Glebar Company

Form Grinding Ball Valves In-House Improves Output, Reducing Production Time and Saving Costs

incumbent process

- The balls are formed one at a time from bar stock on a lathe in multiple roughing and finishing tool paths.

- Molded balls are purchased from a contract manufacturer, then turned to achieve the desired diameter and to remove mold imperfections such as parting lines.

solution – *PG-9DHD Centerless Form Grinder*

- The PG-9DHD Centerless Form Grinder can grind spherical or cylindrically shaped components, yielding 5-10 parts every 40 seconds, depending on the diameter and application. The machine and process increase output, reduce costs, and improve quality.

- The 10" wide work wheel provides the highest capacity, producing multiple components per cycle while, in this application, maintaining tolerances of +/- 0.003". Finer tolerances can be achieved depending on the material being processed.

- An automatic feeding system can be positioned at the top or side of the machine depending on the application.

challenges

- Purchasing the balls can be expensive, and long lead times create a need for increased inventory levels and consumption of cash.

- Turning can be slow and inconsistent, resulting in long cycle times, high scrap rates, and surface finishes that generally require downstream grinding or honing to meet specifications.

benefits

- In recent tests, the PG-9DHD ground preformed balls and rods. Six preformed balls, measuring 1.25" diameter, were ground in 40 seconds. Each 1.75" diameter rod produced five balls in 3-1/2 minutes. In this application, form grinding increases output by as much as 80%.

- Glebar machines can grind most hard to turn materials such as carbon fiber, fiberglass (including G10), Teflon, Santoprene, and polypropylene.

- Glebar developed ball grinding for the golf industry in the 1960s using centerless grinding fundamentals. The process was adapted to grind other spherical or cylindrically shaped components.

- The PG-9DHD is available with remote connectivity, gauging, automation interfacing, and precise positioning.