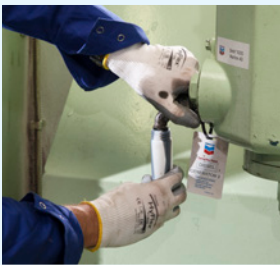




marine lubricants

# DOT.FAST<sup>®</sup> service quick start guide – sampling and analysis

## Step 1 | Sample the drip oil



- Sample at the scavenge air drain sampling valve during stable engine running conditions.
- Flush well before sampling.
- Collect a sample of 50–100 ml in a clean plastic container.
- Transfer that sample in a FAST sample bottle for both onshore and onboard testing and identify the bottle well.



### Recommended sampling frequency:

Onshore Drip Oil Analysis:  
Every 2 months (~1000 running hours)

Onboard Drip Oil Analysis:  
Every 2 weeks (~250 running hours)

*Test frequency can be changed depending on situation, needs and experience (e.g., after using new fuels batches, after an overhaul, after a corrective action and oil feed rate adjustment, etc.).*

## Step 2 | Collect the data and complete the Engine Data Sheet

*Note: Drip Oil samples intended for onshore analysis should always be accompanied with a complete Engine Data Sheet. The Engine Data Sheet can be found in the DOT.FAST kit, and additional copies are easily downloaded from the Chevron website at [www.chevronmarineproducts.com/en\\_UK/lubricants-services/dot-fast.html](http://www.chevronmarineproducts.com/en_UK/lubricants-services/dot-fast.html)*

**DOT.FAST<sup>®</sup> service**  
engine data sheet

**Attention:** This data sheet is required for each batch of drip oil samples. Details of drip oil samples are microchemically analysed at 100°C as except.

- \* Take samples from each cylinder at the same time (complete batch of samples).
- \* Analyse and FAST labels each cylinder with the corresponding cylinder number on the label.
- \* Use a fully certified FAST kit for analysis of your own samples included.
- \* Ship all samples with the completed engine data sheet to our onshore laboratory.
- \* This document can be downloaded from [www.chevronmarineproducts.com](http://www.chevronmarineproducts.com)

Hessel / Facility name*	Liquor/IMO number	Port samples loaded	Date received*	Date loaded								
Engine brand & type*	Number of cylinders*	Number of days in operation*	Lubrication type: <input type="checkbox"/> Full service <input type="checkbox"/> Full service <input type="checkbox"/> Full service <input type="checkbox"/> Full service									
Actual engine running hours (hr)	Actual engine speed (rpm)	Actual engine load (%BMEP)	Piston Cleaning (hr): <input type="checkbox"/> Full service <input type="checkbox"/> Full service <input type="checkbox"/> No <input type="checkbox"/> No									
Maximum power (CFR/ISO/CEC) (kW)	Actual engine power (kW)	Scavenge space temperature (°C)	Scavenge air humidity (%): <input type="checkbox"/> Yes <input type="checkbox"/> No									
Scavenge space pressure (bar)	Scavenge space temperature (°C)	Scavenge air humidity (%)	Scavenge air water drain (MT/Day): <input type="checkbox"/> Yes <input type="checkbox"/> No									
Total amount of scavenge drain (l) (24 hr)		Total cylinder oil consumption (l) (24 hr)*										
1000 1    1000 2    1000 3    1000 4    1000 5    1000 6    1000 7    1000 8    1000 9    1000 10    1000 11    1000 12    1000 13    1000 14		1000 15    1000 16    1000 17    1000 18    1000 19    1000 20    1000 21    1000 22    1000 23    1000 24										
Actual cylinder oil feed rate* (g/drop)		Actual fuel oil use*										
<input type="checkbox"/> Heavy Fuel Oil <input type="checkbox"/> Intermediate/transition <input type="checkbox"/> Diesel Fuel Oil <input type="checkbox"/> Dual Fuel engine operation <input type="checkbox"/> Other		Fuel / Liquid fuel use* <table style="width: 100%; font-size: 8px;"> <tr> <td>2. Heating oil (°C): 180°C (350°F)</td> <td>3. Heating oil (°C): 180°C (350°F)</td> <td>4. Heating oil (°C): 180°C (350°F)</td> <td>5. Heating oil (°C): 180°C (350°F)</td> </tr> <tr> <td>6. Lubrication (kg) (gpm) (mg/kg)</td> <td>7. Lubrication (kg) (gpm) (mg/kg)</td> <td>8. Lubrication (kg) (gpm) (mg/kg)</td> <td>9. Lubrication (kg) (gpm) (mg/kg)</td> </tr> </table>			2. Heating oil (°C): 180°C (350°F)	3. Heating oil (°C): 180°C (350°F)	4. Heating oil (°C): 180°C (350°F)	5. Heating oil (°C): 180°C (350°F)	6. Lubrication (kg) (gpm) (mg/kg)	7. Lubrication (kg) (gpm) (mg/kg)	8. Lubrication (kg) (gpm) (mg/kg)	9. Lubrication (kg) (gpm) (mg/kg)
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<input type="checkbox"/> Heavy Fuel Oil <input type="checkbox"/> Intermediate/transition <input type="checkbox"/> Diesel Fuel Oil <input type="checkbox"/> Dual Fuel engine operation <input type="checkbox"/> Other		For dual fuel operation only* <table style="width: 100%; font-size: 8px;"> <tr> <td>10. Fuel (kg) (gpm) (mg/kg)</td> <td>11. Fuel (kg) (gpm) (mg/kg)</td> <td>12. Fuel (kg) (gpm) (mg/kg)</td> <td>13. Fuel (kg) (gpm) (mg/kg)</td> </tr> <tr> <td>14. Fuel (kg) (gpm) (mg/kg)</td> <td>15. Fuel (kg) (gpm) (mg/kg)</td> <td>16. Fuel (kg) (gpm) (mg/kg)</td> <td>17. Fuel (kg) (gpm) (mg/kg)</td> </tr> </table>			10. Fuel (kg) (gpm) (mg/kg)	11. Fuel (kg) (gpm) (mg/kg)	12. Fuel (kg) (gpm) (mg/kg)	13. Fuel (kg) (gpm) (mg/kg)	14. Fuel (kg) (gpm) (mg/kg)	15. Fuel (kg) (gpm) (mg/kg)	16. Fuel (kg) (gpm) (mg/kg)	17. Fuel (kg) (gpm) (mg/kg)
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<input type="checkbox"/> Heavy Fuel Oil <input type="checkbox"/> Intermediate/transition <input type="checkbox"/> Diesel Fuel Oil <input type="checkbox"/> Dual Fuel engine operation <input type="checkbox"/> Other		Fuel mix ratio: % pilot fuel    % main (gas fuel)										
Remarks:												

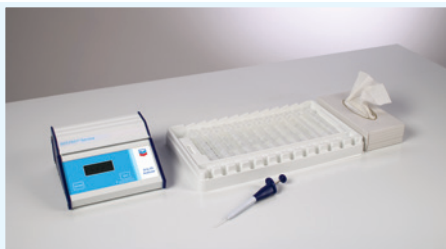
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## Step 3 | Analyze the drip oil samples using the DOT.FAST<sup>®</sup> Onboard Test Kit

**3.1** Always use recommended personal protection equipment.



**3.2** Set up the test equipment and samples in a clean environment.



**3.3** Identify the ITUs with corresponding cylinder number. Include one extra blank ITU if zeroing the Drip Oil Analyzer.



**3.4** Take the oil sample correctly with the pipette and dispense in the ITU.



**3.5** Close the ITU, crush ALL four ampoules and shake well. If zeroing, use the same process for the blank ITU (e.g., crush all four ampoules and shake well).



- 3.6** Tap the ITU content to the bottom and rest the ITU in a sloping position.

Rest time:

BROWN:	-1 hr
BLACK:	-3 hrs
CLEAR:	-1 hr



- 3.7** Prepare the Drip Oil Analyzer and zero if necessary. See the DOT.FAST<sup>®</sup> Instruction Manual, Section 3.4, Steps 11 and 17–21 for details on how to zero the Drip Oil Analyzer.

**Important: do not press the ZERO button with an actual sample in place.** Ensure that the cuvette is filled with clear liquid from the blank ITU (see Manual, Section 3.4, Step 20)



- 3.8** Place a cuvette in the DispoRack<sup>™</sup> and attach a filter to the ITU.



- 3.9** Turn the ITU upside down above the cuvette and wait, allowing the liquid to separate into two layers. Then push the clear bottom layer into the cuvette until it reaches the mark.



- 3.10** Immediately place the cuvette in the Drip Oil Analyzer, read and record the result using the DOT.FAST<sup>®</sup> Worksheet.



- 3.11** Repeat for each ITU.

*Note: Keep your equipment clean and free from dust. In case of spills, wipe the wet surfaces clean immediately.*

## Step 4 | Enter the data

Enter all test results and the recorded data from the Engine Data Sheet into the DOT.FAST Onboard Software.

## Step 5 | Dispose of the waste

Dispose of used ITUs and their content according to the waste management plan required by MARPOL regulations. Empty the oil-reagent mixture from each cuvette and ITU in a suitable container that can be drained to the sludge tank. Treat and dispose the remaining plastic container as mixed waste.

**For further detailed information, please refer to the DOT.FAST Instruction Manual.**

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For any technical inquiries about the DOT.FAST Service, please contact your local Chevron sales representative or our Technical Services Help Desk (DOT.FAST@chevron.com).

Visit [www.chevronmarineproducts.com](http://www.chevronmarineproducts.com) for more information and resources for the DOT.FAST Service.

