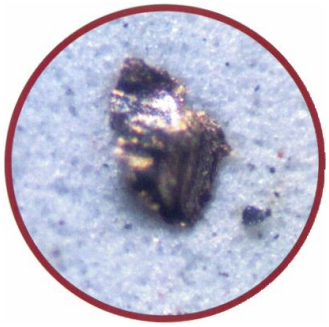
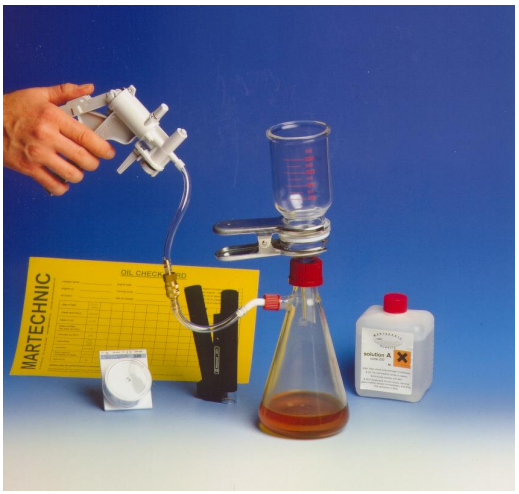
INSOLUBLES CHECK

Instruction Notes

Description:

This test kit uses the means of a vacuum filtration device to extricate insolubles and impurities out of the oil onto a molecular filter. A first visual inspection on insoluble contamination maybe made immediately, but that by far is not all.





With the help of a micro magnifyinglens it is possible to determine quantity, dimensions and even the origin of impurities! Abrasions on pistons, pumps, etc. may be detected in time to react before results become catastrophic.

Test Procedure

Step 1

Assemble the vacuum filtering device by screwing it onto the filter flask. Connect the vacuum hand pump to the filter flask, using the quick coupling. Rinse the measuring cylinder and the vacuum filtering device with Solution A.

Step 2

The membrane filters are installed by removing the metal clips and glass top and fitting it in top of fritted glass. Note: Only ever touch membrane filters (white, round lamina) using tweezers (supplied in kit). Reset glass top and fix with metal clips.

Step 3

If you have a fresh (reference) oil sample, filter this first to get a comparison result. Mix 25ml of well shaken oil with 25ml of Solution A in the measuring beaker. When it is obvious that the oil is heavily contaminated, or highly viscous, mix 10ml of oil with 40ml of Solution A. Put this mixture into the glass top. Then begin to filter the mixture, by slowly operating the vacuum hand pump, until the membrane filter appears dry.

If ever it is not possible to filter oil samples, four causes could be responsible. Here are the remedies:

- Sample is heavily contaminated. - Increase diluent.
- Membrane filter is not compatible with the diluent used. - Use Solution A.
- Sample has exceeding water content. - Use special filter.
- Vacuum filtering device is untight. - Check all couplings for tightness.

Step 4

Remove the membrane filter carefully - avoid tilting - and cover it with adhesive foils i.e. on the back of the recording card. When evaluating the colour shading in the membrane filter, please remember that some oils contain additives, which - when cold - do not dissolve in Solution A. In a case such as this the membrane filter will also change colour when fresh oil is used.

Step 5

Inspect the residues with the micro magnifying lens, by placing the lens directly onto the filter. Evaluate according to the following criteria:

- Strong colouring indicates either, very aged oil or soot, or finest abrasions (dust, sealing material, etc.).

- Particles visible to the naked eye should be estimated in size with the micro lens. In a system of 5µ filtration, particles of 10µ are already considered large and damaging.

- Categories of impurities give a hint to the source of possible malfunction:

  Crystalline structure : Sand, Dust (Contamination from the environment)

  Sharp-edged, bright: Metallic abrasion. Their colour indicates their origin:
  brass = from piston bearings or bushings
  chrome = from piston rods
  steel = from the pump
  rust particles = from metal oxidation within the system

  Fibrous particles : sealing elements, rotating belts and from the environment.

Basically, it can be said that if you detect particles on the membrane filter which, due to their size, do not belong in the system, it is safe to assume that the contamination has sullied the entire system. We advise taking immediate counter measures.

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