

How Better Oil Sampling Practices Drive Bottom Line Profitability

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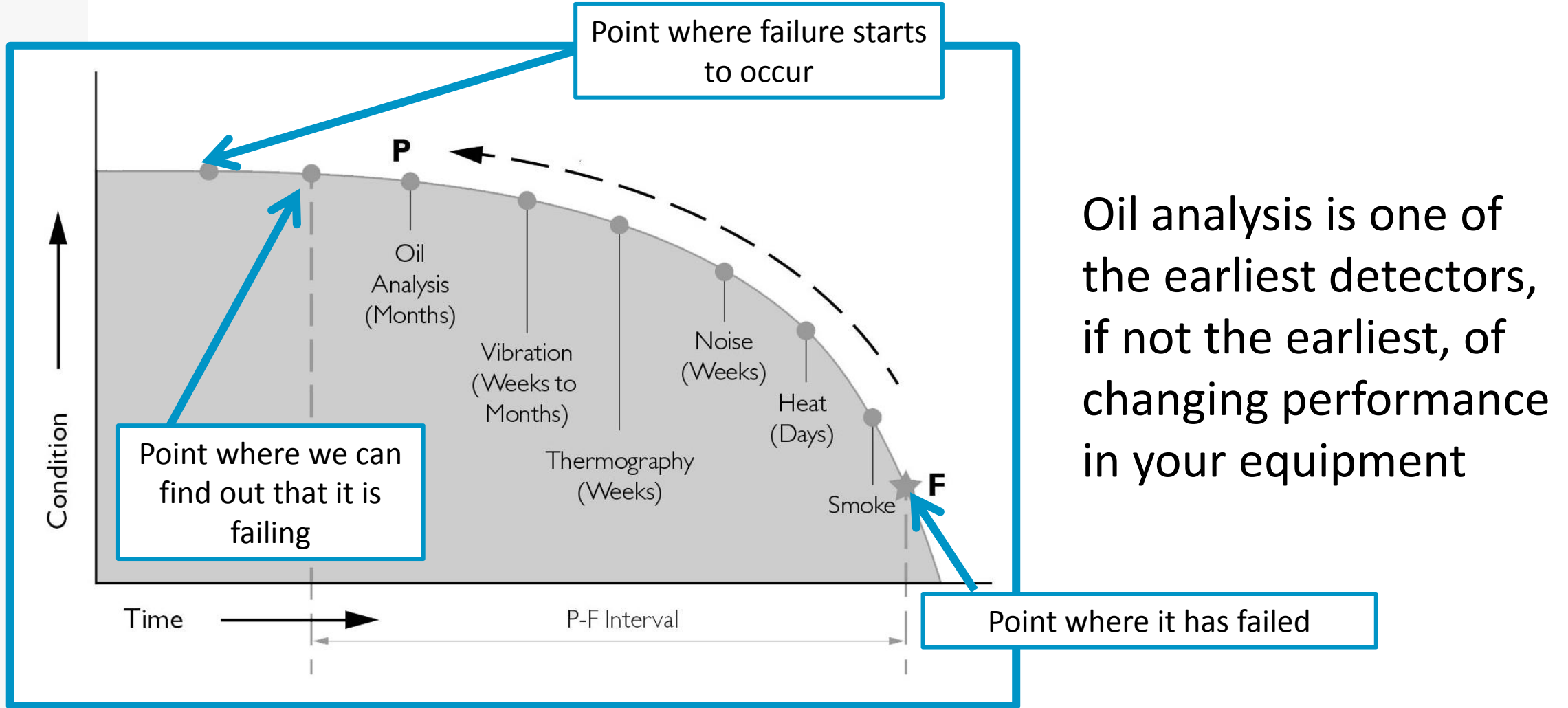
About Checkfluid

Since 2001, Checkfluid has made it easier for companies all over the world to monitor their critical equipment by manufacturing and designing oil sampling valves and related hardware.

ISO 2001:2015 Certified

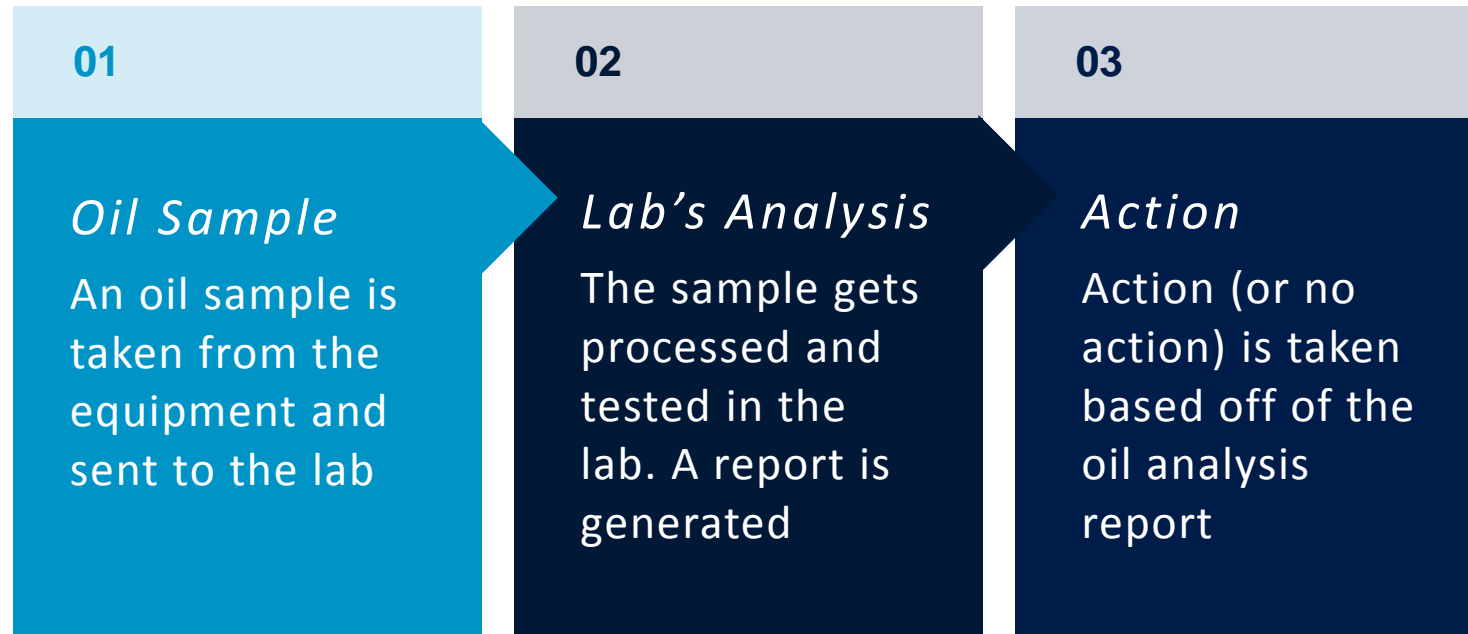


The P-F Curve



Why Is Sampling Important?

Sampling is the first step in oil analysis



What is the Perfect Sample?

1

Representative

2

Repeatable

3

Rapid & Safe & Uncontaminated

Sampling Methods

What are the 3 common sampling methods?

Sampling
Valves

Vacuum Pump &
Tubing

Sampling From
the Drain

Most Common

Least Cost Outlay

What are some problems with these sampling methods?



Sampling Methods

Sampling valves can solve the issues that the other sampling methods have:

SAMPLING VALVES	DRAIN SAMPLING	DROP TUBE SAMPLING
✓	×	×
✓	×	×
✓	×	×

Sampling Method

Safe to sample without shutting down

Quick samples (10 seconds to 2 minutes)

Sample coming from the same location every time



The Value of Valves

Valves can lead to a more successful program

- No special conditions needed to sample
- More sampling compliance = More samples
- Bigger savings (more justification for expanding the program)
- Limited training required
- Reports easy to figure out



The Value of Valves

Case 1: Shutdowns

The Main Issue: Battling With Production

- They had an issue where production would not let them shutdown a line to pull a sample and/or filter
 - Meaning they struggled to complete sampling or filtering between shutdown periods
- A line shutdown cost the company \$5000 per hour in lost production

Additional Notes & Information:

- Drop tube sampling through the breather port
 - Other concern that team members were introducing contamination
 - They weren't wiping down the area before sampling
- They did not have quick connects for filtering, draining or filling



The Value of Valves

Case 1: Shutdowns

What We Recommended



AD Drain Mount

- Quick connect for draining & filtering
- Sampling tube makes sure sample is away from bottom and side sediment



AB Breather Mount

- Quick connect for filtering cart & filtering
- Able to mount a desiccant breather for additional defense against contamination

The Value of Valves

Case 1: Shutdowns

Pilot Results:

- Was able to sample & filter without shutting down
- Got the ok to outfit his “vital” gearboxes

Year 1 Results:

- As a bonus they were able to begin optimizing their drain intervals
- This saved them thousands in oil disposal costs

Cost of sampling valves for pilot run	\$ 526.69
Savings from not having to shut down on a 2-hour filter cycle (1 machine)	\$ 10000
Pilot Savings:	\$ 9473.31

Cost of sampling valves 2017	\$ 7818.51
Savings from not having to shut down on a 2-hour filter cycle (28 pieces of equipment)	\$ 28000
Oil disposal savings in 2017	\$ 9697.50
First Year Savings:	\$ 29878.99

282% ROI the First Year



The Value of Valves

Case 2: Quicker Samples

The Main Issue: Sampling Taking Too Long

- They wanted to reduce the time spent sampling their 9 rotary screw compressors
- Their current sampling method was taking 15 – 30 mins to sample 1 compressor
- The sampling method also required the compressors to be shutdown

Additional Notes & Information:

- Drop tube sampling was their method
- They needed two people to sample
- They found sampling was messy
- Their reports would have varying results



The Value of Valves

Case 2: Quicker Samples

What We Recommended

KP Pushbutton

- Quick samples without shutting down
- Would not need tubing or vacuum pumps or additional accessories
- Samples would be able to be pulled by one person
- Samples would take less than 30 seconds per compressor
- Increase frequency of monthly samples



The Value of Valves

Case 2: Quicker Samples

First Year Results:

- Reduced total sampling time from 4.5 hours to < 30 minutes for all 9 compressors
- No longer had to shutdown
- No longer required two people to sample
- Samples and oil analysis reports improved

Cost of sampling valves	\$ 270
Savings from quicker sampling time & only needing one person to sample	\$ 3060
First Year Savings:	\$ 2790

933% ROI the First Year

Do you see the report where the recommended action has not been followed?
No time?



The Value of Valves

Case 3: Reliable Samples

The Main Issue: Unreliable Samples

- They noticed that their oil analysis reports were coming back indicating coolant was present in the engine
- The engine would be inspected and flushed (no leaks were found each time)
- This cost them \$3000

Additional Notes & Information:

- Drop tube sampling was their method
- The manager did not want to buy tubing any more – they wanted to outfit all systems
- It was discovered that the technician sampling wasn't following procedures and was using the same tubing for both the coolant and engine



The Value of Valves

Case 3: Reliable Samples

What We Recommended

KP & LP Pushbuttons

- Quick samples without shutting down
- Would not need tubing or vacuum pump
- Chance of human error reduced
- LP Pushbutton would provide higher flow on applications that had little sampling pressure and thicker oil
- Valves would have to be in stainless steel due to the marine environment



Do you see erratic results in the customer's reports?



The Value of Valves

Case 3: Reliable Samples

First Year Results:

- Resulted in no more coolant showing up in the engine's oil analysis reports
- Successfully optimized the drain intervals on their hydraulic systems saving them \$5000

One time cost of sampling valves	\$ 1991
Savings from not having to flushing their engine again	\$ 3000
Savings on postponing the drain on their hydraulics	\$ 5000
Savings:	\$ 6009

301% ROI the First Year



The Value of Valves

- Using valves has been proven to be the most effective way statistically to draw a sample
- The sample is taken while the equipment is running from hot active oil, from the same location each time

Sampling valves help correct issues that can arise from other sampling methods. This allows companies to make better maintenance decisions

Sampling Valves

- Industries all over the world have switched to oil sampling valves as their preferred sampling method

Fleet

- Trucking
- Transit
- Refuse
- Construction
- Municipal
- Agriculture
- Mining
- Railroad
- Forestry
- Marine
- Lift/Handling
- Military

Industrial

- Power Generation
- Pulp & Paper
- Mining
- Food & Beverage
- Oil & Gas
- Chemical
- Treatment
- Steel
- Cement
- Pharmaceutical
- Port & Canal Operations
- Military



Basic Valve Recommendations

Sampling Application	KP	KST	L	LE	LT
Engine	●	●			
Hydraulics	●	●			
Compressor	●	●			
Transmission	●	●			
Coolant	●	●	●		
Final Drives				●	
Gearboxes					●
Reservoirs					●

Sampling Valves



KP Pushbutton

1

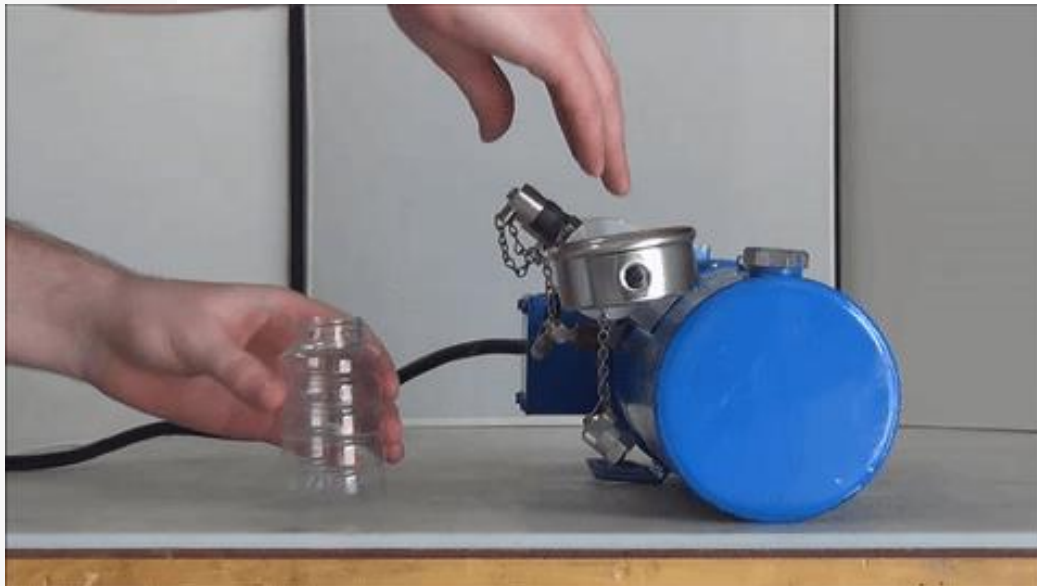
Easy to use

- Push to open – release to close
- No probes, no tubing, no pumps

2

Fast Sampling

- Get samples in minutes

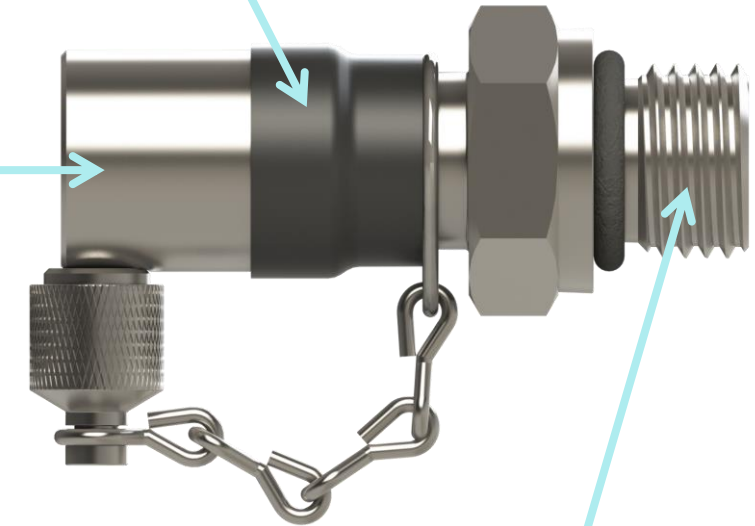


Key Features

Standard weather sleeve shown
(Locknut option also available)

Unique 360°
rotating spout
for convenient
sampling and
installation
without swivel
fittings

Variety of port threads available
for direct installation – mounting
options also available



KST Series

1

Easy to use

- 2mm probe style valve
- Compatible with SOS, Probalizer, and Quick Draw valves

2

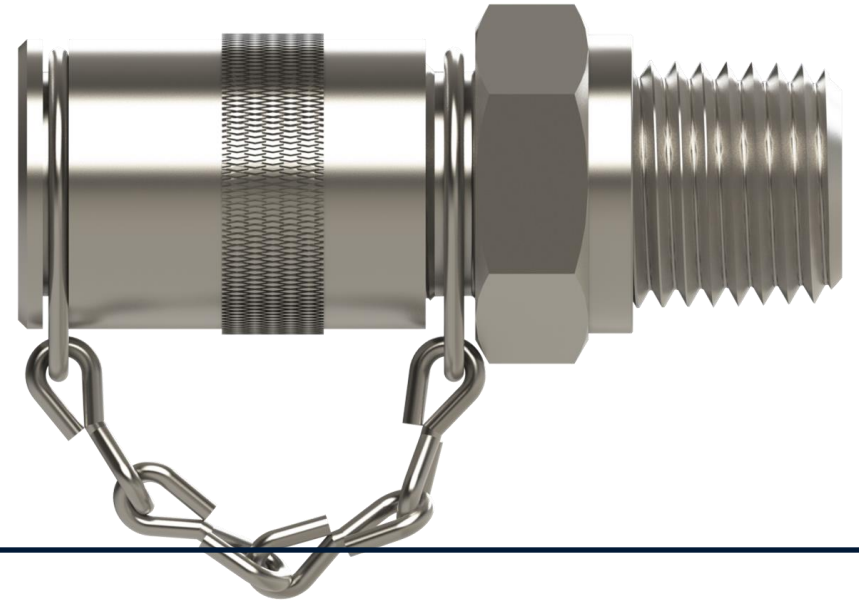
Fast Sampling

- Get samples in minutes

3

High Pressure Sampling

- Sample up to 4000 psi with the VHKF



KST Probes

SVP1 – for general sampling up to 750 psi

VHKF – for sampling 750 – 4000 psi



L High Flow Series

1

Compact – High Flow Sampling

- Samples 7x faster than M16x2 valves
- Valve designed to sample up to VG1500



2

Flush Face

- Easy to clean flat face design
- Extra compact

L High Flow Sampling

Sampling Requires

- SLF4 Probe
- Tubing
- Vacuum Pump



LT Series

1

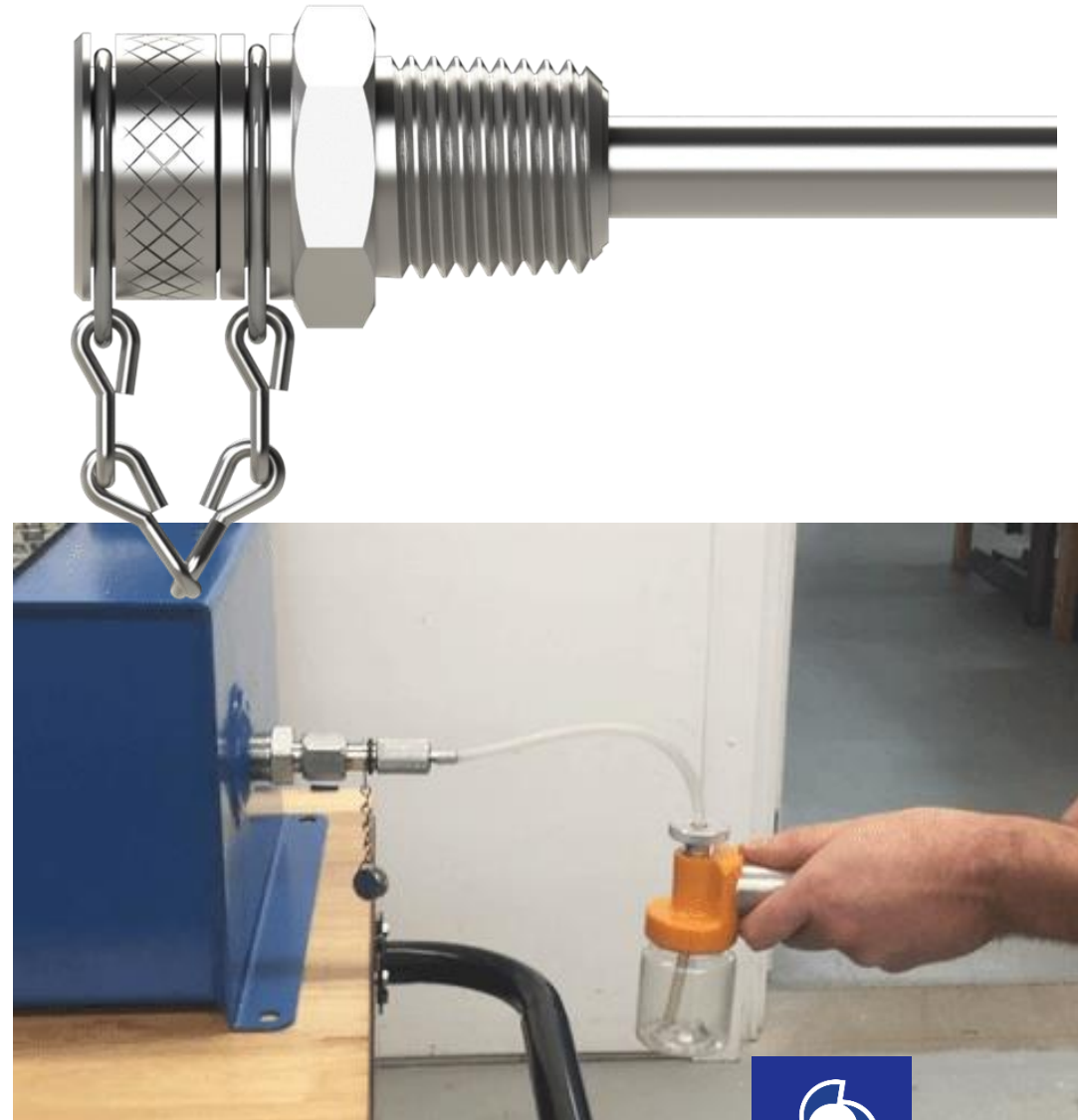
Same High Flow Valve

- Samples 7x faster than M16x2 valves
- Valve designed to sample up to VG1500

2

Permanent Sampling Tube

- Tube can be bent or cut to reach the active oil
- Swivel option allows for easy bent tube installation



LE Series

For Final Drives

1

Compact – High Flow Sampling

- Only 0.64" (16mm) clearance required
- Embedded L High Flow valve

2

Easy Installation

- LE can be inserted into almost any drain plug
- Allows for sampling without removing the drain plug



LE Sampling

Sampling Requires

- SLF4 Probe
- Tubing
- Vacuum Pump



Summary

- A successful oil analysis program is highly dependent on good data - meaning a representative, repeatable oil sample without external debris
- Sampling valves give quick, reliable and repeatable oil samples
- They return their investment each year



Any Questions

