

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.

As with any product, use of the products mentioned in this publication in a given application must be tested (including field testing, etc.) by the user in advance to determine suitability.

Health & Safety Information: Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the LANXESS products mentioned in this publication. For materials mentioned which are not LANXESS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be followed. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, *e.g., material safety data sheets and product labels.* Consult your LANXESS Corporation representative or contact the LANXESS Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

LANXESS Corporation • 111 RIDC Park West Drive • Pittsburgh, PA 15275 • 1-800-LANXESS • www.US.LANXESS.com

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application—specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

The information contained in this bulletin is current as of November 2006. Please contact LANXESS Corporation to determine if this publication has been revised.

