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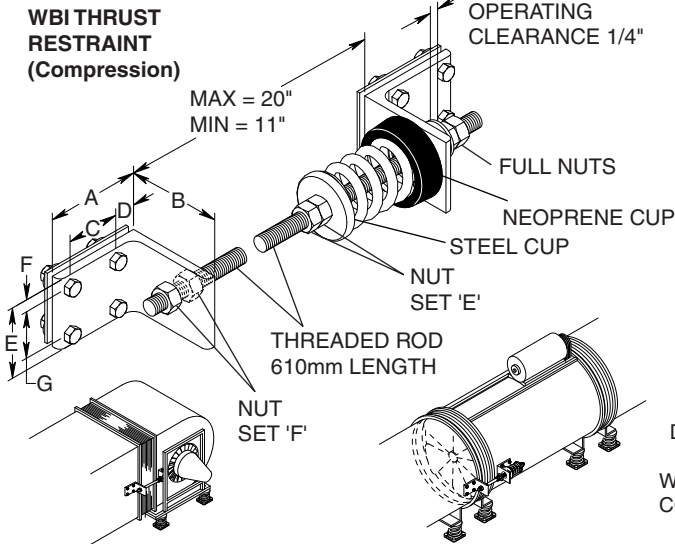
CERTIFIED FOR

JOB NAME :
 CUSTOMER :
 CUSTOMER P.O. :
 MASON M.I. :
 DWG. NO. :

TYPE WBI & WBD

1, 2, 3 & 4" Deflection
 Horizontal
 Thrust Restraints

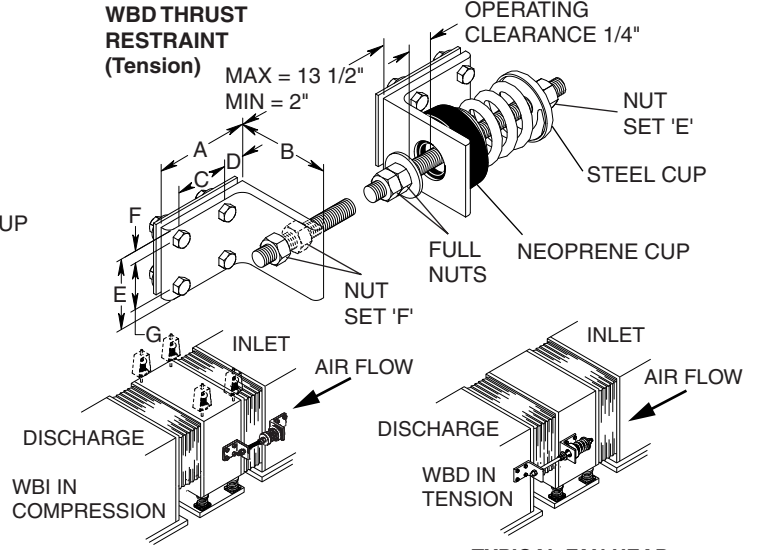
WBI THRUST RESTRAINT (Compression)



TYPICAL CENTRIFUGAL FAN

TYPICAL AXIAL FAN

WBD THRUST RESTRAINT (Tension)



TYPICAL FAN HEAD

TYPICAL FAN HEAD

Fan Heads are cabinets containing a fan and motor and no accessories such as coils or filters. They can develop extremely high thrusts that are equal to the suction area multiplied by the negative head plus the positive pressure multiplied by the discharge area. These forces act horizontally, opposite to the airflow and about halfway up the cabinet. Since fan heads are light and narrow they tend to shift and overturn with damage to the flexible connections or to the units themselves.

Thrust restraints are recommended for all fan heads and for axial or centrifugal fans when the air thrust exceeds 10% of the equipment weight.

Type WBI and WBD Thrust Restraints are precompressed assemblies designed to withstand these forces and allow only minor motion. The WBI is considered standard and used in compression across the inlet flexible connection on both sides. The WBD design is used in tension across the discharge when WBI is impractical. We furnish all parts except those noted "by others".

One end of either the WBI or WBD Assembly must be attached to the unit. The other end is normally attached to the ductwork or adjacent section, but when this becomes difficult it can be attached to a ceiling or floor stanchion fabricated for this purpose.

WBI Units can be converted to WBD by reversing the spring assembly on the angle as illustrated.

- 1) Check with air handling unit manufacturer to establish the structural integrity of the unit and to determine their recommendation as to the bolting position.
- 2) Install Unit on Mounting or suspend from Hangers.
- 3) Bolt thrust assembly angle brackets with back-up plates to fan cabinet on the centerline of the inlet (approximately halfway up the unit). Bolt second angle bracket with back-up plates to the plenum or coil section as shown. If overall length is more than needed, loosen nutset "F", slide angle on threaded rod and re-tighten.
- 4) Turn the unit on.
 - a) If the operating clearance between angle and washer exceeds 1/4", turn nut "E" clockwise (to load spring) two turns at a time on each assembly, until clearance is 1/4"
 - b) If the operating clearance between angle and washer is less than 1/4", turn nut "E" counterclockwise (to unload spring) two turns at a time on assembly, until clearance is 1/4".
- 5) When unit is shut down on 1/4" operating clearance will disappear and reappear when operation is renewed.

INSTALLATION INSTRUCTIONS

TYPE WBI & WBD DIMENSIONS (inches)

Type	Size	A	B	C	D	E	F	G	Threaded Rod	Max Restraint (lbs/Pair)	Max Fan Head Inlet* (ft ²)	Max Axial Fan Discharge Area** (ft ²)	TYPE WBI & WBD RATINGS			
													Rated Capacity (lbs)	Rated Defl. (in)	Spring Constant (lbs/in)	Spring Color/Stripe
WBD	A-310	3 1/2	3	1 3/4	1 1/4	3	1/2	2	1/2-13NC	620	26.00	20.00	310	1.00	310	YELLOW
	B-750	4	3 1/2	2 1/4	1 1/4	3	1/2	2	5/8-11NC	1500	64.00	47.00	750	1.12	670	WHITE
	B-1000	4	3 1/2	2 1/4	1 1/4	3	1/2	2	5/8-11NC	2000	86.00	64.00	1000	1.00	1000	BLUE
	B2-290	4	3 1/2	2 1/4	1 1/4	3	1/2	2	5/8-11NC	580	25.00	19.00	290	2.00	144	BLUE
	B2-450	4	3 1/2	2 1/4	1 1/4	3	1/2	2	5/8-11NC	900	38.00	29.00	450	2.00	224	TAN
	B2-680	4	3 1/2	2 1/4	1 1/4	3	1/2	2	5/8-11NC	1360	58.00	44.00	680	2.00	340	GRAY
	129	6	6	3 7/8	1 1/2	5	5/8	3 3/4	5/8-11NC	1040	45.00	33.00	520	3.25	160	GREEN
	153	8	7	5	2 1/4	6 1/2	1	4 1/2	5/8-11NC	1060	45.00	34.00	530	4.38	120	GREEN

*Based on 6" pressure differential across unit with 4.5" negative pressure **Based on 6" pressure differential

CERTIFICATION DATA

_____ Inch SPECIFIED DEFLECTION

DWN : _____ CHKD: _____ DATE : _____

DWG NO. : _____