I. Assembly of Hub to Gear Box or fan shaft using a Tapered Bushing
   A. Clean all mating surfaces between shaft, bushing and hub spool.
   B. Install the dry bushing on the dry shaft until flush with the top of the shaft.
   C. Tighten the set screws on the busing flange to the shaft.
   D. Coat the mating surfaces between the bushing and the hub spool with an anti-seizing compound.
   E. Align key and install hub onto the bushing.
   F. Torque the bushing bolts into the hub spool, per the bushing specifications.

II. Assembly of Blades to Fan Hub
   A. Remove blade clamp bolts, nuts, lock washers, and blade clamp halves from hub.
   B. Remove and discard the PVC blade clamp spacers.
   C. Position blade clamp halves on blade neck with chamfered edge toward hub.
   D. Install blade clamp with blade necks into hub with leading edge of blade toward direction of fan rotation (always clockwise when viewed from above).
   E. Install clamp bolts with bolt heads on top side through hub plates and blade clamps.
   F. Install lock washers and nuts.
   G. Lightly tighten clamp bolts, at this time.

III. Setting Blade Pitch Angle and Tracking
   A. Pull blade out until blade neck flange is flush with the back of the blade clamp.
   B. Support blade at tip in a horizontal position while setting pitch angle.
   C. Use a protractor with a flat bar extended across width of blade as a base plate approximately 1” from tip of blade and adjust blade to specified pitch angle.
   D. While maintaining the specified pitch angle and while supporting the tip of the blade, tighten the blade clamp bolts to hold blade firmly in place.
   E. Scribe the blade profile on the fan stack with a marking instrument, which will benchmark the tracking profile for all of the blades.
   F. Rotate the fan assembly to the next blade and repeat steps A,B,C, and D for all remaining blades in the fan assembly, using the profile of the first marked blade as a reference for setting the tracking for all remaining blades.
   G. Ensure that weep holes in the blade tips are clear of any obstruction.
   H. All pitch angles should be within plus/minus 0.2° of the specified setting, while maintaining a tracking pattern not to exceed one (1) inch between the highest and the lowest blade track profile.
   I. Torque all blade clamp bolts to the specification required for a specific fan size.
   J. Recheck blade pitch angles and tracking to be within specified settings.

IV. Install the Seal Disc.
V. Rotate the assembled fan by hand to verify the fan turns freely with no interference.
VI. Bump start the motor to verify a clockwise rotation (as viewed from above).
VII. Run the fan and check motor power consumption to ensure proper motor load.
HUDSON PRODUCTS CORPORATION  
FAN ASSEMBLY AND INSTALLATION INSTRUCTIONS

I. Assembly of Hub to Gear Box Shaft that has a Straight Bore (w/ retainer)
   A. Clean all mating surfaces between hub spool and shaft.
   B. Coat the mating surfaces with an anti-seize compound.
   C. Install the retainer channel on top of the hub.
   D. Align key and install hub.
   E. Thread the retainer channel eyebolt into the gear box shaft.
   F. Tighten set screws on hub spool to shaft.

II. Assembly of Blades to Fan Hub
   A. Remove blade clamp bolts, nuts, lock washers, and blade clamp halves from hub.
   B. Remove and discard the PVC blade clamp spacers.
   C. Position blade clamp halves on blade neck with chamfered edge toward hub.
   D. Install blade clamp with blade necks into hub with leading edge of blade toward direction of fan rotation (always clockwise when viewed from above).
   E. Install clamp bolts with bolt heads on top side through hub plates and blade clamps.
   F. Install lock washers and nuts.
   G. Lightly tighten clamp bolts, at this time.

III. Setting Blade Pitch Angle and Tracking
   A. Pull blade out until blade neck flange is flush with the back of the blade clamp.
   B. Support blade at tip in a horizontal position while setting pitch angle.
   C. Use a protractor with a flat bar extended across width of blade as a base plate approximately 1” from tip of blade and adjust blade to specified pitch angle.
   D. While maintaining the specified pitch angle and while supporting the tip of the blade, tighten the blade clamp bolts to hold blade firmly in place.
   E. Scribe the blade profile on the fan stack with a marking instrument, which will benchmark the tracking profile for all of the blades.
   F. Rotate the fan assembly to the next blade and repeat steps A,B,C, and D for all remaining blades in the fan assembly, using the profile of the first marked blade as a reference for setting the tracking for all remaining blades.
   G. Ensure that weep holes in the blade tips are clear of any obstruction.
   H. All pitch angles should be within plus/minus 0.2° of the specified setting, while maintaining a tracking pattern not to exceed one (1) inch between the highest and the lowest blade track profile.
   I. Torque all blade clamp bolts to the specification required for a specific fan size.
   J. Recheck blade pitch angles and tracking to be within specified settings.

IV. Install the Seal Disc.
V. Rotate the assembled fan by hand to verify the fan turns freely with no interference.
VI. Bump start the motor to verify a clockwise rotation (as viewed from above).
VII. Run the fan and check motor power consumption to ensure proper motor load.
HUDSON PRODUCTS CORPORATION
FAN ASSEMBLY AND INSTALLATION INSTRUCTIONS

I. Assembly of Hub to Tapered Fan Shaft (usually a HPC standard)
   A. Clean all mating surfaces between shaft and hub spool.
   B. Coat the mating surfaces between the fan shaft and the hub spool with an anti-seizing compound.
   C. Install the hub on the shaft.
   D. Align key.
   E. Install and tighten the retainer plate to the top of the shaft.

II. Assembly of Blades to Fan Hub
   A. Remove blade clamp bolts, nuts, lock washers, and blade clamp halves from hub.
   B. Remove and discard the PVC blade clamp spacers.
   C. Install blade clamp with blade necks into hub with leading edge of blade toward direction of fan rotation (always clockwise when viewed from above).
   D. Install clamp bolts with bolt heads on top side through hub plates and blade clamps.
   E. Install lock washers and nuts.
   F. Lightly tighten clamp bolts, at this time.

III. Setting Blade Pitch Angle and Tracking
   A. Pull blade out until blade neck flange is flush with the back of the blade clamp.
   B. Support blade at tip in a horizontal position while setting pitch angle.
   C. Use a protractor with a flat bar extended across width of blade as a base plate approximately 1” from tip of blade and adjust blade to specified pitch angle.
   D. While maintaining the specified pitch angle and while supporting the tip of the blade, tighten the blade clamp bolts to hold blade firmly in place.
   E. Scribe the blade profile on the fan stack with a marking instrument, which will benchmark the tracking profile for all of the blades.
   F. Rotate the fan assembly to the next blade and repeat steps A,B,C, and D for all remaining blades in the fan assembly, using the profile of the first marked blade as a reference for setting the tracking for all remaining blades.
   G. Ensure that weep holes in the blade tips are clear of any obstruction.
   H. All pitch angles should be within plus/minus 0.2° of the specified setting, while maintaining a tracking pattern not to exceed one (1) inch between the highest and the lowest blade track profile.
   I. Torque all blade clamp bolts to the specification required for a specific fan size.
   J. Recheck blade pitch angles and tracking to be within specified settings.

IV. Install the Seal Disc.
V. Rotate the assembled fan by hand to verify the fan turns freely with no interference.
VI. Bump start the motor to verify a clockwise rotation (as viewed from above).
VII. Run the fan and check motor power consumption to ensure proper motor load.