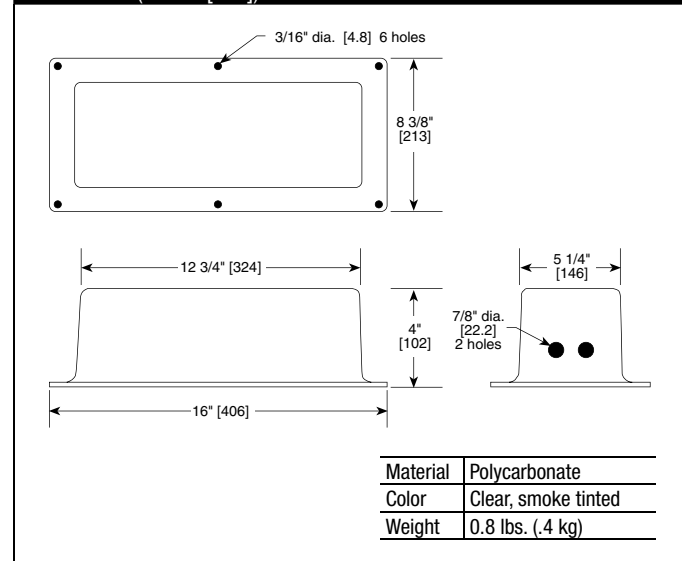
### Application

The ZS-150 weather shield provides moderate protection to actuators which are mounted outdoors. This product is not designed as a water tight enclosure. The one piece, smoke tinted, polycarbonate housing allows easy mounting over all damper actuators. The tinted, clear housing allows easy viewing of the actuator in operation.

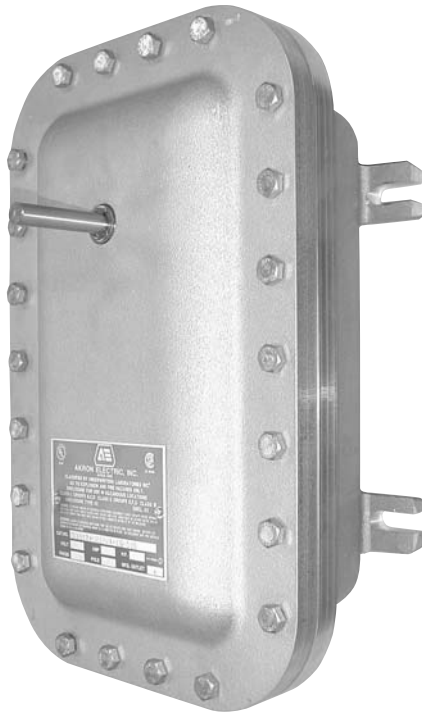
### Installation

The ZS-150 weather shield is supplied as a one piece enclosure. Two 7/8 inch wiring holes are pre-drilled to allow easy connections of conduit to the housing. If connections must be made to a different spot on the enclosure or only one hole is required, two plastic plugs are provided to seal the holes. A foam gasket is also provided to achieve a better seal between the base of the enclosure to the mounting surface.

### Dimensions (Inches [mm])



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## Application

The ZS-260 explosion-proof housing may be used with the GM..., AM..., NFB..., NFX..., AFB..., AFX..., AF..., LF... series actuators. This housing is not designed for direct coupling. UL and CSA; Class I, Division 1&2, Groups B, C, D, (NEMA 7), Class II, Division 1&2, Groups E, F and G, (NEMA 9), Class III, Hazardous (classified) Locations, outdoor application NEMA 4X.

## Operation

The ZS-260 enclosure is designed so that the required actuator may be easily field mounted into the enclosure. The actuator is fastened on to the internal portion of the operating shaft and secured at the end with an anti-rotation strap. A crank-arm, such as the KH8, is mounted to the external portion of the operating shaft for connection to connection to the damper linkage. ZG-109 right angle, and ZG-110 standoff mounting brackets may be used (see back).

The ZS-260 is designed so that the operating shaft can be mounted on either the front or rear side of the housing.

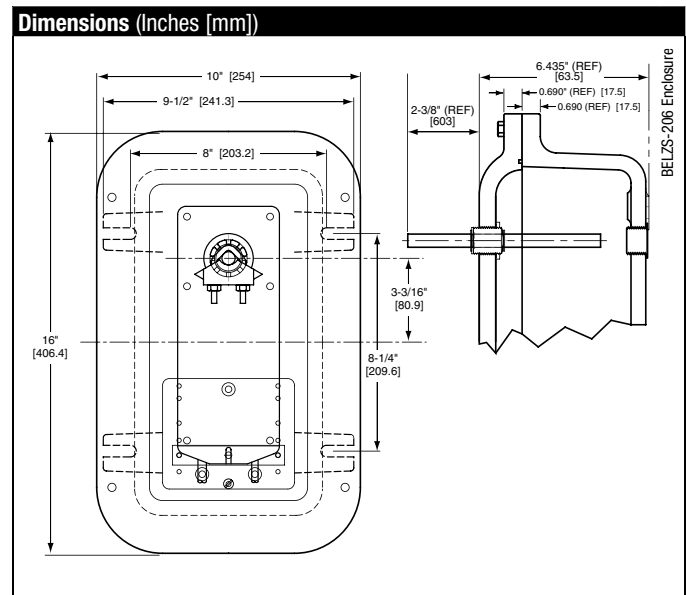
## Accessories

<b>KH8</b>	Universal crank arm
<b>KG8</b>	Universal ball joint
<b>KG10</b>	Universal ball joint
<b>ZG-109</b>	Right angle mounting bracket
<b>ZG-110</b>	Stand-off mounting bracket

Technical Data		ZS-260
Material	Housing	cast, copper-free, aluminum,
	Cover Bolts	stainless steel
	Operating Shaft	stainless steel
Conduit holes		3/4"-14 NPT (2 supplied), <b>see NOTE 1</b>
Operating shaft diameter		1/2 inch [12.7]
Operating shaft location		front or rear side of housing (Field selected)
Approved applications		UL and CSA; Class I, Division 1&2, Groups B, C, D, (NEMA 7), Class II, Division 1&2, Groups E, F and G, (NEMA 9), Class III, Hazardous (classified) Locations, outdoor application NEMA 4X.
Weight		31.0 lb. (14.0 kg) without actuator

**NOTE 1:** Fittings that meet the requirements of the hazardous location must be used. All applications must comply with applicable local and/or national electric code.

**NOTE:** Since conditions of use of this product are outside the control of Belimo, the purchaser should determine suitability of the product for their intended use, and assumes all risk and liability in connection therewith.

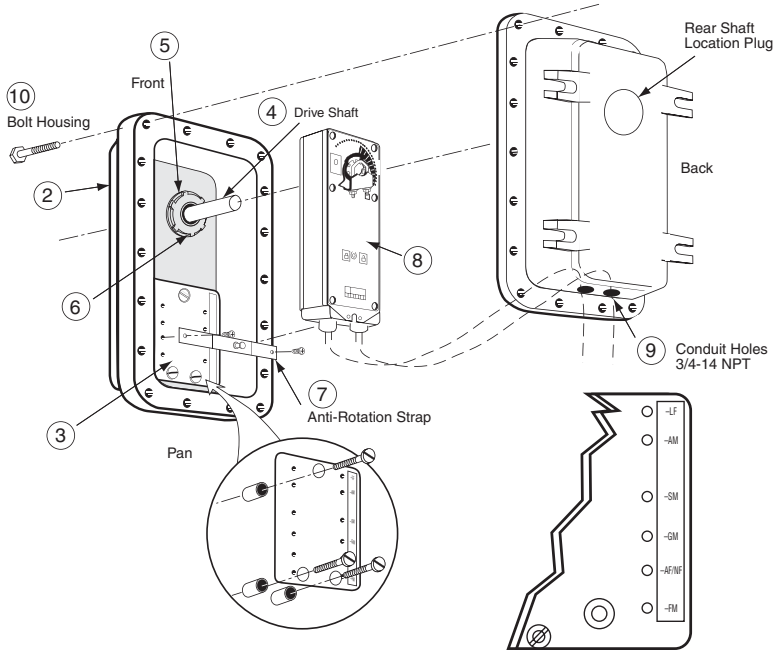


# ZS-260 Explosion-proof Housing

For GM..., AM..., AFB..., AFX..., NFB..., NFX..., LF... Actuators



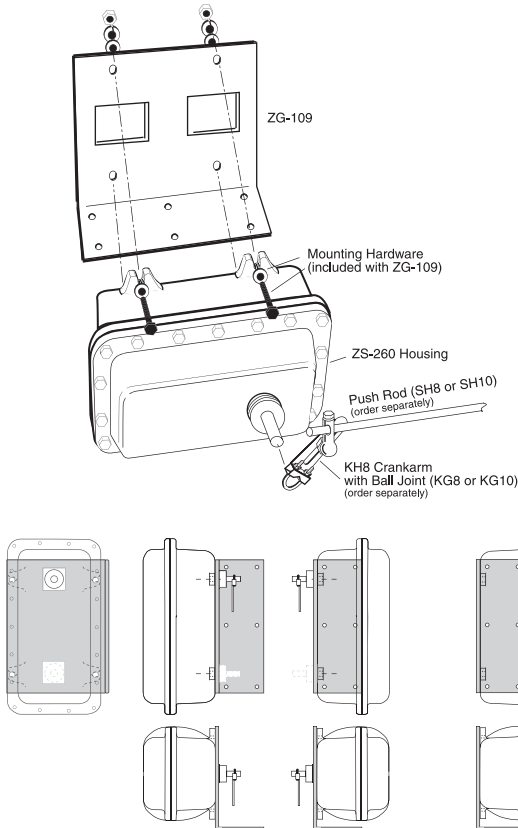
## ZS-260 Shaft Thru Front



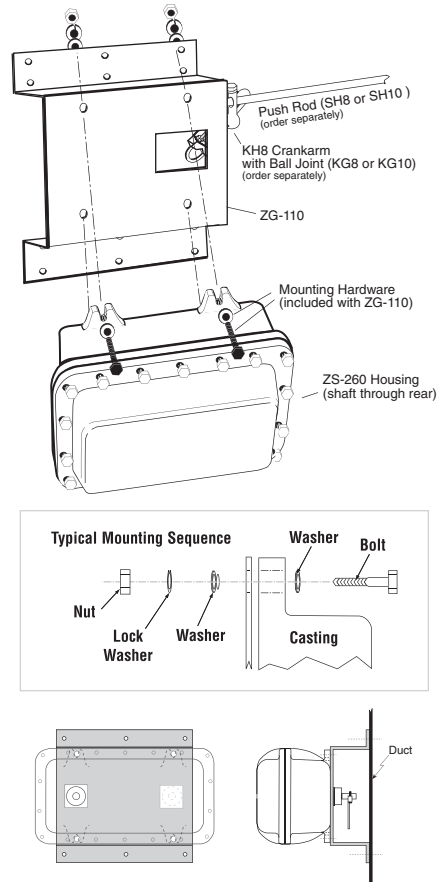
### ZS-260 Mounting Instructions

1. Determine proper operating shaft location.
2. Remove threaded plug from the hole in which the operating shaft will be mounted.
3. Install the anti-rotation strap, mounting plate, to the side of the housing where the operating shaft will be mounted.
4. From the inside surface of the housing, insert the operating shaft, short length first, into the mounting hole.
5. Hand tighten the shaft bushing into the housing until the star nut/seal is in contact with the face of the housing.
6. Using a screw driver blade, drive the star nut/seal clockwise until the bushing is locked into place.
7. Install the anti-rotation strap into the mounting plate at the designated holes for the actuator to be used.
8. Install actuator.
9. Wire actuator (per electrical code).
10. Bolt housing together.

## Typical ZG-109 Mounting



## Typical ZG-110 Mounting



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ZS-300

**ZS-300 NEMA 4X Housing**

For AMB, GMB, LF, NFB, NFX, AFB, AFX, AF Series Actuators

**Application**

The ZS-300 (-1) NEMA 4X enclosures may be used with AMB, GMB, LF, NF, and AF Belimo actuators. They are intended for use primarily to provide protection against corrosion, windblown dust and rain, splashing water, hose-directed water; undamaged by the formation of ice on the enclosure. Type 304 stainless steel enclosures resist moisture, dust, salt, and corrosive chemicals, and are easy to keep clean for sanitary applications.

**Operation**

The ZS-300 enclosures are designed so that the required actuator may be easily mounted in the enclosure. The operating shaft and coupling are inserted from the backside through the rotating shaft seal. The actuator is fastened on the end of the operating shaft and secured at the end with an anti-rotation strap. Adjustable mounting brackets, if supplied, are assembled to the fixed mounting holes at the top and bottom of the enclosure with stainless steel nuts, bolts and lock washers. The direct drive coupling is designed for a 1/2" round or hexagonal shaft and secured with two square head set screws. Mounting brackets are adjusted and secured in place.

**Ordering Information**

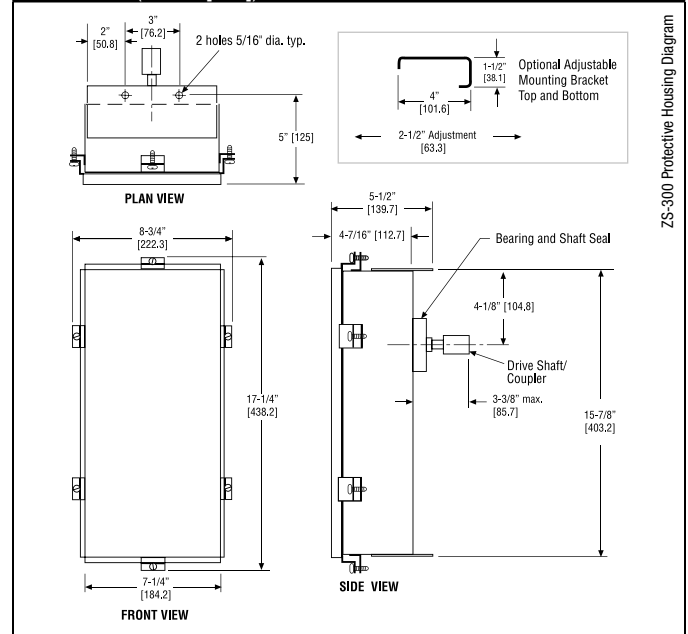
ZS-300	304 stainless steel housing with mounting brackets
ZS-300-1	304 stainless steel housing without mounting brackets
ZS-300-5	316L stainless steel housing with mounting brackets

**Accessories**

ZS-300-BK	Mounting bracket set
ZS-300-C1	1/2" shaft adaptor (standard with housing)
ZS-300-C2	3/4" shaft adaptor
ZS-300-C3	1" shaft adaptor

Technical Data	ZS-300 (-1) (-5)
Material	All stainless steel housing, door, (with microcellular urethane gasket), shaft, coupling, universal mounting plate, and hardware.
Conduit holes	Field drilled as required. UL listed electrical fittings for NEMA 4X conditions must be used.
Drive shaft/coupler	1/2" by 5 15/16" long stainless steel with integral coupling for direct mounting to 1/2" round or hexagonal drive shafts. Square head set screws are stainless steel.
Rotating shaft seal	6061 aluminium hub with black anodize plating, bronze oilite bearings, 10 PSI, Nitrile, bi-rotational, hydrodynamic, radial lip Wave seal.
Industry standards	The Belimo ZS-300 NEMA 4X enclosure and Belimo model AMB, GMB, LF, NFB(X), AF, and AFB(X) are UL listed. These enclosures conform to the NEMA standard for Type 4X (water-tight, dust-tight and corrosion resistant).
Weight	11 lbs. [5 kg] without actuator or mounting brackets.

**Dimensions (Inches [mm])**



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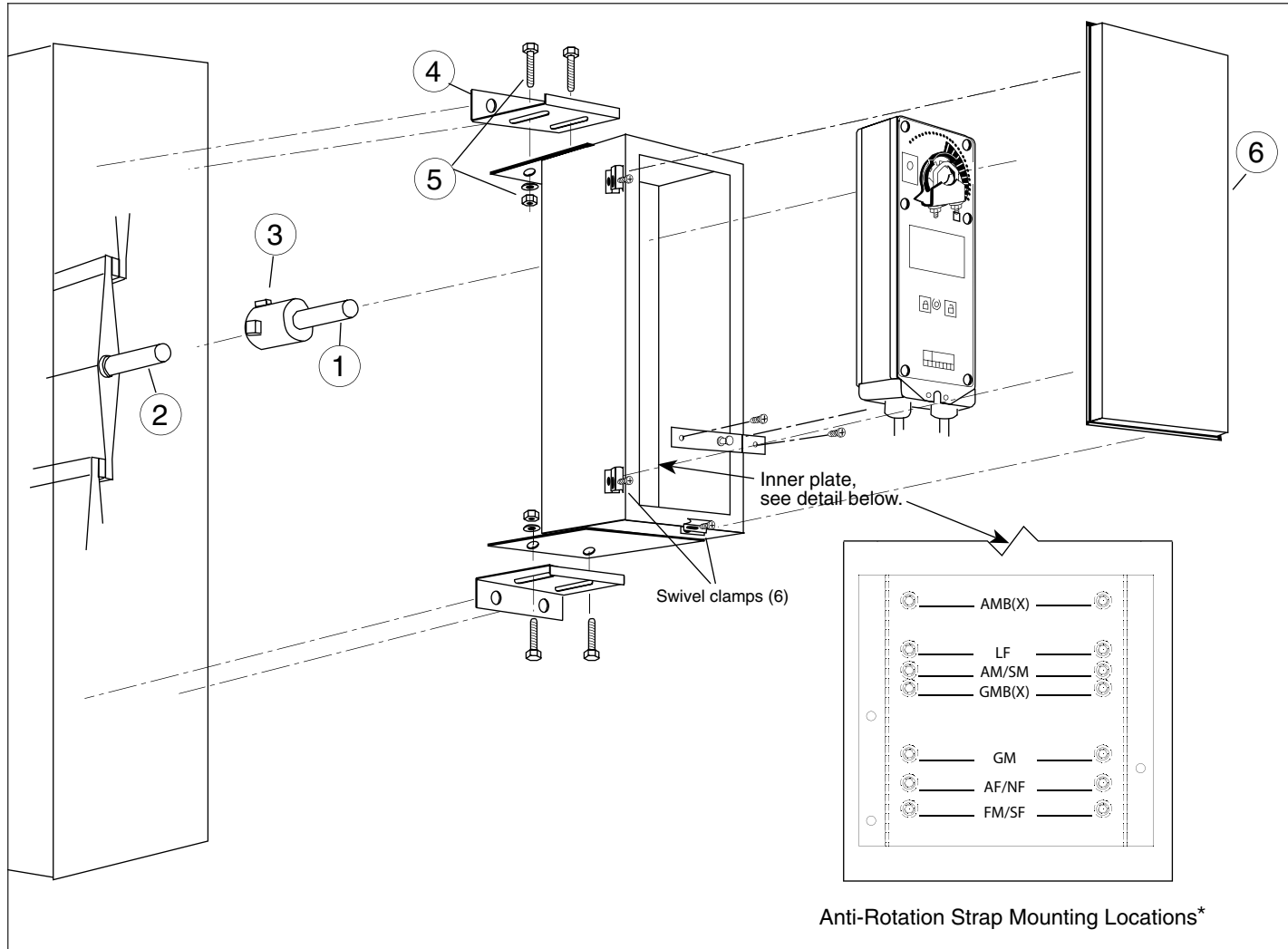
# ZS-300 (-1, -5)

NEMA 4X, stainless steel, corrosion resistant enclosures for AM, GM, NFB, NFX, AFB, AFX and AF actuators



## ZS-300 Mounting Instructions

1. The damper operating shaft should extend approximately 1-1/2 inches from the damper assembly or duct side. Mount the drive shaft/coupler (1) to the damper operating shaft (2). Fasten the coupler to the damper operating shaft by tightening the two 3/8 inch square head set screws (3).
2. Determine the housing mounting orientation for the application.
3. Locate the housing hole position(s) for the control wiring of the actuator.
4. Make the necessary holes in the housing for the electrical fittings. All fittings must be rated for use in NEMA 4X applications.
5. Install (if ordered with) the 2 mounting brackets (4) to the housing using the four 1/4-20 screws, washers, and nuts (5). Do not tighten.
6. Carefully slide the housing over the drive shaft.
7. Place the housing in the desired mounting position. Transfer the mounting hole locations from the mounting bracket to the mounting surface.
8. Drill the 4 holes and fasten the brackets to the surface.
9. Install the anti-rotation strap to the housing in the correct location for the actuator which is being used.
10. Mount the actuator to the drive shaft using the instructions for the actuator being used. Finger tighten the nuts of the universal clamp. Make sure the back of the actuator is parallel to the back of the housing.
11. The operating shaft must pass through the mounting clamp at least 3/8 of an inch. It must not extend beyond the front of the housing. Slide the actuator/housing assembly in the mounting brackets to obtain the proper position.
12. Tighten the mounting brackets to the housing. Verify that the back of the actuator is still parallel to the back of the housing. Tighten the nuts on the universal clamp.
13. Make all of the required electrical connections.
14. Test the actuator/damper operation.
15. Fasten the housing cover (6) using the 6 swivel clamps.



\*AFB, AFX, NFB and NFX can be installed using GM mounting location without the need of the Z-AF retrofit bracket.