

APPLICATION BULLETIN

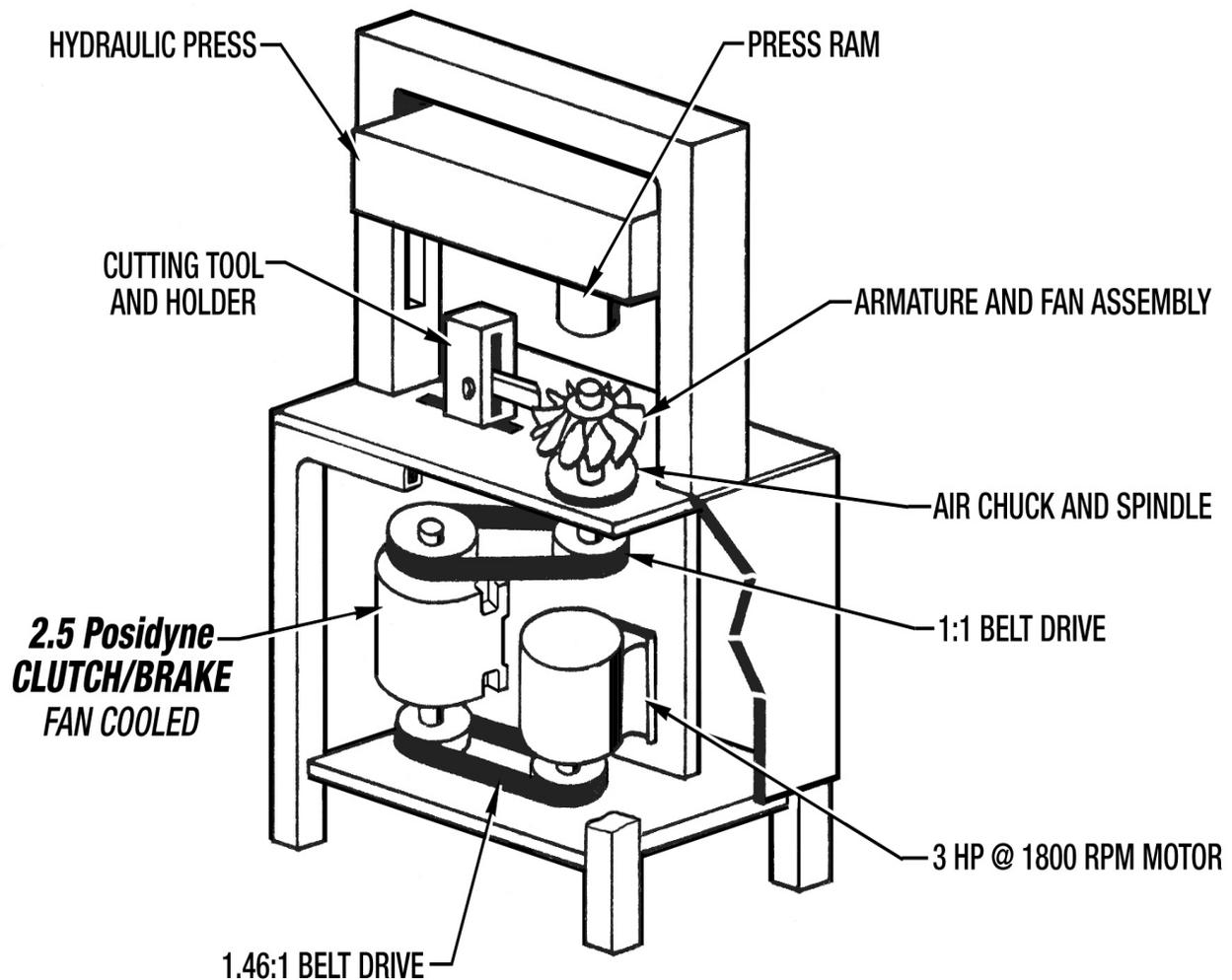


APPLICATION: Fan Press Lathe

INDUSTRY: Electric Motor Manufacturing

PRODUCT: Posidyne Clutch/Brakes

FAN PRESS LATHE



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DRIVE REQUIREMENTS: The Clutch/Brake must start and stop an air chuck which holds an armature and shaft assembly. The armature with shaft is manually loaded into the air chuck and the operator places a plastic fan on the shaft. A hydraulic press ram is stroked, pressing the fan onto the shaft. As the press ram retracts, the spindle is quickly brought up to 1200 RPM. A cutting tool moves past the tips of the fan blades, trimming and balancing the fan. Automatic switching commands the **Posidyne** to stop, and the operator removes the finished assembly to complete the cycle.

APPROACH: The vertical air chuck spindle requires that the drive be vertically mounted. The machine structure restricted the mounting possibilities so that we were required to mount the **Posidyne** with the output shaft extended up. This resulted in a unique problem. With the input shaft extended down the large four lug input rotor runs completely submerged in oil, with approximately 3/4 HP required to run only the **Posidyne**, and the thermal build-up (due to churning of oil) decreases the overall thermal capacity of the standard drive.

The overall load inertia reflected to the **Posidyne** output shaft and the eight cycles per minute rate would not normally dictate a fan-cooling requirement; However, addition of the thermal build-up mentioned above makes fan cooling necessary. To minimize this build-up, the input speed to the **Posidyne** is reduced to 1200 RPM, which greatly reduces the thermal build-up, and since the model 2-1/2 has ample torque capacity, this results in another highly successful application for the **Posidyne** Clutch/Brake.

SEQUENCE: The complete cycle has an operator load the part and put a fan into position on the shaft. He then activates a two hand-no tie-down circuit which strokes the press, and as the press ram retracts, the **Posidyne** is signaled to release the brake and engage the clutch, accelerating the armature chuck spindle to 1200 RPM. A cutting tool moves past the fan, trimming the tips of the blades. Upon completion of the trimming, the **Posidyne** is signaled to release the clutch and engage the brake, stopping the spindle and armature, allowing the operator to unload. This completes the cycle.

FEATURES:

- The **Posidyne** and AC motor drive combination virtually eliminated maintenance on the machine. Previously the electric motor had been burning out every six weeks. At this time the **Posidyne** has given trouble-free service since August 1978.
- Freedom to adjust actuation air pressures to clutch and brake allows operator to control acceleration and deceleration of the drive.
- By allowing the AC motor to run continuously, an electrical saving is realized over starting the motor, under load, over eight times per minute.



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