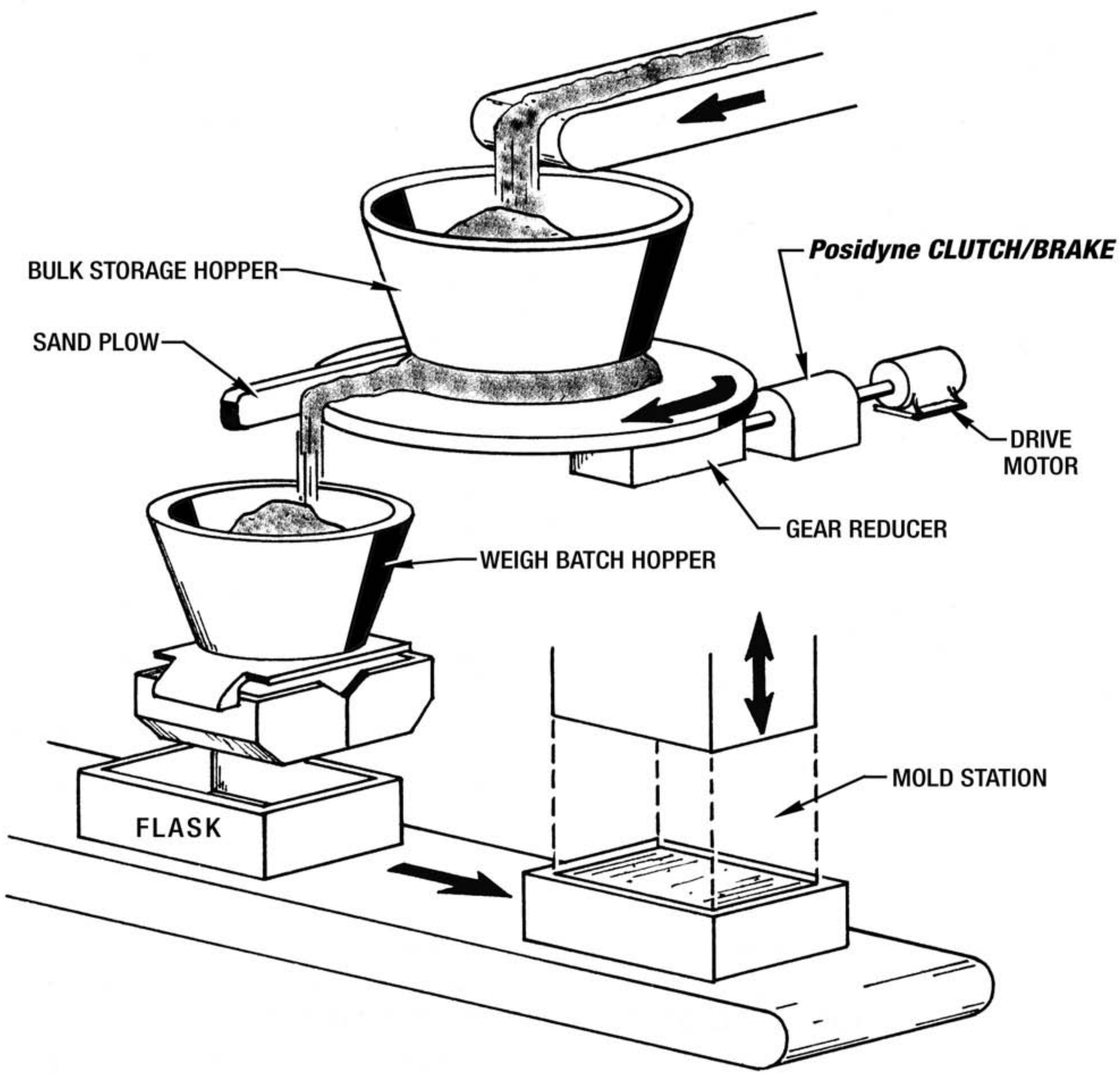
APPLICATION BULLETIN

APPLICATION: **Disc Feeder Batching Drive**

INDUSTRY: **Steel Foundry**

PRODUCT: **Oil Shear *Posidyne* Clutch/Brake**

DISC FEEDER BATCHING DRIVE



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DISC FEEDER BATCHING DRIVE

DRIVE REQUIREMENTS: The drive is to have a cycle on demand control, which is signaled by a weigh batch hopper. It will start and stop a rotating disc-feeder located below a prepared sand bulk storage hopper.

APPROACH: The *A.C.* motor runs on a continuous basis driving the input of our ***Posidyne*** clutch-brake. The ***Posidyne*** output shaft is connected to the input shaft of a worm gear reducer. An. open gear pinion is mounted on the output shaft of the gear reducer. The pinion is driving a ring gear attached to a bearing mounted disc-feeder table. A sand plow is positioned so that the prepared sand which flows out from under the bulk storage hopper is diverted into a weigh batch hopper, which signals the ***Posidyne*** to stop the feeder drive when the required volume of material has been reached.

SEQUENCE:

1. A volume/weight is determined by the cope or drag mold flask size that is being run on the mold line. When this weight is reached the control signals the point at which the disc-feeder drive will be stopped.
2. An empty flask is positioned under the weigh batch hopper. The clutch is signaled to engage, starting the disc-feeder, causing prepared sand to be plowed into the weigh batch hopper
3. When the set point is reached, the ***Posidyne*** is signaled to stop, resulting in the material flow stopping.
4. An air cylinder or rotary actuator is stroked, dumping the sand from the weigh batch hopper into the empty flask.
5. The mold line conveyor is then indexed forward moving the freshly filled flask to the press station. At the same time an empty flask is moved into position under the hopper. The hopper opening is also closed during this sequence.
6. The cycle is now complete.

FEATURES:

1. The ***Posidyne*** is well suited for the hostile environment.
2. Most existing drives use large air motors as prime movers. They are cycled by shifting an air valve on and off. This approach was a very good one at the time. The main consideration today, is the cost of compressed air. They can consume several thousand cubic feet per hour of compressed air. The typical cost involved is approximately 13¢ - 15¢ per thousand cubic feet, depending upon compressor sizes and types.
3. The ***Posidyne*** requires only cubic inches of air per engagement.
4. Soft starts and soft stops are obtainable increasing the life of the other drive components.
5. Air motors require frequent rebuilding about every 6 months.

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