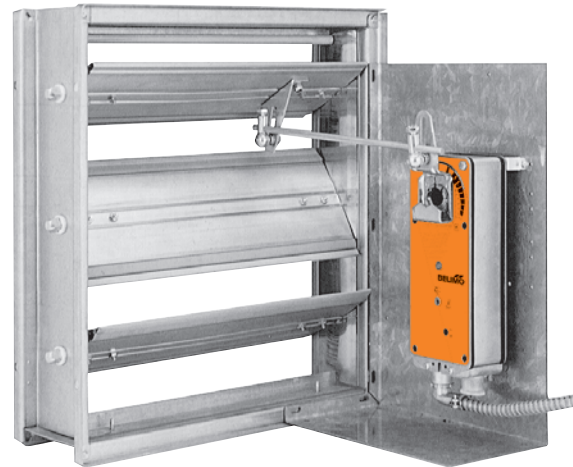


We'll help solve any application problem with a wide range of accessories and unparalleled customer service.



The Belimo Difference

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Extensive product range. Competitive project pricing. Application assistance. Same-day shipments. Free technical support. Five year warranty.
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	Part Number	Description	AF	NF	LF	TF	GM	AM	NM	LM	AH	LH	LU
Clamp / Positioner Indicators	IND-AF2	Damper Position Indicator	●	●									
	IND-LF	Damper Position Indicator			●								
	IND-TF	Damper Position Indicator				●							
	K4-2 US	Standard AF/NF Clamp (1/2" to 1.05")	●	●									
	K4-1 US	Jackshaft Clamp (Up to 1.05")	●	●									
	K4-H US	Hex Shaft Clamp (3/8" to 5/8")	●	●									
	K6 US	Standard LF Clamp (3/8" to 1/2")			●								
	K6-1 US	Jackshaft Clamp (1/2" to 3/4")			●								
	K8 US	Standard TF Clamp				●							
	K-GM20	Reversible Clamp (1/2" to 1.05")					●						
	K-AM25	Standard Clamp (1/2" to 1")						●					
	K-SA	Reversible AM Clamp (2/5" to 3/4")							●				
	K-NA	Reversible NM Clamp (5/16" to 3/4")								●			
	K-LM20	Clamp (3/4")									●		
	K-LM16	Standard Clamp (5/8")									●		
K-LM13	Clamp (1/2")									●			
K-LM10	Clamp (3/8")									●			
K-LU	Spindle Clamp (5/16" to 1/2")												●
Linkage Accessories	KH-AF US	Crankarm	●	●									
	KH-AF-1	Crankarm for Jackshaft Applications	●	●									
	KH-AFV	V-Bolt Kit for KH-AF (-1) Crankarms			●								
	KH-LF	Crankarm			●								
	KH-LFV	V-Bolt Kit for KH-LF Crankarms			●								
	KH-TF US	Crankarm				●							
	AH-GMA	GMB(X) Crankarm					●						
	AH-25	AMB(X) and NMB(X) Crankarm						●	●				
	KH6	Universal Crankarm (For KG6 Balljoint)	●	●	●	●	●	●	●		●	●	
	KH8	Universal Crankarm (For KG8 Balljoint)	●	●	●	●	●	●	●		●	●	
	KG6	Ball Joint (5/16")	●	●	●	●	●	●	●		●	●	
	KG8	Ball Joint (5/16", 90)	●	●	●	●	●	●	●	●	●	●	
	KG10	Ball Joint for KH6 (3/8")	●	●	●	●	●	●	●		●	●	
	SH8	Push Rod for KG6 & KG8 Ball Joints (36", 5/16" Dia.)	●	●	●	●	●	●	●		●	●	
	SH10	Push Rod for KG10 Ball Joints (36", 3/8" Dia.)	●	●	●	●	●	●	●		●	●	
ZG-DC1	Damper Clip for Damper Blade	●	●	●	●	●	●	●		●	●		
ZG-DC2	Damper Clip for Damper Blade	●	●	●	●	●	●	●		●	●		
Brackets	ZG-100	Universal Mounting Bracket	●	●			●	●					
	ZG-101	Universal Mounting Bracket	●	●			●	●					
	ZG-102	Multiple Actuator Mounting Bracket	●	●			●	●					
	ZG-103	Universal Mounting Bracket					●	●	●				
	ZG-104	Universal Mounting Bracket					●	●	●				
	ZG-106	Universal Mounting Bracket	●	●			●	●	●				
	ZG-107	Universal Mounting Bracket	●	●			●	●	●				
	ZG-108	Universal Mounting Bracket	●	●			●	●	●				
	ZG-109	Mounting Bracket for ZS-260 Housings	●	●	●		●	●					
	ZG-110	Mounting Bracket for ZS-260 Housings	●	●	●		●	●					
	ZG-112	Universal Mounting Bracket for LF			●								
	ZG-113	Universal Mounting Bracket for TF				●							
	Z-GMA	GM to GMB(X) Retrofit Mounting Bracket					●						
	Z-SMA	AM, SM to AMB(X) Retrofit Mounting Bracket						●					
	Z-NMA	NM to NMB(X) Retrofit Mounting Bracket							●				
Crankarm Adaptor Kits	ZG-AF US	Crankarm Adaptor Kit (includes mounting hardware)	●	●									
	ZG-AF108	Crankarm Adaptor Kit (includes ZG-108 & KH-AF US)	●	●									
	ZG-LF112	Crankarm Adaptor Kit (includes ZG-112 & KH-LF)			●								
	ZG-LF2	Crankarm Adaptor Kit (includes mounting hardware)			●								
	ZG-LFC114	Trane Voyager Retrofit Kit (includes retrofit bracket)			●								
	ZG-ECON1	Honeywell Economizer Retrofit Kit (includes retrofit bracket)			●								
	ZG-TF112	Crankarm Adaptor Kit (includes ZG-113 & KH-TF US)				●							
	ZG-TF2	Crankarm Adaptor Kit (includes mounting hardware)				●							
	ZG-GMA	Crankarm Adaptor Kit (includes mounting hardware)					●						
ZG-NMA	Crankarm Adaptor Kit (includes mounting hardware)						●	●					
Shaft Adaptors	AV6-20	Shaft Extension fits 1/4" to 3/4" Diameter Shafts			●	●				●			
	AV8-25	Shaft Extension fits 5/16" to 1" Diameter Shafts	●	●	●	●	●	●	●				
	ZG-JSA (-1,2,3)	Jackshaft Adaptors for Hollow Jackshafts	●	●			●	●	●				
	ZG-LMSA(-1)	Shaft Adaptor								●			
	ZG-NMSA-1	Shaft Adaptor							●				
Rotation Limiters	ZDB-AF2 US US	Angle of Rotation Limiter for AF/NF	●	●									
	ZDB-LF	Angle of Rotation Limiter for LF			●								
	ZDB-TF	Angle of Rotation Limiter for TF				●							
	ZDB-LU	Angle of Rotation Limiter for LU											●
	ZS-100	Weather Shield - Galvaneal	●	●	●		●	●					
ZS-101	Base for ZS-100	●	●	●		●	●						
ZS-150	Weather Shield - Polycarbonate	●	●	●		●	●						
ZS-260	Explosion Proof Housing	●	●	●		●	●						
ZS-300 (-1) (-5)	NEMA 4X Housing	●	●			●	●						
ZS-T	Protective Terminal Strip Cover (-T Models Only)					●	●	●	●				
Miscellaneous	AF-CC US	Conduit Connector	●	●									
	TF-CC US	Conduit Connector				●	●	●	●	●	●	●	●
	AF-P	Anti-Rotation Bracket (11414)	●	●									
	LF-P	Anti-Rotation Bracket (11695)			●								
	TF-P	Anti-Rotation Bracket (11533)				●				●			
	Z-DS1	Rotary Support for Lateral Force Compensation									●	●	
	Tool-06	8 mm and 10 mm Wrench	●	●	●	●		●	●	●	●	●	
Tool-07	13 mm Wrench					●							

Clamps / Position Indicators / Rotation Limiters

K4 US Clamp. Fits shafts 3/8" to 3/4".

K4-1 US Jackshaft Clamp. Fits jackshafts up to 1.05".

K4-2 US Standard Clamp. Fits shafts 1/2" to 1.05".



K4-H Hex Shaft clamp. Fits hex shafts 3/8" to 5/8".



IND-AF2 Damper Position Indicator. For damper position indication in short shaft installations.



ZDB-AF2 US US Angle of Rotation Limiter for AF/NF actuators. Includes IND-AF2.



KH-AFV V-Bolt Kit allows for direct coupling with KH-LF. Contains V-Bolt and 2 nuts.



Shaft Adaptors / Extensions

AV8-25 Shaft Extension. For damper operating shafts. Approx. 6-5/8" [170 mm] extension for shafts 1/4" to 3/4" [6 to 20 mm].



The shaft adaptors listed below may be used with AF/NF actuators. For more information see page 329.

ZG-JSA-1 ZG-JSA-2 ZG-JSA-3

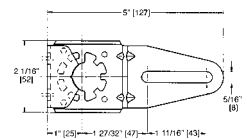
Non-Direct Mounting

ZG-AF US Crankarm Adaptor Kit For more information see page 321.

ZG-AF108 Crankarm Adaptor Kit For more information see page 318.

KH-AF Crankarm Fits round shafts up to 3/4".

KH-AF-1 US Crankarm for Jackshaft Applications Fits round shafts up to 1.05".



Mounting Brackets

The mounting brackets listed below may be used with AF/NF actuators. For more information see pages 320 to 324.

ZG-100 ZG-101 ZG-102 ZG-106 ZG-107 ZG-108

Housings

The housings listed below may be used with AF/NF actuators. For more information see pages 330 to 334.

ZS-100 ZS-150 ZS-260 ZS-300

Miscellaneous

AF-P Anti-Rotation T-Bracket for AF/NF.

Clamps / Position Indicators / Rotation Limiters

K6 US	Clamp. Fits shafts 3/8" to 1/2".
K6-1	Clamp. Fits shafts 1/2" to 3/4".
IND-LF	Damper Position Indicator
ZDB-LF	Angle of Rotation Limiter for LF actuators
KH-LFV	V-Bolt Kit allows direct coupling with KH-LF. Contains V-Bolt and 2 nuts.



Shaft Adaptors / Extensions

ZG-LMSA-1	Shaft Adaptor (See LM Accessories)
AV6-20	Shaft Extension. (See LM Accessories)
AV8-25	Shaft Extension. For damper operating shafts. Approx. 6-5/8" [170 mm] extension for shafts 1/4" to 3/4" [6 to 20 mm].



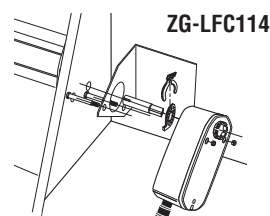
Non-Direct Mounting

ZG-LF112	Crankarm Adaptor Kit For more information see page 325.
ZG-LF2	Crankarm Adaptor Kit For more information see page 326.
ZG-LFC114	Crankarm Adaptor Kit Specifically for Trane Voyager unit retrofit For more information see page 327.
ZG-ECON1	Crankarm Adaptor Kit Specifically for Honeywell economizer retrofit For more information see page 328.
ZG-ECON2	Crankarm Adaptor Kit Specifically for Honeywell economizer retrofit For more information see page 328.
KH-LF	Crankarm

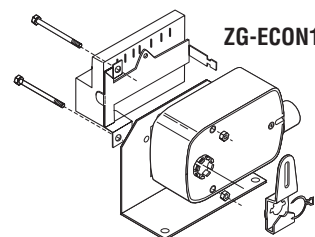
ZG-LF112



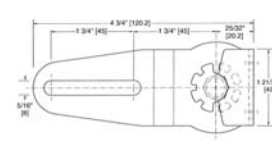
ZG-LF2



ZG-LFC114



ZG-ECON1



Mounting Brackets

The mounting brackets listed below may be used with LF actuators.
For more information see page 325.

ZG-112

Housings

The housings listed below may be used with LF actuators.
For more information see pages 330 to 331.

ZS-100 ZS-150 ZS-260

Miscellaneous

LF-P Anti-Rotation T-Bracket for LF.

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Clamps / Position Indicators / Rotation Limiters

IND-TF	Damper Position Indicator
ZDB-TF	Angle of Rotation Limiter for TF actuators.

Shaft Adaptors / Extensions

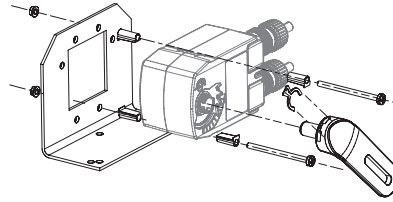
AV6-20	Shaft Extension. For damper operating shafts. Approx. 6-5/8" [170 mm] extension for shafts 1/4" to 3/4" [6 to 20 mm].
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Non-Direct Mounting

ZG-TF112	Crankarm Adaptor Kit. For more information see page 325.
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ZG-TF2	Crankarm Adaptor Kit. For more information see page 326.
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KH-TF US	Crankarm. With 5/16" slot (can be used with KG8 or KG10A Ball Joint).
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KH-TF-1 US	Crankarm. With 1/4" slot (can be used with KG6 Ball Joint).
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Mounting Brackets

The mounting brackets listed below may be used with TF actuators. For more information see page 325.

ZG-113

Housings

The housings listed below may be used with LF actuators. For more information see pages 330 to 331.

ZS-100 ZS-150 ZS-260

Miscellaneous

TF-CC US	Conduit Connector for TF / GM / AM / NM / LM
-----------------	--

TF-P	Anti-Rotation T-Bracket for TF / LM.
-------------	--------------------------------------

Clamps / Position Indicators / Rotation Limiters

K-GM20 Reversible Clamp. Fits shafts up to 1.05".



Shaft Adaptors

AV8-25 Shaft Extension. For damper operating shafts. Approx. 6-5/8" [170 mm] extension for shafts 1/4" to 3/4" [6 to 20 mm].



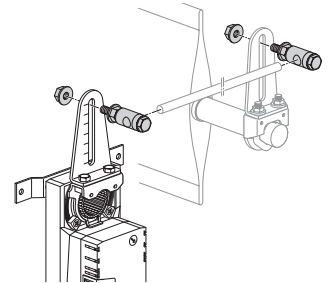
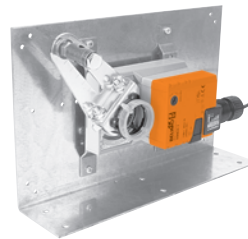
The shaft adaptors listed below may be used with GM actuators. For more information see page 329.

ZG-JSA-1 ZG-JSA-2 ZG-JSA-3

Non-Direct Mounting

ZG-GMA Crankarm Adaptor Kit
For more information see page 322.

AH-GMA Crankarm



Mounting Brackets

The mounting brackets listed below may be used with GM actuators. For more information see pages 317 to 324.

ZG-100 ZG-101 ZG-102 ZG-103 ZG-104

Housings

The housings listed below may be used with GM actuators. For more information see pages 330 to 331 and page 275.

ZS-100 ZS-150 ZS-260 ZS-300 ZS-T

Miscellaneous

TF-CC US Conduit Connector for TF / GM / AM / NM / LM

Z-GMA GM to GMB(X) Retrofit Mounting Bracket.

Clamps / Position Indicators / Rotation Limiters

K-AM25 Standard Reversible Clamp. Fits shafts up to 1.05".

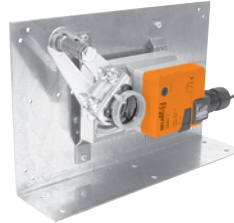
K-SA Reversible Clamp. Fits shafts up to 3/4".



Non-Direct Mounting

ZG-NMA Crankarm Adaptor Kit
For more information see page 323.

AH-25 Crankarm



Shaft Adaptors / Extensions

AV8-25 Shaft Extension. For damper operating shafts.
Approx. 6-5/8" [170 mm] extension for shafts
1/4" to 3/4" [6 to 20 mm].



The shaft adaptors listed below may be used with AM actuators.
For more information see page 329.

ZG-JSA-1 ZG-JSA-2 ZG-JSA-3

Mounting Brackets

The mounting brackets listed below may be used with AM actuators.
For more information see page 324.

ZG-100 ZG-101 ZG-103 ZG-104

Housings

The housings listed below may be used with AM actuators.
For more information see pages 330 to 331 and page 275.

ZS-100 ZS-150 ZS-260 ZS-300 ZS-T

Miscellaneous

TF-CC US Conduit Connector for TF / GM / AM / NM / LM

Z-SMA AM, SM to AMB(X) Retrofit Mounting Bracket

Clamps / Position Indicators / Rotation Limiters

K-AM25 Standard Reversible Clamp. Fits shafts up to 1.05".

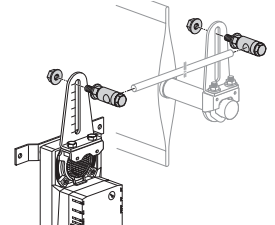
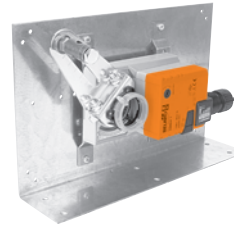
K-NA Reversible Clamp. Fits shafts up to 3/4".



Non-Direct Mounting

ZG-NMA Crankarm Adaptor Kit
For more information see page 323.

AH-25 Crankarm



Shaft Adaptors / Extensions

ZG-NMSA-1 Short Shaft Extension



AV8-25 Shaft Extension. For damper operating shafts.
Approx. 6-5/8" [170 mm] extension for shafts
1/4" to 3/4" [6 to 20 mm].



The shaft adaptors listed below may be used with NM actuators.
For more information see page 329.

ZG-JSA-1 ZG-JSA-2 ZG-JSA-3

Mounting Brackets

The mounting brackets listed below may be used with NM actuators.
For more information see page 324.

ZG-103 ZG-104

Housings

The housings listed below may be used with NM actuators.
For more information see pages 330 and page 275.

ZS-100 ZS-150 ZS-T

Miscellaneous

TF-CC US Conduit Connector for TF / GM / AM / NM / LM

Z-NMA NM to NMB(X) Retrofit Mounting Bracket

Clamps / Position Indicators / Rotation Limiters

K-LM20	Clamp. Fits shafts up to 3/4".
K-LM16	Standard Clamp. Fits shafts up to 5/8".
K-LM13	Clamp. Fits shafts up to 1/2".
K-LM10	Clamp. Fits shafts up to 3/8".



Shaft Adaptors / Extensions

ZG-LMSA	Shaft Extension
ZG-LMSA-1	Shaft Extension
AV6-20	Shaft Extension. For damper operating shafts. Approx. 6-5/8" [170 mm] extension for shafts 1/4" to 3/4" [6 to 20 mm].



Housings

The housings listed below may be used with LM actuators. For more information see pages 330 and 275.

ZS-100 ZS-150 ZS-T

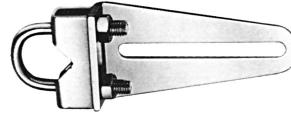
Miscellaneous

TF-CC US	Conduit Connector for TF / GM / AM / NM / LM
TF-P	Anti-Rotation T-Bracket for TF / LM.

AH/LH Accessories

Crankarms / Ball Joints / Push Rods

KH6 Universal Crankarm
(For more information see Universal Accessories).



KH8 Universal Crankarm
(For more information see Universal Accessories).

KG6 Ball Joint (Zinc Plated)
(For more information see Universal Accessories).



KG8 Ball Joint (Galvanized)
(For more information see Universal Accessories).

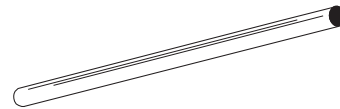


KG10 Ball Joint (Zinc Plated)
(For more information see Universal Accessories).



SH8 Push Rod
(For more information see Universal Accessories).

SH10 Push Rod
(For more information see Universal Accessories).



Miscellaneous

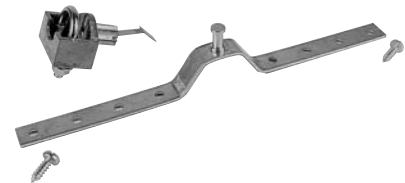
TF-CC US Conduit Connector for TF / GM / AM / NM / LM

Z-DS1 Rotary Support for Lateral Force Compensation

LU Accessories

Clamps / Position Indicators / Rotation Limiters

K-LU Spindle Clamp. Fits shafts 5/16" to 1/2".



ZDB-LU Angle of Rotation Limiter for LU.

Housings

The housings listed below may be used with LU actuators.
For more information see pages 330 and 275.

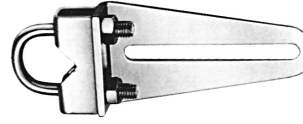
ZS-100 ZS-150 ZS-T

Miscellaneous

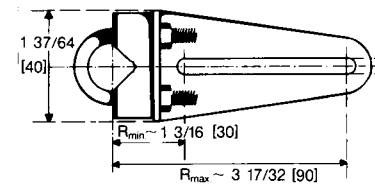
TF-CC US Conduit Connector for TF / GM / AM / NM / LM

Universal Crankarms

KH6 Zinc plated steel. Slot width 1/4" (6.2mm).
For damper shafts:
3/8" to 11/16" dia. (10 to 18mm) or
3/8" to 9/16" sq. (10 to 14mm).
Uses KG6 Ball Joint.



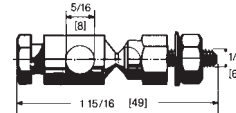
Dimensions (Inches [MM])



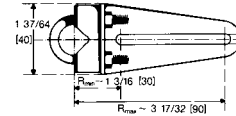
KH8 Zinc plated steel. Slot width 21/64" (8.2mm).
For damper shafts:
3/8" to 11/16" dia. (10 to 18mm) or
3/8" to 9/16" sq. (10 to 14mm).
Uses KG8 or KG10A Ball Joint.

Ball Joints

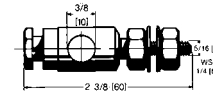
KG6 For KH6 Universal Crankarm. Zinc plated steel.
For 5/16" dia. rod (8mm).
The KG6 ball joint is only recommended
up to 70 in-lbs. (8Nm)



KG8 For KH8 Universal Crankarm
Galvanized steel. 90° angle.
For 5/16" dia. rod (8mm).



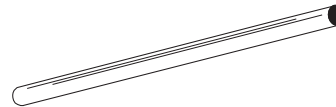
KG10A Zinc Plated Steel
Used with following crankarms:
KH8 = 5/16" (8mm)



Push Rods

SH8 For KG6 and KG8 Ball Joints. 36" length, 5/16" dia.

SH10 For KG10 Ball Joints. 36" length, 3/8" dia.



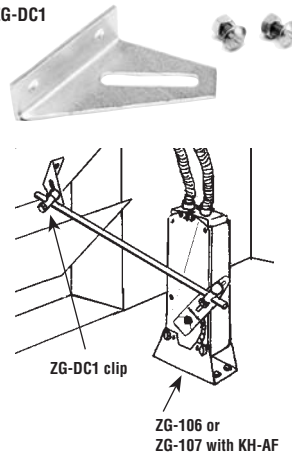
Damper Clips

ZG-DC1 Mounts to damper blades – 3.5"

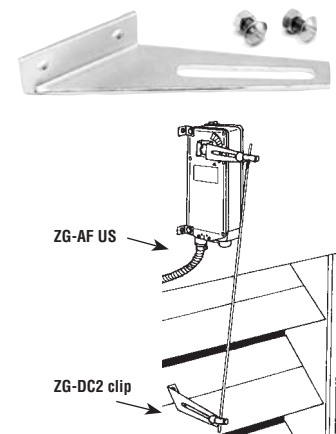
ZG-DC2 Mounts to damper blades – 6"

The ZG-DC1 and ZG-DC2 damper clips are designed to mount to damper blades and work as crankarms in damper linkage applications. The ZG-DC1 is designed to be used in applications where the actuator is located in front of the damper. The ZG-DC2 is designed to be used when the actuator is located above or below the damper.

ZG-DC1



ZG-DC2





Application

The ZG-102 multiple actuator mounting bracket is designed for cases where it is necessary to mount two actuators to one shaft to provide extra torque.

The dual mounting bracket is typically used with the AF and GM series actuators. This is due to the fact that each of these series are the highest torque range available.

Figures A and B demonstrates two different mounting configurations using the ZG-102 mounting bracket.

Accessory

AV10 - 25 Universal shaft extension

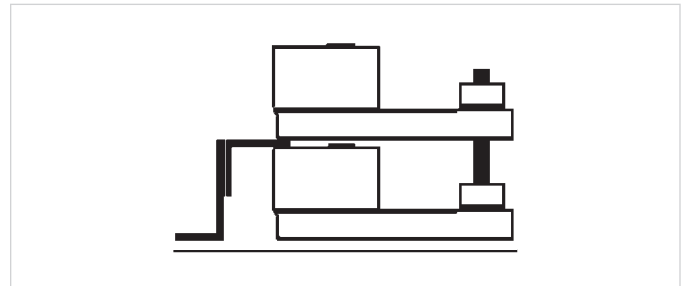


FIGURE A

The major advantage with this method is it requires less mounting area. The manual override, if available, cannot be used in this configuration.

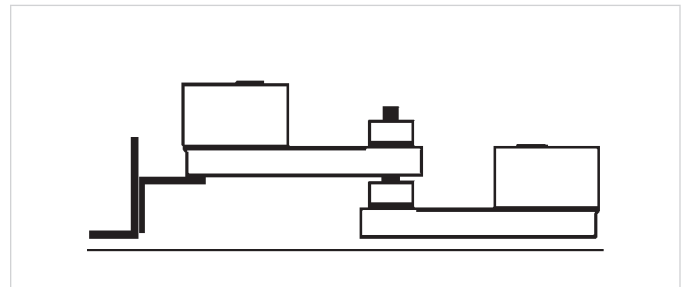
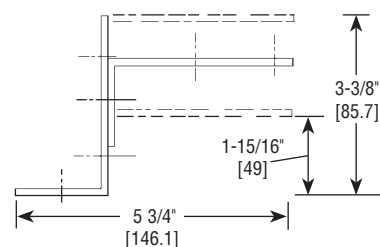
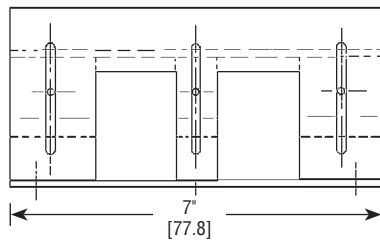
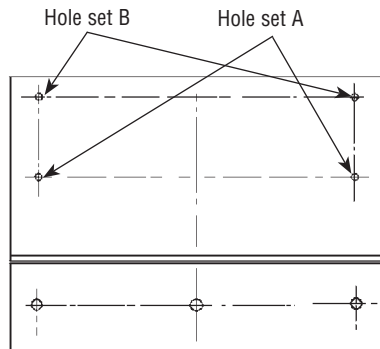


FIGURE B

The major advantages are that a shorter shaft is required and a lower profile is achieved.

Dimensions (Inches [mm])



Material	12 GA Galvanized
Weight	1.8 lbs.

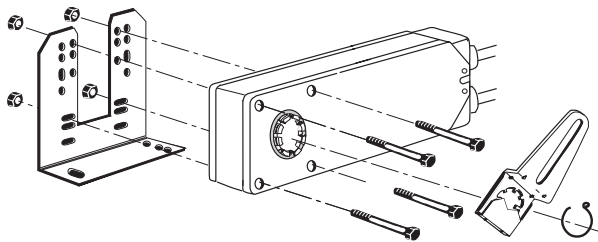
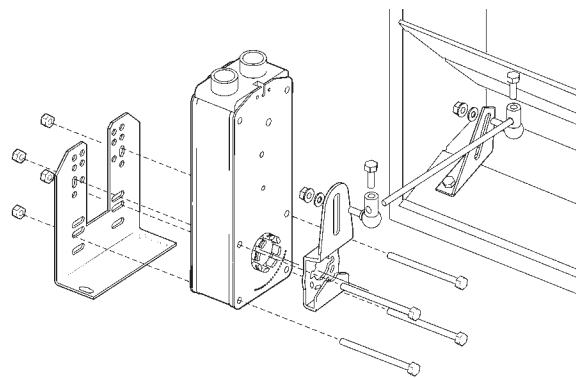
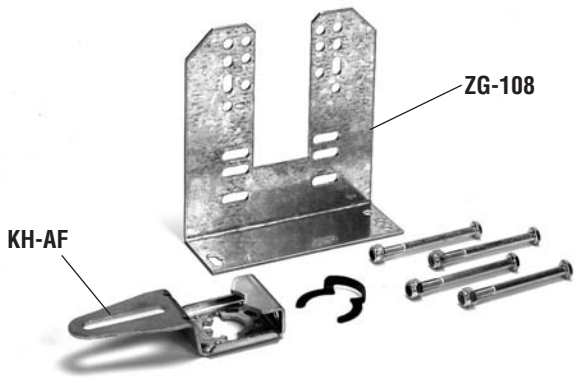
OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GMA	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

ZG-AF108 Crankarm Adaptor Kit

For AF and NF Series Actuators



OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GMA	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

Application

The ZG-AF108 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

The ZG-AF108 Crankarm Adaptor Kit includes:

- 1 ZG-108 Mounting Bracket
- 1 KH-AF Crankarm with Retaining Ring
- 4 Bolts with Nuts

NOTE: May require crankarm and ball joints

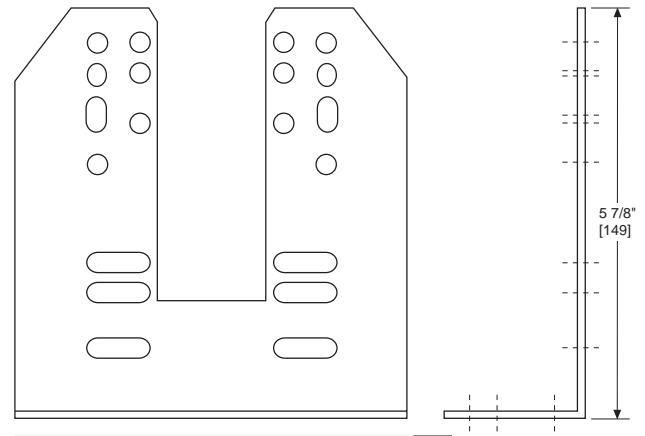
The ZG-108 is provided with hole patterns to mount the NF and AF series actuators in either a horizontal or vertical position to meet space requirements.

The ZG-108 Mounting Bracket is designed to mount the NF and AF series actuator in the same mounting locations as common foot mounted, crankarm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

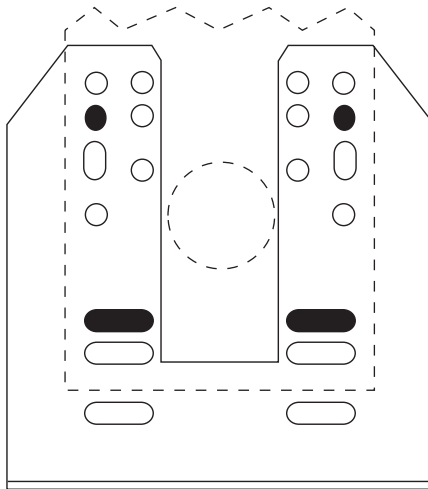
Honeywell	M91... M945...	M955... M965...	M975... M8...
Johnson	M110... M120...	M130... M140...	M150...
Barber Coleman	MA3...	MA4...	MA5...

Dimensions (Inches [mm])

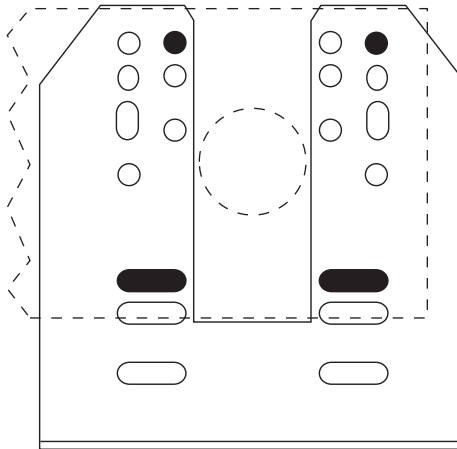


Material	12 GA Galvanized
Weight	1.0 lbs. (0.45 kg)

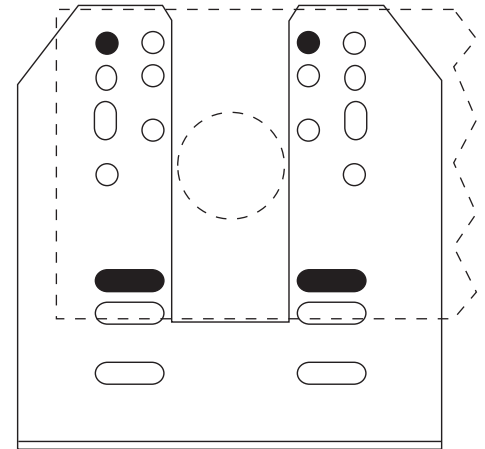
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Barber Colman™ MA Type - Vertical

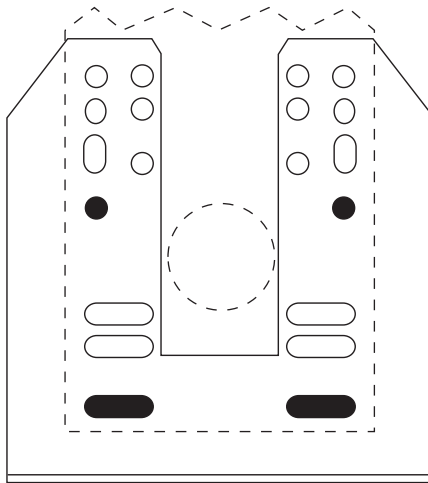


Barber Colman™ MA Type - Horizontal (left)

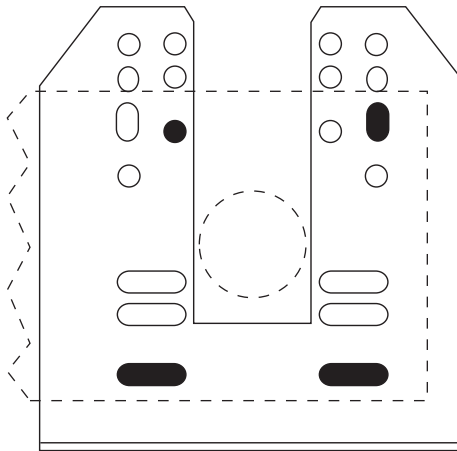


Barber Colman™ MA Type - Horizontal (right)

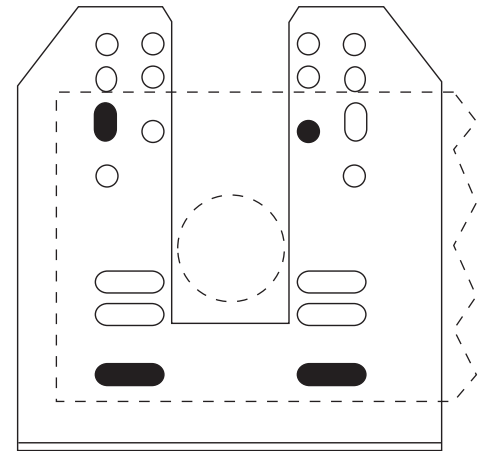
Black holes represent correct bolt locations.



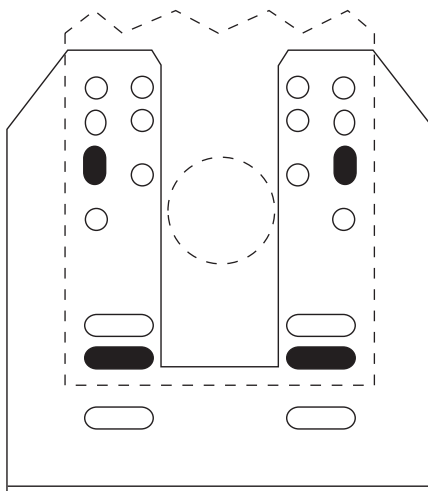
Honeywell™ Mod. IV Type - Vertical



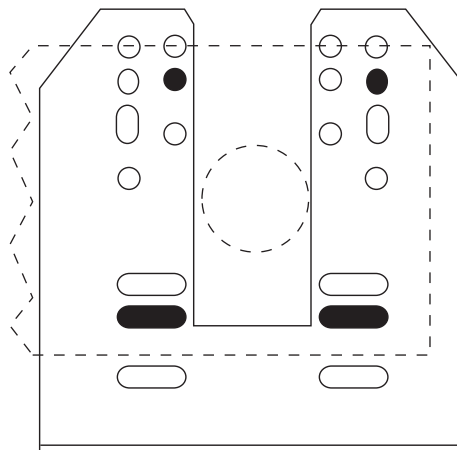
Honeywell™ Mod. IV Type - Horizontal (left)



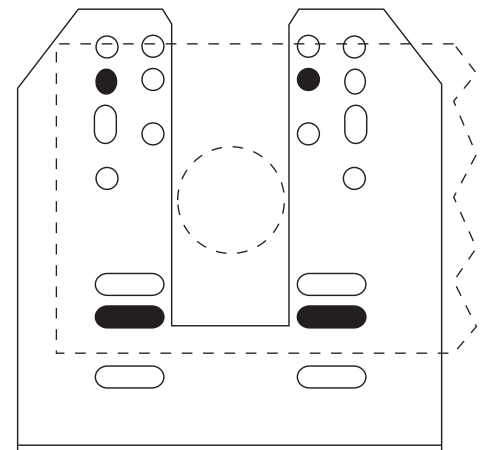
Honeywell™ Mod. IV Type - Horizontal (right)



**Johnson Control™ 100 Series Type
 and Honeywell™ Mod. III Type
 Vertical**



**Johnson Control™ 100 Series Type
 and Honeywell™ Mod. III Type
 Horizontal (left)**

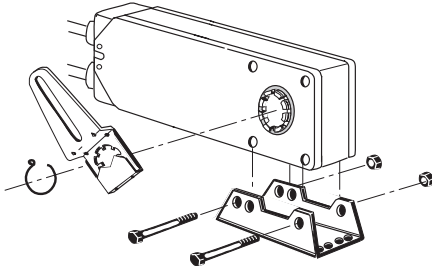
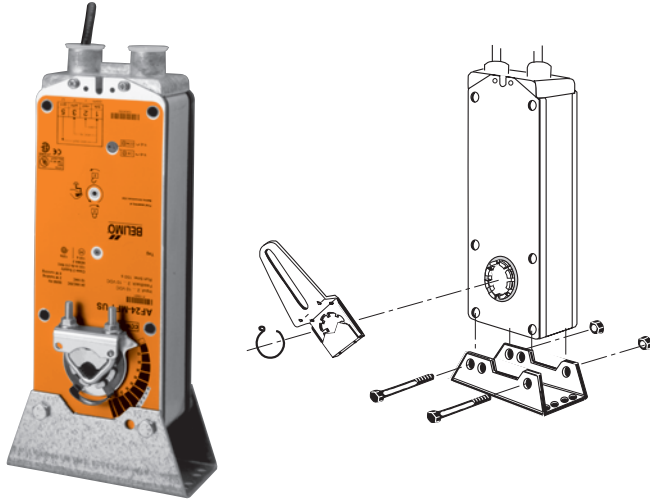


**Johnson Control™ 100 Series Type
 and Honeywell™ Mod. III Type
 Horizontal (right)**

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ZG-106 and ZG-107 Universal Mounting Brackets

For AF and NF Series Actuators



Application

The ZG-106 and ZG-107 Universal Mounting Brackets are designed for applications where the actuator cannot be mounted directly to the damper shaft. They may be used for outside or inside the duct mounting.

The ZG-106 and ZG-107 is provided with hole patterns to mount the NF and AF series actuators in either a horizontal or vertical position to meet space requirements.

The KH-AF crankarm is required to fully convert the NF and AF for crankarm operation.

The ZG-106 and ZG-107 are designed to mount the NF and AF series actuators in the same mounting locations as common foot mounted, crankarm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

The ZG-106 is designed to place the KH-AF crankarm in the same relative position as the Honeywell™ Mod IV actuators. The ZG-107 is designed to place the crankarm in the same relative position as the Honeywell™ Mod III actuators.

USE THE ZG-106 WHEN REPLACING THESE ACTUATORS

Honeywell	Mod IV	M91...	M945...
	M955...	M965...	M975... M8...

USE THE ZG-107 WHEN REPLACING THESE ACTUATORS

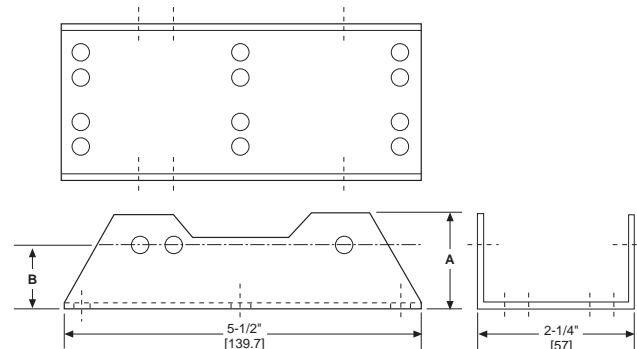
Honeywell	Mod III
-----------	---------

OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GMA	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

Dimensions (Inches [mm])

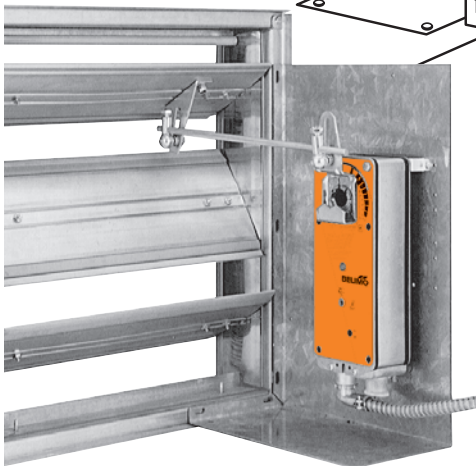
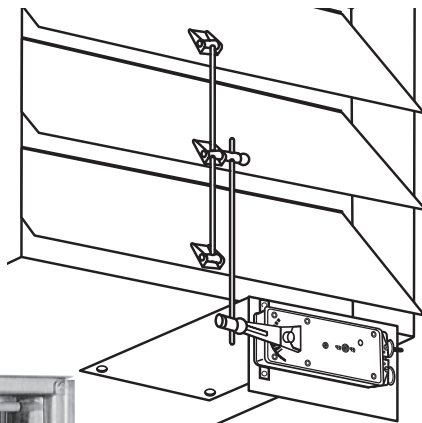
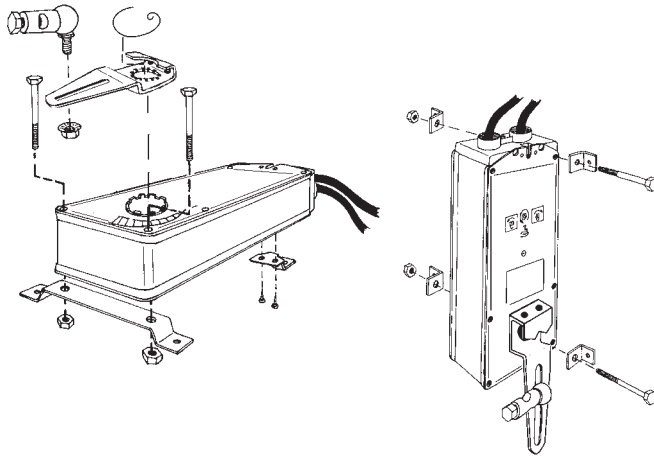
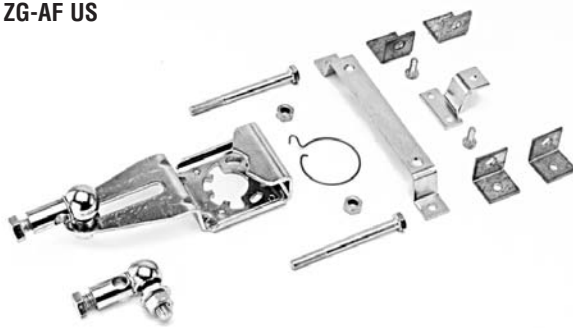


	A	B
ZG-106	1.50"	1.02"
ZG-107	2.25"	1.77"

Material	12 GA Galvanized	
Weight	ZG-106	0.7 lbs.
	ZG-107	0.9 lbs.

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ZG-AF US



Application

The ZG-AF US Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft.

The ZG-AF US Crankarm Adaptor Kit includes:

- 1 KH-AF Crankarm with Retaining Ring
- 2 Standoff Brackets
- 4 Mounting Feet
- 2 Bolts with Nuts
- 2 Self-Tapping Screws
- 2 KG8 Ball Joints Instructions

The following Universal Mounting Brackets are needed to fully convert to crankarm operation:

- ZG-100**
- ZG-101**

The ZG-100 and ZG-101 Universal Mounting Brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It may be used for outside or inside the duct mounting, fastened to the ductwork or directly to the damper assembly. It may also be used to mount to other surfaces rather than the duct.

The ZG-100 and ZG-101 are provided with pre-punched hole patterns for the AM, SM, GM, NF, and AF series actuators. The ZG-100 hole pattern layout allows mounting these actuators in three different, mounting orientations. The ZG-101 hole pattern layout allows mounting these actuators in two different, mounting orientations. The ZG-100 and ZG-101 may also be field drilled for special or more exact mounting of linkage components.

For technical data and dimensions on ZG-100 and ZG-101 Universal Mounting Brackets, see page 324.

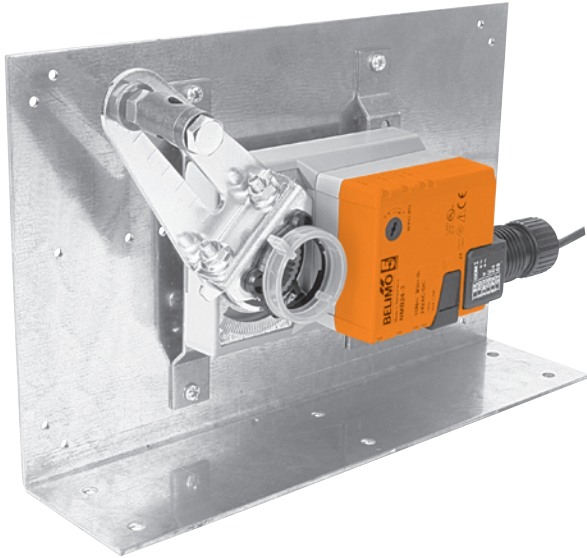
OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GM2	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

ZG-GMA Crankarm Adaptor Kit

For GM Series Actuators



Application

The ZG-GMA Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft.

The ZG-GMA Crankarm Adaptor Kit includes:

- 1 AH-25 Crankarm
- 2 KG10 Ball Joints
- 2 Mounting Brackets
- 1 Spacer
- Mounting Hardware

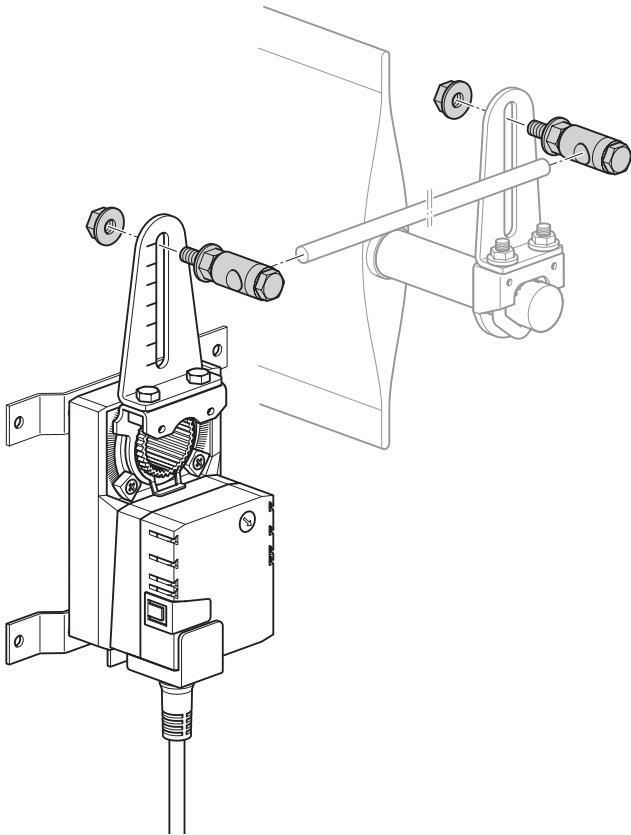
The following Universal Mounting Brackets are needed to fully convert to crankarm operation:

- ZG-100**
- ZG-101**
- ZG-103**
- ZG-104**

The ZG-100, ZG-101, ZG-103, and ZG-104 Universal Mounting Brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It may be used for outside or inside the duct mounting, fastened to the ductwork or directly to the damper assembly. It may also be used to mount to other surfaces rather than the duct.

The ZG-100, ZG-101, ZG-103, ZG-104 are provided with pre-punched hole patterns for the NM, AM, SM, GM, NF, and AF series actuators. The ZG-100 hole pattern layout allows mounting these actuators in three different, mounting orientations. The ZG-101, ZG-103, and ZG-104 hole pattern layout allows mounting these actuators in two different, mounting orientations. The ZG-100 and ZG-101 may also be field drilled for special or more exact mounting of linkage components.

For technical data and dimensions on ZG-100, ZG-101, ZG-103, and ZG-104 Universal Mounting Brackets, see page 324.



OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

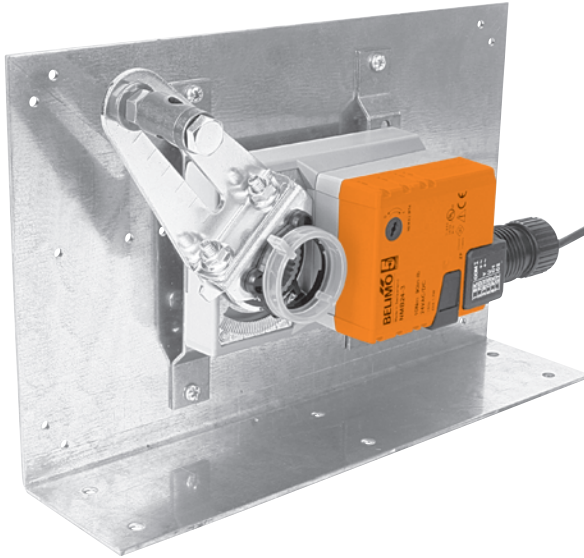
KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GMA	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-102	AF, GM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

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ZG-NMA Crankarm Adaptor Kit

For AM and NM Series Actuators



Application

The ZG-NMA Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft.

The ZG-NMA Crankarm Adaptor Kit includes:

- 1 Crankarm
- 2 KG10 Ball Joints
- 2 Mounting Brackets
- 1 Spacer
- Mounting Hardware

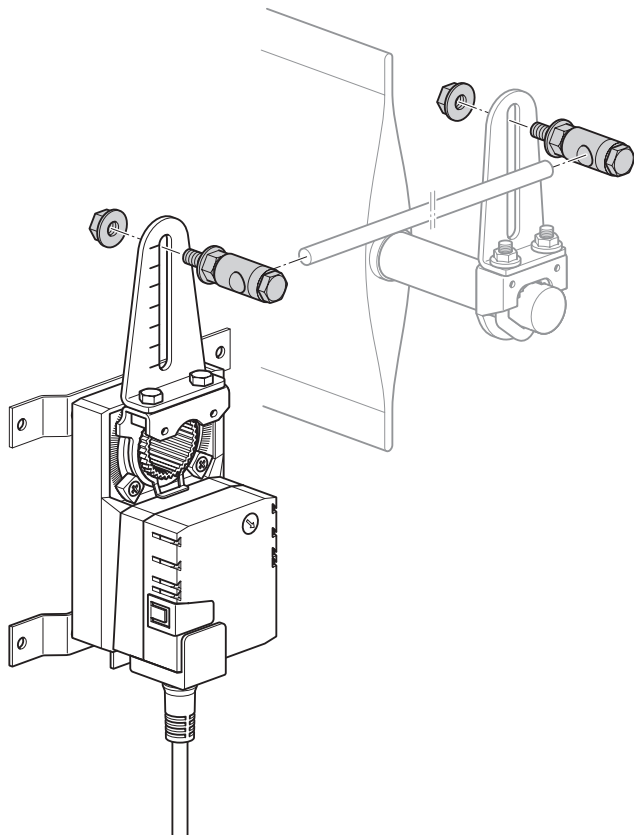
The following Universal Mounting Brackets are needed to fully convert to crankarm operation:

- ZG-100**
- ZG-101**
- ZG-103**
- ZG-104**

The ZG-100, ZG-101, ZG-103, and ZG-104 Universal Mounting Brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It may be used for outside or inside the duct mounting, fastened to the ductwork or directly to the damper assembly. It may also be used to mount to other surfaces rather than the duct.

The ZG-100, ZG-101, ZG-103, ZG-104 are provided with pre-punched hole patterns for the NM, AM, SM, GM, NF, and AF series actuators. The ZG-100 hole pattern layout allows mounting these actuators in three different, mounting orientations. The ZG-101, ZG-103, and ZG-104 hole pattern layout allows mounting these actuators in two different, mounting orientations. The ZG-100 and ZG-101 may also be field drilled for special or more exact mounting of linkage components.

For technical data and dimensions on ZG-100, ZG-101, ZG-103, and ZG-104 Universal Mounting Brackets, see page 324.



OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GMA	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-102	AF, GM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

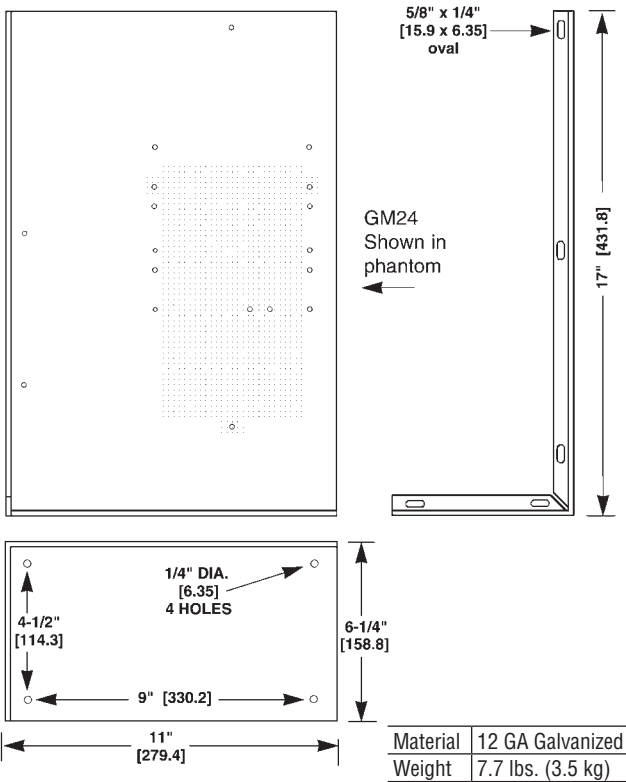
*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

ZG-100, ZG-101, ZG-103, ZG-104 Universal Mounting Brackets

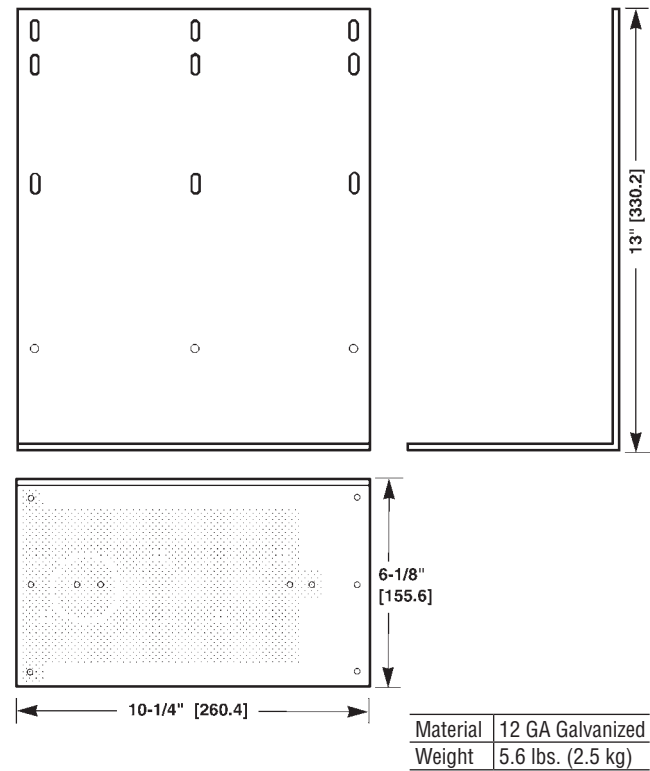
For AM, SM, GM, NF, and AF Series Actuators



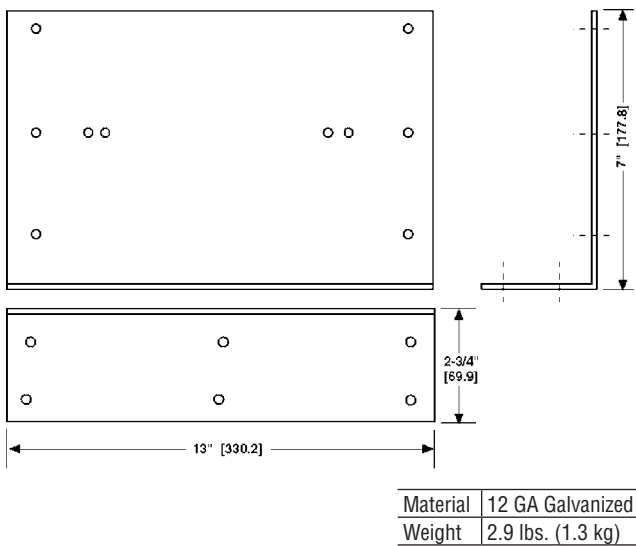
ZG-100 Universal Mounting Bracket* (Inches [mm])



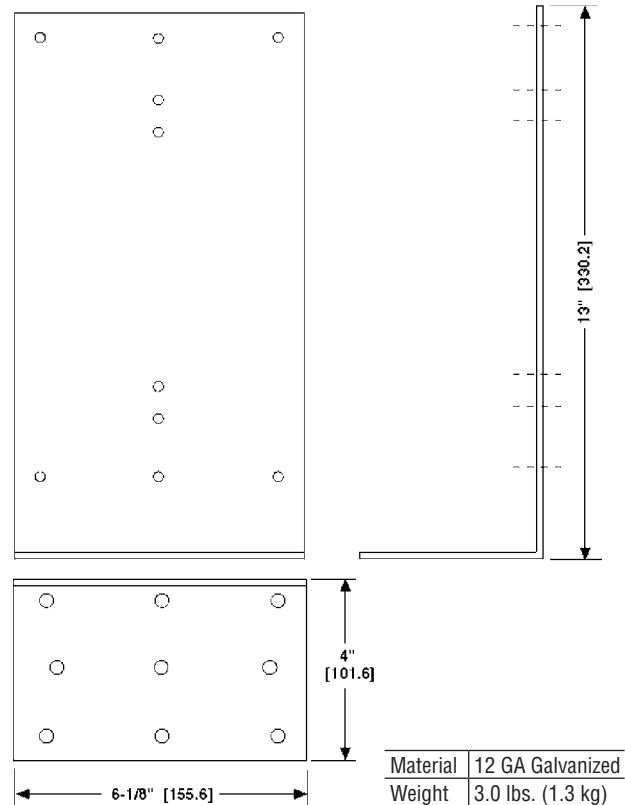
ZG-101 Universal Mounting Bracket* (Inches [mm])



ZG-103 Universal Mounting Bracket (Inches [mm])



ZG-104 Universal Mounting Bracket (Inches [mm])

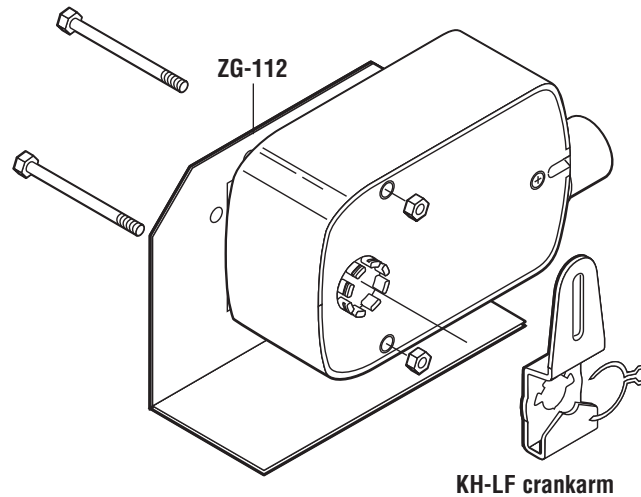


* NOTE: ZG-AF US, ZG-GMA, or ZG-NMA Required

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ZG-LF112 Crankarm Adaptor Kit

For LF Series Actuators



Application

The ZG-LF112 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

The ZG-LF112 Crankarm Adaptor Kit includes:

- 1 ZG-112 Mounting Bracket
- 1 KH-LF Crankarm with Retaining Clip
- 2 Bolts with Nuts

NOTE: May require crankarm and ball joints

The ZG-112 is provided with hole patterns to mount the LF series actuators in either a horizontal or vertical position to meet space requirements.

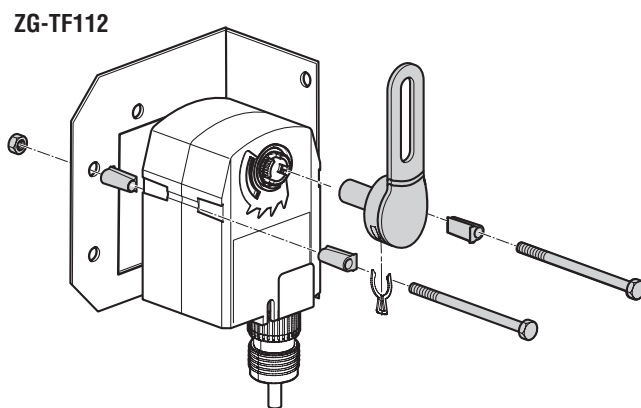
The ZG-112 Mounting Bracket is designed to mount the NF and AF series actuator in the same mounting locations as common foot mounted, crankarm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

Honeywell	M84...	M7
-----------	--------	----

ZG-TF112 Crankarm Adaptor Kit

For TF Series Actuators



Application

The ZG-TF112 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

The ZG-TF112 Crankarm Adaptor Kit includes:

- 1 ZG-113 Mounting Bracket
- 1 KH-TF-1 Crankarm with Retaining Clip
- 2 Bolts with Nuts

NOTE: May require crankarm and ball joints

The ZG-113 is provided with hole patterns to mount the TF series actuators in either a horizontal or vertical position to meet space requirements.

The ZG-113 Mounting Bracket is designed to mount the TF series actuator in the same mounting locations as common foot mounted, crankarm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

Honeywell	M84...	M7...
-----------	--------	-------

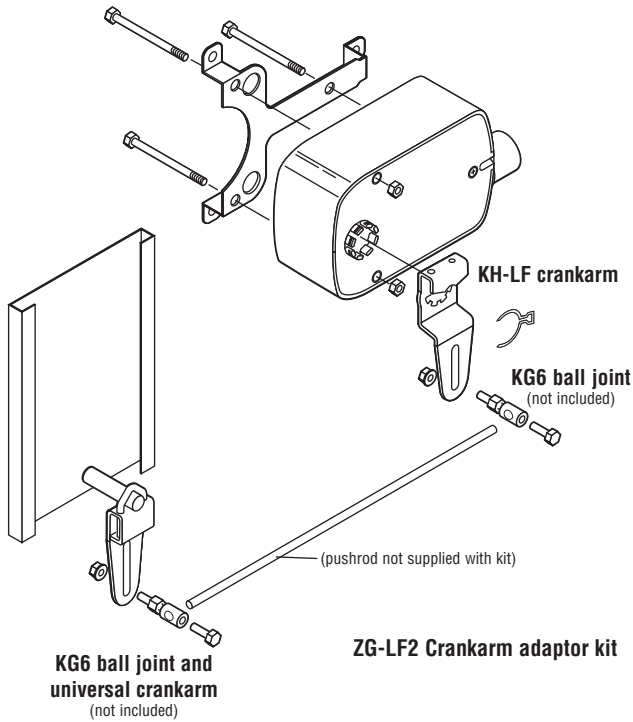
ZG-LF2 and ZG-TF2 Crankarm Adaptor Kits

For LF and TF Series Actuators



ZG-LF2 Crankarm Adaptor Kit

For LF Series Actuators



Application

The ZG-LF2 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

The ZG-LF2 Crankarm Adaptor Kit includes:

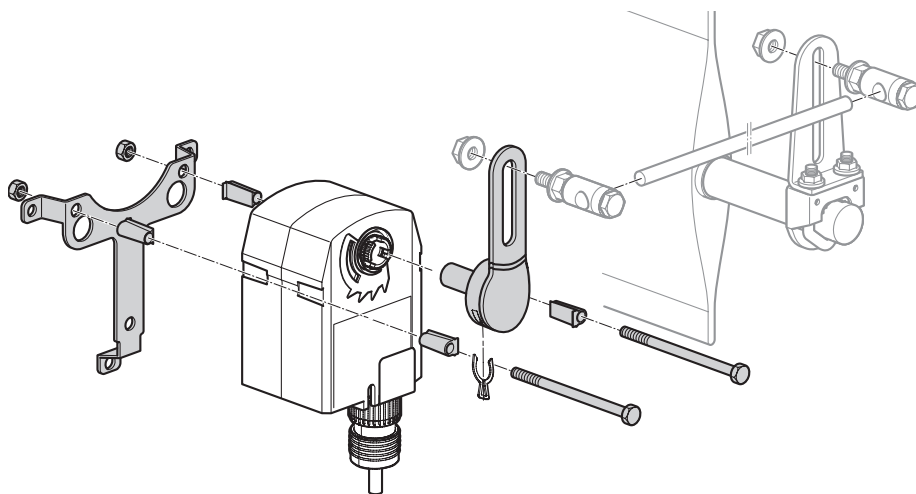
- 1 Mounting Bracket
- 1 KH-LF Crankarm with Retaining Ring
- 3 Bolts with Nuts

NOTE: May require crankarm and ball joints

The ZG-LF2 Crankarm Adaptor Kit can be used to replace foot mounted, crankarm style actuators. The ZG-LF2 allows for easy retrofit of Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators.

ZG-TF2 Crankarm Adaptor Kit

For TF Series Actuators



Application

The ZG-TF2 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

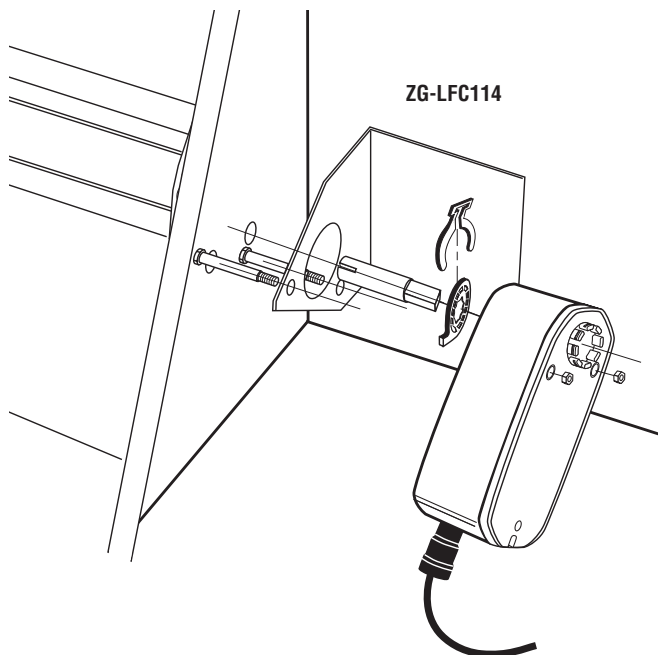
The ZG-TF2 Crankarm Adaptor Kit includes:

- 1 Mounting Bracket
- 1 KH-TF-1 Crankarm with Retaining Clip
- 3 Bolts with Nuts

NOTE: May require crankarm and ball joints

The ZG-TF2 Crankarm Adaptor Kit can be used to replace foot mounted, crankarm style actuators. The ZG-TF2 allows for easy retrofit of Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators.

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Application

The ZG-LFC114 Crankarm Adaptor Kit is designed for Trane voyager economizer actuator retrofit.

The ZG-LFC114 Crankarm Adaptor Kit includes:

- 1 Mounting Bracket
- 1 Shaft Adaptor
- 2 Bolts with Nuts
- 4 Female Spade Connectors

Note: May require crankarm and ball joints

USE WHEN REPLACING THESE ACTUATORS

Honeywell	M84...	M7...
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OTHER CRANKARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AF108	ZG-108 (Included)	NF, AF
ZG-AF US	ZG-100, ZG-101	NF, AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	NA	TF
ZG-GMA	ZG-101, ZG-101, ZG-103, ZG-104	GM
ZG-NMA	ZG-101, ZG-101, ZG-103, ZG-104	NM, AM
NA	ZG-102	AF, GM
NA	ZG-106	NF, AF
NA	ZG-107	NF, AF

*Unless otherwise noted, mounting brackets are not included in crankarm adaptor kits.

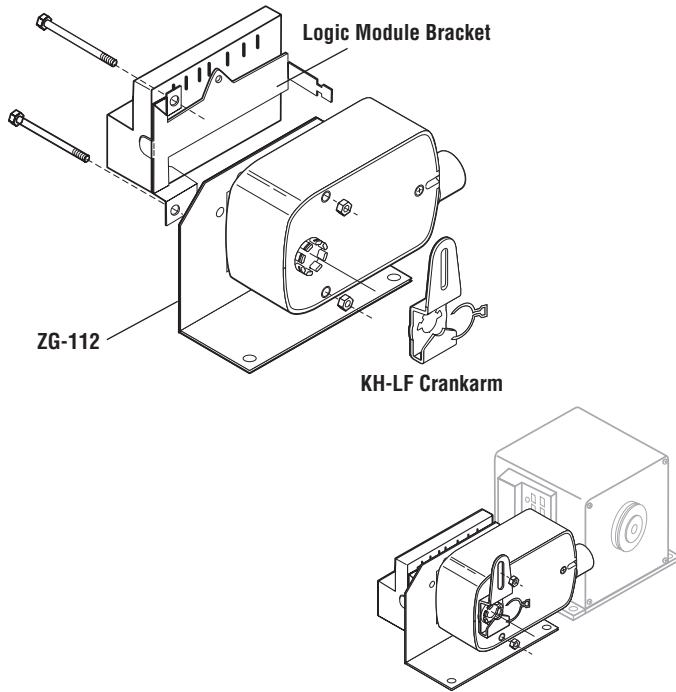
ZG-ECON1 and ECON2 Crankarm Adaptor Kits

For LF and Series Actuators



ZG-ECON1 Crankarm Adaptor Kit

For LF Series Actuators



Application

The ZG-ECON1 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

The ZG-ECON1 Crankarm Adaptor Kit includes:

- 1 ZG-112 Mounting Bracket
- 1 Logic Module Mounting Bracket (20477-00001)
- 1 KH-LF Crankarm with Retaining Ring
- 1 KG6 Ball Joint
- 4 Male Spades
- 2 Bolts with Nuts

NOTE: May require crankarm and ball joints

The ZG-112 is provided with hole patterns to mount the LF series actuators in either a horizontal or vertical position to meet space requirements.

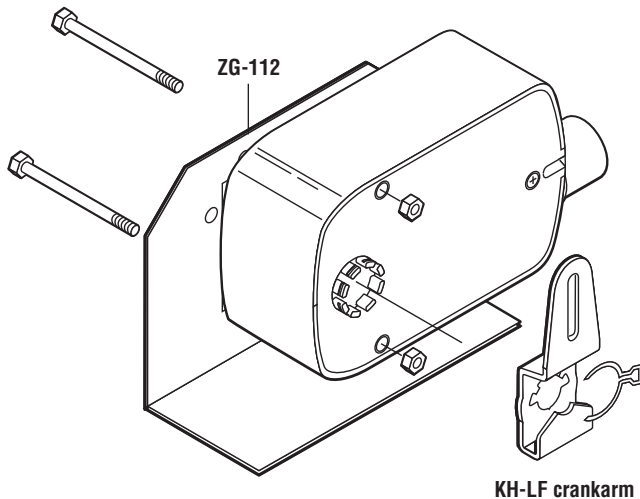
The ZG-112 Mounting Bracket is designed to mount the TF and LF series actuator in the same mounting locations as common foot mounted, crankarm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

Honeywell	M84...	M7...
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ZG-ECON2 Crankarm Adaptor Kit

For LF Series Actuators



Application

The ZG-ECON2 Crankarm Adaptor Kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. It may be used for outside or inside the duct mounting.

The ZG-ECON2 Crankarm Adaptor Kit includes:

- 1 ZG-112 Mounting Bracket
- 1 KH-LF Crankarm with Retaining Ring
- 1 KG6 Ball Joint
- 4 Female Spades
- 2 Bolts with Nuts

NOTE: May require crankarm and ball joints

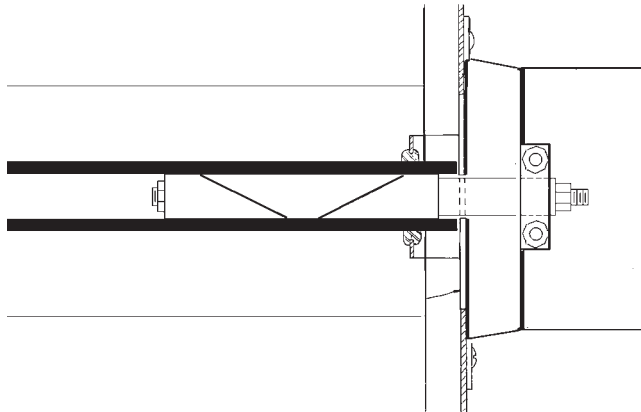
The ZG-112 is provided with hole patterns to mount the LF series actuators in either a horizontal or vertical position to meet space requirements.

The ZG-112 Mounting Bracket is designed to mount the TF and LF series actuator in the same mounting locations as common foot mounted, crankarm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

Honeywell	M84...	M7...
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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.

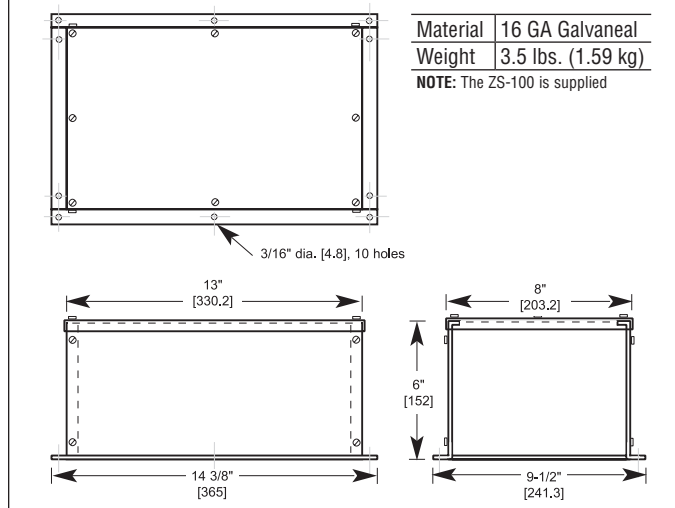
It may be assembled with 2 sides, 2 ends and the cover to completely conceal the actuator. A hole punch can be used to provide a hole to mount a wire conduit. A foam gasket is also provided to achieve a better seal between the cover and sides or from the base to the mounting surface.

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



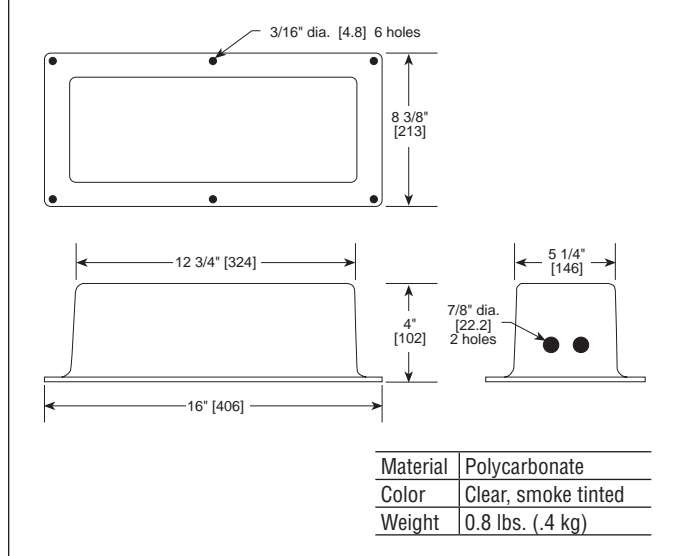
Application

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..., SM..., AF..., NF..., 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 4.

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

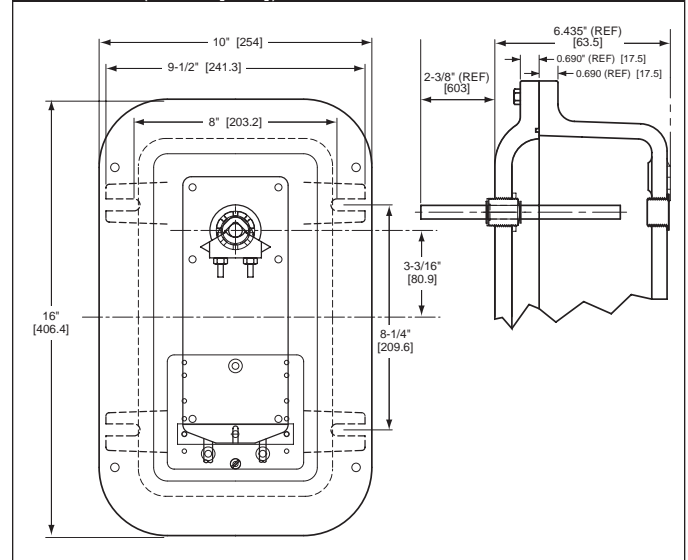
KH8	Universal crankarm
KG8	Universal ball joint
KG10	Universal ball joint
ZG-109	Right angle mounting bracket
ZG-110	Stand-off mounting bracket

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), see NOTE 1
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 4.
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.

Dimensions (Inches [mm])

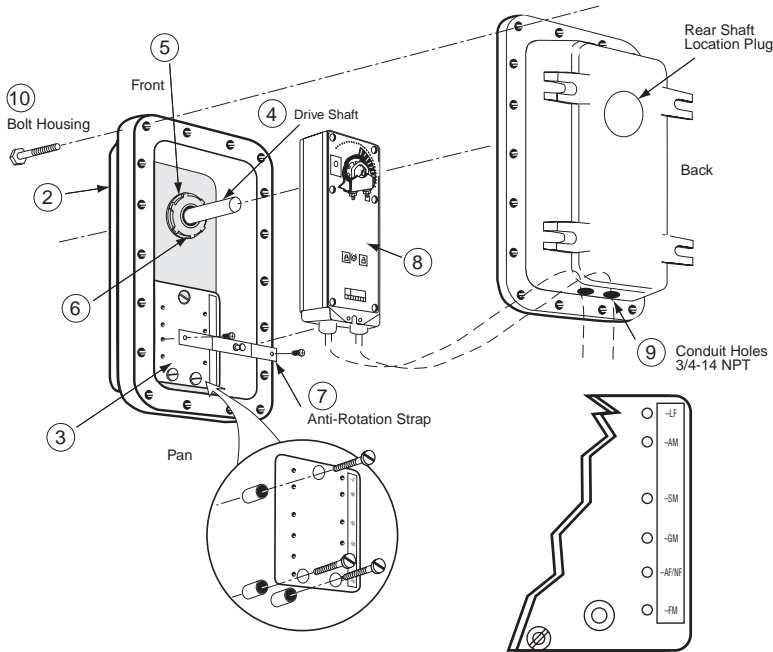


ZS-260 Explosion-proof Housing

For GM..., AM..., SM..., AF..., NF..., LF... Actuators



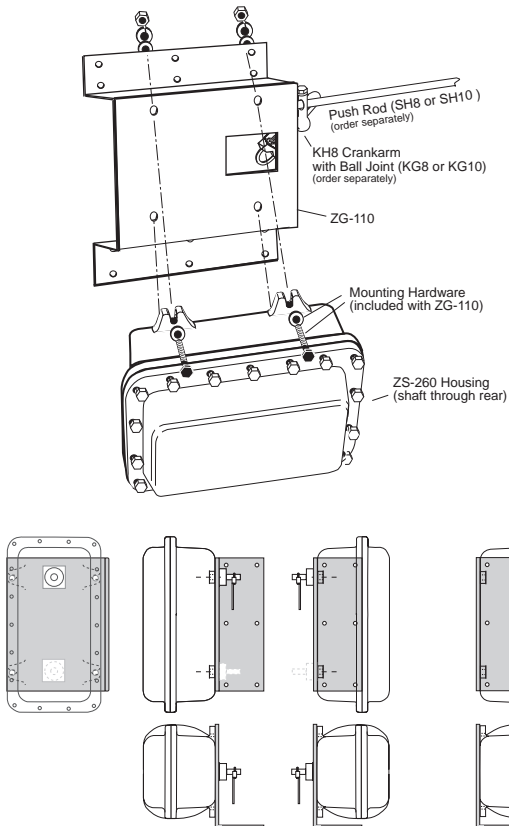
ZS-260 Shaft Thru Front



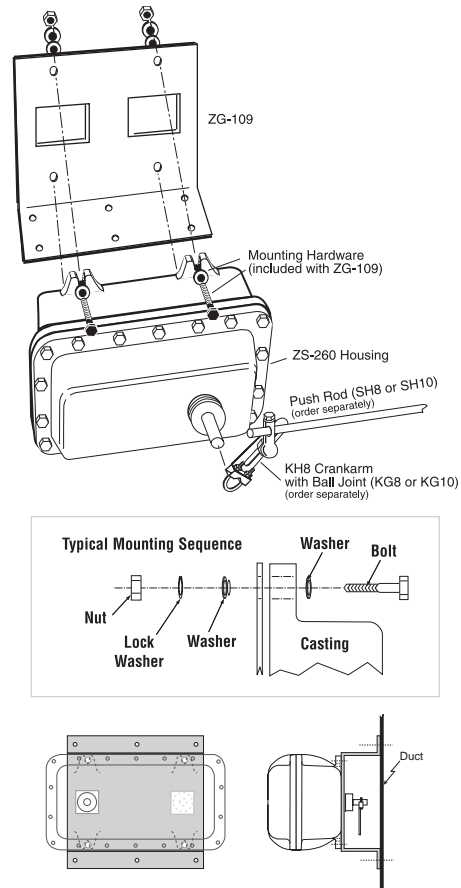
ZS-260 Mounting Instructions

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.

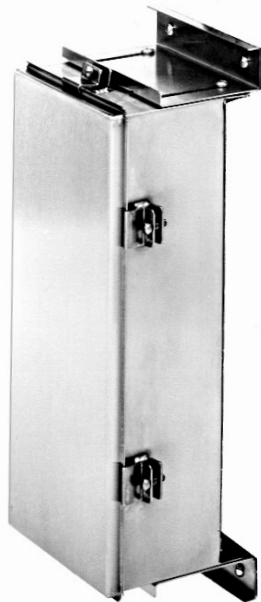
Typical ZG-109 Mounting



Typical ZG-110 Mounting



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ZS-300

ZS-300 NEMA 4X Housing

For AM, GM, AF, NF, LF Series Actuators

Application

The ZS-300 (-1) NEMA 4X enclosures may be used with GM, AM, AF, NF and LF 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.

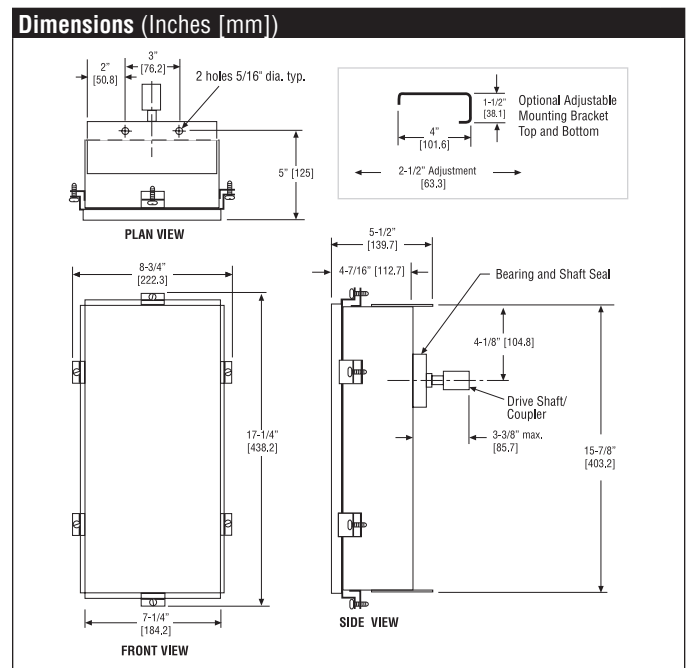
Ordering Information

ZS-300	Housing with mounting brackets
ZS-300-1	Housing without mounting brackets
ZS-300-5	316L enclosures, custom mounting brackets and operating shaft/couplings are available. Consult Belimo.

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

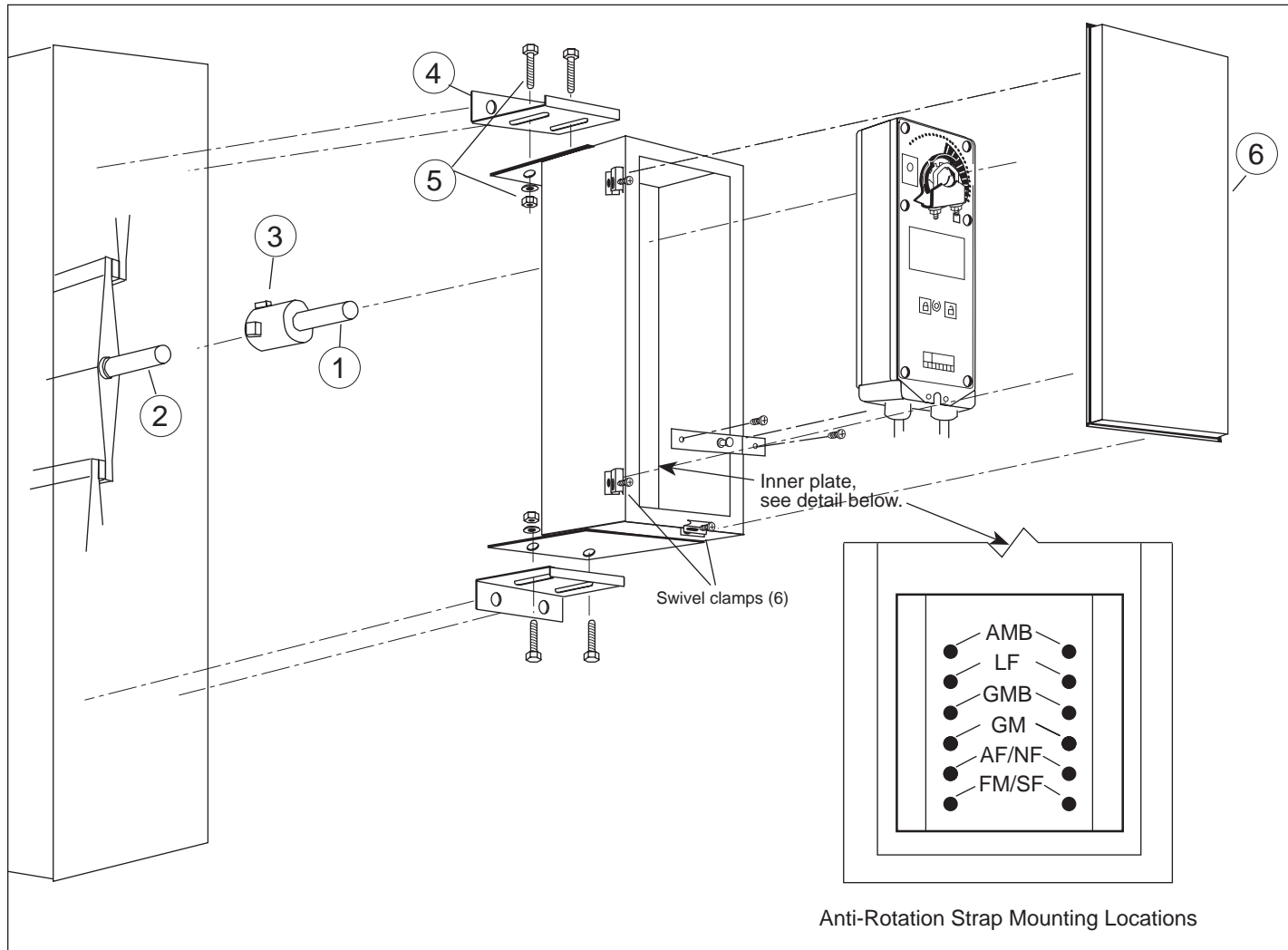
Technical Data		ZS-300 (-1) (-5)
Material		All 304 stainless steel housing, door, (with neoprene gasket), shaft, coupling, universal mounting plate, and hardware.
Material Thickness		16 GA
Conduit holes		Field drilled as required. U.L. listed electrical fittings for NEMA 4X conditions must be used.
Operating shaft (Ordered separately)		1/2" by 5 15/16" long 304 stainless steel with integral coupling for direct mounting to 1/2" round or hexagonal drive shafts. Square head set screws are 304 stainless steel.
Optional shafts	ZS-300-C1 ZS-300-C2 ZS-300-C3	1/2" shaft adaptor (standard with housing) 3/4" shaft adaptor 1" shaft adaptor
Rotating shaft seal		Machined PVC hub, 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 GM, AM, AF, NF and LF are U.L. listed. These enclosures conform to the NEMA standard for Type 4X (water-, dust-tight and corrosion resistant).
Weight		11 lbs. [5 kg] without actuator or mounting brackets.



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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.



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