ENGINE TEST CELL

REPSOL
Technology Lab

Short Description

Performance evaluation, fuel consumption, emissions and durability of components with fuel and lubricant formulations in engine test cells:

- Heavy Duty engine test cell
- Light Duty engine test cell
- Motorcycle engine test cell

Deliverable

Technical report of the requested evaluation, including a comparison of benefits between the proposed formulation and the reference formulation.

Characterization of lubricant or fuel used. (Optional)

Injector and / or residue analysis (Optional)

Benefits

- Performance evaluation of new products (engines, components, fuels and / or lubricants) in the engine test cell to be able to technically and economically adjust new equipment designs and / or new formulations to comply with the regulations.
- Evaluation and quantification of improvements obtained in new products development, such as fuels and lubricants, and contribution of evidence.

Engine test bed image

Differential Features

- Tailored fuels and lubricants formulation to carry out the tests and their subsequent study. (Optional)
- New and used oils and fuels analysis. (Optional)
- Confidentiality of information related to operations.

Engine test bed image

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Requirements

- Definition of scope and objectives of the evaluation to be carried out
- Detail of the proposed experimental plan
- Physical samples of the product and additives to be used

Limitations

- Prior to the evaluation, the proposed products and formulations will be analyzed in order to validate the technical feasibility and additional actions necessary for their evaluation in the motor cell. Based on this prior analysis, the final evaluation proposal will be made to the client.

The Product in Depth

Performance evaluation of engines, components and / or formulations (bases and additives) of fuels and lubricants in test cells of gasoline and diesel engines (optionally other fuels will be considered) with temperature control (10ºC to 40ºC) through the following tests :

- Consumption, fouling, durability (lubricants) and emissions in Heavy Duty engine. Available range up to 350 kW of Power and 2080 Nm.
- Consumption, fouling, durability (lubricants) and emissions in Light Duty engine. Available range up to 250 kW of Power and 480 Nm.
- Consumption, fouling, durability (lubricants) and emissions in motorcycle engines or Light Duty single cylinder engines. Available range up to 45 kW of Power and 120 Nm.

Some Use Cases

- New fuels and lubricants design.
- Evaluation of the behavior of fuel additives on the engine.
- Lubricating oils durability evaluation
- Engine components performance evaluation, such as exhaust particulate filters or EGR intercooler
- Engine performance evaluation, such as an LPG direct injection engine prototype design