

Fresh oil instead of oats

Using the Grabner Miniflash the ÖBB (Austrian Railways) Technical Services at the Motor Centre in St. Pölten ensure that the railway's workhorses undergo an oil change at the right time



Fresh oil instead of oats for the railway's workhorses

With their 12 cylinders and a total piston displacement of 74.85 litres, automotive diesel motors in Austrian Railway's trains produce around 1500 HP at 1500 rpm. 250 litres of oil keep the 6.9 ton motor on the right track. However, whereas in cars the time for an oil change can be calculated from the operating hours or kilometres driven, it's not so easy with trains. A small measuring instrument has recently been introduced at the Motor Centre St. Pölten, which quickly and reliably determines the correct time for an oil change. This instrument has been developed in Austria - the Miniflash from Grabner Instruments.

With careful servicing and expert repair work, automotive diesel motors can have a working life of over 25 years. In the Motor Centre St. Pölten around 60 specialists are responsible for diesel motors and compressors from all well-known manufacturers such as SGP, Jenbacher Werke, Mercedes, MAN or Caterpillar. In this Centre diesel motors from 50 to 2000 HP are cleaned, disassembled and measured and motor parts such as fuel injection pumps or turbochargers are overhauled. The restrengthened engines then undergo a final check at the new AVL motor testing station.

In externalised laboratories a wide range of precision mechanical instruments, metal processing techniques and chemical analytical tests are employed. Just as the doctor examines our blood sample in a health check, when detecting signs of mechanical wear in motors and parts the first thing to be analysed is the motor oil.

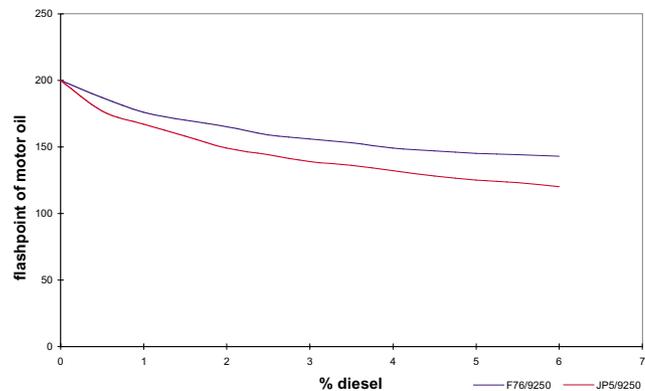
The amount of heavy metal is measured in the ppm range with an atom absorption spectrometer, the flow behaviour is characterised using a viscometer and the oil flash point is determined with a fully automatic flash point tester.



Ing. Honeder, preparing a flash point measurement.

“Of all these measurements, the flash point determination is for us at the Motor Centre St. Pölten a very important factor in the decision to undertake an oil change or not “, explains Mr. Honeder from the Motor Centre, “this is because the flash point changes – it falls – if even the smallest amounts of diesel have entered the motor oil via leaky pipes or damaged piston ring seals.”

The following table shows the relationship between the amount of diesel found in the motor oil and flash point change.



%	F76/9250	JP5/9250
0	200	200
0,5	187	177
1	176	167
1,5	170	158
2	165	149
2,5	159	144
3	156	139
3,5	153	136
4	149	132
4,5	147	128
5	145	125
5,5	144	123
6	143	120

On the further advantages of using the Miniflash for flash point measurement, Mr. Honeder explains: “Although around 1 ml of sample is ignited for the flash point measurement, there is no open flame. Alongside the instrument’s ease of use, the principle of the constantly closed sample cup contributes greatly to work safety at our Motor Centre.”