

# LDS RUBBER SOUND ISOLATION SYSTEM

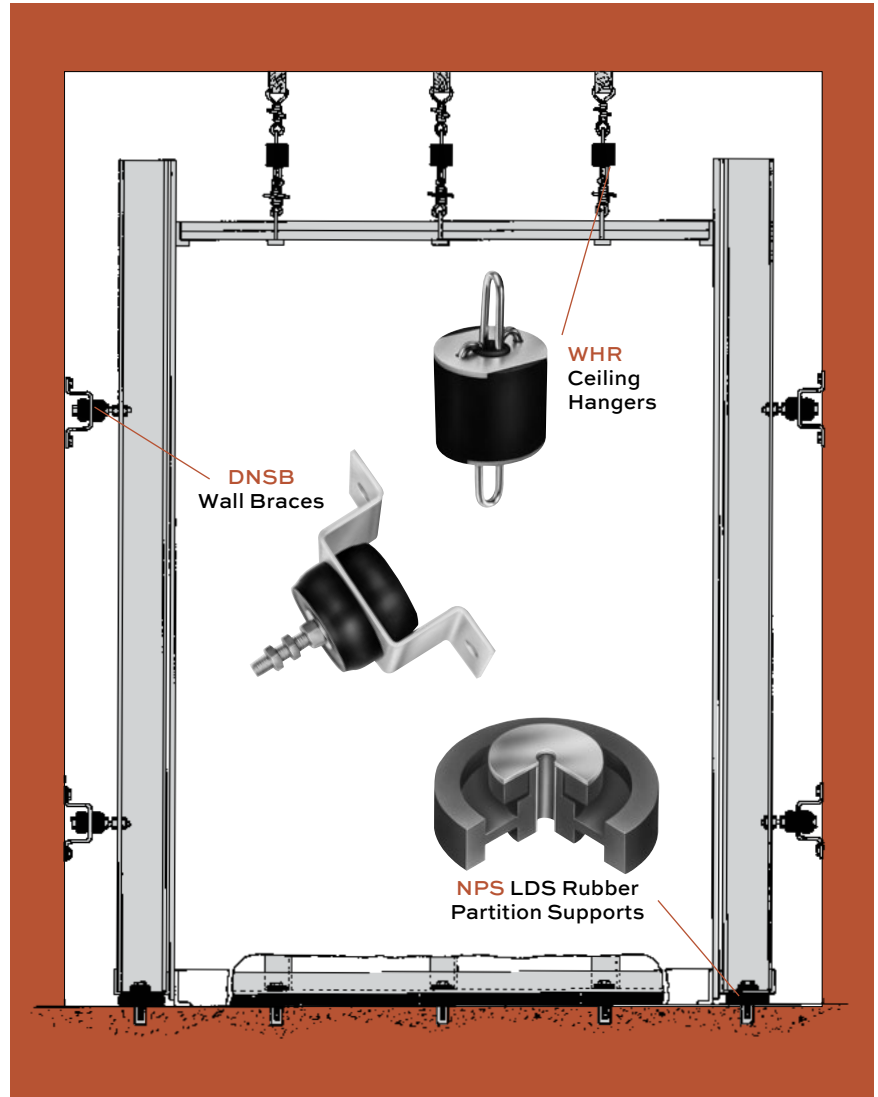
## for CEILINGS & WALLS

### A NEW TOTAL CONCEPT APPROACH TO LOW COST NOISE ISOLATION SYSTEMS

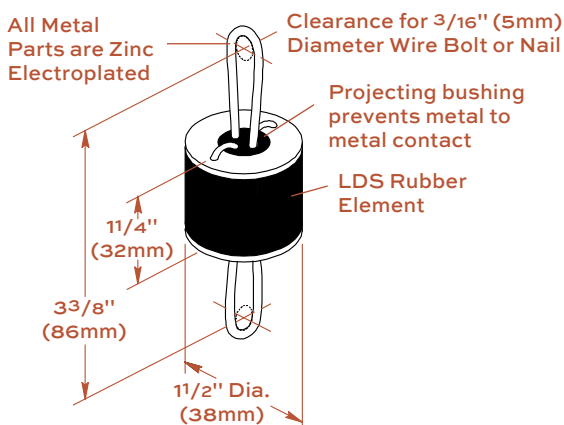
The noise isolation efficiency of mechanical or gypsum board walls and ceilings is seriously threatened when solid connections are made to noisy structural walls, ceilings or floors. Simple inexpensive LDS rubber isolators can break these sound paths when used as wall braces, ceiling hangers or floor supports. The modest cost of this protection is more than paid for by quieter occupied space.

Typical applications include computer rooms, studios, offices, conference rooms, machine rooms, etc. See below and the following page for physical data. When ordering please include model designation and size to ensure prompt service.

Should you require assistance in determining your exact requirements, contact our factory, your local representative or distributor.



### WHR CEILING HANGERS



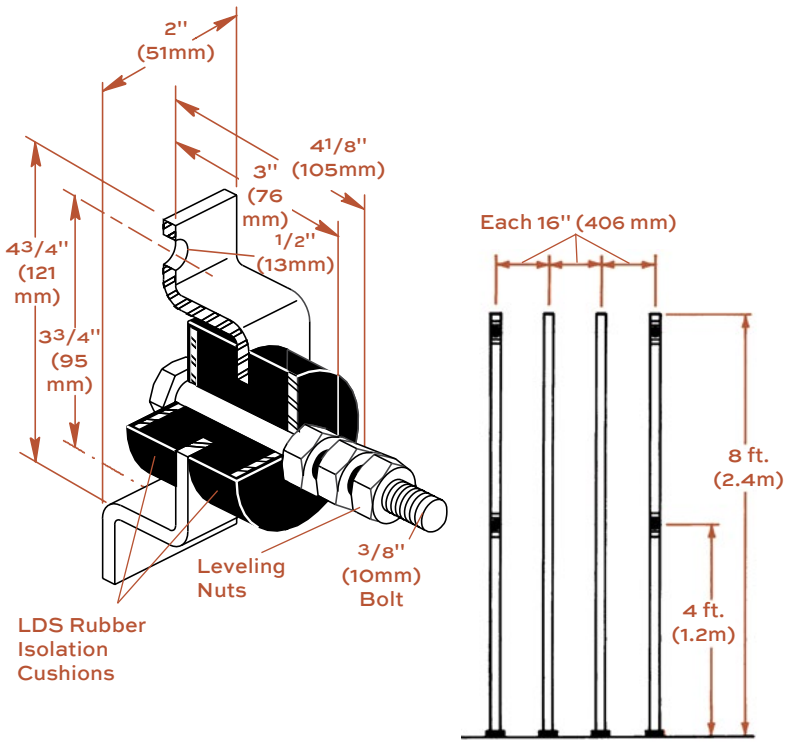
### WHR LOAD RATINGS

Type & Size	Durometer	Color Code	Rated Load		Max Static Defl	
			(lb)	(kg)	(in)	(mm)
WHR-40	40	Green	Up to 60	27	0.2	5.0
WHR-50	50	Red	55 - 95	25 - 43	0.2	5.0
WHR-60	60	White	90 - 155	41 - 70	0.2	5.0
WHR-70	70	Yellow	150 - 220	68 - 100	0.2	5.0

### WHR SELECTION GUIDE - TYPICAL APPLICATION Hangers Located on 48" (1200mm) Centers

Type & Size	Construction			Approximate Wt.	
				Sq Ft (lb)	Sq Meter (kg)
WHR-40	1"	25mm	Ceiling Tile	2.5	12
WHR-50	2 Layers	1/2"	13mm Gypsum Board	4.5	22
WHR-60	2 Layers	5/8"	16mm Gypsum Board	5.6	27
WHR-60	2 Layers	3/4"	19mm Gypsum Board	6.8	33
WHR-70			Plaster & Lathe	10.0	49

**DNSB WALL BRACES**

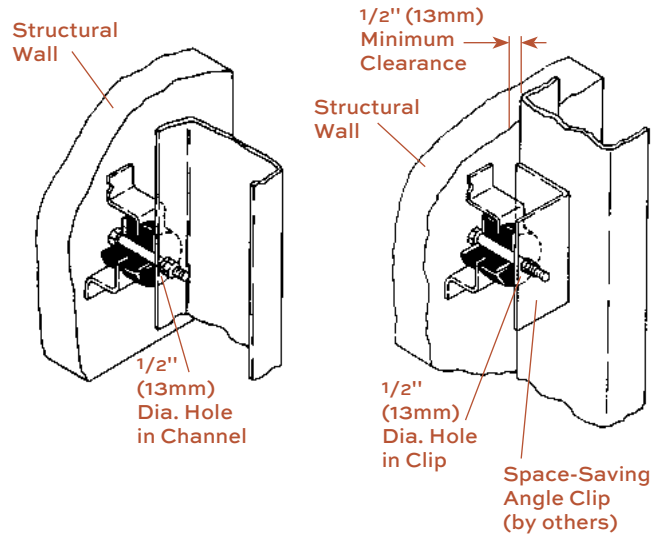


**NORMAL DNSB SPACING**

Vertical - 1st Row - 4 ft 0" above floor  
 2nd Row - Near the top of an 8 ft 0" high partition  
 Horizontal - 4ft 0" - (Every fourth stud)

**STANDARD STEEL STUDDING END**

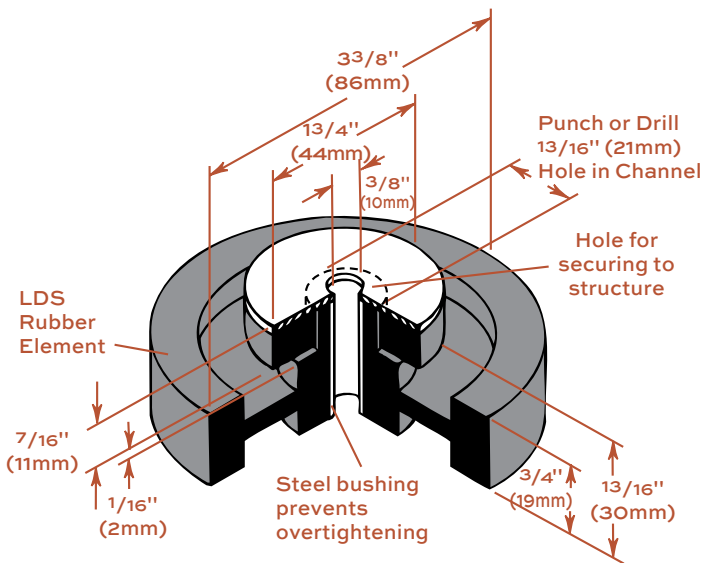
DNSB Brace with 3/8" (10mm) Bolt for Metal Studs



**TYPE DNSB LOAD RATINGS**

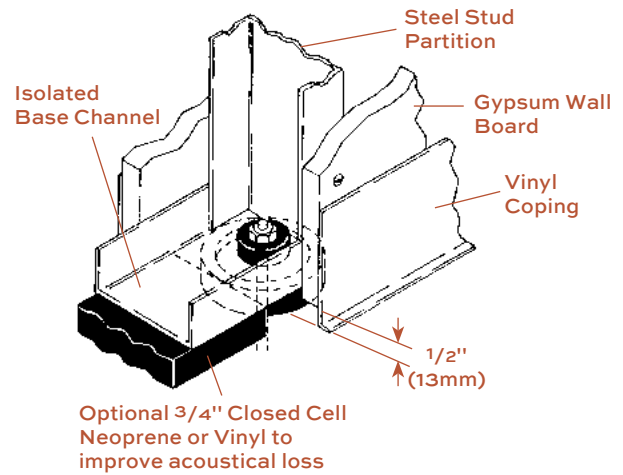
Type & Size	Rated Axial Restraint & Deflection if Stressed				Maximum Assigned Wall Weight		Minimum Assigned Weight to Establish 10Hz	
	Load (lb)	Load (kg)	Defl (in)	Defl (mm)	(lb)	(kg)	(lb)	(kg)
DNSB-A	56	25	0.10	2.5	250	113	50	22.7
	84	38	0.15	3.8				

**NPS LDS RUBBER PARTITION SUPPORTS**



**NPS LOAD RATINGS**

Type & Size	Durometer	Color Code	Rated Load		Max Static Defl	
			(lb)	(kg)	(in)	(mm)
NPS-30	30	Black	140	64	0.12	2.8
NPS-40	40	Green	240	109	0.12	2.8



**NPS SELECTION GUIDE - TYPICAL APPLICATION**

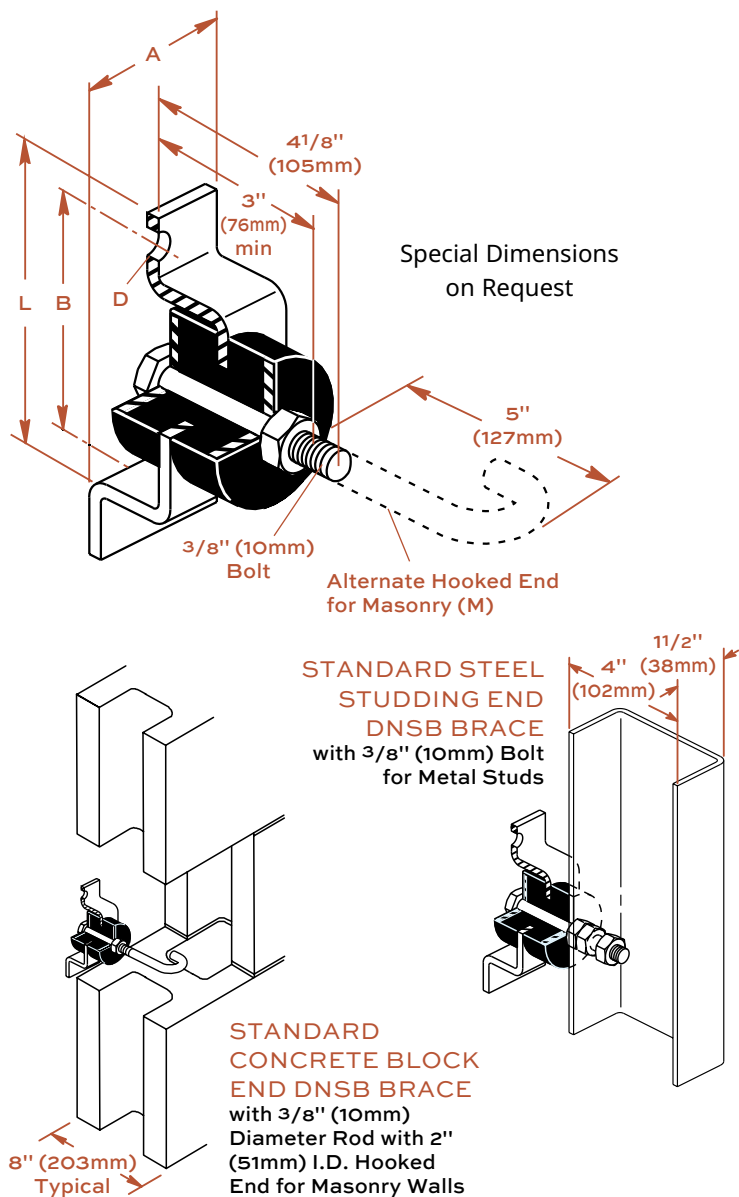
Supports on 16" (400mm) centers with a wall height of 96" (240mm) and 4" (100mm studs)

Type & Size	Gypsum Board	Approximate Wt.		Weight per Location	
		Sq Ft (lb)	Sq Meter (kg)	(lb)	(kg)
NPS-30	1/2" 13mm 1 Side	4.2	45	45	21
	1/2" 13mm 2 Sides	6.7	72	71	32
	5/8" 16mm 1 Side	4.8	52	51	23
	5/8" 16mm 2 Sides	7.6	82	81	37
	3/4" 19mm 1 Side	5.4	58	58	26
	3/4" 19mm 2 Sides	8.8	95	94	43

# DOUBLE DEFLECTION SWAY BRACES

for MASONRY or DRY WALL CONSTRUCTION

# DNSB



### COMMON WALL WEIGHTS

See page 4-52 for Common Wall Weights.

### PHYSICAL PROPERTIES OF BRIDGE BEARING NEOPRENE ELEMENTS

Grade (Durometer A)	60
Original Physical Properties	
Hardness ASTM-D676	60±5
Tensile strength, minimum psi ASTM-D412	2500
Elongation at break, minimum percentage	350
Accelerated Tests to Determine Long-term Aging Characteristics	
Oven Aging - 70 hrs @ 212°F, ASTM-D573	
Hardness, maximum change of points	+15
Tensile strength, maximum percentage of change	±15
Elongation at break, minimum percentage	-40
Ozone (1 ppm in air by volume @ 20% strain @ 100 + 2°F, ASTM-D1149, 100 hrs	No Cracks
Compression Set, ASTM-D395 - Method B, 22 hrs at 158°F, maximum percentage of change	25

### NOTES

- Sway braces prevent buckling or overturning of tall or long walls.
- Buckling forces are extremely small when braces are reasonably spaced both horizontally and vertically as the brace spacing maintains a very low l/r column ratio.
- Our general recommendation is spacing on four foot centers both horizontally and vertically.
- The maximum axial restraint rating is approximately 33% of the maximum assigned wall weight and extremely conservative.
- Vertical resistance information is provided for checking embedment requirements in walls and shear or pullout forces on both ends of the sway braces. Sway braces are not to be used for vertical supports.
- Response frequency is a function of the attached mass and the dynamic stiffness in the direction of vibration. The 10 Hz response is normally lower and more desirable than what is usually specified. Heavier weight assignments than the specified minimum will lower the response frequency by the square root of the ratio of the minimum weight to the assigned value multiplied by 10 Hz. Lighter loads will increase the frequency by the same proportion.

EXAMPLE: 8" Concrete Block Wall weighing 55 lb per sq/ft.  
 Sway braces on 4 foot centers both ways.  
 Assigned Weight = 16 x 55 = 880 lb  
 Selection DSNB-B (Maximum 1200 lb)  
 Frequency = 10Hz x  $\sqrt{400/880}$  = 6.74 Hz

### TYPE DNSB DIMENSIONS

Type & Size	A (in) (mm)		B (in) (mm)		D Hole Diameter (in) (mm)		L (in) (mm)	
DNSB-A DNSB-AM*	2	51	33/4	95	1/2	13	43/4	121
DNSB-B DNSB-BM*	2 1/2	64	4 1/4	108	1/2	13	5 1/4	133

### TYPE DNSB LOAD RATINGS

Type & Size	Rated Axial Restraint & Deflection if Stressed				Maximum Assigned Wall Weight (lb) (kg)	Minimum Assigned Weight to Establish 10Hz (lb) (kg)	Resistance to Vertical Motion Created by Wall Pad or Floating Floor Deflection																					
	Load (lb) (kg)	Defl (in) (mm)	Load (lb) (kg)	Defl (in) (mm)			Load (lb) (kg)	Defl (in) (mm)	Load (lb) (kg)	Defl (in) (mm)	Load (lb) (kg)	Defl (in) (mm)	Load (lb) (kg)	Defl (in) (mm)														
DNSB-A DNSB-AM*	56	25	0.10	2.5	84	38	0.15	3.8	250	113	50	23	6	3	0.05	1.3	12	6	0.10	2.5	18	8	0.15	3.8	24	11	0.20	5.1
DNSB-B DNSB-BM*	260	118	0.10	2.5	390	177	0.15	3.8	1200	544	400	181	39	18	0.05	1.3	78	35	0.10	2.5	117	53	0.15	3.8	156	71	0.20	5.1

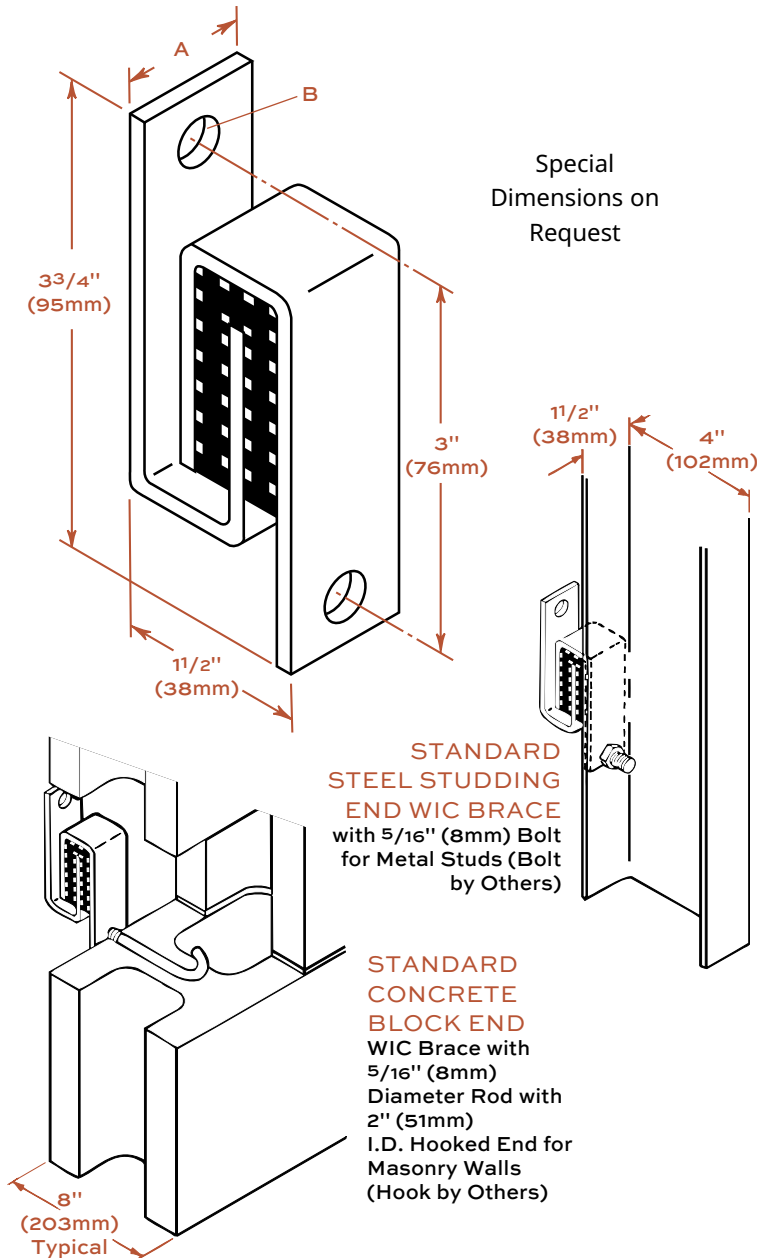
\*"M" designates Hooked End for Masonry



# SPACE SAVING TYPE W NEOPRENE PAD INTERLOCKING CLIPS (SWAY BRACE)



## Standard 40 Durometer 5/16" (8mm) Neoprene Waffle Pad



### COMMON WALL WEIGHTS

Thickness (in)	Thickness (mm)	Material	(lb/ft <sup>2</sup> )	(kg/m <sup>2</sup> )
4	102	Brick	35	175
8	203		75	365
12	305		115	560
4	102	Heavy Aggregate Hollow Concrete Block	35	175
6	152		50	245
8	203		58	285
12	305	90	440	
4	102	Poured Concrete Masonry	48	235
6	152		72	350
8	203		96	470
12	305	144	705	
4	102	Steel Studded Alone	1.5	7.5
2 x 4	51 x 102	Wood Studded Alone	2.0	10
1/2	13	Gypsum Board	2.1	10
5/8	16		2.7	13
3/4	19		3.2	16
1	25	Cement Plaster	10.0	50
1	25	Gypsum Plaster	5.0	25
-	-	Metal Lathe	0.5	2.5
-	-	Gypsum Lathing Board	2.0	10

### NOTES

- Sway braces prevent buckling or overturning of tall or long walls.
- Buckling forces are extremely small when braces are reasonably spaced both horizontally and vertically as the brace spacing maintains a very low l/r column ratio.
- Our general recommendation is spacing on four foot centers both horizontally and vertically.
- The maximum axial restraint rating is approximately 33% of the maximum assigned wall weight and extremely conservative.
- Vertical resistance information is provided for checking embedment requirements in walls and shear or pullout forces on both ends of the sway braces. Sway braces are not to be used for vertical supports.
- Response frequency is a function of the attached mass and the dynamic stiffness in the direction of vibration. The 15 Hz response is normally lower and more desirable than what is usually specified. Heavier weight assignments than the specified minimum will lower the response frequency by the square root of the ratio of the minimum weight to the assigned value multiplied by 15 Hz. Lighter loads will increase the frequency by the same proportion.

**EXAMPLE:** Steel stud wall with 2 layers of 3/4 inch gypsum board weighing 7.9 lb per sq/ft. Sway braces on 4 foot centers both ways.  
 Assigned Weight = 16 x 7.9 = 126 lb  
 WIC-1 Selection (Maximum 250 lb)  
 Frequency = 15Hz x  $\sqrt{126/250}$  = 10.65 Hz

### TYPE WIC DIMENSIONS

Type & Size	A (in)	A (mm)	B Hole Diameter (in)	B Hole Diameter (mm)
WIC-1	1	25	3/8	10
WIC-2	2	51	3/8	10

### TYPE WIC LOAD RATINGS

Type & Size	Rated Horizontal Restraint & Deflection if Stressed				Maximum Assigned Wall Weight		Minimum Assigned Weight to Establish 15Hz	
	Load (lb)	Load (kg)	Defl (in)	Defl (mm)	(lb)	(kg)	(lb)	(kg)
WIC-1	90	41	0.05	1.3	250	113	50	23
WIC-2	260	118	0.05	1.3	500	227	100	45

