

## Damper Construction Details

For Air Balance  
Control and Balance Dampers  
Made from Extruded Aluminum or Steel

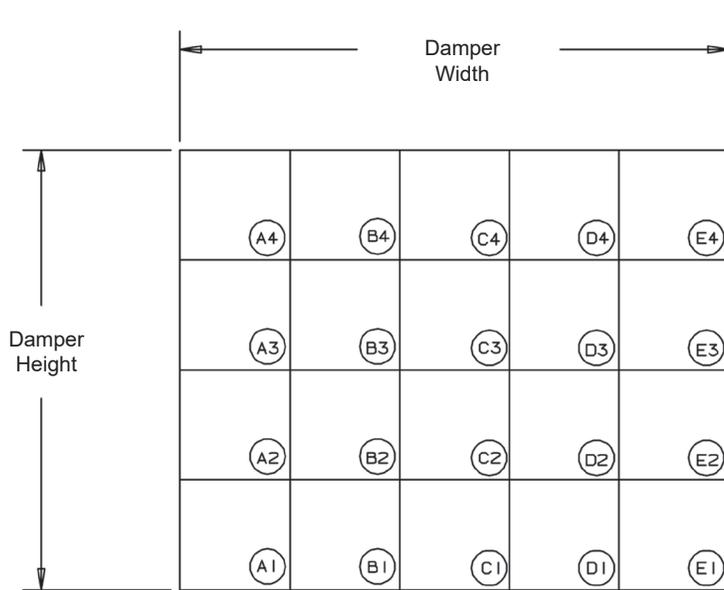
### Aluminum and Steel Control Damper Reference Chart

Detail Description	Aluminum Dampers			Steel Dampers		
	AC525	AC51	AC52	A1770	A395	A182
Extended Shaft	1	1	1	5	5	5
Vertical Mullion	2	2	2	6	6	6
Horizontal Mullion	3	3	3	7	7	7
Horizontal / Vertical Internal Mullion	4	4	4	8	8	8
Jumper Bracket	9	9	9	10	10	10
Jackshaft Bearing Mounting Bracket Attachment	11	11	11	11	11	11
Jackshaft to Blade Interconnection	12	12	12	13	13	13
Jackshaft Coupling	14	14	14	14	14	14
Vertical Face Jumper Linkage	15	15	15	16	16	16
Standard Blade Linkage Dimensions	17	17	17	18	18	18
Jackshaft to Jackshaft Interconnection	19	19	19	20	20	20
Internally Mounted Pneumatic "Uni-Mount" Driving to a Blade Clip	21	21	21	21	21	21
Internally Mounted Electric "Uni-Mount" Driving to a Blade Clip	22	22	22	22	22	22
Internally Mounted Electric Operator Bracket Driving to a Blade Clip	23	23	23	23	23	23
Externally Mounted Electric Operator Driving to an Extended Shaft	24	24	24	24	24	24
Externally Mounted Pneumatic Operator Driving to an Extended Shaft	25	25	25	25	25	25
Internally Mounted Pneumatic "Uni-Mount" Driving to a Jackshaft	26	26	26	26	26	26
Internally Mounted Electric "Uni-Mount" Driving to a Jackshaft	27	27	27	27	27	27
Internally Mounted Electric Operator Bracket Driving to a Jackshaft	28	28	28	28	28	28
Jamb Linkage	29	29	29	30	30	30
Face Linkage Arrangements	-	-	-	31	-	32

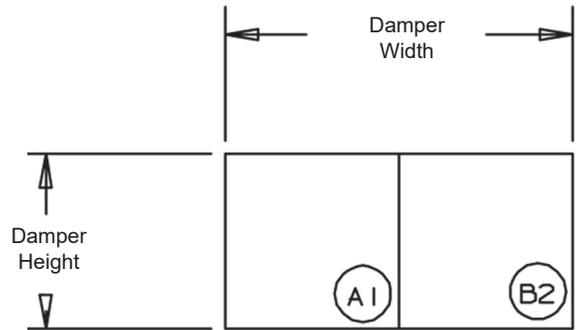
#### Notes

- Details show general construction only for aluminum and steel dampers. The pin-lock damper and thermal break damper and their details are not provided in this reference.
- MCDLG dampers are self supporting after installation in only its largest single-section size. Multi-damper section assemblies require bracing to support damper weight and system pressure and shall be furnished and installed by others unless otherwise noted.
- Face jackshaft and internal operator mounting brackets are shipped loose unless otherwise specified.

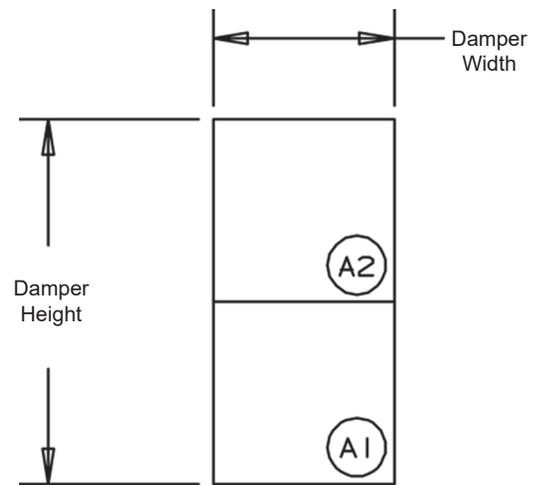
## Damper Tagging For Multi-Panel Assemblies



Rear Elevation

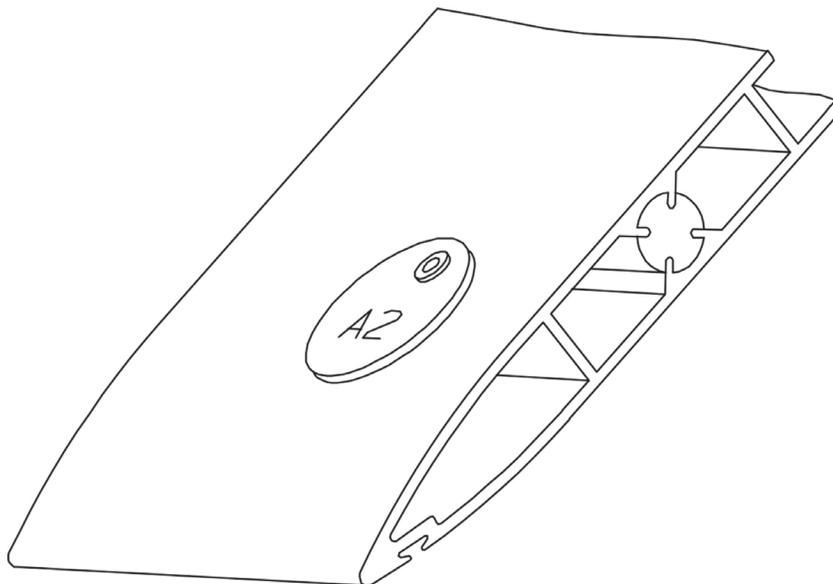


Rear Elevation

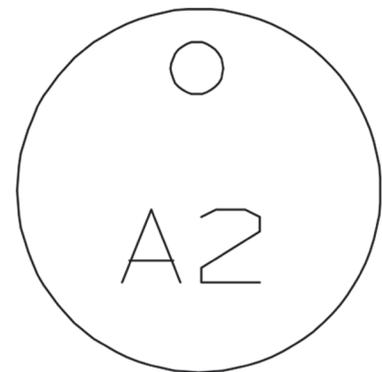


Rear Elevation

•• All tag identification will be located at the rear of all damper sections, in the locations shown on the above elevations. Tags will be approximately 1¼" diameter aluminum with ¼" high lettering stamped into the aluminum. Tags will be riveted to the bottom half of the first blade of each section.



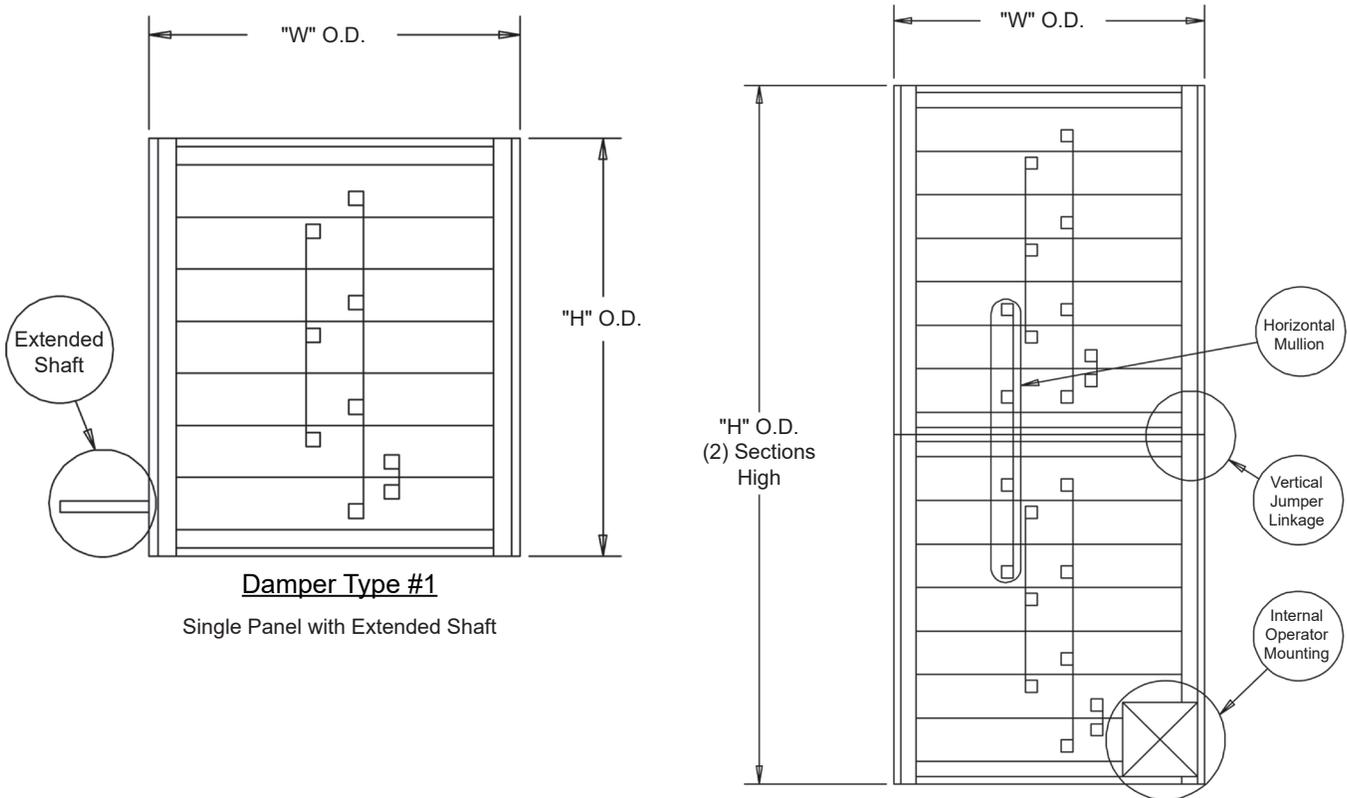
Damper Tag Mounting Detail



Damper Tag Detail

• Frame member not shown for clarity.

## Typical Schematic Damper Elevations

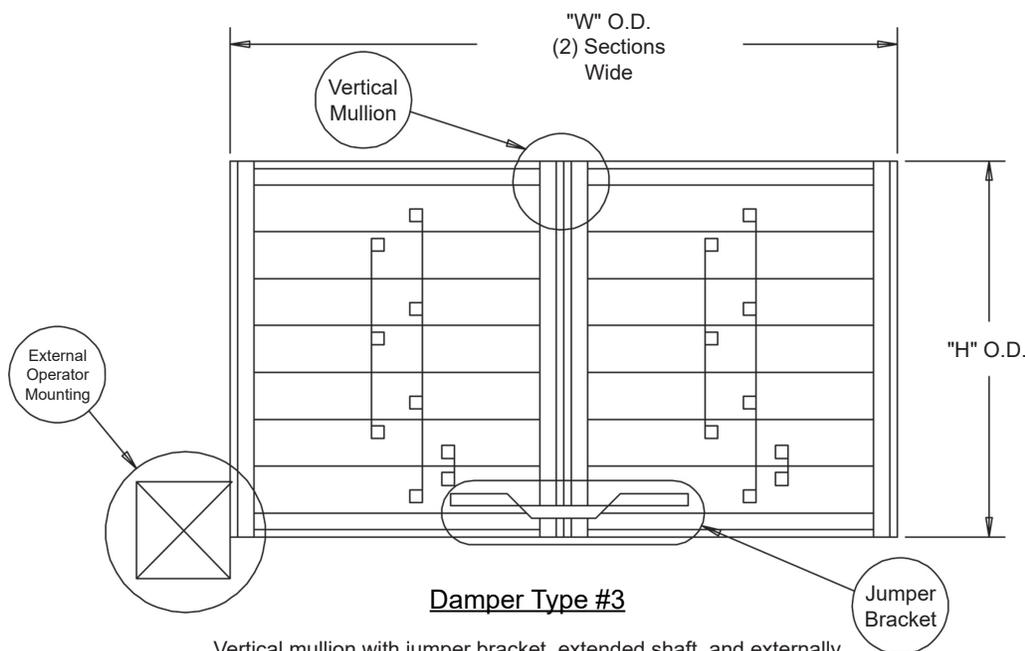


**Damper Type #1**

Single Panel with Extended Shaft

**Damper Type #2**

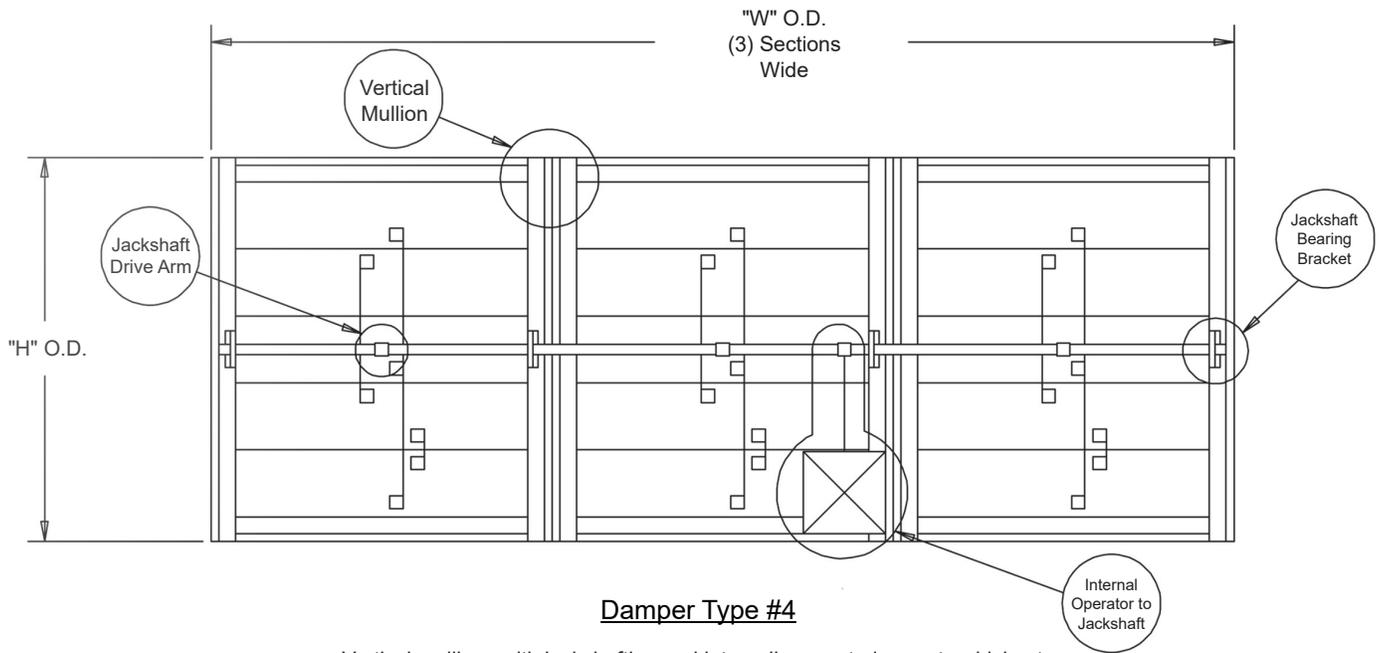
Horizontal mullion with vertical jumper linkage and internally mounted operator, one section wide by two sections high.



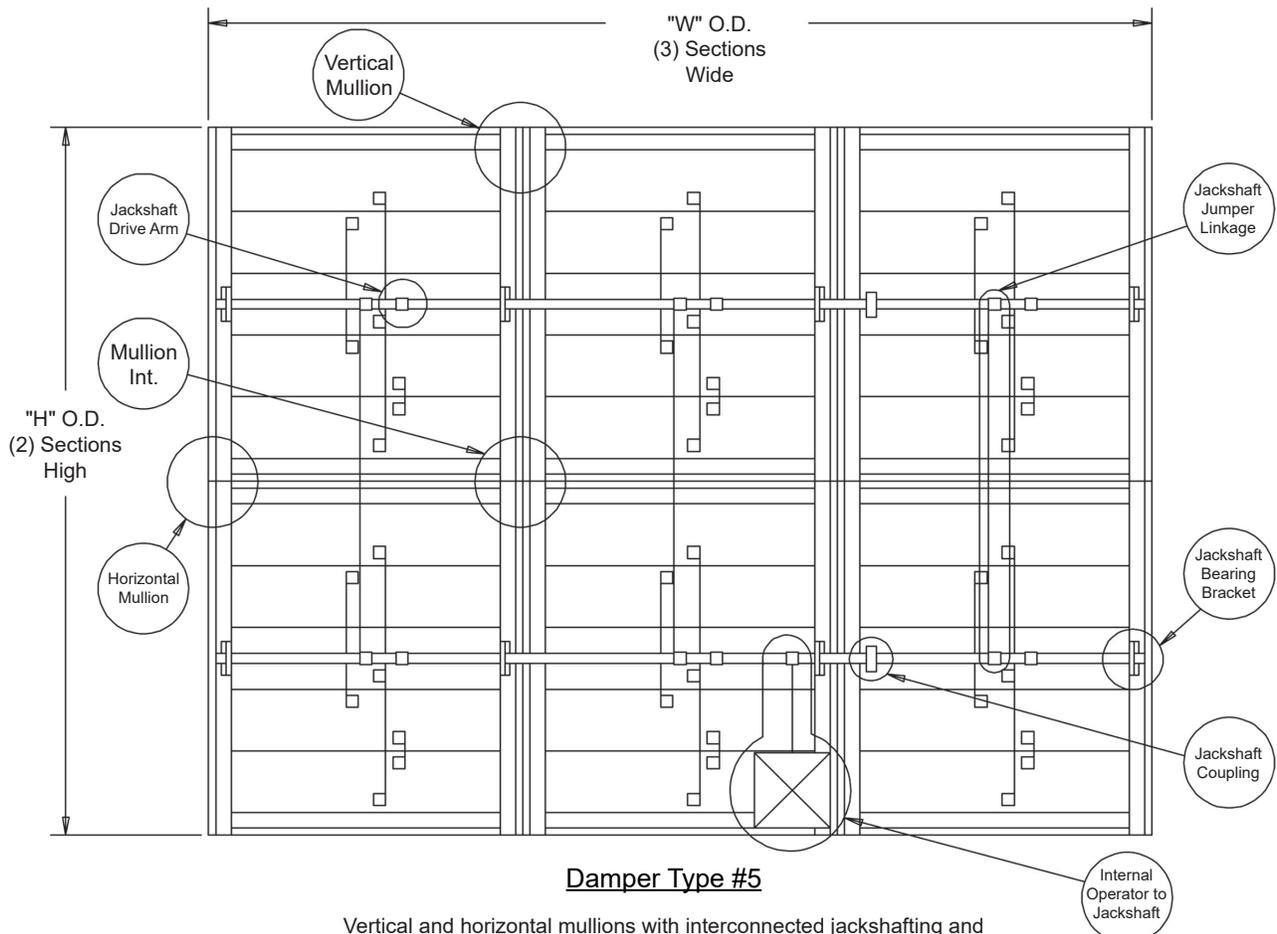
**Damper Type #3**

Vertical mullion with jumper bracket, extended shaft, and externally mounted operator, two sections wide by one section high.

## Typical Schematic Damper Elevations

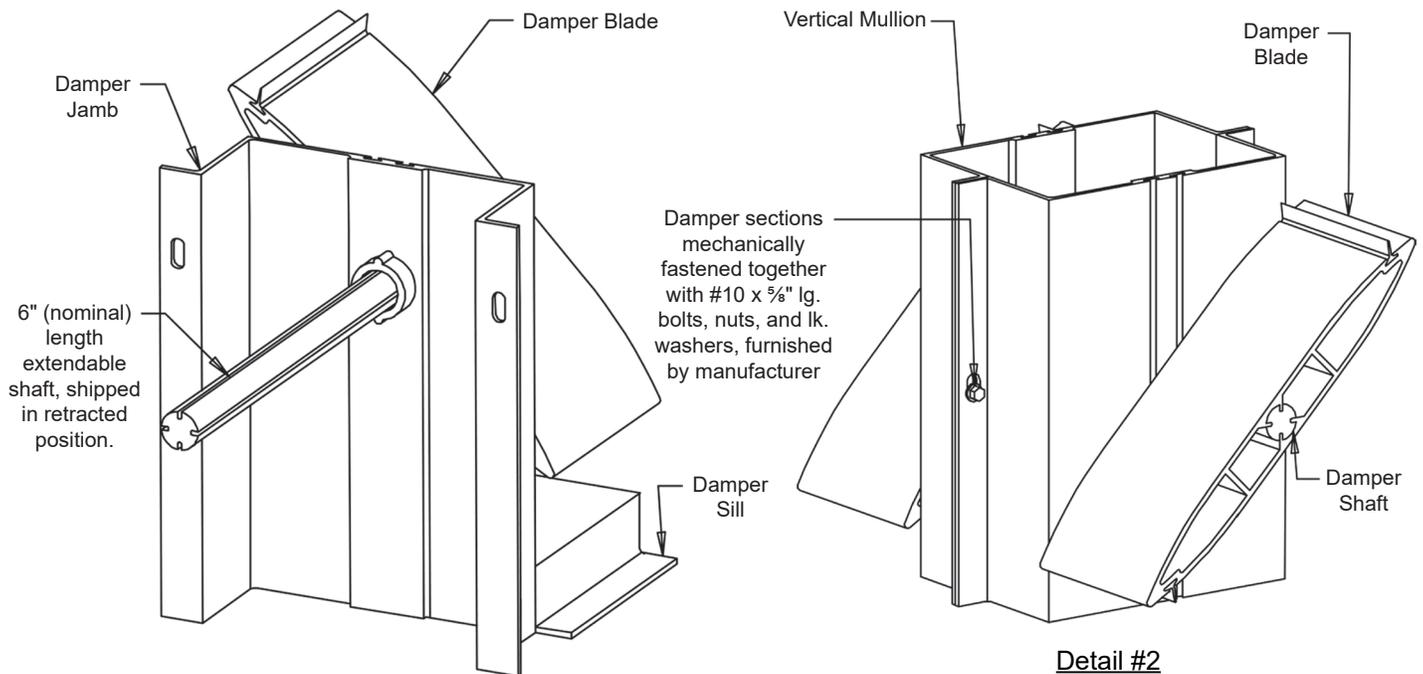


Vertical mullions with jackshifting and internally mounted operator driving to jackshifting, multi-sections wide by one section high.



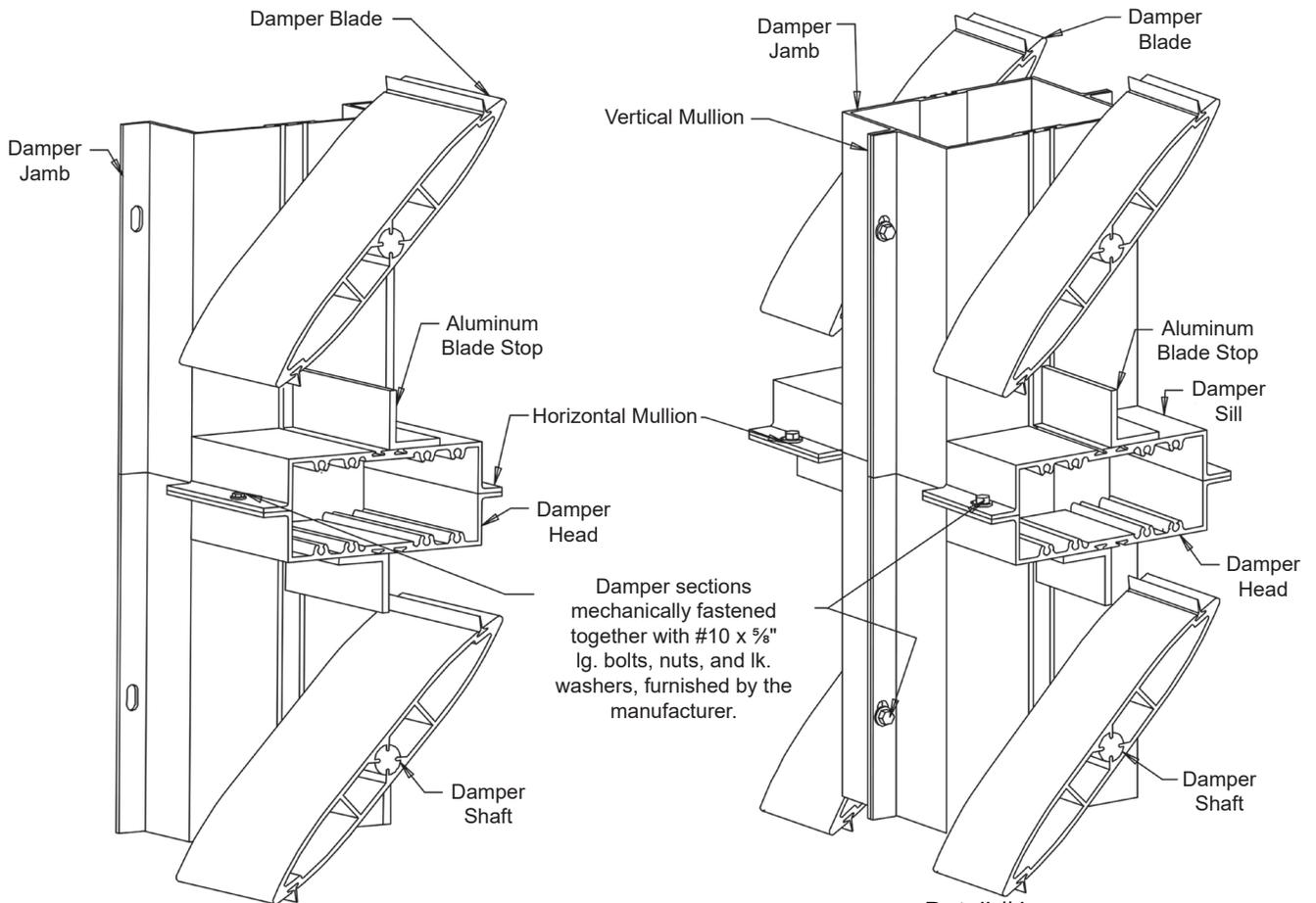
Vertical and horizontal mullions with interconnected jackshifting and internally mounted operator driving to lower jackshaft, multi-sections wide by multi-sections high.

## Extruded Aluminum Damper Details



**Detail #1**

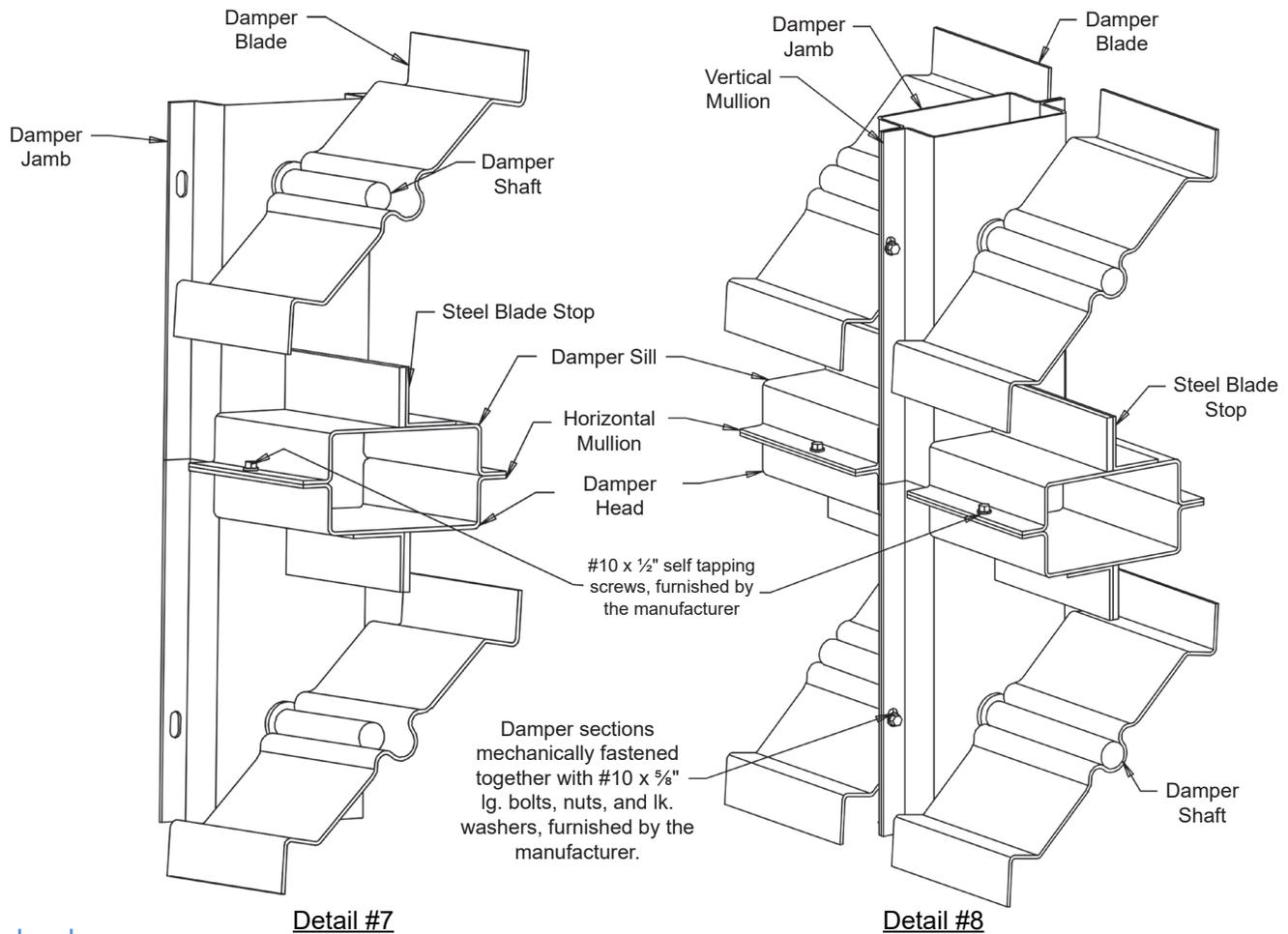
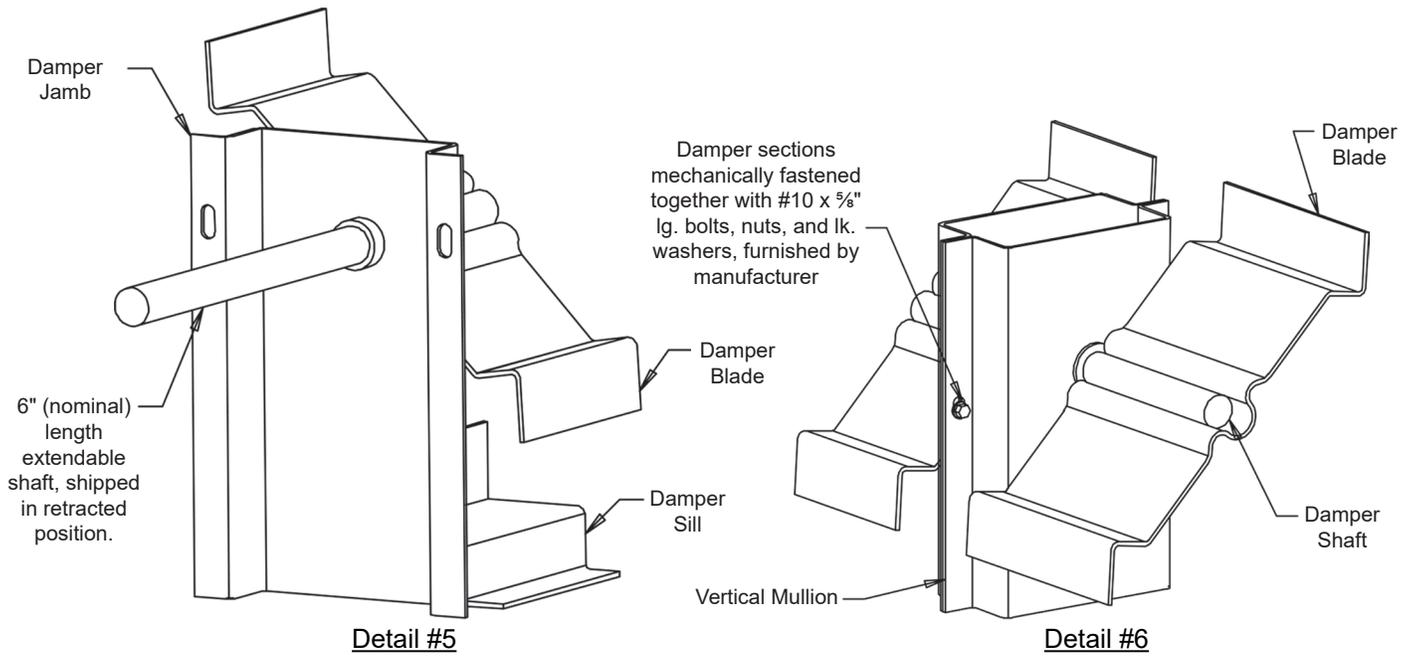
**Detail #2**



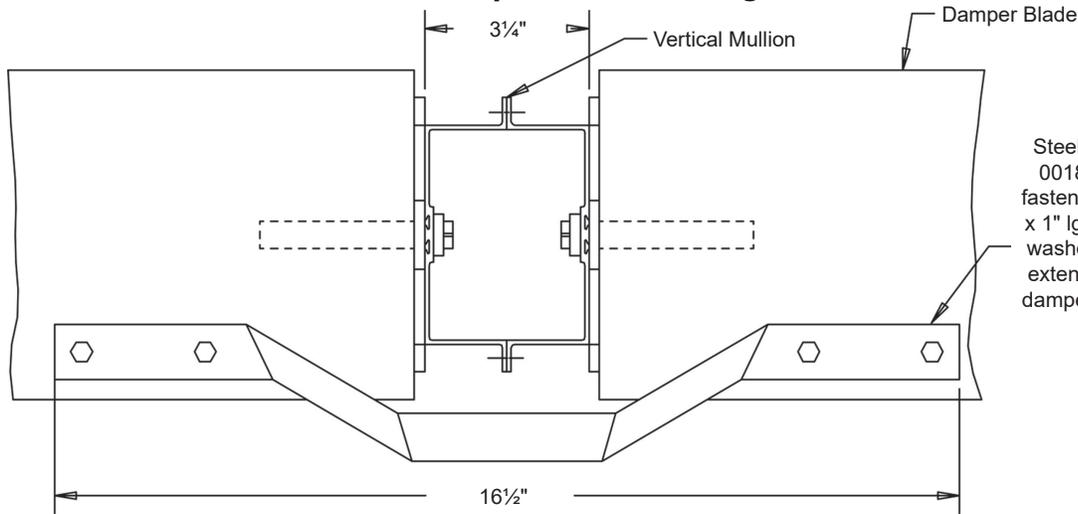
**Detail #3**

**Detail #4**

## Fabricated Steel Damper Details

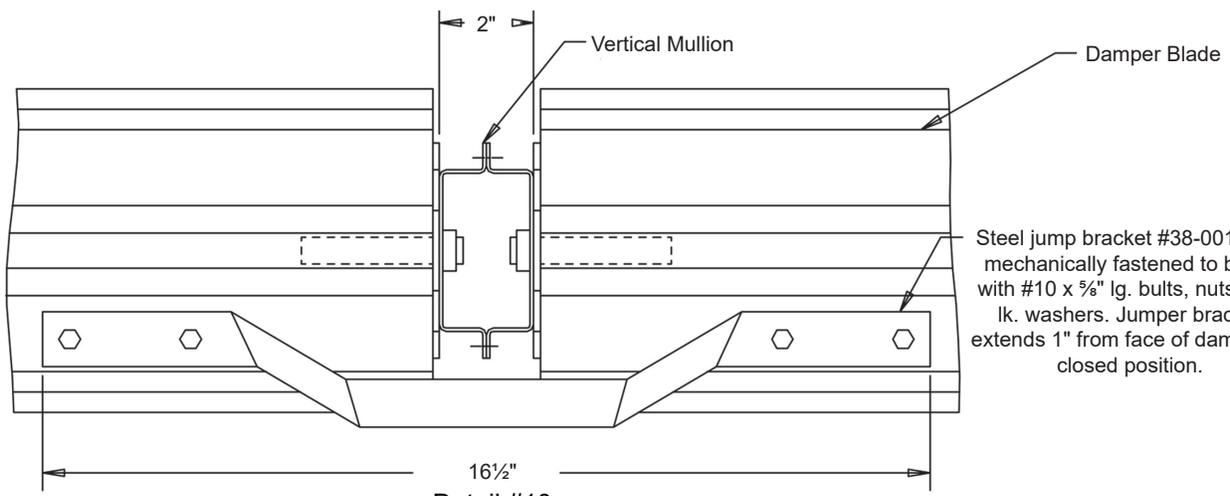


## Damper Interconnecting Details



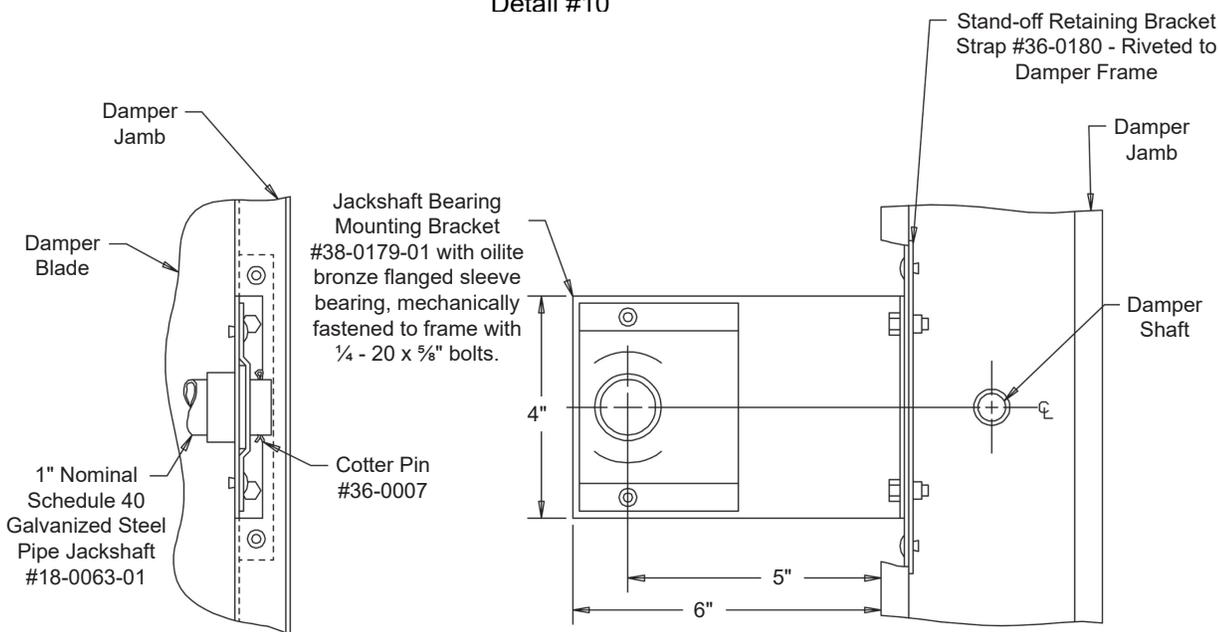
Steel jump bracket #38-0018-01, mechanically fastened to blade with #10 x 1" lg. bolts, nuts, and lk. washers. Jumper bracket extends 1 1/2" from face of damper in closed position.

**Detail #9**



Steel jump bracket #38-0017-01, mechanically fastened to blade with #10 x 5/8" lg. bolts, nuts, and lk. washers. Jumper bracket extends 1" from face of damper in closed position.

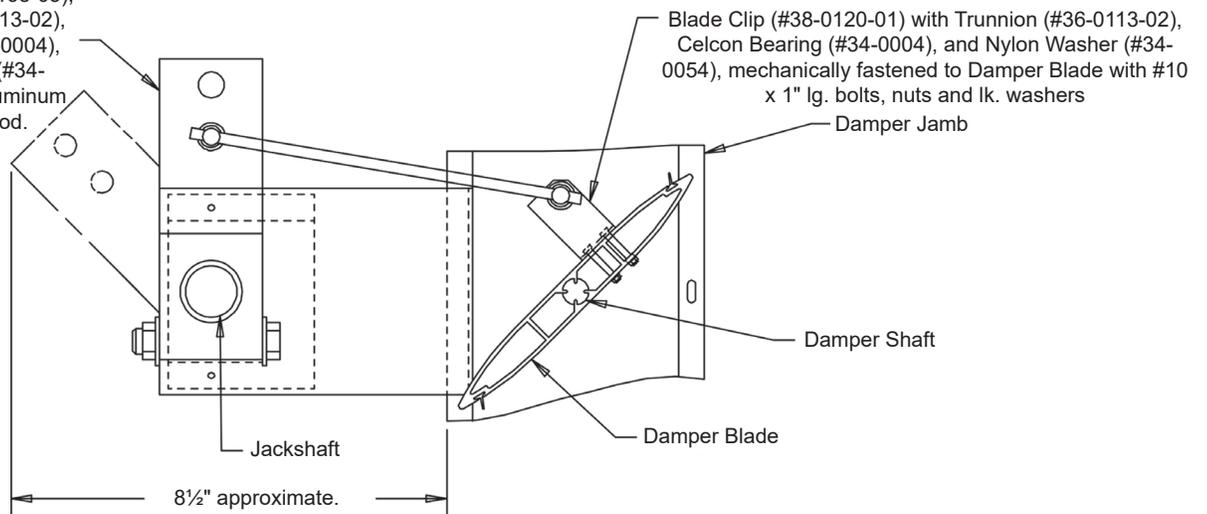
**Detail #10**



**Detail #11**

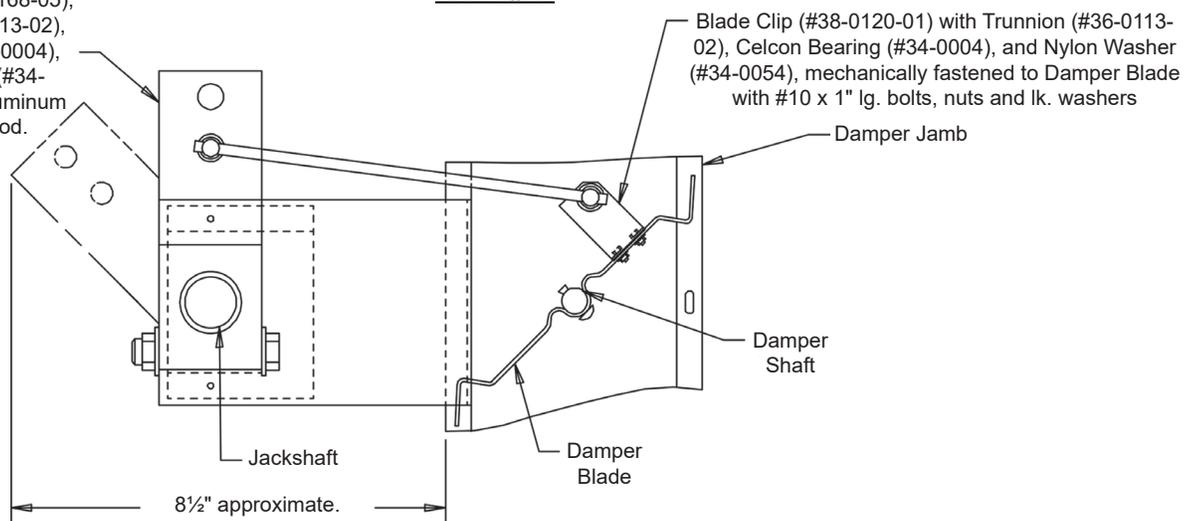
## Damper Interconnecting Details

H.D. Drive Arm (#36-0168-05), with Trunnion (#36-0113-02), Celcon Bearing (#34-0004), and Nylon Washer (#34-0054) and 5/16" dia. Aluminum Interconnecting Rod.

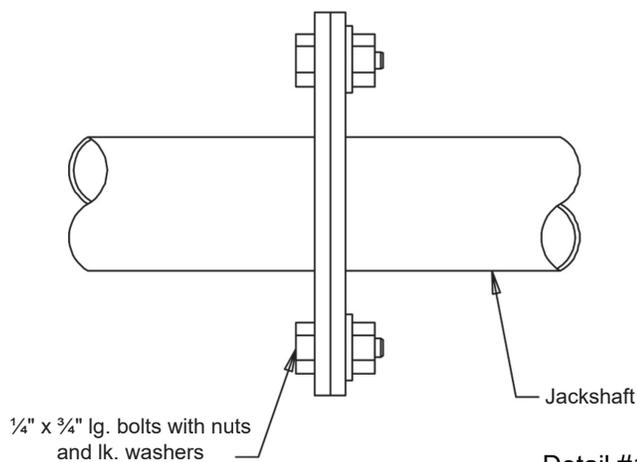


**Detail #12**

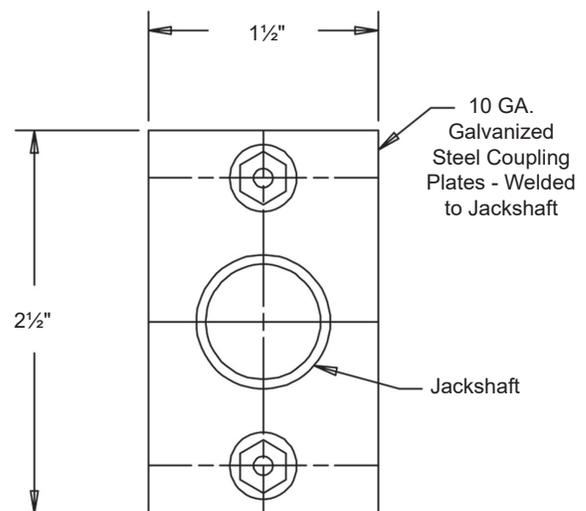
H.D. Drive Arm (#36-0168-05), with Trunnion (#36-0113-02), Celcon Bearing (#34-0004), and Nylon Washer (#34-0054) and 5/16" dia. Aluminum Interconnecting Rod.



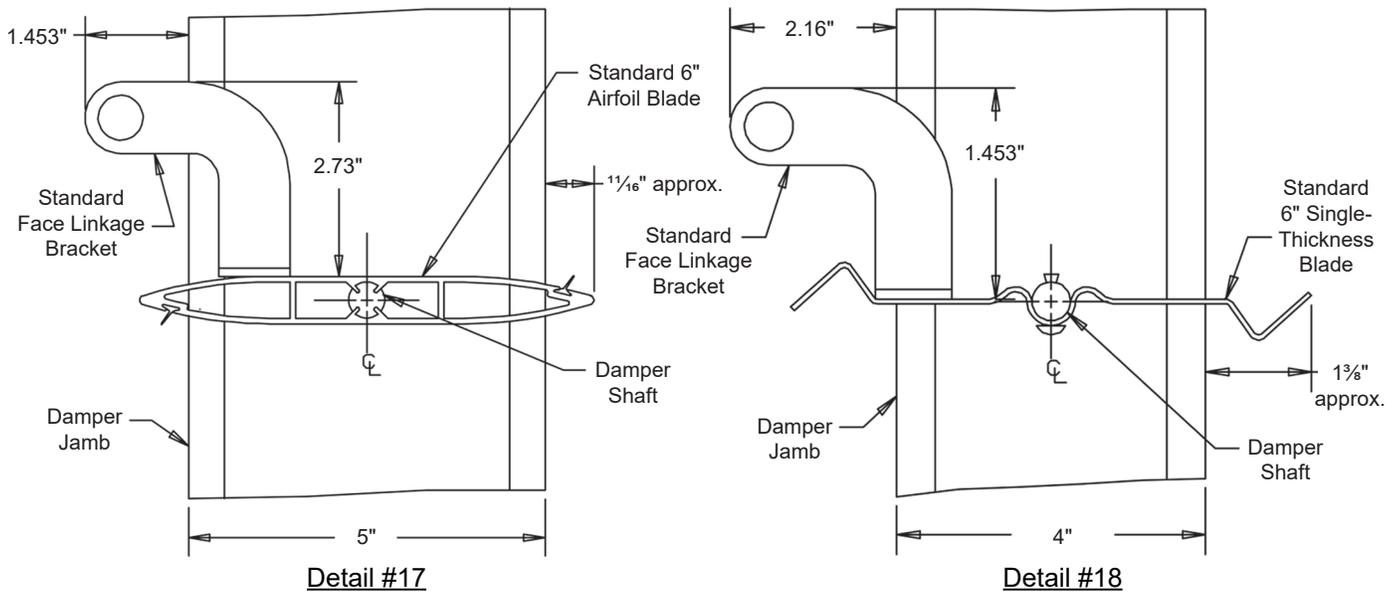
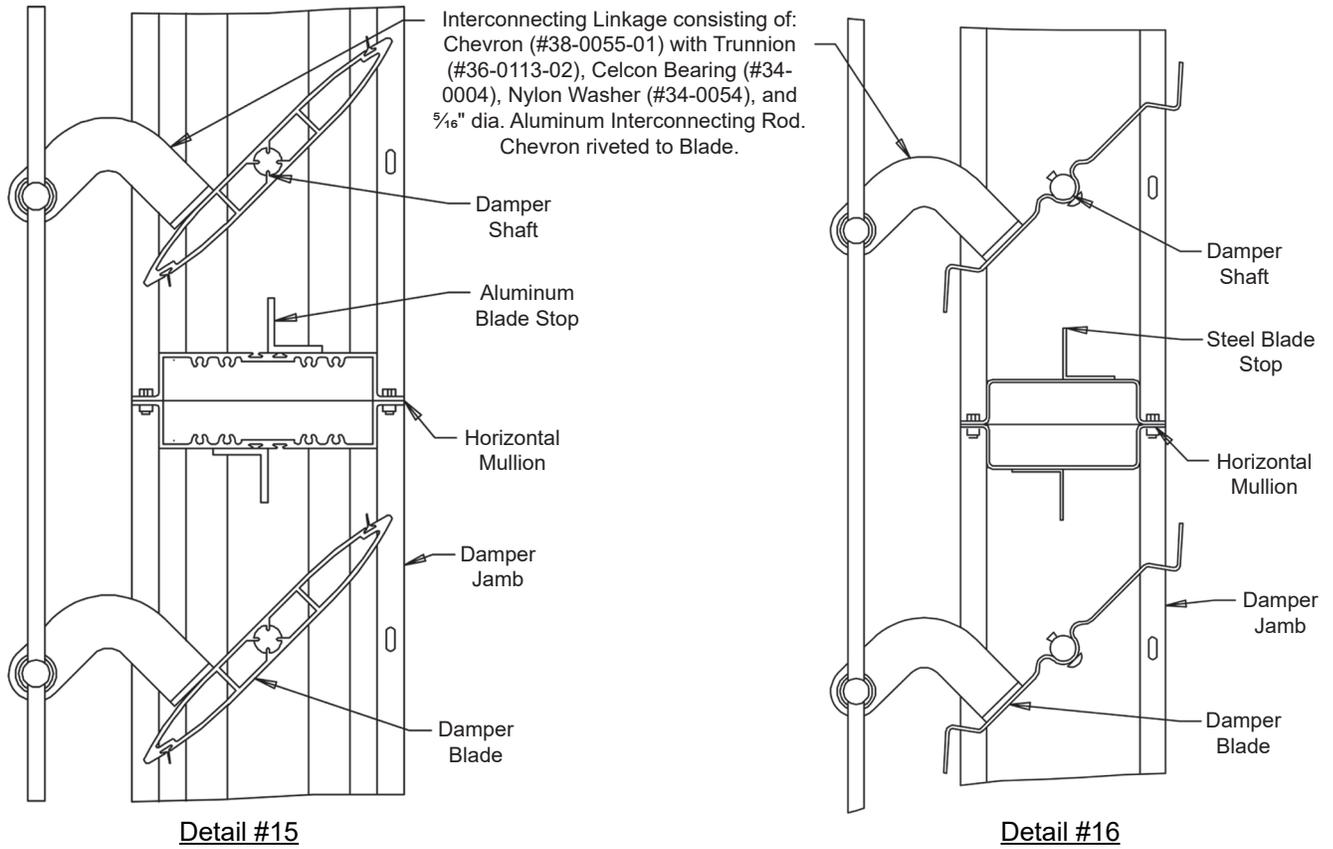
**Detail #13**



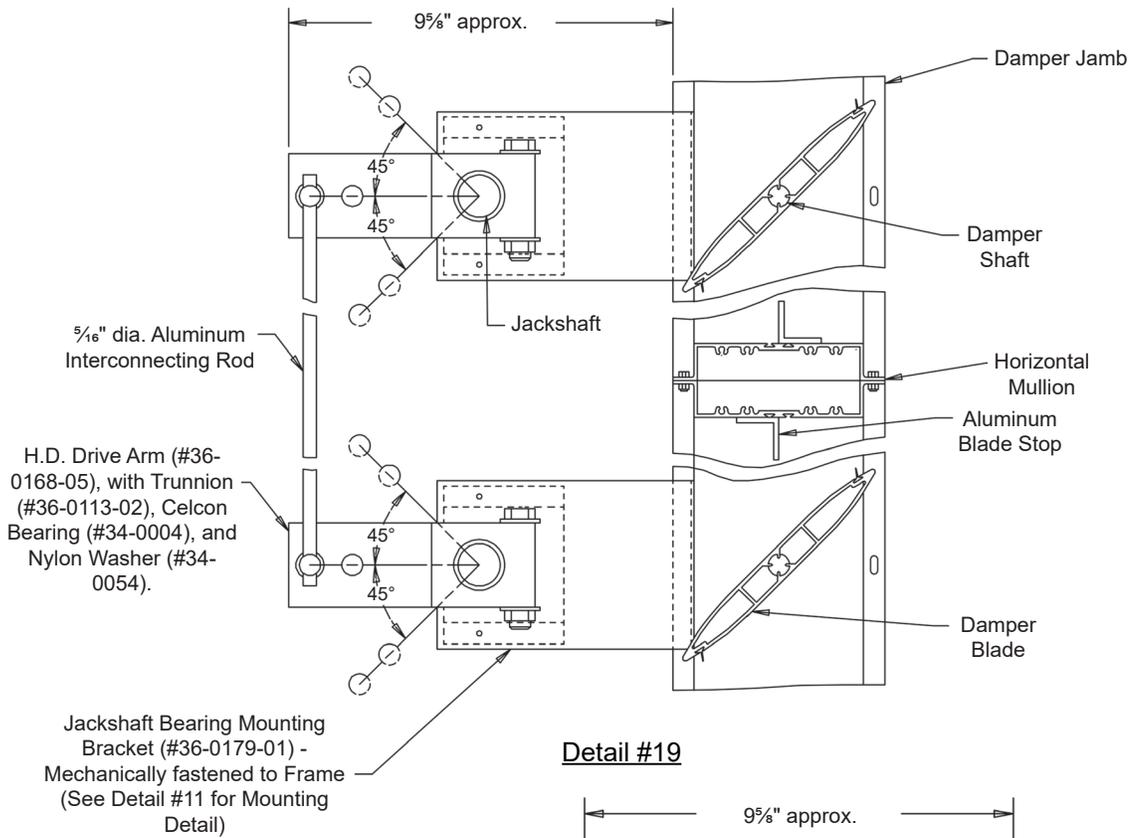
**Detail #14**



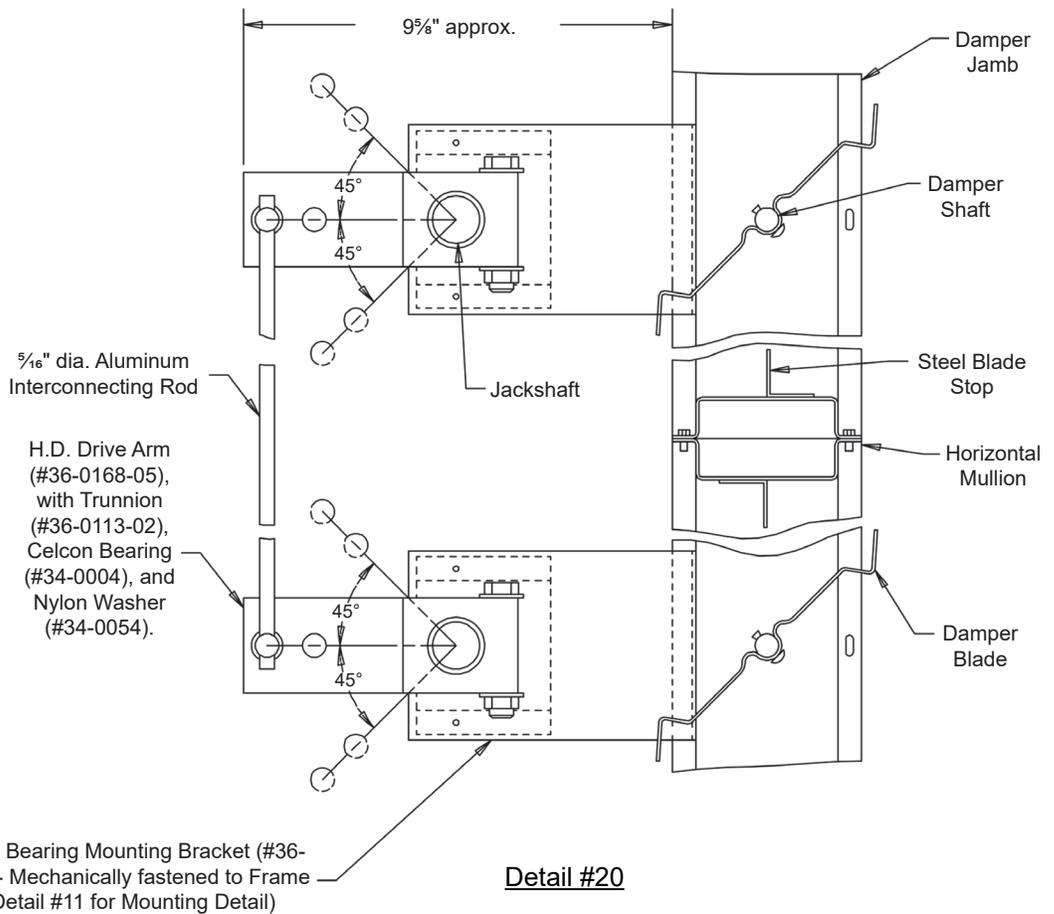
## Damper Interconnecting Details



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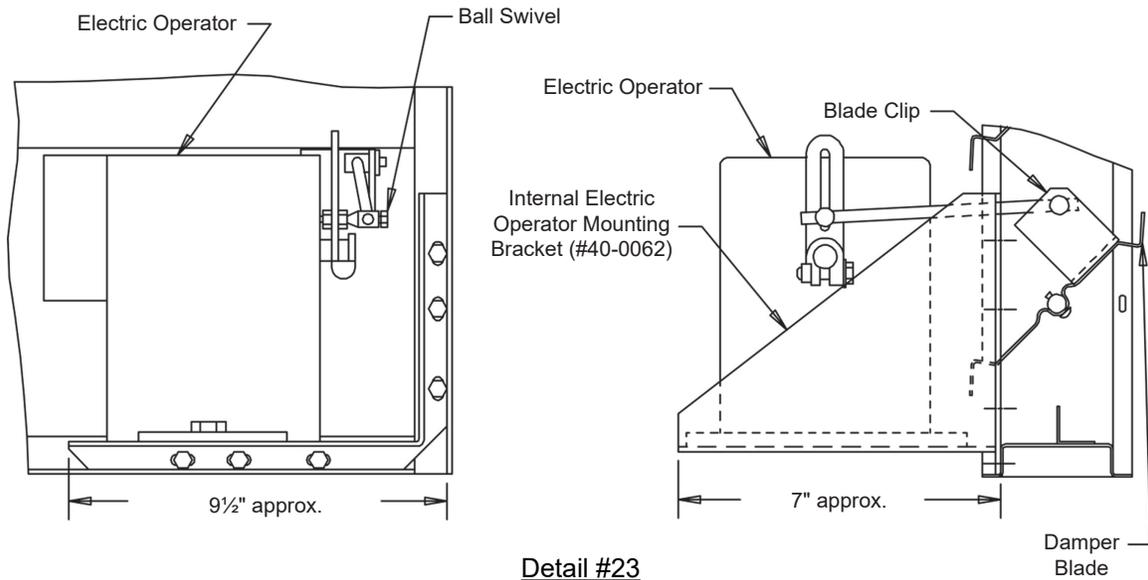
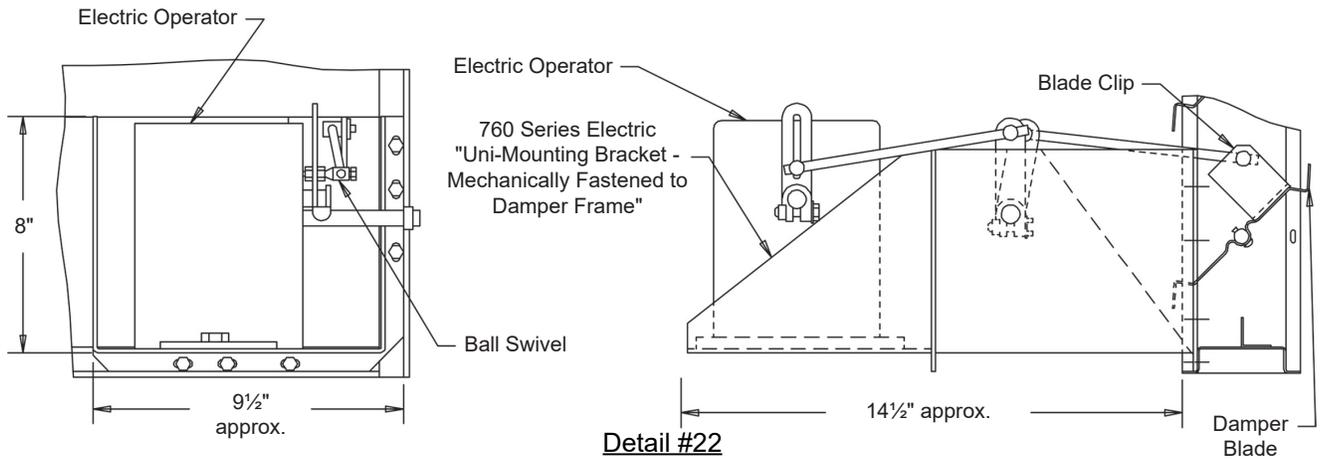
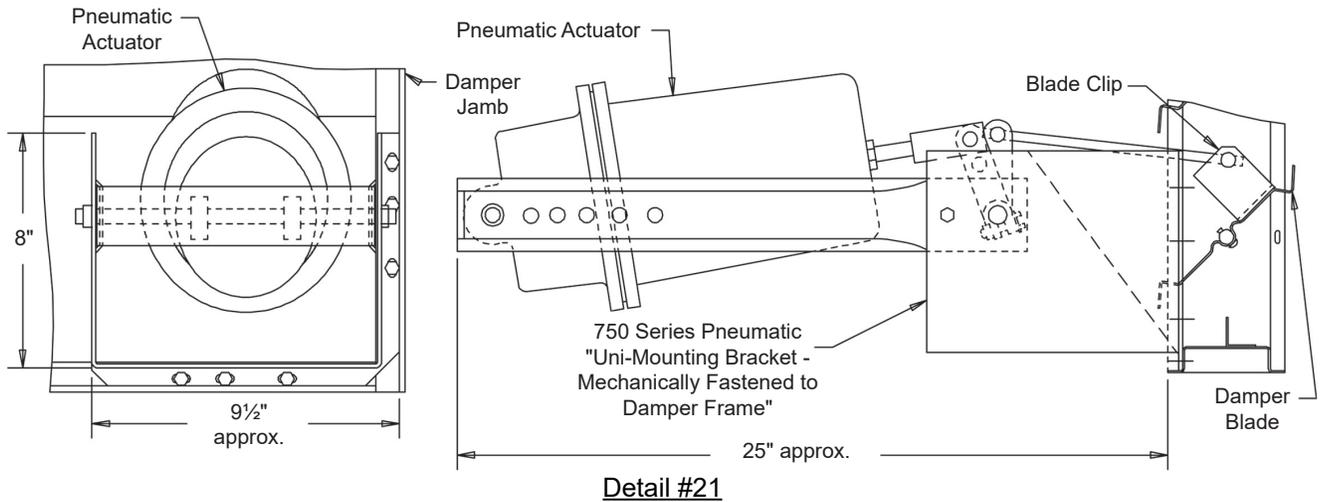


**Detail #19**

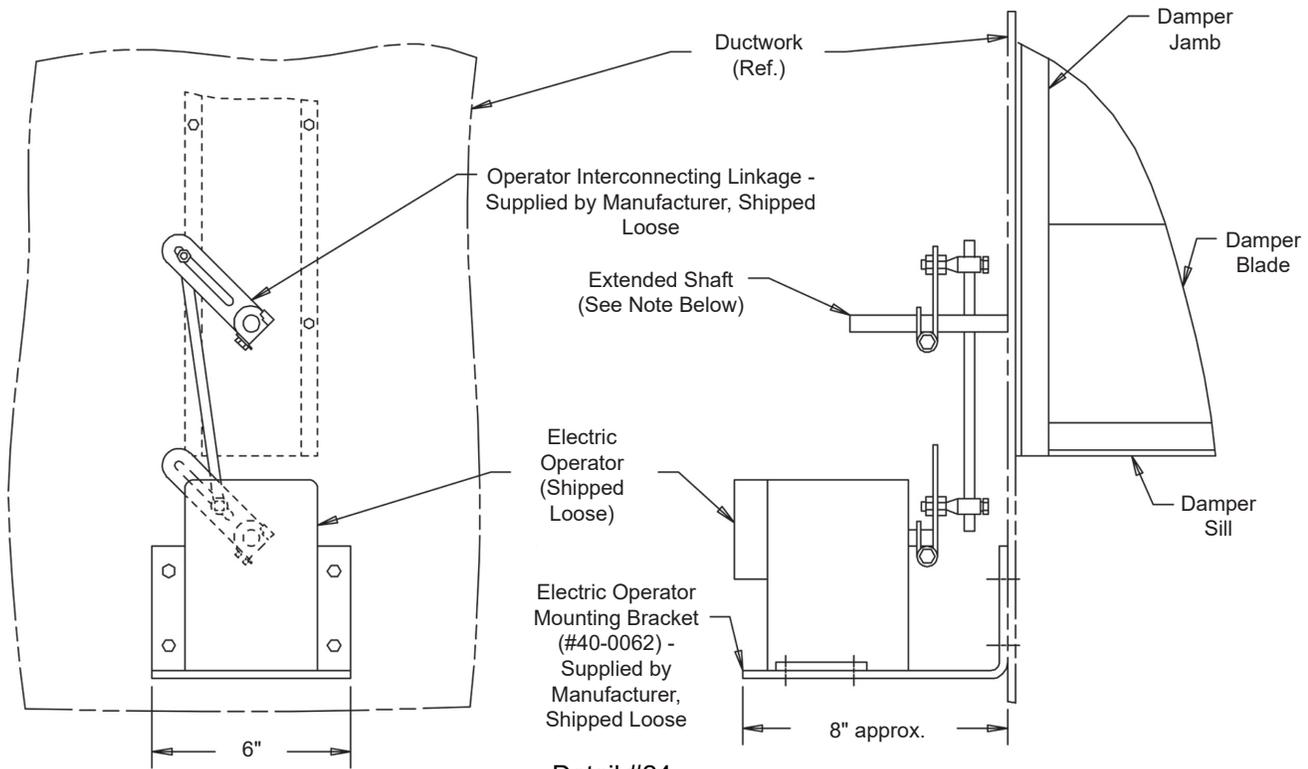


**Detail #20**

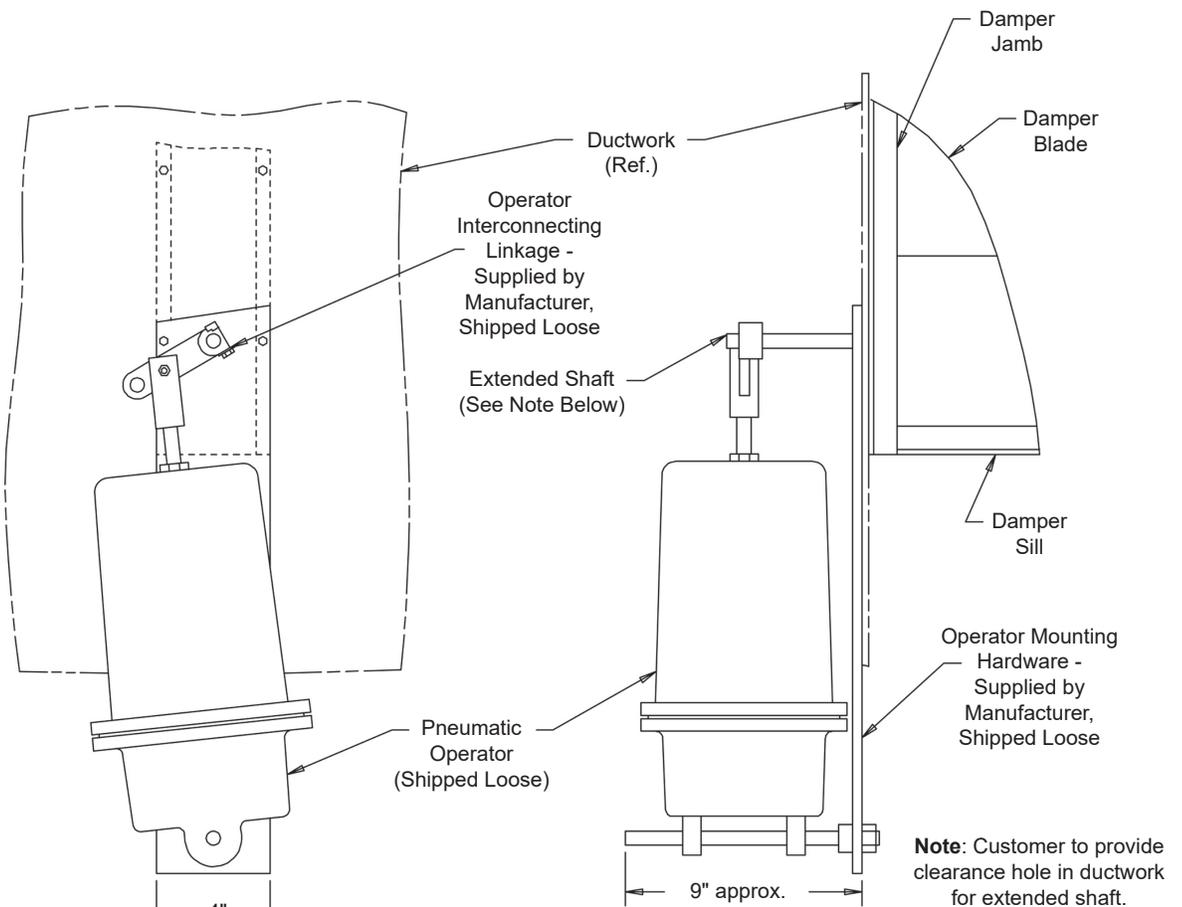
## Operator Mounting Details



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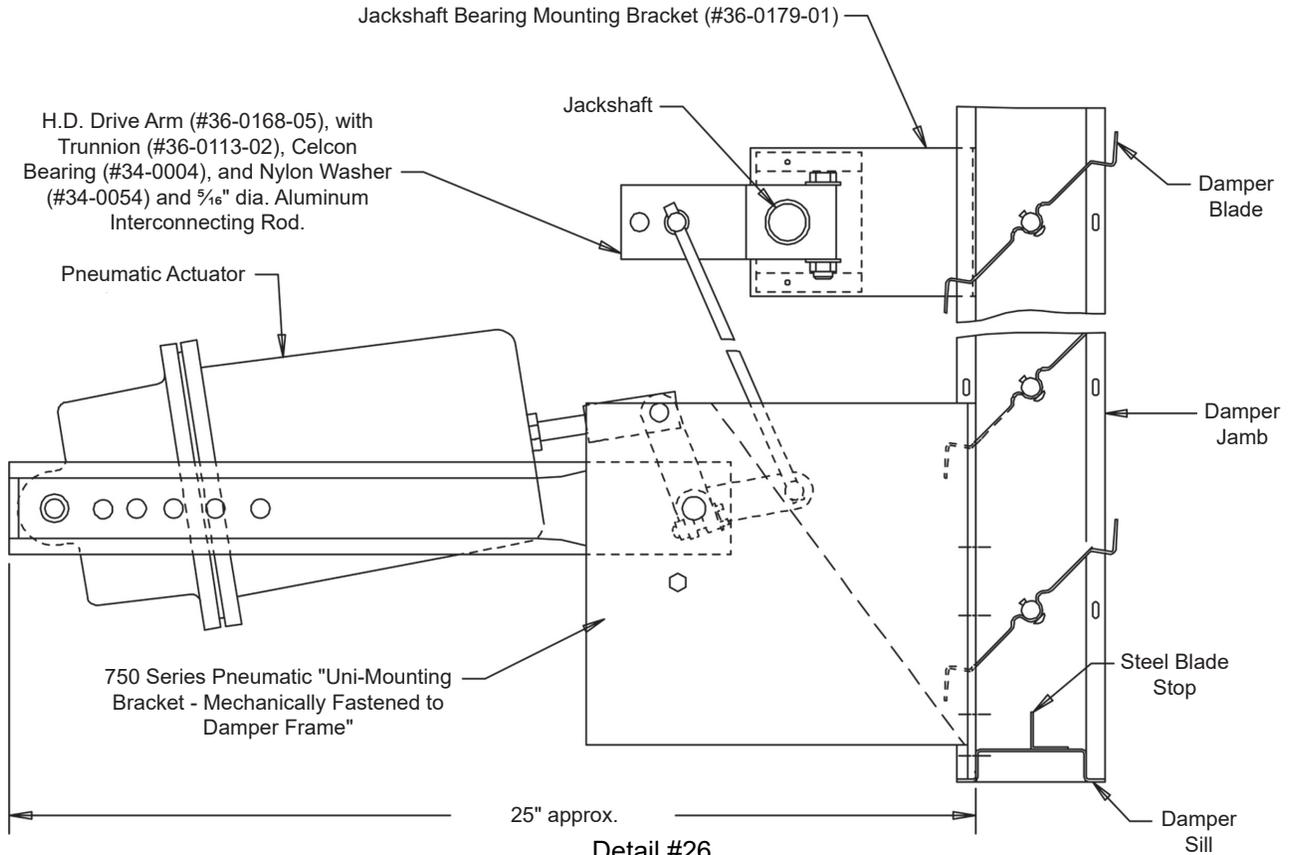


**Detail #24**

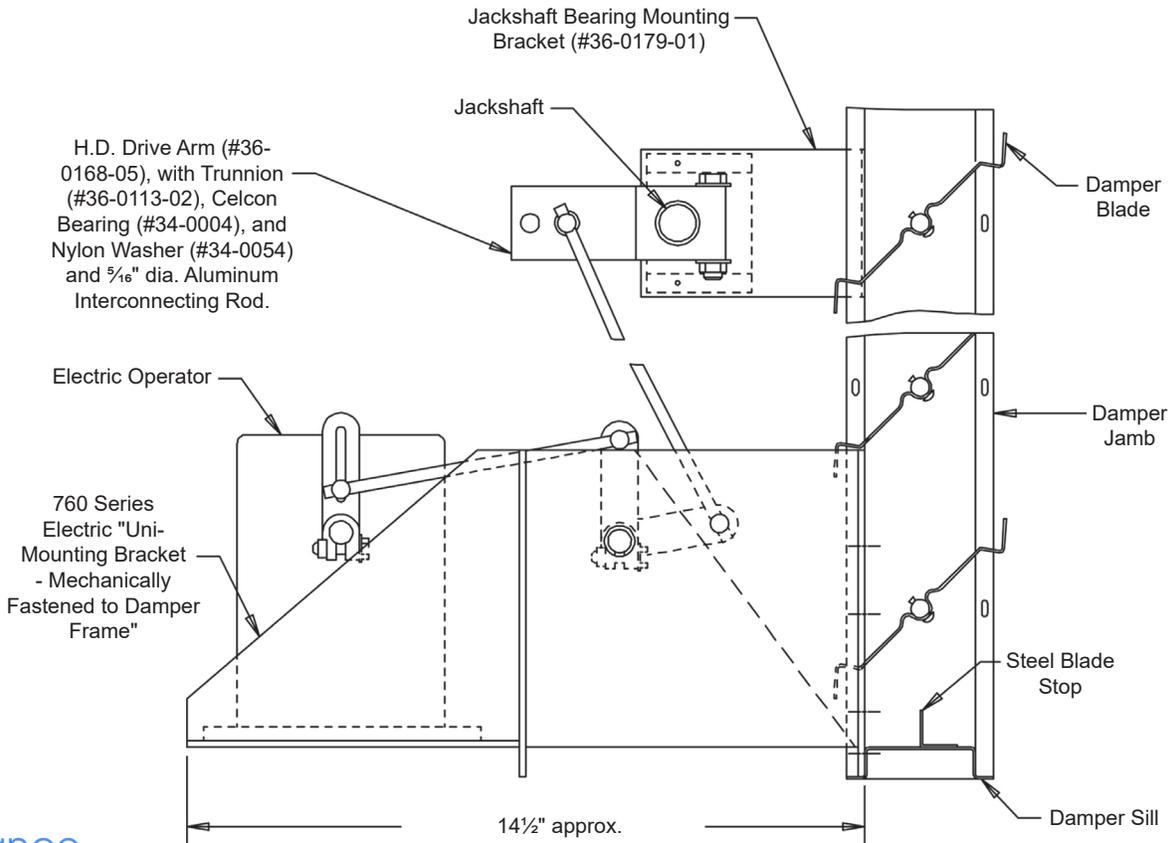


**Detail #25**

## Operator Mounting Details

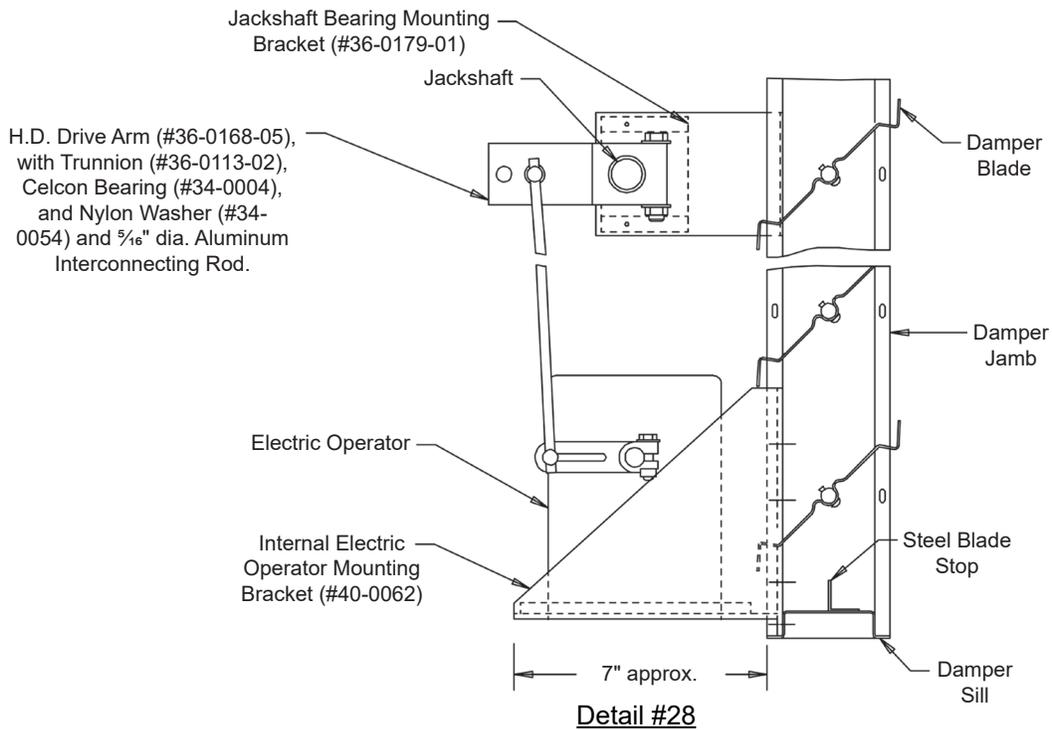


**Detail #26**



**Detail #27**

## Operator Mounting Details



## Linkage Details

