Plastic Oil Pick-Up Tube
Case Study

Picture 1: Plastic Oil Pick-Up Tube

Picture 2: Metal Oil Pick-Up Tube

Material Used: DURETHAN® BKV 30 and DURETHAN® AKV 30 & 35 H2.0

Brazed, bent and coated metal tubing and screen are currently used to create many of the engine oil pick-up tubes in today's automobiles. However, plastic has recently been successfully employed in many applications in Europe. A combination of methods is employed to manufacture the pick-up tube, including water injection technology (WIT). WIT uses reinforced grades to increase design freedom and cycle times to create hollow articles. In this example, plastic is used to create the oil pick-up. Sealing must then be considered between the engine block and the oil tube (a circumferential oil ring is sufficient). Moving cores or water injection could be used for this. Additional features are then molded in, such as mounting brackets. Compression limiters must then be employed for clamping loads. The use of WIT allows for the creation of complex moldings with minimal tooling expenditures and also greater flexibility in tooling and manufacture.

Advantages:

- Potential cost reduction of up to 45% compared to metal oil pick-up tube.
- Potential weight reduction of up to 50% compared to metal oil pick-up tube.
- Water injection technology (WIT) allows for the creation of complex moldings with limited expenditures and greater flexibility.

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