

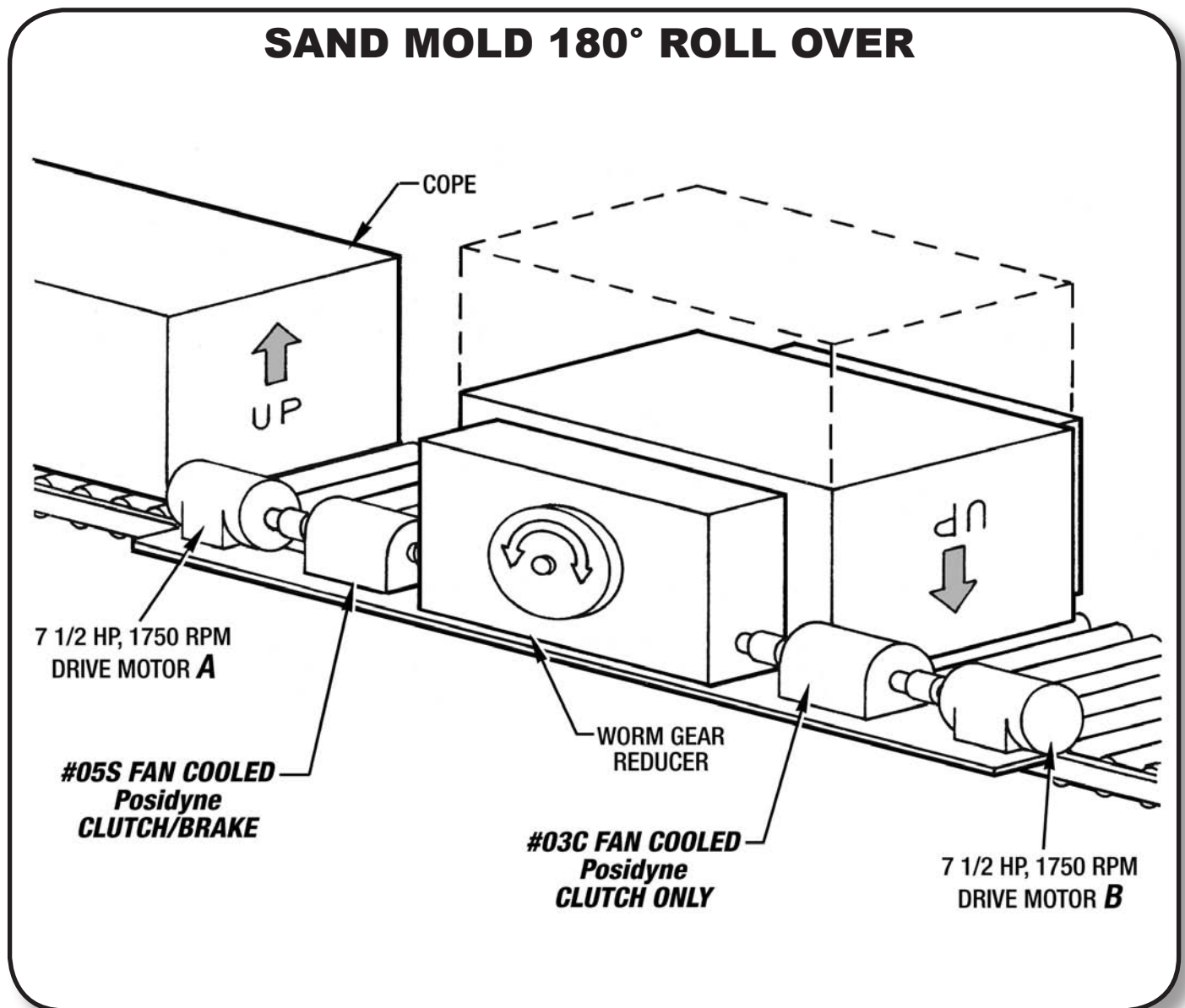
APPLICATION BULLETIN



APPLICATION: Sand Mold 180° Roll Over

INDUSTRY: High Production Foundry

PRODUCT: Oil Shear Size 03 *Posidyne* Clutch Only



SAND MOLD 180° ROLL OVER

REQUIREMENTS: The drive is to invert the cope (top) portion of a sand mold after it has been made in the automatic mold machine in a high production foundry. The environment is very hostile with hot, smoky, sandy, oily conditions. Typically, severe conditions exist in which the machinery operates.

APPROACH: To accomplish a reversing index drive, a worm gear reducer equipped with a double extended input shaft is used. Drive A provides rotation of the worm gear output to the unloading position. **Drive A** also provides braking action to stop or index for loading or unloading of the rollover. **Drive B** provides the opposite rotation to return the rollover to the reload position.

SEQUENCE:

1. Powered roller conveyor or cylinders load the rollover, which is stopped in position by the brake of **Drive A**. When loaded and the load mechanism is cleared, a limit, or sensor is satisfied.
2. **Drive A** brake is released and its clutch is engaged rotating rollover 180° which satisfies a limit or sensor as it approaches the index or stop point.
3. **Drive A** clutch is disengaged and its brake is engaged to position the rollover for unloading.
4. The rollover is unloaded and when the unload mechanism is cleared, the **Drive A** brake is released and the **Drive B** clutch is engaged rotating the rollover back towards the home or load position. The limit or sensor is satisfied as it approaches the index or stop point. **NOTE:** A small time delay is required to allow the **Drive A** brake to release so that an overlap does not occur.
5. The **Drive B** clutch is released and the **Drive A** brake is engaged stopping the roll over in the load position. The cycle is now completed.

FEATURES:

- Adjustable starts and stops reduce damage to the sand molds when turning over.
- Simplified troubleshooting is realized by installing air pressure gauges on clutch/brake actuation lines.
- The **Posidyne** approach eliminates the use of hydraulic power units, which drive rotary actuators. The power units usually have severe problems with sand and dirt in the oil. Also are quite noisy adding to the sound pollution.



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