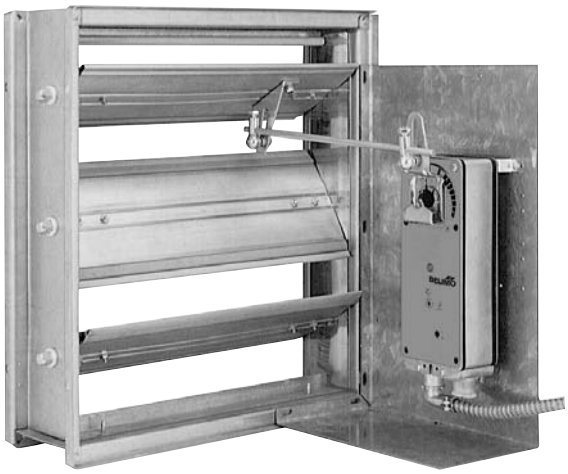
We'll help solve any application problem with a wide range of accessories and unparalleled customer service.







The Belimo Difference

- *Customer Commitment.*
  Extensive product range. Competitive project pricing. Application assistance.
  Same-day shipments. Free technical support. Five year warranty.

- *Low Installation and Life-Cycle Cost.*
  Easy installation. Accuracy and repeatability.
  Low power consumption. No maintenance.

- *Long Service Life.*
  Components tested before assembly. Every product tested before shipment.
  20+ years direct coupled actuator design.

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

	Part Number	Description	AFB	AF	NFB	LF	TF	GM	AM	NM	LM	AH	LH	LU
Clamp / Positioner Indicators	IND-AFB	Damper Position Indicator	●		●									
	IND-AF2	Damper Position Indicator		●										
	IND-LF	Damper Position Indicator				●								
	IND-TF	Damper Position Indicator					●							
	K7-2	Standard AFB/NFB Clamp (1/2" to 1.05")	●		●									
	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	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-AFB	Crank Arm	●		●									
	KH-AF	Crank Arm		●										
	KH-AF-1 US	Crank Arm for Jackshaft Applications		●										
	KH-AFV	V-Bolt Kit for KH-AF (-1) Crank Arms		●										
	KH-LF	Crank Arm				●								
	KH-LFV	V-Bolt Kit for KH-LF Crank Arms				●								
	KH-TF US	Crank Arm					●							
	AH-GMA	GMB(X) Crank Arm						●						
	AH-25	AMB(X) and NMB(X) Crank Arm							●	●				
	KH6	Universal Crank Arm (For KG6 Ball Joint)		●	●	●	●	●	●	●		●	●	
	KH8	Universal Crank Arm (For KG8 Ball Joint)		●	●	●	●	●	●	●		●	●	
	KH10	Universal Crank Arm (For KG10A Ball Joint)	●	●	●	●	●	●	●	●				
	KH12	Universal Crank Arm (For KG10A Ball Joint)	●	●	●	●	●	●	●	●				
	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		●	●	●	●	●	●	●		●	●	

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

BELIMO

	Part Number	Description	AFB	AF	NFB	LF	TF	GM	AM	NM	LM	AH	LH	LU
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					●							
	ZG-118	Universal Mounting Bracket for AFB, NFB	●		●									
	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								●				
Crank arm Adaptor Kits	ZG-AFB	Crank Arm Adaptor Kit	●		●									
	ZG-AFB118	Crank Arm Adaptor Kit	●		●									
	ZG-AF US	Crank Arm Adaptor Kit (includes mounting hardware)		●										
	ZG-AF108	Crank Arm Adaptor Kit (includes ZG-108 & KH-AF US)		●										
	ZG-LF112	Crank Arm Adaptor Kit (includes ZG-112 & KH-LF)				●								
	ZG-LF2	Crank Arm Adaptor Kit (includes mounting hardware)				●								
	ZG-LFC114	Trane Voyager Retrofit Kit (includes retrofit bracket)				●								
	ZG-ECON1	Honeywell Economizer Retrofit Kit (includes retrofit bracket)				●								
	ZG-ECON2	Honeywell Economizer Retrofit Kit				●								
	ZG-TF112	Crank Arm Adaptor Kit (includes ZG-113 & KH-TF US)					●							
	ZG-TF2	Crank Arm Adaptor Kit (includes mounting hardware)					●							
	ZG-GMA	Crank Arm Adaptor Kit (includes mounting hardware)						●						
	ZG-NMA	Crank Arm 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	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												●
Housings	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)						●	●	●	●			

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

	Part Number	Description	AFB	AF	NFB	LF	TF	GM	AM	NM	LM	AH	LH	LU
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						●						

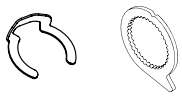
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

Clamps / Position Indicators / Rotation Limiters

K7-2 US Standard Clamp. Fits shafts 1/2" to 1.05".



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



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].

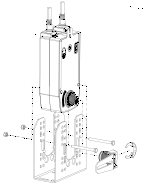


The shaft adaptors listed below may be used with AFB, AFX, NFB, NFX actuators.
For more information see page 410.
ZG-JSA-1 **ZG-JSA-2** **ZG-JSA-3**

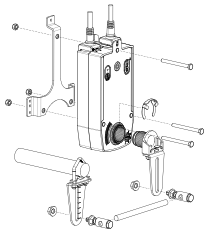
Non-Direct Mounting

ZG-AFB Crank Arm Adaptor Kit
For more information see page 401.

ZG-AFB118 Crank Arm Adaptor Kit
For more information see page 396.



ZG-AFB118



ZG-AFB

KH-AFB Crank Arm
Fits round shafts up to 3/4".



Mounting Brackets

The mounting brackets listed below may be used with AFB, AFX, NFB, NFX actuators.
For more information see pages 395, 396 and 405.
ZG-100 **ZG-101** **ZG-102** **ZG-118**

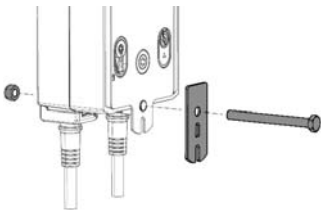
Housings

The housings listed below may be used with AF/NF actuators.
For more information see pages 411 to 415.
ZS-100 **ZS-150** **ZS-260** **ZS-300**

Miscellaneous

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

Z-AF AF, NF to AFB, AFX, NFB, NFX Retrofit Mounting Bracket



M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

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



KH-AFV V-Bolt Kit allows for direct coupling with KH-AF.
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 410.
ZG-JSA-1 **ZG-JSA-2** **ZG-JSA-3**

Non-Direct Mounting

ZG-AF US Crank Arm Adaptor Kit
For more information see page 402.

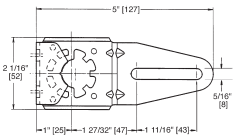
ZG-AF108 Crank Arm Adaptor Kit
For more information see page 398.



KH-AF Crank Arm
Fits round shafts up to 3/4”.

KH-AF-1 US Crank Arm 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 395, 398, 400 and 405.
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 411 to 415.
ZS-100 **ZS-150** **ZS-260** **ZS-300**

Miscellaneous

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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

BELIMO

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. For damper operating shafts.
Approx. 6 ⅝" [170 mm] extension for shafts
¼" to ¾" [6 to 20 mm] (must use K6-1 clamp).



AV8-25 Shaft Extension. For damper operating shafts.
Approx. 9.8" [170 mm] extension for shafts
5/16" to 1" [8 to 10 mm].

Non-Direct Mounting

ZG-LF112 Crank Arm Adaptor Kit
For more information see page 406.

ZG-LF2 Crank Arm Adaptor Kit
For more information see page 407.

ZG-LFC114 Crank Arm Adaptor Kit
Specifically for Trane Voyager unit retrofit
For more information see page 408.

ZG-ECON1 Crank Arm Adaptor Kit
Specifically for Honeywell economizer retrofit
For more information see page 409.

ZG-ECON2 Crank Arm Adaptor Kit
Specifically for Honeywell economizer retrofit
For more information see page 409.

KH-LF Crank Arm

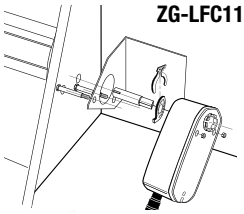
ZG-LF112



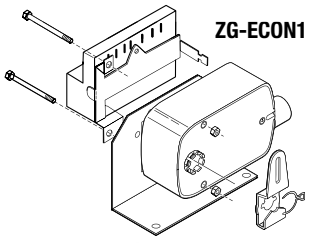


ZG-LF2

ZG-LFC114

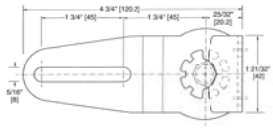


ZG-ECON1





KH-LF



Mounting Brackets

The mounting brackets listed below may be used with LF actuators.
For more information see page 406.
ZG-112

Housings

The housings listed below may be used with LF actuators.
For more information see pages 411 to 413.
ZS-100 **ZS-150** **ZS-260**

Miscellaneous

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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

Clamps / Position Indicators / Rotation Limiters

IND-TF Damper Position Indicator

ZDB-TF Angle of Rotation Limiter for TF actuators.

Shaft Adaptors / Extensions

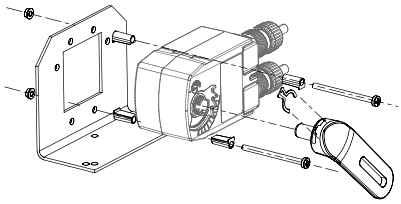
AV6-20 Shaft Extension. For damper operating shafts.
Approx. 6-5/8" [170 mm] extension for shafts 1/4" to 3/4" [6 to 20 mm].



Non-Direct Mounting

ZG-TF112 Crank Arm Adaptor Kit.
For more information see page 406.

ZG-TF2 Crank Arm Adaptor Kit.
For more information see page 407.



KH-TF US Crank Arm.
With 5/16" slot (can be used with KG8 or KG10A Ball Joint).

KH-TF-1 US Crank Arm.
With 1/4" slot (can be used with KG6 Ball Joint).

Mounting Brackets

The mounting brackets listed below may be used with TF actuators.
For more information see page 406.
ZG-113

Housings

The housings listed below may be used with TF actuators.
For more information see page 411.
ZS-100 **ZS-150**

Miscellaneous

TF-CC US Conduit Connector for AFB(X) / NFB (X) / TF / GM / AM / NM / LM

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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

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. 9.8" [170 mm] extension for shafts 5/16" to 1" [8 to 10 mm].



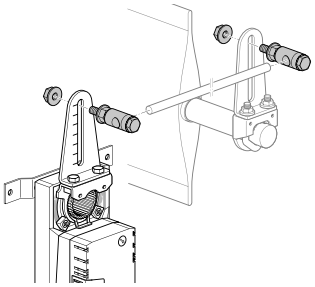
The shaft adaptors listed below may be used with GM actuators.
For more information see page 410.
ZG-JSA-1 **ZG-JSA-2** **ZG-JSA-3**

Non-Direct Mounting

ZG-GMA Crank Arm Adaptor Kit
For more information see page 403.

AH-GMA Crank Arm

23681-00001 GK Adaptor. For short shafting to connect to auxiliary switch or potentiometer.



Mounting Brackets

The mounting brackets listed below may be used with GM actuators.
For more information see pages 395 and 405.
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 411 to 415 and page 372.
ZS-100 **ZS-150** **ZS-260** **ZS-300** **ZS-T**

Miscellaneous

TF-CC US Conduit Connector for AFB, AFX / NFB, NFX / TF / GM / AM / NM / LM

Z-GMA GM to GMB, GMX Retrofit Mounting Bracket.

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

Clamps / Position Indicators / Rotation Limiters

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

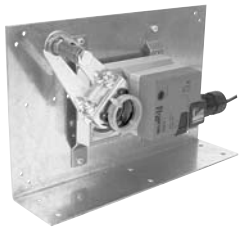
K-SA Reversible Clamp. Fits shafts up to 3/4".



Non-Direct Mounting

ZG-NMA Crank Arm Adaptor Kit
For more information see page 404.

AH-25 Crank Arm



Shaft Adaptors / Extensions

AV8-25 Shaft Extension. For damper operating shafts.
Approx. 9.8" [170 mm] extension for shafts
5/16" to 1" [8 to 10 mm].



The shaft adaptors listed below may be used with AM actuators.
For more information see page 410.
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 405.
ZG-100 ZG-101 ZG-103 ZG-104

Housings

The housings listed below may be used with AM actuators.
For more information see pages 411 to 415 and page 372.
ZS-100 ZS-150 ZS-260 ZS-300 ZS-T

Miscellaneous

TF-CC US Conduit Connector for AFB, AFX / NFB, NFX / TF / GM / AM / NM / LM

Z-SMA AM, SM to AMB, AMX Retrofit Mounting Bracket

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

Clamps / Position Indicators / Rotation Limiters

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

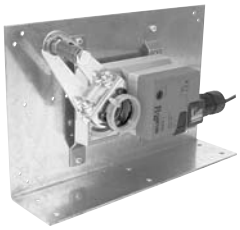
K-NA Reversible Clamp. Fits shafts up to 3/4".

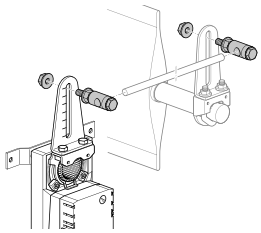


Non-Direct Mounting

ZG-NMA Crank Arm Adaptor Kit
For more information see page 404.

AH-25 Crank Arm





Shaft Adaptors / Extensions

ZG-NMSA-1 Short Shaft Extension



AV8-25 Shaft Extension. For damper operating shafts.
Approx. 9.8" [170 mm] extension for shafts
5/16" to 1" [8 to 10 mm].



The shaft adaptors listed below may be used with NM actuators.
For more information see page 410.
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 405.
ZG-103 ZG-104

Housings

The housings listed below may be used with NM actuators.
For more information see pages 411 and page 372.
ZS-100 ZS-150 ZS-T

Miscellaneous

TF-CC US Conduit Connector for AFB, AFX / NFB, NFX / TF / GM / AM / NM / LM

Z-NMA NM to NMB, NMX Retrofit Mounting Bracket

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

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-LM12	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 ⅝" [170 mm] extension for shafts ¼" to ¾" [6 to 20 mm] (must use K6-1 clamp).



Housings

The housings listed below may be used with LM actuators.
For more information see pages 411 and 372.
ZS-100 **ZS-150** **ZS-T**

Miscellaneous

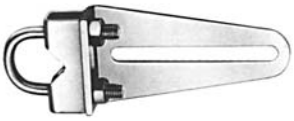
TF-CC US	Conduit Connector for TF / GM / AM / NM / LM
TF-P	Anti-Rotation T-Bracket for TF / LM.

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

AH/LH Accessories

Crank arms / Ball Joints / Push Rods

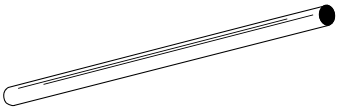
KH6	Universal Crank Arm (For more information see Universal Accessories).
KH8	Universal Crank Arm (For more information see Universal Accessories).
KG6	Ball Joint (Zinc Plated) (For more information see Universal Accessories).
KG8	Ball Joint (Galvanized) (For more information see Universal Accessories).
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).











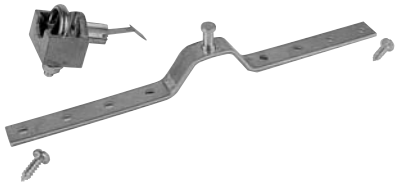
Miscellaneous

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.
Z-DS1	Rotary Support for Lateral Force Compensation
Z-KSA	5/16" Shaft Clevis
Z-KSC	3/8" Shaft Clevis



Housings

The housings listed below may be used with LU actuators.
For more information see pages 411 and 372.
ZS-100 **ZS-150** **ZS-T**

Miscellaneous

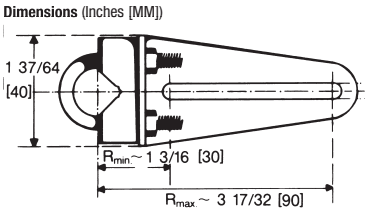
TF-CC US	Conduit Connector for TF / GM / AM / NM / LM

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

Universal Crank arms

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.





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.

KH10 Zinc plated steel. Slot width 21/64" (8.2mm).
For damper shafts:
9/16" to 1.05" dia. (14 to 25mm).
Uses KG10A Ball Joint.



KH10

KH12 Zinc plated steel. Slot width 21/64" (8.2mm).
For damper shafts:
3/4" to 1" dia. (20 to 25mm).
Uses KG10A Ball Joint.

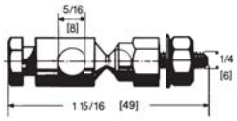


KH12

Ball Joints

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



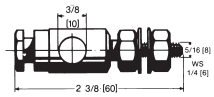


KG8 For KH8 Universal Crank Arm
Galvanized steel. 90° angle.
For 5/16" dia. rod (8mm).



KG10A Zinc Plated Steel
Used with following crank arms:
KH8 = 3/8" (10mm)

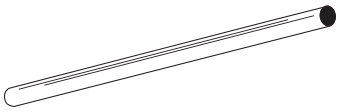




Push Rods

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

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



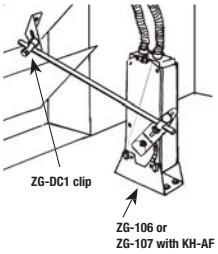
Damper Clips

ZG-DC1 Mounts to Damper Blades – 3.5"

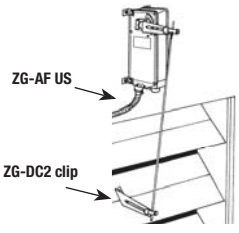
ZG-DC2 Mounts to Damper Blades – 6"

The ZG-DC1 and ZG-DC2 damper clips are designed to mount to damper blades and work as crank arms 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.









M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-102 Multiple Actuator Mounting Bracket

For GK, AF and GM Series Actuators



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 GK, 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.

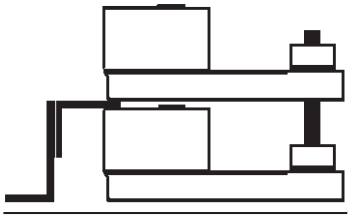


FIGURE A
The major advantage with this method is it requires less mounting area. The manual override, if available, cannot be used in this configuration.

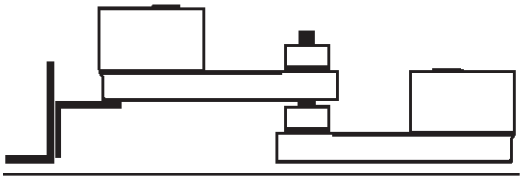
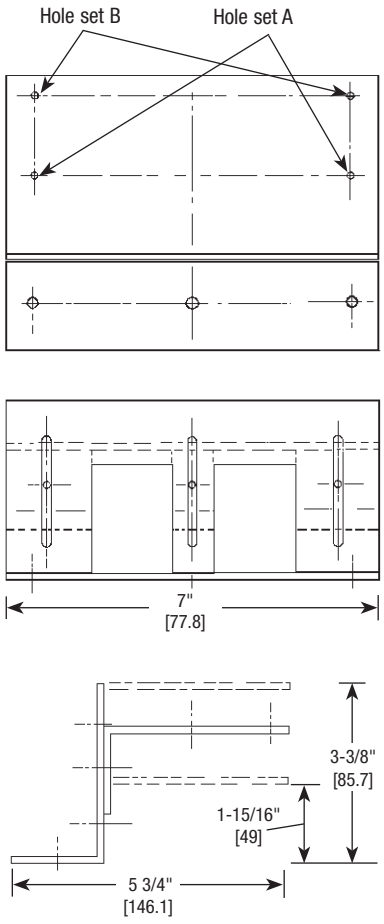


FIGURE B
The major advantages are that a shorter shaft is required and a lower profile is achieved.

Dimensions (Inches [mm])



Material	12 GA Galvanized
Weight	1.8 lbs.

OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

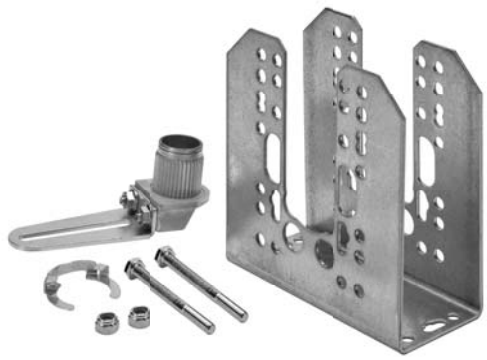
KIT	MOUNTING BRACKET*	SUITABLE ACTUATOR
ZG-EFB	ZG-100, ZG-101	EF
ZG-AFB	ZG-100, ZG-101	AF, NF
ZG-AFB118	ZG-118 (included)	AF, NF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	N/A	LF
ZG-LFC114	N/A	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	TF
ZG-TF2	N/A	TF
ZG-GMA	ZG-100, ZG-101, ZG-103, ZG-104	GK, GM
ZG-NMA	ZG-100, ZG-101, ZG-103, ZG-104	NM, AM

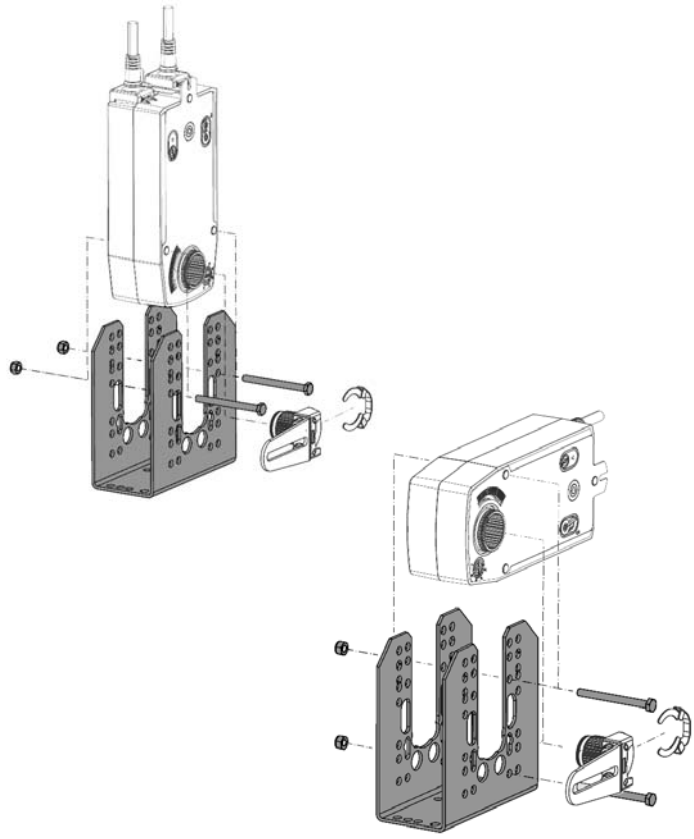
*Unless otherwise noted, mounting brackets are not included in crank arm adaptor kits.

P10414 - 05/13 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-AFB118 Crank Arm Adaptor Kit

For AFB, AFX, NFB and NFX Series Actuators





Application

The ZG-AFB118 Crank Arm 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-AFB118 Crank Arm Adaptor Kit includes:

1 ZG-118 Mounting Bracket
1 KH-AFB Crank Arm with Retaining Clip
2 Bolts with Nuts

NOTE: May require crank arm and ball joints

The ZG-118 is provided with hole patterns to mount the AFB, AFX, NFB and NFX actuators in either a horizontal or vertical position to meet space requirements. The KH-AFB crank arm is required to fully convert the AFB, AFX, NFB or NFX for crank arm operation.

The ZG-118 is designed to mount the AFB, AFX, NFB and NFX actuators in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Colman™) and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

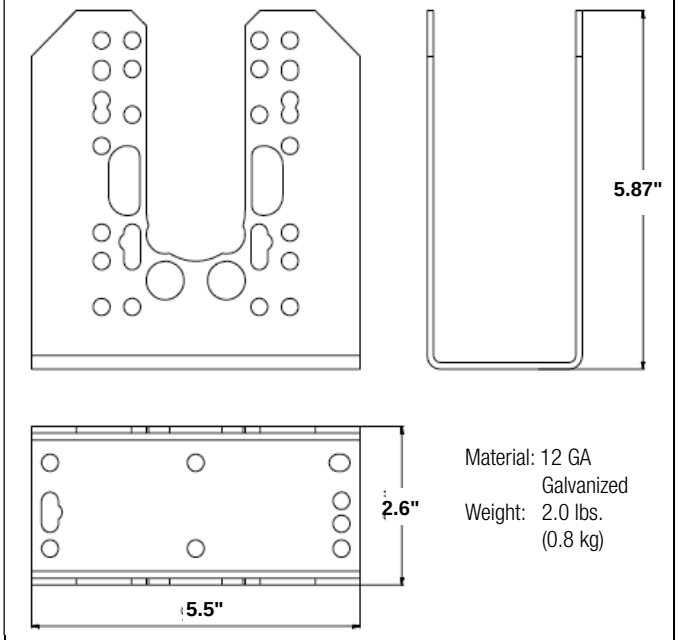
Honeywell	**M91…**	**M955…**	**M975…**
	M945…	**M965…**	**M8…**
Johnson	**M110…**	**M130…**	**M150…**
	M120…	**M140…**	
Barber Coleman			
	MA3…	**MA4…**	**MA5…**

OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	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	AF
NA	ZG-107	AF

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

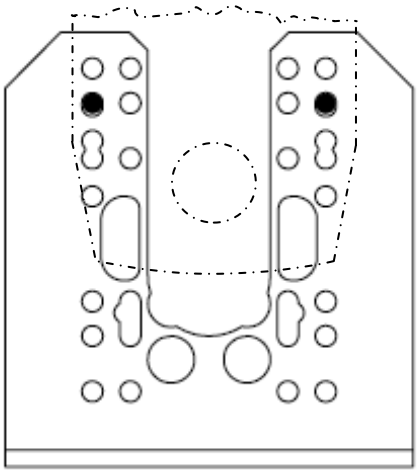
Dimensions (Inches [mm])



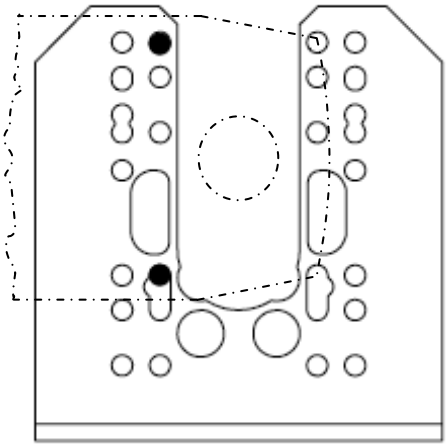
Material: 12 GA Galvanized
Weight: 2.0 lbs. (0.8 kg)

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

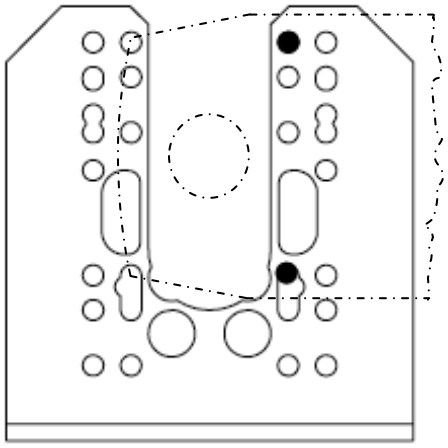
ZG-AFB118 Crank Arm Adaptor Kit
Mounting Positions for Typical Replacements



Barber Colman™ MA Type - Vertical

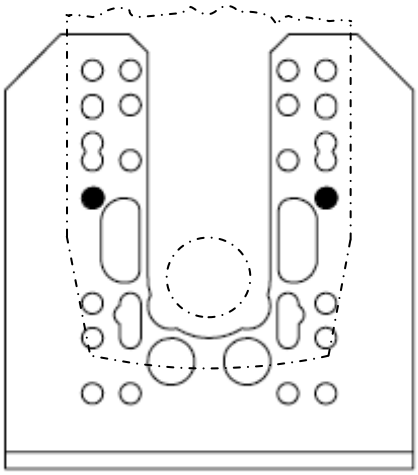


Barber Colman™ MA Type - Horizontal (left)

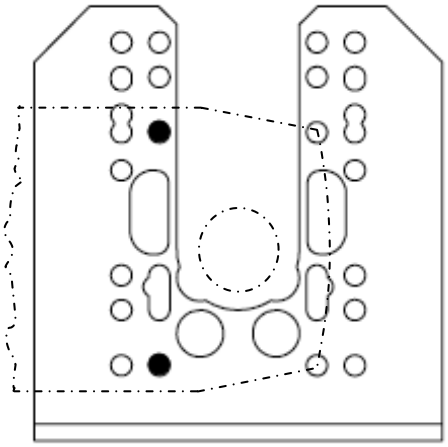


Barber Colman™ MA Type - Horizontal (right)

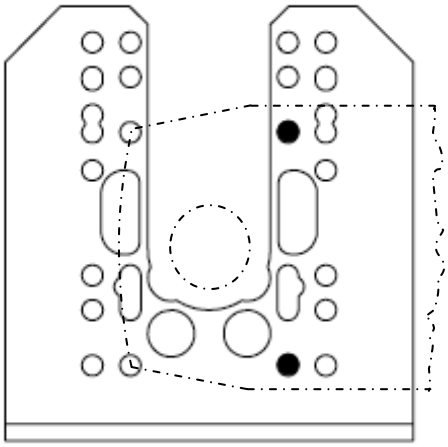
Black holes represent correct bolt locations



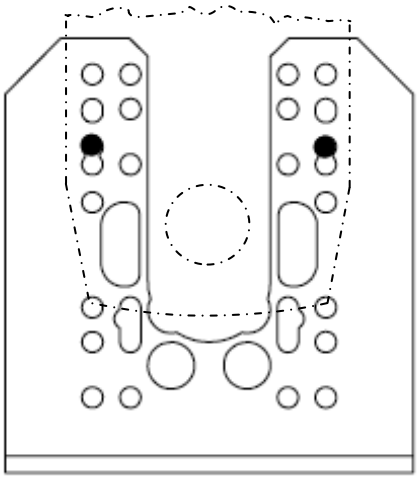
Honeywell™ Mod. IV Type - Vertical



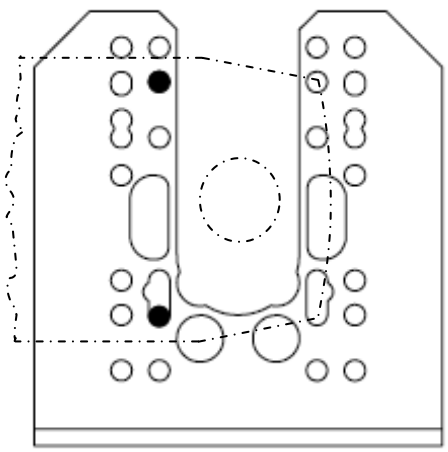
Honeywell™ Mod. IV Type - Horizontal (left)



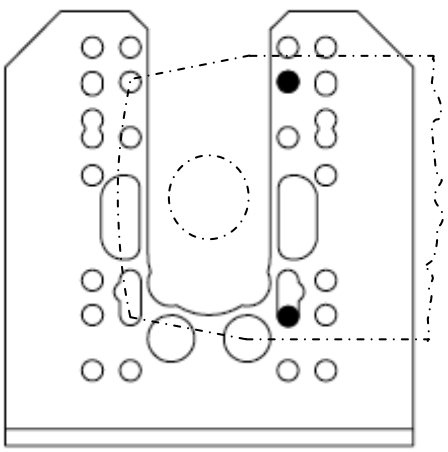
Honeywell™ Mod. IV Type - Horizontal (right)



Johnson Controls™ 100 Series Type and Honeywell™ Mod. III Type - Vertical



Johnson Controls™ 100 Series Type and Honeywell™ Mod. III Type - Horizontal (left)

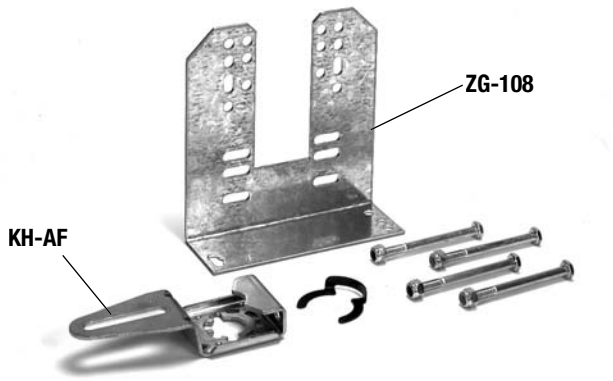


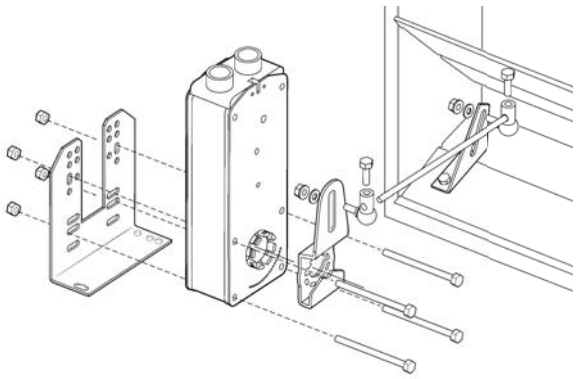
Johnson Controls™ 100 Series Type and Honeywell™ Mod. III Type - Horizontal (right)

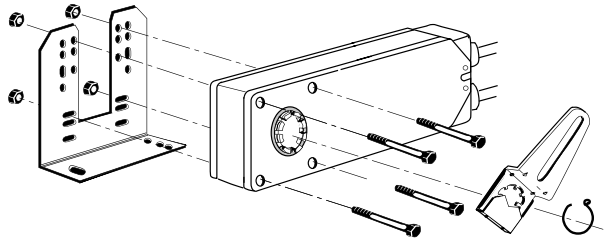
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-AF108 Crank Arm Adaptor Kit

For AF Series Actuators







Application

The ZG-AF108 Crank Arm 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 Crank Arm Adaptor Kit includes:

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

NOTE: May require crank arm and ball joints

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

The ZG-108 Mounting Bracket is designed to mount the AF series actuator in the same mounting locations as common foot mounted, crank arm 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

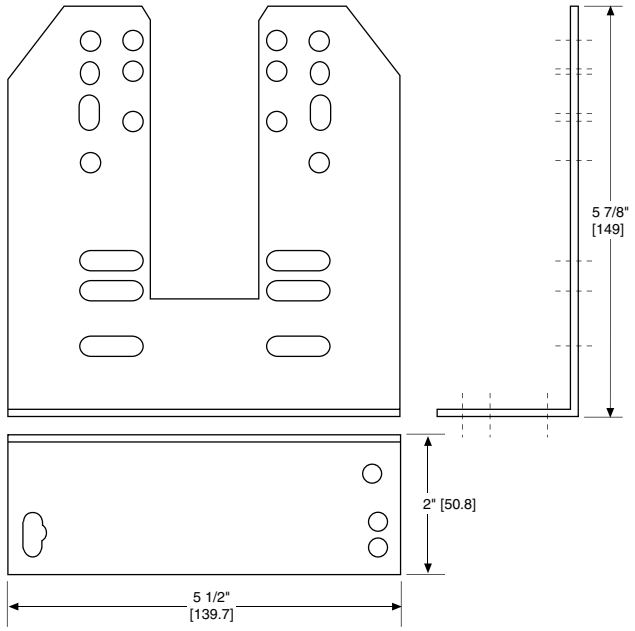
Honeywell	**M91…**	**M955…**	**M975…**
	M945…	**M965…**	**M8…**
Johnson	**M110…**	**M130…**	**M150…**
	M120…	**M140…**	
Barber Coleman			
	MA3…	**MA4…**	**MA5…**

OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	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	AF
NA	ZG-107	AF

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

Dimensions (Inches [mm])

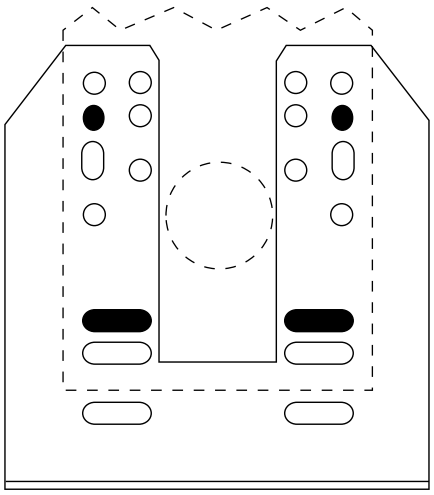


Material	12 GA Galvanized
Weight	1.0 lbs. (0.45 kg)

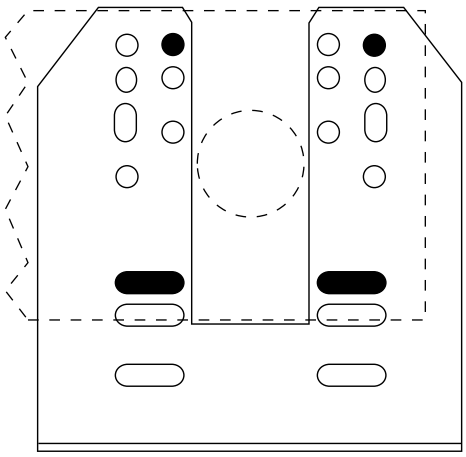
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-AF108 Crank Arm Adaptor Kit

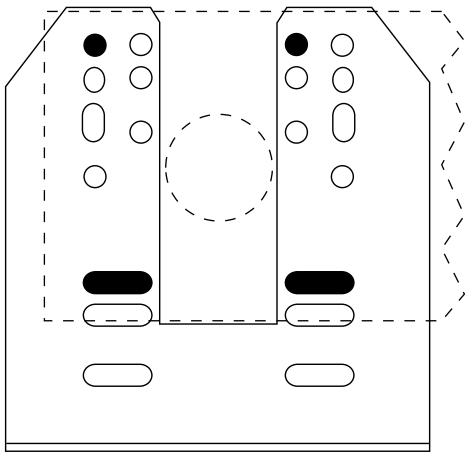
Mounting Positions for Typical Replacements



Barber Colman™ MA Type - Vertical

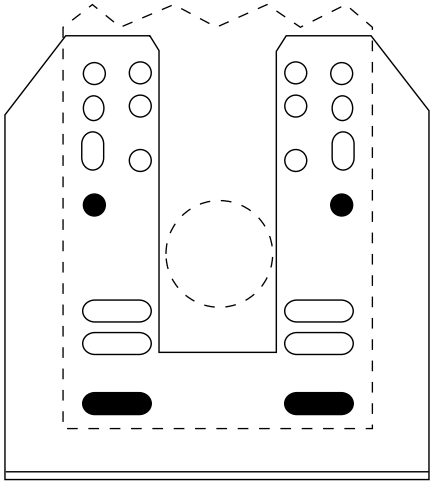


Barber Colman™ MA Type - Horizontal (left)

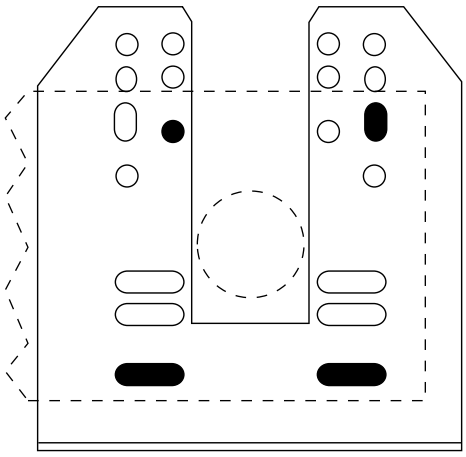


Barber Colman™ MA Type - Horizontal (right)

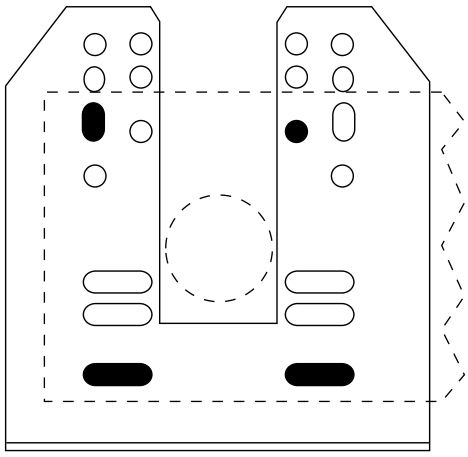
Black holes represent correct bolt locations.



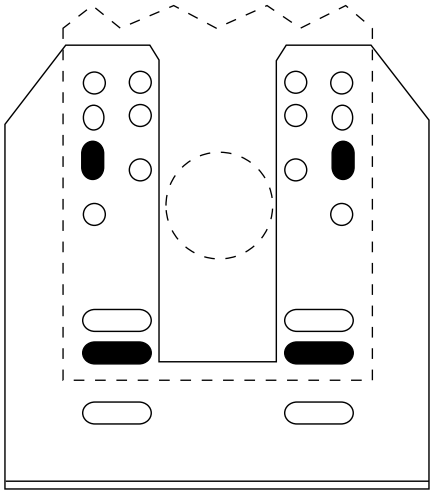
Honeywell™ Mod. IV Type- Vertical



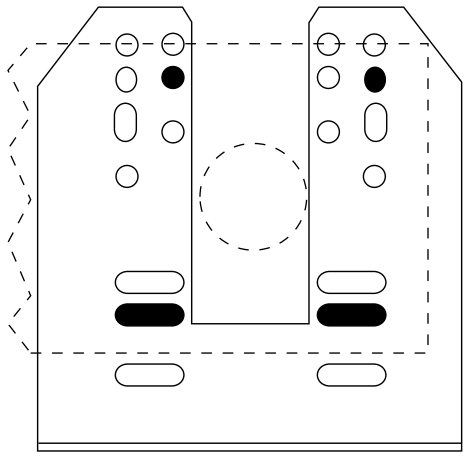
Honeywell™ Mod. IV Type - Horizontal (left)



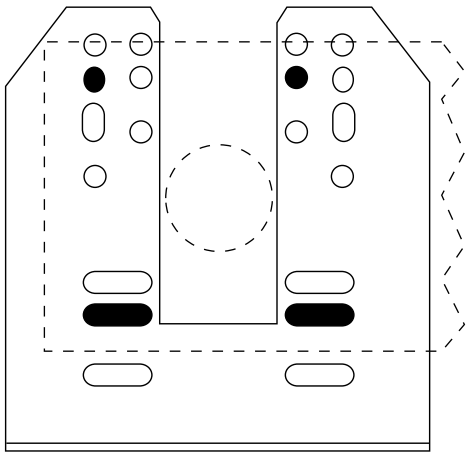
Honeywell™ Mod. IV Type - Horizontal (right)



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



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

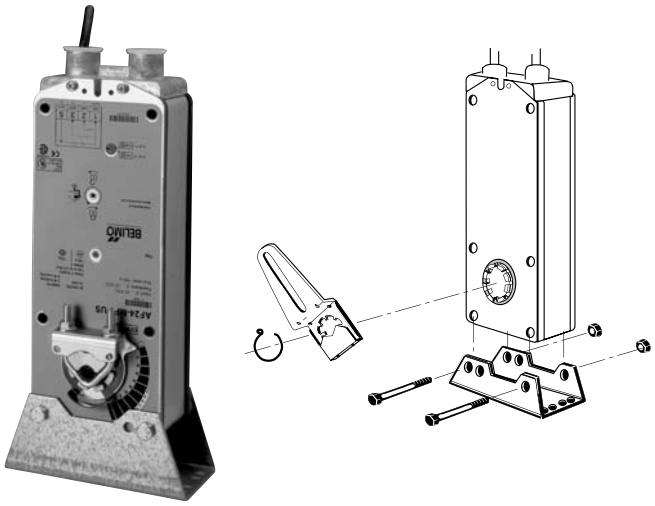


Johnson Control™ 100 Series Type and Honeywell™ Mod. III Type Horizontal (right)

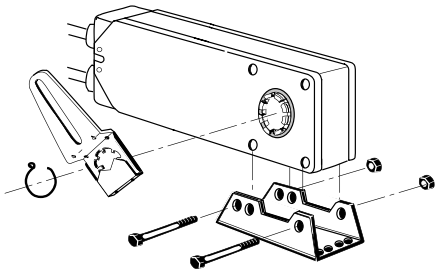
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-106 and ZG-107 Universal Mounting Brackets

For AF 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 AF series actuators in either a horizontal or vertical position to meet space requirements.

The KH-AF crank arm is required to fully convert the AF for crank arm operation.

The ZG-106 and ZG-107 are designed to mount the AF series actuators in the same mounting locations as common foot mounted, crank arm 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 crank arm in the same relative position as the Honeywell™ Mod IV actuators. The ZG-107 is designed to place the crank arm 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

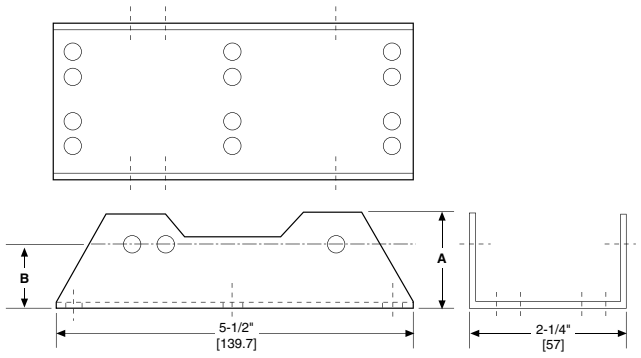
Honeywell	**Mod III**

OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	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	AF
NA	ZG-107	AF

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

Dimensions (Inches [mm])



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

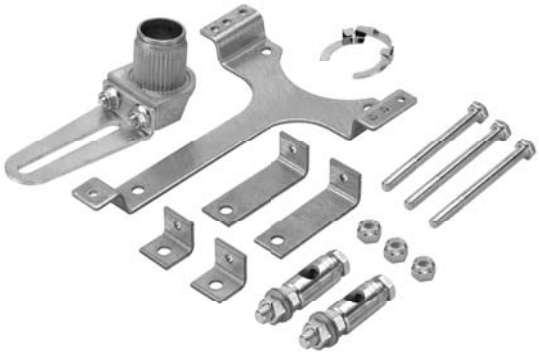
Material		12 GA Galvanized
Weight	ZG-106	0.7 lbs.
	ZG-107	0.9 lbs.

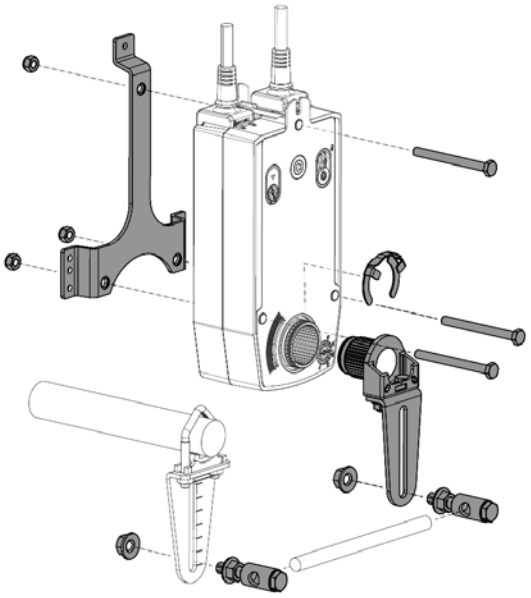
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

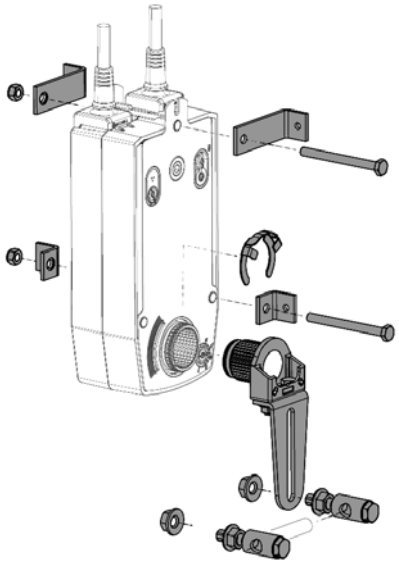
ZG-AFB Crank Arm Adaptor Kit

For AFB, AFX, NFB and NFX Series Actuators

ZG-AFB







Application

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

The ZG-AFB Crank Arm Adaptor Kit includes:

1 KH-AFB Crank Arm with Retaining Clip
1 "T" Bracket
4 Mounting Feet
3 Bolts with Nuts
2 KG10A Ball Joints

The following Universal Mounting Brackets are needed to fully convert to crank arm 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, AF, AFB(X) and NFB(X) 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 405.

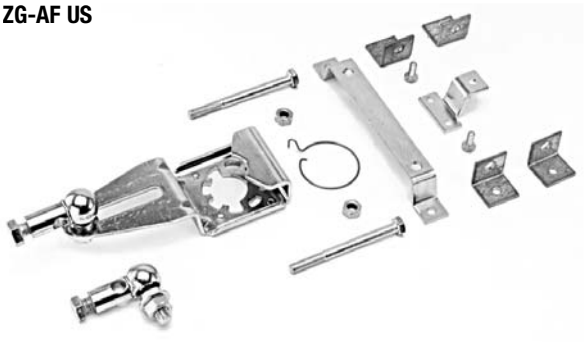
OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

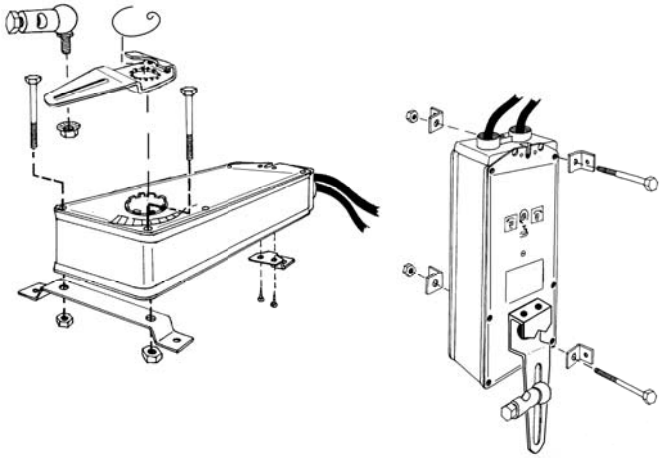
KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	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	AF
NA	ZG-107	AF

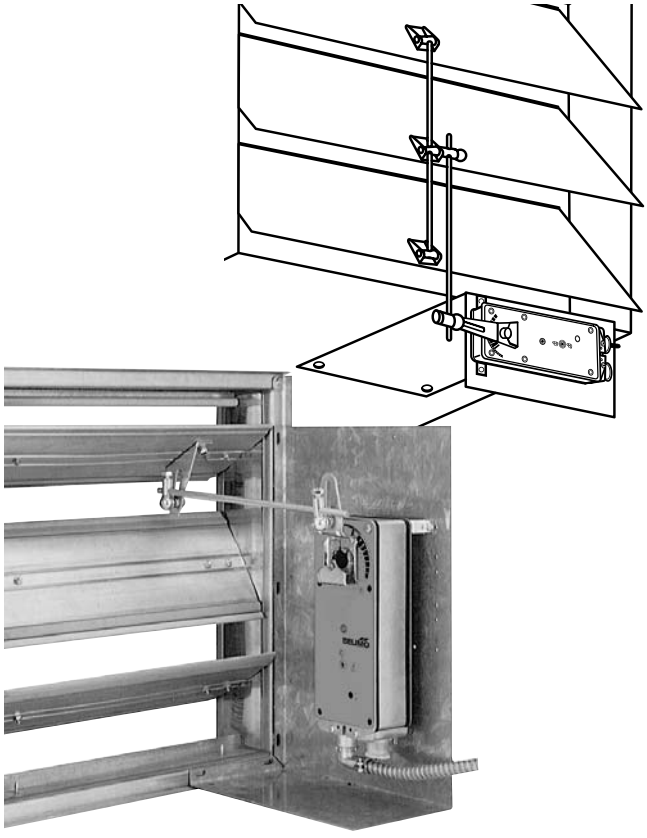
*Unless otherwise noted, mounting brackets are not included in crank arm adaptor kits.

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-AF US







Application

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

The ZG-AF US Crank Arm Adaptor Kit includes:

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

The following Universal Mounting Brackets are needed to fully convert to crank arm 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, AF, AFB(X) and NFB(X) 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 405.

OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

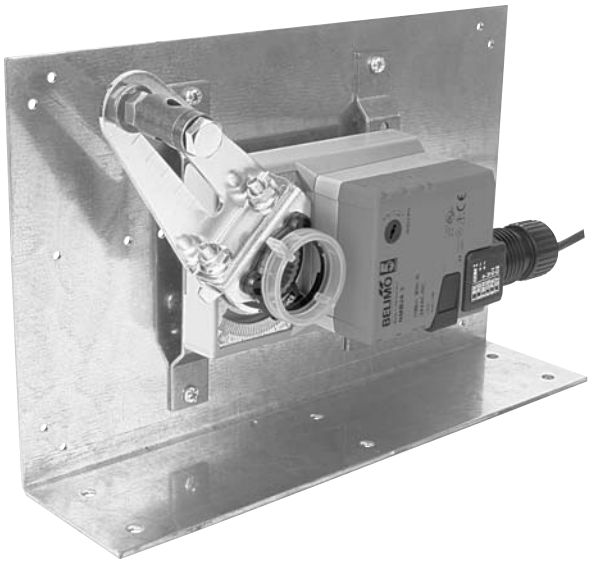
KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	AF
ZG-LF112	ZG-112 (Included)	LF
ZG-LF2	NA	LF
ZG-LFC114	NA	LF
ZG-ECON1	ZG-112 (Included)	LF
ZG-ECON2	ZG-112 (Included)	LF
ZG-TF112	ZG-113 (Included)	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	AF
NA	ZG-107	AF

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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-GMA Crank Arm Adaptor Kit

For GM Series Actuators



Application

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

The ZG-GMA Crank Arm Adaptor Kit includes:

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

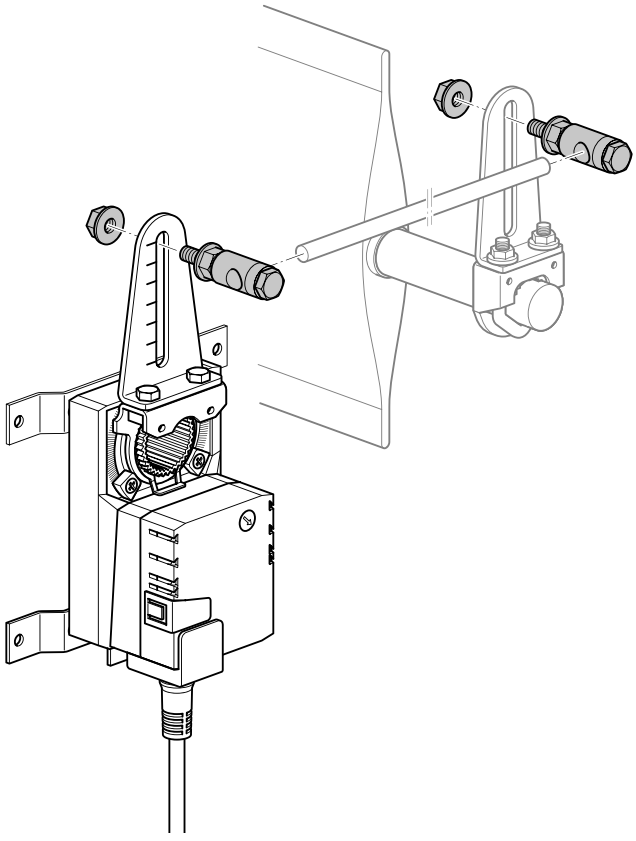
The following Universal Mounting Brackets are needed to fully convert to crank arm operation:

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, AFB(X), NFB(X), 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.

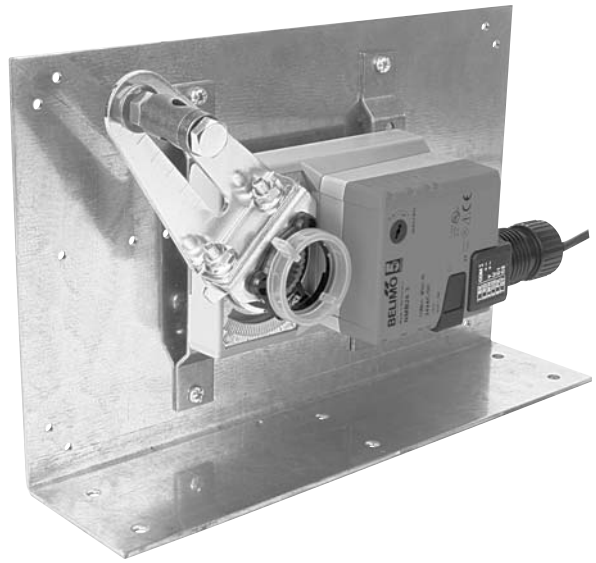
For technical data and dimensions on ZG-100 , ZG-101, ZG-103, and ZG-104 Universal Mounting Brackets, see page 405.



OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS		
KIT	**MOUNTING BRACKET***	**ACTUATOR USED WITH**
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	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	AF
NA	ZG-107	AF
NA	ZG-107	AF

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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.



Application

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

The ZG-NNA Crank Arm Adaptor Kit includes:

1 Crank Arm
2 KG10 Ball Joints
2 Mounting Brackets
1 Spacer
Mounting Hardware

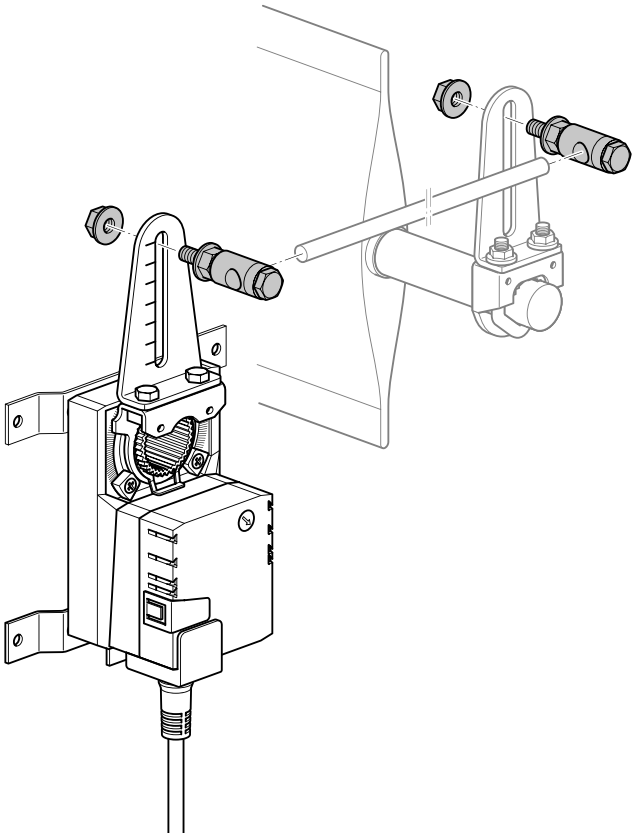
The following Universal Mounting Brackets are needed to fully convert to crank arm operation:

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, AFB(X), NFB(X), 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 405.



OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	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	AF
NA	ZG-107	AF
NA	ZG-107	AF

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

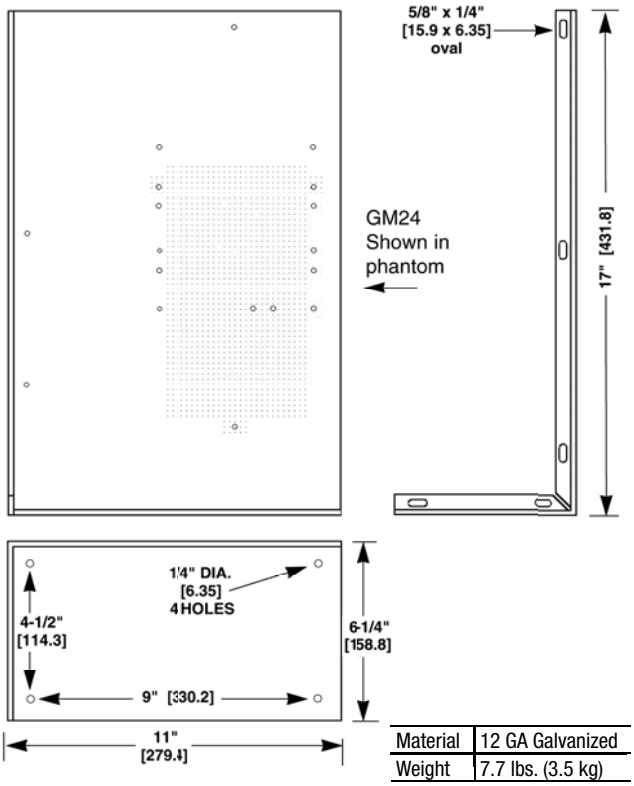
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

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

For AM, SM, GM, NFB(X), and AFB(X) Series Actuators

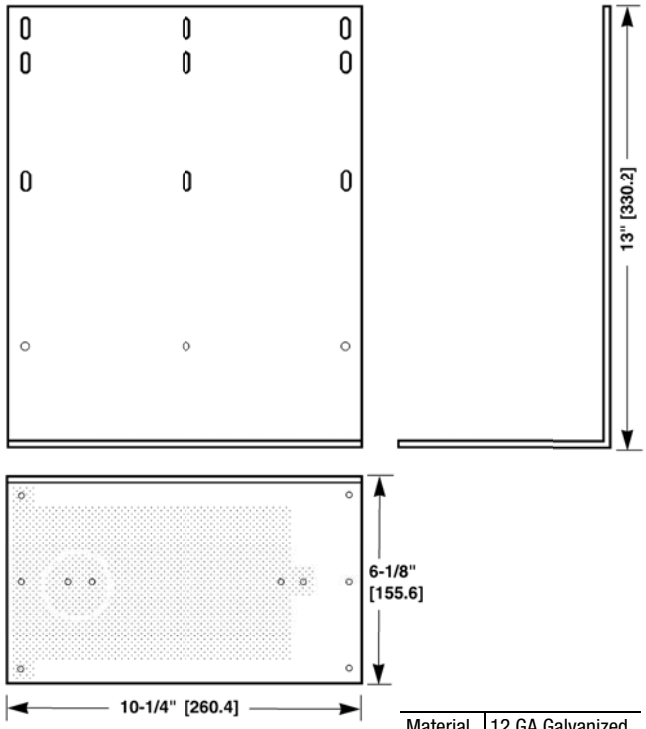
BELIMO

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



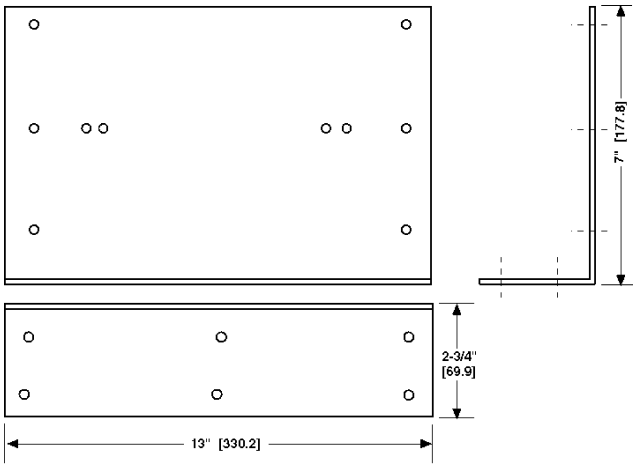
Material	12 GA Galvanized
Weight	7.7 lbs. (3.5 kg)

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



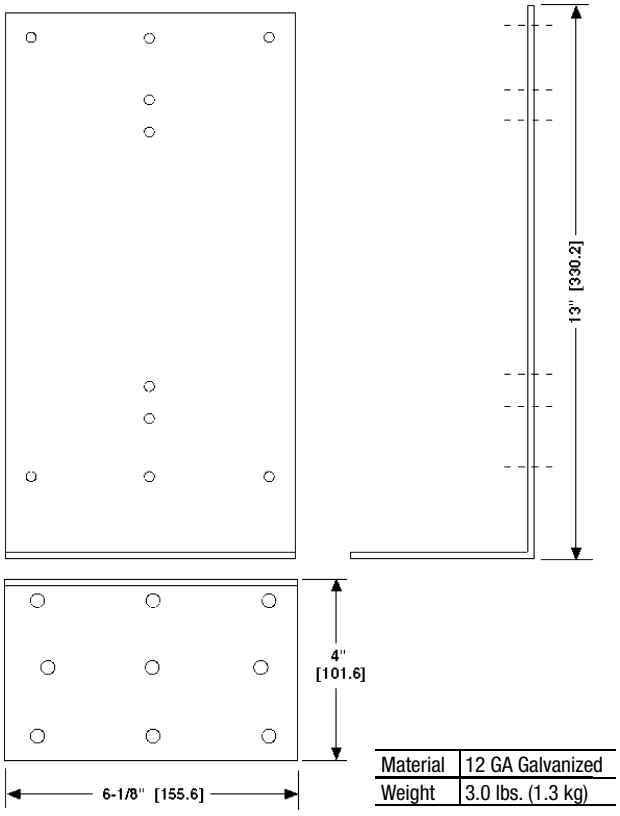
Material	12 GA Galvanized
Weight	5.6 lbs. (2.5 kg)

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



Material	12 GA Galvanized
Weight	2.9 lbs. (1.3 kg)

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



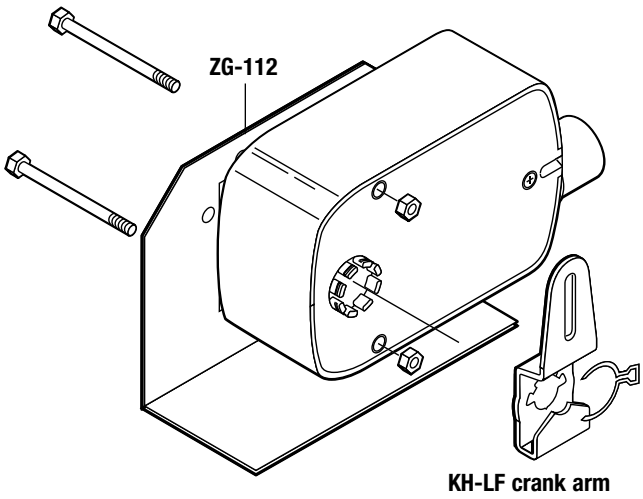
Material	12 GA Galvanized
Weight	3.0 lbs. (1.3 kg)

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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-LF112 Crank Arm Adaptor Kit

For LF Series Actuators



Application

The ZG-LF112 Crank Arm 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 Crank Arm Adaptor Kit includes:

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

NOTE: May require crank arm 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.

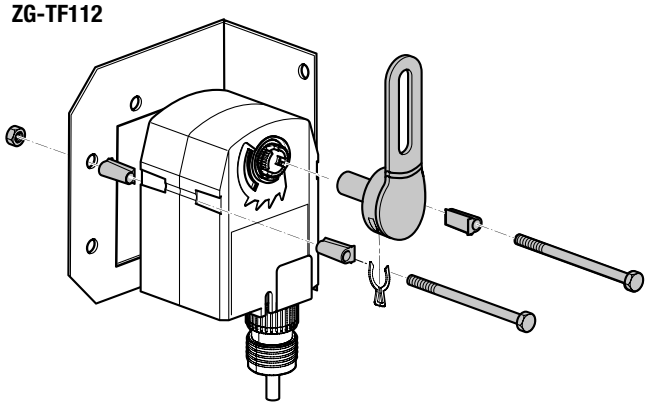
The ZG-112 Mounting Bracket is designed to mount the NF and AF series actuator in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

Honeywell	**M84…**	**M7**

ZG-TF112 Crank Arm Adaptor Kit

For TF Series Actuators



Application

The ZG-TF112 Crank Arm 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 Crank Arm Adaptor Kit includes:

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

NOTE: May require crank arm 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, crank arm 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…**

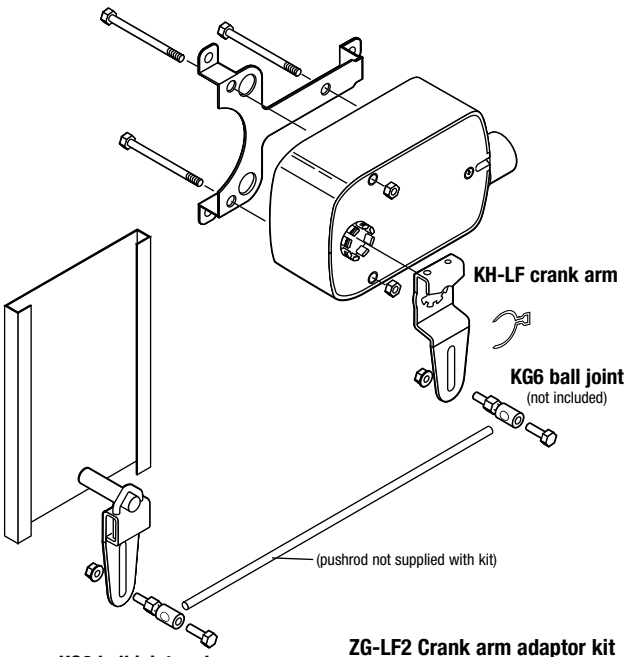
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-LF2 and ZG-TF2 Crank Arm Adaptor Kits

For LF and TF Series Actuators

ZG-LF2 Crank Arm Adaptor Kit

For LF Series Actuators



ZG-LF2 Crank arm adaptor kit

Application

The ZG-LF2 Crank Arm 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 Crank Arm Adaptor Kit includes:

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

NOTE: May require crank arm and ball joints

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

ZG-TF2 Crank Arm Adaptor Kit

For TF Series Actuators

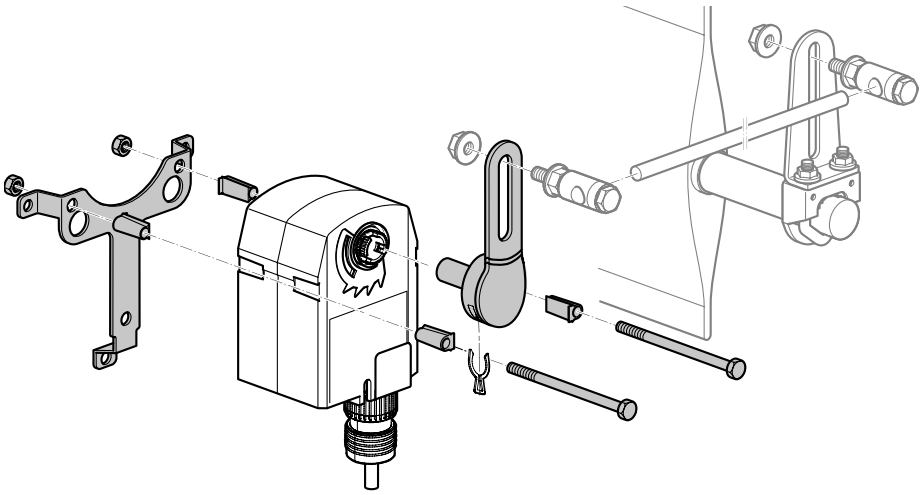
Application

The ZG-TF2 Crank Arm 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 Crank Arm Adaptor Kit includes:

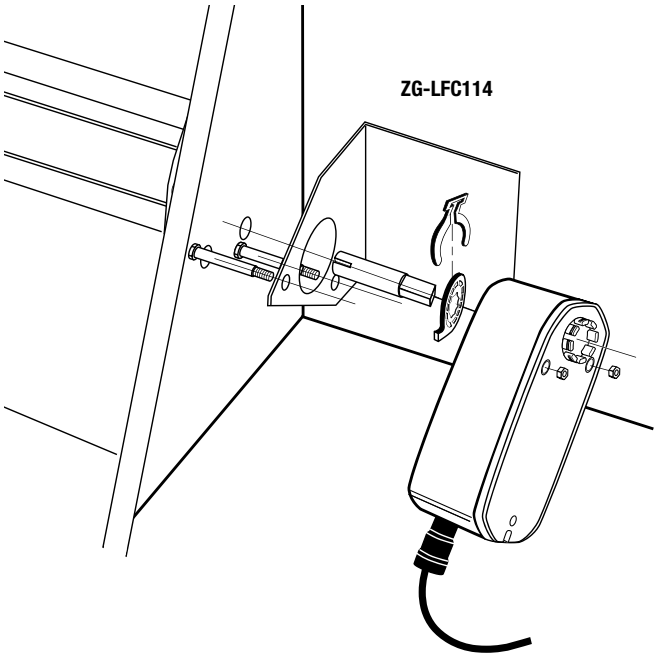
1 Mounting Bracket
1 KH-TF-1 Crank Arm with Retaining Clip
3 Bolts with Nuts

NOTE: May require crank arm and ball joints



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

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.



Application

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

The ZG-LFC114 Crank Arm Adaptor Kit includes:

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

Note: May require crank arm and ball joints

USE WHEN REPLACING THESE ACTUATORS

Honeywell	**M84…**	**M7…**

OTHER CRANK ARM ADAPTOR KITS AND UNIVERSAL MOUNTING BRACKETS

KIT	MOUNTING BRACKET*	ACTUATOR USED WITH
ZG-AFB	NA	AFB, AFX, NFB, NFX
ZG-AFB118	ZG-118	AFB, AFX, NFB, NFX
ZG-AF108	ZG-108 (Included)	AF
ZG-AF US	ZG-100, ZG-101	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	AF
NA	ZG-107	AF
NA	ZG-107	AF

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

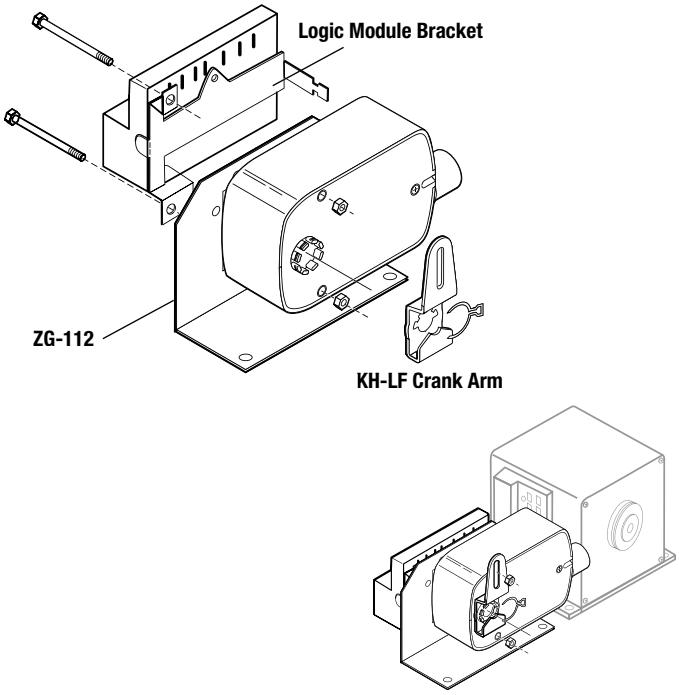
M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZG-ECON1 and ECON2 Crank Arm Adaptor Kits

For LF and Series Actuators

ZG-ECON1 Crank Arm Adaptor Kit

For LF Series Actuators



Application

The ZG-ECON1 Crank Arm 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 Crank Arm Adaptor Kit includes:

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

NOTE: May require crank arm 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.

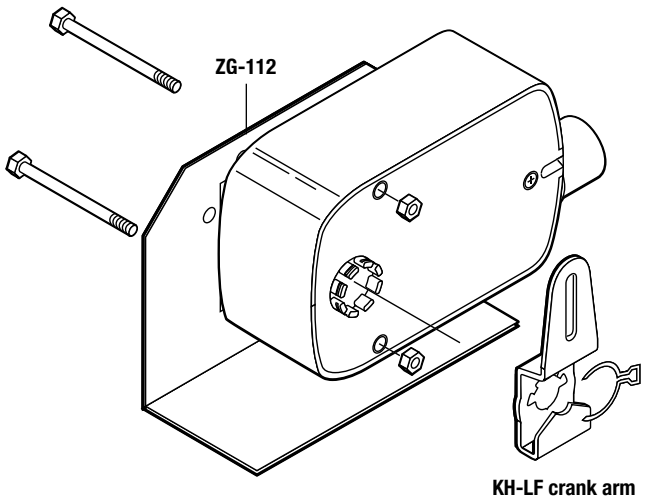
The ZG-112 Mounting Bracket is designed to mount the TF and LF series actuator in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell™, Siebe™ (Barber Coleman™), and Johnson Controls™ actuators for easy retrofit.

USE WHEN REPLACING THESE ACTUATORS

Honeywell	**M84…**	**M7…**

ZG-ECON2 Crank Arm Adaptor Kit

For LF Series Actuators



Application

The ZG-ECON2 Crank Arm 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 Crank Arm Adaptor Kit includes:

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

NOTE: May require crank arm and ball joints

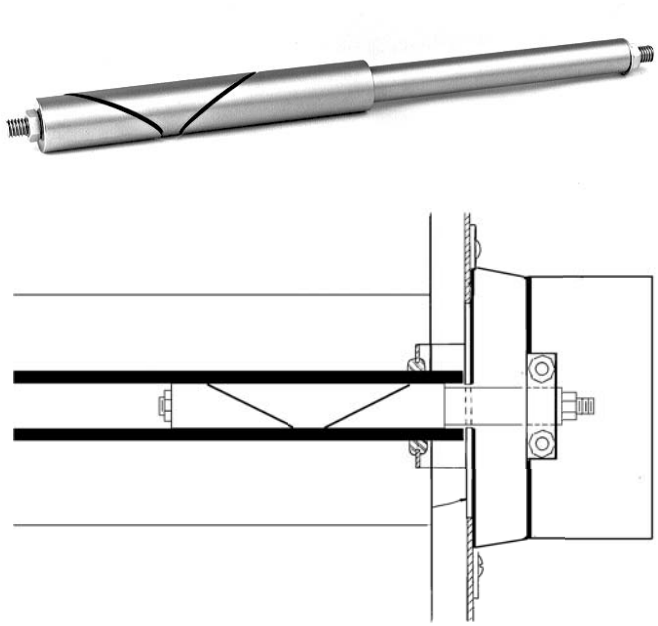
The ZG-112 is provided with hole patterns to mount the LF series actuators in either a horizontal or vertical position to meet space requirements.

The ZG-112 Mounting Bracket is designed to mount the TF and LF series actuator in the same mounting locations as common foot mounted, crank arm 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…**

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.



Application

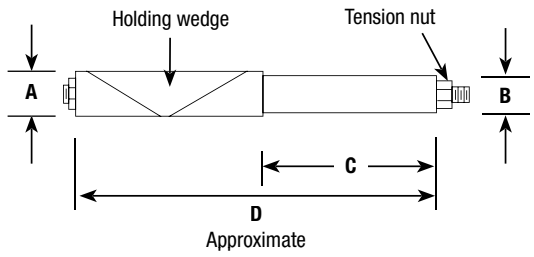
The ZG-JSA jack shaft adaptors are designed to be inserted into hollow jack shafts which have an outside diameter greater than 3/4 inch and provide a 3/4 inch shaft for mounting Belimo actuators.

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”

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

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.

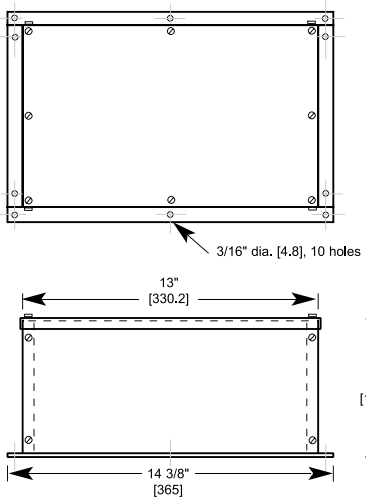
It may be assembled with 2 sides, 2 ends and the cover to completely conceal the actuator. A hole punch can be used to provide a hole to mount a wire conduit. A foam gasket is also provided to achieve a better seal between the cover and sides or from the base to the mounting surface.

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])



Material	16 GA Galvaneal
Weight	3.5 lbs. (1.59 kg)

NOTE: The ZS-100 is supplied

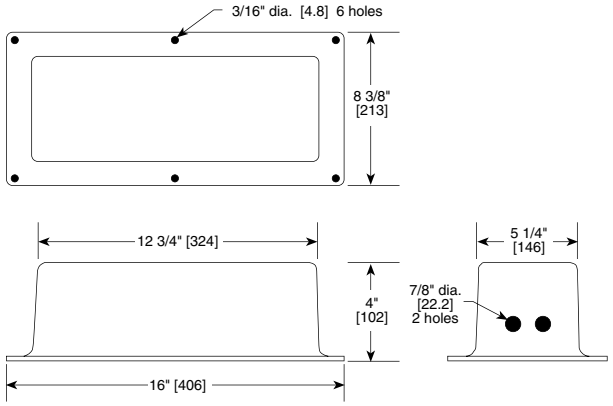
ZS-150 Weather Shield



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])



Material	Polycarbonate
Color	Clear, smoke tinted
Weight	0.8 lbs. (.4 kg)

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZS-260 Explosion-proof Housing

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



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

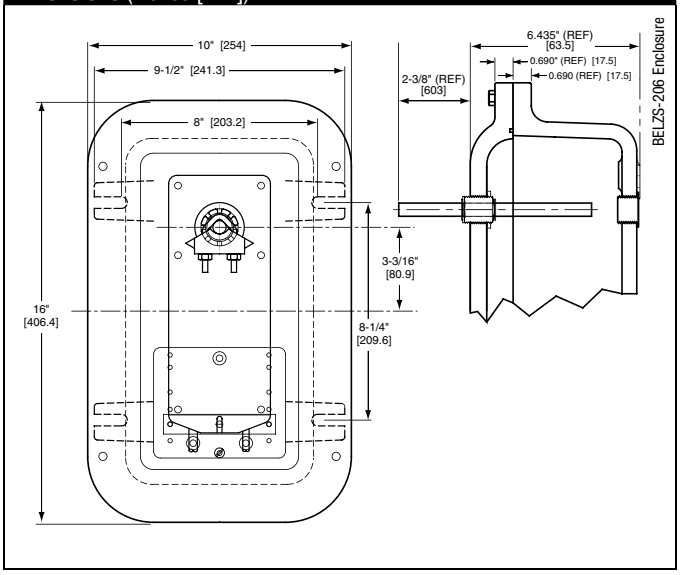
KH8	Universal crank arm
KG8	Universal ball joint
KG10	Universal ball joint
ZG-109	Right angle mounting bracket
ZG-110	Stand-off mounting bracket

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 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.

Dimensions (Inches [mm])

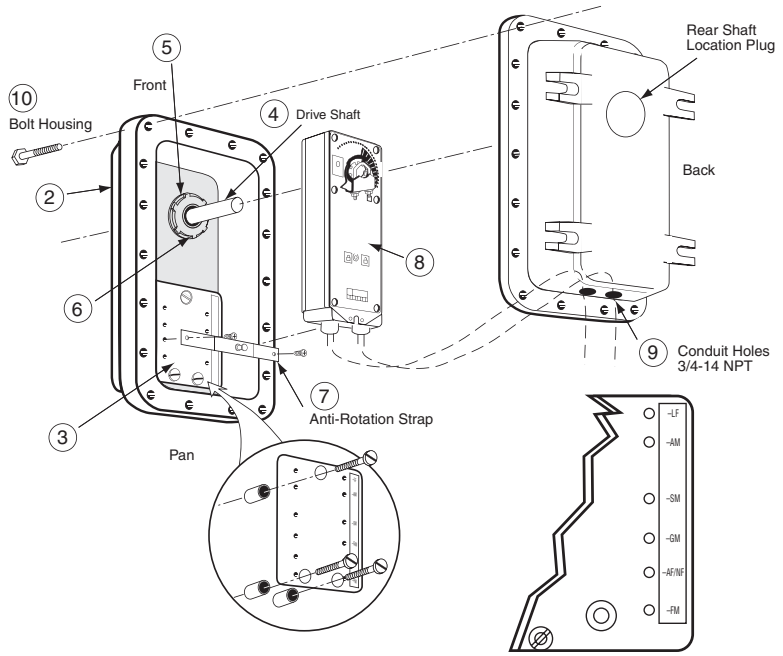


M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

ZS-260 Explosion-proof Housing

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

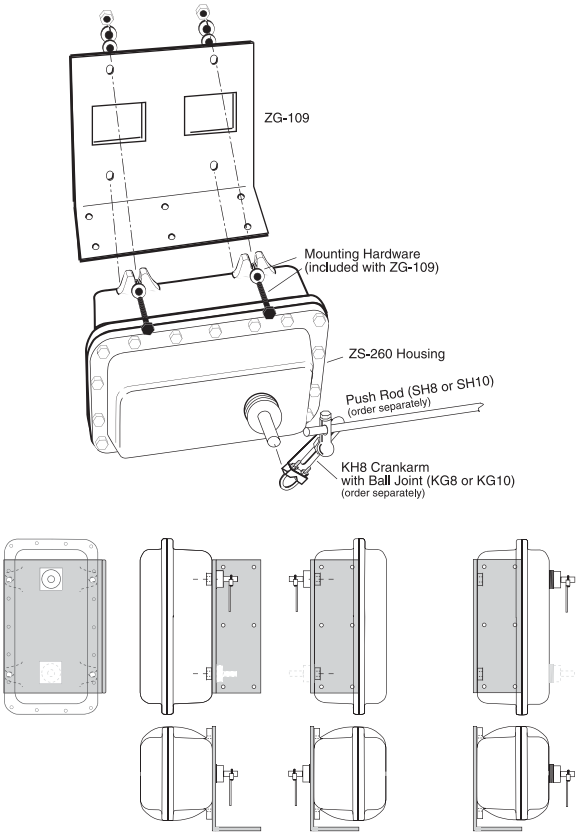
ZS-260 Shaft Thru Front



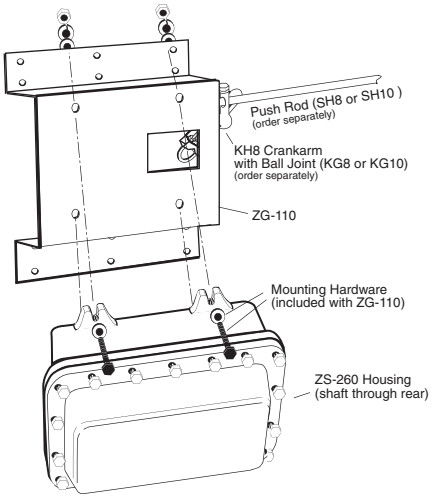
ZS-260 Mounting Instructions

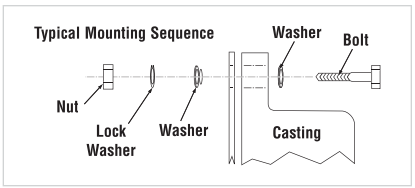
1. Determine proper operating shaft location.
2. Remove threaded plug from the hole in which the operating shaft will be mounted.
3. Install the anti-rotation strap, mounting plate, to the side of the housing where the operating shaft will be mounted.
4. From the inside surface of the housing, insert 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.

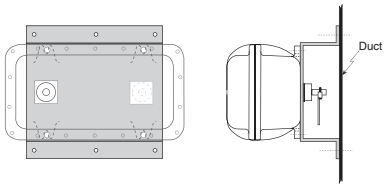
Typical ZG-109 Mounting



Typical ZG-110 Mounting







M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.



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

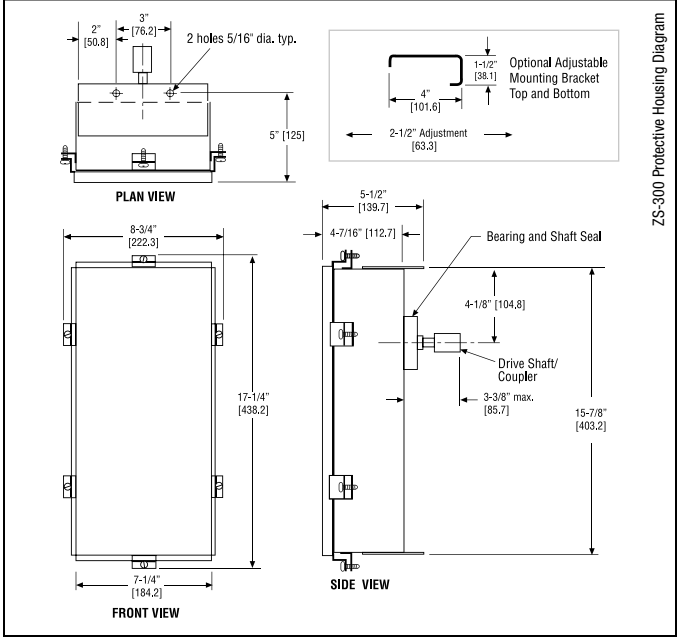
ZS-300	304 stainless steel housing with mounting brackets
ZS-300-1	304 stainless steel housing without mounting brackets
ZS-300-5	316L stainless steel housing with mounting brackets

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.

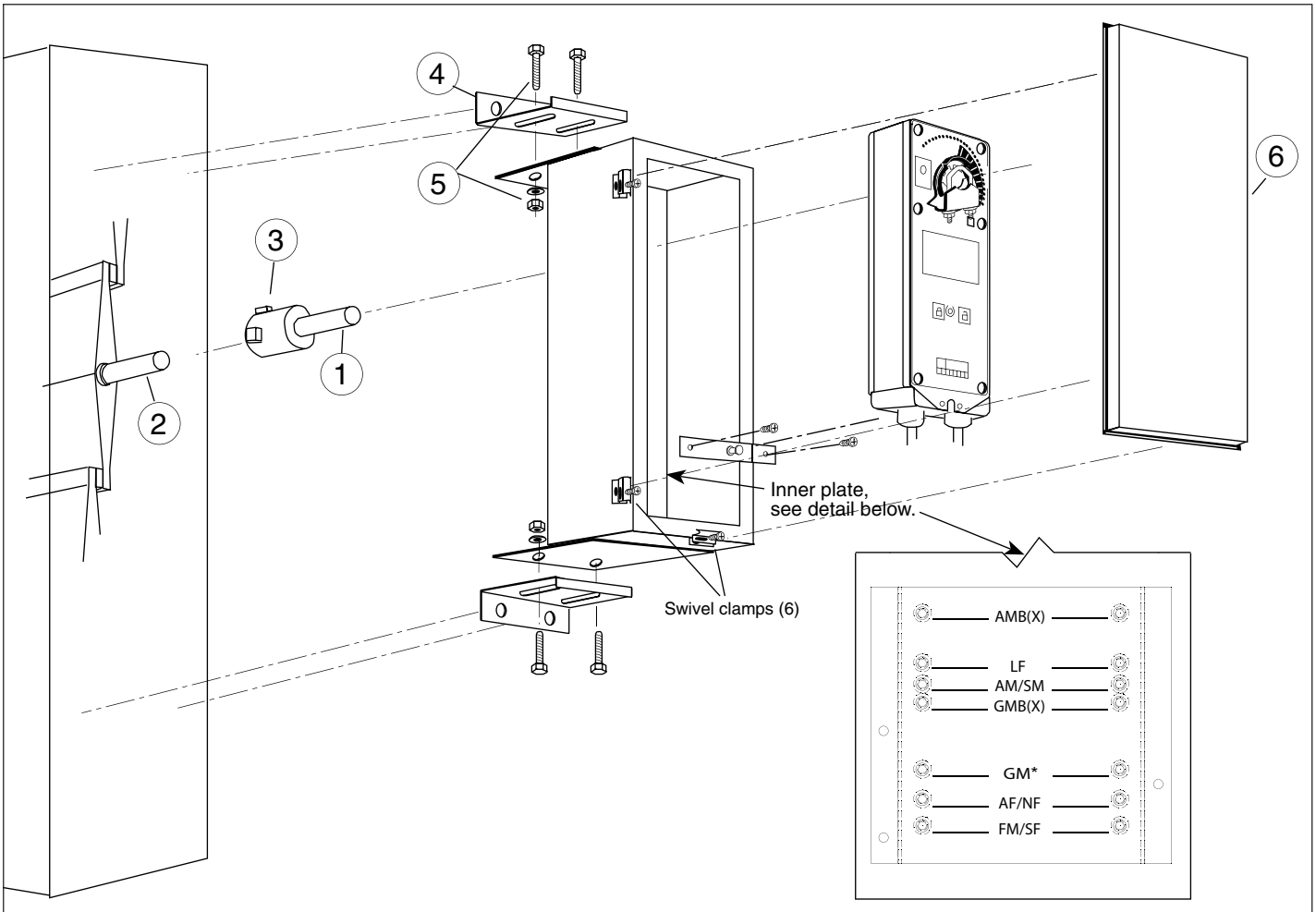
Dimensions (Inches [mm])



M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

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.



Anti-Rotation Strap Mounting Locations*

*AFB, AFX, NFB and NFX can be installed in existing GM mounting location using the Z-AF retrofit bracket.

M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.