ABSTRACT

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Production Process Of The Rear Hydraulic Shock Lower Cover Using Black Copolymer Polypropylene Material With An Injection Moulding Machine At PT Arlene Jaya Mandiri

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(xiv + 43 + Appendix)

The lower cover of the rear hydraulic shock absorber is a protective component that shields the shock absorber shaft or tube from dust, sand, water, and other foreign objects that may cause damage. This component is produced using Polypropylene (PP) Black Copolymer, a mixture of propylene and ethylene that provides flexibility, heat resistance, chemical durability, and crack resistance. A black pigment is added to protect the material from UV degradation. With a melting point of 200–300°C, the material is suitable for the injection molding process. The production process begins with drying the plastic pellets in a hopper dryer at 69°C to reduce moisture. The pellets are melted in the screw barrel with temperature settings of 190°C at the front, 220°C in the middle, 184°C at the rear, and 235°C at the nozzle, while the mold temperature is kept at 55°C. The "Under Case" mold with 4 cavity is used. The injection pressure is set at 64 Kg/cm², with a process sequence of mold close 5 seconds, mold open 3 seconds, injection 15 seconds, screw rotation 3.6 seconds, and a total cycle time of 34 seconds. The products consist of two main partsSpring Guide and Under Case. Production output reaches 3,368 pcs in one shift (8 hours), 6,736 pcs in two shifts, and 10,104 pcs in three shift. This study highlights the production stages, technical parameters, and results, showing that optimized settings improve efficiency, maintain product quality, and minimize defects in the injection molding process.

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