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BulletBrace™

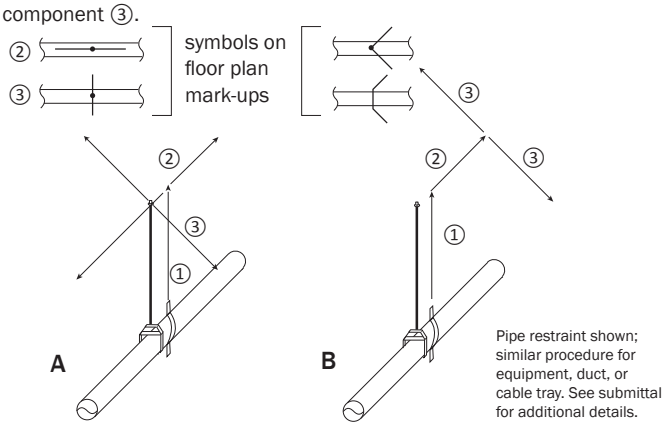
Preassembled Adjustable Cable Restraint Kits
Installation Instructions

BB
BBR

File No.: INS-BB-005 Date: 23 May 2017
Supersedes: INS-BB-004 Date: 27 Feb 2017

INSTRUCTIONS

1. Locate restraint position and direction as shown in seismic restraint submittal package.
2. Locate the positions on the structure for attaching the seismic restraints. These attachment positions shall be as close as possible to 45°(±15°) from the restrained component connection.
   A) **For transverse or longitudinal-only restraints (shown as a straight line on floor plan markups)**: This point can be estimated easily by measuring the vertical distance from the structure to the restraint attachment point on the component ①, then measuring that distance along the structure either inline with the component ② (for longitudinal restraints) or perpendicular to the component ③ (for transverse restraints).
   B) **For compound 45° angle restraints (shown as a "V" on floor plan markups)**: This point can be estimated easily by measuring the vertical distance from the structure to the restraint attachment point on the component ①, then measuring that distance along the structure inline with the component ②, then the same distance perpendicular to the component ③.



3. Note that standard BB and BBR restraint kit cable lengths are 10′ (3 m). If longer cables are required, contact Vibro-Acoustics for custom length pricing or for bulk wire rope with field-assembled ends using a BulletLock™ at each end (Fig. 1).
4. Attach the preassembled fixed ends to structure using the attachment method indicated in the submittal package (e.g., seismically rated concrete anchor bolts). See sheet INS-BB-AL for attachment requirements.
5. Attach brackets on restraint adjustable ends to restrained component as indicated in the seismic restraint submittal package.
6. Pull and slide each cable from its dead end side to achieve the desired length.
   a. The dead end is the side of the cable that does not carry any load. Securing set screw is installed at the factory snugged against the cable (Fig. 2).
   b. Loosen the securing set screw inside each BulletLock™ to slide the cable.
7. Adjust cables to remove slack. If the non-structural component is supported with vibration isolators, leave a 1/4″ (6 mm) sag in each cable to prevent vibrations from transferring to the structure.
8. Move the BulletLock within 1/4″ (6 mm) of the thimble. While holding each cable in position, torque the securing set screws inside the BulletLock™ (Fig. 3). Refer to Table 1 for torque values and hex key sizes.
9. Once cable length is adjusted and the securing set screw is torqued properly, install the locking set screw hand-tight against the torqued securing set screws. Cut off excess cable, leaving a turnback length of at least 2″ (50 mm) as shown above.

Standard BB or BBR Kit Arrangement

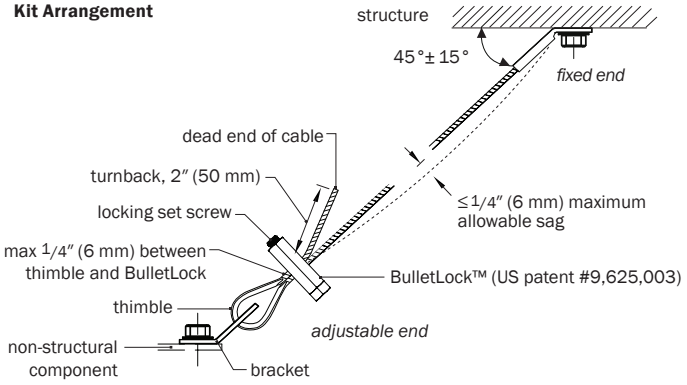
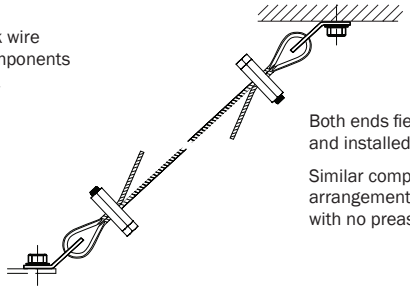


Fig.1

Optional bulk wire rope and components arrangement



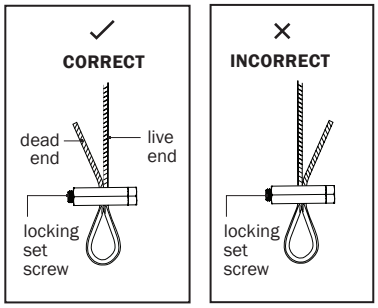
Both ends field assembled and installed

Similar components and arrangements as above with no preassembly

Table 1

Model	BulletLock Label Color	Torque		Hex Key Size	
		ft.lb	N-m	in	mm
BB-13 / BBR-13	Red	**10**	13.6	3/16	5
BB-19 / BBR-19	Green	**26**	35.3	1/4	6

Fig.2



NOTE: The securing set screw inside the BulletLock™ must be torqued tight against the dead end of the cable.

Please notify the factory if any parts are missing or the cable kits have incorrect BulletLock™ assemblies.

Fig.3