

Key data

Molded part	Wheel arch liner
Application	Car body
Part weight	1400 g
Material	PP/EPDM
Mold type	Family mold
No. of cavities	1+1

Illustrations simplified, schematically drawn and not to scale.
For a specific application, please consult Synventive.

Customer's requirements

This application involved the production of wheel arch liners for car bodies. The wheel arch liner for the right-hand side was to be produced in a family mold together with the wheel housing liner for the left-hand side.

Solution

In the implementation of this application, an externally heated 6-port hot runner system with screw fit valve gate manifold nozzles and melt pressure control was employed. Manifold form and nozzle lengths were specially adapted to the part contour and the required injection points. The cavity was directly gated with hot runner to the surface of the molding via valve gate nozzles or with sprue via valve gate nozzles. A pressure-controlled melt valve was installed upline of each nozzle with which the flow cross-section in the runner could be varied dynamically and infinitely online and in real time or could be held constant. This permitted not only gentle opening and closing but also the generation of individual pressure profiles and hence individual filling conditions during the filling and holding pressure phases for each individual nozzle.

Benefits

- ➔ Differentiated, optimum filling of the different cavity areas
- ➔ Avoidance of overfilling in part-areas of the cavity
- ➔ Reduction in cycle time and reworking
- ➔ Increased productivity during series production of more than 30%
- ➔ Good, uniform molding quality from all the cavities

Schematic product overview

1. Manifold nozzle, screw fit
Series 16 E02, Type V V
2. Manifold
Series VF
3. Melt valve block **DFTB**
with pressure transducer
4. Actuator, hydraulic, bolted
Series HYC 4520M 01
5. Servo valves (and pressure generator)
6. PID controller **DFC**
7. Start signal from the injection
molding machine

