

## Manual Oil Condition Monitoring Instruments

Manual oil condition monitoring instruments are generally economical and are used regularly for on-site analysis of oils. Therefore, the results obtained by these devices are approximate, and their accuracy is dependent on human interference.

Testing instruments offered under this category of products are:

- **Visgauge**
- **Hydrogauge**
- **Patch test kit**
- **Titration kit for moisture detection and TAN detection**



Visgauge



Hydrogauge



Patch testing kit



Titration kit

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## Visgauge Testing Kit

### Viscosity Test Kits:

**Visgauge** is a handheld instrument that measures kinematic viscosity of oil by comparing it to a standard reference oil of 100 CST.

### Principle of Operation:

Based on comparison of speed of SS ball through a tubular path of sample oil to that of a reference oil at 100 CST.

### Measurement ranges selectable:

The range of operation is 0 - 460 CST.

### Test time:

Only approx. 2 minutes

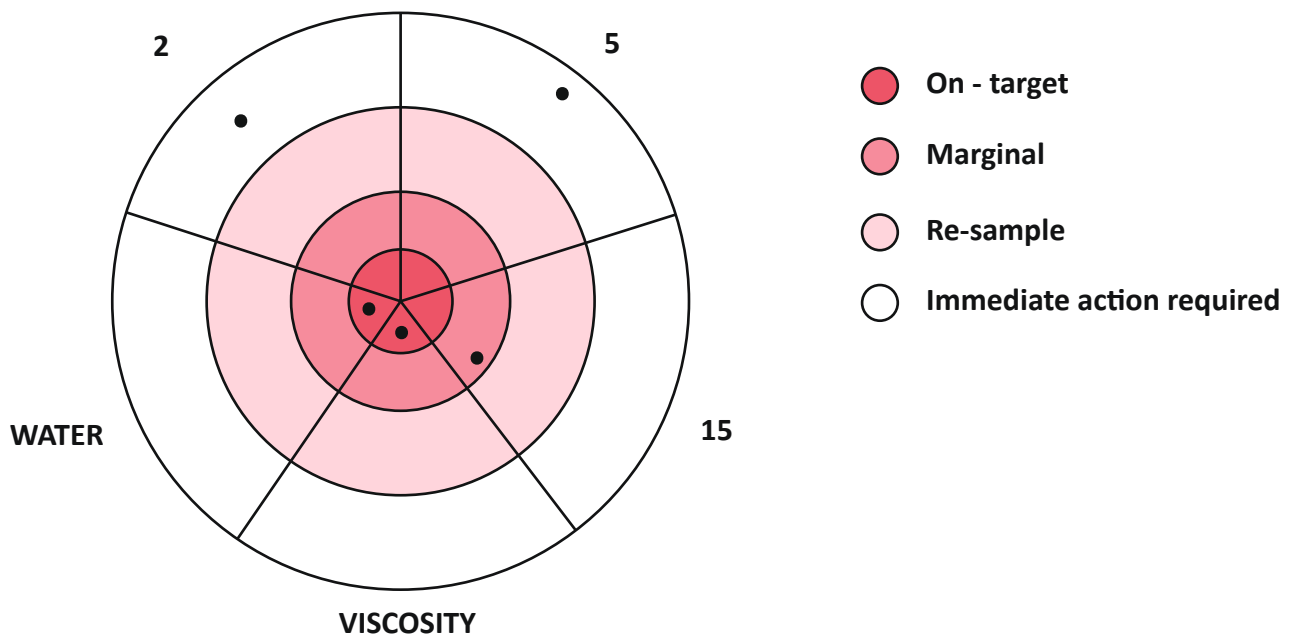
### Accuracy:

>95% (depending on human reaction time)

### Results Target:

A results target compares your actual fluid cleanliness results to your desired degree of cleanliness. If you don't yet have a goal level, we can utilize your sample to assist you figure it out.

## Fluid Results



## Hydroguage

### Water Test Kits:

The **Water Test Kit** is used to determine the water content of mineral and lubricating oils in percent by volume. For measurement, a Hydroguage instrument is used in this package.

A **hydroguage** is a handheld instrument used to evaluate the proportion of water in oil. The values of moisture in oil are acquired in %age and PPM levels.

### Principle of Operation:

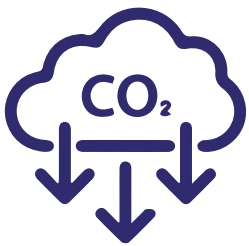
Adding two reagents to specific mL of oil sample in an airtight chamber causes release of hydrogen gas, equivalent to the moisture content present in oil sample. This leads to an increase in pressure in the measuring cell. The pressure increase is calibrated as %age of moisture in oil thus giving the desired result.

### Measurement ranges selectable:

The range of operation is 0.05% to 5% moisture.

### Test time:

Only approx. 2 minutes (excluding sample preparation)



# REDUCE YOUR CARBON FOOTPRINT

## Patch Testing Kit

### Principle:

A method of verifying part cleanliness, Millipore water testing measures the presence of solid particles and other non-soluble contaminants on machine parts.

SN	Description	Make
<b>Minimac Patch Testing Kit</b>		MINIMAC
1	Motorised Vacuum Pump	Minivac, Mumbai
2	Glass Flask - Vacuum Chamber (500 ML)	Millipore, USA
3	Mixing Cylinder (100 ML) & glass stopper	Borosil Moulded Glass
4	Filtering Assembly (SS) inclusive of Funnel (SS) and Membrane Holder (SS)	Millipore (USA) with Warranty Certificate
5	Microscope 10x10 (100 times)	Banbros (Imported)
6	Solvent HX 999 (1L Bottle)	Standard, Laboratory Quality
7	Membrane Filter Paper Patch (47 mm, 0.8 micron, 100 no.s) Cellulose Nitrile MOC	Nupore, India
8	Working Manual with ISO 4406 Calibration Chart, NAS 1638 table	ISO 4406 Standard, NAS 1638 Standard
9	Instrument Case (Scientific Type Customized Design)	Sivitek

## Individual Components



Membrane Holding Assembly



Vacuum Chamber (Flask)



Table Microscope



Motorised Vacuum Pump



Cellulose Nitrile Membrane Filter Paper

## Titration kit for TAN detection

### Benefits of JACOB OTS:

- Jacob OT'S helps in using lubricating oil to its full life without any risk of engine failure. It reduces the oil consumption considerably by increasing the oil change period by over 25%.
- Jacob OTS helps in detecting the spurious and substandard oil at the time of purchasing. Large quantity of engine oil sold in the market is spurious
- Monitoring of engine oil gives an indication of likely engine trouble. Thus Jacob OT'S test results can actually help in diagnosing likely engine trouble and in its preventive maintenance.
- Jacob OTS oil monitoring system is scientific and easy to use. The D.G. Set Operator or Engine Mechanic can carry out all these five tests in a very short period of time - less than one hour.
- Jacob OTS eliminates all the costly delays as you do not have to depend on a laboratory test report.
- Jacob OTS is everlasting, requiring only replenishment of a few chemicals and charts.
- The actual cost of carrying out all the five tests is almost negligible.
- Jacob OTS by regular testing, monitors the quality of engine oil in service as also the health of the engine, thereby enhancing the Engine life which results in substantial savings on capital investment.

## Engine Oil Test Kit:

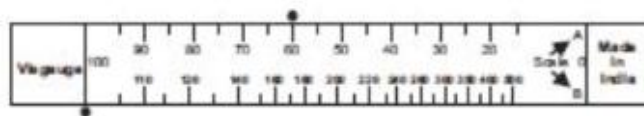
The "JACOB" equipment has been created and field-tested for precise and user-friendly engine oil condition determination. Through the use of this kit, periodic service will ensure optimum usage of the oil and filter as well as longer engine life and improved performance.

### • Viscosity Test:

Indicative of fuel dilution & oxidation

Example:

In the example given below, the Viscosity of Test Oil, when read on Scale "A", comes to 60 Centistokes at 400C



Example II:

In the example, the Viscosity of Test Oil, when read on Scale "B", comes to 300 Centistokes at 400C



## TBN Test

Alkalinity Test (Total Base Number): To determine whether alkaline additives have been depleted.



## Water Test

From condensation of water vapours from combustion products and also from external contamination.



## Oxidation Test (D.D.O. Test)

This test aids in determining whether dispersant and detergent additive levels have dropped. These additives are necessary for the engine to run smoothly.

