INSTALLING AND USING MEYER SOUND 3.5" NUT PLATES

Recommended procedures for the safe installation and use of Meyer Sound 3/8"-16 and M-10 3.5"-diameter nut plates include:

- Minimum bolt grade (quality)
- Minimum and maximum bolt length extending below the nut plate surface
- Maximum torque settings for installing the bolt into the nut plate
- Installation procedure for nut plates

CAUTION: The standard Meyer Sound nut plate is rated for a safe working load not to exceed the weight of a single loudspeaker to which it is attached. Do not suspend additional loads from the enclosure.

RECOMMENDED BOLT GRADE

The *minimum* bolt grade to use with a Meyer Sound nut plate is Grade 5 (imperial) or Grade 8.8 (metric). The ratings are typically marked on the bolt head. The optimal bolt rating is Grade 8 (imperial) or Grade 10.9 (metric).

CAUTION: Hardware store bolts that are unmarked are usually made of soft, mild steel. These bolts, and any bolts of Grade 2 quality or lower should not be used.

BOLT LENGTH GUIDELINES

When selecting bolts to use with the nut plates, the total length of the bolt will depend on the thickness of the material that the loudspeaker is being attached to. However, follow these guidelines for the minimum and maximum lengths that the bolt will extend below the top surface of the nut plate:

- Minimum Length: 0.25"/6.35 mm (to engage all of the threads in the nut plate)
- Maximum Length: 0.5"/12.7 mm (to avoid hitting internal parts under the nut plate)

MAXIMUM TORQUE SETTINGS

Use the following maximum torque settings to tension the bolt properly and remain within the safe elastic limits of the bolt and nut plate:

- Imperial Units: Grade 5 or Grade 8 bolt torque settings should not exceed 33 ft-lbs (396 in-lbs)
- Metric Units: Grade 8.8 or Grade 10.9 bolt torque settings should not exceed 49 Nm (434 in-lbs)

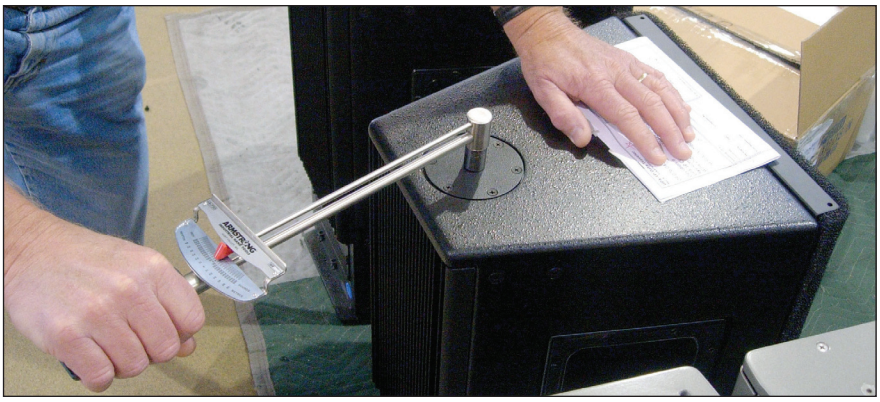

Figure 1. Use torque wrench to properly tension bolt into nut plate.

Meyer Sound Laboratories Inc.
2832 San Pablo Avenue
Berkeley, CA 94702

www.meyersound.com
T: +1 510 486.1166
F: +1 510 486.8356

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CAUTION: Excessive torque will exceed the bolt's elastic limits, causing it to weaken and become vulnerable to tensile failure when further loads are applied — even though it may appear sound and "tight."

CAUTION: When using plated or lubricated bolts, the recommended maximum torque is 15% to 20% lower.

NOTE: Threaded knobs are typically supplied with yoke rigging for loudspeakers; hand-tighten.

INSTALLING NUT PLATES

If upgrading or replacing the 3.5"-diameter nut plates, they are installed into Meyer Sound loudspeakers using six 10-32 x 1.0" bolts (part #101.641, included in the 3/8"-16 and the M-10 nut plate kits).

1. Remove the previously installed plate or ring-and-stud hardware, if necessary. Retain the screws, replacing any that are damaged.
2. If needed, replace the gasket (part #67.051.039.01), lining up its holes with those in the enclosure, and place the nut plate. Remove all of the previous gasket if it is torn or otherwise damaged.
3. Coat the threads on each of the six screws with Loctite® 222, place them in the holes, and hand-thread a few turns into the internal rigging plate. Then tighten down to the surface of the nut plate until "snug."
4. Final tighten with a medium (18 in-lbs) torque setting in a "star" pattern, tightening bolts on opposite sides of the nut plate to evenly seat it. Repeat the star pattern twice.

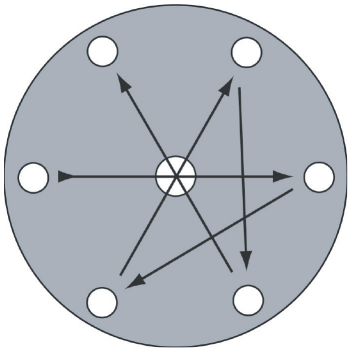

Figure 2. Tighten nut plate bolts in a "star" pattern.

CAUTION: When replacing nut plates on a weather-protected loudspeaker, be sure to use the weather-protected version of the nut plate.

CONVERTING TORQUE MEASUREMENTS

If you need to use a bolt that is not graded in your primary country's measurement units, use the following conversion method to verify the torque settings:

- Newton-meters (Nm) to in-lbs: multiply by 8.85
- Inch-pounds (in-lbs) to Nm: multiply by 0.113