Beloit Precision, Inc.

CASE STUDY

EVCO Plastics

Project: A new molding process to produce a high-efficiency, rotary screen air filter for combine harvesters.

Goal: Improve the ability of the rotating cooling screen to prevent debris from entering the air passages of the combine engine.

Results: Less cost to create a better product that lasts longer and is easier to install.

Since 1964, EVCO Plastics, based in DeForest, Wisconsin, has grown to become a leading supplier of custom plastic molding services for transportation, industrial, home appliance, and other applications. In the agricultural market, EVCO engineered a new molding process for the production of screen air filters in combine harvesters for a global manufacturer of agricultral equipment based in Iowa.

Combine harvesters literally combine the tasks of harvesting, threshing and cleaning grain crops. The remaining dried stems and leaves of the crops are either chopped and spread on the field or baled for feed and bedding for livestock. The rotary screen air filter is a vital part of the advanced cooling technology essential for reliable, lasting engine performance.

Beloit Precision worked with EVCO to develop wire mesh screens to fit in a molded disc with a 52-inch diameter. The cooling screen has a positive, full-time drive. It rotates at fan speed whenever the engine is running, collecting dirt and debris as it turns. A vacuum pickup then removes chaff and trash from the screen.

The key elements of the rotary screen include the disc, screen sections, hub, bearing, snap ring and spacers. Beloit Precision produced the screen to be made up of eight sections. EVCO is responsible for molding the screen sections into place around a hub.

Once the screens are in place, Beloit Precision coins each section to remove any slack from the screen. We developed a coin that is offset in the screen for tightening the screen all the way around the disc. The high degree of tension improves screening capabilities and provides overall strength to the design.

In addition to manufacturing the screen sections, Beloit Precision makes the hubs and spacers. We perform the final assembly of the bearing, snap ring and spacers, as well as packaging and shipping the finished products.

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