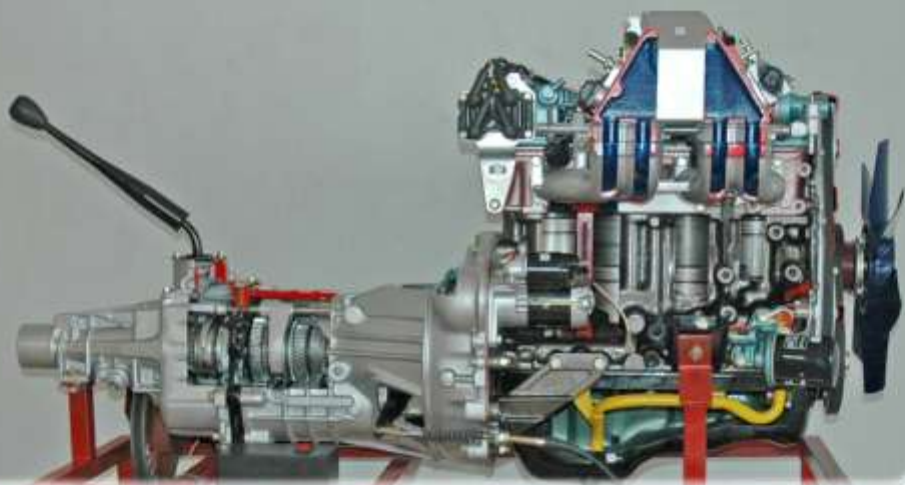


**MT | MODTECH**  
ENGINEERING

An ISO 9001-2008 Certified Company



**Equipments for automobile teaching and training**

Plot No. 95, Behind Omax auto, Jigini Post,  
Bandanalsandra, Bommasandra Jigini Link Road, Bangalore 560 105.

Ph : 08110414385. Mob: 9845885811 / 9845343851

E-mail : Sales@modtechindia.com, Website: www.modtechindia.com



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Thanking you, and assuring you our best services at all times.

Yours faithfully,  
For **MODTECH**  
S/D  
Partner

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# Registration Certificate

*This is to certify that  
the Management Systems of*

## **Modtech**

*have been assessed by AJA Registrars and registered  
against the requirements of*

### **ISO 9001:2008**

Certificate No. : **AJA12/16292**      Date of Original Registration : **17/11/2010**

Expiry Date : **17/11/2013**      Date of Re-Registration : **12/09/2012**



*Hammond Jackson*      *Timothy Dixon*  
Joint Chief Executives, AJA Registrars



*This certificate is issued in respect of the locations & scope of registration detailed in the Associated Registration Schedule.  
This certificate has been issued by AJA Registrars Limited Unit 6 Gordano Court Gordano Gate Business Park Serbert Close Portishead Bristol UK BS20 7FS*

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## **CUT SECTION COMPLETE CHASSIS WITH ELECTRICALS**

**A** Model No. MT-A00

### **CUT-SECTION MODEL OF DEMONSTRATION CHASSIS WORKING WITH ELECTRICALS VEHICLE:**



The model is made out of full size original used car/van/LCV/Truck/tractor chassis. The cut section model is constructed such that all the following systems can be demonstrated in working conditions.

#### **ENGINE:**

Maximum parts and accessories of an engine like of the cylinders, cylinder head, Inlet and Exhaust manifolds, Fuel system, Lubrication system, cooling system, self-starter, Alternator, etc, are sectioned to show the internal constructional details.

This complete sectioned models is coupled with 220/230V A.C single phase Motor through a Reduction drive unit. By running the motor the complete working details of the individual parts, different mechanisms can be demonstrated as the model is running at a very low speed (about 15 to 20 rpm).

#### **TRANSMISSION SYSTEM:**

It consists of a Clutch and gearbox assembly, the casing of which is suitably cut to demonstrate its operation. The Hydraulic/Mechanical circuit from the pedal to the Clutch is active and will help to demonstrate the response of clutch systems. The gearbox is coupled to Differential gear box with an axle and the different coupling used for this transmission can be demonstrated. The Differential gear box is also cut so as to clearly to demonstrate its complete operating principle. The gear shifting including the forward and reverse gear operation can be clearly shown. The speed variation and the rotation of the Differential gear box can be seen while gear shifting.

#### **FUEL SYSTEM:**

The components related to fuel system will be suitably sectioned and made working to explain the internal details of the system.

#### **EXHAUST SYSTEM:**

It consists of Exhaust Manifold and silencer in cut section to explain internal construction.

#### **LUBRICATION SYSTEM:**

It consists of the engine Lubrication system along with the Lubrication oil pump.

**SUSPENSION SYSTEM:**

*This will explain both the front and rear Suspension systems along with necessary linkages etc.,*

*The construction and internal details can be explained using the same.*

**BRAKING SYSTEM:**

*This Mechanical/Hydraulic/Air circuit of the Braking mechanism is suitably sectioned to show the internal constructional details. The principle of Pedal braking and hand braking can be explained .*

*(Only Hydraulic Braking circuit will be made working.)*

**STEERING MECHANISM:**

*This can be seen and included in the Steering wheel, Steering gear and coupling at the wheels.*

**ELECTRICAL SYSTEM:**

*The Electrical system gives a complete idea of the electrical system and circuit of a vehicle. It has been provided with Sectionised battery and terminals are provided to connect another working battery to show the working of the individual parts and accessories such as a Sectionised Self starter, Alternator, Wiper Motor, Distributor, Horn relay, etc., and working of head light Brake light, side indicator, Horn, parking lights, spark in spark plugs, etc.*

*Note: The complete wiring related to MPFI system will be retained but the working of MPFI system associated with the electrical system cannot be made working.*

<b>Model No.</b>	<b>Description</b>
MT-A01	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS MPFI VEHICLE
MT-A02	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS CARBURATOR VEHICLE
MT-A03	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS DIESEL 2 WHEEL DRIVE
MT-A04	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS DIESEL 4 WHEEL DRIVE
MT-A05	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS DIESEL LCV
MT-A06	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS TRUCK
MT-A07	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS TRACTOR
MT-A08	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS THREE WHEELER PETROL
MT-A09	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS THREE WHEELER DIESEL
MT-A10	CUT-SECTION MODEL OF DEMONSTRATION CHASSIS TWO WHEELER PETROL

## **CUT SECTION COMPLETE CHASSIS WITHOUT ELECTRICALS**

### **B** Model No. MT-B00

#### **CUT-SECTION MODEL OF DEMONSTRATION CHASSIS WORKING OF A VEHICLE:**

The model is made out of full size original used car/van/LCV/Truck/tractor chassis. The cut section model is constructed such that all the following systems can be demonstrated in working conditions.

##### **ENGINE:**

Maximum parts and accessories of an engine like of the cylinders, cylinder head, Inlet and Exhaust manifolds, Fuel system, Lubrication system, cooling system, self-starter, Alternator, etc, are sectioned to show the internal constructional details.

This complete sectioned models is coupled with 220/230V A.C single phase Motor through a Reduction drive unit. By running the motor the complete working details of the individual parts, different mechanisms can be demonstrated as the model is running at a very low speed (about 15 to 20 rpm).

##### **TRANSMISSION SYSTEM:**

It consists of a Clutch and gearbox assembly, the casing of which is suitably cut to demonstrate its operation. The Hydraulic/Mechanical circuit from the pedal to the Clutch is active and will help to demonstrate the response of clutch systems. The gearbox is coupled to Differential gear box with an axle and the different coupling used for this transmission can be demonstrated. The Differential gear box is also cut so as to clearly to demonstrate its complete operating principle. The gear shifting including the forward and reverse gear operation can be clearly shown. The speed variation and the rotation of the Differential gear box can be seen while gear shifting.

##### **FUEL SYSTEM:**

The components related to fuel system will be suitably sectioned and made working to explain the internal details of the system.

##### **EXHAUST SYSTEM:**

It consists of Exhaust Manifold and silencer in cut section to explain internal construction.

##### **LUBRICATION SYSTEM:**

It consists of the engine Lubrication system along with the Lubrication oil pump.

##### **SUSPENSION SYSTEM:**

This will explain both the front and rear Suspension systems along with necessary linkages etc.,

The construction and internal details can be explained using the same.

**BRAKING SYSTEM:**

*This Mechanical/Hydraulic/Air circuit of the Braking mechanism is suitably sectioned to show the internal constructional details. The principle of Pedal braking and hand braking can be explained .*

*(Only Hydraulic Braking circuit will be made working.)*

**STEERING MECHANISM:**

*This can be seen and included in the Steering wheel, Steering gear and coupling at the wheels.*

<b>Model No.</b>	<b>Description</b>
<b>MT-B01</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS MPFI VEHICLE</b>
<b>MT-B02</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS CARBURATOR VEHICLE</b>
<b>MT-B03</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS DIESEL 2 WHEEL DRIVE</b>
<b>MT-B04</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS DIESEL 4 WHEEL DRIVE</b>
<b>MT-B05</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS DIESEL LCV</b>
<b>MT-B06</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS TRUCK</b>
<b>MT-B07</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS TRACTOR</b>
<b>MT-B08</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS THREE WHEELER PETROL</b>
<b>MT-B09</b>	<b>CUT-SECTION MODEL OF DEMONSTRATION CHASSIS THREE WHEELER DIESEL</b>



## C Model No.MT-C00

### MODEL OF CUT SECTIONED ENGINE ASSEMBLY WITH CLUTCH AND GEAR BOX (WORKING):



The model is made out of full size original, used engine, Gear box, clutch etc. The Maximum parts and accessories of the engine like four cylinders of the cylinder block, Cylinder heads, valve ports, piston, Connecting rod, inlet and Exhaust manifolds, throttle body, Fuel system, Lubrication system, Water pump, radiator, oil pump, Oil pan, air Filter, self-starter, Alternator Clutch, Gear box etc are sectioned to clearly demonstrate the internal constructional details. The reduction gear unit will be coupled to the flywheel of the engine assembly, which is then coupled to the single phase AC motor. So that by running the electric motor the entire function of the engine can be demonstrated .



The engine is coupled with Gear Box. The gearbox is coupled to the engine through the diaphragm clutch and gear selection is done by shifting the gear shift control lever. The bell housing will be sectioned to show the clutch connected to the flywheel and the clutch housing will be sectioned to show the diagram spring pressure plate, the clutch will be made operational through its original mechanical system fabricated on to the stand to which the whole system is mounted, so that by operating clutch pedal the engagement and disengagement of the clutch can be demonstrated. The gearbox will be suitably sectioned to demonstrate the gear mechanism, shifter mechanism etc, and shifting the gear lever the complete operating of the gear box can be demonstrated. And will be coupled to the engine assembly. Through the Clutch so that by working the engine the entire system of engine to clutch and gear box can be demonstrated working.

The whole system is mounted on to a sturdy iron frame, and the frame will be provided with caster wheels for easy movement of the entire model. Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine. The painting will be carried out in such a way that different colors will be used for different components such as Air, oil, petrol, exhaust identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated. A switch box with indicator switch will be provided .

<i>Model No.</i>	<i>Description</i>
<i>MT-C01</i>	<i>CUT-SECTION MODEL OF THREE CYLINDER MPFI ENGINE WITH GEAR BOX</i>
<i>MT-C02</i>	<i>CUT-SECTION MODEL OF THREE CYLINDER CARBURATOR ENGINE WITH GEAR BOX</i>
<i>MT-C03</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER MPFI ENGINE WITH GEAR BOX</i>
<i>MT-C04</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER CARBURATOR ENGINE WITH GEAR BOX</i>
<i>MT-C05</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER DIESEL ENGINE WITH GEAR BOX</i>
<i>MT-C06</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER TURBO DIESEL ENGINE WITH GEAR BOX</i>
<i>MT-C07</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER CRDI DIESEL ENGINE WITH GEAR BOX</i>
<i>MT-C08</i>	<i>CUT-SECTION MODEL OF SIX CYLINDER DIESEL ENGINE WITH GEAR BOX</i>

## **D** *Model No.MT-D00*

### **CUT SECTION MODEL OF ENGINE WORKING:**

*The model is made out of full size original, used engine. The Maximum parts and accessories of the engine like cylinder block, Cylinder heads, valve ports, piston, Connecting rod, inlet and Exhaust manifolds, throttle body, Fuel system, Lubrication system, Water pump, radiator, oil pump, Oil pan, air Filter, self-starter, Alternator etc are sectioned to clearly demonstrate the internal constructional details. The reduction gear unit will be coupled to the flywheel of the engine assembly, which is then coupled to the single phase AC motor. So that by running the electric motor the entire function of the engine can be demonstrated .*

*The whole system is mounted on to a sturdy iron frame, and the frame will be provided with caster wheels for easy movement of the entire model. Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine. The painting will be carried out in such a way that different colors will be use for different components such as Air, oil, petrol, exhaust identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated. A switch box with indicator switch will be provided .*



<i>Model No.</i>	<i>Description</i>
<i>MT-D01</i>	<i>CUT-SECTION MODEL OF SINGLE CYLINDER PETROL ENGINE</i>
<i>MT-D02</i>	<i>CUT-SECTION MODEL OF SINGLE CYLINDER DIESEL ENGINE</i>
<i>MT-D03</i>	<i>CUT-SECTION MODEL OF THREE CYLINDER MPFI ENGINE</i>
<i>MT-D04</i>	<i>CUT-SECTION MODEL OF THREE CYLINDER CARBURATOR ENGINE</i>
<i>MT-D05</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER MPFI ENGINE</i>
<i>MT-D06</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER CARBURATOR ENGINE</i>
<i>MT-D07</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER DIESEL ENGINE</i>
<i>MT-D08</i>	<i>CUT-SECTION MODEL OF FOUR CYLINDER CRDI DIESEL ENGINE</i>
<i>MT-D09</i>	<i>CUT-SECTION MODEL OF SIX CYLINDER DIESEL ENGINE</i>

## **E** Model No.MT-E00\

### **MODEL OF CUT SECTIONED ENGINE ASSEMBLY WITH CLUTCH AND GEAR BOX (TWO WHEELER )(WORKING):**



The model is made out of full size original, used engine, Gear box, clutch etc The Maximum parts and accessories of the engine like cylinder block, Cylinder heads, valve/ports, piston, Connecting rod, inlet and Exhaust manifolds, throttle body, Fuel system, Lubrication system, Clutch, Gear box etc are sectioned to clearly demonstrate the internal constructional details.

The engine is coupled with Gear Box. The gearbox is coupled to the engine through the clutch and gear selection is done by shifting the gear shift control lever. The whole system is mounted on to a sturdy iron frame, and the frame will be provided with caster wheels for easy movement of the entire model. Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine. The painting will be carried out in such a way that different colors will be use for different components such as Air, oil, petrol, exhaust identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated. A switch box with indicator switch will be provided .

<b>Model No.</b>	<b>Description</b>
<b>MT-E01</b>	<b>CUT-SECTION MODEL OF SINGLE CYLINDER PETROL ENGINE (TWO STROKE)</b>
<b>MT-E02</b>	<b>CUT-SECTION MODEL OF SINGLE CYLINDER PETROL ENGINE (FOUR STROKE)</b>

## **F** Model No.MT-F01

### **CUT SECTION MODEL OF TWO STROKE SINGLE CYLINDER DIESEL ENGINES.**

*The model is made out of new single cylinder Diesel engine. Maximum parts such as piston, cylinder, cylinder head, inlet and Exhaust manifolds, Fuel Injection pump, oil pump, Fuel Filter, Injector, etc., are sectioned to show the internal constructional details of the engine. The working of individual parts and accessories like Valves, piston, pumps, Crank, Camshaft, etc., can be demonstrated. This model is fixed on a sturdy iron frame.*

## **G** Model No.MT-G01

### **CUT SECTION MODEL OF SYNCHROMESH GEAR BOX (WORKING):**



*This is made out of original full size used gearbox, suitably sectioned to show the details of gear mechanism of forward and reverse speeds. A Crank lever is provided to demonstrate the mechanism. Complete unit is mounted on a sturdy iron frame.*

## Model No. MT-G02

### **CUT SECTION MODEL OF GEAR BOX WITH DIFFERENTIAL (TRANSAXLE) (WORKING):**

*This is made out of original full size used gearbox, suitably sectioned to show the details of gear mechanism of forward and reverse speeds. A Crank lever is provided to demonstrate the mechanism. Complete unit is mounted on a sturdy iron frame.*



**Model No.MT-G03**

**CUT SECTION MODEL OF SLIDING MESH GEAR BOX (WORKING):**

*This mode is made out of original full size used gearbox, suitably sectioned to show the gear mechanism of forward and reverse speeds. A Crank lever is provided to demonstrate the mechanism. Complete unit is mounted on a sturdy iron frame.*



**Model No.MT-G04**

**CUT SECTION MODEL OF CONSTANT MESH GEAR BOX (WORKING):**

*This mode is made out of original full size used gearbox, suitably sectioned to show the gear mechanism of forward. A Crank lever is provided to demonstrate the mechanism. Complete unit is mounted on a sturdy iron frame.*



**Model No. MT-G05.**

**CUT SECTION MODEL OF FIVE SPEED MANUAL TRANSMISSION (WORKING):**

*This mode is made out of original full size used gearbox, suitably sectioned to show the gear mechanism of forward and reverse speeds. A Crank lever is provided to demonstrate the mechanism. Complete unit is suitably painted and mounted on a sturdy iron frame.*



**Model No. MT-G06**

**CUT SECTION MODEL OF AUTOMATIC TRANSMISSION OF A CAR.**

The model is made out of full size original used automatic transmission of a car, the transmission will be suitably sectioned to show the internal details, of gear mechanism of forward and reverse speeds. The automatic shifting of the gears can be explained using this model clearly.

The model will be mounted on to a tubular frame, Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine.



The painting will be carried out in such a way that different colors will be use for different components such as identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated.

**Model No. MT-G07**

**CUT SECTION MODEL OF COUNTINUOUSLY VARIABLE TRANSMISSION(CVT)- Two Wheeler.**

The model is made out of full size original used CVT of a two wheeler, the transmission will be suitably sectioned to show the internal details, of gear mechanism. The variation in variator pulley can be explained to demonstrate the speed variation.

The model will be mounted on to a tubular frame, Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine. The painting will be carried out in such a way that different colors will be use for different components such as identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated

**Model No. MT-G08.**

**TRACTOR TRANSMISSION ASSLY WITH GEAR BOX, ROCKSHAFT ASSEMBLY :**

The model is made out of full size original used Tractor Transmission Assay with Gear Box Rockshaft Assembly Suitable sectioning of the transmission housing is done So as to demonstrate its complete operational principle/Details it will be coated with suitable/requested Spl.Duco painting and plating of the Hardware's Etc. will be carried out. And also the model will be provided with suitable mounting option. .



**Model No. MT-G09.**

**MODEL OF CUT SECTIONED TRANSFER CASE ASSEMBLY (WORKING):**

*This model is made out of original full size used Transfer Case, suitably sectioned to show the gear mechanism of forward and reverse speeds. A Crank lever is provided to demonstrate the mechanism. Complete unit is mounted on a sturdy iron frame. The model will be finished by suitable colour painting.*



**Model No. MT-G10.**

**DISMANTELING AND ASSEMBLING PRACTICE FOR MANUAL GEAR BOX WITH 360 DEGREE ROTATING STAND.**



*The original car Gear Box will be mounted on to the rolling stand, so that slowly rolling the handle provided the engine can be rotated and lock and any position and angle to enable the students to assemble or dismantle the Gear box, a large oil drip pan is provided at the bottom to collect the small screws, parts and oil dripping. The rotating stand is made out of steel tube with gears for slow speed operation along with self retention wheels. The Paint finished rotating stand is provided with heavy duty caster wheels with brakes.*

**Model No. MT-G11.**

**DISMANTELING AND ASSEMBLING PRACTICE FOR AUTOMATIC GEAR BOX WITH 360 DEGREE ROTATING STAND.**

*The original car Gear Box will be mounted on to the rolling stand, so that slowly rolling the handle provided the engine can be rotated and lock and any position and angle to enable the students to assemble or dismantle the Gear Box, a large oil drip pan is provided at the bottom to collect the small screws, parts and oil dripping. The rotating stand is made out of steel tube with gears for slow speed operation along with self retention wheels. The Paint finished rotating stand is provided with heavy duty caster wheels with brakes.*





## **H** Model No.MT-H00

### **CUT SECTION MODEL OF STEERING GEAR BOX (WORKING):**



*This model is made out of full size original parts, suitably sectioned and to demonstrate the working of Steering wheel worms, Steering arm, etc., is mounted on a sturdy iron frame.*

<b>Model No.</b>	<b>Description</b>
<b>MT-H01</b>	<i>Rack and Pinion type</i>
<b>MT-H02</b>	<i>Worm and roller type</i>
<b>MT-H03</b>	<i>Recirculating ball type</i>
<b>MT-H04</b>	<i>Worm and sector type</i>
<b>MT-H05</b>	<i>Two wheeler steering</i>
<b>MT-H06</b>	<i>Power steering Hydraulic</i>
<b>MT-H07</b>	<i>Power steering Electronic (EPS)</i>

### **CUT SECTION MODEL OF STEERING GEAR BOX (WORKING) WITH WHEEL AND AXLE:**



*This model is made out of full size original parts, suitably sectioned and to demonstrate the working of Steering wheel worms, Steering arm, etc., The Arrangement Of Wheels And Axle Connecting To steering system will be done so the movement of the wheels when rotating the steering wheels can be displayed .*

The model will be mounted on to a tubular frame, Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine. The painting will be carried out in such a way that different colors will be use for different components such as identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated

<b>Model No.</b>	<b>Description</b>
<b>MT-H08</b>	<b>Rack and Pinion type</b>
<b>MT-H09</b>	<b>Worm and roller type</b>
<b>MT-H10</b>	<b>Recirculating ball type</b>
<b>MT-H11</b>	<b>Worm and sector type</b>
<b>MT-H12</b>	<b>Power steering Hydraulic</b>
<b>MT-H13</b>	<b>Power steering Electronic (EPS)</b>

**Model NO. MT-H14.**

#### **TRAINING PLATFORM FOR HYDRAULIC POWER STEERING WORKING.**



The Working setup of Hydraulic power steering is made out of original hydraulic steering system completely rigged on to a metal frame, where in a complete hydraulic circuitry will be connected with the hydraulic pump motorised to pressurise the hydraulic oil inside the system. The steering system will be with complete suspension system , tyres and wheels. A rotary platform will be provided under the tyres to demonstrate the vehicle load. So that the Steering with and without the hydraulic power can be demonstrated.

**Model NO. MT-H15.**

**TRAINING PLATFORM FOR ELECTRONIC POWER STEERING (EPS) WORKING.**

The Working setup of Electronic power steering is made out of original Electronic steering system completely rigged on to a metal frame, where in a complete electrical circuitry will be connected with the ECU and 12V power supply. The steering system will be with complete suspension system , tyres and wheels. A rotary platform will be provided under the tyres to demonstrate the vehicle load. So that the Steering with and without the Electrical power can be demonstrated.

**Model NO. MT-101**

**CUT SECTION MODEL OF SINGLE PLATE COIL SPRING CLUTCH SYSTEM (WORKING):**



This model is made out of original used parts such as Flywheel, Clutch plates, etc. to demonstrate the working of clutch assembly. By operating the pedal provided the model can be demonstrated. The entire model is mounted on a sturdy iron frame.

**Model NO. MT- 102**

**CUT SECTION MODEL OF DIAPHRAM CLUTCH SYSTEM (WORKING):**

This model is made out of original parts such as Flywheel, Pressure Plate ,Clutch plates, etc. to demonstrate the working of clutch assembly. By operating the pedal provided the model can be demonstrated. The entire model is mounted on a sturdy iron frame.



**Model No. MT-103.**

**CUT SECTION MODEL OF CENTIFUGAL CLUTCH .**



*This model is made out of original used parts, will be suitably sectioned to demonstrate the internal construction details showing the minute information, and working of the same, the model will be suitably painted and mounted on a navopan wooden base.*

**Model No. MT-104**

**MODEL OF CUT SECTIONED MULTI PLATE CLUTCH SYSTEM :**

*This model is made out of full size original multi plate clutch which is suitably sectioned to show the multi plate friction plate arrangement and its working principle.*

*The model will be mounted on wooden base, Suitable color imported painting will be carried out along with Miracle coating for the model will be done for extra gloss and shine. The painting will be carried out in such a way that different colors will be use for different components such as identification of sectioned area etc according to the colors code for easy identification of different systems and mechanisms. All the hardware's and gears will be suitably electroplated*

**J Model No.MT-J01**

**CUT SECTION MODEL OF FULLY FLOATING DIFFEREINTIAL AND REAR WHEEL MECHANISM (WORKING) (HCV):**

*This model is made out of original used heavy vehicle parts, suitably sectioned to show clearly the action of Differential gear box, such as pinion crown wheel in Differential and Brake drums in Rear axle, A Crank handle is provided to demonstrate the model. The model is mounted on a sturdy iron frame.*



**Model No.MT-J02**

**CUT SECTION MODEL OF SEMI FLOATING DIFFERENTIAL AND WHEEL MECHANISM (WORKING) (LCV):**

*This model is made out of original used light vehicle, suitably sectioned to show the action of Differential gear box and Brake drums in Rear axle. A Crank handle is provided to demonstrate the model. The whole model is mounted on a sturdy iron frame.*



**Model No.MT-J03**

**CUT SECTION MODEL OF LIVE FRONT AXLE ASSEMBLY (WORKING) :**



*This model is made out of original used light vehicle, suitably sectioned to show the action of Differential gear box and Brake drums in Rear axle. A Crank handle is provided to demonstrate the model. The whole model is mounted on a sturdy iron frame.*

**K Model No. MT-K01**

**CUT SECTION MODEL OF MECHANICAL BRAKE SYSTEM (WORKING):**

*This model is made out of original used parts such as Brake drum, Brake Shoes, etc., suitably sectioned and mounted on a wooden base. By operating the Brake drum and applying the Brake pedal this model can be demonstrated.*



**Model No. MT-K02**

**CUT SECTION MODEL OF AIR BRAKE SYSTEM:**

The model is made out of Original parts such as Air compressor, Unloader valve, foot valve, Booster, Wheel assembly, air tank, control valve etc Suitably sectioned and mounted on a sturdy iron frame.



**Model No. MT-K03**

**MODEL OF AIR BRAKE SYSTEM WORKING:**



The model is made out of Original parts such as Air compressor, Unloader valve, foot valve, Booster, Wheel assembly, air tank, control valve etc The Brake system will be fitted with two front wheel assembly complete ( with out axle) and the drum will be suitably sectioned to show the working of the brake shoe. Other system will be mounted as it is and will be made to function ( foot brake, hand brake etc will be functional.)the entire system will be mounted on a sturdy iron frame. A F.H.P Single phase 220/230 V AC motor will be coupled to the compressor for generation of the air, which is used for the operation of the model.

**Model No. MT-K04**

**CUT SECTION MODEL OF DISC BRAKE SYSTEM: (working):**

The Model is made out of Original parts such as Two Brake disc, two Calliper assembly (one sectioned), two master cylinder (one sectioned) etc, the model is mounted on a sturdy iron frame and can be demonstrated by operating the lever provided.



**Model No. MT-K05**

**CUT SECTION MODEL OF DRUM BRAKE UNIT (HYDRAULIC) (WORKING):**

*This model is made out of original parts such as Two Brake drum assembly, one master cylinder (one sectioned), wheel cylinders (one sectioned), Brake Shoes, etc., the model can be demonstrated by operating the lever provided.*



**Model No. MT-K06**

**CUT SECTION MODEL OF HYDRAULIC BRAKE UNIT -FOUR WHEEL TYPE (CUT SECTIONED AND WORKING) WITH TWO DISC AND TWO DRUM BRAKES:**



*This model contain two disc brakes in the front and two drum brakes at the rear and it is made out of original parts such as two master cylinder Assembly (one sectioned and one working), wheel cylinder, Brake drum, Brake Shoes, callipers etc., suitably sectioned and mounted on a sturdy iron frame. By operating the lever provided, the working procedure of the model can be demonstrated.*

**Model No. MT-K07**

**MODEL OF HYDRAULIC BRAKING SYSTEM WITH VACCUM BOOSTER WITH VACUUM PUMP.**

*The model will be made out of Used MARUTI brake aggregates which will be suitably sectioned, Left Front disc and Left rear drum will be made working, using necessary hydraulic connection from the Master cylinder, By operating the brake pedal connected to the Master cylinder through booster, the functioning of disc and drum brake can be demonstrated. The aggregates on the other side will be suitably sectioned to show the internal details and will be kept dummy. All the aggregates will paint finished The entire setup will be mounted on a sturdy iron frame.*

**Model No. MT-K08**

**CUT SECTION MODEL OF DISC BRAKE SYSTEM TWO WHEELER.**

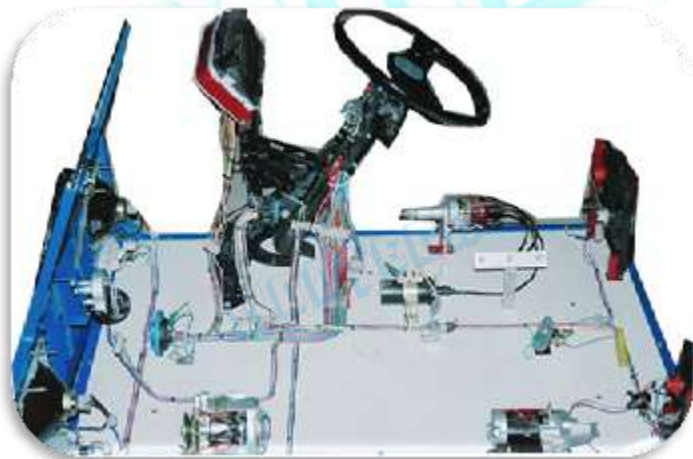
*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information such as the disc brake assembly, master cylinder on the handle, its piping, front wheel assembly with disc , handle bar with cylinder and brake lever etc., and working of the same can be show by operating the brake lever, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*



**NOTE: For ABS working model Please Refer Model No. MT-X04**

**L Model No. MT-L01**

**CUT SECTION MODEL OF MOCK LAYOUT OF A CAR WIRING (VEHICLE BODY ELECTRICAL SYSTEM) WORKING (BASIC TYPE ):**



*This demonstration board which will give a complete idea of the electrical system of a car. In this demonstration board the actual wiring with parts and accessories of a car had been arranged, according to the electrical circuit of a car and terminals are provided to connect the battery.*

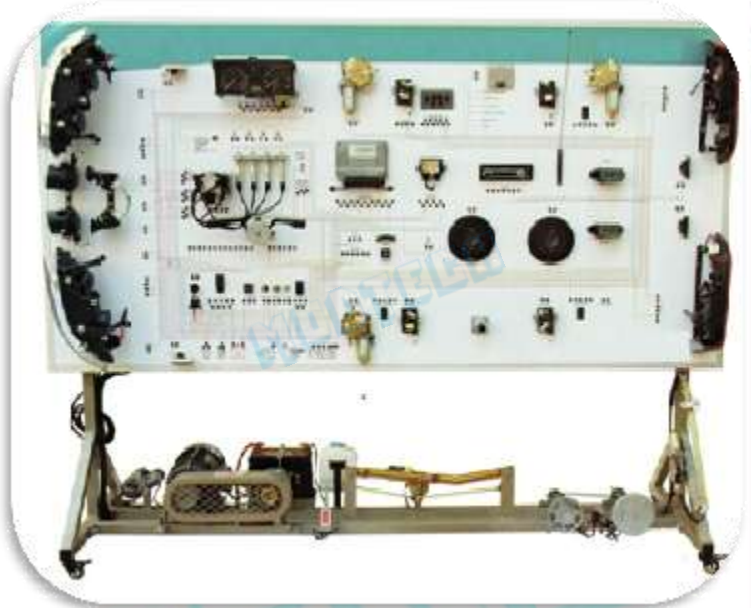
*By giving connection the working of individual parts such as Self starter, Alternator, Wiper Motor, Horn, Head lights, Tail lamps, Parking lamps, Side indicators, Brake light, Distributor, Sparks of spark plugs, etc., can be demonstrated. The parts sectioned to show the internal constructional details. This is a working demonstration model.*



**Model No. MT-L02**

**CUT SECTION MODEL OF MOCK LAYOUT OF A CAR WIRING (VEHICLE BODY ELECTRICAL SYSTEM) WORKING (COMPREHENSIVE TYPE):**

*This demonstration board which will give a complete idea of the electrical system of a car. In this demonstration board the actual wiring with parts and accessories of a car had been arranged, according to the electrical circuit of a car and terminals are provided to connect the battery. By giving connection the working of individual parts such as Self starter, Alternator Motorised and working, Wiper Motor, Water sprayer, Brake fluid indicator, Horn, Head lights with head light adjustment, Fog Lamp,*



*Tail lamps, Parking lamps, Side indicators, Brake light, Distributor, Sparks of spark plugs, power window motor, central locking system, music system, reverse parking assist, etc., can be demonstrated. The parts sectioned to show the internal constructional details. This is a working demonstration model (with inbuilt battery charger and battery).*

**Model No. MT-L03**

**CUT SECTION MODEL OF MOCK LAYOUT OF A TRACTOR WIRING (ELECTRICAL SYSTEM OF A TRACTOR) WORKING MODEL (Diesel):**

*This demonstration board which will give a complete idea of the electrical system of a Tractor. In this demonstration board the actual wiring with parts and accessories of a Tractor had been arranged, according to the electrical circuit of a Tractor and terminals are provided to connect the battery. By giving connection the working of individual parts such as Self starter, Alternator, Horn, Head lights, Tail lamps, Parking lamps, Side indicators, Brake light, etc., can be demonstrated. The parts sectioned to show the internal constructional details. This is a working demonstration model (battery not included in the rate).*

**Model No. MT-L04**

**MOCK LAYOUT OF A TWO WHEELER WIRING (ELECTRICAL SYSTEM OF A TWO WHEELER) WORKING MODEL**

*This demonstration board which will give a complete idea of the electrical system of a Two wheeler. In this demonstration board the actual wiring with parts and accessories of a two wheeler will be arranged, according to the electrical circuit and terminals are provided to connect the battery. By*



*giving connection the working of individual parts such as Self, Horn, Head lights, Tail lamps, Parking lamps, Side indicators, Brake light, Distributor, Sparks of spark plugs, etc., can be demonstrated. The parts sectioned to show the internal constructional details. This is a working demonstration model.*

**Model No. MT-L05**

**DEMONSTRATION BOARD OF IGNITION SYSTEM OF AN AUTOMOBILE 4 WHEELER (WORKING):**



*This open demonstration working unit is made out of original used parts such as switches, ignition coil, Distributor, four spark plugs and a battery for power source, with necessary wiring connections. By switching on the switch and by giving rotation to the Distributor, Sequential Sparks in the spark plugs can be demonstrated.*

**Model No. MT-L06**

**DEMONSTRATION BOARD OF ELECTRONIC IGNITION SYSTEM OF AN AUTOMOBILE 4 WHEELER (WORKING):**

*This open demonstration working unit is made out of original used parts such as switches, Electronic ignition coil, Distributor, four spark plugs and a battery for power source, with necessary wiring connections. By switching on the switch and by giving rotation to the Distributor, Sequential Sparks in the spark plugs can be demonstrated.*



**Model No. MT-L07**

**DEMONSTRATION BOARD OF IGNITION SYSTEM OF A TWO WHEELER (WORKING):**

*This open demonstration-working unit is made out of original used parts such as switch, ignition coil, Magneto Assembly, spark plug, with necessary wiring connections. By switching on the switch and by giving rotation to the Magneto Assembly, Sequential Sparks in the spark plug can be demonstrated.*



**Model No. MT-L08**

**DEMONSTRATION BOARD OF ELECTRONIC IGNITION SYSTEM OF A TWO WHEELER (WORKING):**



*This open demonstration-working unit is made out of original used parts such as switch, Electronic ignition coil, Magneto Assembly, spark plug, with necessary wiring connections. By switching on the switch and by giving rotation to the Magneto Assembly, Sequential Sparks in the spark plug can be demonstrated.*

**Model No. MT-L09**

**CUT SECTION MODEL OF POWER WINDOWS WITH ONE DOOR.**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information such as motor and its gear arrangement etc., and working of the same can be show by connecting it to a battery, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*



**Model No. MT-L10**

**CUT SECTION MODEL OF AIR CONDITIONING SYSTEM OF A CAR. (NON WORKING)**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information such as AC compressor, condenser, radiator, its pipe lining, blower/fan assembly etc., the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*

**Model No.MT-L11**

**DEMONSTRATION BOARD OF AIR CONDITIONING SYSTEM OF FOUR WHEELER.  
( WORKING)**



*This model is made out of original New parts, will be suitably Arranged on to a Metal frame with navopan board to demonstrate details of Piping connection, Wiring circuit with all the accessories such as Cooling Coil, compressor, evaporator, necessary hoses, condenser etc., the model will be made to work using a FHP motor so that by operating the AC panel the operation and cooling effect of the same can be demonstrated, the Model will contain a car Battery for the operation of the blower and Magnetic clutch the entire system will be suitably painted.*

**Model No.MT-L12**

**DEMONSTRATION BOARD OF MPFI SYSTEM. :**

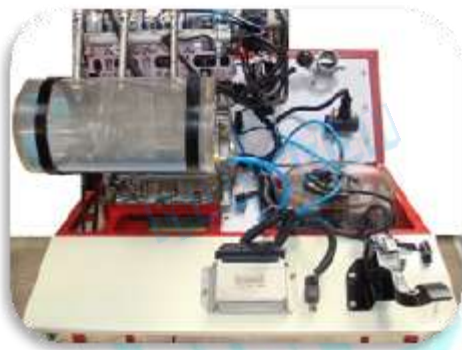
*This open demonstration Board is made out of original used parts such as petrol injector, inlet manifolds, throttle body, distributor, ECU, canister purge valve, carbon canister, fuel tank module, supporting sensors such as lambda sensor, engine speed sensor, cam position sensor etc., with necessary wiring connections to show the circuit connections. The entire system will be suitably sectioned and mounted on Navopan board.*



**Model No. MT-L13**

**DEMONSTRATION BOARD OF WORKING MODEL MPFI SYSTEM.**

This open demonstration Board is made out of original used parts such as petrol injector, inlet manifolds, throttle body, distributor, ECU, canister purge valve, carbon canister, fuel tank module, supporting sensors such as lambda sensor, engine speed sensor, cam position sensor etc., with necessary wiring connections to show the circuit connections. The entire system will be suitably sectioned and mounted on Navopan board. By rotating the distributor the spray from the injector and demonstrated along with the spark from the spark plugs. Acrylic fuel tank will be pleased along with the fuel pump module.



NOTE: For Circuit printed Demo Board for MPFI and CRDI Refer Model No. MT-X01 and Model No. MT-X02 respectively

NOTE: For Charging and starting system Please Refer Model No. MT-X06 and MT-X07

**M** Model No. MT-M01

**DEMONSTRATION BOARD OF FUEL SUPPLY SYSTEM OF A PETROL ENGINE:**

This demonstration board consists of cut sectioned used parts such as tank, petrol pump, Filter, Carburettor, etc., to show the Fuel supply system.



**Model No. MT-M02**

**DEMONSTRATION BOARD OF FUEL SUPPLY SYSTEM OF DIESEL ENGINE**

*This demonstration board consists of cut sectioned used parts such as Fuel injection pump, Fuel tank, Filter, Fuel Injector with Atomiser, etc., to show the Fuel supply system.*



**Model No. MT-M03**

**DEMONSTRATION BOARD OF FUEL SUPPLY SYSTEM OF DIESEL ENGINE WORKING:**



*This demonstration board consists of Original parts such as Fuel injection pump, Fuel tank, Filter, Fuel Injector with Atomiser, etc., to show the Fuel supply system. The Fuel injection pump will be motorised and the entire fuel supply circuitry will be connected to show the flow of fuel from tank to filter and to the pump through feed pump and to the injector. When the motor is switched on the FIP rotates creating a pressure inside the injector and according to the timing the diesel spray form the injector can be observed.*

<b>Model No.</b>	<b>Description</b>
<b>MT-M03A</b>	<i>Four cylinder Inline FIP</i>
<b>MT-M03B</b>	<i>Four cylinder Rotary FIP</i>
<b>MT-M03C</b>	<i>Six cylinder Inline FIP</i>

**N** Model No. MT-N01.

**CUT SECTION MODEL OF COMPELETE ONE SIDE MACPHERSON SUSPENSION STRUT WITH DRIVE SHAFT, DISK BRAKE.**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With Suspension Strut with spring and shock absorber, disc brake, calliper, wishbone drive shaft etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*



**Model No. MT-N02.**

**CUT SECTION MODEL OF COMPELETE BOTH SIDE MACPHERSON SUSPENSION STRUT WITH DRIVE SHAFT, DISK BRAKE.**



*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With Suspension Strut with spring and shock absorber, disc brake, callipers, drive shaft etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*

**Model No. MT-N03.**

**CUT SECTION MODEL OF COMPELETE FRONT SUSPENSION WITH LONGITUDINAL TORSION BAR..**



*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With Suspension System with longitudinal torsion bar arrangement, shock absorber, etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*

**Model No. MT-N04.**

**CUT SECTION MODEL OF COMPELETE COIL SPRING TYPE FRONT SUSPENSION SYSTEM.**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With Suspension with Coil spring and wheels mounted on bearing on tapered spindles of the steering knuckles, drive shaft etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*



**Model No. MT-N05.**

**CUT SECTION MODEL OF COMPELETE BOTH SIDE WITH DOUBLE WISHBONE SUSPENSION WITH DRIVE SHAFT.**



*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With Suspension Strut with spring and shock absorber, disc brake, callipers drive shaft etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*

**Model No. MT-N06**

**CUT SECTION MODEL OF COMPELETE LEAF SPRING SUSPENSION SYSTEM WITH REAR AXLE .**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With leaf spring is arranged along with shock absorber etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*



**Model No. MT-N07.**

**CUT SECTION MODEL OF COMPLETE COIL SPRING TYPE REAR SUSPENSION SYSTEM.**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information With Suspension with Coil spring and axle, wheels mounting, drive shaft etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*



**Model No. MT-N08.**

**CUT SECTION MODEL OF COMPLETE AIR SUSPENSION SYSTEM.**

*This model is made out of original used parts, will be suitably sectioned And Arranged to demonstrate the internal construction details showing the minute information of Suspension with air bellow, shock absorber, linkages , Air bellow fittings, air valve with connections etc., and working of the same can be shown, the model will be suitably painted and The entire model is mounted on a sturdy iron frame.*

**O Model No. MT-001**

**CUT SECTION WORKING MODEL OF LUBRICATING SYSTEM:**

*This model is made out of original used parts, will be suitably sectioned to demonstrate the internal construction details like oil pump, oil filter, oil strainer etc. showing the minute information, and working of the same, the model will be suitably painted and mounted on a navapan wooden base*

**Model No. MT-002**

**CUT SECTION WORKING MODEL OF COOLING SYSTEM:**

*This model is made out of original used parts, will be suitably sectioned to demonstrate the internal construction details like radiator, fan blade, water pump and hose showing the minute information, and working of the same, the model will be suitably painted and mounted on a navapan wooden base*



**P** Model No. MT-P00

**Cut Section Model Of Different Automobile Parts And Accessories Suitably Painted And Mounted On A Wooden Board:**



<b>Model No.</b>	<b>Description</b>
MT-P01	Self starter (axle type/non axle type)
MT-P02	Dynamo
MT-P03	Distributor
MT-P04	Mechanical Fuel pump
MT-P05	Electrical Fuel pump
MT-P06	Carburettors Simple Type-2 wheeler
MT-P07	Carburettors Solex Type-4 wheeler
MT-P08	Carburettors Mikuni type
MT-P09	Radiator
MT-P10	Ignition coil
MT-P11	Shock absorber
MT-P12	Brake cylinder and master cylinder
MT-P13	Speedo meter
MT-P14	Water pump
MT-P15	FIP Pneumatic Governor (Four cyl engine)
MT-P16	FIP RQ governor (Six cylinder Engine)
MT-P17	FIP RSV governor (Six cylinder Engine)
MT-P18	FIP Distributor type ( four Cylinder)
MT-P19	I.C.Injector (4 Types)
MT-P20	Diesel Filter
MT-P21	Gear Lubrication pump
MT-P22	Propeller shaft
MT-P23	Cone clutch
MT-P24	Alternator
MT-P25	Silencer
MT-P26	Catalytic converter
MT-P27	Fuel Pump diaphragm type
MT-P28	Oil Pump External
MT-P29	Oil Pump internal
MT-P30	Vacuum Pump (Vane type)
MT-P31	Vacuum Pump (Rotary type)
MT-P32	piston Pump (air Compressor)
MT-P33	Turbocharger
MT-P34	Fluid flywheel/ Torque converter
MT-P35	Alkaline Battery
MT-P36	Air Cleaner

## **Q** Model No. MT-Q00

### **FOUR STROKE PETROL CARBURATOR ENGINE SETUP FOR PRACTICE (WORKING CONDITION)**

The Four stroke petrol engine setup will be prepared by using good working condition multi cylinder car engine with all the fittings of the engine along with radiator, silencer, air filter, starter, battery, alternator, indication meters, fuel tank ,electrical wiring with ignition switch etc., all mounted on to a sturdy iron frame with caster wheels (mobile trolley) .

All the fittings such as meter, fuel tank, radiator etc., along with the engine will be arrange on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations. The wiring for the sensors, indication meters etc, will be done so that by cranking the ignition the engine will start working, the indications such as alternator charging, oil pressure, temperature etc., will be displayed on to the necessary indication meter attached. The engine assembly will be serviced ,painted with a single colour paint.



**Model No.**

**Description**

**MT-Q01**

Maruti OMNI/800 cc carburettor Engine setup

**MT-Q02**

Maruti Zen/Alto/Esteem(Carburettor) Engine setup

**MT-Q03**

118 NE carburettor Engine setup

## **R** Model No. MT-R00

### **FOUR STROKE PETROL MPFI ENGINE SETUP FOR PRACTICE (WORKING CONDITION)**



The Four stroke petrol engine setup will be prepared by using good working condition multi cylinder car engine with all the fittings of the engine along with radiator, silencer, air filter, starter, battery, alternator, indication meters, fuel tank ,electrical wiring with ignition switch etc., all mounted on to a sturdy iron frame with caster wheels (mobile trolley) .

All the fittings such as meter, fuel tank, radiator etc., along with the engine will be arrange on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations. The wiring for the sensors, indication meters etc, will be done so that by cranking the ignition the engine will start working, the indications such as alternator charging, oil pressure, temperature etc., will be displayed on to the necessary indication meter attached. The engine assembly will be serviced ,painted with a single colour paint.

MPFI engines will be fitted with all necessary sensors, injectors and other MPFI accessories, ECU etc., which will be duly connected by its original wiring harness and will be made to work along with necessary indications.



#### **Model No.**

#### **Description**

**MT-R01**

Ambassador Isuzu MPFI Engine setup

**MT-R02**

Maruti 800 CC/Omni MPFI Engine setup

**MT-R03**

Santro MPFI Engine setup

**MT-R04**

Maruti Zen/Alto/Esteem MPFI Engine setup

## **S** Model No. MT-S00

### **FOUR STROKE PETROL CARBURATOR ENGINE WITH LPG SETUP (WORKING CONDITION)**



The Four stroke petrol engine with LPG setup will be prepared by using good working condition multi cylinder car engine with all the fittings of the engine along with radiator, silencer, air filter, starter, battery, alternator, indication meters, fuel tank, LPG tank ,electrical wiring with ignition switch etc., all mounted on to a sturdy iron frame with caster wheels (mobile trolley).

All the fittings such as meter, fuel tank, radiator etc., along with the engine will be arrange on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations. The wiring for the sensors, indication meters etc, will be done so that by cranking the ignition the engine will start working, the indications such as alternator charging, oil pressure, temperature etc., will be displayed on to the necessary indication meter attached. The engine assembly will be serviced ,painted with a single colour paint.

Model No.	Description
MT-S01	Maruti OMNI/800 cc carburettor Engine with LPG setup
MT-S02	Maruti Zen/Alto/Esteem(Carburettor) with LPG Engine setup

## **T** Model No. MT-T00

### **FOUR STROKE PETROL MPFI ENGINE WITH LPG SETUP (WORKING CONDITION)**

The Four stroke petrol engine with LPG setup will be prepared by using good working condition multi cylinder car engine with all the fittings of the engine along with radiator, silencer, air filter, starter, battery, alternator, indication meters, fuel tank, LPG tank ,electrical wiring with ignition switch etc., all mounted on to a sturdy iron frame with caster wheels (mobile trolley).



All the fittings such as meter, fuel tank, radiator etc., along with the engine will be arrange on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations. The wiring for the sensors, indication meters etc, will be done so that by cranking the ignition the engine will start working, the indications such as alternator charging, oil pressure, temperature etc., will be displayed on to the necessary indication meter attached. The engine assembly will be serviced ,painted with a single colour paint.

MPFI engines will be fitted with all necessary sensors, injectors and other MPFI accessories, ECU etc., which will be duly connected by its original wiring harness and will be made to work along with necessary indications.

<i>Model No.</i>	<i>Description</i>
<i>MT-T01</i>	<i>Ambassador Isuzu MPFI Engine with LPG setup</i>
<i>MT-T02</i>	<i>Maruti 800 CC/Omni MPFI Engine with LPG setup</i>
<i>MT-T03</i>	<i>Santro MPFI Engine with LPG setup</i>
<i>MT-T04</i>	<i>Maruti Zen/Alto/Esteem MPFI Engine with LPG setup</i>

**U** *Model No. MT-U00.*

#### **FOUR STROKE DIESEL ENGINE SETUP (WORKING)**



The Four stroke Diesel engine setup will be prepared by using good working condition multi cylinder diesel engine with all the fittings of the engine along with air filter, starter, battery, alternator, indication meters, fuel tank ,electrical wiring etc., all mounted on to a sturdy iron frame with caster wheels (mobile trolley) .

All the fittings such as meter, fuel tank, radiator etc., along with the engine will be arrange on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations. The wiring for the sensors, indication meters etc, will be done and painted with a single colour paint.

<i>Model No.</i>	<i>Description</i>
<i>MT-U01</i>	<i>Tata Car turbo charged Engine assembly</i>
<i>MT-U02</i>	<i>Tata Sumo Turbo charged Engine assembly with rotary type Fuel injection Pump</i>
<i>MT-U03</i>	<i>Mahindra 540 Engine assembly</i>
<i>MT-U04</i>	<i>Ambassador Isuzu Diesel Engine assembly</i>
<i>MT-U05</i>	<i>Tata Sumo Non Turbo Engine assembly</i>
<i>MT-U06</i>	<i>Tata Safari turbo charged engine assembly</i>
<i>MT-U07</i>	<i>Ford 1.4 ZXi engine assembly</i>
<i>MT-U08</i>	<i>Hyundai Accent/ScorpioCRDI Engine assembly</i>
<i>MT-U09</i>	<i>Single Cylinder Diesel engine setup</i>

## V Model No. MT-V00

### TWO WHEELER PETROL ENGINE OF DIFFERENT MAKES IN RUNNING CONDITION



The petrol engine setup will be prepared by using good working condition engine with all the fittings of the engine along with silencer, air filter, fuel tank ,electrical wiring with ignition switch etc., all mounted on to a sturdy iron frame with caster wheels (mobile trolley) .

All the fittings such as fuel tank, etc., along with the engine will be arrange on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations.. The engine assembly will be serviced ,painted with a single colour paint.

#### Model No.

#### Description

MT-V01	Bajaj Chetak Engine assembly
MT-V02	Suzuki Samurai Engine assembly
MT-V03	Yamaha engine assembly
MT-V04	TVS super XL (Electronic Ignition Engine)
MT-V05	Bajaj Pulsar 150 CC Engine assembly
MT-V06	Hero Honda Engine assembly

## W Model No. MT-W01

### TRAINING MODULE FOR THE MPFI PETROL ENGINE.

The device is designed based on latest technology petrol engines with Multi point fuel injection system. The trainer helps to simulate engine startup, speedup, slowdown and other actions so as to illustrate the structure and working principle of MPFI engines.

#### Features

1. Real and operating Petrol MPFI engine, illustrating the structure and working process.
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base..





3. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current, frequency and wave form signals are provided on to the printed circuit diagram.
4. Automobile meters are fitted on to the training module along with the printed circuit diagram, to demonstrate engine speed, temperature, fuel pressure, charging light etc.,
5. The training module is fitted with diagnostic socket (DLC) for universal automobile decoder(Scan tool) to read fault codes, clear fault codes and read data stream.
6. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
7. Good working condition engine will be provided with fuel tank and battery. Throttle control is provided on the module to accelerate.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.

**Model No. MT-W02**

#### **TRAINING MODULE FOR THE CRDI DIESEL ENGINE.**

The device is designed based on latest technology diesel engines with Common rail direct fuel injection system. The trainer helps to simulate engine startup, speedup, slowdown and other actions so as to illustrate the structure and working principle of CRDI engines.

##### **Features**

1. Real and operating CRDI Diesel engine, illustrating the structure and working process.
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base..
3. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current, frequency and wave form signals are provided on to the printed circuit diagram.
4. Automobile meters are fitted on to the training module along with the printed circuit diagram, to demonstrate engine speed, temperature, fuel pressure, charging light etc.,
5. The training module is fitted with diagnostic socket (DLC) for universal automobile decoder(Scan tool) to read fault codes, clear fault codes and read data stream.
6. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
7. Good working condition engine will be provided with fuel tank and battery. Throttle control is provided on the module to accelerate.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.



**Model No. MT-W03**

**DISMANTELING AND ASSEMBLING PRACTICE ENGINE WITH 360 DEGREE ROTATING STAND.**

The original car engine will be mounted on to the rolling stand, so that slowly rolling the handle provided the engine can be rotated and lock and any position and angle to enable the students to assemble or dismantle the engine, a large oil drip pan is provided at the bottom to collect the small screws, parts and oil dripping. The rotating stand is made out of steel tube with gears for slow speed operation along with self retention wheels. The Paint finished rotating stand is provided with heavy duty caster wheels with brakes.



**X Model No. MT-X01**

**INSTRUCTION BOARD FOR ELECTRONIC FUEL INJECTION SYSTEM OF GASOLINE ENGINE. (MPFI)**



The Instruction board adopts the real components of electronic fuel injection system to illustrate engine fuel system structure and working principle. The components are rigged onto colour circuit diagram. And made functional.

**Features**

1. Real and operatable engine fuel injection system is assembled onto a colour printed board to illustrating the structure and working process .
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
3. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current , frequency and wave form signals are provided on to the printed circuit diagram.
4. The training module is fitted with diagnostic socket (DLC) for universal automobile decoder (Scan tool) to read fault codes, clear fault codes and read data stream.
5. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
6. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
7. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally so that the board works without battery.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.

**Model No. MT-X02**

### **INSTRUCTION BOARD FOR ELECTRONIC FUEL INJECTION SYSTEM OF DIESEL ENGINE.(CRDI)**

The Instruction board adopts the real components of electronic fuel injection system( CRDI) to illustrate engine fuel system structure and working principle. The components are rigged onto colour circuit diagram. And made functional.

#### **Features**

1. Real and operatable engine fuel injection system with partial engine block is assembled onto a colour printed board to illustrating the structure and working process .
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
3. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current , frequency and wave form signals are provided on to the printed circuit diagram.
4. The training module is fitted with diagnostic socket (DLC) for universal automobile decoder (Scan tool) to read fault codes, clear fault codes and read data stream.
5. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
6. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
7. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally, so that the board works without battery.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.



**Model No. MT-X03**

### **INSTRUCTION BOARD FOR IGNITION SYSTEM.**

The Instruction board demonstrates two different types of ignition system in one boards with colour circuit diagrams. The structure and operation of the systems can be explained, with the difference of Conventional ignition system and electronic ignition system.



### Features

1. Real and operatable ignition system with partial engine block is assembled onto a colour printed board to illustrating the structure and working process .
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
3. Detection terminals for operator to detect various sensors, electrical signals for control unit, such as resistive, voltage, current and wave form signals are provided on to the printed circuit diagram.
4. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
5. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
6. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally, so that the board works without battery.
7. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.

**Model No. MT-X04**

### **TRAINING PLATFORM FOR ABS BRAKE SYSTEM.**

The device is designed on the ABS system, where in the principle of operation and working of the same can be demonstrated . A parts and accessories are arranged on to a Colour printed board. And the system is made functional.

#### Features

1. Real and operatable ABS brake system is assembled onto a colour printed board to illustrating the structure and working process .
2. The front and rear Disc Brake with callipers are coupled to two different three phase motor with electric drives to rotate the front disc and rear disc separately. A brake Pedal along with vacuum booster is connected to the Front calliper system and rear drum brake system, a vacuum pump will be connected to the booster to demonstrate the effect of vacuum in the pedal operation.
3. The Device is connected with Pressure meters to demonstrate the different pressure at different locations in the brake system.
4. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
5. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current , frequency and wave form signals are provided on to the printed circuit diagram.
6. The training module is fitted with diagnostic socket (DLC) for universal automobile decoder (Scan tool) to read fault codes, clear fault codes and read data stream.
7. Fault setting switch bank will be provided to induce faults in the training module demonstrate the fault and to diagnose faults.



8. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
9. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally, so that the board works without battery.
10. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same

**Model No. MT-X05**

### **INSTRUCTION BOARD FOR CENTRAL DOOR LOCKING AND ALARM SYSTEM.**

The Instruction board adopts the real components of Central door Locking and alarm system to illustrate Locking and safety system structure and working principle. The components are rigged onto colour circuit diagram. And made functional.

#### **Features**

1. Real and operatable Central door Locking and alarm system is assembled onto a colour printed board to illustrating the structure and working process .
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
3. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current, frequency and wave form signals are provided on to the printed circuit diagram.
4. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
5. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
6. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally, so that the board works without battery.
7. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.



**Model No. MT-X06**

### **INSTRUCTION BOARD FOR CHARGING SYSTEM.**

The Instruction board adopts the real components of charging system to illustrate charging system structure and working principle. The components are rigged onto colour circuit diagram. And made functional.

#### **Features**

1. Real and operatable Charging system such as alternator, meters etc is assembled onto a colour printed board to illustrating the structure and working process .

2. The alternator will be coupled electric motor, and the necessary electrical circuitry will be provided along with warning lamp, ignition switch, voltage meters etc., to demonstrate the working of charging system.



3. And exploded view arrangement of an alternator assembly will be displayed on the board.
4. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
5. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current , frequency and wave form signals are provided on to the printed circuit diagram.
6. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
7. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.

**Model No. MT-X07**

### **INSTRUCTION BOARD FOR STARTING SYSTEM.**

The Instruction board adopts the real components of Starting system to illustrate Starting system structure and working principle. The components are rigged onto colour circuit diagram. And made functional.

#### **Features**



1. Real and operatable starting system such as Starter motor, ignition switch etc is assembled onto a colour printed board to illustrating the structure and working process .
2. The Starter will be connected to a battery, and the necessary electrical circuitry will be provided along with ignition switch, voltage meters etc., to demonstrate the working of charging system.
3. And exploded view arrangement of an starter motor will be displayed on the board.
4. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
5. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current , frequency and wave form signals are provided on to the printed circuit diagram.
6. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
7. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.

**Model No. MT-X08**

### **INSTRUCTION BOARD FOR REVERSE CAMERA AND PARKING ASSIST SYSTEM.**

The Instruction board adopts the real components of Reverse camera and Parking Assist system to illustrate Reverse camera and Parking Assist system structure and working principle. The components are rigged onto colour circuit diagram and made functional.

#### **Features**

1. Real and operatable Reverse camera and Parking Assist system is assembled onto a colour printed board to illustrating the structure and working process .
2. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
3. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current , frequency and wave form signals are provided on to the printed circuit diagram.
4. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
5. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
6. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally, so that the board works without battery.
7. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.



**Model No. MT-X09**

### **INSTRUCTION BOARD FOR AIR BAG SYSTEM.**

The Instruction board adopts the real components of Air bag system to illustrate Air bag safety system structure and working principle. The components are rigged onto colour circuit diagram and made functional.

#### **Features**

1. Real and operable Air bag system is assembled onto a colour printed board to illustrating the structure and working process
2. The Vehicle Crash is Simulated by pushing and hitting the crash sensor along the rail provided to demonstrate the quick air bag inflation.
3. Coloured circuit diagram on the training Module printed on to 6mm organic glass base. Where in the students can compare the diagram and actual diagram.
4. Detection terminals for operator to detect various sensors, actuators, electrical signals for engine control unit, such as resistive, voltage, current, frequency and wave form signals are provided on to the printed circuit diagram.
5. Fault setting switch bank will be provided to induce faults in the training module to demonstrate the fault and to diagnose faults.
6. Set the line break, grounding short circuit, improper contact or open circuit faults can be induced, user can adjust the number and type of faults.
7. Good working condition Parts will be provided with fuel tank. The instruction board has to be connected to 220V AC socket Which changes to 12V DC internally, so that the board works without battery.
8. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.



**Y Model No. MT-Y01**

### **SINGLE CYLINDER FOUR STROKE DIESEL ENGINE TEST RIG**

Engine: New AV1 Kirloskar Engine, 5HP, 1500 RPM 4 Stroke  
Water cooled

Parameters measured

1. Performance test
2. Heat balance test





## COMPUTERIZED MODULE

Parameters measured for Computerization module

1. Indicated HP
2. Indicated Torque
3. Combustion Pressure Vs Volume
4. Combustion Pressure Vs Crank angle
5. IMEP
6. Heat release curve

Standard Accessories

Fuel Measurement consumption by Volumetric method

Air Consumption using standard orifice & MS Air box

Digital RPM meter (Except Mechanical loading)

Digital Electronic torque controller for Eddy current dynamometer

Digital temperature gauges (Air IN, Exhaust OUT, Cooling Water IN, Cooling Water OUT)

Water flow Measurement through Rotor meter 2400 LPH

Model No.	Description
MT-Y01-A	With Rope Brake Dynamometer
MT-Y01-B	With Hydraulic Brake Dynamometer
MT-Y01-C	With Electrical Dynamometer
MT-Y01-D	With Eddy Current Dynamometer

Model No. MT-Y02

### FOUR STROKE FOUR CYLINDER PETROL ENGINE TEST RIG.

Engine: Re-conditioned/Brand New MPFI Engine (De-rated 10HP, 1500rpm)

Parameters measured

1. Performance test
  2. Heat balance test
  3. Morse test
- Standard Accessories

Fuel Measurement consumption by Volumetric method

Air Consumption using standard orifice & MS Air box

Digital RPM meter (Except Mechanical loading)

Digital Electronic torque controller for Eddy current dynamometer

Digital temperature gauges (Air IN, Exhaust OUT, Cooling Water IN, Cooling Water OUT)

Water flow Measurement through Rotormeter 2400 LPH



<b>Model No.</b>	<b>Description</b>
<i>MT-Y02-A</i>	<i>With Rope Brake Dynamometer</i>
<i>MT-Y02-B</i>	<i>With Hydraulic Brake Dynamometer</i>
<i>MT-Y02-C</i>	<i>With Electrical Dynamometer</i>
<i>MT-Y02-D</i>	<i>With Eddy Current Dynamometer</i>
<i>MT-Y02-E</i>	<i>With Eddy Current Dynamometer &amp; Computerized Module</i>

**Model No. MT-Y03**

**TWO CYLLINDER FOUR STROKE DIESEL ENGINE TEST RIG**

*Engine: New TV2 Kirloskar Engine, 14HP, 1800 RPM 4 Stroke Water cooled  
Parameters measured*

- 1. Performance test*
- 2. Heat balance test*

*Standard Accessories*

*Fuel Measurement consumption by Volumetric method  
Air Consumption using standard orifice & MS Air box  
Digital RPM meter (Except Mechanical loading)  
Digital Electronic torque controller for Eddy current dynamometer  
Digital temperature gauges (Air IN, Exhaust OUT, Cooling Water IN, Cooling Water OUT)  
Water flow Measurement through Rotor meter 2400 LPH*

<b>Model No.</b>	<b>Description</b>
<i>MT-Y03-A</i>	<i>With Rope Brake Dynamometer</i>
<i>MT-Y03-B</i>	<i>With Hydraulic Brake Dynamometer</i>
<i>MT-Y03-C</i>	<i>With Electrical Dynamometer</i>
<i>MT-Y03-D</i>	<i>With Eddy Current Dynamometer</i>
<i>MT-Y03-E</i>	<i>With Eddy Current Dynamometer &amp; Computerized Module</i>

**Model No. MT-Y04**

**FOUR STROKE SINGLE CYLINDER VCR ENGINE TEST RIG.**

*Engine: New AV1 Kirloskar Variable Compression Ratio (VCR) Engine, 5HP,1500 RPM 4 Stroke Water cooled*

*Parameters measured*

- 1. Performance test*
- 2. Heat balance test*

*Standard Accessories*

*Fuel Measurement consumption by Volumetric method*

*Air Consumption using standard orifice & MS Air box*

*Digital RPM meter (Except Mechanical loading)*

*Digital Electronic torque controller for Eddy current dynamometer*

*Digital temperature gauges (Air IN, Exhaust OUT, Cooling Water IN, Cooling Water OUT)*

*Water flow Measurement through Rotor meter 2400 LPH*

<b>Model No.</b>	<b>Description</b>
<b>MT-Y04-A</b>	<i>With Rope Brake Dynamometer</i>
<b>MT-Y04-B</b>	<i>With Hydraulic Brake Dynamometer</i>
<b>MT-Y04-C</b>	<i>With Electrical Dynamometer</i>
<b>MT-Y04-D</b>	<i>With Eddy Current Dynamometer</i>
<b>MT-Y04-E</b>	<i>With Eddy Current Dynamometer &amp; Computerized Module</i>

**Model No. MT-Y05**

**FOUR WHEELER CHASSIS DYNAMOMETER**

*Characteristics*

- Tests can be done by only one person on the car (without having to operate in the computer)*
- Standard connection RS232 to any computer with no need of installing a special card.*
- Easy and powerful Software and High speed data collection*

*General data*

- Maximum power 240 Hp*
- Terminal speed 180 - 200 Km/h*

*Details about roller*

- Diameter 400 mm*
- Wheel base Max: 2800mm and Track Width Max: 2100 mm*

### Specifications

Power supply: 220V 50Hz/60Hz

Data transfer: RS232C

Roller rpm input connector

- Type of sensor: Digital Pick-Up (Non Contact Type)
- Type of input: logical Level (active at high level)
- Maximum frequency: 15 KHz (6,000 rpm with 150 teeth)
- Maximum cable length: 6m
- Run/Stop input SWITCH

Engine rpm input: capacitive type (reads high voltage pulses on ignition cables)

Parameters Measured

1. Horse Power at Wheel
2. Torque
3. Exhaust gas temperature

**Model No. MT-Y06**

## TWO WHEELER CHASSIS DYNAMOMETER

### Characteristics

- Tests can be done by only one person over the bike (without having to operate in the computer).
- Standard connection RS232 to any computer with no need of installing a special card.
- Easy and powerful Software.
- Adjustable wheelbase between 850 mm and 1600 mm

### General data

- Maximum power 50 Hp
- Terminal speed 235 Km/h

### Details about roller

- Diameter 230 mm
- Roller weight of 136 kg.
- Inertia 1 kg.m<sup>2</sup>

### Specifications

Power supply: 220V 50Hz/60Hz

Data transfer: RS232C

Roller rpm input connector

- Type of sensor: Digital Pick-Up
- Type of input: logical Level (active at high level)
- Maximum frequency: 15 KHz (6,000 rpm with 150 teeth)
- Maximum cable length: 6m
- Run/Stop input SWITCH

Engine rpm input: capacitive type (reads high voltage pulses on ignition cables)

Display: LCD 16x2 Characters.

Two control buttons in the panel.

**Model No. MT-Y07**

## SHOCK ABSORBER TEST RIG

The Shock Absorber tester is used to find the performance of the damper under various load condition. The Rig is useful to compare the different types of shock absorber available in the market. Using this rig we can find the time taken by the shock absorber to compress and rebound. A load cell is provided at the bottom of the shock absorber to know the load transverse during the gradual shock.

## Z TOOLS AND EQUIPMENTS

### Model No. MT-Z01 BLUE TOOTH WHEEL ALIGNER (CABLELESS & CORDLESS)

1. 4 Measuring heads with 6 CCD sensors
2. Measures Camber, Caster, Toe, Set Back, Thrust angle, KPI
3. Spoiler Program
4. Data Bank about 60,000 vehicles
5. DELL Computer System with 17" TFT monitor, Data Manager Software
6. 4 x Wheel Clamp 12" - 20"; 7. 2 x Turn Table



### Model No. MT-Z02

#### COMPUTERISED WHEEL BALANCER



#### Computerised Wheel Balancer

1. Maximum Rim Dia : 10" - 26"
2. Maximum Wheel Dia : 900 mm (35")
3. Maximum Wheel Weight : 65Kg
4. Readout accuracy : 1g
5. Motorised

### Model No. MT-Z03

#### VIDEOGRAPHIC WHEEL BALANCER

#### Videographic Wheel balancer

1. Maximum Rim Dia : 10" - 24"
  2. Maximum Wheel Weight : 65Kg
  3. Readout accuracy : 1g
  4. Motorised, Optional Electric Brake
1. Cycle time : < 15 seconds



**Model No. MT-Z04**

**TYRE CHANGER**

*External Locking Rim Dimensions: 300mm-510mm (12"- 20")*

*Internal Locking Rim Dimensions: 355mm-585mm (14"- 23")*

*Max Tyre Diameter: 950mm (37")*

*Max Tyre Width: 410mm (16")*

*Bead Breaker Force (10bar) : 2500Kg*

*Working Pressure: 8-10bar(116-145Psi)*

*Power Supply Voltage: 220V (Single Phase)*



**Model No. MT-Z05**

**AUTOMATIC TYRE INFLATOR**

*Power Supply 1PH, 110V - 230V, 50Hz*

*Power- 40W*

*Working Temp -20 degree ~70 degree*

*Max. Compressed Air Pressure input pressure: 0 - 170 psi*

*Max. over pressure : 250 psi*

*Output Air Pressure 4.5Kg/cm<sup>2</sup>, 65psi*

*Measuring Range 5 ~ 150 psi/0.3 ~ 8bar/0.3 ~ 8Mpa*

*Accuracy ±0.5psi/0.03bar/0.3Mpa of full scale*

*Dimension 620\*350\*180(mm)*

*Net Weight 6.2Kg*

*Display 4 Digit LCD 1.2" height display*

**Model No. MT-Z06**

**NITROGEN GENERATOR**

*Power Supply: 220 V AC*

*Maximum Input pressure: 145 PSI*

*Maximum Output pressure: 75PSI*

*Purity of Nitrogen: 95%*

*Nitrogen Producing Speed: 160 Litres/min*



**Model No. MT-Z07**

**LOW RAISE LIFT**

*Lifting capacity: 3000Kg*

*Max Lifting Height: 1000mm*

*Min Height: 120mm*

*Space Between Platforms: 700mm*

*Platform Length: 1400mm-1900mm; Width 1760mm*

*Single Platform Width: 530mm*

*Power Supply Voltage:380V 3ph*



**Model No. MT-Z08**

**TWO POST LIFT**



1. Capacity : 3200 Kg
2. With Base floor plate
3. Three Stage short arms suitable for off road vehicles
4. Min. floor height 140 mm & Max. lifting height 2056 mm
5. Chain drive

**Model No. MT-Z09**

**FOUR POST LIFT**

*Four Post Lift with flat runways*

1. Capacity : 3500 Kg
2. Motor Capacity : 2.6 KW



**Model No. MT-Z10**

**TWO POST LIFT**

1. Capacity : 3.5 Tons
2. Electro Hydraulic Symmetrical Supporting Column
3. Passage Width : 2486 mm
4. Lifting Height: 1950 mm
5. Power Supply :Three Phase or Option of Single phase also



**Model No. MT-Z11**

**FOUR POST LIST SUITABLE FOR WHEEL ALIGNMENT WITH BUILT IN WHEELS FREE LIFT**

1. Capacity : 3500 Kg
2. Motor Capacity : 2.6 KW

**Model No. MT-Z12**

**GAS ANALYSER (BLACK BOX VERSION)**



1. Measures CO,HC,CO2,O2
2. Engine RPM for Sealed engines
3. Oil Temperature measurement
4. Air Fuel Ratio and Lambda Measurements
5. Option to add Nox measurement facility
6. OMIL Class1 category
7. RS 232 Port

**Model No. MT-Z13**

**SMOKEMETER**

1. Peak and Average Smoke density measurements
2. Measures in KM-1,HSU,FSN and mg/m<sup>3</sup>
3. Free or Steady state operation use
4. Rapid Warmup time and self zeroing facility
5. Integral DOT Matrix printer as standard supply
6. Optional Trolley





**Model No. MT-Z14**

**MULTISCAN FOR PETROL / DIESEL VEHICLES**

1. Complete Worldwide Coverage
2. Upgradation through Internet
3. Big Capacity 128MB with software's for Japanese, Korean, Indian Vehicles
4. DTC, Live Reading, Actuation tests and Keycoding
5. Connector locations, Wiring Diagrams and help menus
6. Real-time PC interface through USB port



**Model No. MT-Z15**

**PAINTBOOTH**



1. Positive Pressure Paint Booth
2. Size :L x W x H = 6800 x 3800 x 2400 mm
3. Double walled with Insulation
4. With Metal Base with three stage filtration unit
5. Diesel fired Burner, 1,00,000 K cal / hr
6. 7.5 HP, 16000 m<sup>3</sup>/hr 1440 rpm Air Inlet Blower

**Model No. MT-Z16**

**AC SERVICE STATION**

1. Functions: Vacuum, Recharging, Refrigerant purifying and recycling
2. Discharge used Oil and Refill new Oil
3. High Pressure and Low pressure Alarm
4. Empty tank alarm



**Model No. MT-Z17**

**BATTERY CHARGER**

*Patented Sulphating Recovery Program  
Short Circuit shutdown without blown fuse  
Reverse Polarity Protection  
3-stage charging: C1-CV-Float*



**Model No. MT-Z18**

**BATTERY TESTER WITHOUT PRINTER**



*50 CCA to 2000 CCA battery size*

*Display shows capacity in % available CCA and battery condition  
Tests discharged batteries and Battery recharge indicator  
Starter test 12/24/36 volt systems and Alternator Ripple Test*

**Model No. MT-Z19**

**VACUUM BRAKE / CLUTCH BLEEDER**

*Pneumatic Brake Bleeder with an extractor and refiller set  
One Man Operation with safety cut off*

*Uses Vacuum to draw the Old brake fluid from the Calliper  
Useful for Clutch bleeding also*



**Model No. MT-Z20**

**BRAKE FLUID TESTER**

*Simple and Effective tool shows the Condition of the Brake  
fluid with automatic shut off when not in use*

**Model No. MT-Z21**

**GLOW PLUG TESTER**

*Test the Glow Plug / Heater Plug  
Test the glow plug without removing from the Engine*



**Model No. MT-Z22**

**CYLINDER LEAKAGE TESTER**



*Checks the Leakage in the Cylinder Head  
By injecting a measured amount by air into each cylinder  
and rate of leakage*

**Model No. MT-Z23**

**CLICK ADJUSTER - TAPPET ADJUSTER**

*Click adjuster Micro meter Tappet adjuster  
Suitable for all types of Push rod Engines  
All OHC engines with top adjustment*

*Inlet and Exhaust valves*

*No need for feeler gauge*



**Model No. MT-Z24**

**EEZI-LAP**

*Eez lap oscillating Valve lapper*

*Fits with all power drill with normal 5/16" ( 8 mm ) chuck  
Converts the rotary drill to oscillating action / grinding  
motion*



**Model No. MT-Z25**

**COMMON RAIL FLOW METER**

*Measures the return flow in the injectors  
Supplied with adaptors suitable Bosch, Delphi, Denso and  
Siemens Injectors*



**Model No. MT-Z26**

**CAR CRASH EQUIPMENT CHASSISLINER - LIFT N RAK**



1. 3500 Kg Scissor lift
2. Tilt N Turn Tower for pulling upto 8 Tons
3. Includes 4 Nos adjustable Unibody tie down clamps
4. 9 feet Bed length, 38" Bed Width and 37" Lifting Height
5. With Ramp for lower profile vehicles
6. Suitable for Passenger cars
7. Supplied with the Tools for pulling

**Model No. MT-Z27**

**MIG WELDING**

*Input voltage : 3 Phase 400V*

*Welding current range: 20 - 220 Amps*

*Weldable wires: Steel wire: 0.6 - 1 mm*

*Stainless Steel Wire: 0.8 - 1 mm*

*Aluminium Mg-Si Wire: 0.8 - 1 mm*



**Model No. MT-Z28**

**PLASMA CUTTER**

*Input Voltage 220 V*

*Cutting Current 5 - 40 Amps*

*Max. Thickness of the sheet for cutting 12 mm*

*Air Pressure required 3.5 - 5 Bar*

**Model No. MT-Z29**

### **SPOT WELDING**

*Synergetic Adjustment*

*Automatically sets the setting according the selected tool & sheet thickness*

*Continuous Single spot and Pulsed single spot*

*Adjustable Time and Spot Welding Current*

*STORE button to save the Customer settings*

*Compressed air pressure to low mechanical strength*

*Overload protection*

*Pneumatic Gun supplied as a standard accessory*



**Model No. MT-Z30**

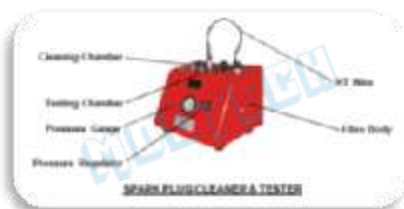
### **HOT WATER CLEANER**

*New professional handgrip with EPT system and SWIVEL joint to prevent hose twisting. 10 m H.P. hose with screw coupling, 70 cm stainless steel lance, H.P. nozzle.*

Remote control .....	total stop TSR
Pressure - bar .....	30 ÷ 175
Volume - l/h .....	400 ÷ 800
Outlet water temperature - C° .....	30 ÷ 140
Oil consumption - kg/h .....	5,8
Voltage - Ph-V-Hz .....	3 ~ 400V ~ 50Hz
Absorbed power - KW .....	5,5
RPM .....	1400
Dimensions - LxPxH .....	105 x 70 x 88
Weight - Kg .....	105

**Model No. MT-Z31**

### **SPARK PLUG CLEANER AND TESTER**



*Spark Plug Cleaner works on the Pneumatic air supply with the requirement of Air Pressure 8 - 10 kg/cm<sup>2</sup>. It performs abrasive sand blast cleaning first and then air cleaning. The cleaned spark plug is then fitted in the hole and the HT cable is connected. The performance of the spark can be viewed in the inspection hole Suitable for M10, M14 and M18 Plugs and supplied with ½ Kg of abrasive sand material*

**Specification**

**Power Supply: 220V AC, 50 Hz**

**Pneumatic Supply required: 8 - 10 Kg/cm<sup>2</sup>**

**Accessories**

**Adaptor : 3 Nos. (suitable for M10,M14,M18)**

**Abrasive Sand: 500 gms.**

**Model No. MT-Z32**

### **INJECTOR CLEANER & TESTER**

1. Suitable for cleaning 4 Injectors simultaneously
2. Ultra Sonic Bath tub as standard supply
3. Uniformity test, Spray test, Leakage test and Auto test



**Model No. MT-Z33**

### **FUEL INJECTION PUMP TEST BENCH**

*Drive Belt*

*No. of Cylinders 6 (Six)*

*Motors 3.7 KW for main drives & 0.7 KW for Fuel supply*

*Tachometer Digital Electronic 0 - 9999 RPM with electronic Timer*

*Strokes Electronic automatic*

*100 - 1200 shots per minute*

*Speed Range 100 - 3000 RPM*

*Phasing High Pressure Phasing (standard)*

*Pr. Gauges Two (for fuel supply & high pressure phasing)*

*Speed control Fully controllable from both sides*

*Color Oasis Green*

*Capability Inline & Rotary Pumps testing*

**Model No. MT-Z34**

### **ARBOR PRESS HAND OPERATED TWO TON CAPACITY MAXIMUM PRESSURE**

*Exerted (tons - kgs) : 2 tons - 2000*

*Centre to bake (inch - mm) : 7.1 / 2-190*

*Maximum height from base to guide (inch - mm) : 15 - 380*

*Maximum height arbor plate to guide (inch - mm) : 13.1/2-345*

*Size of arbor round or square (inch - mm): 1.3/4-45. ; Approx net weight kgs : 85.*

**Model No. MT-Z35**

### **High Rate Discharge Tester**

*As the name suggests, this tester works by rapidly discharging a battery. This is a very dangerous test to carry out, and it is very hard on the battery. If you can avoid carrying out this type of test and can carry out a no-load test instead, you should do so.*

*With the high rate discharge test, the length of time the battery can maintain a sufficiently high voltage decides if the battery is serviceable or not.*

*When you are confronted with a machine that is having starting problems, there are a number of possible reasons:*

- *Faulty or failing battery.*
- *Loose or dirty wiring connections.*
- *Faulty starter motor.*
- *Faulty alternator. (Alternator testing procedure).*
- *Loose or worn alternator drive belt.*
- *Machine operator not using the correct starting technique.*
- *Faulty cold-start system.*

### Model No. MT-Z36

#### CAR WASHER

Single Plunger car washer model RSP-3 with 3 HP Motor and 12 mtrs hose and two guns

1. Number of Guns: 2 60,277.00
2. Working Pressure: 25 kgs
3. Discharge per Gun: 24 LPM
4. Length of Hose: 12 mtrs
5. Motor HP: 3 HP, 3 phase power supply

### Model No. MT-Z37

#### BRAKE LINING REVETING MACHINE-FOOT OPERATED

Foot Operated Brake shoe riveting machine for brake shoes and for clutch discs for cars, vans. It is perfect for rivet brake shoes and clutch discs of any kind of vehicles since there is enough space between the tool and die punch.

The riveting machine has a new innovative die-punch base that creates a perfect holding and grip, with which possible deviations or imbalances in the riveting process and the brake shoe coverings are avoided



#### Technical Specification

Maximum distance from the die holder to the back die 40 mm.

Min. distance from the die holder to the back die 0 mm.

Max. stroke 30 mm.

Punches bases kit for riveting tubular and semi-tubular rivets of warm material: 4, 5, 6, 8, 10 mm.

### Model No. MT-Z38

#### STARTER / ALTERNATOR TEST BENCH

##### Specification

1. Motor 2 hp three phase 1500rpm
2. Digital dc voltmeter of 3.5 digit display with minimum readable upto 0.1 volt of meco make
3. Digital dc ammeter for load of 3.5 digit display with minimum readable upto 1 amp of meco make.
4. Digital rpm indicator 0-5000rpm of selection make
5. Speed sensor for sensing starter speed
6. Alternator loading through wire wound resistors of 0-50 amps capacity
5. Alternator loading through 4nos rotary switches.
6. Two directional rugged mounting arrangement to suit your various range of alternators.
- 7 Provision for two speed check with two set of pulley and belts
- 8 Starter free spin testing upto 100amps capacity.
- 9 110 v series lamp test facility also available.



## Model No. MT-Z39

### VALVE REFACER

Smooth working with 100% efficiency. Slides have set in springs to maximum rigidity. Provides grinding from 0° to 90°, • Precision built, under stringent quality control measures. • Produces mirror proof finish without chatter marks. • Easy to handle, eliminates time-consuming operations of lapping etc. • Common drive with one motor for grinding wheel, valve spindle and coolant pump, • Centrifugal pump provides constant water supply for better finish. • Well protected against in- grease, dirt, dust, and coolant.

1. Valve stem capacity : 6 mm to 14 mm, 2. Valve angle adjustment range : 0° to 90°, 3. Valve head capacity : Up to 90mm, 4. Grinding wheel size : 5"×1/2"×5/8", 5. Butt grinding wheel : 4"×3/4"×5/8", 6. Grinding wheel spindle : 4000RPM, 7. Work head spindle : 175RPM, 8. Power required : 0.5 H.P. 200/220 Volts. A.C, 9. Net weight : 100kg (+25 kg. for packing), Spare Parts: 1. Collets 1/4" to 9/16" : 2 nos., 2. Diamond Dresser : One no, 3. C-Spanner : 1 eac

## Model No. MT-Z40

### OTHER EQUIPMENTS

Model No.	Description
MT-Z40-A	Petrol Compression Tester
MT-Z40-B	Mechanical Wheel Alignment
MT-Z40-C	Diesel Injector Cleaning Machine
MT-Z40-D	Hydraulic Bearing Puller
MT-Z40-E	Diesel Compression Tester
MT-Z40-F	Air Compressor Pressure Gauge
MT-Z40-G	Carburettor repair tool kit.
MT-Z40-H	Distributor tester
MT-Z40-I	Pneumatic Gun
MT-Z40-J	Tool valve grinding suction type (Consumable tool)
MT-Z40-K	Cylinder gauge, bore dial gauge with standard accessories (50-150mm)
MT-Z40-L	Compression gauge to read 120kg/sq cm and vacuum gauge 0-75cm (Petrol)
MT-Z40-M	Filling jig for adjusting the piston ring gap
MT-Z40-N	Tachometer (Counting type)
MT-Z40-O	Connecting rod alignment fixture
MT-Z40-P	Puller set universal for bearing and bushes
MT-Z40-Q	Piston ring compressor
MT-Z40-R	Valve key inserter
MT-Z40-S	High rate discharge tester
MT-Z40-T	AVO Meter 0-240 (Digital multi meter)
MT-Z40-U	Piston groove cleaner
MT-Z40-V	Multimeter
MT-Z40-W	Timing light
MT-Z40-X	RPM meter
MT-Z40Y	Hydraulic Press 5 Ton Capacity
MT-Z40-Z	Floor Crane 1.5 Ton Capacity



**Note:**

**we can also supply any other model as per your requirement**

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Yours faithfully,  
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Partner*

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