

HUDSON PRODUCTS CORPORATION

FAN ASSEMBLY AND INSTALLATION INSTRUCTIONS

- 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 bushing 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.

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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.

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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.