

# The global concept

## Autonomous engine test bed



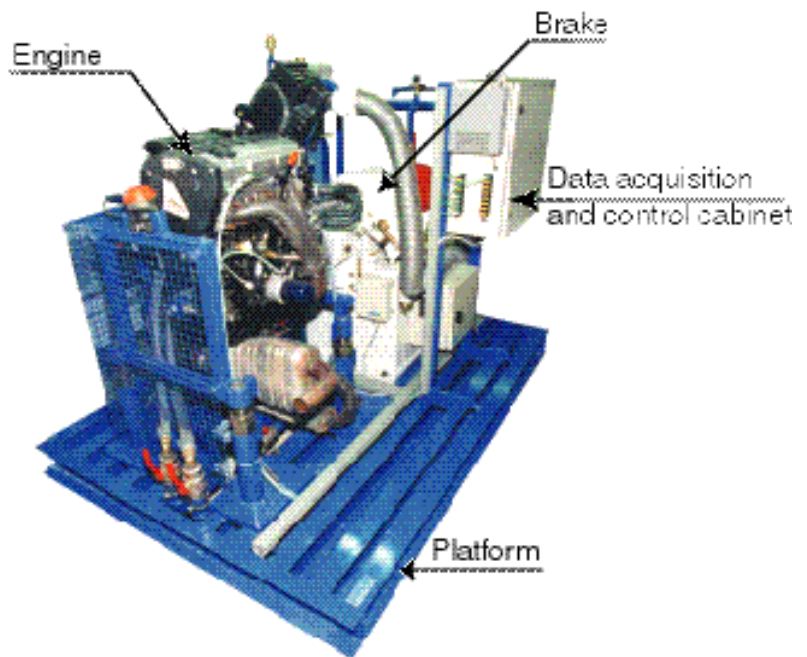
- Total project management.
- Management of all services : installation, training, certification.
- Elements collected together on a single platform.
- Simple design perfectly adapted to teaching use.
- Easy exchange of engine by use of mobile engine modules.

## ***The global concept***

Rotronics proposes engine dynamometer test beds according to its "Global Concept". That is to say that all elements comprising the test bed are gathered on a single autonomous platform. The user has simply to integrate the equipment into the workplace. Once the test bed has been installed, it is only necessary to make the required power and fluid connections and the unit is operational.

Moreover, the realisation of an on-site engine dynamometer is enhanced by an interactive design service and the limited number of parties involved, all of which greatly facilitates project management.

These test beds are all built around the same base unit but designed entirely in accordance with the client's specification. A commissioning service, together with on-site user training, is always provided.



## ***The platform :***

Comprises a slotted upper surface, mountings for the engine and the different elements related to data acquisition and control. All the necessary components are mounted on this base, which itself is supported by antivibration pads.

The engines are mounted on mobile trolleys ; the trolley housing as well as a system for fixing and centralizing it, are built into the platform.



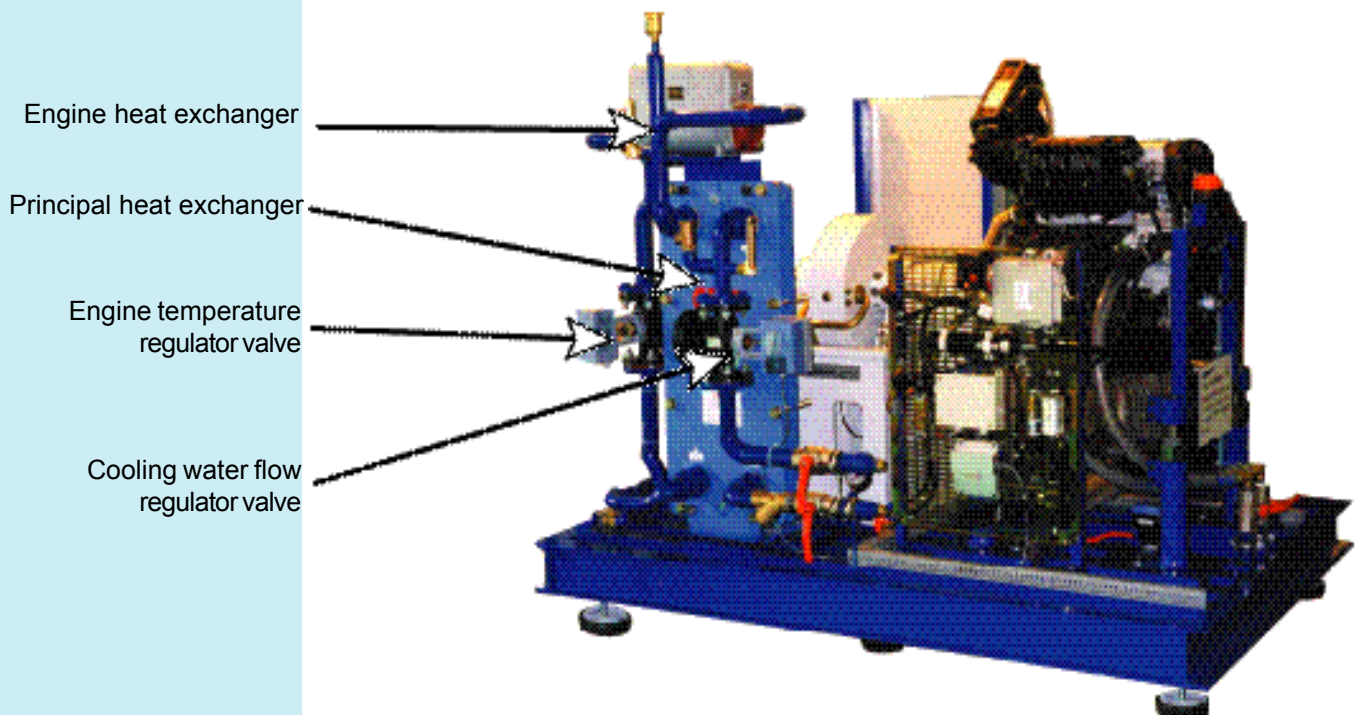
## **The loading brake :**

The loading brake is an industrial, water cooled, eddy current device. A complete range is available (from 20 kW to 500 kW). All accessories are supplied : transmission shaft adapted to its protective cover, with velocity sensor, torque sensor, and control unit. The dynamometer can be equipped with a starter. All types of transmission can be accommodated.



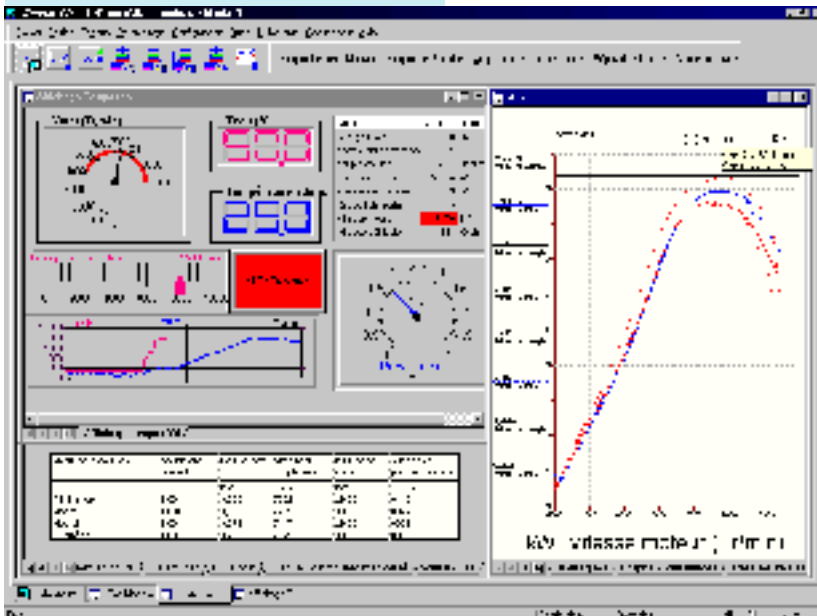
## **Engine and loading brake cooling :**

Cooling is achieved by a water circulation system. Several solutions are possible : closed circuit, open circuit, combination circuit. The chosen technique and its capacity are made to specification depending upon the intended use of the test bed.



## Operation and data acquisition :

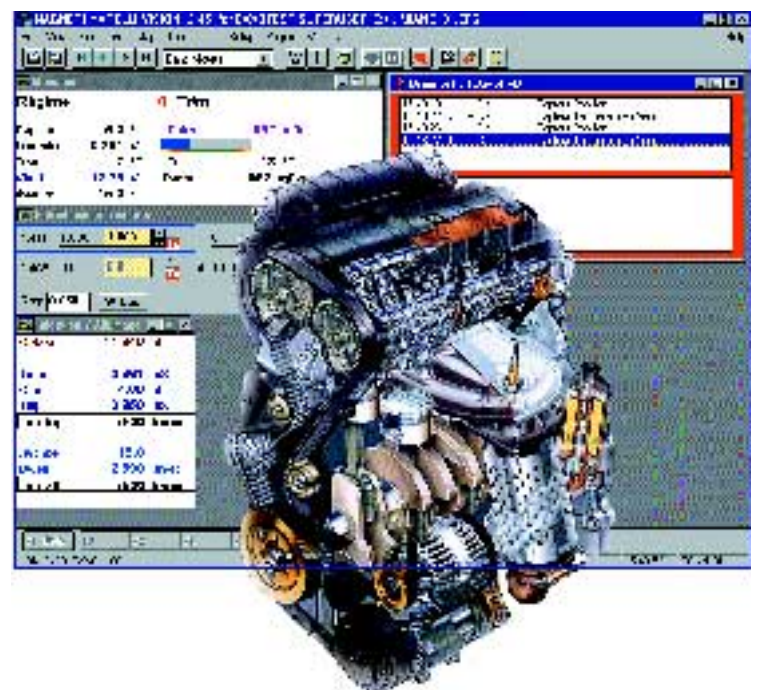
All operations and data acquisition are realised using integrated equipment (engine and loading brake control, fuel consumption, software to drive and for data acquisition etc...). The design of this element is carried out according to specification.



## The engine :

It is generally supplied by the client but can be delivered, assembled and instrumented, by Rotronics, notably for projects in the teaching domain. Many types of engine can be used : petrol, diesel, LPG, VNG, marine, turbocharged... It is equally possible to mount a programmable injection system on certain engines. The ignition advance and injection maps can hence be modified at will.

Where the test bed is delivered without an engine, the engine trolley supplied allows installation and instrumentation of the engine, by the customer.



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