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| **Product Name :** | **Product Code :** |
|---|---|
| Twin Cylinder Four Stroke Water Cooled Diesel Engine Test Rig | Automobile Engg0002 |

**Description :**

Twin Cylinder Four Stroke Water Cooled Diesel Engine Test Rig

**Technical Specification :**

win Cylinder Four Stroke Water Cooled Diesel Engine Test Rig IC engines are widely used in automobile, domestic and industrial sector. They are classified according to cycle, number of cylinders, arrangement of cylinders, fuel used, type of ignition, valve arrangement, cooling system. Test rigs are used to find out the performance of an IC engine. It consists of an IC Engine, dynamometer, fuel measuring, air intake measuring and various other arrangements.

SCOPE OF EXPERIMENTATIONS:

· To determine Brake Horse Power

· To determine fuel consumption

· To determine specific fuel consumption

· To determine Brake Thermal Efficiency

TECHNICAL DETAILS:

· Type of Engine

o Single cylinder, two stroke, air cooled, Hand start, self lubricating, petrol engine (BAJAJ- New)

· Type of Loading

o TD-101A Rope Brake Dynamometer

§ Rope Brake arrangement with the brake drum fitted on the engine shaft and provided spring balance.

o TD-101B Electric Brake Dynamometer

§
The engine is coupled with electrical alternator with resistance
loading arrangement. Digital voltmeter and digital ammeter is provided.

· Fuel measuring system

o Fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement.

· Air intake measuring system

o Air tank fitted with orifice and water manometer.

· Exhaust Gas Calorimeter

o
An Exhaust Gas Calorimeter, made of Stainless Steel is provided for
calculating heat carried away by exhaust gas. The body of the
calorimeter is insulated and thermometers are provided to measure the
temperature of water and gas.

· The whole setup is well designed and supported by a good quality painted rigid M.S. Structure

SINGLE CYLINDER TWO STROKE PETROL ENGINE TEST RIG

SINGLE CYLINDER FOUR STROKE PETROL ENGINE TEST RIG

SINGLE CYLINDER F/S PETROL ENGINE:-

IC
engines are widely used in automobile, domestic and industrial sector.
They are classified according to cycle, number of cylinders,

arrangement of cylinders, fuel used, type of ignition, valve arrangement, cooling system. Test rigs are used to find out the performance of an IC engine. It consists of an IC Engine, dynamometer, fuel measuring, air intake measuring and various other arrangements.

SCOPE OF EXPERIMENTATIONS :

· To determine specific fuel consumption

· To determine Brake Horse Power

· To determine Brake Thermal Efficiency

TECHNICAL DETAILS:

· Type of Engine

o Single cylinder, four stroke, air cooled, Hand start, self lubricating, petrol engine. (HONDA New)

· Type of Loading

o TD-102A- Rope Brake Dynamometer

§ Rope Brake arrangement with the brake drum fitted on the engine shaft and provided spring balance.

o TD-102B- Electric Brake Dynamometer

§ The engine is coupled with electrical alternator with resistance loading arrangement. Digital voltmeter and digital ammeter is provided.

· Fuel measuring system

o Fuel measuring system consists of a fuel tank, a burette and a three way cock.

· Air intake measuring system

o Air tank fitted with orifice and water manometer.

· Exhaust Gas Calorimeter

o An Exhaust Gas Calorimeter, made of Stainless Steel is provided for calculating heat carried away by exhaust gas. The body of the calorimeter is insulated and thermometers are provided to measure the temperature of water and gas.

· The whole setup is well designed and supported by a good quality painted rigid M.S. Structure.

SINGLE CYLINDER FOUR STROKE PETROL ENGINE TEST RIG

MULTI CYLINDER FOUR STROKE PETROL ENGINE TEST RIG

M. CYLINDER F/S DIESEL ENGINE:-

IC
engines are widely used in automobile, domestic and industrial sector. They are classified according to cycle, number of cylinders, arrangement of cylinders, fuel used, type of ignition, valve arrangement, cooling system. Test rigs are used to find out the performance of an IC engine. It consists of an IC Engine, dynamometer, fuel measuring, air intake measuring and various other arrangements.

SCOPE OF EXPERIMENTATIONS:

· To determine specific fuel consumption.

· To determine Brake Horse Power.

· To determine mechanical efficiency.

· To determine Brake Thermal Efficiency.

· To determine volumetric efficiency measurement.

· To determine indicated thermal efficiency.

UTILITIES REQUIREMENTS:

· Electric Supply-Single Phase, 220 V, 5 Amp.

· Continuous Water Supply-10 LPM Approx.

· Fuel-10 Ltrs.

· Floor Area-3m X 2m

· Tachometer-For RPM measurement

TECHNICAL DETAILS:

· Type of Engine-Four cylinder, four stroke engine, vertical water cooled, self start, diesel engine.

· Type of Loading

o TD-106A – Electric Brake Dynamometer

§
The engine is coupled with electrical alternator with resistance

loading arrangement. Digital voltmeter and digital ammeter is provided.

o TD-106B –Hydraulic Brake Dynamometer

§
It consist of weighing gear, control gear, a dead weight in Kg unit suitable for testing the engine at different speeds. The engine and dynamometer are directly coupled on a substantial base plate.

· Fuel measuring system

o Fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement.

· Air intake measuring system

o Air tank fitted with orifice and water manometer.

· Measurement of Heat carried

o
It consists of inlet outlet piping with flow control valve, water away by Cooling water meter. Thermometers are provided to measure the inlet outlet temperature of water.

OPTIONAL :

Exhaust gas calorimeter

-
made of Stainless Steel including the body & the tubes for cooling water circulation and designed to get maximum temperature difference. The body of the calorimeter is insulated on all sides to prevent heat losses due to radiation. Thermometers are provided to measure the temperature of water and gas

MULTI CYLINDER FOUR STROKE PETROL ENGINE TEST RIG

SINGLE CYLINDER FOUR STROKEDIESEL ENGINE TEST RIG

SINGLE CYLINDER F/S W/C DIESEL ENGINE

IC
engines are widely used in automobile, domestic and industrial sector. They are classified according to cycle, number of cylinders, arrangement of cylinders, fuel used, type of ignition, valve arrangement, cooling system. Test rigs are used to find out the performance of an IC engine. It consists of an IC Engine, dynamometer, fuel measuring, air intake measuring and various other arrangements.

EXPERIMENTS:

- To determine specific fuel consumption.
- To determine Brake Horse Power.
- To determine Brake Thermal Efficiency.
- To determine volumetric efficiency measurement.

TECHNICAL DETAILS:

- Type of Engine

o
Single cylinder, four stroke, vertical water cooled, crank start, diesel engine developing 5 HP at 1500 rpm (Kirloskar New)

- Type of Loading

o TD-104A - Rope Brake Dynamometer

§
Rope Brake arrangement with the brake drum fitted on the engine shaft and provided with cooling water arrangement and spring balance in Kg units.

o TD-104B - Electric Brake Dynamometer

§
The engine is coupled with electrical alternator with resistance loading arrangement. Digital voltmeter and digital ammeter is provided.

o TD-104C - Hydraulic Brake Dynamometer

§
It consists of weighing gear, control gear, a dead weight in kg unit suitable for testing the engine at different speeds. The engine and dynamometer are directly coupled on a substantial base plate.

- Fuel measuring system

o Fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement.

- Air intake measuring system

o Air tank fitted with orifice and water manometer.

- Measurement of Heat carried

o
It consists of inlet outlet piping with flow control valve, water away by Cooling water meter. Thermometers are provided to measure the inlet outlet temperature of water.

- The whole setup is well designed and supported by a good quality painted rigid M.S. Structure.

OPTIONAL:

Exhaust gas calorimeter:

Exhaust gas calorimeter - made of Stainless Steel including the body & the tubes for cooling water circulation and designed to get maximum temperature difference. The body of the calorimeter is insulated on all sides to prevent heat losses due to radiation. Thermometers are provided to measure the temperature of water and gas

SINGLE CYLINDER FOUR STROKEDIESEL ENGINE TEST RIG

TWIN CYLINDER FOUR STROKE WATER COOLED DIESEL ENGINE TEST RIG

T. CYLINDER F/S DIESEL ENGINE

IC engines are widely used in automobile, domestic and industrial sector. They are classified according to cycle, number of cylinders, arrangement of cylinders, fuel used, type of ignition, valve arrangement, cooling system. Test rigs are used to find out the performance of an IC engine. It consists of an IC Engine, dynamometer, fuel measuring, air intake measuring and various other arrangements.

SCOPE OF EXPERIMENTATIONS:

- To determine specific fuel consumption.
- To determine I.H.P. by Williams Line Method.
- To determine Brake Horse Power.
- To determine Brake Thermal Efficiency.
- To determine volumetric efficiency measurement.

TECHNICAL DETAILS:

- Type of Engine

o Twin cylinder, four stroke, vertical water cooled, crank start, diesel engine developing 10 HP at 1500 RPM. (Kirloskar New)

- Type of Loading

o TD-105A - Rope Brake Dynamometer

§
Rope Brake arrangement with the brake drum fitted on the engine shaft and provided with cooling water arrangement and spring balance in Kg units.

o TD-105B - Electric Brake Dynamometer

§
The engine is coupled with electrical alternator with resistance loading arrangement. Digital voltmeter and digital ammeter is provided.

o TD-105C - Hydraulic Brake Dynamometer

§
It consist of weighing gear, control gear, a dead weight in Kg unit suitable for testing the engine at different speeds. The engine and dynamometer are directly coupled on a substantial base plate.

· Fuel measuring system

o Fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement.

· Air intake measuring system

o Air tank fitted with orifice and water manometer.

· Measurement of Heat carried

o
It consists of inlet outlet piping with flow control valve, water away by Cooling water meter. Thermometers are provided to measure the inlet outlet temperature of water.

· The whole setup is well designed and supported by a good quality painted rigid M.S. Structure.

OPTIONAL:

Exhaust gas calorimeter

Exhaust
gas calorimeter - made of Stainless Steel including the body & the tubes for cooling water circulation and designed to get maximum temperature difference. The body of the calorimeter is insulated on all sides to prevent heat losses due to radiation. Thermometers are provided

to measure the temperature of water and gas.

## Electrical and Electronics

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