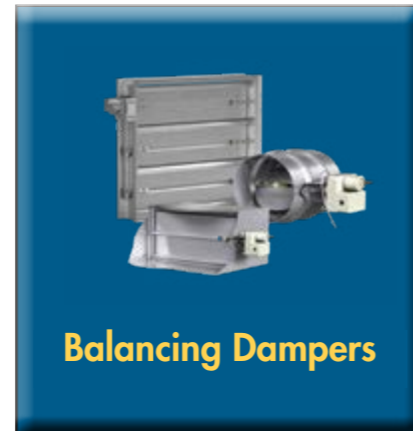


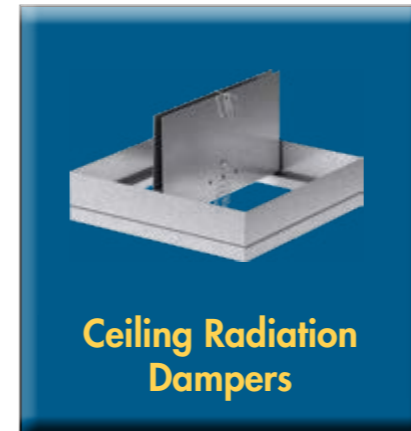
# Damper Selection Guide



**Backdraft  
Dampers**



**Balancing Dampers**



**Ceiling Radiation  
Dampers**



**Combination Fire  
Smoke Dampers**



**Control Dampers**



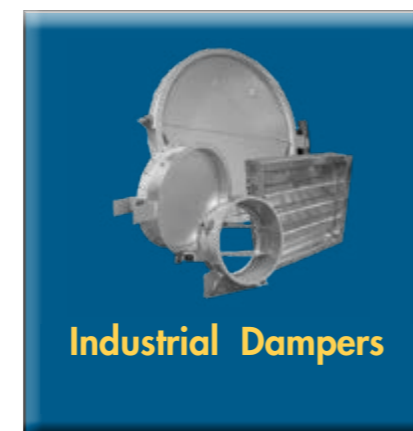
**Fire Dampers**



**Smoke Dampers**

















































**Relief Dampers**














**Industrial Dampers**





















**Bubble-Tight Dampers**

Model	Frame Material	Blade Material	Velocity (FPM)	Pressure (in. wg)	Counter Balance	Airflow Direction					Mounting Position	Submittal	Installation Instructions	Drawings
						Vertical Up	Vertical Down	Horizontal	Angular Up	Angular Down				DWG
<b>Commercial Backdraft</b>														
BD-100	Galv. Steel	Aluminum	1500	2		✓					Horizontal		-	
BD-300	Galv. Steel	Aluminum	1500	2				✓			Vertical		-	
EM-1x Series	Aluminum	Aluminum	3500	10	✓	✓					Horizontal			
EM-3x Series	Aluminum	Aluminum	3500	10	✓			✓			Vertical			
EM-4x Series	Aluminum	Aluminum	3500	10	✓		✓				Horizontal			
WD-1xx Series	Galv. Steel	Aluminum	2500	1		✓					Horizontal		-	
WD-2xx Series	Galv. Steel	Aluminum	2500	1		✓	✓	✓			Horizontal, Vertical		-	
WD-3xx Series	Galv. Steel	Aluminum	2500	2				✓			Vertical		-	
WD-400, 420, 430	Galv. Steel	Aluminum	2500	2				✓			Vertical		-	
WD-410	Galv. Steel	Aluminum	2500	2			✓				Horizontal		-	
<b>True Round Commercial Backdraft</b>														
WDR-53	Galv. Steel	Aluminum	2000	3		✓	✓	✓			Horizontal, Vertical		-	
<b>Heavy-Duty/Industrial Backdraft</b>														
HB-110	Galv. Steel	Aluminum	3900	5	✓	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-120	Galv. Steel	Galv. Steel	5150	8.5	✓	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-230	Galv. Steel	Galv. Steel	5150	13.5	✓	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-240	Galv. Steel	Aluminum	5150	13.5	✓	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-330	Galv. Steel	Galv. Steel	6400	20	✓	✓	✓	✓	✓	✓	Horizontal, Vertical			
<b>True Round Heavy-Duty/Industrial Backdraft</b>														
HBR-050	Painted Steel	Painted Steel	3000	6	✓	✓	✓	✓			Horizontal, Vertical			
HBR-150	Painted Steel	Painted Steel	4000	6	✓	✓	✓	✓			Horizontal, Vertical			

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Model	Blade Type	Damper Maximum Size	Velocity (FPM)	Pressure (in. wg)	Operator	Submittal	Installation Instructions	Drawings
								DWG
<b>Manual Balancing Dampers</b>								
MBD-10	Single Blade	36 x 12	2000	2	Manual Quadrant or Cable Operated			
MBD-15	3V	96 x 96	2000	4	Manual Quadrant or Cable Operated			
MBDR-50	True Round	24	2000	1	Manual Quadrant or Cable Operated		-	
<b>Bowtie Damper</b>								
BTDR-50	True Round	15	1600	1	Cable Operated			

Model	Blade Type	Fire Resistance Rating*	Leakage Class	Damper Maximum Size (Inches)			Submittal	Installation Instructions	Drawings
				Roof/Floor Assembly	Wood Truss Assembly	Wood Joist Assembly			DWG
<b>Ceiling Radiation Dampers</b>									
CRD-1	Butterfly	3 Hour	-	24 x 24	-	-			
CRD-1WJ	Butterfly	1 Hour (UL Wood Joist)	-	-	-	16 x 12			
CRD-1WT	Butterfly	1 Hour (UL Wood Truss)	-	-	21 x 18	-			
CRD-2	Round Butterfly	3 Hour	-	24	-	-			
CRD-2WT	Butterfly	1 Hour (UL Wood Truss)	-	-	12 x 12	-			
CRD-60	Curtain	3 Hour	-	24 x 24	-	-			

\* Fire rated floor/ceiling assemblies.

\*Maximum size can be single or multiple sections.

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Model	Blade Type	Fire Resistance Rating	Leakage Class	Damper Maximum Size*		Velocity (FPM)	Pressure (in. wg)	Submittal	Installation Instructions	Drawings	
				Horizontal	Vertical					DWG	Revit
<b>Traditional Combination Fire Smoke</b>											
FSD-211	3V	1½ hour	I	144 x 96	128 x 100	2000	6				
FSD-212	3V	1½ hour	II	144 x 96	128 x 100	2000	6				
FSD-311	Airfoil	1½ hour	I	144 x 96	128 x 100	4000	8				
FSD-312	Airfoil	1½ hour	II	144 x 96	128 x 100	4000	8				
FSD-331	Airfoil	3 hour	I	120 x 96	120 x 96	4000	8				
<b>Vertical Blade Fire Smoke</b>											
FSD-311V	Airfoil	1½ hour	I	-	100 x 32	4000	4				
<b>Out of Wall Fire Smoke</b>											
GFSD-211	3V	1½ hour	I	48 x 48	48 x 48	2000	4				
OFSD-211	3V	1½ hour	I	36 x 36	36 x 36	2000	6				
OFSD-311	Airfoil	1½ hour	I	36 x 36	36 x 36	4000	4				
<b>True Round Fire Smoke</b>											
FSDR-511	True Round	1½ hour	I	24	24	4000	4				













































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Model	Blade Type	Damper Maximum Size	Velocity (FPM)	Pressure (in. wg)	Leakage Class @ 1 in. wg	Submittal	Installation Instructions	Drawings	
								DWG	Revit
<b>Commercial Control Dampers</b>									
VCD-20	3V	Unlimited	3000	5	-				
VCD-23	3V	Unlimited	3000	5	1A				
VCD-33	Airfoil	Unlimited	4000	8	1A				
VCD-40	Airfoil	Unlimited	6000	6	1A				
VCD-42	Extruded Airfoil	Unlimited	6000	6	1A				
VCD-43	Extruded Airfoil	Unlimited	6000	8	1A				
<b>Vertical Blade Control Dampers</b>									
VCD-23V	3V	148 x 96	3000	5	1A				
VCD-33V	Airfoil	148 x 120	4000	8	1A				
<b>Insulated Thermally Broken Control Dampers</b>									
ICD-44	Extruded Aluminum	180 x 156	4000	8	1A				-
ICD-45	Extruded Aluminum - Thermally Broken	180 x 156	4000	8	1A				-
<b>True Round Control Dampers</b>									
VCDR-50	True Round	24	3000	4	-				-
VCDR-53	True Round	24	3000	4	1				-

\*Maximum size can be single or multiple sections.

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Model	Blade Type	Damper Maximum Size	Velocity (FPM)	Pressure (in. wg)	Maximum Temperature	Submittal	Installation Instructions	Drawings	
								DWG	Revit
<b>Heavy-Duty/Industrial Control Dampers</b>									
HCD-120	3V	96 x 96	3000	8.5	400°F				
HCD-130	Airfoil	120 x 96	4000	8.5	400°F				
HCD-135	Insulated Airfoil	120 x 96	4000	8.5	250°F				
HCD-220	3V	96 x 96	4000	15	600°F				
HCD-221	Flat Dual Skin w/ Perimeter Seal	96 x 60	4000	10	400°F				
HCD-230	Airfoil	120 x 96	5000	15	600°F				
HCD-240	Extruded Airfoil	120 x 96	5000	15	250°F				
HCD-330	Airfoil	120 x 96	5000	25	600°F				
HCD-430	Airfoil	120 x 96	6000	35	600°F				
HCD-530	Airfoil	120 x 96	6000	45	600°F				
<b>True Round Heavy-Duty/Industrial Control Dampers</b>									
HCDR-050	True Round	24	3000	6	250°F				
HCDR-150	True Round	48	4000	6	400°F				
HCDR-152	Two-Blade	48	4000	6	400°F				
HCDR-250	True Round	72	5150	13.5	600°F				
HCDR-350	True Round	72	6400	20	1000°F				
HCDR-351	True Round	48	6500	20	400°F				
HCDR-450	True Round	60	7000	30	400°F				

















































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Model	Blade Type	Fire Resistance Rating	Closure Rating	Damper Maximum Size*		Velocity (FPM)	Pressure (in. wg)	Submittal	Installation Instructions	Drawings
				Horizontal	Vertical					DWG
<b>Multiblade Fire</b>										
DFD-210	3V	1 ½ hour	Dynamic	128 x 96	128 x 100	4000	10			
DFDAF-310	Airfoil	1 ½ hour	Dynamic	144 x 96	128 x 100	4000	8			
DFDAF-330	Airfoil	3 hour	Dynamic	144 x 96	120 x 96	4000	8			
<b>Out of Wall Fire</b>										
ODFD-150	Curtain	1 ½ hour	Dynamic	36 x 36	36 x 36	4000	4			
OFD-150	Curtain	1 ½ hour	Static	36 x 36	36 x 36	-	-			
<b>Traditional Curtain Fire</b>										
DFD-110	Curtain	1 ½ hour	Dynamic	48 x 36	72 x 48 or 60 x 60	4000	4			
DFD-150	Curtain	1 ½ hour	Dynamic	48 x 36	72 x 48 or 60 x 60	4000	4			
DFD-350	Curtain	3 hour	Dynamic	48 x 36	48 x 48	4000	4			
FD-110	Curtain	1 ½ hour	Static	96 x 48	96 x 48	-	-			
FD-150	Curtain	1 ½ hour	Static	96 x 48 or 120 x 40	96 x 48 or 120 x 40 or 74 x 74	-	-			
FD-350	Curtain	3 hour	Static	80 x 40	48 x 48	-	-			
<b>True Round Fire</b>										
DFDR-510	True Round	1 ½ hour	Dynamic	24	24	2000	4			
<b>Curtain Fire - Integral Sleeve</b>										
DFD-150X12	Curtain	1 ½ hour	Dynamic	30 x 30	36 x 36	4000	4			
DFD-150X16	Curtain	1 ½ hour	Dynamic	30 x 30	36 x 36	4000	4			
FD-150X12	Curtain	1 ½ hour	Static	48 x 48	48 x 48	-	-			
FD-150X16	Curtain	1 ½ hour	Static	48 x 48	48 x 48	-	-			

\*Maximum size can be single or multiple sections.

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Model	Blade Type	Leakage Class	Damper Maximum Size*		Velocity (FPM)	Pressure (in. wg)	Submittal	Installation Instructions	Drawings	
			Horizontal	Vertical					DWG	Revit
<b>Traditional Smoke</b>										
SMD-201	3V	I	144 x 100 or 288 x 50	144 x 100 or 288 x 50	2000	6				
SMD-202	3V	II	144 x 100 or 288 x 50	144 x 100 or 288 x 50	2000	6				
SMD-301	Airfoil	I	128 x 100 or 256 x 50	128 x 100 or 256 x 50	4000	8				
SMD-301M	Airfoil	I	72 x 72	72 x 72	2000	4				
SMD-302	Airfoil	II	128 x 100 or 256 x 50	128 x 100 or 256 x 50	4000	8				
<b>Vertical Blade Smoke</b>										
SMD-301V	Airfoil	I	-	100 x 32	4000	4				
<b>True Round Smoke</b>										
SMDR-501	True Round	I	24	24	3000	4				-

Model	Frame Material	Blade Material	Counter Balance	Velocity (FPM)	Back Pressure (in. wg)	Airflow Direction			Mounting Position	Submittal	Installation Instructions	Drawings
						Vertical Up	Vertical Down	Horizontal				DWG
<b>Barometric Relief</b>												
BR-1x Series	Galv. Steel	Aluminum	✓	2000	2	✓			Horizontal			
BR-3x Series	Galv. Steel	Aluminum	✓	2000	2			✓	Vertical			
BR-4x Series	Galv. Steel	Aluminum	✓	2000	2		✓		Horizontal			
<b>Heavy-Duty/Industrial Pressure Relief</b>												
HPR-120	Galv. Steel	Galv. Steel	✓	5150	8.5	✓	✓	✓	Horizontal, Vertical			
HPR-230	Galv. Steel	Galv. Steel	✓	5150	13.5	✓	✓	✓	Horizontal, Vertical			
HPR-330	Galv. Steel	Galv. Steel	✓	6400	20	✓	✓	✓	Horizontal, Vertical			




















































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Model	Blade Type	Damper Maximum Size	Velocity (FPM)	Pressure (in. wg)	Maximum Temperature	Submittal	Installation Instructions	Drawings DWG
<b>Heavy-Duty/Industrial Control Dampers</b>								
HCD-120	3V	96 x 96	3000	8.5	400°F			
HCD-130	Airfoil	120 x 96	4000	8.5	400°F			
HCD-135	Insulated Airfoil	120 x 96	4000	8.5	250°F			
HCD-220	3V	96 x 96	4000	15	600°F			
HCD-221	Flat Dual Skin w/ Perimeter Seal	96 x 60	4000	10	400°F			
HCD-230	Airfoil	120 x 96	5000	15	600°F			
HCD-240	Extruded Airfoil	120 x 96	5000	15	250°F			
HCD-330	Airfoil	120 x 96	5000	25	600°F			
HCD-430	Airfoil	120 x 96	6000	35	600°F			
HCD-530	Airfoil	120 x 96	6000	45	600°F			
<b>Heavy-Duty/Industrial Round Control Dampers</b>								
HCDR-050	True Round	24	3000	6	250°F			
HCDR-150	True Round	48	4000	6	400°F			
HCDR-152	Two-Blade	48	4000	6	400°F			
HCDR-250	True Round	72	5150	13.5	600°F			
HCDR-350	True Round	72	6400	20	1000°F			
HCDR-351	True Round	48	6500	20	400°F			
HCDR-450	True Round	60	7000	30	400°F			






















Heavy-Duty Dampers cont...
















\*Maximum size can be single or multiple sections.

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Model	Frame Material	Blade Material	Counter Balance	Velocity (FPM)	Back Pressure (in. wg)	Airflow Direction			Mounting Position	Submittal	Installation Instructions	Drawings DWG
						Vertical Up	Vertical Down	Horizontal				
<b>Heavy-Duty/Industrial Pressure Relief</b>												
HPR-120	Galv. Steel	Galv. Steel	✓	5150	8.5	✓	✓	✓	Horizontal, Vertical			
HPR-230	Galv. Steel	Galv. Steel	✓	5150	13.5	✓	✓	✓	Horizontal, Vertical			
HPR-330	Galv. Steel	Galv. Steel	✓	6400	20	✓	✓	✓	Horizontal, Vertical			

Model	Frame Material	Blade Material	Velocity (FPM)	Pressure (in. wg)	Airflow Direction					Mounting Position	Submittal	Installation Instructions	Drawings DWG
					Vertical Up	Vertical Down	Horizontal	Angular Up	Angular Down				
<b>Heavy-Duty/Industrial Backdraft</b>													
HB-110	Galv. Steel	Aluminum	3900	5	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-120	Galv. Steel	Galv. Steel	5150	8.5	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-230	Galv. Steel	Galv. Steel	5150	13.5	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-240	Galv. Steel	Aluminum	5150	13.5	✓	✓	✓	✓	✓	Horizontal, Vertical			
HB-330	Galv. Steel	Galv. Steel	6400	20	✓	✓	✓	✓	✓	Horizontal, Vertical			
<b>True Round Heavy-Duty/Industrial Backdraft</b>													
HBR-050	Galv. Steel	Galv. Steel	3000	6	✓	✓	✓			Horizontal, Vertical			
HBR-150	Painted Steel	Painted Steel	4000	6	✓	✓	✓			Horizontal, Vertical			

Model	Blade Type	Velocity (FPM)	Pressure (in. wg)	Maximum Temperature	Submittal	Installation Instructions	Drawings
							DWG
<b>True Round Bubble-Tight Damper</b>							
HBTR-151	True Round	3900	10	250°F			
HBTR-451	True Round	6500	30	250°F			
HBTR-551	True Round	6500	40	250°F			
<b>Rectangular Bubble-Tight Damper</b>							
HBT-221	Rectangular	3900	10	250°F			
HBT-321	Rectangular	4000	20	250°F			

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