Thank you for your purchase of the Spiral Groove Centroid Universal Integrated Tonearm. The Universal Integrated model is designed for use with turntables other than our own Spiral Groove models. The performance features and use of the tonearm is identical to that of the arm we mount onto our own tables, only the arm to armboard mounting system is different. The discussion of the tonearm design below provides much useful information for both model tonearms, but can be read before or after the installation and setup of the tonearm. Enjoy!

**Centroid Universal Integrated Parts List**

- Universal Armboard assembly
- Armboard Mounting Collet with Wave Washer and Collet Lock Ring.
- Spindle to Pivot Jig
- Scribe/Punch tool for marking drill point on armboard.
- Locating Pin Base (pressure fits into corresponding holes on the mirrored gauge and spindle to pivot jig via three pins on the underside of the base)
- Locating pin (screws into locating pin base, and inserts into center-front pin hole on headshell)
- Hex key(s):
  - 5/64 inch (for VTA)
  - 3/32 inch (for RCA connector block hold-down bolt)
  - 5/32 inch (for tone arm board mounting bolts)
- One RCA connector block hold-down bolt
- Four anti-skate weights (3 thicknesses: 1 x 1mm, 1 x 2mm, and 2 x 4mm)
- Mirrored cartridge alignment gauge
- Top capture “O” ring for Antiskate rod.

**Universal Integrated Armboard Assembly**

![Universal Integrated Armboard Assembly Diagram](image)
Critical Alignment

Very Important Note: For any tonearm, the ultimate performance of the tonearm is determined by the accuracy of where the tonearm is mounted, regardless of how well the tonearm is designed or manufactured. One of the benefits that can accrue to a factory assembled arm and table system is the precision of the platter spindle to arm pivot distance. The accuracy of this specification must be precise as cartridge alignment geometry is calculated using this as a fixed point, from which the variable position of the phono cartridge can be determined using an alignment gauge. This requires being able to identify the exact pivot point of the tonearm and a mounting system that can accurately place and secure the tonearm onto the turntable for a given specification. Unless extremely tight tolerances are held, the position of the arm relative to the platter spindle can vary greatly, rendering the alignment geometry inaccurate. We believe that the Centroid Universal Integrated is the first tonearm designed for consumer installation that provides the design and tooling to determine the exact pivot point of the tonearm on the turntable that results in the correct platter spindle to arm pivot point distance.

The Centroid Universal Integrated provides both design features and easy to use tools that allow the user to accurately drill and mount the arm onto a turntable with critical accuracy. We have developed a system where we do not rely on the precision of the user’s machining skills to precisely locate the arm, but rather an easy to use template and arm pivot location device that allows the pivot point height and distance to be critically found and locked into place. We believe there is no other universal arm on the market that provides such precise positioning of the arm pivot point to the platter spindle. Below is an easy to follow illustrated step by step process to mount the Centroid Universal Integrated.
Preparing the turntable armboard for mounting the Centroid Universal

The Centroid Universal Mounting Collet is 1” (25mm) in diameter. A 1 ¼” (27mm) drill bit is required that is appropriate for the armboard material of your turntable is required. The oversized whole is specified so that perfect alignment using the Spindle to Pivot Jig can be obtained.

1. Place the Spindle to Pivot jig onto the spindle of the turntable and rotate it into place over the armboard.

2. Lower the Scribe/Punch tool through the hole over the armboard, point side down. Lower it all the way down to the turntable armboard surface.
3. Using the Scribe/Punch Tool, mark the point on the armboard where you want to drill the 27mm hole.

4. After drilling the 27mm hole, insert the Arm Mounting Collet into the armboard hole. Then from the bottom, first mount the Wave Washer and then the Lock Ring onto the collet.

5. Pass the Armboard Assembly through the Collet and tighten the Lock Ring/Wave Washer combo so the Wave Washer is slightly compressed but the Collet Assembly can be moved around in the 27mm hole when mild pressure is applied.
Determining Spindle to Pivot Distance

6. Insert the Armboard Assembly into the Collet and gently tighten the Collet set screw so that the Armboard Assembly will be held in place, but can still be raised or lowered by hand. Rotate the Spindle to Pivot Jig so it is generally above the Bearing Post on the Armboard Assembly. Raise the Armboard Assembly up so that the Bearing Post goes up and through the hole in the Pivot Jig. Now tighten the Collet Lock Ring, compressing the Wave Washer against the bottom of the turntable armboard. After it is tight and the Collet Assembly will not move, gently tighten the 1/8” set screw on the lock ring. Recheck Spindle to Pivot distance with the Jig to ensure that it is correct. Correct if necessary.

Determining Bearing Height

7. Lift and rotate the Spindle to Pivot Point Jig off the Bearing Post and let it sit flat on the platter. Insert the Locating Pin into the Locating Pin Base as shown below. Holding the Locating Pin Base off the side of the Spindle to Pivot Point Jig, lower the Locating Pin until it touches the platter surface.
8. Insert the Locating Pin Base onto the Pivot to Stylus Jig by aligning the three protruding pins with the three corresponding holes on the Jig. Press down until the device is seated flat against the Jig. Lift and rotate the Jig back onto the Bearing Post, pressing down on the Jig until it is seated flat against the platter surface. A small portion of the Bearing Post will be in the Jig. The Locating Pin will seat onto the Sapphire Cup Bearing surface. When the Jig is flat on the platter and the Bearing Post is up as far as it will extend without raising the Jig off the platter surface, the correct bearing height will be set.

Note: The first image shows the correct position of the Bearing Post in the Jig. The second image shows the Bearing Post elevated too high, and the third image shows it elevated too low.

9. Before fully tightening the Collet set screw, Rotate the Armboard Assembly so it is oriented to your liking on the turntable. We suggest aligning the back edge of the Armboard Assembly to be level with the back of the turntable, as illustrated. Tighten the 1/8” set screw on the Arm Mounting Collet to it is very snug.

The Universal Armboard Assembly is now mounted with the critical alignment required to properly align the phono cartridge. You can now proceed to the part of the manual about setting up the Centroid Tonearm onto the armboard.