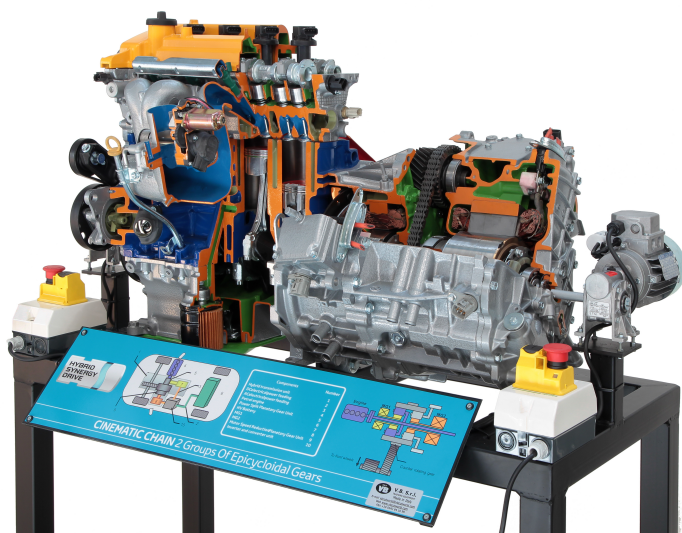
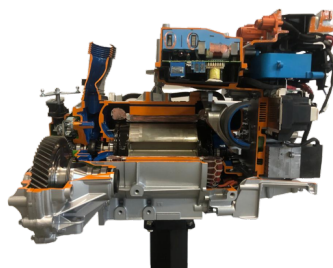
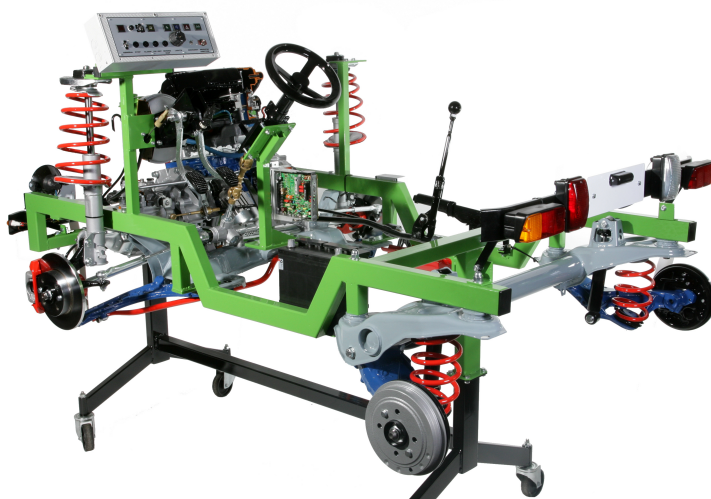




**MECHANICAL SECTIONS  
TRAINING EQUIPMENT**



**2024 - 2025**



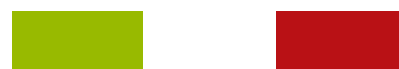
REPRESENTANTE PARA ECUADOR



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**MADE IN ITALY**



## ENGINES & MODELS

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## LEGEND

List and meaning of the LETTERS near the VBcode.

- E** Electrically operated, 220 Volts (110 Volts on request)
- M** Manually operated
- S** Static
- F** Working (fully-functioning)
- A** Assembly & Disassembly

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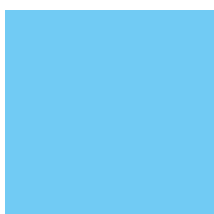
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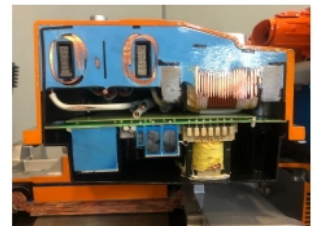
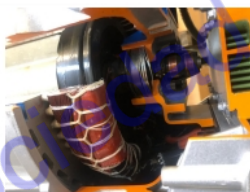
## Engines & Models

## VB5405M TRAINING MODEL OF A RENAULT ZOE ELECTRIC CAR ENGINE (on stand with wheels) - manual



Accurate section of an electric engine/differential group originally mounted on Renault Zoe/Nissan Leafcars, year of production from 2013 to 2015, engine manufactured by Continental.

The shaft can be moved manually.



### Approx. weight and dim.:

Cm:	80x80x80h
Net weight:	kg 102
Gross weight:	kg 140

Indicative picture for reference only

## VB 4500M TOYOTA HYBRID ENGINE 1NZE-FXE HYBRID SYNERGY DRIVE - GASOLINE AND ELECTRIC (on stand with wheels)- manual

## VB 4500E TOYOTA HYBRID ENGINE 1NZE-FXE HYBRID SYNERGY DRIVE - GASOLINE AND ELECTRIC (on stand with wheels)- electrical

The Toyota hybrid system (THS) has two sources of power, the petrol engine and the electric motor. The THS recovers energy otherwise lost to heat in the brakes and uses it to supplement the power of its fuel-burning engine. MG1 (motor generator 1) generates electrical power and starts the engine; MG2 (motor generator 2) drives the vehicle. During deceleration the wheels drive MG2 which acts as a generator for regenerative power recovery. The THS uses different modes to achieve the most efficient operation in response to driving conditions.



### Main technical specifications:

- 4 cylinders
- Displacement: 1500 cc
- DOHC overhead camshaft
- 4 valves per cylinder
- Roller chain
- VVT-I system (Variable Valve Timing with intelligence) electronically controlled intake valves
- Multi-point electronic injection with throttle
- Electrical engine
- Epicyclic engine
- Generator
- Transmission belt (CTV)
- Gears
- Differential group
- Exhaust manifold with Lambda probe

The engine is mounted on a stand with wheels and it is operated manually by means of one crank handle placed on the thermal engine and one on the electric engine in order to simulate the different cycles.

### Approx. weight and dim.:

Cm:	104x80x130h
Net Weight:	kg 180
Gross Weight:	kg 250

Same as VB 4500 but operated electrically by means of two electric motors: one on the petrol engine and the other on the generator. The electric motors can be operated separately or simultaneously, according to teaching requirements.

The engine is provided with nomenclature panel.

### Approx. weight and dim.:

Cm:	130x90x155h
Net Weight:	kg 190
Gross Weight:	kg 300

Indicative picture for reference only



## **VB 4300M ELECTRONIC INJECTION MULTIPOINTS ENGINE WITH PETROL/LPG FEEDING SYSTEM (on stand with wheels) - manual**

Accurate section of an engine, where the main components of the two different feeding circuits (Petrol and LPG) are sectioned:

Petrol feeding circuit:

- electro-injectors
- throttle body
- rail
- sensors/ phonic wheel
- Lambda probe
- electronic ignition

LPG feeding circuit:

- genius reducer
- LPG electrovalve
- LPG tank with float device for the charge level
- charge socket
- filter
- rail and LPG electro-injectors

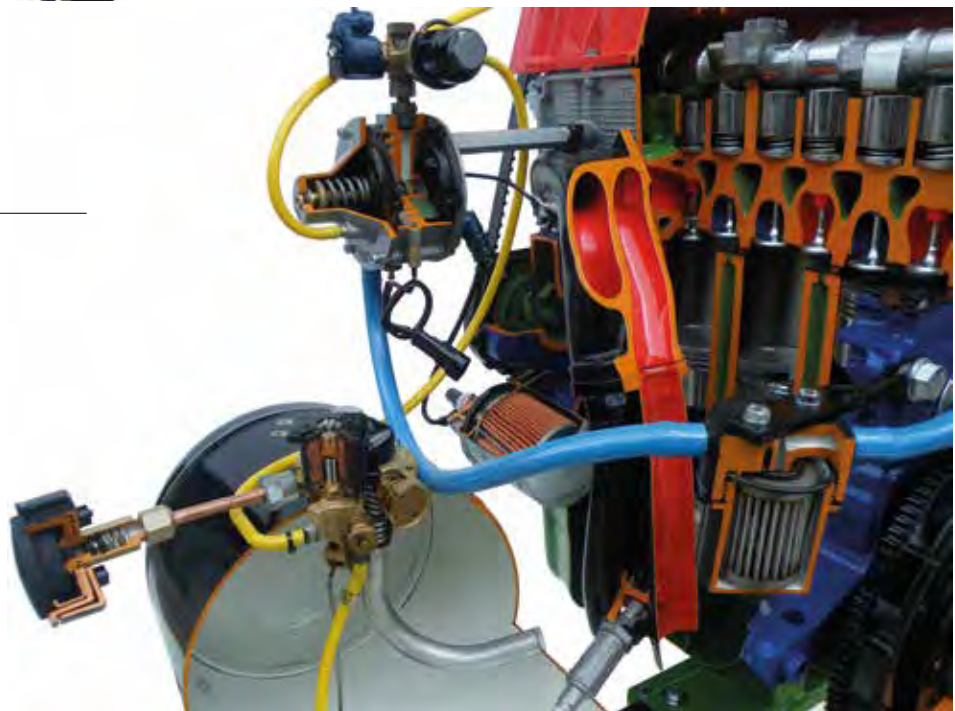


For the engine specifications see **VB 5212** at page **A-19**.

Schematic illustration of the different mechanical components together with its electronic and electrical connections.

### **Approx. weight and dim.:**

Cm:	70x80x95h
Net Weight:	kg 86
Gross Weight:	kg 105

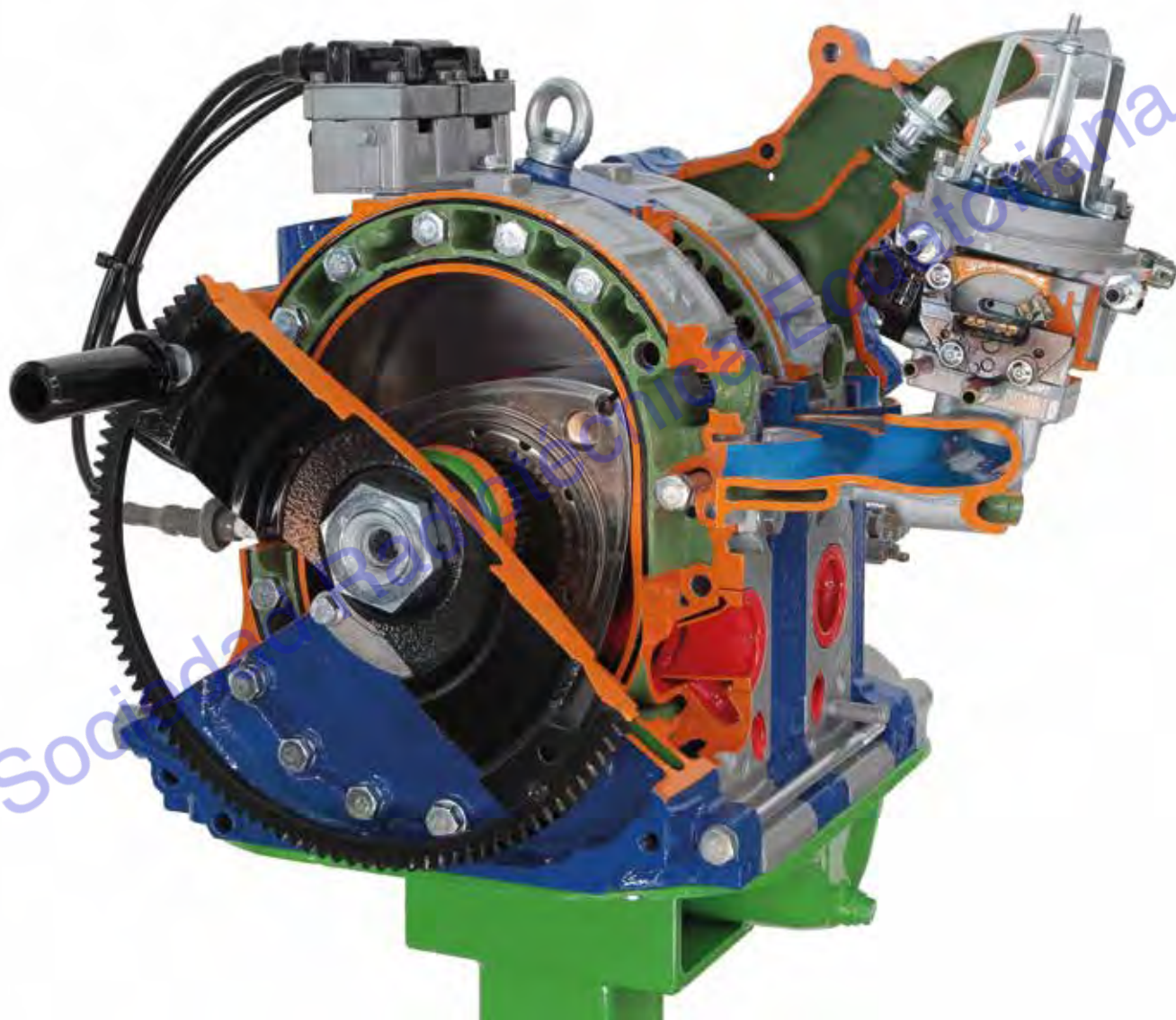


**VB 4300**

## VB 4400M MAZDA RX TWIN-ROTOR WANKEL ENGINE (on stand with wheels) - manual

Accurate section of the most common Mazda RX wankel engine, clearly showing the following main components:

- Drive shaft with flywheel
- Twin-rotor
- Suction and exhaust channels
- Chain-driven oil pump
- Water pump with thermostatic valve
- Electronic injection
- Twin-spark ignition



Indicative picture for reference only

The engine is operated manually by means of a handle.

### Approx. weight and dim.:

Cm:	70x70x100h
Net Weight:	kg 95
Gross Weight:	kg 140



## **VB 4550M FERRARI 12 V CYLINDERS ENGINE (on stand with wheels) - manual**

## **VB 4551M FERRARI 8 V CYLINDERS ENGINE (on stand with wheels) - manual**

This accurate section shows the maximum expression of the most advanced automotive technique and engineering of our region: the Ferrari engine.

Indicative picture for reference only



### **VB 4550M**

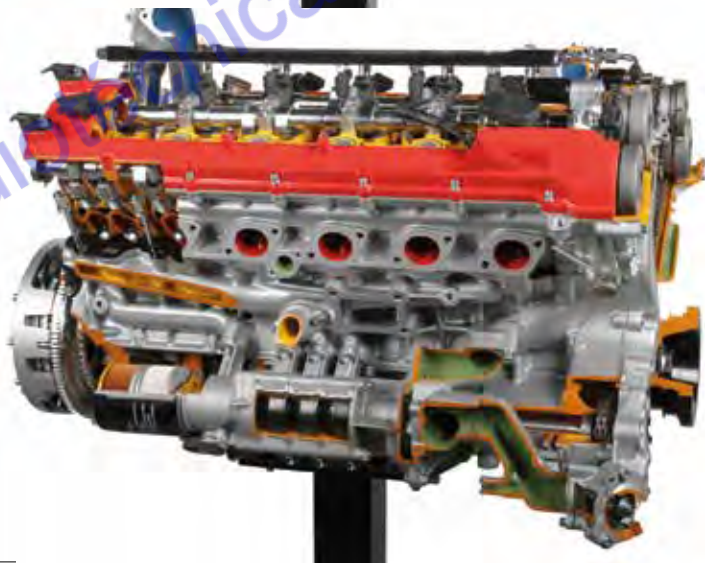
#### **Main technical specifications:**

- 12 V cylinders
- 4 valves per cylinder
- Displacement: 5999 cc
- DOHC overhead camshaft
- 4 variable timing devices on the camshaft
- Multi-point electronic injection
- Chain/Belt timing
- 3 oil pumps
- Water pump

### **VB 4550M - VB 4551M**

#### **Approx. weight and dim.:**

Cm:	80x100x130h
Net Weight:	kg 180
Gross Weight:	kg 250



### **VB 4551M**

#### **Main technical specifications:**

- 8 V cylinders
- 4 valves per cylinder
- Displacement: 3000 cc
- DOHC overhead camshaft
- Mechanic injection with electronic governor KE3 Jetronic
- Belt distribution
- Oil pump
- Water pump
- Alternator

The engine is mounted on a stand with wheels and it is operated manually by means of a crank handle.

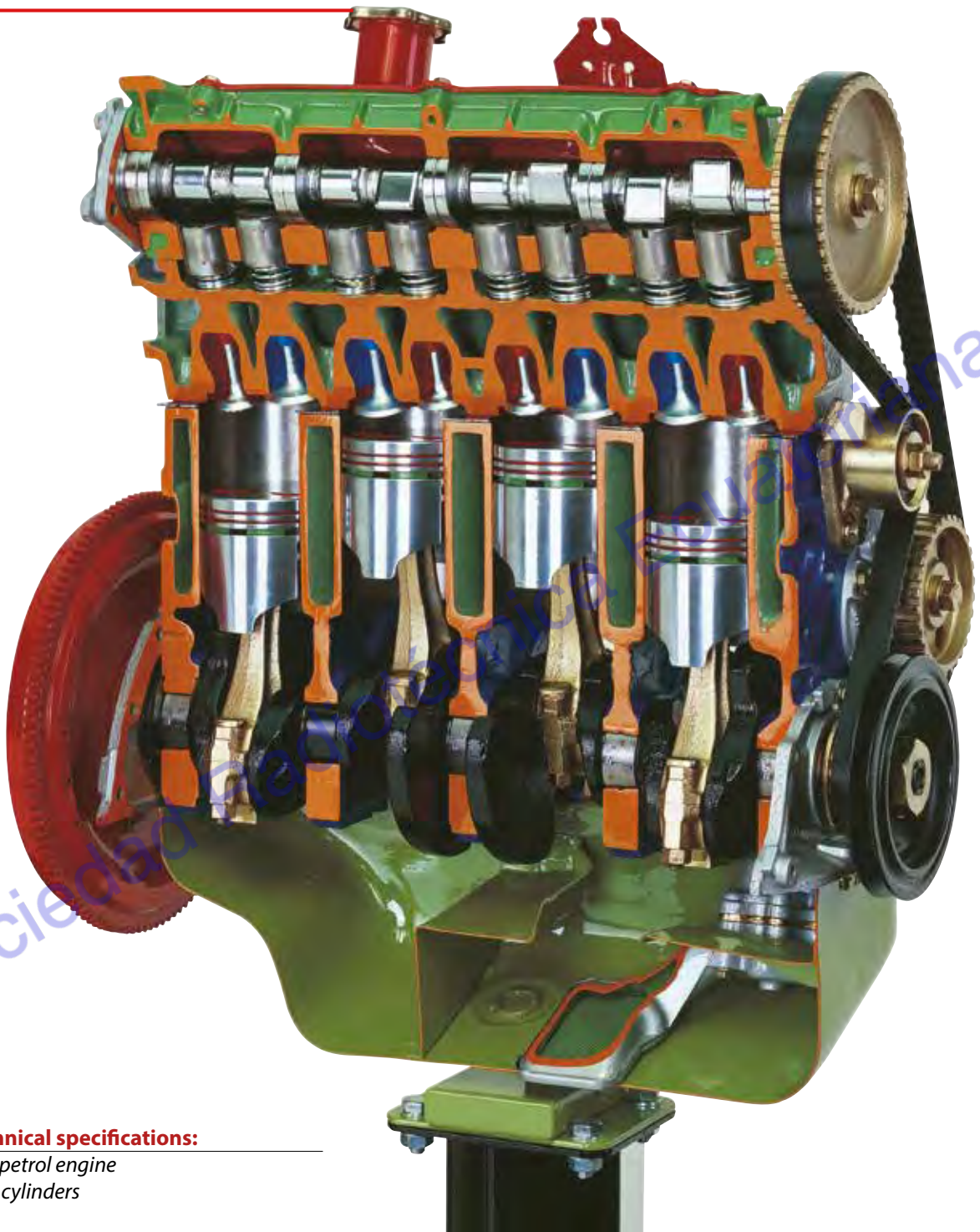
**VB 4550 - VB 4551**

# VB 5440 - VB 5445

**VB 5440M ENGINE UNIT WITH OVERHEAD CAMSHAFT (OHC) AND TOOTHED TIMING BELT (on stand with wheels) - manual**

**VB 5445M ENGINE UNIT WITH DOUBLE OVERHEAD CAMSHAFT (DOHC) AND TOOTHED TIMING BELT (on stand with wheels) - manual**

**\*\*NEW 16V VERSION\*\***



## **Main technical specifications:**

- 4 stroke petrol engine
- 4 in-line cylinders

The engine is operated manually through a crank handle.

*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

## **Approx. weight and dim.:**

Cm:	70x60x80h
Net Weight:	kg 60
Gross Weight:	kg 110

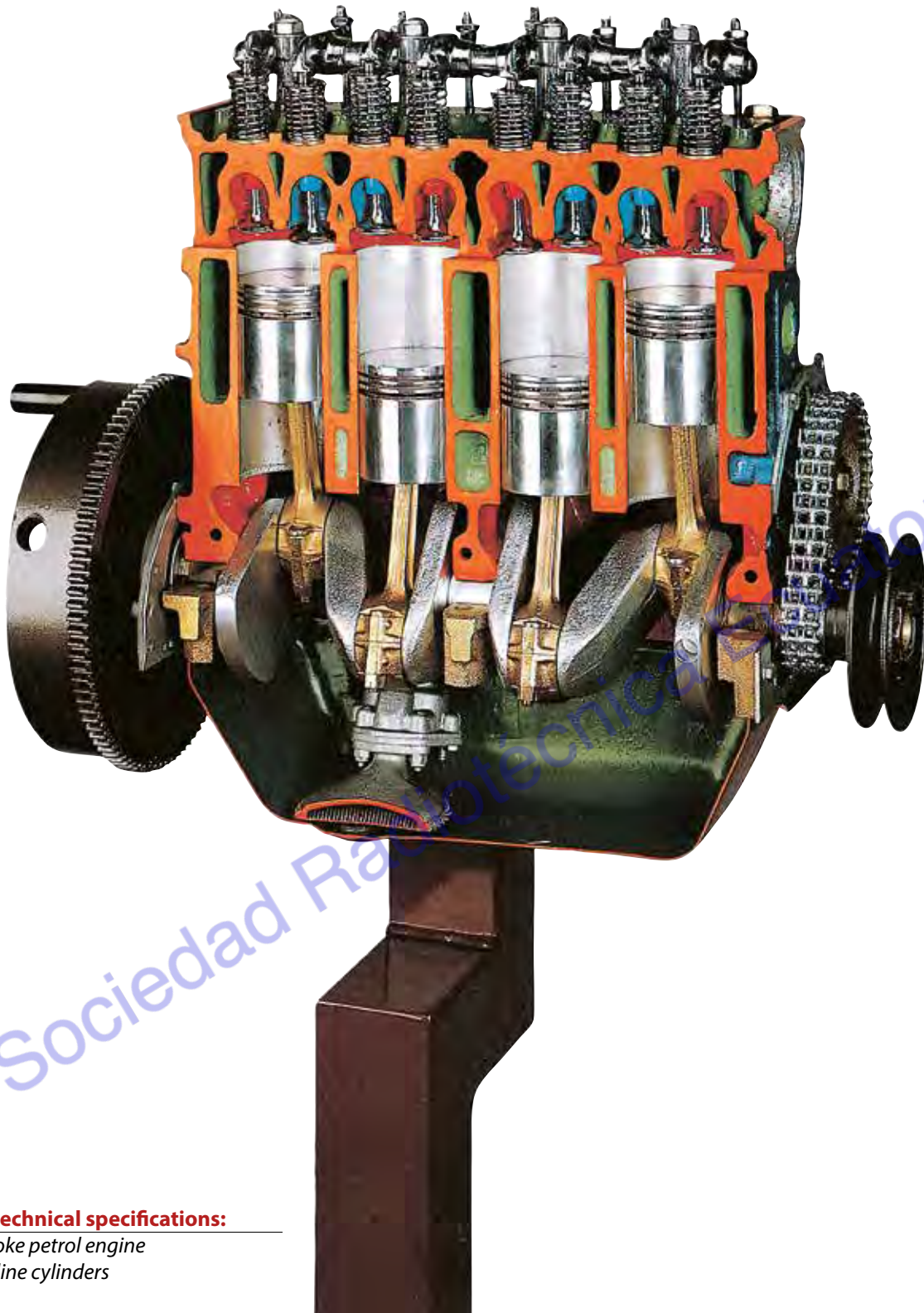
Indicative picture for reference only



**VB 5450M ENGINE UNIT WITH OVERHEAD VALVE (OHV) AND TIMING CHAIN**  
(on stand with wheels) - manual

**VB 5450**

Indicative picture for reference only



**Main technical specifications:**

- 4 stroke petrol engine
- 4 in-line cylinders

The engine is operated manually through a crank handle.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

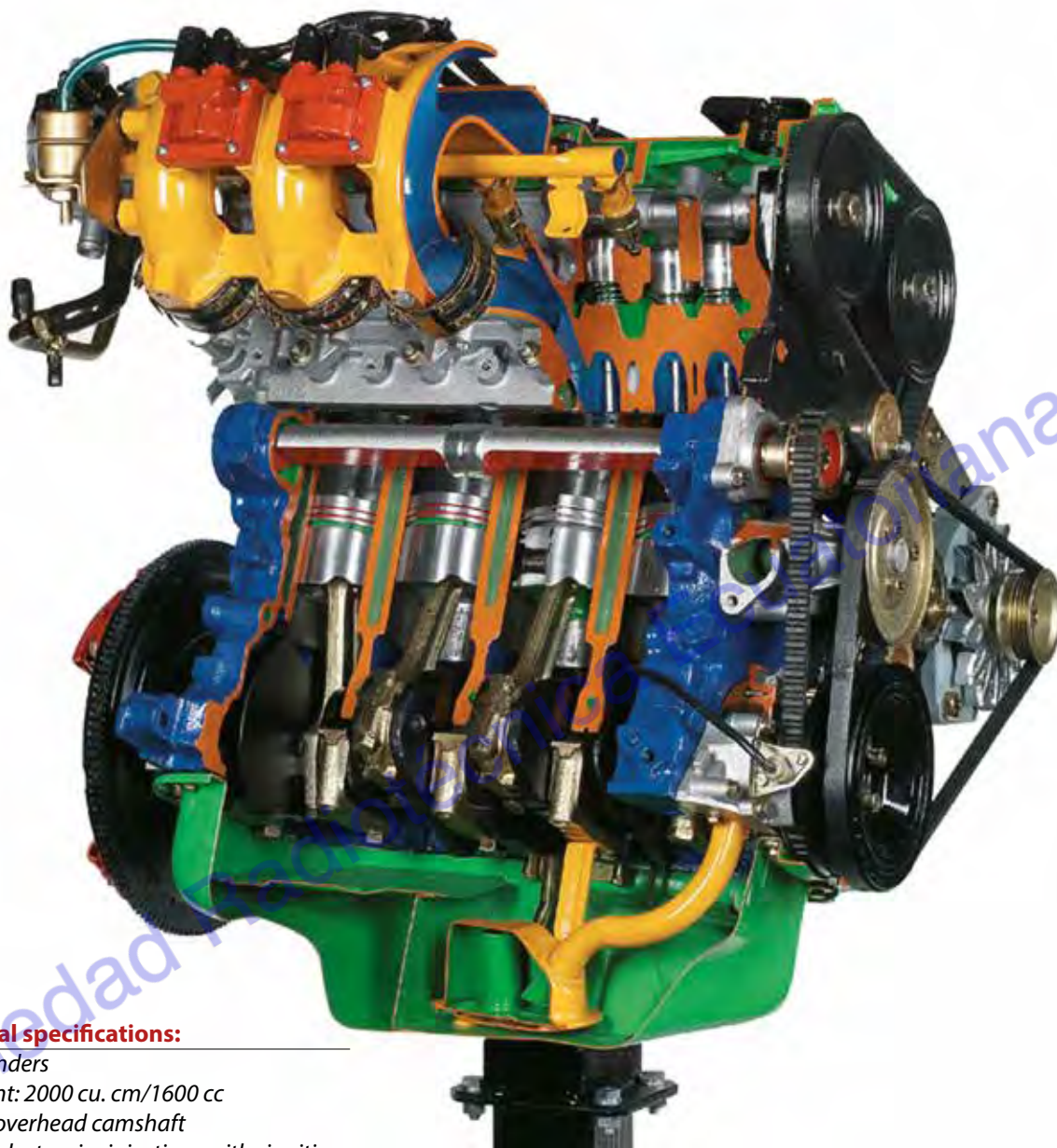
**Approx. weight and dim.:**

Cm:	70x60x80h
Net Weight:	kg 60
Gross Weight:	kg 110

# VB 4800 - VB 4801

**VB 4800E** 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION (on stand with wheels) - electrical

**VB 4801M** 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION (on stand with wheels) - manual



Indicative picture for reference only

## **VB 4800E**

### **Main technical specifications:**

- 4 in-line cylinders
- Displacement: 2000 cu. cm/1600 cc
- DOHC twin overhead camshaft
- Multipoint electronic injection with ignition-integrated control unit
- Vibration-damping balancing shafts
- 4 valves per cylinder
- Water cooling
- 12 Volt alternator
- Membrane clutch

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## **VB 4801M**

Same as VB 4800 but operated manually through a crank handle

## **VB 4800E - VB 4801M**

### **Approx. weight and dim.:**

Cm:	90x120x125h
Net Weight:	kg 160
Gross Weight:	kg 210



**VB 4805E** 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + REAR DRIVE GEARBOX 5 SPEEDS + REVERSE (on stand with wheels) - electrical

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**VB 4806E** 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + REAR DRIVE GEARBOX 5 SPEEDS + REVERSE TURBOSUPERCHARGER (on stand with wheels) – electrical

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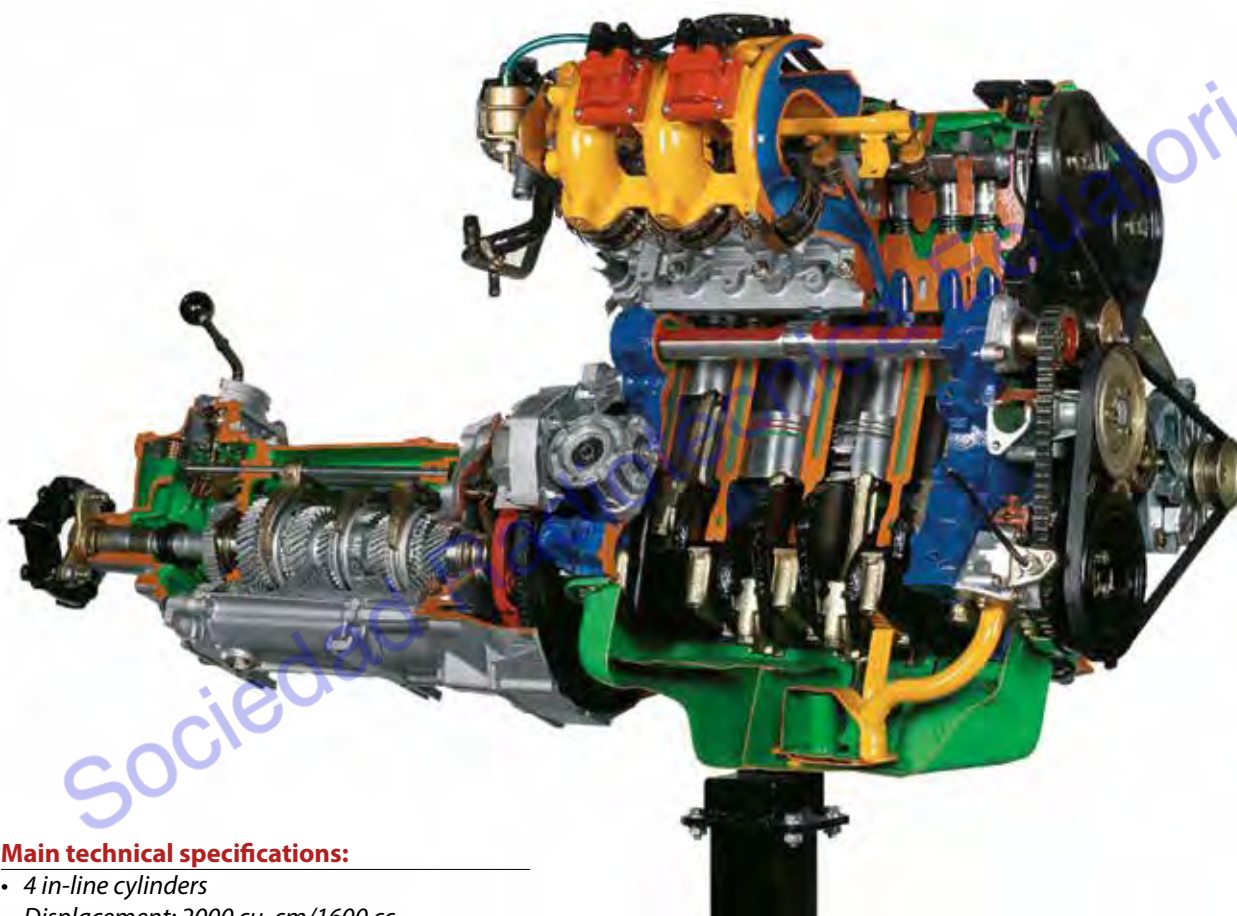
**VB 4807E** 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + **FRONT DRIVE** GEARBOX 5 SPEEDS + REVERSE +DIFFERENTIAL (on stand with wheels) – electrical

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**VB 4808E** 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + **FRONT DRIVE** GEARBOX 5 SPEEDS + REVERSE +DIFFERENTIAL WITH TURBOSUPERCHARGER (on stand with wheels) – electrical

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Indicative picture for reference only



#### **Main technical specifications:**

- 4 in-line cylinders
- Displacement: 2000 cu. cm/1600 cc
- DOHC twin overhead camshaft
- Multipoint electronic injection with ignition-integrated control unit
- Vibration-damping balancing shafts
- Gearbox 5 forward speeds + reverse
- 4 valves per cylinder
- Water cooling
- 12 Volt alternator
- Membrane clutch

#### **Approx. weight and dim.:**

Cm: 160x86x100h  
Net Weight: kg 195  
Gross Weight: kg 250

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**VB 4805 - VB 4806 - VB 4807 - VB 4808**



**VB 4600E** PETROL ENGINE WITH **DIRECT INJECTION** 16 VALVES MULTI-POINT ELECTRONIC INJECTION - 4 CYLINDERS 4 STROKES (on stand with wheels) - electrical

**VB 4601M** PETROL ENGINE WITH **DIRECT INJECTION** 16 VALVES MULTI-POINT ELECTRONIC INJECTION - 4 CYLINDERS 4 STROKES (on stand with wheels) - manual

Petrol engines with direct injection (fuel inlet in the combustion chamber and not in the air suction duct), have high performances and are designed to comply with the most severe anti-pollution regulations.

We can provide the following:

**VB 4600/F** - TSI-FSI Audi/Volkswagen

**VB 4600/G** - GDI Mitsubishi



Indicative picture for reference only

## VB 4600 F/G/

### Main technical specifications:

- 4 in-line cylinders
- Displacement: 1400-2000 cc
- DOHC twin overhead camshaft
- Multi-point electronic injection
- 4 valves per cylinder
- Water cooling
- 12V alternator

The engine is mounted on a stand with wheels and it operates at 220V; it runs at a reduced speed in order to let the student easily observe and understand the operation of the various mechanical parts.

## VB 4601 F/G/

Same as VB 4600 but operated manually by means of a crank handle.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc.

## VB 4600 - VB 4601

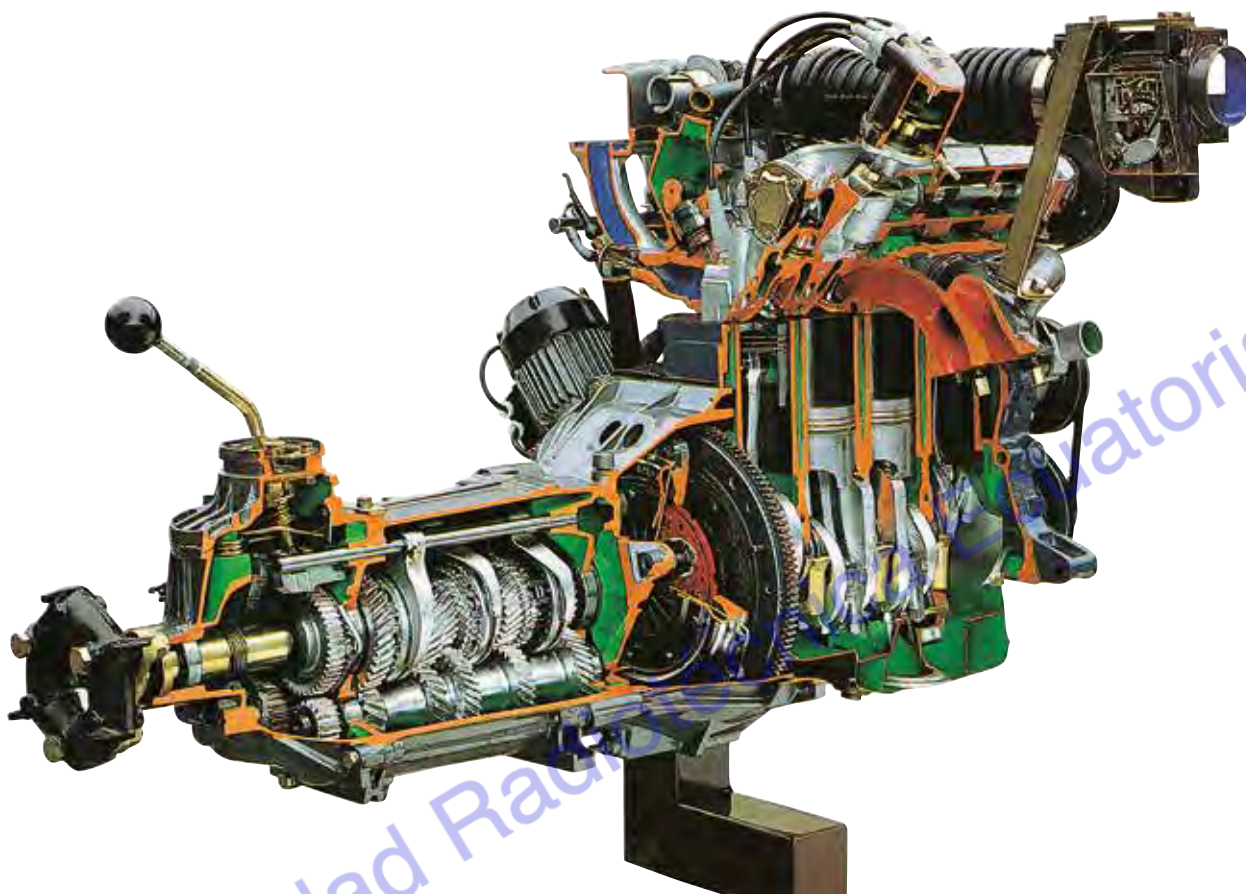
### Approx. weight and dim.:

Cm:	90x110x125h
Net Weight:	kg 150
Gross Weight:	kg 210

**VB 5150E** FIAT 4 CYLINDERS PETROL ENGINE (LONGITUDINALLY MOUNTED)  
WITH L-JETRONIC ELECTRONIC INJECTION **REAR wheel-DRIVE** (on stand with  
wheels) - electrical

**VB 5152E** FIAT 4 CYLINDERS PETROL ENGINE (TRANSVERSALLY MOUNTED)  
WITH L-JETRONIC ELECTRONIC INJECTION **FRONT wheel-DRIVE** (on stand with  
wheels) - electrical

Indicative picture for reference only



**VB 5150 - VB 5152**

#### **VB 5150E**

##### **Main technical features:**

- Displacement: 2000 cu. cm or 1600 cc (according to availability)
- 2 overhead camshafts - DOHC
- MULTIPOINT electronic injection
- 4 in-line cylinders
- Gearbox: 5 forward speeds + reverse
- Electronic ignition

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

#### **VB 5152E FRONT DRIVE**

Same as VB 5150 with Gearbox 5 forward speeds + reverse and integrated differential and FRONT wheel-drive.

#### **VB 5150E - VB 5152E**

##### **Approx. weight and dim.:**

Cm:	80x140x110h
Net Weight:	kg 140
Gross Weight:	kg 200

## VB 5166E VOLKSWAGEN 4 CYLINDERS PETROL ENGINE WITH MULTI-POINT ELECTRONIC INJECTION (on stand with wheels) - electrical



### Main technical features:

- Displacement: 1600/1800/2000 cu. cm
- Overhead camshaft (OHC)
- Distribution by means of a toothed belt
- 4 in-line cylinders
- Gearbox: 5 forward speed + reverse, with integrated differential

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

### VB 5166E

#### Approx. weight and dim.:

Cm:	60x155x90h
Net Weight:	kg 155
Gross Weight:	kg 205

Indicative picture for reference only



**VB 5170E BMW 6 CYLINDERS PETROL ENGINE WITH L-JETRONIC INJECTION**  
(on stand with wheels) - electrical

**VB 5175E BMW 6 CYLINDERS PETROL ENGINE WITH K-JETRONIC INJECTION**  
(on stand with wheels) - electrical **!! LAST UNIT AVAILABLE !!**

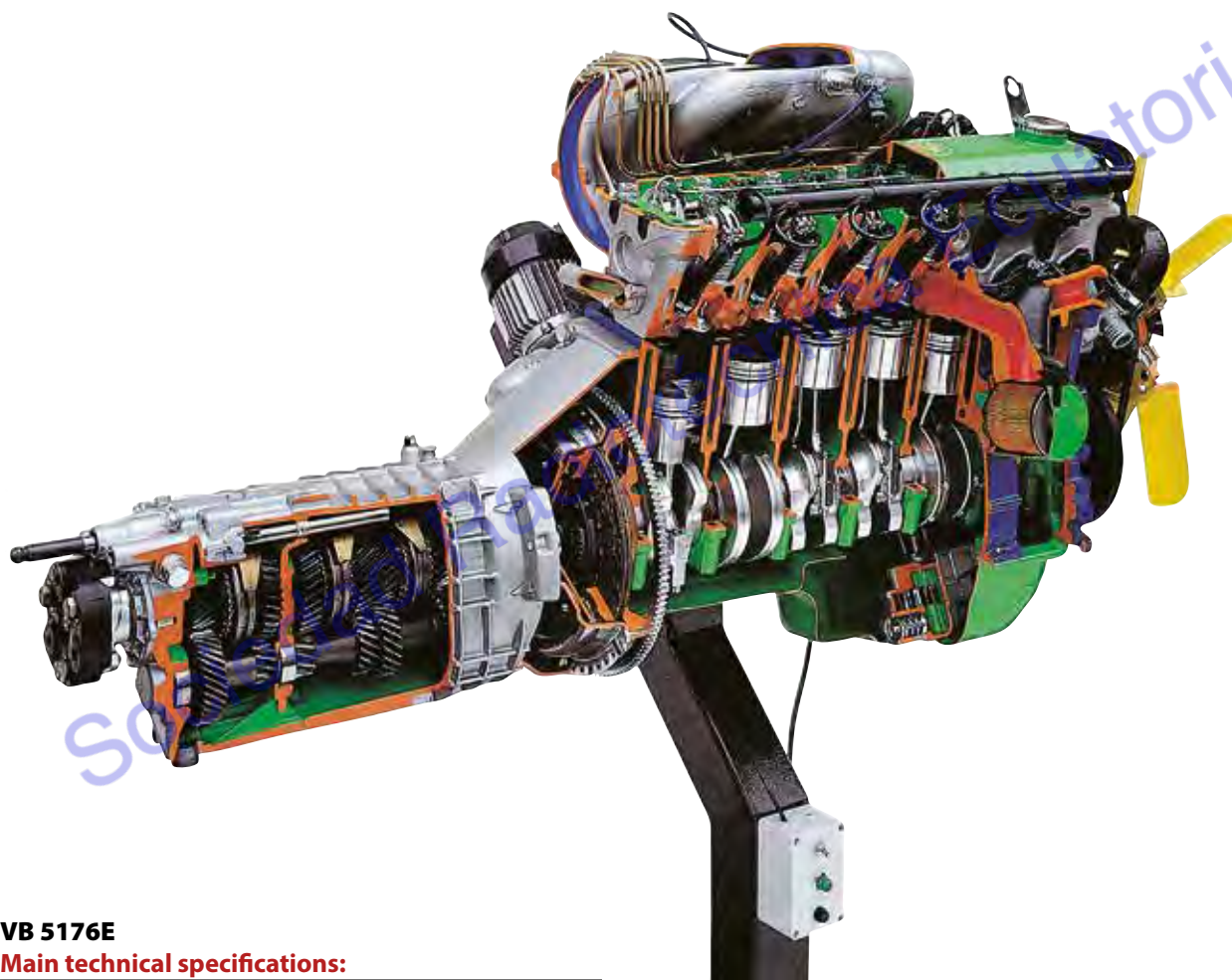
**VB 5176E BMW 6 CYLINDERS PETROL ENGINE 24 VALVES WITH MULTI-POINT ELECTRONIC INJECTION AND TWIN OVERHEAD CAMSHAFT (DOHC)**  
(on stand with wheels) - electrical

#### **VB 5170E - VB 5175E**

##### **Main technical specifications:**

- Displacement: 2000/3200 cu. cm
- Overhead camshaft (OHC), valves with V-arrangement
- Distribution by means of a roller chain
- 6 in-line cylinders
- Gearbox: 5 forward speeds + reverse

*The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.*



Indicative picture for reference only

#### **VB 5176E**

##### **Main technical specifications:**

- Displacement: 2000/2500 cc
- Double overhead camshaft (DOHC)
- Distribution by means of a roller chain
- 4 valves per cylinder
- 6 in-line cylinders
- Gearbox: 5 forward speeds + reverse

*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

#### **VB 5170E - VB 5175E - VB 5176E**

##### **Approx. weight and dim.:**

Cm:	140x80x100h
Net Weight:	kg 180
Gross Weight:	kg 265

**VB 5170 - VB 5175 - VB 5176**

**VB 5178M TOYOTA LEXUS ENGINE 8 V-TYPE CYLINDERS 32 VALVES**  
**(on stand with wheels) - manual**

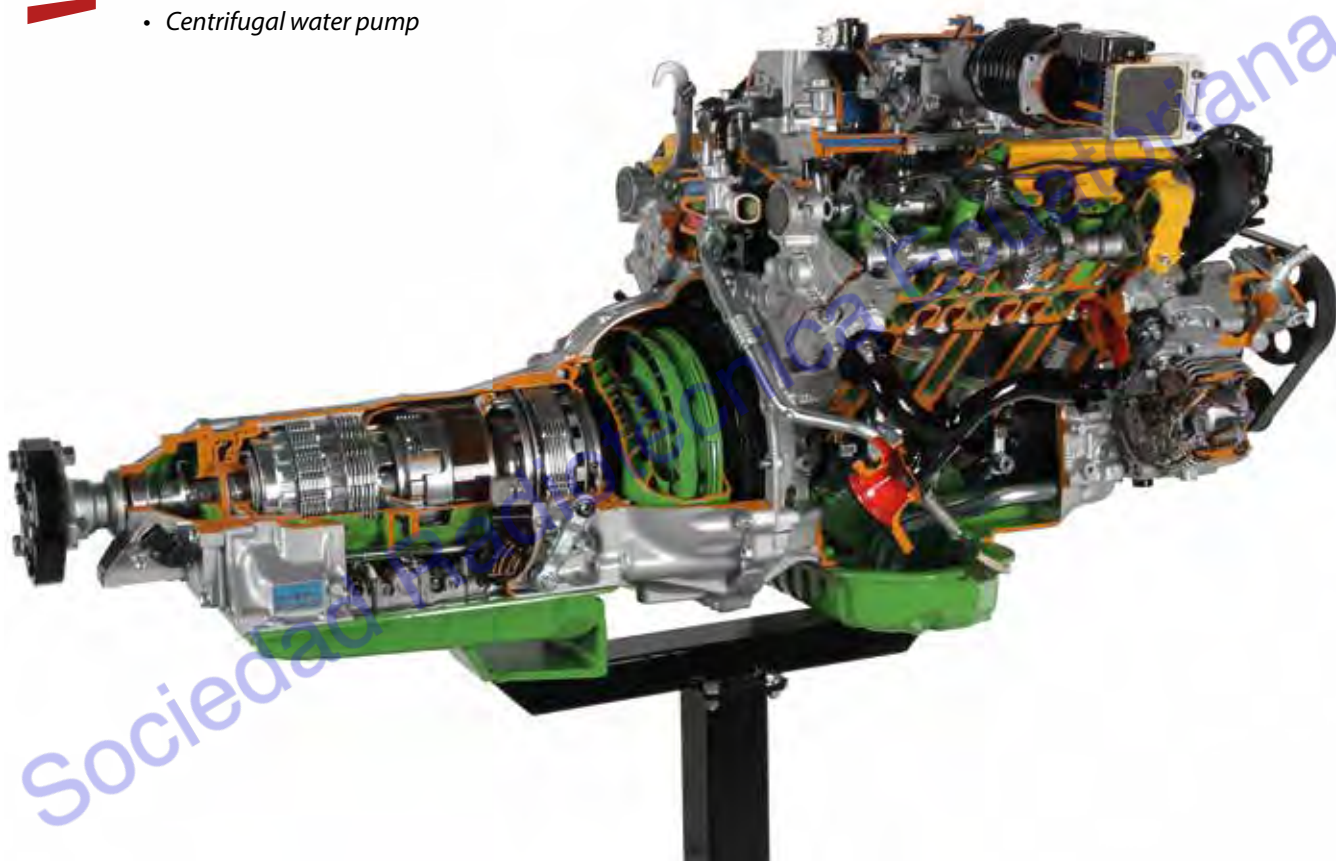
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**VB 5178**

**VB 5178M**

**Main technical features:**

- Displacement 3968cc
- 8 V-type cylinders
- 4 valves per cylinder (32 total)
- DOHC (double over-head camshaft)
- Bore and stroke 87,5x82,5
- Compression ratio 1:10
- Multi-point electronic fuel injection
- Electronic ignition
- 12V alternator
- Centrifugal water pump



Indicative picture for reference only

**VB 5178M**

**Approx. weight and dim.:**

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Cm:	100x90x150h
Net Weight:	kg 180
Gross Weight:	kg 270

The engine is operated manually by means of a crank handle.



**VB 5181M** TOYOTA PETROL ENGINE WITH VVT.I INJECTION (on stand with wheels)  
- manual

**VB 5181E** TOYOTA PETROL ENGINE WITH VVT.I INJECTION (on stand with wheels)  
- electrical

**VB 5181 - VB 5182**

Indicative picture for reference only



#### Main technical specifications:

- 4 cylinders
- Displacement: 1000-1300 cc
- DOHC - double overhead camshaft
- VVT.I system with electronically controlled intake valves
- 4 valves per cylinder
- Roller chain
- Multi-point electronic injection with throttle
- 12V alternator
- Thermostatic valve

The engine is operated manually by means of a crank handle.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc.

#### Approx. weight and dim.:

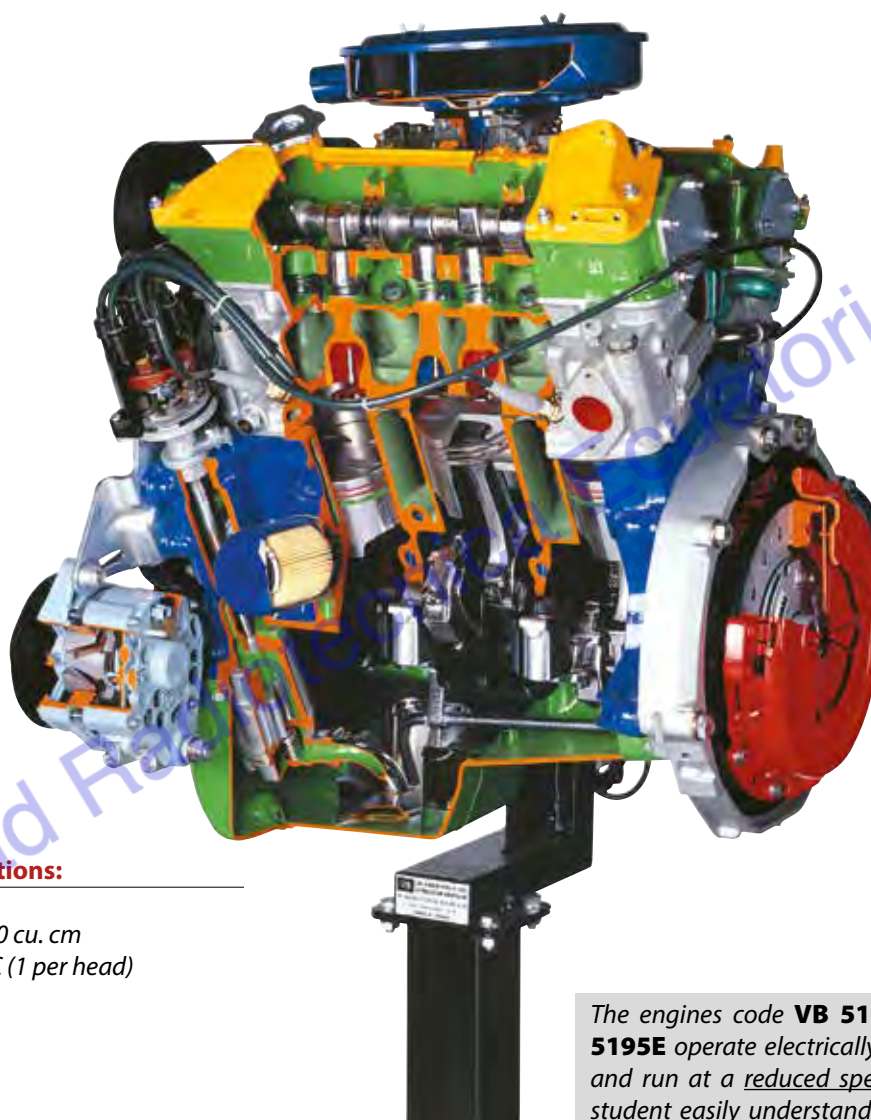
Cm:	70x90x100h
Net Weight:	kg 60
Gross Weight:	kg 110

**VB 5190E** 6 V CYLINDERS PETROL ENGINE **CARBURETTOR** (on stand with wheels) - electrical

**VB 5195E** 6 V CYLINDERS PETROL ENGINE WITH **MULTI-POINT ELECTRONIC INJECTION** (on stand with wheels) - electrical

**VB 5190M** 6 V CYLINDERS PETROL ENGINE **CARBURETTOR** (on stand with wheels) - manual

**VB 5195M** 6 V CYLINDERS PETROL ENGINE WITH **MULTI-POINT ELECTRONIC INJECTION** (on stand with wheels) - manual



Indicative picture for reference only

## VB 5190E

### Main technical specifications:

- 6 V cylinders
- Displacement: 2800/3200 cu. cm
- Overhead camshaft OHC (1 per head)
- Twin-body carburettor
- Centrifugal water pump
- 12 Volt alternator
- Membrane clutch

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

The engines code **VB 5190E** and **VB 5195E** operate electrically at 220 volts and run at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

## VB 5190M

Same as VB 5190E but operated manually through a crank handle.

## VB 5195E

### Main technical specifications:

- 6 V cylinders
- Displacement: 2000-3000 cc
- DOHC (2 per head)
- Multi-point E.I.
- Centrifugal water pump
- 12V alternator

## VB 5195M

Same as VB 5195E but operated manually through a crank handle

### VB 5190E - VB 5195E - VB 5190M - VB 5195M Approx. weight and dim.:

Cm:	120x60x100h
Net Weight:	kg 190
Gross Weight:	kg 260



**VB 5210 CE FIAT PETROL ENGINE CARBURETTOR FEEDING**  
(on stand with wheels) - electrical

**VB 5212 IEE FIAT PETROL ENGINE WITH ELECTRONIC FUEL INJECTION -**  
**MULTI-POINT** (on stand with wheels) - electrical

**VB 5210 CE**

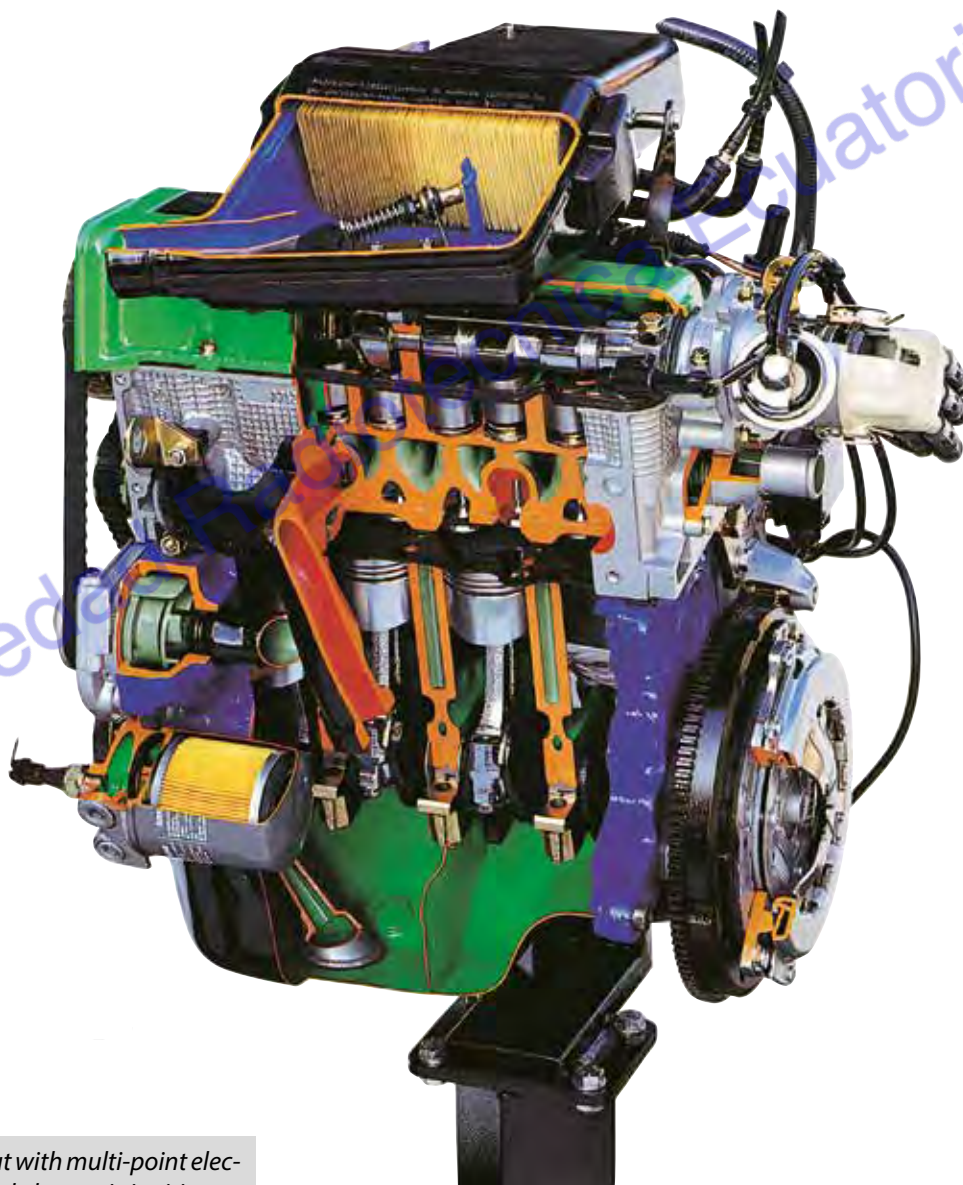
**Main technical specifications:**

- 4 in-line cylinders
- Displacement: 1000/1300 cu. cm
- Overhead camshaft - OHC
- Carburettor
- Electronic ignition
- Alternator
- Toothed belt

**VB 5212 IEE**

**Main technical specifications:**

- 4 in-line cylinders
- Displacement 1245 cc
- Overhead camshaft -OHC
- Electronic injection multipoints
- Electronic ignition
- Toothed belt
- Alternator



**VB 5212 IEE**

Same as VB 5210IEE but with multi-point electronic fuel injection and electronic ignition.

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

**VB 5210 CE**

**Approx. weight and dim.:**

Cm:	67x87x85h
Net Weight:	kg 60
Gross Weight:	kg 120

**VB 5212 IEE**

**VB 5212 IE**

**VB 5210 C**

**VB 5210 CM** FIAT PETROL ENGINE **CARBURETTOR** FEEDING (on stand with wheels) - manual

**VB 5210 IEM** FIAT PETROL ENGINE WITH ELECTRONIC FUEL INJECTION - **MONOJETRONIC** (on stand with wheels) - manual

**VB 5212 IEM** FIAT PETROL ENGINE WITH ELECTRONIC FUEL INJECTION - **MULTI-POINT** (on stand with wheels) - manual

## VB 5210 CM

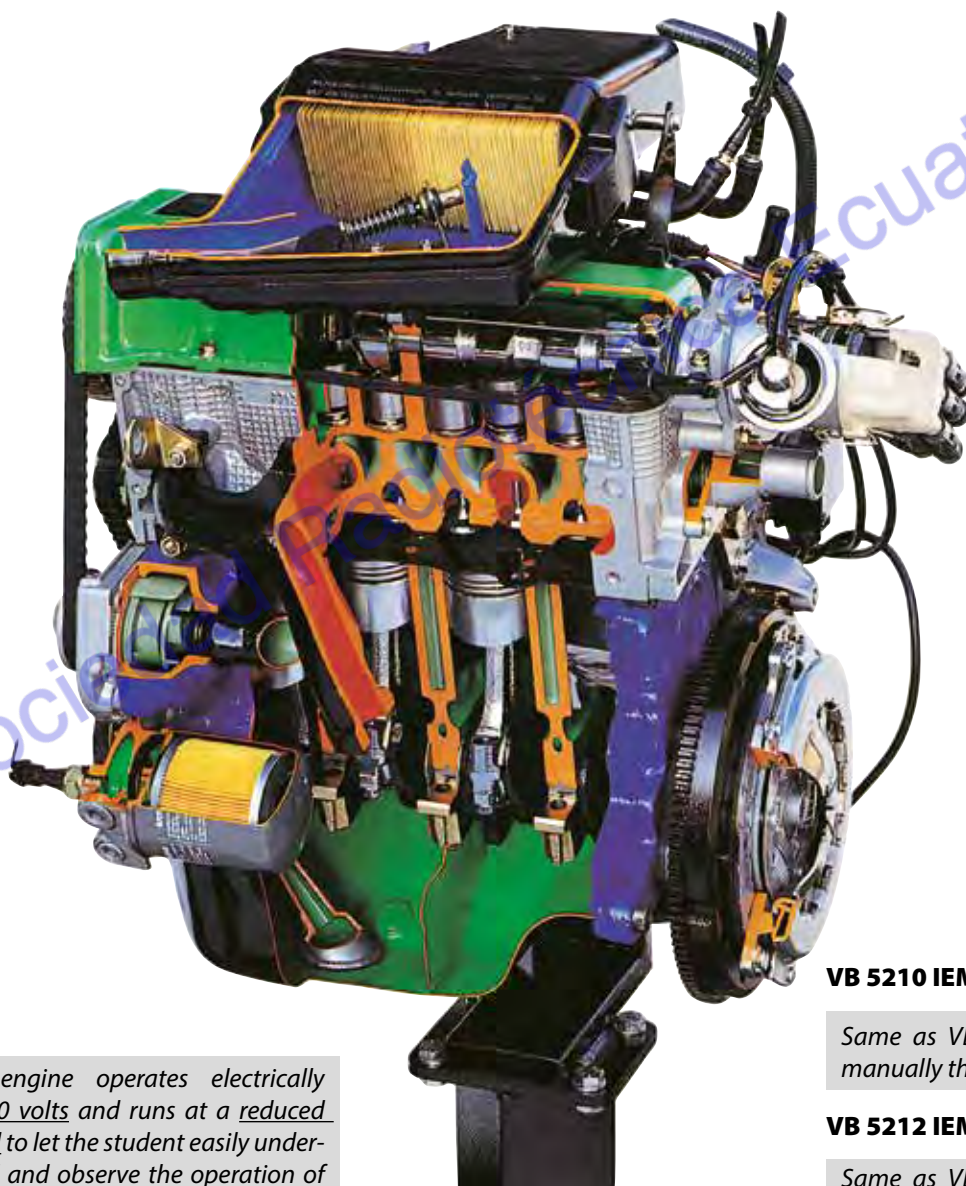
### Main technical specifications:

- 4 in-line cylinders
- Displacement: 1000/1300 cu. cm
- Overhead camshaft - OHC
- Carburettor
- Electronic ignition
- Alternator
- Toothed belt

## VB 5210 IEM - VB 5212 IEM

### Main technical specifications:

- 4 in-line cylinders
- Displacement 1245 cc
- Overhead camshaft - OHC
- Electronic injection
- Electronic ignition
- Toothed belt
- Alternator



The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

## VB 5210 CM

Same as VB 5210CE but operated manually through a crank handle.

## VB 5210 IEM

Same as VB 5210IEE but operated manually through a crank handle.

## VB 5212 IEM

Same as VB 5212IEE but operated manually through a crank handle.

## VB 5210 CM - VB 5210 IEM - VB 5212 IEM

### Approx. weight and dim.:

Cm: 67x87x85h  
 Net Weight: kg 60  
 Gross Weight: kg 120

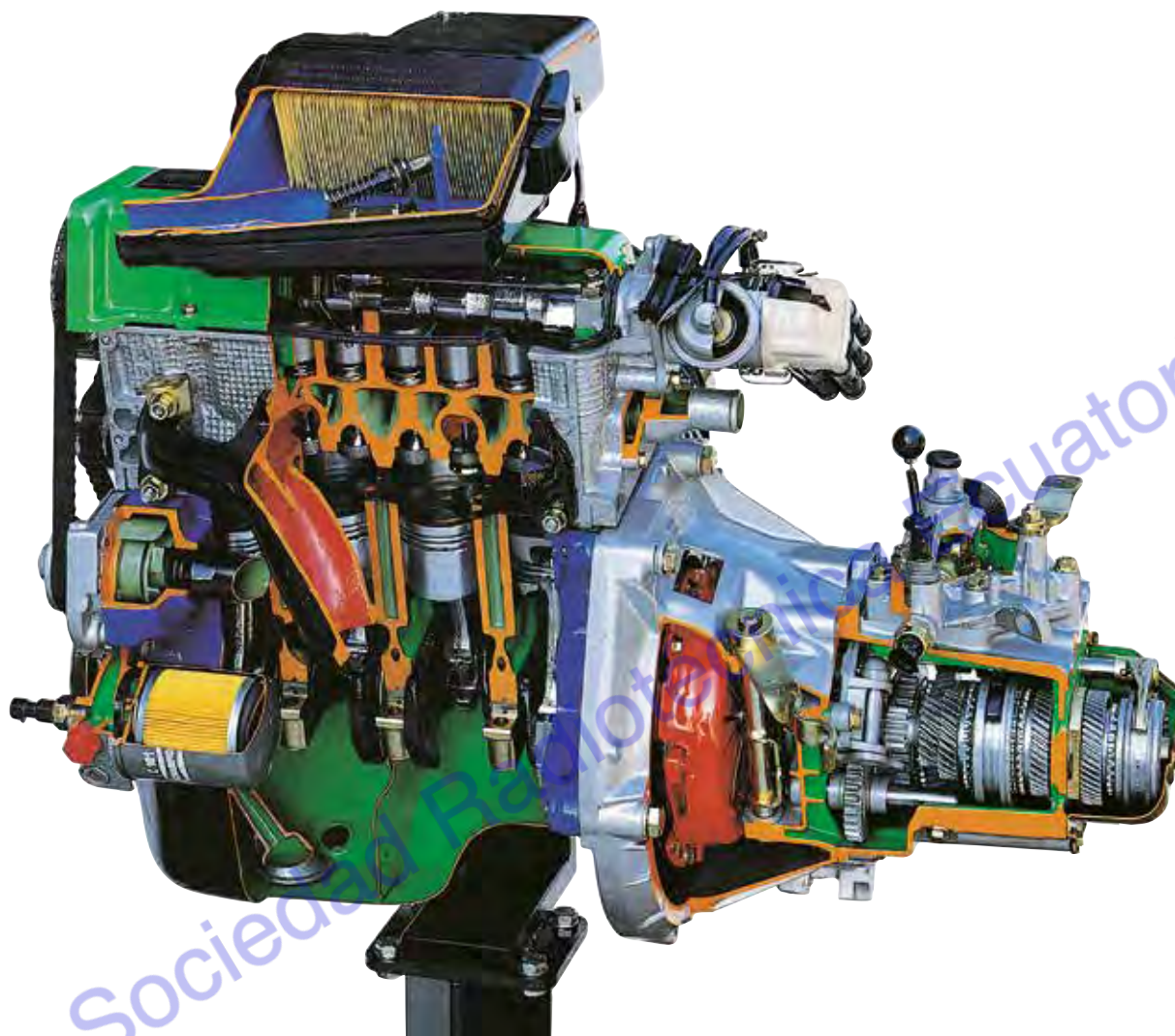
Indicative picture for reference only



**VB 5220 CE** FIAT PETROL ENGINE WITH **CARBURETTOR** + GEARBOX  
(on stand with wheels) - electrical

**VB 5222 IEE** FIAT PETROL ENGINE WITH **MULTI-POINT** ELECTRONIC INJECTION +  
GEARBOX (on stand with wheels) - electrical

Indicative picture for reference only



#### **VB 5220 CE**

##### **Main technical specifications:**

- 4 in-line cylinders
- Displacement: 1000/1300 cu. cm
- Overhead camshaft - OHC
- Carburettor
- Electronic ignition
- Timing belt distribution
- Gearbox: 5 forward speeds + reverse with differential

The engine operates electrically at 220 volts and run at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

#### **VB 5222 IEE**

##### **Main technical specifications:**

- 4 in-line cylinders
- Displacement: 1250 cc
- Overhead camshaft - OHC
- Electronic ignition
- Multi-point electronic injection
- Gearbox with 5F + R + differential

#### **VB 5220 CE**

##### **Approx. weight and dim.:**

Cm: 120x70x100h  
Net Weight: kg 90  
Gross Weight: kg 140

#### **VB 5222 IEE**

**VB 5222 IEE**

**VB 5220 C**

## INJECTION CHASSIS

**VB 5272E PETROL MULTI-POINT ENGINE CHASSIS WITH ABS AND HYDRAULIC POWER STEERING + WORKING LIGHT SYSTEM (on stand with wheels) - electrical**

**VB 5273E PETROL MULTI-POINT ENGINE CHASSIS WITH ABS AND HYDRAULIC POWER STEERING (on stand with wheels) - electrical**



Indicative picture for reference only

### VB 5272E

#### Main technical specifications:

- Fiat chassis with front drive (transversally mounted engine)
- Petrol engine, 4 cylinders, displacement: 1200 Cu. Cm, complete of all accessories
- Electronic injection MPI (Multipoint) and electronic ignition controlled by a single electronic ECU (engine control unit)
- Catalytic converter with oxygen (Lambda) sensor
- Gearbox: 5 forward speeds+reverse+ differential
- Hydraulic power steering with double-jointed steering column
- Brake system with 4 sensors ABS
- Radiator with electric fan
- Front-disc brake
- Rear-drum or disc brake
- Independent wheels McPherson front suspension with oscillating arms
- Rear independent suspensions with oscillating arms
- Working front and back lighting system controlled by a dashboard

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

### VB 5273E

Same as VB 5272E, but without light system.

### VB 5272E - VB 5273E

#### Approx. weight and dim.:

Cm:	220x160x115h
Net Weight:	kg 290
Gross Weight:	kg 400

The engine operates electrically 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

VB 5272 - VB 5273

## INJECTION CHASSIS

**VB 5274E STANDARD PETROL MULTI-POINT ENGINE CHASSIS WITH WORKING LIGHT SYSTEM (on stand with wheels) - electrical**

**VB 5275E STANDARD PETROL MULTI-POINT ENGINE CHASSIS (on stand with wheels) - electrical**

**VB 5274E****Main technical specifications:**

- Fiat chassis with front drive (transversally mounted engine)
- Petrol engine, 4 cylinders, displacement: 1200 Cu. Cm, complete of all accessories
- Electronic injection MPI (Multi-point) and electronic ignition controlled by a single electronic ECU (engine control unit)
- Catalytic converter with oxygen (Lambda) sensor
- Gearbox: 5 forward speeds+reverse+ differential
- Driving box gauge line with double-jointed steering column
- Radiator with electric fan
- Double circuit brake system with servo brake
- Front-disc brake
- Rear-drum brake
- Working front and rear light system controlled by a dashboard

**VB 5275E**

Same as VB 5274E, but without light system.

The engine operates electrically at 230 Volts/50Hz and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

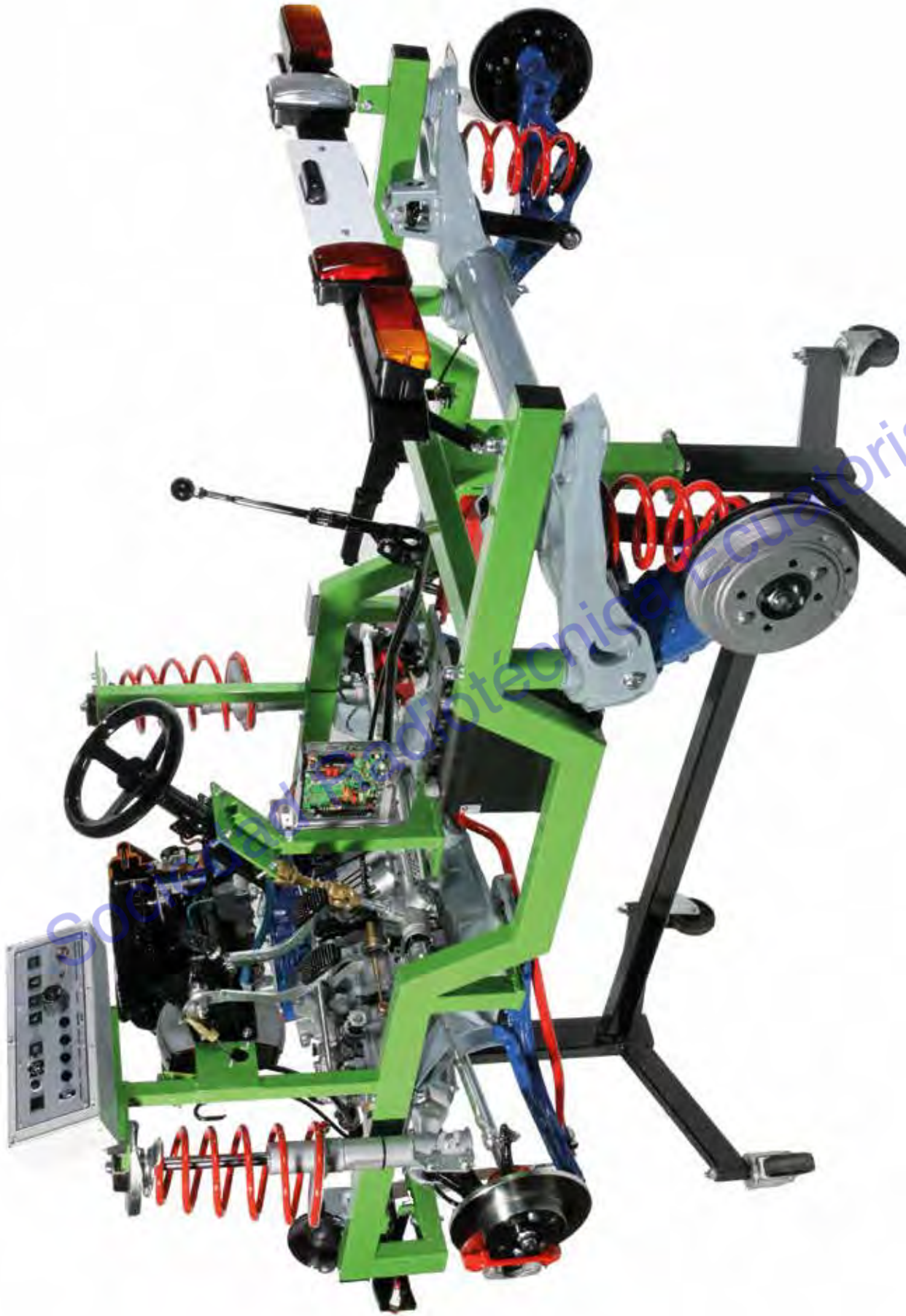
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**VB 5274E - VB 5275E:**  
**Approx. weight and dim.:**

Cm:	220x160x115h
Net Weight:	kg 290
Gross Weight:	kg 400

Indicative picture for reference only





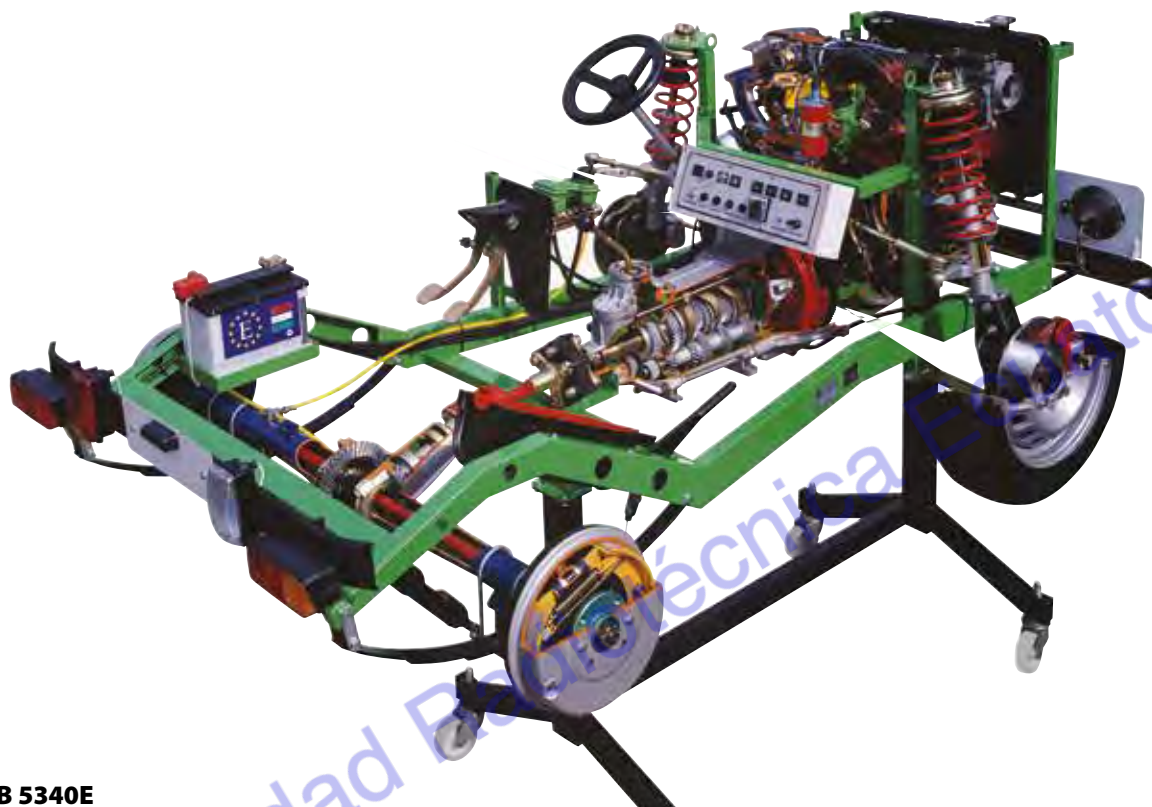
**VB 5274 - VB 5275**



## INJECTION CHASSIS

**VB 5340E** FIAT DOUBLE SHAFT (DOHC) WITH MULTI-POINT ELECTRONIC INJECTION WITH LIGHT SYSTEM (on stand with wheels) - electrical

**VB 5350E** FIAT DOUBLE SHAFT (DOHC) WITH MULTI-POINT ELECTRONIC INJECTION (on stand with wheels) - electrical



Indicative picture for reference only

### VB 5340E

#### Main technical specifications:

- 4-stroke petrol engine 4-cylinders
- Displacement: 2000 cu. cm or 1600 according to availab.
- Gearbox: 5 forward speeds + reverse
- Differential with hypoid crown wheel and pinion
- Twin overhead camshaft driven by a toothed belt
- Electronic ignition
- Dual braking circuit
- McPherson front suspension
- Front disc brakes and rear drum brakes
- Rack steering box
- Rear leaf spring suspension

#### Working light system

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc.

Many parts have been chromium, plated and galvanized for a longer life.

### VB 5350E

Same as VB 5340, but without working light system.

### VB 5340E - VB 5350E

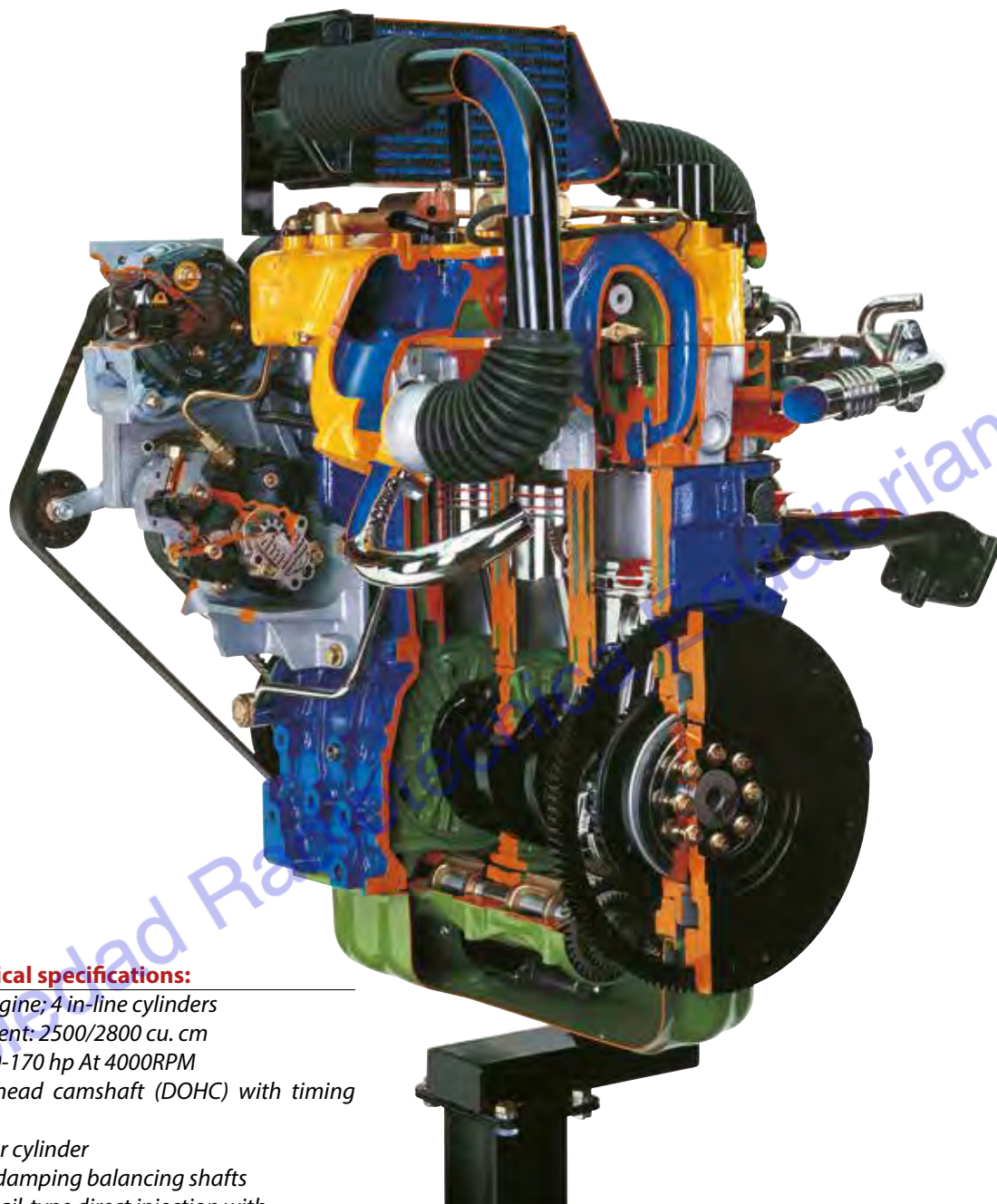
#### Approx. weight and dim.:

Cm:	145x220x100h
Net Weight:	kg 300
Gross Weight:	kg 420

**VB 5340 - VB 5350**

**VB 6010E 16 VALVE CHRYSLER TURBO DIESEL ENGINE WITH COMMON-RAIL INTERCOOLER (on stand with wheels) - electrical**

**VB 6010M 16 VALVE CHRYSLER TURBO DIESEL ENGINE WITH COMMON-RAIL INTERCOOLER (on stand with wheels) - manual**



Indicative picture for reference only

## VB 6010E

### Main technical specifications:

- 4 stroke engine; 4 in-line cylinders
- Displacement: 2500/2800 cu. cm
- Power: 150-170 hp At 4000RPM
- Twin overhead camshaft (DOHC) with timing belt
- 4 valves per cylinder
- Vibration-damping balancing shafts
- Common rail-type direct injection with electro-injectors
- Turbo-supercharger with air-air intercooler
- Alternator-oil filter-oil pump

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate among the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## VB 6010M

Same as VB 6010E but operated manually through a crank handle.

## VB 6010E - VB 6010M

### Approx. weight and dim.:

Cm:	90x90x120h
Net Weight:	kg 200
Gross Weight:	kg 270



**VB 6015E** FIAT/ALFA ROMEO 8 VALVE ENGINE with TURBO DIESEL COMMN-RAIL (on stand with wheels) –electrical

**VB 6015M** FIAT/ALFA ROMEO 8 VALVE ENGINE with TURBO DIESEL COM-MN-RAIL (on stand with wheels) – manual

**VB 6017E** FIAT/ALFA ROMEO 8 VALVE ENGINE with TURBO DIESEL COMMN-RAIL WITH FRONT DRIVE GEARBOX 5 SPEEDS + REVERSE + DIFFERENTIAL (on stand with wheels) – electrical



#### **VB 6015E**

##### **Main technical specifications:**

- 4 stroke engine; 4 in-line cylinders
- Displacement: 1900 cu. cm
- Power: 115 hp. At 4000 RPM
- Overhead camshaft (OHC) with timing belt
- 2 valves per cylinder
- Common rail-type direct injection with electro-injectors
- Turbo-supercharger
- Alternator-oil filter-oil pump

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

#### **VB 6017E**

##### **Main technical specifications:**

- 4 stroke engine; 4 in-line cylinders
- Displacement: 1900 cu. cm
- Power: 115 hp. At 4000 RPM
- Overhead camshaft (OHC) with timing belt
- 2 valves per cylinder
- Common rail-type direct injection with electro-injectors
- Turbo-supercharger
- Alternator-oil filter-oil pump
- Gearbox 5 speeds + reverse
- Differential
- Rear Drive gearbox on request

#### **VB 6015M**

Same as VB 6015E but operated electrically.

#### **VB 6015E - VB 6015M - VB 6017E**

##### **Approx. weight and dim.:**

Cm: 90x100x120h  
Net Weight: kg 150  
Gross Weight: kg 210

**VB 6015 - VB 6017**

**VB 6070E REAR DRIVE TURBO DIESEL ENGINE WITH CLUTCH GEARBOX**  
(on stand with wheels) - electrical

**VB 6071E REAR DRIVE DIESEL ENGINE WITH CLUTCH GEARBOX WITHOUT**  
**TURBOSUPERCHARGER** (on stand with wheels) - electrical

Indicative picture for reference only



**VB 6070 - VB 6071**

**VB 6070E**

**Main technical specifications:**

- 4 stroke engine; 4 cylinders in line
- Displacement: 1700 cu. cm
- Indirect injection
- Feeding by turbosupercharger
- VE Bosch type rotary injection pump
- Overhead camshaft (OHC)
- Distribution through a toothed belt
- Alternator
- Thermostatic valve
- Gearbox: 4 forward speeds + reverse
- Single-plate clutch with diaphragm
- Water cooling

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**VB 6070E - VB 6071E**

**Approx. weight and dim.:**

Cm:	60x160x100h
Net Weight:	kg 150
Gross Weight:	kg 210

**VB 6071E**

Same as VB 6070E but *without turbo-supercharger*.





## VB 6065E

### Main technical specifications:

- 4 stroke engine; 4 in-line cylinders
- Displacement: 1700 cu. cm
- Indirect injection
- VE Bosch type rotary injection pump
- Overhead camshaft (OHC)
- Distribution through a toothed belt
- Alternator
- Thermostatic valve
- Water cooling

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## VB 6065M

Same as VB 6065E but operated manually through a crank handle.

## VB 6065E - VB 6065M

### Approx. weight and dim.:

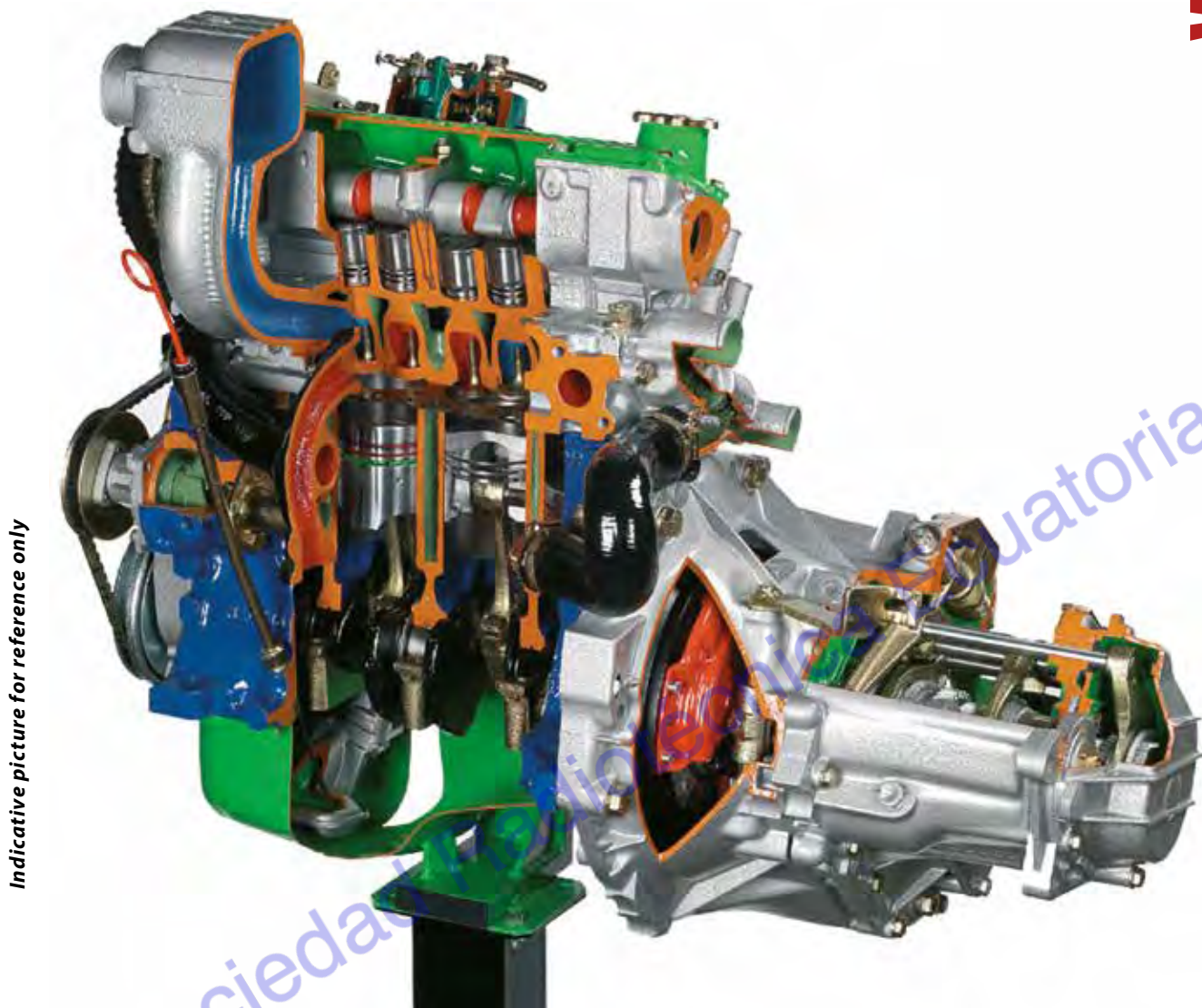
Cm:	85x130x100h
Net Weight:	kg 160
Gross Weight:	kg 220

Indicative picture for reference only



**VB 6068E FRONT DRIVE DIESEL ENGINE WITH CLUTCH-GEARBOX**  
(on stand with wheels) - electrical

**VB 6068**



Indicative picture for reference only

**VB 6068E**

**Main technical specifications:**

- 4 stroke engine; 4 in-line cylinders
- Displacement: 1400-1700 cu. cm
- Indirect injection
- VE Bosch type rotary injection pump
- Overhead camshaft (OHC)
- Distribution through a toothed belt
- Alternator
- Thermostatic valve
- Power: 45/70 cv
- Gearbox: 5 forward speeds + reverse and differential
- Single-plate clutch with diaphragm

The engine operates electrically at 220volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**VB 6068E**

**Approx. weight and dim.:**

Cm:	130x86x100h
Net Weight:	kg 140
Gross Weight:	kg 200

# VB 6075



## Main technical specifications:

- 4 stroke engine; 4 in-line cylinders
- Displacement: 2500 cu. cm
- Direct/indirect injection
- Feeding by turbo-supercharger
- VE Bosch type rotary injection pump
- Overhead camshaft (OHC)
- Distribution through a toothed belt
- Alternator
- Thermostatic valve
- Intercooler water-oil
- Water cooling

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## Approx. weight and dim.:

Cm:	90x100x120h
Net Weight:	kg 200
Gross Weight:	kg 260

Indicative picture for reference only



**VB 6077E 4 CYLINDERS DIESEL ENGINE FOR FARM TRACTOR**  
(on stand with wheels) - electrical

**VB 6077**

Indicative picture for reference only



**Main technical specifications:**

- 4 cylinders indirect injection
- OHV camshaft in the crankcase
- Bosch in-line injection pump
- Gear timing
- Water cooling
- Gear oil pump
- Displacement: 1900 cu. cm

*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

*The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.*

**Approx. weight and dim.:**

Cm:	90x100x100h
Net Weight:	kg 280
Gross Weight:	kg 340



**VB 6078E MERCEDES A CLASS TURBO DIESEL ENGINE 16 VALVES + GEARBOX**  
(on stand with wheels) – electrical

**VB 6078M MERCEDES A CLASS TURBO DIESEL ENGINE 16 VALVES + GEARBOX**  
(on stand with wheels) – manual



Indicative picture for reference only

### Main technical specifications:

- Mercedes A class diesel engine
- Direct injection
- 4 stroke, 4 cylinders
- Displacement: 1700 cc
- Double overhead camshaft (DOHC)
- 16 valves
- Timing chain
- Common rail turbo diesel
- Oil pump, water cooling
- Air filter with box
- Intake manifold, Air mass flow sensor
- Starter motor alternator
- Clutch
- Gearbox 5 forward speeds + reverse
- Differential

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

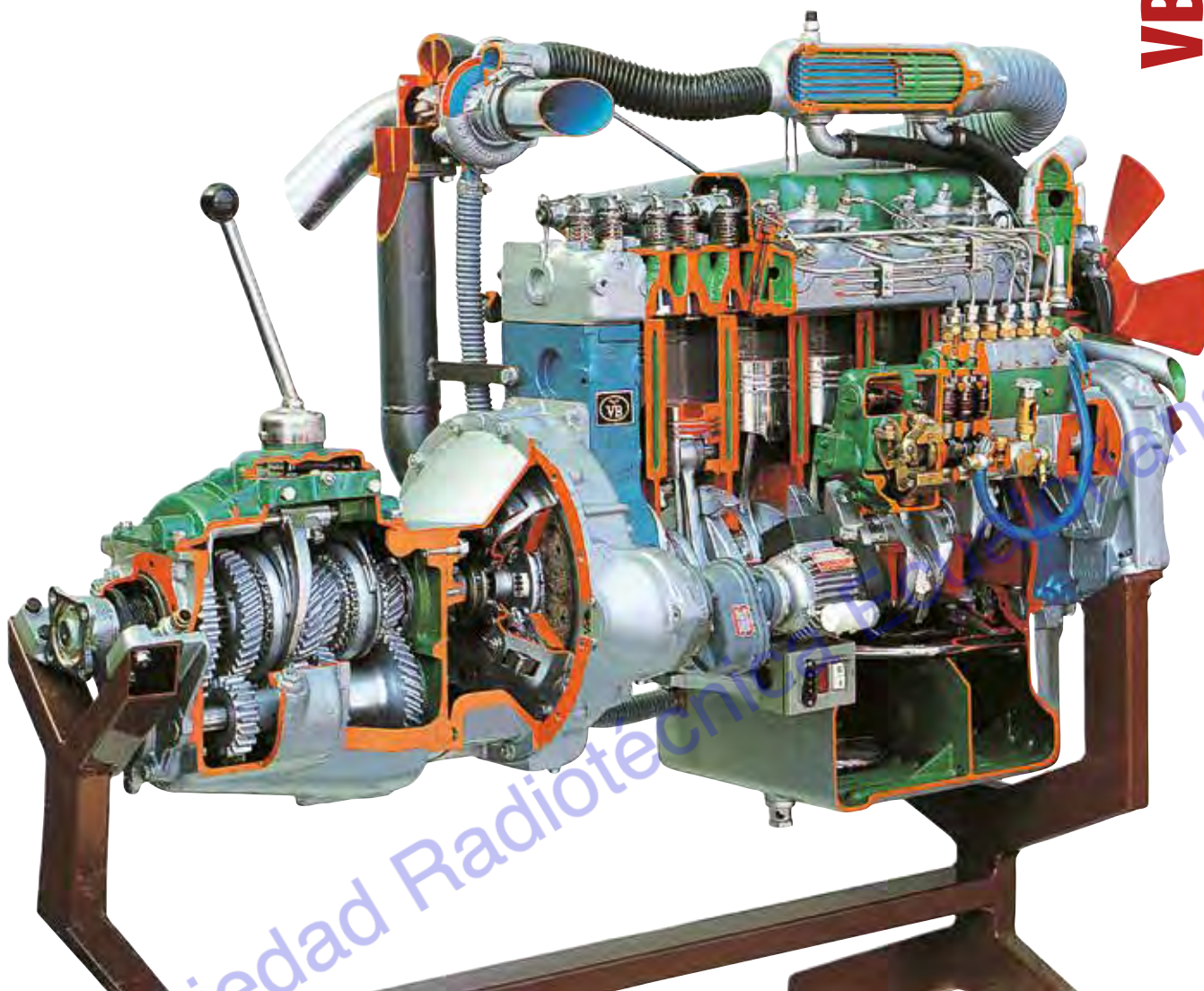
### Approx. weight and dim.:

Cm:	110x110x150h
Net Weight:	kg 200
Gross Weight:	kg 280

**VB 6080E 6 CYLINDERS INTERCOOLER TURBO DIESEL ENGINE 5200 CU.CM**  
(for trucks) (on a sturdy stand with wheels) - electrical

**VB 6080**

Indicative picture for reference only



**Main technical specifications:**

- 4 stroke engine; 6 in-line cylinders
- Displacement: 5200 cu. cm
- Direct injection
- Bosch type in-line injection pump with mechanical governor
- Intercooler air-air
- Camshaft in the crankcase
- Spring single-plate clutch
- Fuel fed by turbo-supercharger and intercooler
- Gearbox: 4 forward speeds + reverse
- Geared distribution

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**Approx. weight and dim.:**

Cm:	90x180x170h
Net Weight:	kg 450
Gross Weight:	kg 560



## VB 6083E 6 CYLINDERS DIESEL ENGINE TRUCK "IVECO" CURSOR WITH ELECTRONICALLY CONTROLLED PUMP INJECTORS (on a sturdy stand with wheels) - electrical



Indicative picture for reference only

### Main technical specifications:

- Displacement: 7790/10380 cu. Cm. according to what is available
- 4 stroke; 6 in-line cylinders
- 4 valves per cylinder
- Overhead camshaft (OHC)
- Water cooling
- Turbo-compressor
- Pump injectors electronically controlled
- Pre-heating device

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

### Approx. weight and dim.:

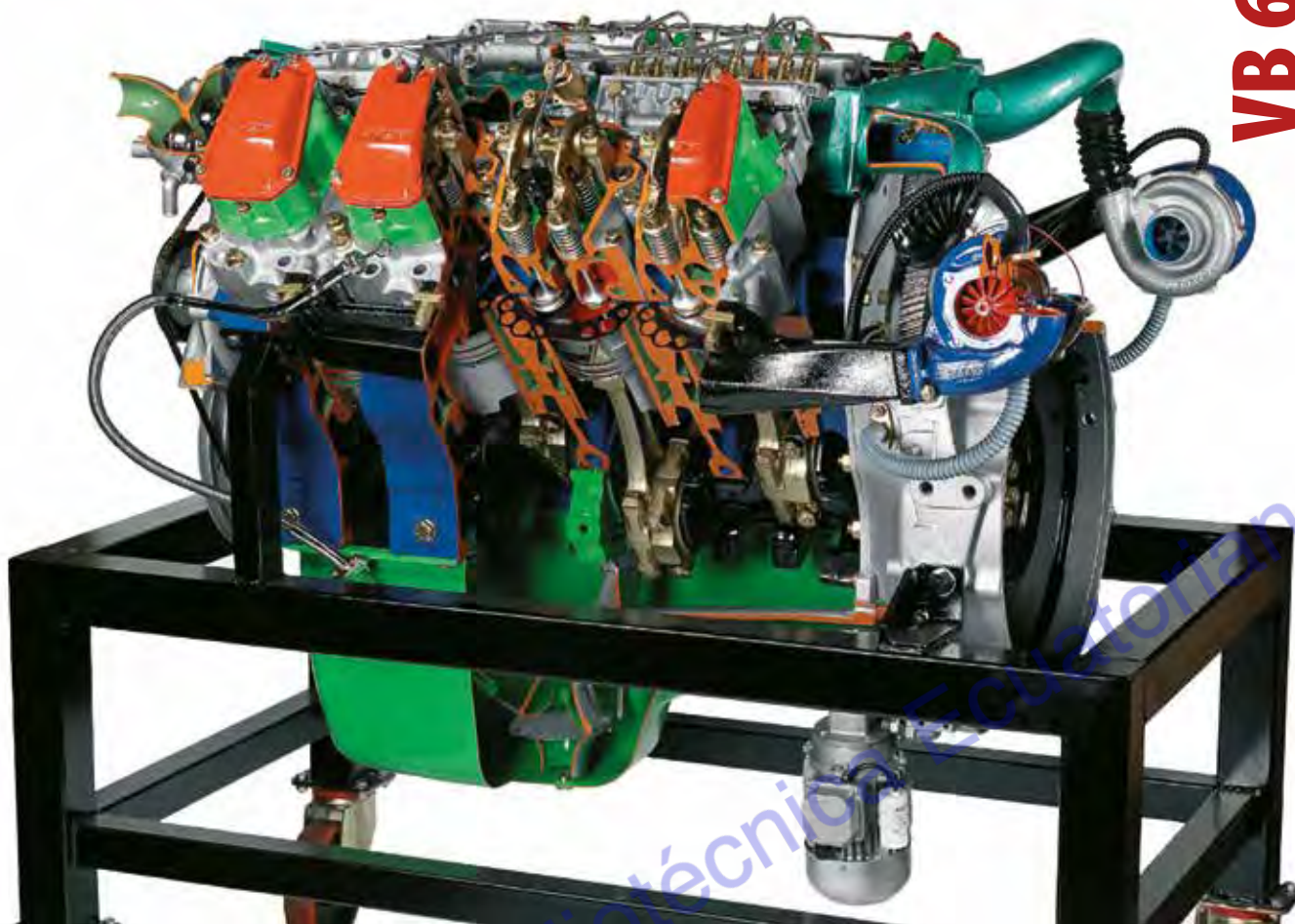
Cm:	200x105x150h
Net Weight:	kg 950
Gross Weight:	kg 1200



**VB 6084E 8 V CYLINDERS TURBO DIESEL ENGINE FOR TRUCK "IVECO TURBOSTAR  
190-38" 17.200 CU.CM (on a sturdy stand with wheels) - electrical**

**VB 6084**

Indicative picture for reference only



**Main technical specifications:**

- 4 strokes, 8 V cylinders
- Displacement: 17.200 cu. cm
- Power: 380 hp
- Direct injection
- Bosch type in-line injection pump with mechanical governor
- Intercooler water-oil
- 4 valves per cylinder
- Camshaft in the crankcase
- 2 turbo-superchargers
- Geared distribution



The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

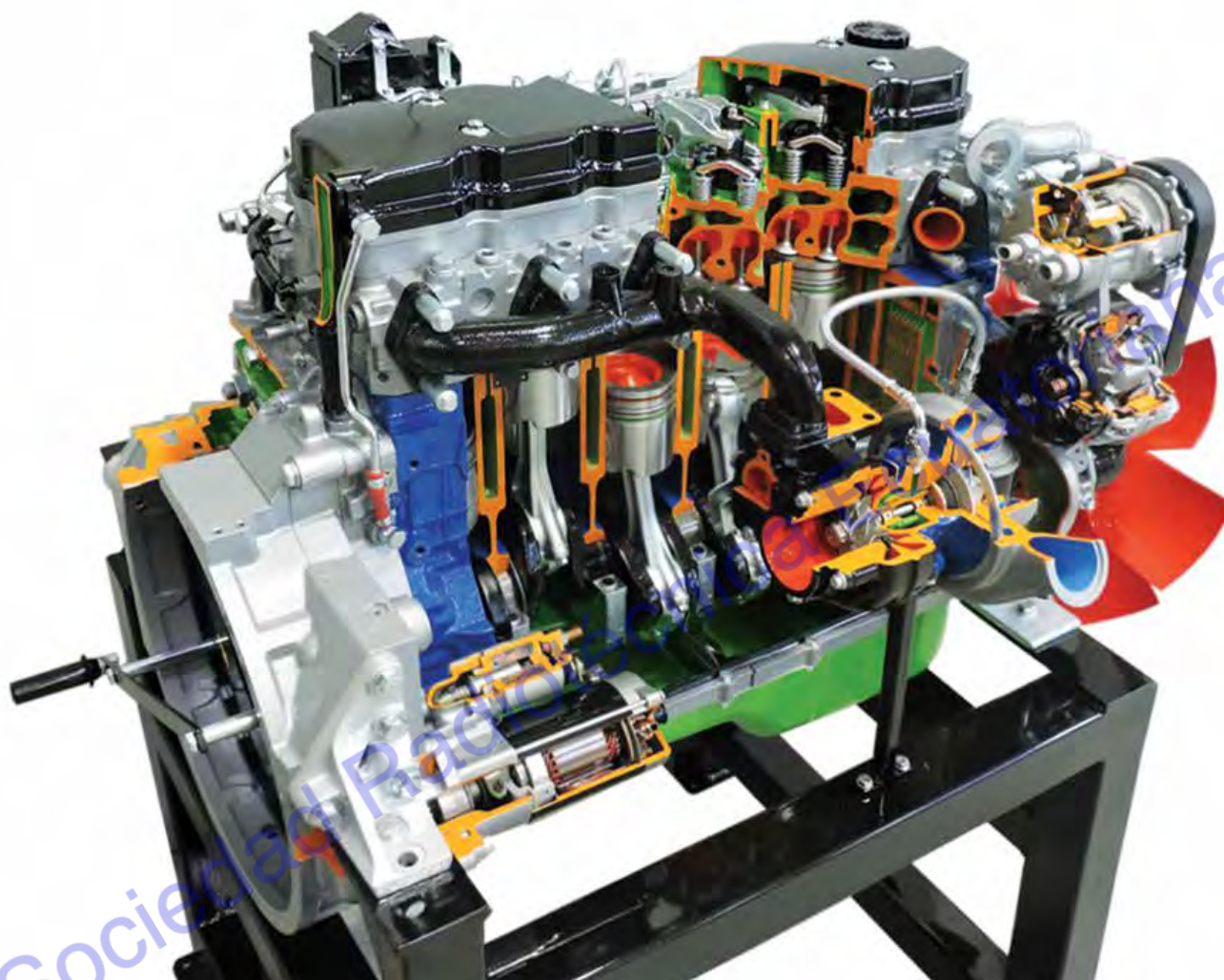
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**Approx. weight and dim.:**

Cm:	120x185x150h
Net Weight:	kg 1100
Gross Weight:	kg 1400

**VB 6091E 6 CYLINDERS TURBO DIESEL COMMON RAIL ENGINE FOR IVECO TRUCKS (on stand with wheels) – electrical**

**VB 6091M 6 CYLINDERS TURBO DIESEL COMMON RAIL ENGINE FOR IVECO TRUCKS (on stand with wheels) – manual**



Indicative picture for reference only

### Main technical specifications:

- Displacement: 5900 Cm. cu
- 6 cylinders in-line with direct injection
- Camshaft in the crankcase (OHV)
- Geared timing
- 4 valves per cylinder
- Bosch common-rail injection
- Waste-gate turbocharger
- Alternator
- Air compressor
- Engine oil rotor pump
- Flange power steering pump
- Air conditioning pump
- Cooling fan with viscous joint

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

### Approx. weight and dim.:

Cm:	140x100x165h
Net Weight:	kg 510
Gross Weight:	kg 630



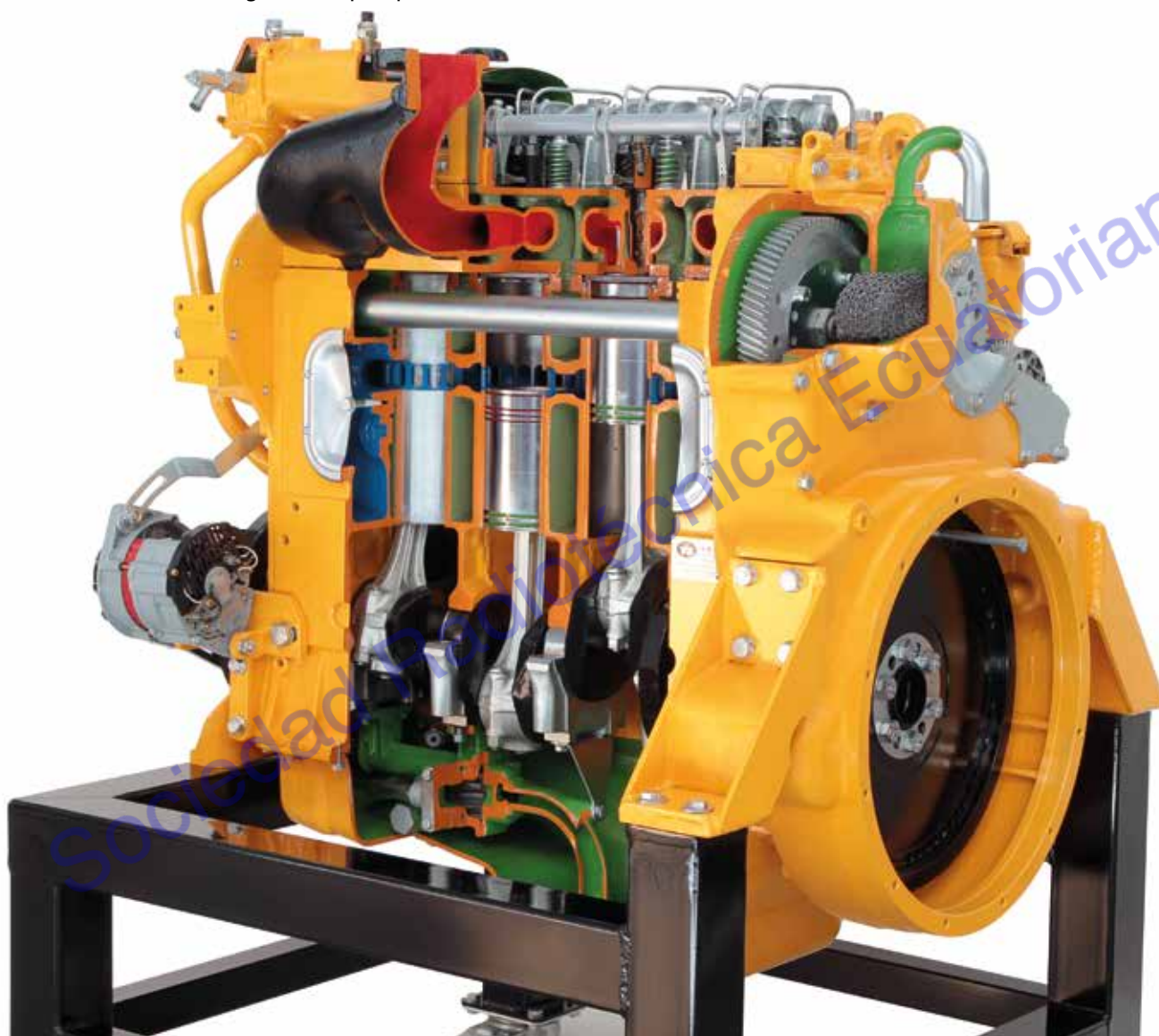
## **VB 6122E 2 STROKE 4 CYLINDERS DETROIT DIESEL ENGINE** **(on stand with wheels) - electrical**

Accurate section of a real industrial engine produced by the American Detroit Diesel; this engine is widely used in industrial and nautical fields.

The following components are clearly shown and highlighted:

- Air intake channels
- Lobe-type volumetric compressor
- Exhaust valves (2 or 4 per cylinder) controlled by camshaft in the monobloc
- Direct injection by means of a pump/injector for each cylinder
- Vibration-damping balancing shafts
- Water cooling with centrifugal pump
- Lubrication circuit with geared oil pump

Indicative picture for reference only



*The engine operates electrically by means of a 220V gear-motor.*

### **Approx. weight and dim.:**

Cm:	110x100x150h
Net Weight:	kg 630
Gross Weight:	kg 780





**VB 6140E FIAT TURBO DIESEL REAR DRIVE CHASSIS**  
(on a sturdy stand with wheels) - electrical

**VB 6150E FIAT DIESEL REAR DRIVE CHASSIS WITHOUT TURBOSUPERCHARGER**  
(on a sturdy stand with wheels) - electrical

**VB 6160E FIAT TURBO DIESEL REAR DRIVE CHASSIS WITH WORKING LIGHT SYSTEM** (on a sturdy stand with wheels) - electrical

**VB 6170E FIAT DIESEL REAR DRIVE CHASSIS WITHOUT TURBOSUPERCHARGER + WORKING LIGHT SYSTEM** (on a sturdy stand with wheels) - electrical



Indicative picture for reference only

## VB 6140E

### Main technical specifications:

- 4 stroke engine; 4 in-line cylinders
- Displacement: 1700 cc
- Gearbox: 5 forward speeds+reverse
- Single-plate clutch with diaphragm
- Propeller shaft with mechanical and flexible joint
- Hypoid differential
- Front disc brakes; rear drum brakes with double circuit
- Rear leaf spring suspension
- McPherson suspension front
- Rack steering gear

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## VB 6150E

Same as VB 6140E without turbo-supercharger.

## VB 6160E

Same as VB 6160E complete with working light system, regulation light, rear fog lights, reverse and emergency lights, etc...

The electrical controls are assembled on a dashboard complete with warning lights.

## VB 6170E

Same as VB 6150E complete with working lighting system, regulation light, rear fog lights, reverse and emergency lights, etc...

The electrical controls are assembled on a dashboard complete with warning lights.

## VB 6140E - VB 6150E - VB 6160E - VB 6170E

### Approx. weight and dim.:

Cm:	145x220x100h
Net Weight:	kg 420
Gross Weight:	kg 560

**VB 6175E FIAT TURBO DIESEL CHASSIS WITH FRONT DRIVE AND WORKING LIGHT SYSTEM (on a sturdy stand with wheels) - electrical**

**VB 6176E FIAT TURBO DIESEL CHASSIS WITH FRONT DRIVE (on a sturdy stand with wheels) - electrical**



Indicative picture for reference only

**VB 6175E**

**Main technical specifications:**

- Fiat chassis with front drive (engine transversally mounted)
- Diesel engine displacement: 1700 cu. Cm.; 4 cylinders
- Indirect injection with pre-chamber
- Bosch VE rotary injection pump
- Turbo-compressor with waste-gate valve
- Gearbox: 5 forward speed+reverse+differential
- Hydraulic power steering with double-jointed steering column
- Radiator with electric fan
- Front disc brake
- Rear drum brake
- Independent wheels McPherson front suspension with oscillating arms
- Rear independent suspension with coil spring and gas shock absorbers
- Front and rear working light system controlled by a dashboard

The engine operates electrically at 230 volts/50Hz and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts. ELECTRICAL SYSTEM IN COMPLIANCE WITH EC STANDARDS

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium plated and galvanized for a longer life.

**VB 6176E**

Same as VB 6175E, without light system.

**Upon Customer's request, it can be provided with ABS**

The electrical controls are assembled on a dashboard complete with warning lights.

**VB 6175E - VB 6176E**

**Approx. weight and dim.:**

Cm:	220x160x115h
Net Weight:	kg 400
Gross Weight:	kg 545

**VB 6175 - VB 6176**





Indicative picture for reference only

Careful and complete section of the "Guzzi" motorcycle with V-type twin-cylinder 350/500 cu. cm. engine. All internal parts are clearly shown: battery, tank, silencer, suspensions, carburettor, coil, pistons, connecting rods, driving shaft, gearbox, selector, etc.

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

### Approx. weight and dim.:

Cm:	200x70x130h
Net Weight:	kg 160
Gross Weight:	kg 230



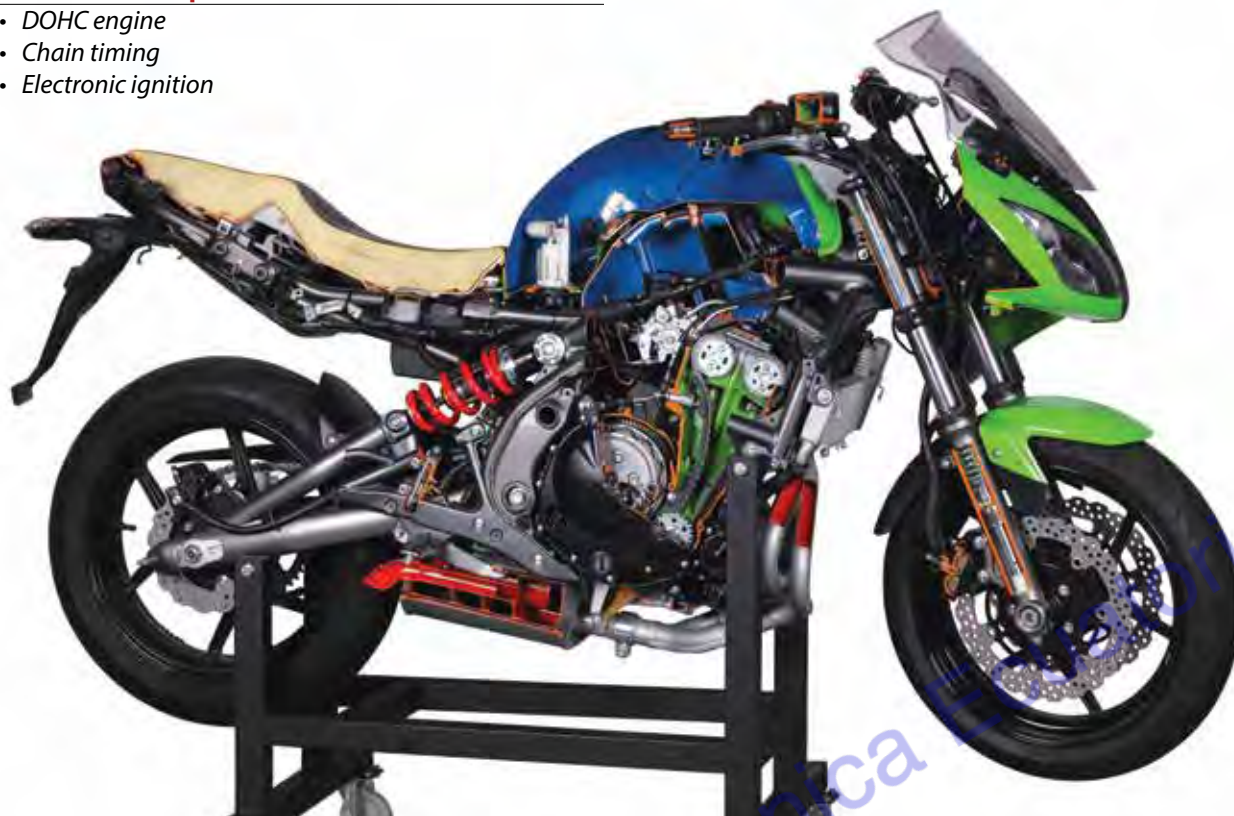
**VB 7850M 2/3/4 CYLINDERS MOTORCYCLE DOHC CHAIN TIMING KAWASAKI**  
**-HONDA-YAMAHA BRAND (on stand with wheels) - manual**

According availability

**Main technical specifications:**

- DOHC engine
- Chain timing
- Electronic ignition

**VB 7850**



*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

Indicative picture for reference only

**VB 7810M CVT ENGINE 4 STROKES SINGLE-CYLINDER with CARBURETTOR**  
(on stand with wheels)

**VB 7815M CVT ENGINE 4 STROKES SINGLE-CYLINDER with ELECTRONIC INJECTION** (on stand with wheels)

**VB 7830M CVT ENGINE 2 STROKES SINGLE-CYLINDER with CARBURETTOR**  
(on stand with wheels)

**Main technical specifications:**

- Electronic ignition
- Water cooling system
- CVT automatic clutch
- Disc brake
- Silencer
- Manual functioning through crank handle



*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium plated and galvanized for a longer life.*

**Approx. weight and dim.:**

Cm:	100x60x80h
Net Weight:	kg 50
Gross Weight:	kg 75

**VB 7831S CVT TRANSMISSION (on stand with wheels) – static**

Static model of a Continuously Variable Transmission used on small motorcycle.

The following components are shown:

- Driving wheels
- Driven pulley
- Centrifugal masses
- Belt



**Approx. weight and dim.:**

Cm:	160x30x40h
Net Weight:	kg 12
Gross Weight:	kg 18

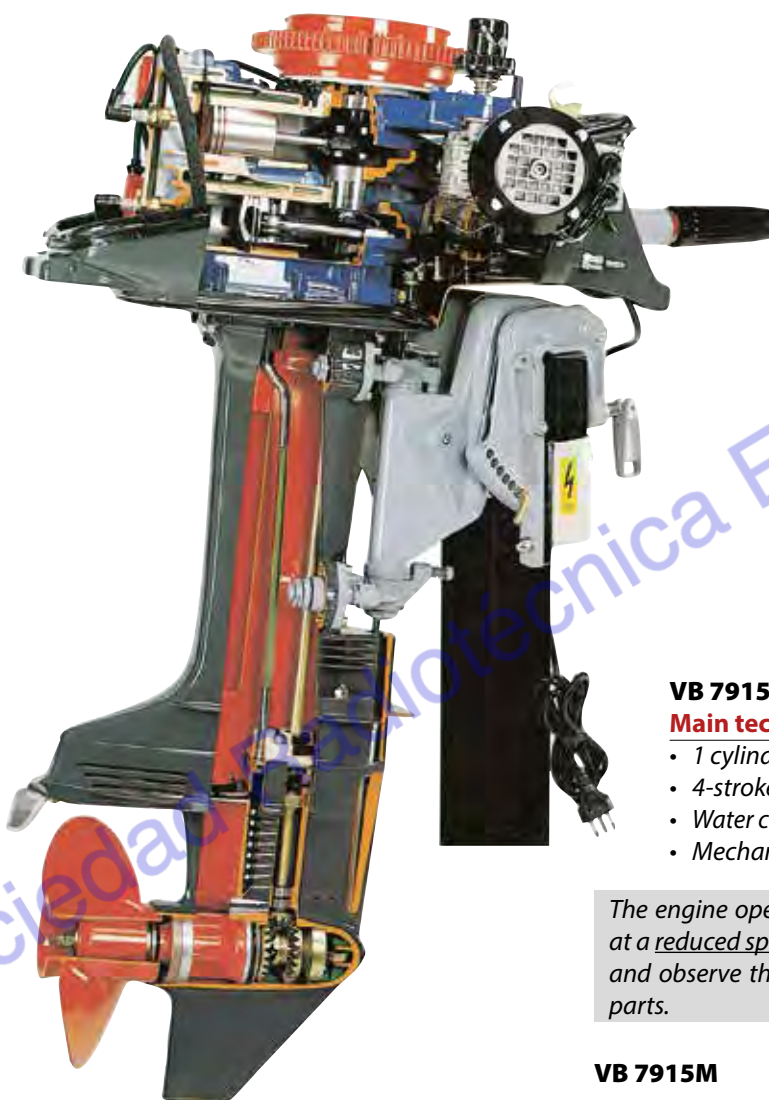


**VB 7900E MARINE OUTBOARD ENGINE 2 STROKES** (on stand with wheels)  
- electrical

**VB 7900M MARINE OUTBOARD ENGINE 2 STROKES** (on stand with wheels)  
- manual

**VB 7915E MARINE OUTBOARD ENGINE 4 STROKES** (on stand with wheels)  
- electrical

**VB 7915M MARINE OUTBOARD ENGINE 4 STROKES** (on stand with wheels)  
- manual



## VB 7900E

### Main technical specifications:

- 2/3 cylinders
- 2-stroke engine
- Water cooling system with centrifugal pump
- Mechanical type converter

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

## VB 7900M

Same as VB 7900 but operated manually through a crank handle.

## VB 7915 E

### Main technical specifications:

- 1 cylinder
- 4-stroke engine
- Water cooling system with centrifugal pump
- Mechanical type converter

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

## VB 7915M

Same as VB7915E but operated manually through a crank handle.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## VB 7900E - VB 7900M - VB 7915E - VB 7915M

### Approx. weight and dim:

Cm:	80x80x150h
Net Weight:	kg 60
Gross Weight:	kg 100

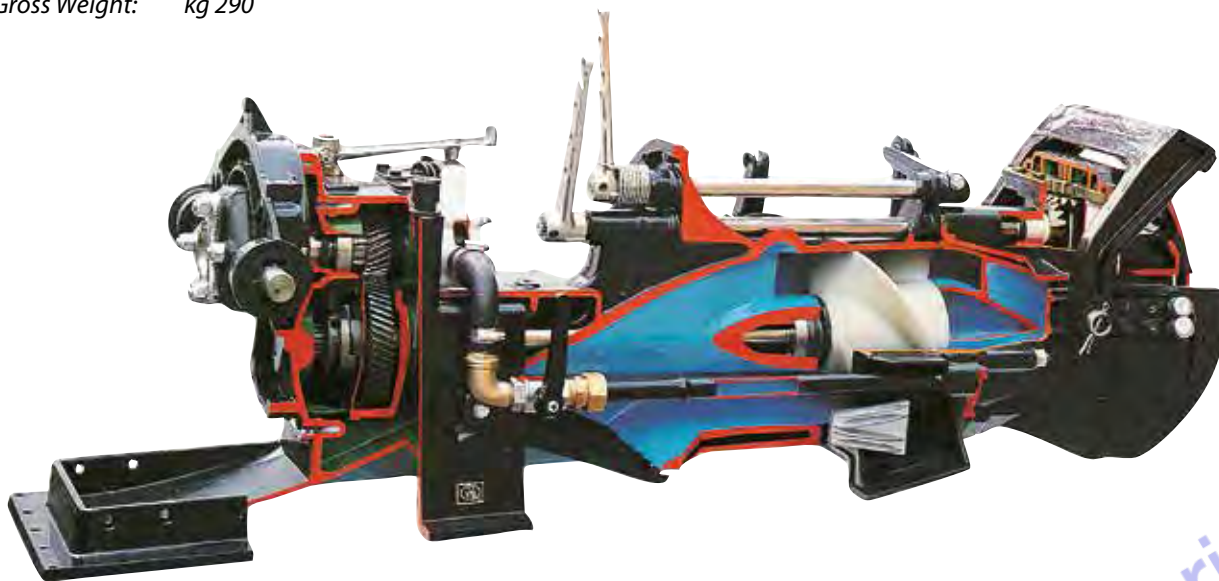
Indicative picture for reference only



## VB 7920M HYDROJET (on stand with wheels) - manual

### Approx. weight and dim:

Cm: 200x60x120h  
Net Weight: kg 220  
Gross Weight: kg 290



VB 7920

"Castoldi" jet drive marine propeller. The unit is carefully sectioned to show every detail.

The engine is operated manually through a crank handle.

## VB 7930M OUTBOARD MARINE REVERSER (on base) - manual

Mechanical type reverse, universal type, installed on marine outboard motors.

The engine is operated manually through a crank handle.

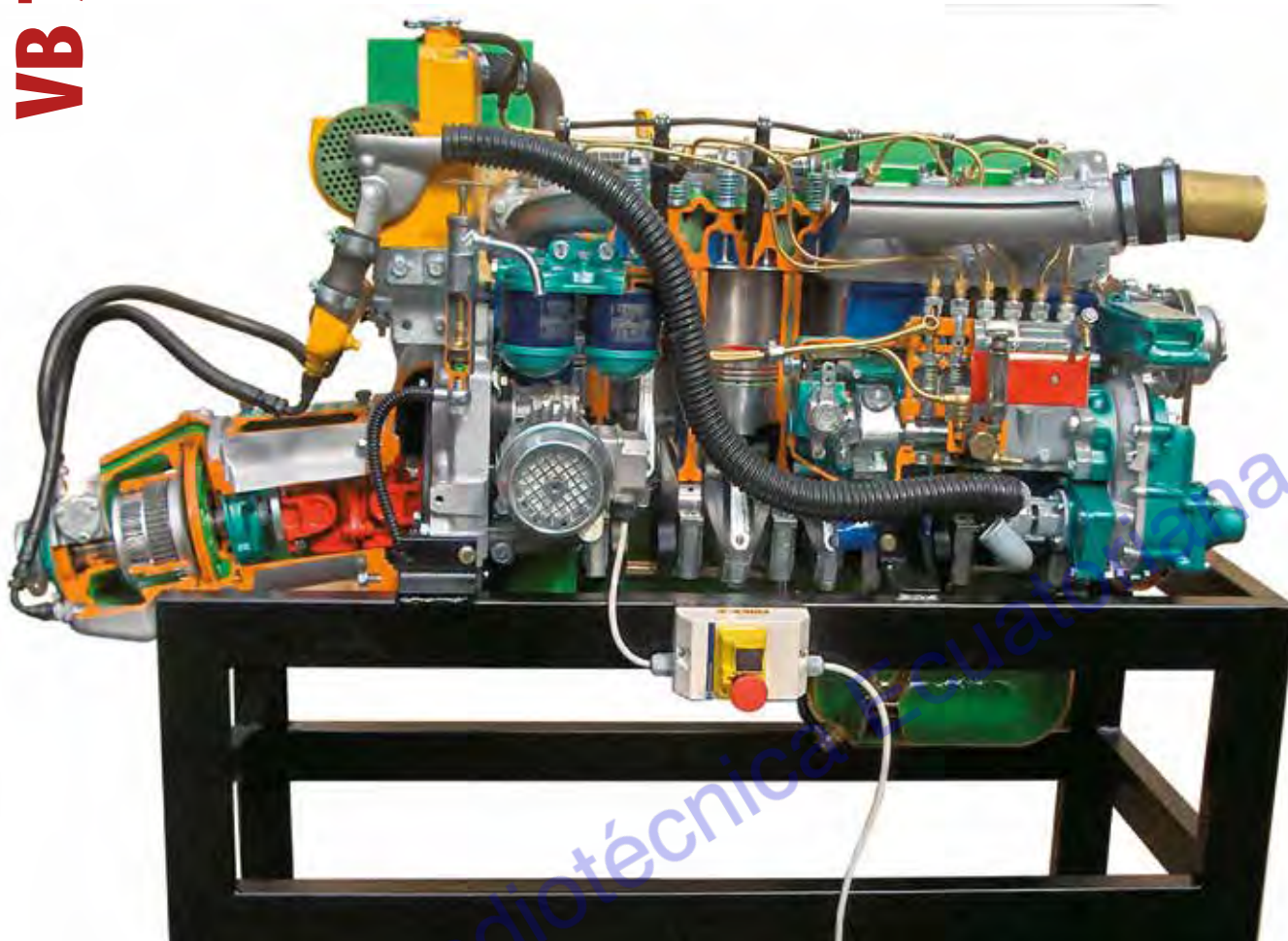
### Approx. weight and dim:

Cm: 50x40x75h  
Net Weight: kg 8  
Gross Weight: kg 15



VB 7930

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits. Many parts have been chromium, plated and galvanized for a longer life.



Indicative picture for reference only

## Main technical specifications:

*4 cylinders in line engine or 6 cylinders in line engine according to market availability.  
Complete of accessories and closed circuit.*

*The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.*

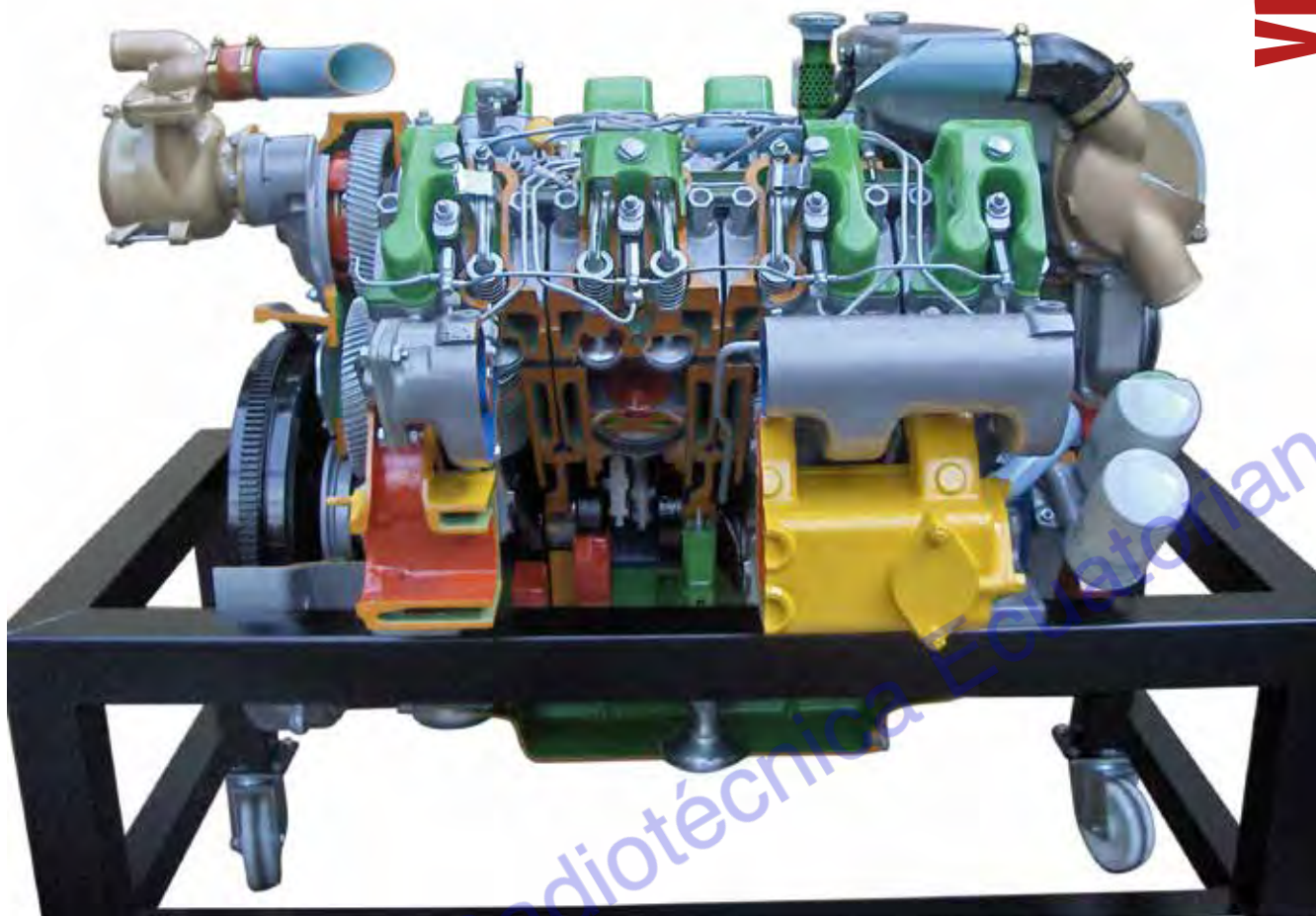
*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours*

*to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

*Packing details are provided upon request according to the engine type (4 or 6 cylinders).*

**VB 7950E MARINE INBOARD DIESEL ENGINE 6/8 V-CYLINDERS WITHOUT  
INVERTER (on stand with wheels) - electrical**

**VB 7950**



Indicative picture for reference only

**Main technical specifications:**

6 V-cylinders engine or 8 V-cylinders engine according to market availability.

Complete of accessories and closed cooling circuit.

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours

to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

Packing details are provided upon request according to the engine type (6 or 8 cylinders).





Indicative picture for reference only

Accurate section of a small tractor with several interesting technical features for educational purposes.

#### Main technical specifications:

- 4-stroke diesel engine 20hp/ 16Kw
- water cooling system
- lubrication of trochoid pump
- in-line injection pump
- dry single-disc clutch
- Gearbox: 6 speeds + 2 reverse with gear reducer
- 2 speed power take-off
- rear differential with mechanical locking
- possibility of disengaging the front drive
- rear drum brakes
- sector steering gear box
- hydraulic lifter

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

#### Approx. weight and dim.:

Cm:	190x110x160h
Net Weight:	kg 345
Gross Weight:	kg 500

**VB 8300E "MASSEY-FERGUSON" / "LANDINI" FARM TRACTOR 4 DRIVING WHEELS**  
(on stand with wheels) - electrical

**VB 8300**

Indicative picture for reference only



**Main technical specifications:**

- 4 cylinders Perkins diesel engine
- direct injection
- CAV rotary injection pump
- single-disc clutch
- speed gear with reduction unit
- rear hydraulic lifter with rear differential locking and insertion of the front drive
- PTO

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

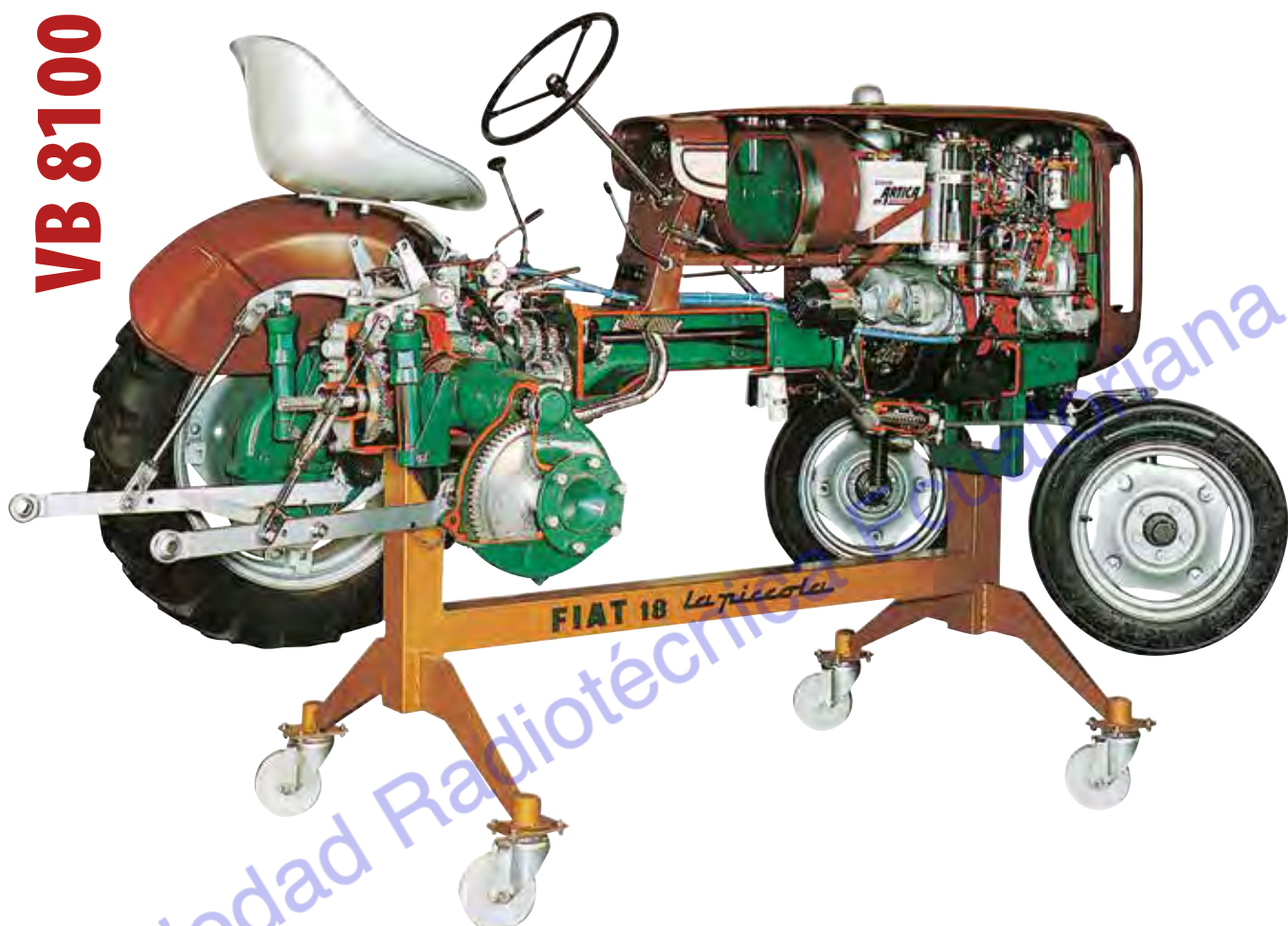
**Approx. weight and dim.:**

Cm: 360x185x215h  
Net Weight: kg 2000  
Gross Weight: kg 2470



**VB 8100E** TYRE-WHEELED FARM TRACTOR WITH DIESEL ENGINE - FIAT "La Piccola" (on stand with wheels) - electrical

**VB 8110E** TYRE-WHEELED FARM TRACTOR WITH DIESEL ENGINE - FIAT "La Piccola" + HYDRAULIC HOIST (on stand with wheels) - electrical



Indicative picture for reference only

## VB 8100E

### Main technical specifications:

- 4-stroke – 2 cylinders engine
- Indirect injection
- Water cooling system
- Overhead valves
- In-line injection pump
- Conical and sector and pinion type steering system
- Gearbox: 6 forward speeds + 2 reverse

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## VB 8110E

Same as VB 8100E with hydraulic hoist.

## VB 8100E - VB 8110E

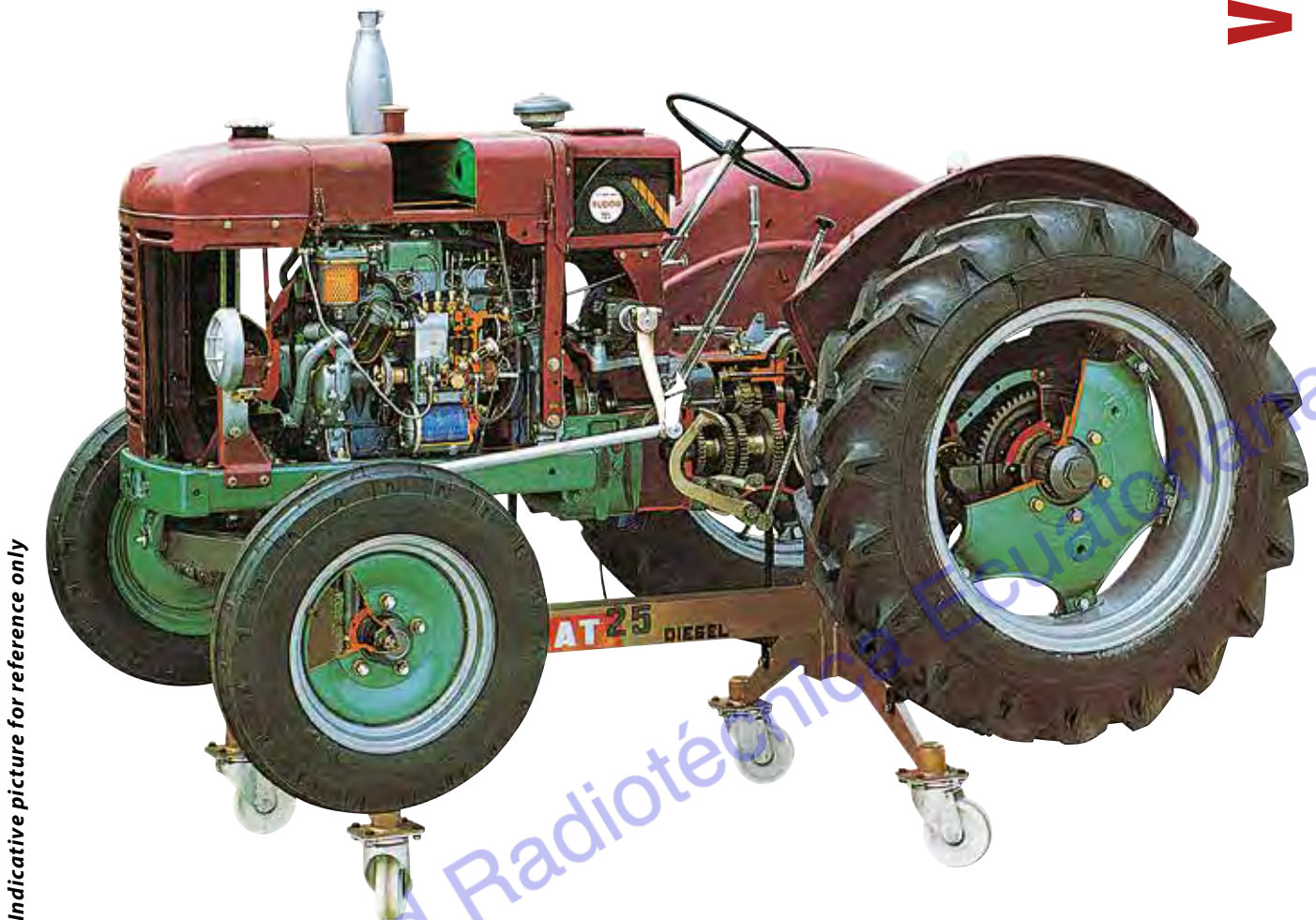
### Approx. weight and dim.:

Cm:	265x160x180h
Net Weight:	kg 650
Gross Weight:	kg 830



**VB 8200E TYRE-WHEELED FARM TRACTOR WITH DIESEL ENGINE - FIAT 25R**  
(on stand with wheels) - electrical

**VB 8200**



Indicative picture for reference only

**Main technical specifications:**

- 4-stroke – 4 cylinders engine
- Displacement: 2000 cu.cm
- Indirect injection
- Water cooling system
- Overhead valves
- In-line injection pump
- Globe-shaped steering box
- Gearbox: 4 forward speeds + reverse

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

**Approx. weight and dim.:**

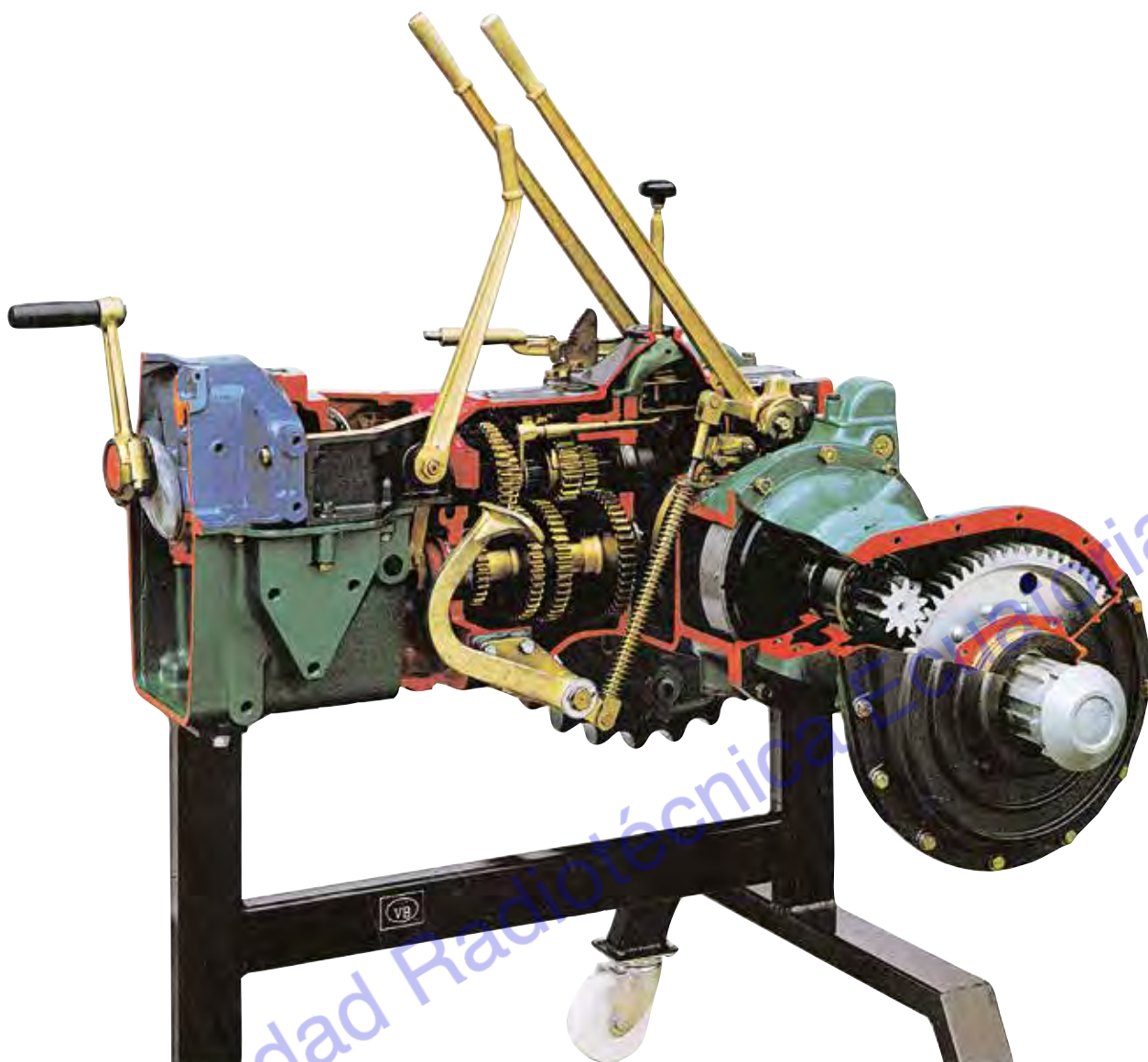
Cm:	220x172x180h
Net Weight:	kg 1030
Gross Weight:	kg 1250

**VB 8360M TRACKED TRACTOR TRANSMISSION (on stand with wheels) - manual**

**VB 8370M WHEELED TRACTOR TRANSMISSION (on stand with wheels) - manual**

**VB 8360 - VB 8370**

Indicative picture for reference only



**VB 8360M**

**Main technical specifications:**

- Clutch unit
- Gearbox
- Pinion gear – ring gear
- Steering clutch
- Final reducer

The engine is operated manually through a crank handle.

**VB 8360M**

**Approx. weight and dim.:**

Cm: 140x125x150h  
Net Weight: kg 450  
Gross Weight: kg 610

*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits. Many parts have been chromium, plated and galvanized for a longer life.*

**VB 8370M WHEELED TRACTOR TRANSMISSION**

**Main technical specifications:**

- Clutch unit
- Gearbox
- Pinion gear – ring gear
- Differential units axle shafts with band brakes
- Final reducer

The engine is operated manually through a crank handle.

**VB 8370M**

**Approx. weight and dim.:**

Cm: 145x170x120h  
Net Weight: kg 480  
Gross Weight: kg 590





### Main technical features:

- 2 stroke engine with carburettor
- Centrifugal clutch
- Oil pump for chain lubrication
- Electronic ignition
- Safety system

*Operated manually through a crank handle.*

### Approx.weight and dim.:

Cm: 90x30x35h  
 Net Weight: kg 5  
 Gross Weight: kg 10

## VB8390E TRANSPLANTER (on stand with wheels) – electrical



CUTAWAY MODEL OF A TRANSPLANTER MOD TU140 MONODRIVE  
 1 ROW: ELEMENT WITH OSCILLATION AND ADJUSTABLE COMPRESSION SPRING  
 MECHANICAL TRANSMISSION  
 FIXED FRAME TF  
 DISTRIBUTION SYSTEM CHAIN HOLDER OF 40 LINKS (CLAMPS EXCLUDED)  
 QUICK ADJUSTMENT OF RIDDING WHEELS  
 DRAWER QUICK ADJUSTMENT OF RIDDING WHEELS  
 STANDARD PLANT BOX  
 PADDED SEAT WITH BACKREST  
 STANDARD S MODEL FURROWER



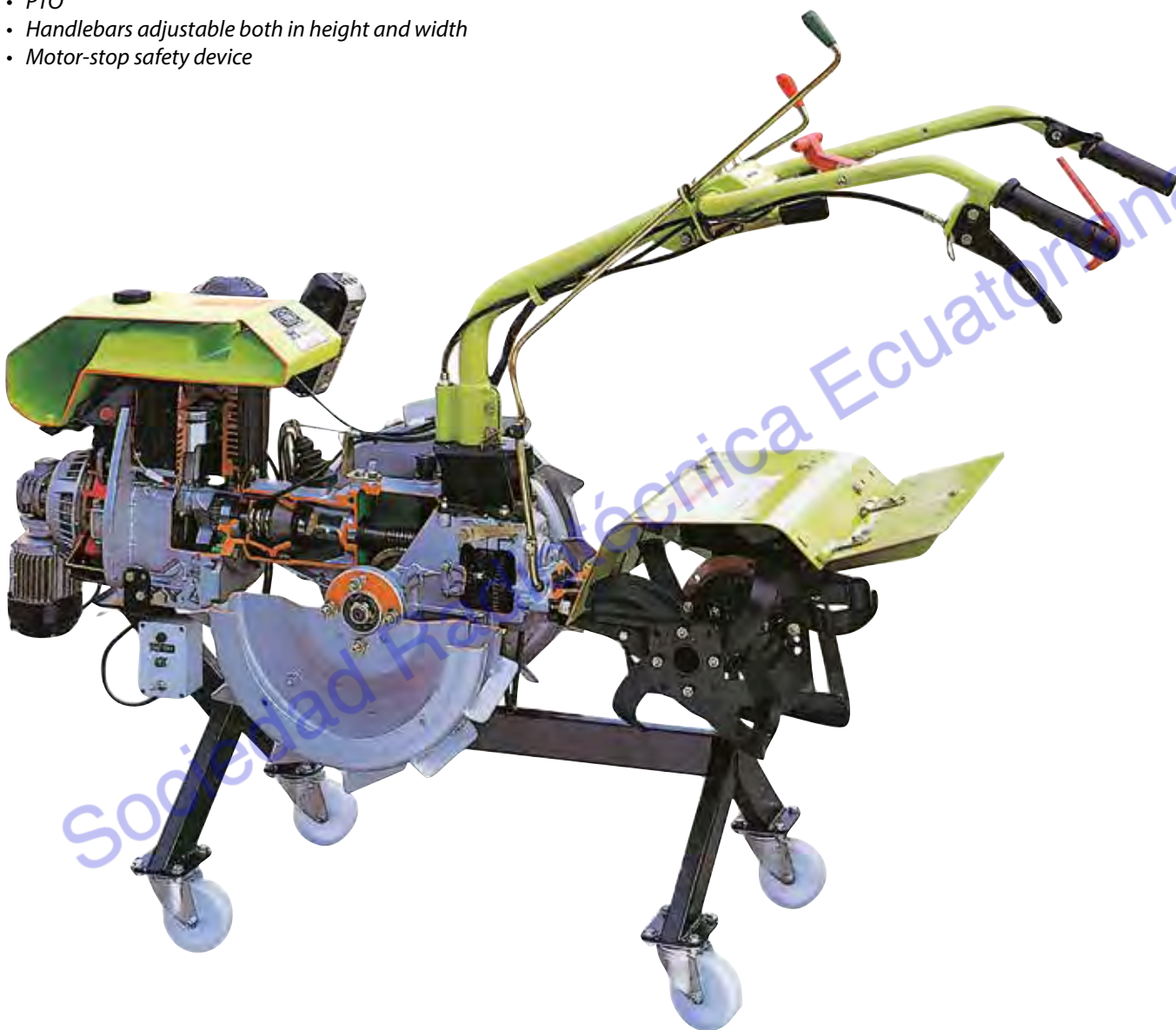
## VB 8600E MOTOR CULTIVATOR (on stand with wheels) - electrical

Accurate section of a modern petrol motor cultivator with single-cylinder engine, air cooling, 6/10 HP approx.

### Main technical features:

- Petrol engine 4 strokes single cylinder
- Power: 6 Kw
- Recoil starter
- Dry clutch with manual control
- Gearbox MTC 3+2
- Reverse command by lever
- PTO
- Handlebars adjustable both in height and width
- Motor-stop safety device

Indicative picture for reference only



The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc.

Many parts have been chromium, plated and galvanized for a longer life.

### Approx. weight and dim.:

Cm:	70x180x110h
Net Weight:	kg 100
Gross Weight:	kg 160

VB 8600



Indicative picture for reference only

Accurate section of a towed universal seeder showing:

- Seed hopper
- Distributor
- Inlet pipes
- Coulter

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.

#### Approx. weight and dim.:

Cm:	105x135x145h
Net Weight:	kg 200
Gross Weight:	kg 300



Accurate section of a real agricultural sprayer, used to spray crops with fungicides.

Indicative picture for reference only



**Main technical specification:**

- Radial piston pump
- Fibreglass tank with filter
- Control unit
- Overdrive with fan
- Hydraulic stirrer
- Cardan shaft
- Adjustable nozzles

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits. Many parts have been chromium, plated and galvanized for a longer life.

**Approx. weight and dim.:**

Cm:	220x110x130h
Net Weight:	kg 220
Gross Weight:	kg 330



## VB 8640E MANURE SPREADER (on stand with wheels) - electrical

Accurate section of a pulled manure spreader.

### The following parts are shown:

- Hopper
- Spreader disc with blades
- Bevel gear pair
- Spread control

*The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.*

### Approx. weight and dim.:

Cm:	150x140x160h
Net Weight:	kg 135
Gross Weight:	kg 230



Indicative picture for reference only

## **VB 9000A PETROL ENGINE FOR ASSEMBLING & DISASSEMBLING OPERATIONS** **(on rotating workbench with wheels)**

Educational training equipment for assembling and disassembling operations on modern petrol engines for cars.

### **Main technical features:**

- Petrol engine, 4 stroke
- Displacement: 1242 cu Cm
- 4 cylinders in line with overhead camshaft
- Two valves per cylinder
- Timing system with toothed belt
- Electronic ignition with 4 spark plugs
- Electronic injection
- Alternator
- Lubrication system with mechanical oil pump
- Oil filter
- Flywheel
- Clutch-mechanical dry, single disc

### **DIESEL ENGINE ON DEMAND**



### **Approx. weight and dim.:**

Cm:	90x60x120h
Net Weight:	kg 100
Gross Weight:	kg 140

**VB 9000**

Indicative picture for reference only



Indicative picture for reference only

Engines in working conditions ready to be started, mounted on a strong steel painted stand with anti-vibration rubber caps. Each support is equipped with 4 nylon wheels with brake system.

### **Complete with:**

- Fuel tank
- Fuel filter
- Battery with relevant electric system
- Silencer
- Accelerator command
- Starting key
- Rpm counter
- Water temperature device
- Voltmeter
- Oil pressure indicator
- Alternator charger indicator
- Radiator with fan/electro-fan
- Coolant tank

- Mesh guards
- Diagnostic connector (where provided)
- Instruction manual
- Trouble-shooting device simulating 5 faults (upon request)

### **Showing:**

- no-load operation
- fault simulation on request
- repair demonstrations
- assembly-disassembly

**Perfectly working overhauled engines.**





**VB 9005F IAW-MARELLI  
MULTI-POINT  
ELECTRONIC INJECTION -  
functioning**

- 4 cylinders FIAT engine
- 2 valves per cylinder
- Overhead camshaft (OHC)
- Electronic ignition
- Displacement: 1242 cu. Cm
- diagnostic connector **OBD**

**Approx. weight and dim.:**

Cm:	115x120x140h
Net weight:	kg 250
Gross weight:	kg 330

**VB 9009F BOSCH  
MULTI-POINT MOTRONIC  
ELECTRONIC INJECTION -  
functioning**

- 4 cylinders FIAT engine
- 4 valves per cylinder
- 2 Overhead camshaft (DOHC)
- Electronic ignition
- Displacement: 1300 cu. Cm
- Diagnostic connector **OBD**

**Approx. weight and dim.:**

Cm:	130x130x140h
Net weight:	kg 300
Gross weight:	kg 400

**VB 9011F  
CARBURETTOR -  
functioning**

- 4 cylinders FIAT/SEAT engine
- Overhead camshaft (OHC)
- Electronic ignition
- Displacement: 1000/1500 cu. Cm

**Approx. weight and dim.:**

Cm:	115x120x140h
Net weight:	kg 240
Gross weight:	kg 340



Indicative picture for reference only

## **VB 9070F FIAT 1700/2500 CU.CM DIESEL ENGINE (indirect injection) - functioning**

- 4 cylinders, 4 strokes
- Indirect injection
- Overhead camshaft (OHC)
- Rotating injection pump
- Displacement: 1700/2500 cu. Cm

### **Approx. weight and dim.:**

Cm: 140x75x110h  
Net weight: kg 380  
Gross weight: kg 460

## **VB 9080F FIAT 2500 CU.CM TURBO DIESEL ENGINE (direct injection) - functioning**

- 4 cylinders 4 strokes
- Direct injection
- Overhead camshaft (OHC)
- Rotating injection pump
- Displacement: 2500 cu. Cm
- Turbo-supercharger with relief valve

### **Approx. weight and dim.:**

Cm: 140x75x110h  
Net weight: kg 400  
Gross weight: kg 480

## **VB 9095F FIAT COMMON RAIL JTD UNIJET - functioning**

- 4 cylinders FIAT engine
- 2 valves per cylinder
- Overhead camshaft (OHC)
- Turbo-compressor
- Displacement: 1900 cu. Cm
- Diagnostic socket **OBD**
- On request: multi-jet, 1300 cc, DOHC, 4 valves per cylinder

### **Approx. weight and dim.:**

Cm: 120x130x140h  
Net weight: kg 350  
Gross weight: kg 450

## CHASSIS TRAINER IN WORKING CONDITIONS

### Approx. weight and dim.:

Cm:	300x150x140h
Net weight:	kg 450
Gross weight:	kg 730



The chassis trainer is realized from a medium displacement vehicle which is particularly useful for the study of the main components, the repair operations and the diagnostic, by means of the OBD socket (VB 9100 and VB 9110). All the mechanical parts are carefully revised and assembled on a chassis produced by us. This chassis allows an easy display and the possibility of assemble and disassemble each part. Engine, gearbox, clutch, brakes, lubricating circuit, cooling system, injection, ignition, suspensions, electric system, exhaust, etc. ARE COMPLETELY FUNCTIONING.

The chassis is supplied with a stand with wheels in order to move it easily.

### VB 9100F PETROL INJECTION CHASSIS TRAINER - functioning

- Petrol engine 4 cyl. 4 strokes
- Displacement: 1242 cu.Cm
- Multipoint electronic injection
- Electronic ignition
- Gearbox: 5 speeds + reverse
- Front drive
- Catalytic silencer
- Electric fuel pump
- Depression servo-brake
- Front disc brakes
- Rear drum brakes
- McPherson front suspension
- Independent wheels rear suspension with oscillating arms
- Hand brake
- Tank
- Battery
- Radiator with electric fan
- Dashboard
- Diagnostic socket

### VB 9105F TURBO DIESEL CHASSIS TRAINER - functioning

- Turbo diesel engine 4 cyl. 4 strokes
- Displacement: 1700 cu.Cm
- Gearbox: 5 speeds + reverse
- Front drive
- Silencer
- Bosch VE injection pump
- Depression servo-brake
- Front disc brakes
- Rear drum brakes
- McPherson front suspension
- Independent wheels rear suspension with oscillating arms
- Hand brake
- Tank
- Battery
- Radiator with electric fan
- Dashboard



## INDUSTRIAL FUNCTIONING ENGINES (on metallic table-stand support)

SMALL INDUSTRIAL ENDOTHERMIC ENGINES VARIOUS TYPES.

Perfectly functioning engines on a metallic table-stand support with silent block, support for table fixing.

Complete with tank, silencer, air filter, recoil and all the accessorizes.

### VB 8900F – SINGLE-CYLINDER 2 STROKE PETROL ENGINE AIR COOLED (on metallic table-stand support)

#### Main technical specifications:

- displacement 52 cm<sup>3</sup>.
- air cooled
- electronic ignition
- carburattor

#### Approx. weight and dim:

Cm: 45x45x50h

Net Weight: kg 10

Gross Weight: kg 20



-> For the same item, cutaway see item **VB 7450** at page **A-77**

### VB 8910F – SINGLE-CYLINDER 4 STROKE PETROL ENGINE AIR COOLED (on metallic table-stand support)

#### Main technical specifications:

- displacement 163 cc
- power 5,5 hp at 2500 rpm
- recoil starting system
- TCI transistorized magneto ignition
- forced air cooling system
- camshaft in the crankcase
- overhead valves

#### Approx. weight and dim:

Cm: 48x48x60h

Net Weight: kg 20

Gross Weight: kg 40



-> For the same item, cutaway see item **VB 5245** at page **A-73**

### VB 8920F – SINGLE-CYLINDER 4 STROKE DIESEL ENGINE AIR COOLED (on metallic table-stand support)

#### Main technical specifications:

- displacement 211 cc
- direct injection – in-line injection pump
- power 3,8 hp at 3000 rpm
- recoil ignition
- forced air cooling system
- camshaft in the crankcase
- overhead valves

#### Approx. weight and dim:

Cm: 50x50x60h

Net Weight: kg 30

Gross Weight: kg 50



-> For the same item, cutaway see item **VB 6120** at page **A-73**

Indicative picture for reference only

## **VB 5245M SINGLE-CYLINDER 4 STROKE PETROL ENGINE AIR COOLED (on base) - manual**

### **Main technical specifications:**

- displacement 160cc
- power 6 hp
- camshaft in the crankcase
- overhead valves
- rpm regulator
- oil pump
- carburettor
- air filter
- silencer
- tank

### **Approx. weight and dim:**

Cm: 48x48x50h  
Net Weight: kg 16  
Gross Weight: kg 25



**VB 5245**

## **VB 6120M SINGLE-CYLINDER 4 STROKE DIESEL ENGINE AIR COOLED (on base) - manual**

### **Main technical specifications:**

- displacement 210cc
- power 4 hp direct injection
- camshaft in the crankcase
- overhead camshafts
- rpm regulator
- toroidal oil pump
- injection pump
- injector
- silencer

### **Approx. weight and dim:**

Cm: 48x48x50h  
Net Weight: kg 25  
Gross Weight: kg 35



**VB 6120**

Indicative picture for reference only

# VB 7000

## VB 7000M INDIRECT INJECTION 4 STROKE DIESEL ENGINE MODEL (on base) - manual

*The most rational training model of a 4-stroke diesel engine sectioned for training purposes. Indirect injection, complete with injection pump, injector, pre-chamber, preheating glow plug, cooling system, distribution circuit, etc. Operated manually through a crank handle. In order to simulate the active stage of the cycle a small bulb lights up during the expansion phase.*

### Approx. weight and dim.:

Cm:	40x40x65h
Net Weight:	kg 10
Gross Weight:	kg 14

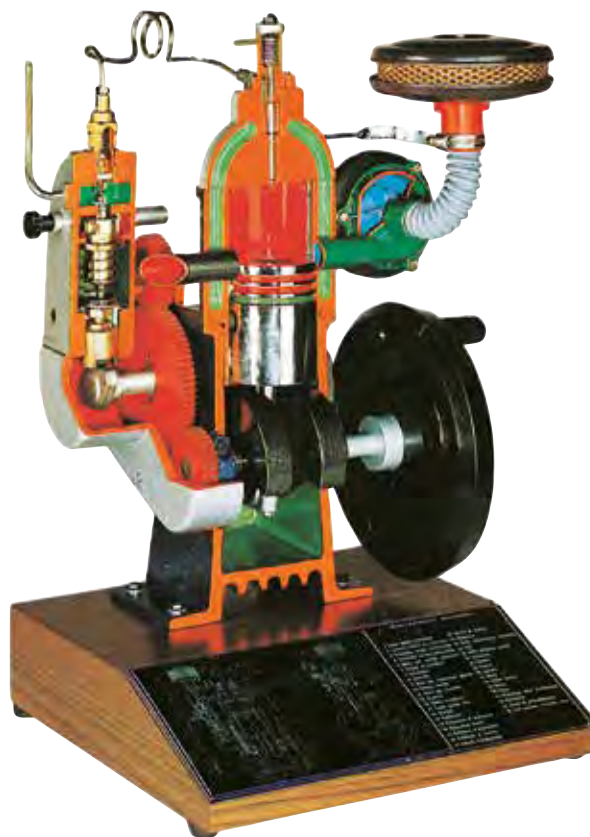


## VB 7100M DIRECT INJECTION 2 STROKE DIESEL ENGINE MODEL (on base) - manual

*The most rational training model of a 2-stroke diesel engine sectioned for training purposes. Direct injection, complete with injection pump, injector, volumetric compressor, cooling system, etc. Operated manually through a crank handle. In order to simulate the active stage of the cycle a small bulb lights up during the expansion phase.*

### Approx. weight and dim.:

Cm:	40x40x65h
Net Weight:	kg 9
Gross Weight:	kg 13



*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

Indicative picture for reference only



## VB 7200M 4 STROKE PETROL ENGINE MODEL (on base) - manual

The most rational training model of a 4-stroke petrol engine. Complete with sectioned carburettor and coil ignition, cooling system, distribution system, spark coil, etc. During the combustion phase a bulb lights up to simulate the mixture ignition.

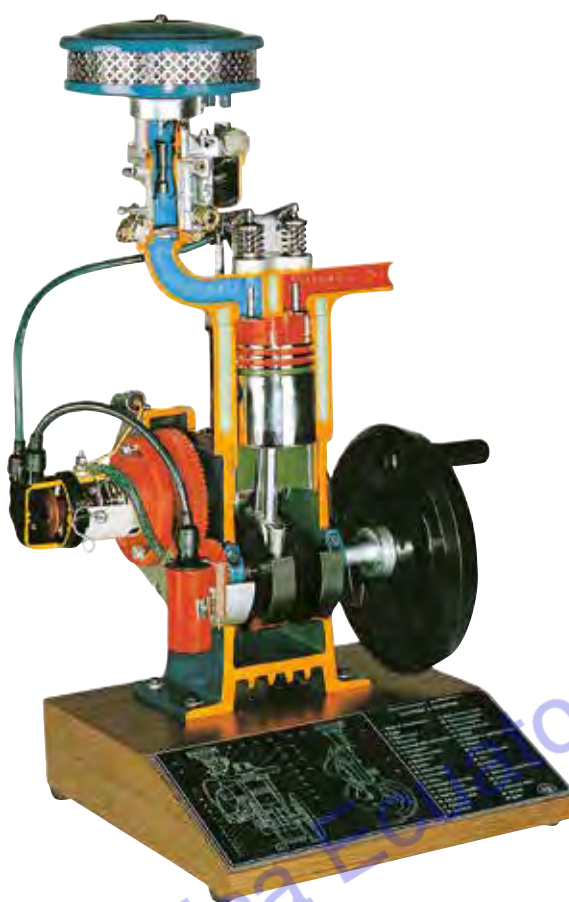
The engine is operated manually through a crank handle.

### Approx. weight and dim.:

Cm: 40x40x70h

Net Weight: kg 10

Gross Weight: kg 14



## VB 7460M 4 STROKE PETROL ENGINE MODEL WITH ELECTRONIC INJECTION MONOJETRONIC (on base) - manual

The most rational training model of a 4-stroke petrol engine. During the combustion phase a bulb lights up to simulate the mixture ignition.

### Main technical specifications:

- Mono-jetronic
- Lambda probe
- Coil single ignition
- Sensor

The engine is operated manually through a crank handle.

### Approx. weight and dim.:

Cm: 40x40x70h

Net Weight: kg 10

Gross Weight: kg 14



These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

VB 7200

VB 7460

Indicative picture for reference only

## VB 7490M MULTI-POINT ELECTRONIC INJECTION I.C. ENGINE MODEL (on a table support) - manual

Built using original parts, this single-cylinder model reunites all the main parts making up a modern petrol engine with multipoint electronic injection and ignition-integrated control unit. Special care has been taken with the cutaway views of the electro-injector, throttle body, control unit and LAMBDA probe.

### Main technical specifications:

- Overhead camshaft (OHC)
- Toothed belt timing
- Cartridge oil filter
- Centrifugal water pump
- Air temperature sensor
- Throttle potentiometer
- Idling adjustment motor
- Ignition coil
- LAMBDA probe

*The engine is operated manually through a crank handle.*



Indicative picture for reference only

*This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.*

### Approx. weight and dim.:

Cm:	50x45x80h
Net Weight:	kg 21
Gross Weight:	kg 40

## VB 7450M 2 STROKE PETROL ENGINE (on base) - manual

Accurate section of a real 2-Stroke engine, showing every detail, carburettor, ignition, etc.

The suction-exhaust-transfer channels are especially highlighted so as to make it easy to learn the cycle.

### Main technical specifications:

- Piston displacement 52 cu. cm
- Air cooling system
- Electronic ignition
- Box carburettor

The engine is operated manually through a crank handle.



VB 7450

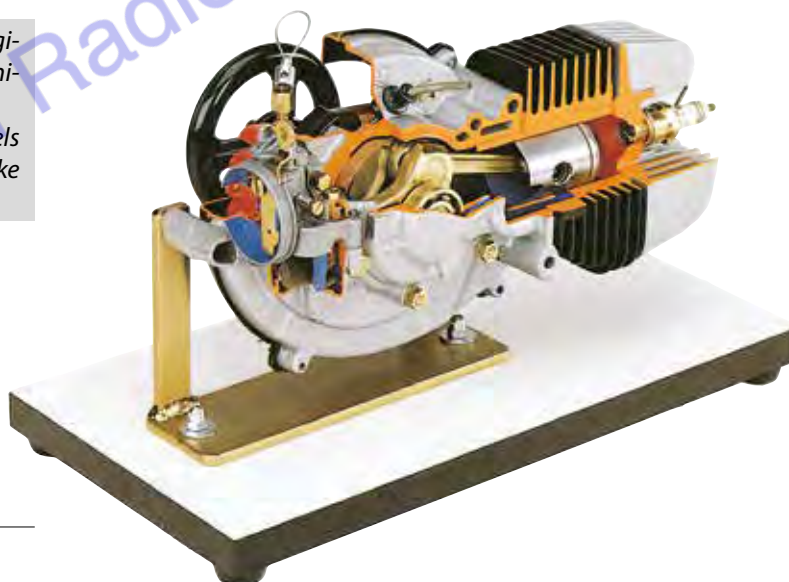
### Approx. weight and dim.:

Cm: 30x30x40h  
Net Weight: kg 8  
Gross Weight: kg 15

## VB 7400M 2 STROKE MOTORCYCLE PETROL ENGINE (on base) - manual

Accurate section of a real 2-Stroke engine, cut in every detail, carburettor, ignition, etc.

The suction-exhaust-transfer channels are especially highlighted so as to make it easy to learn the cycle.



VB 7400

### Main technical specifications:

- Piston displacement 48 cu. cm
- Air cooling
- Plug point and magnet flywheel ignition
- Box carburettor

The engine is operated manually through a crank handle.

### Approx. weight and dim.:

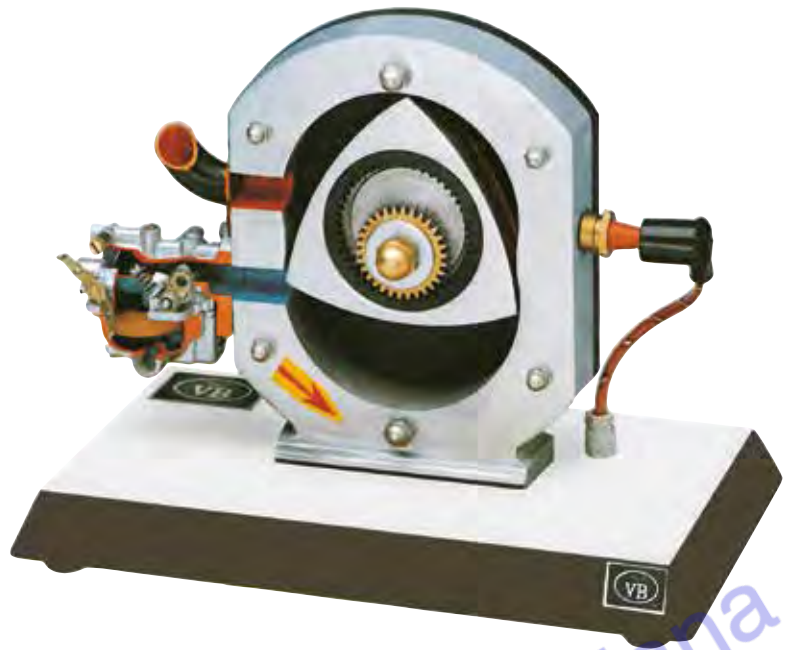
Cm: 24x42x28h  
Net Weight: kg 6  
Gross Weight: kg 10

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.



# VB 7500

## VB 7500M WANKEL ENGINE MODEL (on base) - manual



Rotating engine model, true to the original and complete with cutaway carburettor. The rotor (triangular piston), operated by the driving shaft, rotates inside the stator thus clearly showing the different phases. During the compression phase a small bulb lights up to simulate the petrol ignition. Light metal construction.

The engine is operated manually through a crank handle.

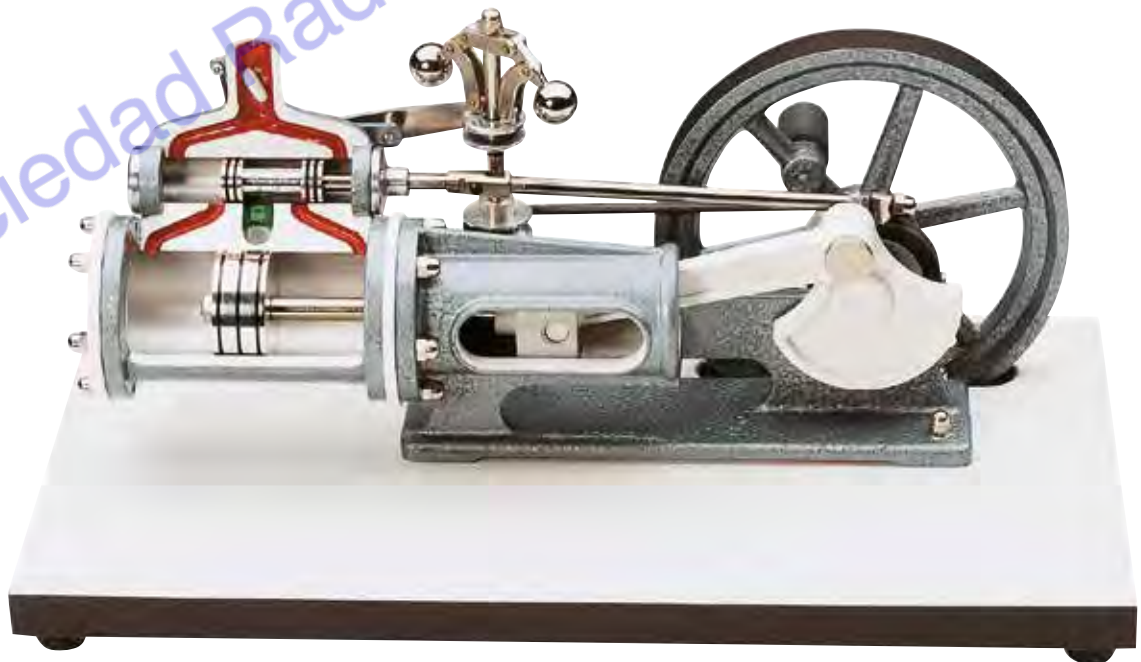
### Approx. weight and dim.:

Cm:	20x40x30h
Net Weight:	kg 6
Gross Weight:	kg 7

Indicative picture for reference only

# VB 9220

## VB 9220M STEAM ENGINE MODEL (on base) - manual



Educational model of a modern horizontal steam engine with piston valve control. The model can be put in motion by turning the flywheel, thus showing the manner of operation of the engine and of the built-on centrifugal governor.

### Approx. weight and dim.:

Cm:	36x22x24h
Net Weight:	kg 3
Gross Weight:	kg 8

## VB 9200E TURBO JET ENGINE MODEL (on base) - electrical

This super-model of a modern two-wave turbine shows in detail the construction and the operating system of such a motor. Low-pressure and high-pressure compressor, low-pressure and high-pressure turbine are readily recognisable, as also are the combustion chambers with the injection nozzles and starting plugs.

These can be readily seen thanks to the section cut housing. The turbines can be set in motion with the built-in electro-motor.

### Approx. weight and dim.:

Cm:	70x28x45h
Net Weight:	kg 13
Gross weight:	Kg 30



Indicative picture for reference only

## VB 9211M

### INSTRUCTION MODEL OF A TURBOJET ENGINE

This model clearly shows the construction of a modern jet turbine.

The compressor, the combustion, the combustion chambers and the turbines are readily recognisable and their operation explained.

### Approx. weight and dim.:

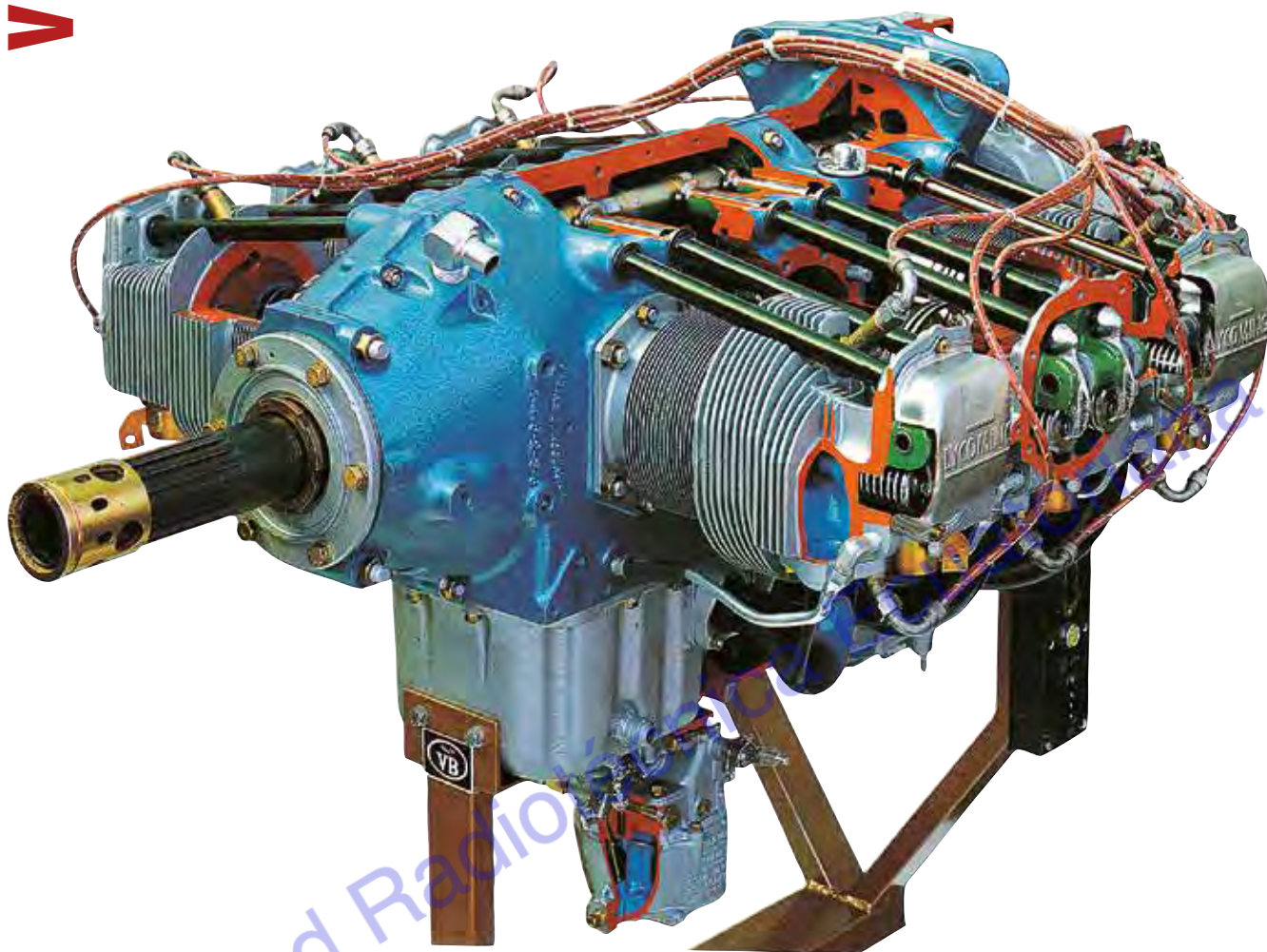
Cm:	60x40x40h
Net weight:	Kg 10
Gross weight:	Kg 20



VB 9200

VB 9210





Indicative picture for reference only

### Main technical specifications:

- Lycoming/Piaggio/Continental 4/6-opposed cylinders engine
- Air cooling system
- Gear distribution with camshaft in the crankcase
- Ignition with magneto
- Single-body carburettor

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

### Approx. weight and dim.:

Cm:	140x110x150h
Net Weight:	kg 190
Gross Weight:	kg 280



## VB 9280E RADIAL ENGINE (on stand with wheels) - electrical

This kind of engine was largely used in aeronautic before the introduction of reaction engines. As it is mechanically simple and sturdy, it is used for tanks, hovercrafts, etc.

VB 9280

Indicative picture for reference only



### Main technical specifications:

- Driving shaft with integral master rod and moving connection rods
- Air cooling system
- Double ignition (2 spark plugs per cylinder and 2 magnetos)

The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

### Approx. weight and dim.:

Cm:	150x140x180h
Net Weight:	kg 700
Gross Weight:	kg 850

Sociedad Radiotécnica Ecuatoriana

*Indicative picture for reference only*

Sociedad Radiotécnica Ecuatoriana

**Simulators**





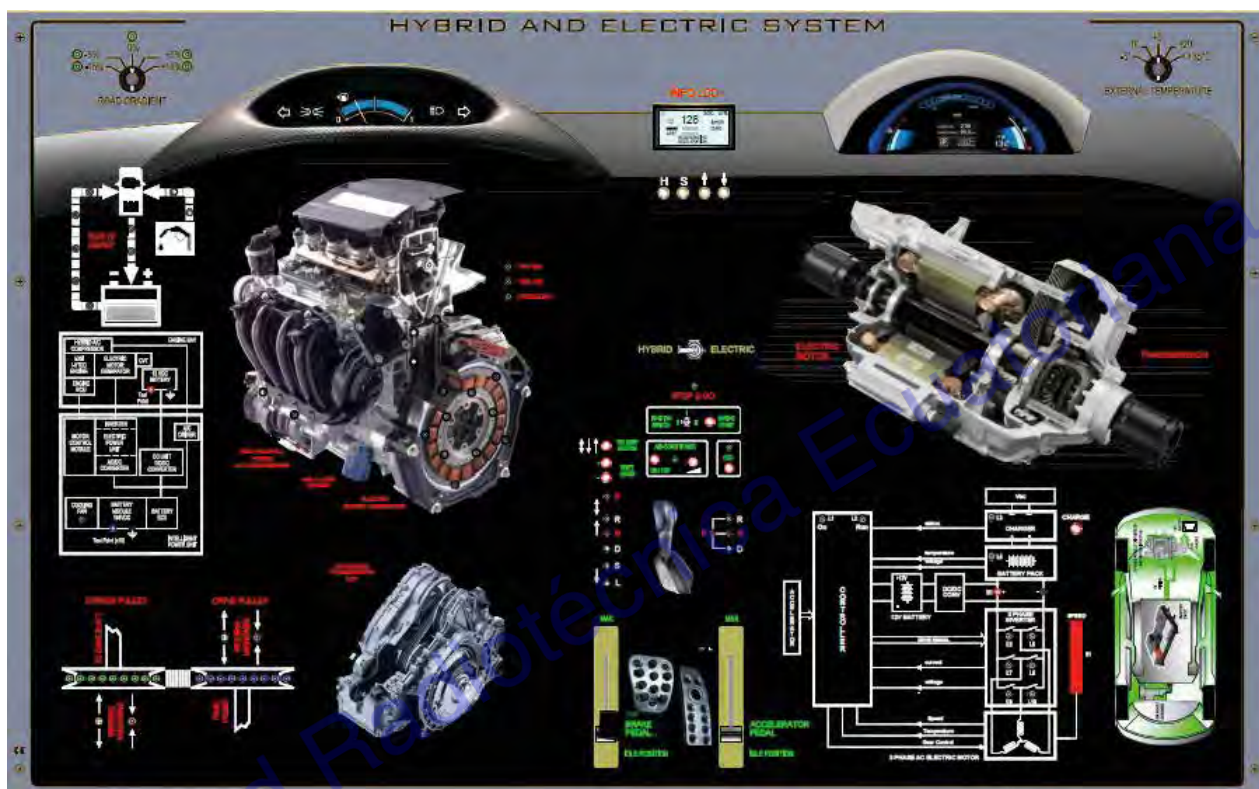
This simulator allows the study of all the operating features of an automobile with a hybrid system (internal combustion engine and electric motor) or completely electric.

It is composed of a panel operated by computer with a silk-screened diagram which explains the positioning of the car components and indicates the features of the system by showing different colours on the panel. Moreover light indicators are on the panel to show for the operation of the system.

Through the computer, the teacher can monitor the entire system and the operational states entered by the students. Moreover, the faults can be inserted and checked by the teacher and with the use of the software practical and theoretical topics can be constantly followed.

An english manual is supplied together with the unit.

The silk-screened panel shows:



Indicative picture for reference only

#### Hybrid system:

- Intelligent Power Unit
  - Battery unit (Ni-MH cells)
  - ECU battery
- Electric Unit:
  - Synchronous 3-phase Electric Motor/Generator with permanent magnets
  - Eco Assist System
- Gasoline Unit :
  - Gasoline Engine
  - i-DSI
  - i-VTEC
  - ECU
- CVT
- A/C Compressor- dual-scroll hybrid mode
- Cooling Fan
- Motor Control Module
- Electric Power Unit
- DC Unit
- A/C Driver

#### Electric System

- High-voltage battery module, (Li-ion cells)
- Recharging system by external AV
- 12 V battery and recharging
- Electric motor control system
- 3-phase inverter for managing the electric motor
- Inverter control signals and sensors for the voltage and current measurement
- 3-phase AC motor with integrated transmission system
- Integrated sensors in the AC three-phase motor

*The simulator is complete with Training Software and with Control Software.*

*The software guides the student through the learning, simulation and experiments performance, tests and troubleshooting.*

#### Approx. weight and dim.:

Cm: 104x35x66  
Net Weight: kg 16

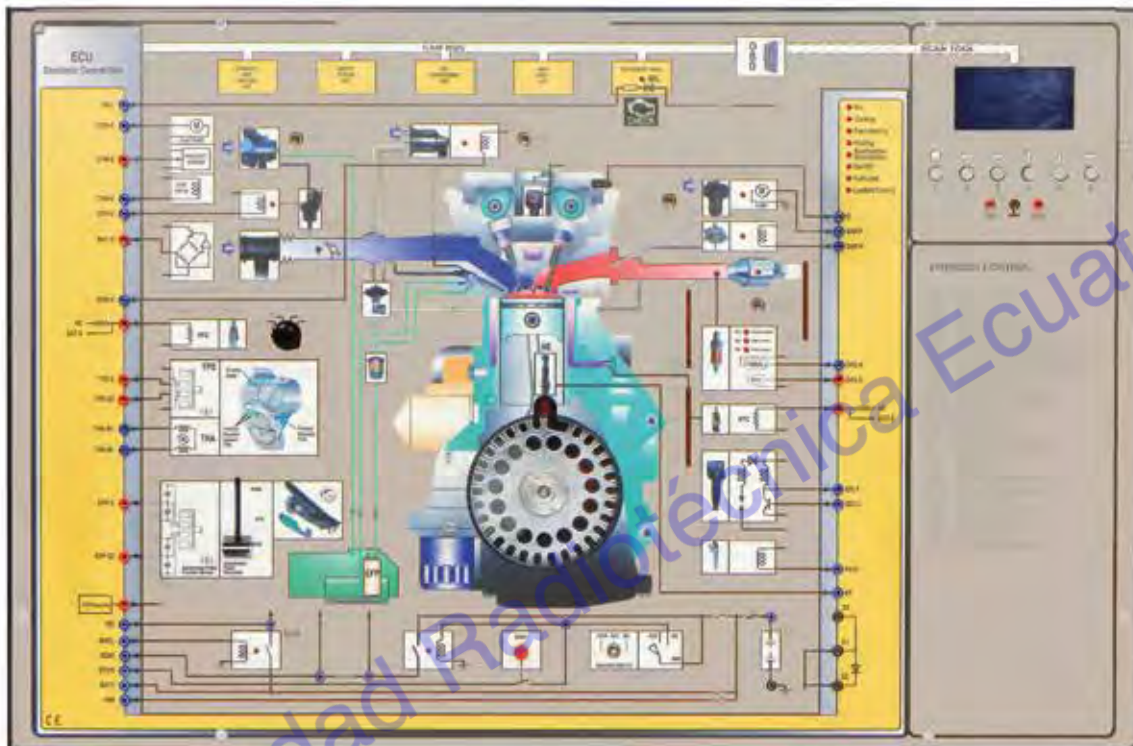
Didactic equipment - This Trainer studies the devices and the systems used for controlling and reducing the emissions of gasoline engines. The trainer illustrates the operation, the electric signals and all the sensors and the actuators that are used in modern automobiles to reduce the emission of noxious gases. The Trainer covers the following study and experiment subjects:

1. General structure of the management system for a gasoline engine
2. Composition of the exhaust gases in Otto cycle engines
3. Preparation and control of the fuel
4. Lambda regulation
5. Re-circulation of the exhaust gases, anti-evaporation of the fuel and thermal post-combustion
6. Sensors and actuators used in the systems for reducing the exhaust gas
7. Control unit (ECU) and CAN-BUS
8. Analysis of the electric signals of sensors and actuators
9. Troubleshooting with traditional instruments
10. Troubleshooting with OBD self-diagnosis

**Approx. weight and dim.:**

Cm: 62x23x43h

Net Weight: kg 10



Indicative picture for reference only

**Main features****Autonomous operation**

The trainer is able to operate autonomously, without connection to PC. Moreover, it is provided with a USB interface to connect to a computer for data acquisition, graphic visualization, eTraining.

**Use of some real components**

The trainer is provided with an electric motor, with phonic wheel and magnetic sensor for position and rotation speed. The electric motor 'simulates' the operation of the real engine (all the operations are made at a speed 10 times lower than the real one of the engine: between 80 and 600 rpm). This allows visualizing on LED the operation of the different devices: spark plugs, injectors, etc. On the LCD display the actual speeds are visualized (rpm from 800 to 6000). All the signals (on LED and terminals) is synchronized with the rotation of the phonic wheel and this makes 'real' the operation of the trainer.

**'Real' signals**

All the signals at the test points are real. They are equal in value, shape, time to the signals found in a real automobile.

**Graphic Display and Keyboard**

The trainer uses a graphic display and a keyboard for the visualization of the interesting parameters during the operation and for the selection of quantities and functions to be visualized.

**'Integrated' Instrumentation**

The Trainer contains the Instruments that are normally used on the field for the operation of troubleshooting in automobiles, both the 'traditional' ones, such as the multimeter, and the 'new' ones, such as the ScanTool for the OBD diagnosis.

**Digital voltmeter**

It allows performing all the voltage measurements on the system, without the need for external instrumentation.

**Digital oscilloscope**

It allows checking the waveforms at all the Test Points of the system and to operate in the same modes of a real oscilloscope.

**Tester OBD-II (SCANTOOL)**

It allows operating in the activities of fault finding in the same modes of a Scantool connected to an automobile through the OBD socket.

It is supplied with manual in English language.

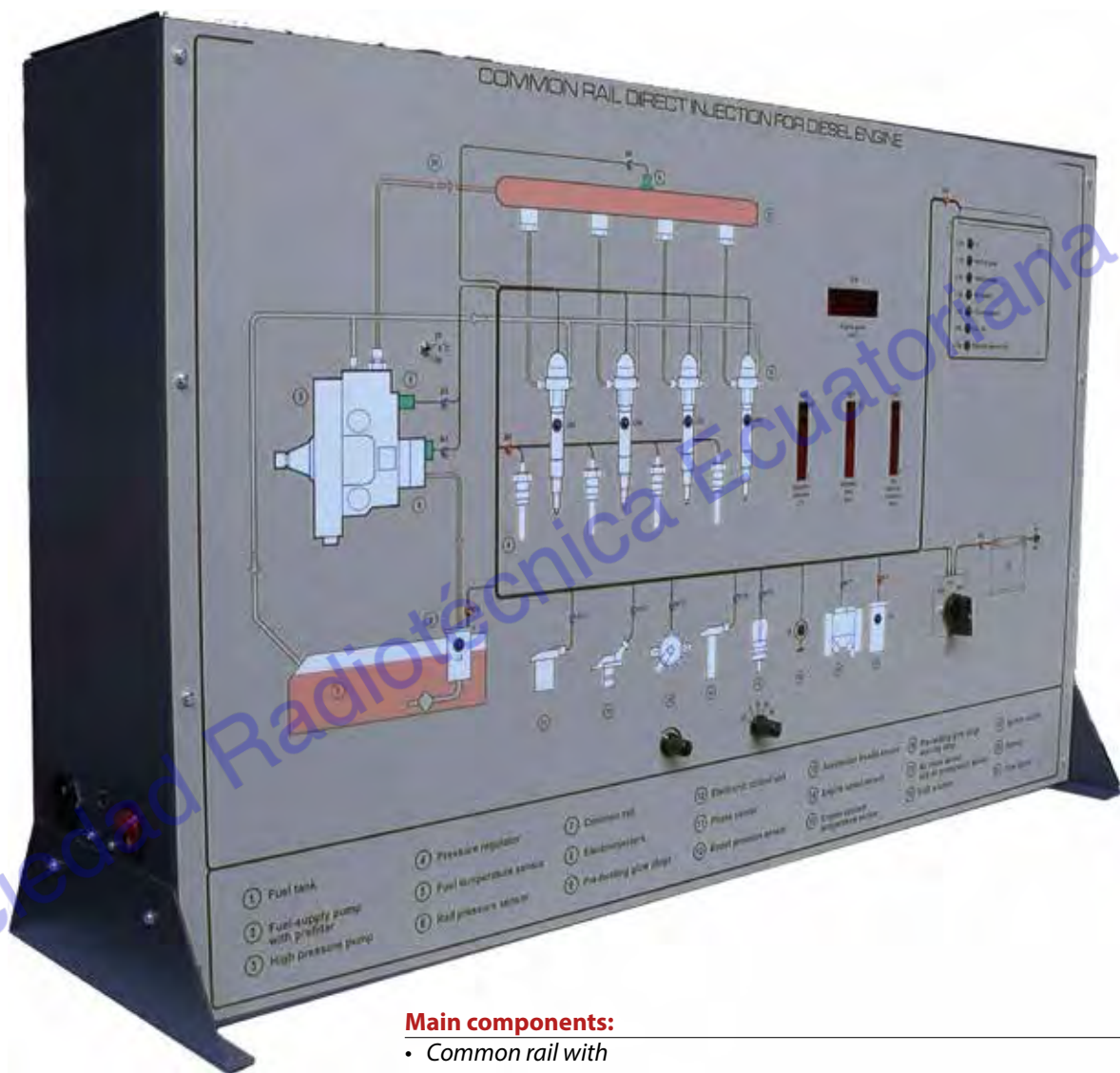
## VB 9148E COMMON-RAIL DIRECT INJECTION SIMULATOR FOR DIESEL ENGINE - electrical

This simulator allows the study on HDI (CDI - CR) injection systems for diesel engines.

It is composed of a screen panel with a mimic diagram which shows the entire analysis of the circuit of the fuel of the electrical/electronic control circuit and of all its components. The whole cycle of a common rail direct injection diesel engine is replicated on the panel.

The behaviour of components and circuits can be simulated on the basis of operating conditions that students and teachers can control directly on the panel or through computer. Teachers can keep continually under control the simulation by the measuring through analogue and digital devices so that the students can carry on working on the fault finding without any interruption.

The software is structured so to balance theory with practical experiences, troubleshooting and tests.



### Main components:

- Common rail with
  - electro-injectors
  - fuel pressure limiting valve
  - pressure sensor
- sensors for:
  - accelerator pedal position
  - over-supply pressure
  - air temperature
  - engine temperature
  - engine rpm
  - air mass
- electronic control board
- pneumatic actuator for the variable geometry turbine
- computerized workstation connected to the management system
- fuel tank with pre-filter
- high pressure electro-pump
- flow limiter

### Approx. weight and dim.:

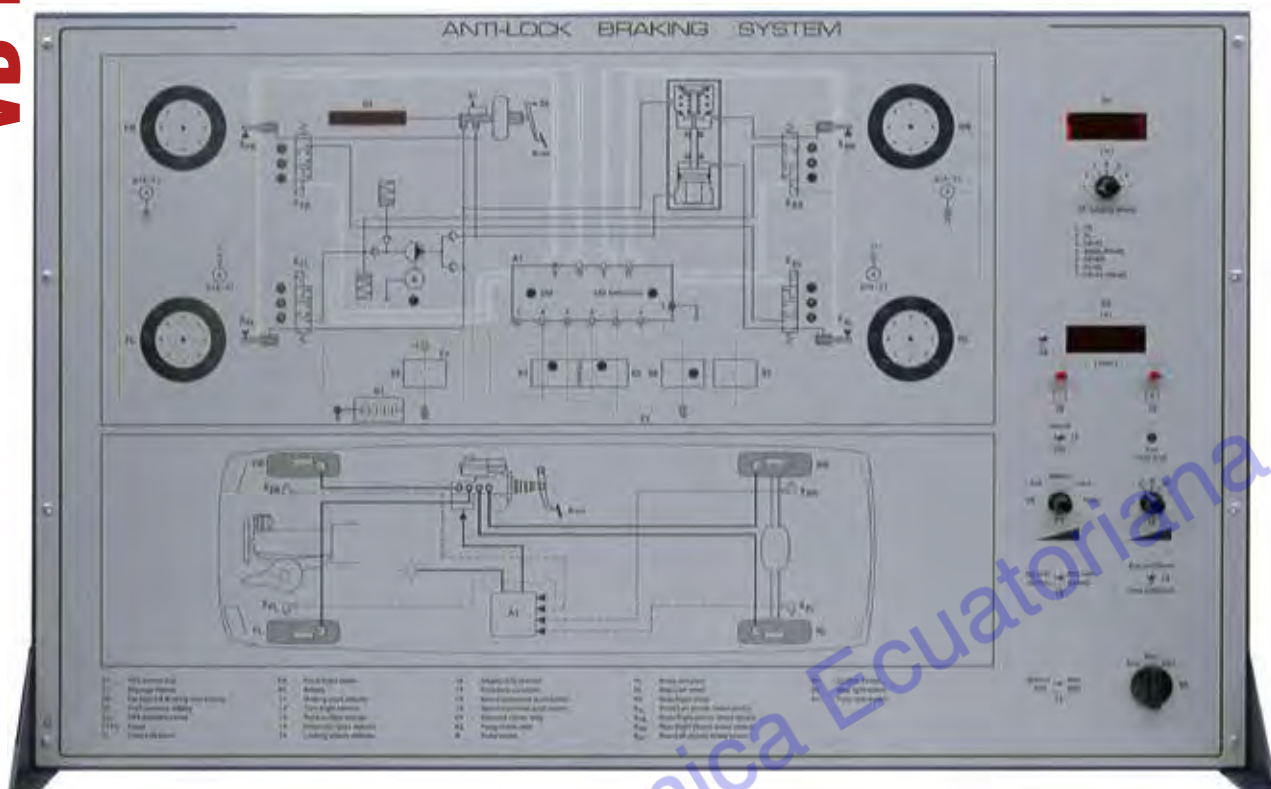
Cm: 104x35x66h

Net Weight: kg 16

Indicative picture for reference only



This simulator has been created to show how modern car ABS systems operate.



### Experiments :

- How ABS operates:
  - with one wheel speed sensor disconnected
  - when wheels are rotated at different speeds
  - when wheels are rotated at same speed
  - with destroyed hydraulic valve
  - with hydraulic valve stuck
  - with different relative speed turn of wheels
- How to detect:
  - Low fluid level
- How to measure:
  - Pressure during operation
  - Different control signals in the ABS system
- How Hydraulic ABS valve operates
- How brake system works:
  - when the electronic brake unit is disconnected
  - when there is leakage
- Self-diagnostic control
- Fault diagnosis process

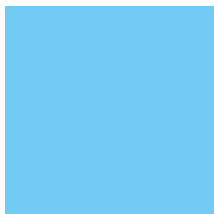
An educational manual with a theoretical and practical study is supplied.

### Approx. weight and dim.:

Cm: 104x35x66h  
 Net Weight: kg 16

Indicative picture for reference only

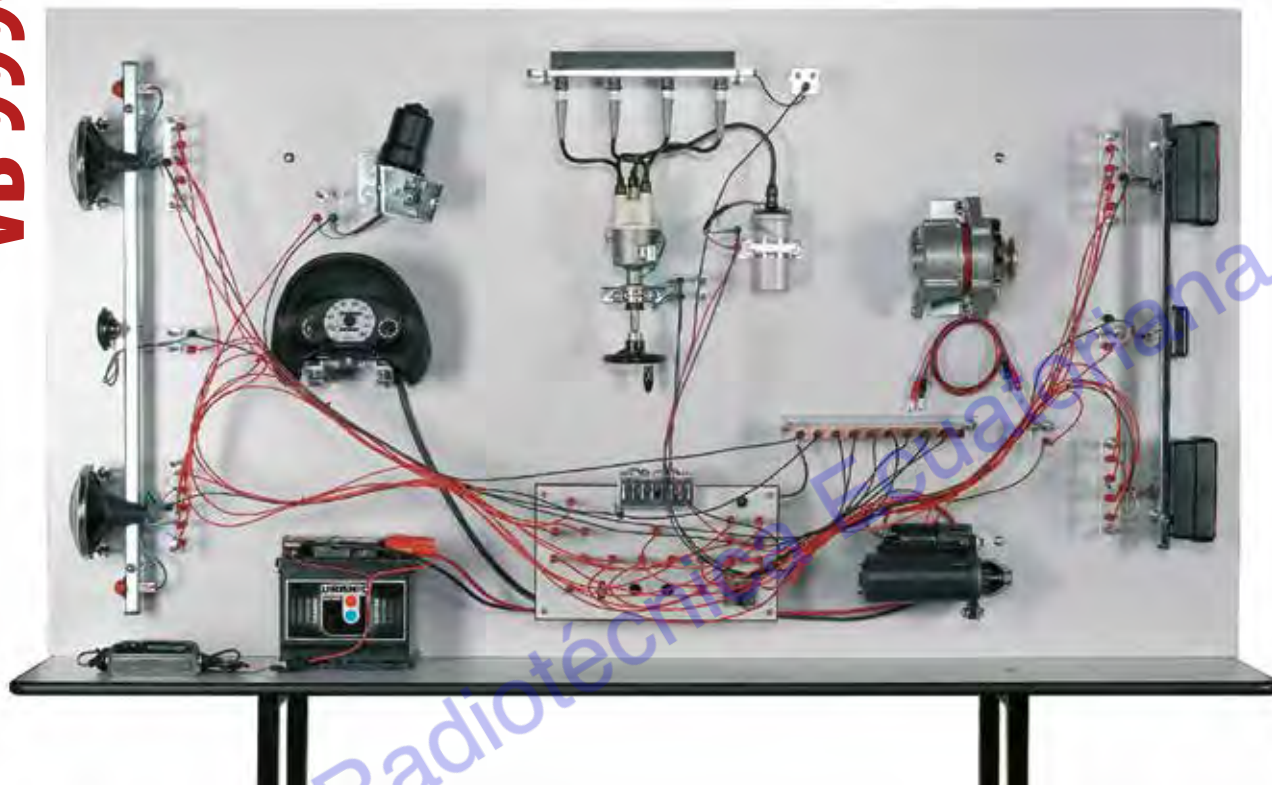
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## Components & Accessories

**VB 9990E TEACHING BENCH FOR CAR WITH WIRING TROUBLE-SHOOTING SYSTEM (on stand) CONVENTIONAL COIL IGNITION SYSTEM - electrical**

**VB 9991E TEACHING BENCH FOR CAR WITH WIRING TROUBLE-SHOOTING SYSTEM (on stand) ELECTRONIC IGNITION UNIT - electrical**



Indicative picture for reference only

All main components of the electric system of a car are fixed together on a board and can be operated at 12 Volts.

The teacher can train the student to:

- assemble an electric system
- shoot the troubles (that have been produced previously on purpose) in the connections
- study the whole system by disassembling and assembling its various parts.

#### Approx. weight and dim.:

Cm	55x195x205h
Net Weight:	kg 90
Gross Weight:	kg 180

#### Main technical specifications:

- Front and rear lights
- Turn indicators
- Emergency
- Licence plate light
- Horn
- Windshield wiper motor
- Instrument panel
- Battery
- Distributor
- Battery ignition
- Spark plugs
- Coil
- Fuse box
- Starter motor
- Alternator
- Voltage regulator
- Wires with red couplings (positive) N°19
- Wires with black couplings (negative) N°10



## VB 9992E ELECTRIC PANEL FOR LIGHTING AND ELECTRONIC IGNITION SYSTEM WITH ALTERNATOR (on stand with wheels) - electrical

### Main technical specifications:

- Position lights
- Head lights
- Beam lights
- Indicators
- Rear fog-lights
- Stop lights
- Reverse light
- Work lights
- Relays
- Dashboard with lights
- Four spark plugs
- High tension coil
- Electronic distributor
- Battery with isolator
- *Electronic functioning Alternator with variable speed electric engine*
- Complete with volt-meter and ampere-meter
- Pin outs for tension values of each component



### Approx. weight and dim.:

Cm: 130x100x206h

Net weight : kg 110

Gross weight: Kg 220

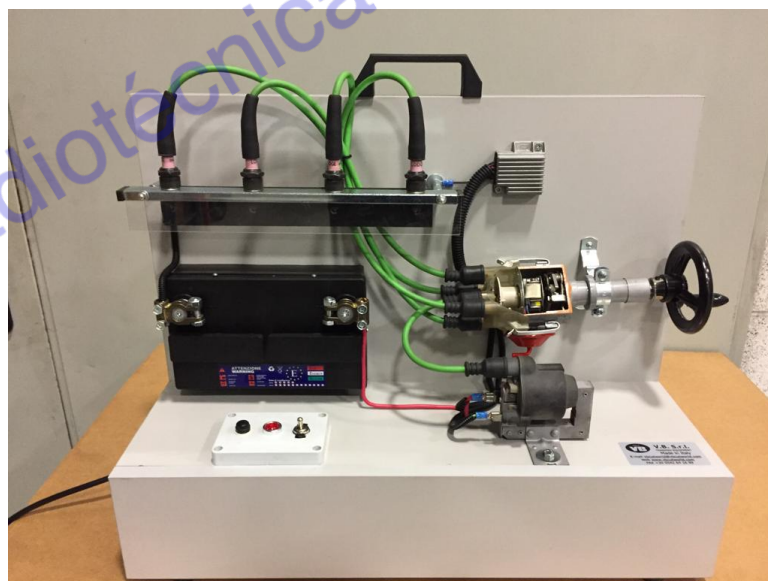
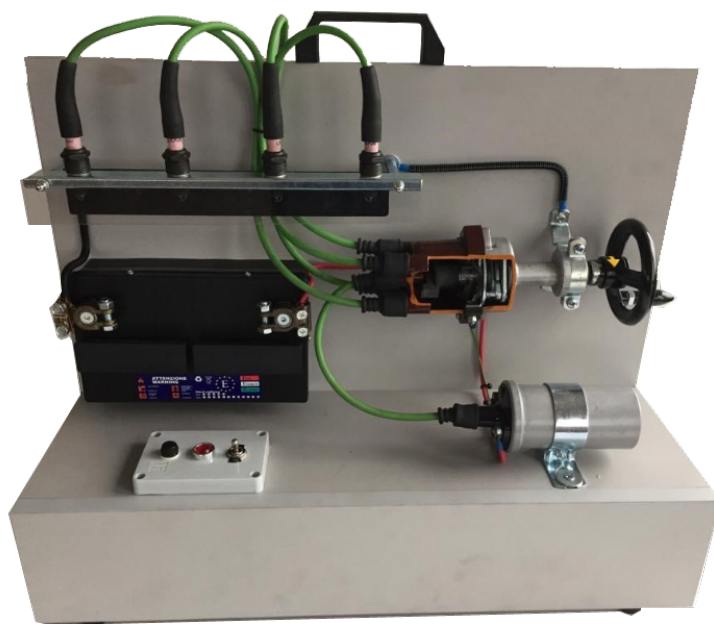
VB 9992

Indicative picture for reference only

**VB 10000E COIL IGNITION UNIT (on base) - electrical**

**VB 10010E ELECTRONIC IGNITION UNIT (on base) - electrical**

**VB 10000 - VB 10010**



#### **VB 10000E**

*A plastic-plated wooden base is the support of the main components of the coil ignition of a 4-stroke engine:*

*battery, spark coil, coil, spark plugs.*

*Rotating the flywheel, it shows the operation of the whole unit (the action of the platinum points and of the distributor can be observed through the section) and the spark flashing in the respective spark plugs is shown as well.*

#### **VB 10010E**

*Same as VB 10000E with electronic ignition.*

#### **VB 10000E - VB 10010E ·**

##### **Approx. weight and dim.:**

*Cm:* 70x25x55h

*Net Weight:* kg 10

*Gross Weight:* kg 15

*Indicative picture for reference only*

## VB 10030M IGNITION SYSTEM (on base) - manual

Representation of the ignition system composed of: distributor, spark coil and spark plug connected to each other by high voltage cables. The distributor is operated through a hand wheel and it is carefully sectioned to show the breaker points and the (centrifugal) automatic advance.

### Approx. weight and dim.:

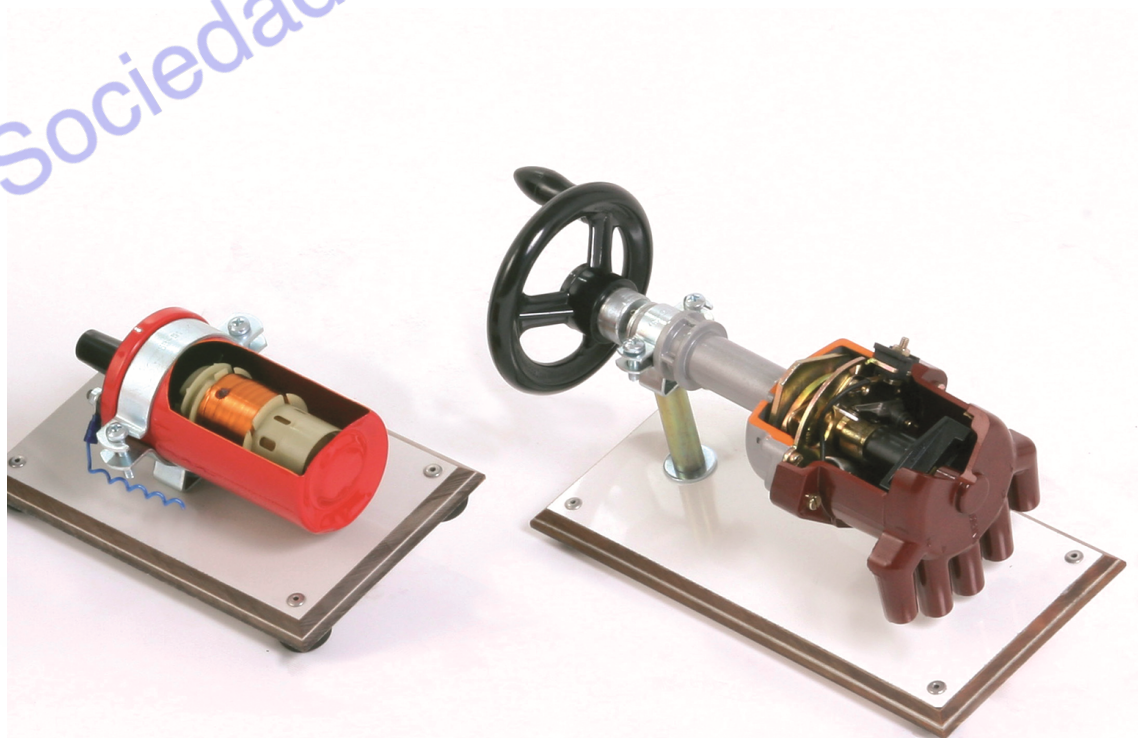
Cm:	30x20x15h
Net Weight:	kg 2
Gross Weight:	kg 5



**VB 10030**

## VB 10050S COIL - static

## VB 10060M DISTRIBUTOR - manual



**VB 10050 - VB 10060**



VB 10070 - VB 10071

**VB 10070M STARTER MOTOR FOR CARS (on base) - manual**

**VB 10071M STARTER MOTOR WITH REDUCTION GEARS FOR CARS (on base) - manual**

**Approx. weight and dim.:**

Cm: 25x20x20h  
Net Weight: kg 6  
Gross Weight: kg 10



**VB 10080M ALTERNATOR SINGLE-FLOW COOLING (on base) - manual**

**VB 10081M ALTERNATOR DOUBLE-FLOW COOLING (on base) - manual**

**Approx. weight and dim.:**

Cm: 25x20x20h  
Net Weight: kg 4  
Gross Weight: kg 8



**VB 10090M DYNAMO - manual**

**Approx. weight and dim.:**

Cm: 25x20x20h  
Net Weight: kg 6  
Gross Weight: kg 10



Indicative picture for reference only

**VB 10091M VACUUM PUMP ALTERNATOR (on base) - manual**

**VB 10092M LIQUID-COOLED WINDINGLESS-ROTOR COMPACT ALTERNATOR (on base) - manual**



**VB 10091M**

**Approx. weight and dim.:**

Cm: 20x20x25h  
Net Weight: kg 8  
Gross Weight: kg 15

**VB 10092M**

**Approx. weight and dim.:**

Cm: 20x20x25h  
Net Weight: kg 8  
Gross Weight: kg 15

**VB 10095S THROTTLE JACKING DEVICE - static**

**VB 10096S EGR VALVE - static**

**VB 10097S AIR-FLOW SENSOR - static**



**VB 10095S**

**Approx. weight and dim.:**

Cm: 15x10x10h  
Net Weight: kg 1  
Gross Weight: kg 1,5

**VB 10096S**

**Approx. weight and dim.:**

Cm: 20x10x10h  
Net Weight: kg 1,5  
Gross Weight: kg 2

**VB 10097S**

**Approx. weight and dim.:**

Cm: 10x10x10h  
Net Weight: kg 1  
Gross Weight: kg 1,5

**VB 10091 - VB 10092**  
**VB 10095 - VB 10096 - VB 10097**

Indicative picture for reference only

## VB 9900E IAW 59 F MULTI-POINT ELECTRONIC INJECTION SYSTEM - MPI (on stand with wheels) - electrical

The panel shows the functioning of an electronic injection system. It is possible to regulate the rpm from 0 to 2000 rpm by means of a pedal. It can simulate the air pressure sensor in the collector and the water temperature. It is possible to generate sensors and actuators faults disconnecting the relevant EOBD connections interface (standard with K line and 7 pins).



### Main technical specifications:

- Fuel tank
- Electric fuel pump (N40)
- Multifunction valve
- Safety valve
- Fuel delivery pipe
- Electronic injection/ignition control unit (M10)
- Battery
- Ignition switch
- Inertia switch (I50)
- Engine compartment junction unit
- Climate control system
- Fuel vapour cut out solenoid valve (L10)
- Injection timing sensor (K47)
- Activated carbon filter
- Body Computer (diagnostic socket and Fiat CODE signal)
- Temperature/absolute pressure sensor (K44)
- Rpm sensor (K46)
- Spark plugs
- Coolant temperature sensor (K45)
- Injectors (N70)
- Throttle valve position sensor (K56)
- Idle speed actuator (N74)
- Fuel supply rail
- Air filter
- Ignition coils (A30)
- Lambda sensor (upstream) (K15)
- System failure warning light
- Rev. counter
- Catalytic converter
- Lambda sensor (downstream) (K16)

### Approx. weight and dim.:

Cm	140x80x200h
Net Weight:	kg 96
Gross Weight:	kg 175

Indicative picture for reference only



## VB 9901E SINGLE-POINT INJECTION SYSTEM - SPI (on stand with wheels) - electrical

This panel shows the functioning of an electronic injection system. It is possible to regulate the rpm from 0 to 2000 by means of a pedal. The IAW Weber-Marelli single point injection (SPI) system is a self-contained engine management system, which controls both the fuel injection and ignition. The fuel injection system comprises a fuel tank, an electric fuel pump, a fuel filter, fuel supply and returns lines, a throttle body with an integral electronic fuel injector, and an Electronic Control Unit (ECU) together with its associated sensors, actuators and wiring.

VB 9901



Indicative picture for reference only

### Main technical specifications:

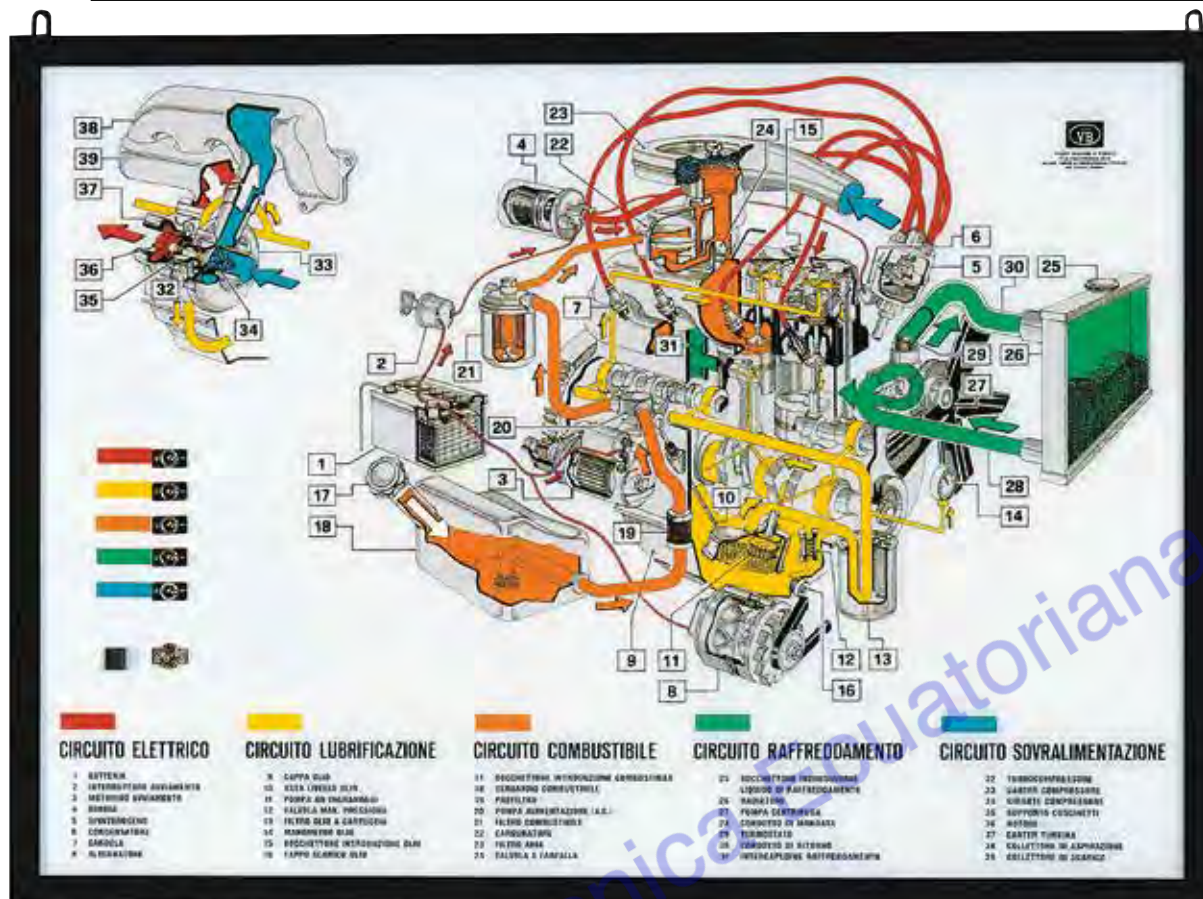
- Fuel tank
- Fuel pump
- Fuel pressure regulator
- Injector
- Fuel vapour trap
- Idle stepper motor
- Absolute pressure sensor
- Injection/ignition ECU
- Throttle position sensor
- Engine coolant temperature sensor
- Intake air temperature sensor
- Injection/ignition dual relay
- Ignition coils
- Rpm and TDC sensor
- Spark plugs
- Diagnostic socket
- EVAP solenoid
- Lambda /oxygen sensor

### Approx. weight and dim.:

Cm	140x70x210h
Net Weight:	kg 96
Gross Weight:	kg 170

## VB 5500E ENGINE VIDEO SYSTEM (on panel) - electrical

## VB 5510E ENGINE VIDEO SYSTEM (on stand with wheels) - electrical



Luminous training panel with silk-screened plexiglass front painted with different colours to better show the most important functions inside an internal combustion system.

The ignition, lubrication, carburetting, cooling and supercharging system (different colours) are shown separately by some lamps flashing one after the other to give the movement impression.

Perfect operation of the panel is got by means of an electric board.

### VB 5510E

Same as VB 5500E but on a wheeled stand.

ENGLISH / FRENCH TEST AVAILABLE UPON REQUEST  
VB 5500E

### VB 5500E

Approx. weight and dim.:

Cm: 110x80x10h  
Net Weight: kg 10  
Gross Weight: kg 20

### VB 5510E

Approx. weight and dim.:

Cm: 110x80x50h  
Net Weight: kg 20  
Gross Weight: kg 30



Indicative picture for reference only

**VB 10310S VERTICAL TWIN CARBURETTOR (on base) - static**

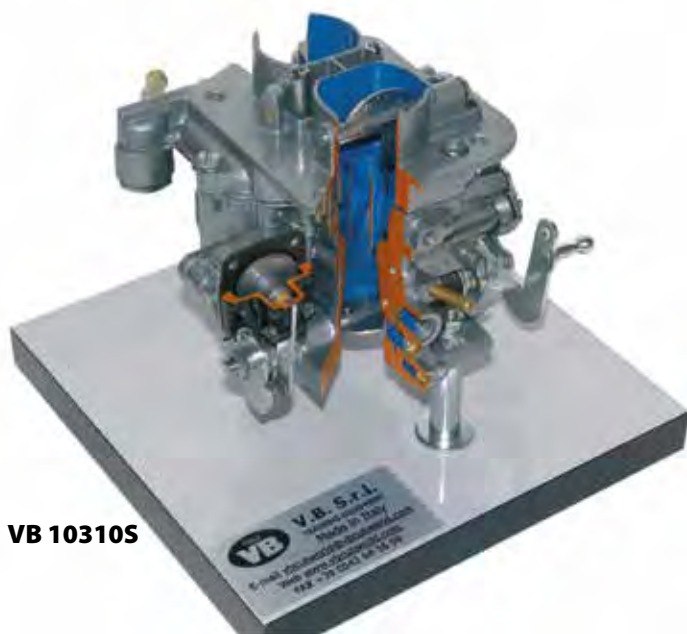
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**VB 10320S SINGLE-BODY CARBURETTOR (on base) - static**

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**VB 10330S VACUUM CARBURETTOR (on base) - static**

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**VB 10310S**



**VB 10320S**



**VB 10330S**

**Approx. weight and dim.:**

Cm: 25x30x30h

Net Weight: kg 1

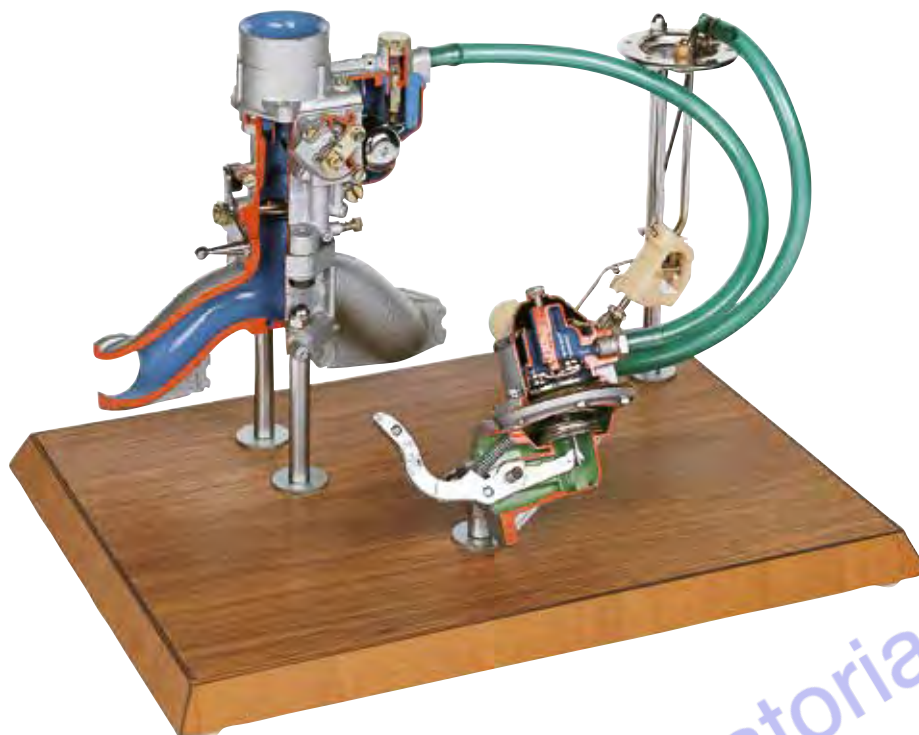
Gross Weight: kg 2

**VB 10310 - VB 10320 - VB 10330**



# VB 10350

## VB 10350S PETROL ENGINE FEEDING CIRCUIT (on base) - static



### Main technical specifications:

- Float with fuel level gauge (tank)
- Diaphragm pump
- Single-body carburettor
- Inlet manifold

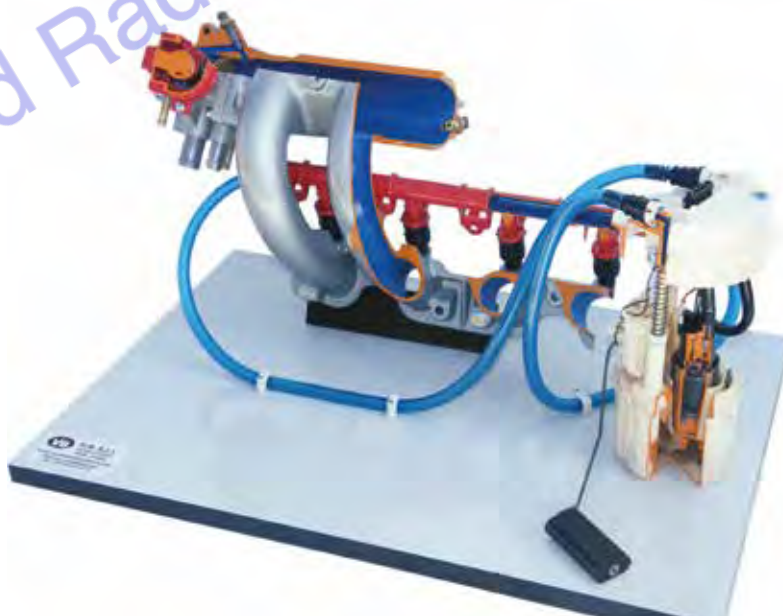
### Approx. weight and dim.:

Cm: 40x30x30h  
 Net Weight: kg 3  
 Gross Weight: kg 6

Indicative picture for reference only

# VB 10355

## VB 10355S ELECTRONIC INJECTION FEEDING CIRCUIT (on base) - static



### Main technical specifications:

- Suction manifold with electro-injector
- Air capacity meter
- Fuel manifold to the injectors
- Butterfly body
- Accelerator position switch
- Submersed electric petrol pump
- Fuel lever meter

Section of an electronic injection feeding circuit, 4 cylinders multi-point

### Approx. weight and dim.:

Cm: 40x60x40h  
 Net Weight: kg 8  
 Gross Weight: kg 12

## VB 10360S MONO-JETRONIC THROTTLE BODY (on base) - static

Accurate section of a throttle body fitted to Mono-jetronic engines with the following visible parts:

- Pressure control
- Bottom feed type injector
- Air and water temperature sensor
- Potentiometer
- Idling control actuator

### Approx. weight and dim.:

Cm: 25x25x25h

Net Weight: kg 3

Gross Weight: kg 6



## VB 10361S PETROL ELECTRO-INJECTOR (on base) - static

Cutaway model of an electro injector for multipoint injection engines.

The following parts are shown:

- Injector body
- Needle
- Magnetic core
- Winding
- Electric connector



## VB 10365S SPARK PLUG (on base) - static

Internal combustion engine spark plug cutaway model.

The following part are shown:

- Spark plug body
- Ceramic insulator
- Earth electrode



VB 10360

VB 10361

VB 10365

# VB 10366

## VB 10366S 2 VALVE DESMO SOHC ENGINE HEAD (on base) - static



Accurate section of a Ducati two-valve desmo engine head.

### Approx. weight and dim.:

Cm:	25x20x20h
Net Weight:	kg 7
Gross Weight:	kg 7

Indicative picture for reference only

# VB 10367

## VB 10367S 3 VALVE OHC ENGINE HEAD (on base) - static



Accurate section of FIAT three-valve engine head with hydraulic tappet.

### Approx. weight and dim.:

Cm:	20x20x15h
Net Weight:	kg 3,5
Gross Weight:	kg 6



## VB 10368S TWIN VALVE OHC ENGINE HEAD (on base) - static



Accurate section of a BMW twin-valve per cylinder engine head.

### Approx. weight and dim.:

Cm: 25x20x20h

Net Weight: kg 5

Gross Weight: kg 8

## VB 10369S 4 VALVE DOHC ENGINE HEAD (on base) - static



Top-of-the-range Volkswagen engine head, with 4 valves per cylinder and hydraulic tappet adjustment.

### Approx. weight and dim.:

Cm: 25x20x20h

Net Weight: kg 5

Gross Weight: kg 8

VB 10368

VB 10369

Indicative picture for reference only

# VB 10525

## VB 10525S LPG TIMED SEQUENTIAL INJECTION FOR ELECTRONIC INJECTION ENGINES (wall-mounted) - static

LPG timed sequential injection for petrol engine with multi-point electronic injection, complete with the following components:

- E.C.U.
- Injection rail
- L.P.G. solenoid valve
- Reducer – vaporizer
- Pressure sensor
- Pressure stabilizer
- Switch commutator
- Nozzles for manifold
- Water temperature sensor
- Gas temperature sensor
- Refuelling valve
- Level indicator



The panel is equipped with nomenclature table.

### Approx. weight and dim.:

Cm 70x120x15h

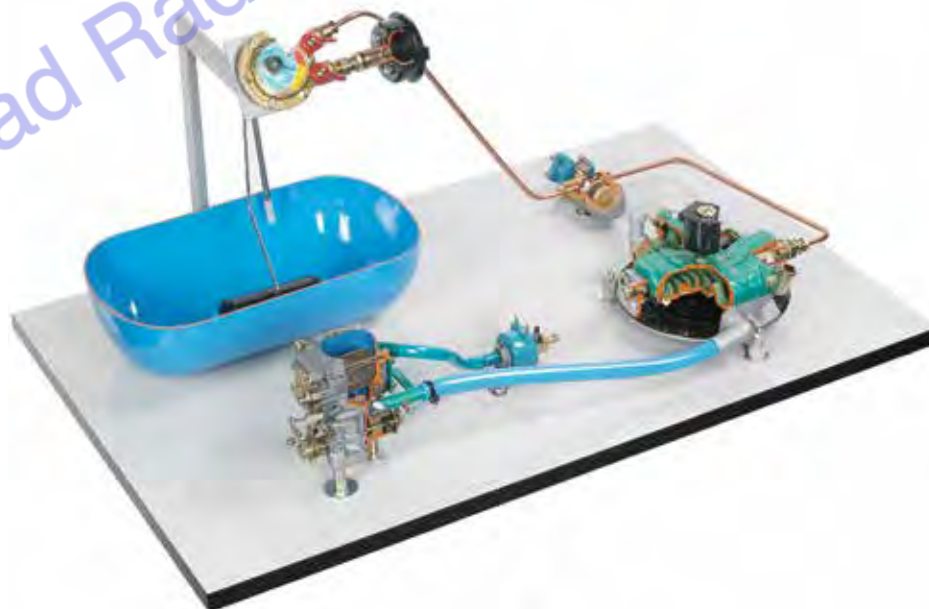
Net Weight: kg 16

Gross Weight: kg 30

Indicative picture for reference only

# VB 10520

## VB 10520S LPG FUEL CIRCUIT FOR CARBURETTOR ENGINES (on base) - static



### Main technical specifications:

- Filler Plug
- LPG tank
- Level gauge
- LPG solenoid valve
- Petrol solenoid valve
- Vaporiser reduction gear
- Carburettor

Layout of a car LPG fuel system with single-body type carburettor for educational purposes.

### Approx. weight and dim.:

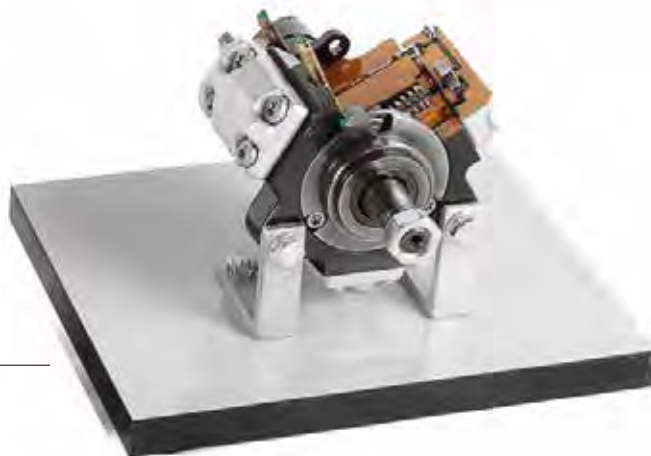
Cm: 80x50x40h

Net Weight: kg 12

Gross Weight: kg 20

### **VB 10104M CP1 BOSCH HIGH PRESSURE PUMP (on base) - manual**

Radial-piston pump for common rail engine, pressure 1100-1350 bar, fuel lubrication, three plungers.



#### **Approx. weight and dim.:**

Cm: 25x20x20h

Net Weight: kg 5

Gross Weight: kg 8

### **VB 10106M CP3 BOSCH HIGH-PRESSURE PUMP (on base) - manual**

Radial-piston pump for common rail engine, pressure 1600 bar, fuel lubrication, three plungers.



#### **Approx. weight and dim.:**

Cm: 25x20x25h

Net Weight: kg 5

Gross Weight: kg 8

### **VB 10108M CP4 BOSCH HIGH-PRESSURE PUMP (on base) - manual**

Radial-piston pump for common rail engine, pressure 2000 bar, fuel lubrication, two plungers.



#### **Approx. weight and dim.:**

Cm: 25x20x25h

Net Weight: kg 4

Gross Weight: kg 8

**VB 10104**

**VB 10106**

**VB 10108**

Indicative picture for reference only





Indicative picture for reference only

*Reproduction of the fuel circuit of a diesel engine, complete with:*

- 2 direct injectors;
- 2 indirect injectors;
- fuel filter;
- in-line injection pump with cylinder;
- low pressure gauge (pump circuit);
- high pressure gauge (injector circuit);
- tank;
- feeding pump;
- high and low pressure delivery and return pipings.

*The injection pump, operates by means of a 220 V geared motor, sends the fuel to the injectors which atomize it in special glass bulbs.*

*In this way the fuel injection and atomization can be displayed.*

*The unit is also suitable for idling tests and demonstrations with simulated breakdowns.*

**Approx. weight and dim.:**

Cm	80x80x160h
Net Weight:	kg 55
Gross Weight:	kg 90

# VB 10300

## VB 10300M DIESEL COMMON-RAIL (on base) - manual



Accurate cross-section of the high pressure (1600 bar) fuel system known as Common-rail. This circuit consists of a radial piston pressure pump, one delivery manifold and an electro-injector, all connected via high-pressure hoses.

*It is operated manually.*

### Approx. weight and dim.:

Cm:	50x20x30h
Net Weight:	kg 8
Gross Weight:	kg 15

Indicative picture for reference only

# VB 10305

## VB 10305S DIESEL ELECTRO-INJECTOR WITH SOLENOID VALVE (on base) - static



Section of electro injector for modern diesel engines. The main interesting components from the educational point of view are displayed.

### Approx. weight and dim.:

Cm:	10x25x10h
Net Weight:	kg 0,5
Gross Weight:	kg 1

## VB 10110S INJECTOR PUMP (on base) - static

Accurate section of a unit injector system for commercial vehicles, where it is possible to observe:

- electromagnetic valve HD
- pumping element
- duster, etc.



### Approx. weight and dim.:

Cm: 40x20x10h

Net Weight: kg 3

Gross Weight: kg 4

VB 10110

Indicative picture for reference only

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# VB 10180 - VB 10181

**VB 10180M INJECTION PUMP WITH 6 IN-LINE CYLINDERS AND CENTRIFUGAL GOVERNOR (on base) - manual**

**VB 10181M INJECTION PUMP WITH 4 IN-LINE CYLINDERS AND CENTRIFUGAL GOVERNOR (on base) - manual**



Indicative picture for reference only

## **VB 10180M**

### **Main technical specifications:**

- Small piston;
- Cylinder;
- Sector gear,
- Rock,
- Camshaft,
- Check valve,
- Centrifugal governor

Operated manually through a crank handle.

## **VB 10180M**

### **Approx. weight and dim.:**

Cm: 25x55x45h  
Net Weight: kg 16  
Gross Weight: kg 20

## **VB 10181M**

### **Main technical specifications:**

- Small piston;
- Cylinder;
- Sector gear,
- Rock,
- Camshaft,
- Check valve,
- Centrifugal governor

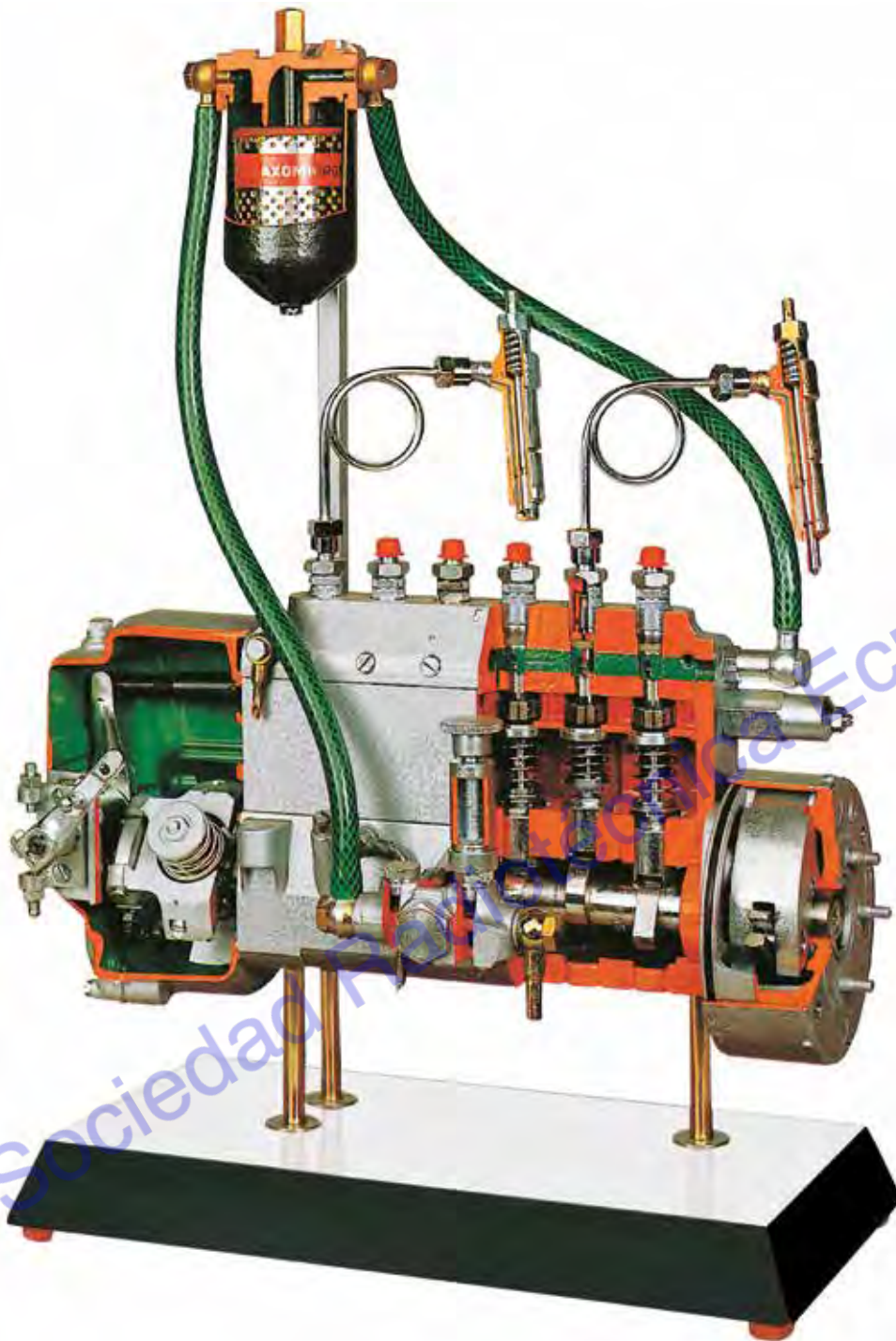
Operated manually through a crank handle.

## **VB 10181M**

### **Approx. weight and dim.:**

Cm: 20x40x30h  
Net Weight: kg 9  
Gross Weight: kg 15

Indicative picture for reference only



**VB 10200**

#### **VB 10200M**

##### **Main technical specifications:**

- Small piston;
- Cylinder;
- Sector gear,
- Rock,
- Camshaft,
- Check valve,
- Centrifugal governor
- 2 injectors of different type
- Fuel filter
- Fuel pump

##### **Approx. weight and dim.:**

Cm: 60x30x60h  
Net Weight: kg 24  
Gross Weight: kg 35

Operated manually through a crank handle.

# VB 10220

## VB 10220M BOSCH INJECTION PUMP WITH 4 IN-LINE CYLINDERS + PNEUMATIC SPEED GOVERNOR (on base) - manual

Accurate section of a pump suitable for medium displacement engine (FIAT, Mercedes) with pneumatic speed governor (rock rod or acceleration rod controlled by a diaphragm connected to the suction collector). It is provided with a feeding pump.

*Operated manually through a crank handle.*

### Approx. weight and dim.:

Cm:	20x30x30h
Net Weight:	kg 7
Gross Weight:	kg 10



# VB 10230

## VB 10230M SINGLE-CYLINDER INJECTION PUMP (on base) - manual

Alternative single-cylinder injection pump model complete with one injector.

### Approx. weight and dim.:

Cm:	20x20x30h
Net Weight:	kg 3
Gross Weight:	kg 5

*Operated manually through a crank handle.*

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system. Many parts have been chromium, plated and galvanized for a longer life.



Indicative picture for reference only



## VB 10240M BOSCH ROTARY INJECTION PUMP (on base) - manual



The most popular rotating pump (Bosch VE) has been sectioned for training purposes to show all its operating parts.

The distributor during the gas oil pumping and distribution phase, the transfer pump, the speed governor, the automatic advance regulator and the fuel circuit are clearly displayed.

It is supplied complete with an indirect injector.

*Operated manually through a crank handle.*

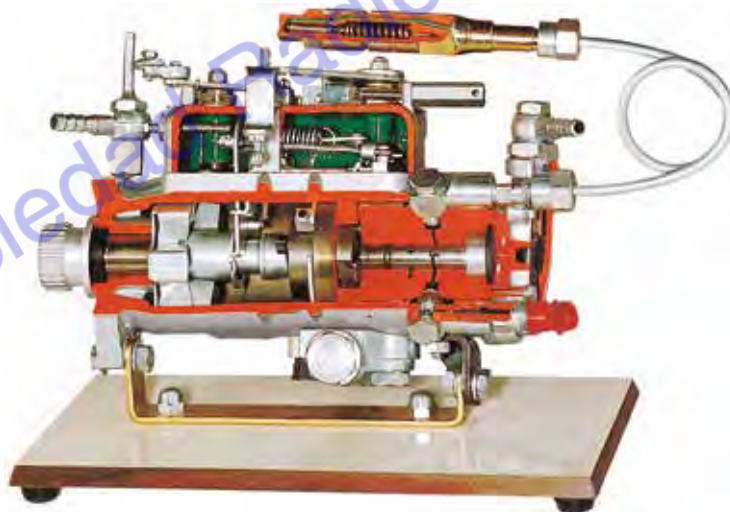
### Approx. weight and dim.:

Cm: 30x15x30h

Net Weight: kg 5

Gross Weight: kg 8

## VB 10250M CAV DPA-DPS ROTARY INJECTION PUMP (on base) - manual



Careful section of a CAV rotary pump for training purposes, showing all its operating parts.

The transfer pump, the speed governor, the automatic advance regulator, the hydraulic sensor device, the fuel circuit and the pumping small piston are clearly shown. It is supplied complete with an indirect injector.

*Operated manually through a crank handle.*

### Approx. weight and dim.:

Cm: 30x20x20h

Net Weight: kg 6

Gross Weight: kg 8

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system. Many parts have been chromium, plated and galvanized for a longer life.

VB 10240

VB 10250

# VB 10260

## VB 10260M CAV DPC INJECTION PUMP (on base) - manual

*This is an evolution of the CAV DPA pump.  
It has been cross sectioned according to the same criteria to show its main parts.  
It is provided with an indirect injector.*

*It is operated manually.*

### Approx. weight and dim.:

Cm:	30x20x20h
Net Weight:	kg 6
Gross Weight:	kg 9



# VB 10270

## VB 10270M RADIAL PISTON INJECTION PUMP WITH ELECTRONIC ADJUSTER VP 44 BOSCH DISTRIBUTOR (on base) - manual

### Approx. weight and dim.:

Cm:	40x20x30h
Net Weight:	kg 9
Gross Weight:	kg 15

### Main technical specification:

- Vane pump
- Electric fan
- Distributor plunger
- Injection phase
- Electronic control unit, etc.



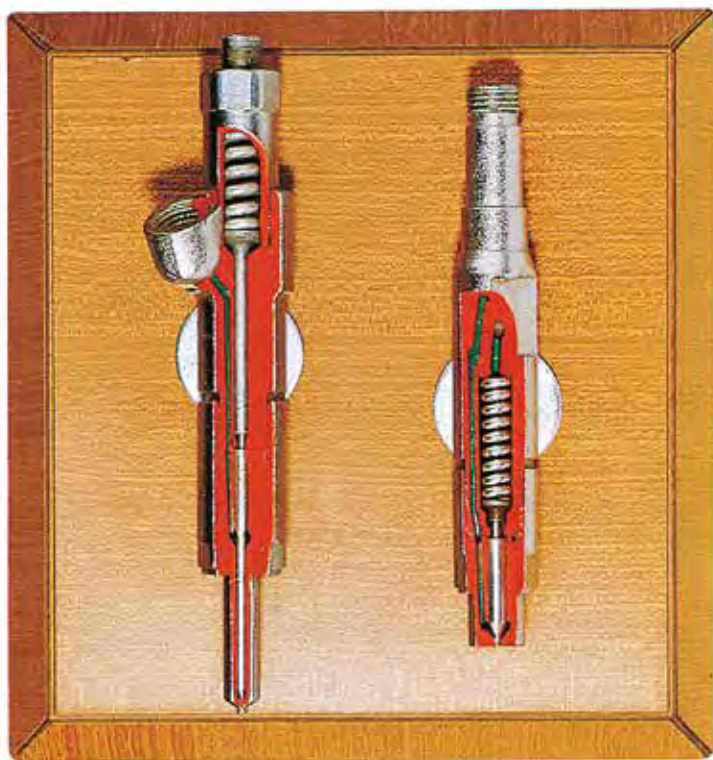
*Modern high-pressure rotary injection pump (approx. 1500 bars).*

*It is operated manually.*

*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system. Many parts have been chromium, plated and galvanized for a longer life.*

*Indicative picture for reference only*

## VB 10280S INJECTORS (on base) - static



Careful section of two different injectors (direct and indirect injection type) showing their internal parts and relevant operation.

### Approx. weight and dim.:

Cm: 30x20x15h

Net Weight: kg 1

## VB 10500S DIRECT INJECTION PISTON - static

## VB 10510S INDIRECT INJECTION PISTON - static



### VB 10500S

#### Approx. weight and dim.:

Cm: 18x18x35h

Net Weight: kg 5

Gross Weight: kg 7

### VB 10510S

#### Approx. weight and dim.:

Cm: 12x12x22h

Net Weight: kg 2.5

Gross Weight: kg 4

VB 10500 - VB 10510

## VB 10290M DIESEL PUMPING ELEMENT - manual



Giant model (scale 5:1) of the pumping element of a Diesel engine. It has been carefully cross sectioned to show the cylinder inlet hole and the helical spline on the piston.

It is operated manually.

### Approx. weight and dim.:

Cm: 30x6x6h

Net Weight: kg 1

VB 10290

VB 10280



# VB 10430

## VB 10430M TURBOSUPERCHARGER WITH WASTE-GATE VALVE (on base) - manual

### Approx. weight and dim.:

Cm:	30x30x30h
Net Weight:	kg 6
Gross Weight:	kg 8

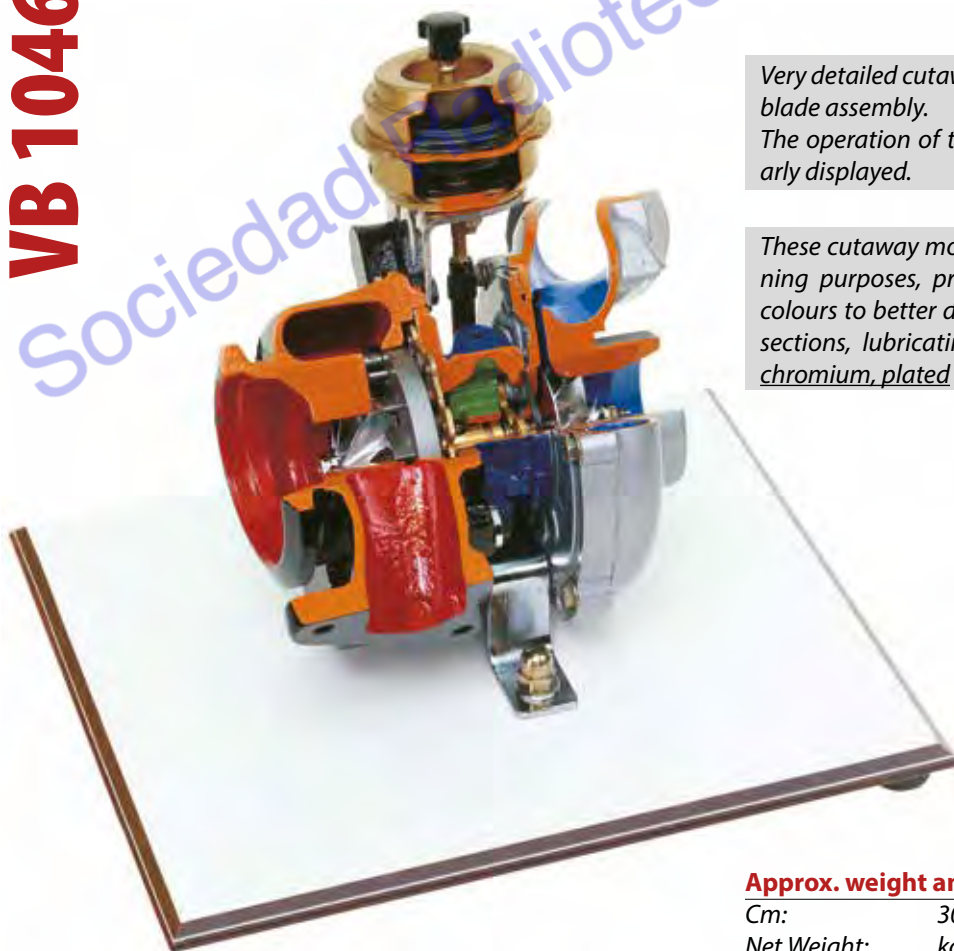


## VB 10460M VARIABLE GEOMETRY TURBOSUPERCHARGER (on base) - manual

Very detailed cutaway item, with clearly visible moving blade assembly. The operation of the variable geometry system is clearly displayed.

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits. Many parts have been chromium, plated and galvanized for a longer life.

# VB 10460



### Approx. weight and dim.:

Cm:	30x25x30h
Net Weight:	kg 6
Gross Weight:	kg 10

Indicative picture for reference only

**VB 10441M TURBO-CHARGER WITH VARIABLE GEOMETRY + ELECTRICAL CONTROL MOTOR (on base) - manual**



**Approx. weight and dim.:**

Cm:	50x20x25h
Net Weight:	kg 7
Gross Weight:	kg 10

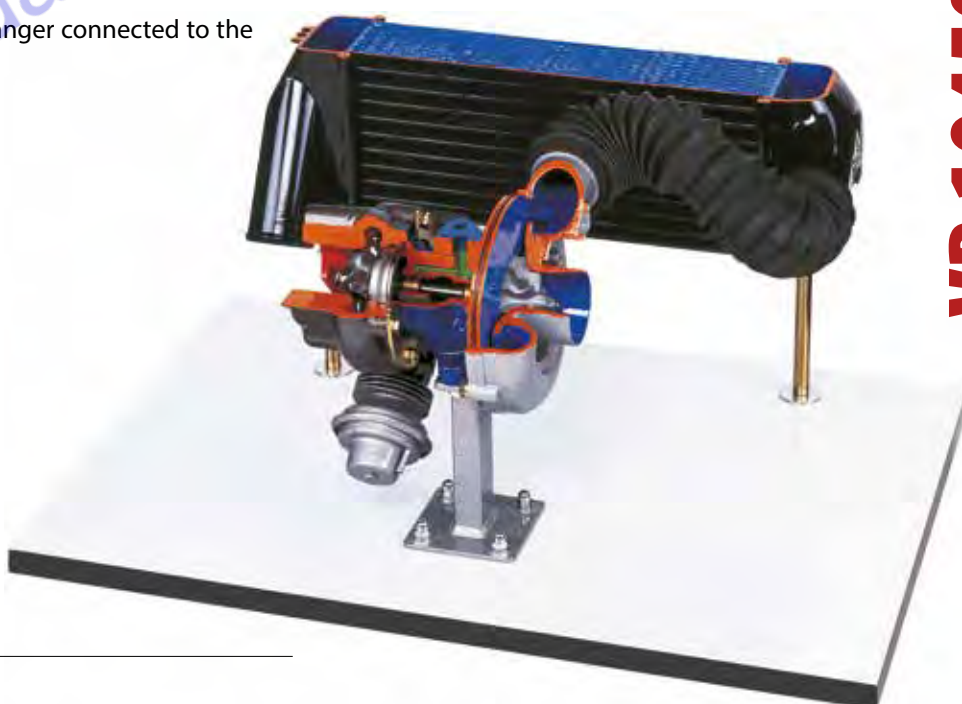
**VB 10450M TURBO-INTERCOOLER (on base) - manual**

**VB 10450M**

Accurate section of a supercharging unit for Diesel or petrol motorcars.

The cross-section of the turbo-supercharger highlights the following:

- Exhaust gas turbine
- Waste-gate valve
- Centrifugal compressor
- Lubricating circuit
- Cutaway air-air heat exchanger connected to the turbo-supercharger.



**VB 10450M**

**Approx. weight and dim.:**

Cm:	60x40x40h
Net Weight:	kg 12
Gross Weight:	kg 18

**VB 10441**

**VB 10450**

# VB 10442

## VB 10442M ROOTS-TYPE SUPERCHARGER (on base) - manual

### Approx. weight and dim.:

Cm:	50x20x25h
Net Weight:	kg 9
Gross Weight:	kg 15



# VB 10452

## VB 10452M SEQUENTIAL TWIN-TURBO (on base) - manual

Accurate section of a sequential turbo showing one turbocharger for lower engine speeds and a second turbocharger at higher engine speeds.



### Approx. weight and dim.:

Cm:	55x35x40h
Net Weight:	kg 8
Gross Weight:	kg 15

Indicative picture for reference only



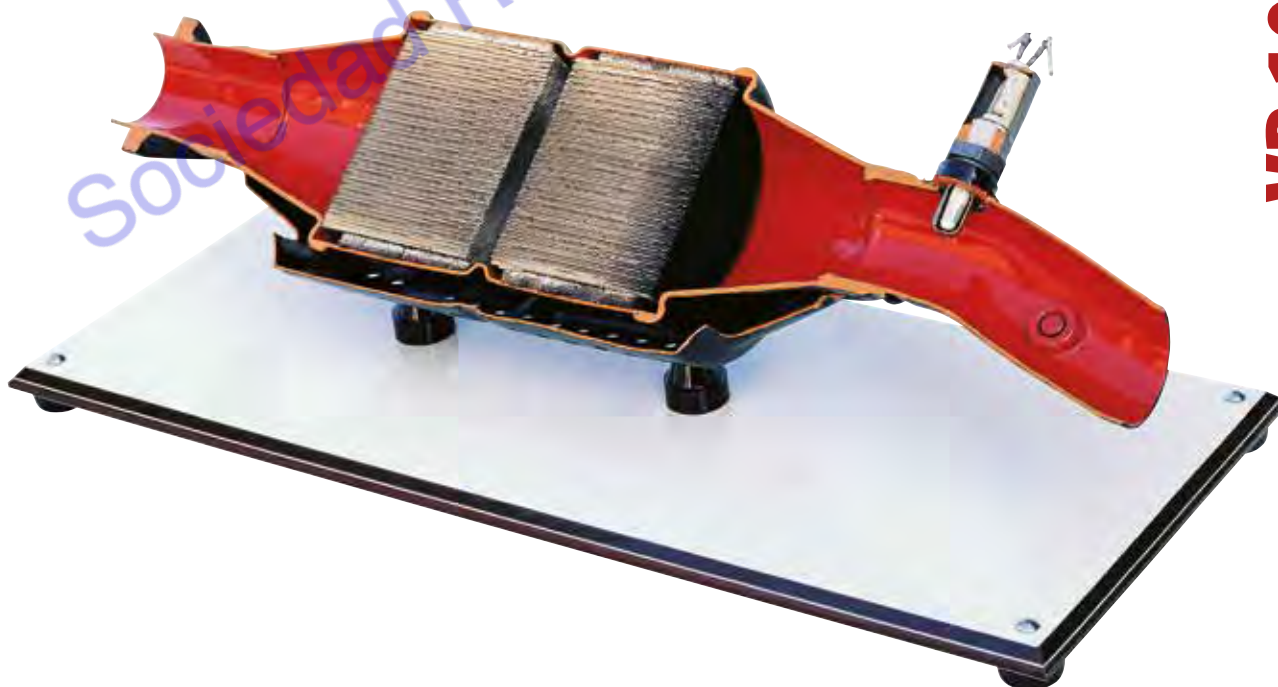
**VB 10453S TURBOCHARGER WITH VARIABLE GEOMETRY HOLSET FOR TRUCKS**  
(on base) - static



**Approx. weight and dim.:**

Cm: 45x45x45h  
Net Weight: kg 26  
Gross Weight: kg 35

**VB 10630S CATALYTIC SILENCER WITH LAMBDA PROBE (on base) - static**



**Approx. weight and dim.:**

Cm: 50x20x20h  
Net Weight: kg 3  
Gross Weight: kg 6  
Packing

**VB 10453**

**VB 10630**

Indicative picture for reference only

**VB 10370S PISTON PUMP (on base) - static**

**VB 10380S ELECTRICAL FUEL PUMP (on base) - static**

**VB 10385S MECHANICAL FUEL PUMP (on base) - static**

**VB 10390M WATER PUMP WITH RADIATOR (on base) - manual**

**VB 10400M OIL PUMP WITH FILTER (on base) - manual**



**VB 10370S**



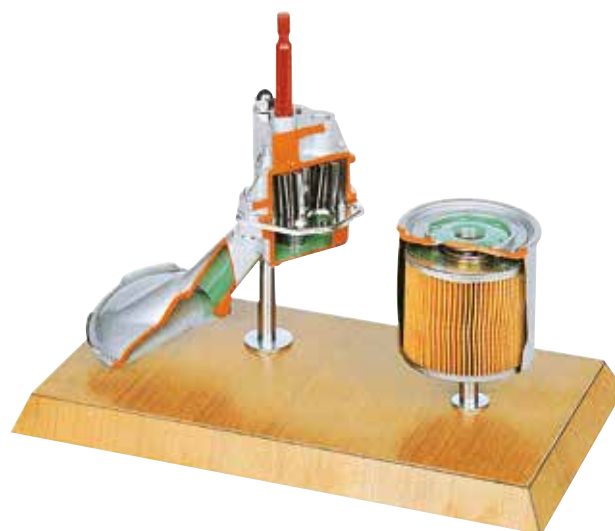
**VB 10380S**



**VB 10385S**



**VB 10390M**



**VB 10400M**

**VB 10370S - VB 10380S - VB 10385S**

**Approx. weight and dim.:**

Cm: 15x15x15h

Net Weight: kg 0,5

Gross Weight: kg 1,0

**VB 10390M - VB 10400M**

**Approx. weight and dim.:**

Cm: 30x20x30h

Net Weight: kg 3

Gross Weight: kg 6

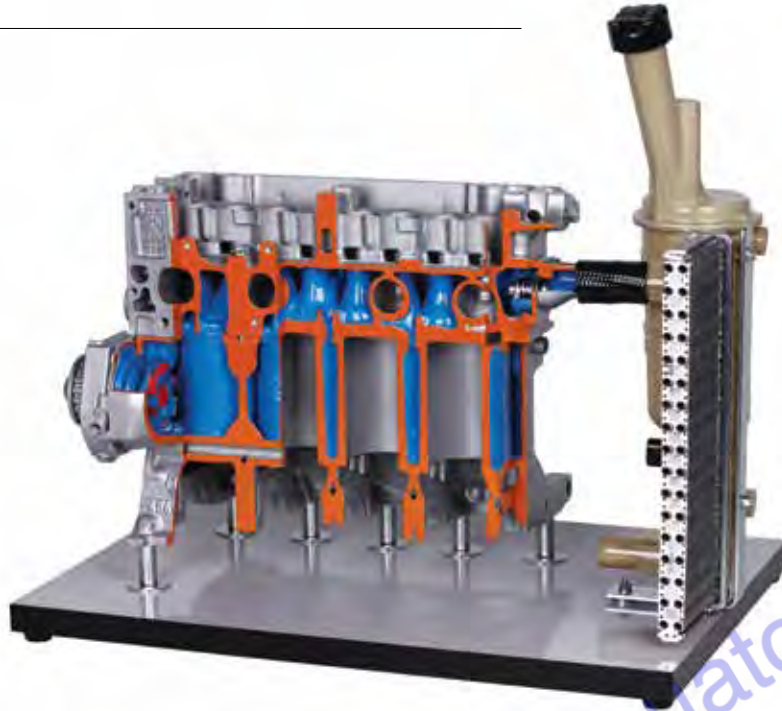
Indicative picture for reference only

## VB10401S ENGINE COOLING SYSTEM (on base) - static

Complete Cooling System unit

### Main technical specifications:

- Block-head canalisation
- Water pump
- Thermostatic valve
- Water temperature bulb
- Expansion tank
- Radiator
- Connecting pipe



### Approx. weight and dim.:

Cm: 50x70x75h

Net weight : kg 26

Gross weight: Kg 35

## VB 10402S DUAL MASS FLYWHEEL(on base) - static

Sectioned to highlight the two different damped masses by means of internal springs



### Approx. weight and dim.:

Cm: 35x35x20h

Net Weight: kg 16

Gross Weight: kg 21

VB 10401

VB 10402

Indicative picture for reference only

Sociedad Radiotécnica Ecuatoriana



## VB 10403S LUBRICATION CIRCUIT WITH GEAR ROTOR TYPE PUMP (on base) - static

Oil pump apparatus with internal gears complete with oil filter.

### Main technical specification:

- Pressure bulb
- Pressure relief valve
- Suction device with small net



### Approx. weight and dim.:

Cm	30x40x40h
Net Weight:	kg 2,5
Gross Weight:	kg 4

Indicative picture for reference only

## VB 10404M FLANGE OIL PUMP COMPLETE WITH PRESSURE RELIEF VALVE (on base) - manual



### Approx. weight and dim.:

Cm:	20x20x30h
Net Weight:	kg 4
Gross Weight:	kg 6

**VB 10405M** ROTOR OIL PUMP (on base) - manual

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**VB 10410M** VANE PUMP (on base) - manual

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**VB 10420M** GEAR PUMP (on base) - manual

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Indicative picture for reference only



**VB 10405M**



**VB 10420M**

**VB 10405M**

**Approx. weight and dim.:**

Cm: 25x20x30h  
Net Weight: kg 1  
Gross Weight: kg 2

**VB 10410M**

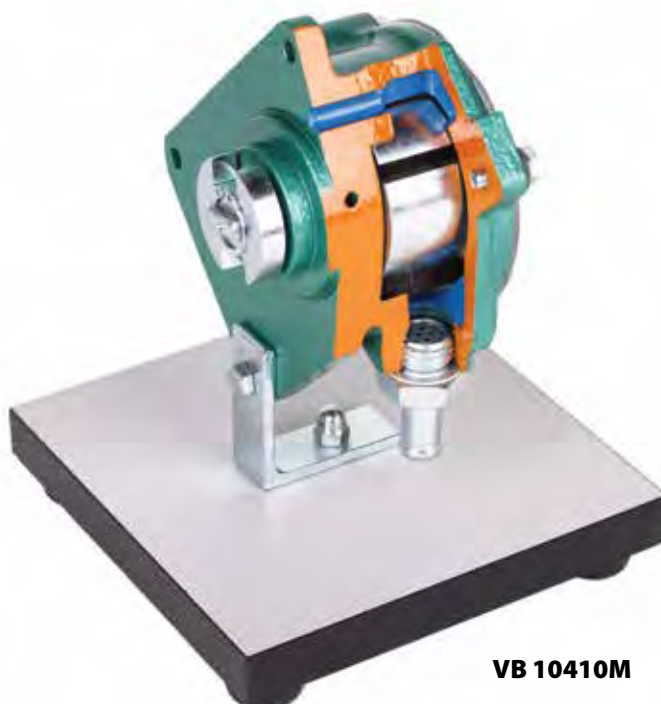
**Approx. weight and dim.:**

Cm: 15x15x20h  
Net Weight: kg 1  
Gross Weight: kg 2

**VB 10420M**

**Approx. weight and dim.:**

Cm: 25x20x30h  
Net Weight: kg 1  
Gross Weight: kg 2



**VB 10410M**

**VB 10405 - VB 10410 - VB 10420**

## VB 9130E CAR AIR CONDITIONING SYSTEM (on stand with wheels) - electrical

After market unit mounted on an auto chassis. It is ideal for training in the operation, maintenance, repair and troubleshooting.

### Main technical features:

- Max. power 2 Kw
- Cooling liquid 400gt Freon R134a
- Piston compressor
- Condenser
- Dehydrating filter
- Pressure switch
- Expansion valve
- Evaporation unit
- Resistor
- Thermostat
- Troubleshooting device for simulation of 4 faults
- With nomenclature table



Indicative picture for reference only

It operates at 220V by means of a mono-phase 1,5 Kw motor.

### Approx. weight and dim.:

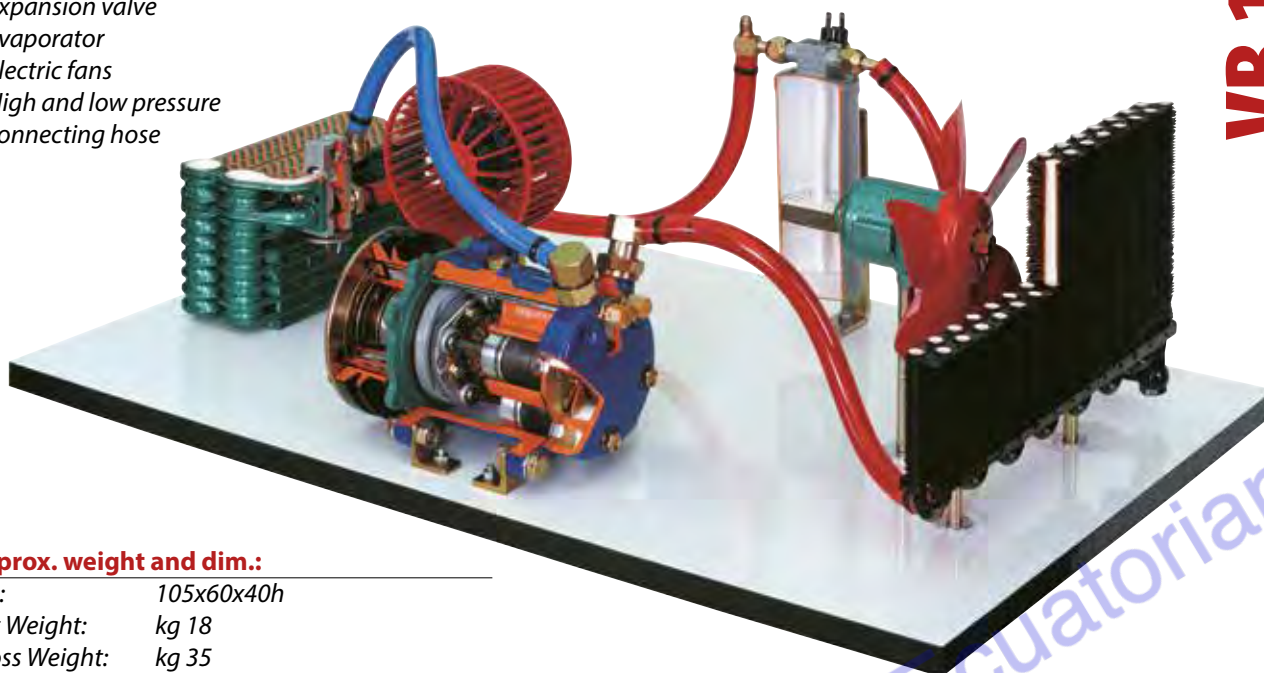
Cm:	105x75x130h
Net Weight:	kg 70
Gross Weight:	kg 120



## VB 10650M AIR CONDITIONING SYSTEM (on base) - manual

### Main technical specifications:

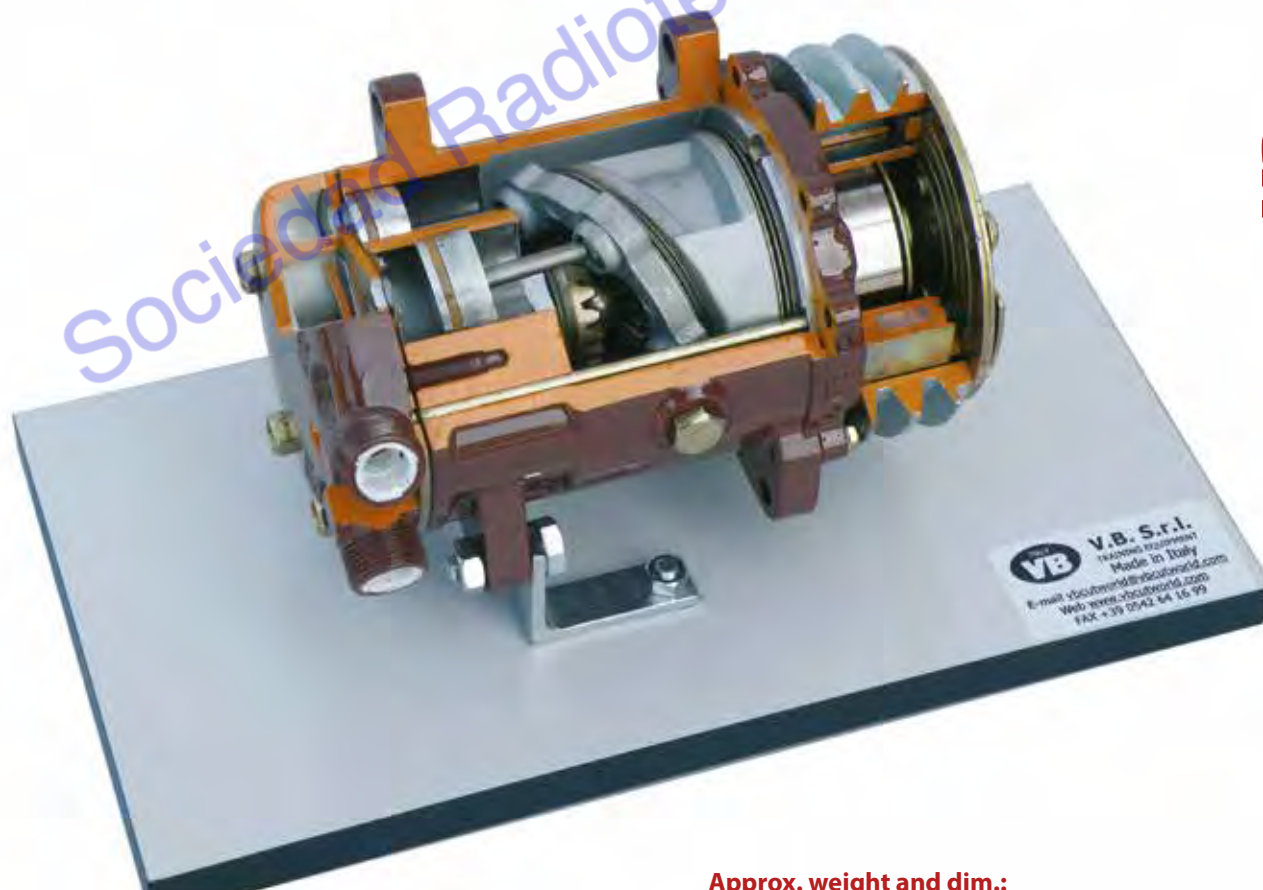
- Radial piston compressor
- Condenser
- Filter
- Expansion valve
- Evaporator
- Electric fans
- High and low pressure connecting hose



### Approx. weight and dim.:

Cm: 105x60x40h  
Net Weight: kg 18  
Gross Weight: kg 35

## VB 10651M AXIAL ALTERNATIVE COMPRESSOR WITH SIMPLE EFFECT PISTON (on base) - manual



### Approx. weight and dim.:

Cm: 30x20x20h  
Net Weight: kg 8  
Gross Weight: kg 13

VB 10650

VB 10651

Indicative picture for reference only

# VB 10652 - VB 10653

**VB 10652M AXIAL ALTERNATIVE COMPRESSOR WITH VARIABLE DISPLACEMENT (on base) - manual**

**VB 10653M AXIAL ALTERNATIVE COMPRESSOR WITH DOUBLE EFFECT PISTON (on base) - manual**



## VB 10652M

### Approx. weight and dim.:

Cm: 20x20x20h  
Net Weight: kg 7  
Gross Weight: kg 12

## VB 10653M

### Approx. weight and dim.:

Cm: 20x20x20h  
Net Weight: kg 7  
Gross Weight: kg 12

Indicative picture for reference only

# VB 10654 - VB 10655

**VB 10654M ROTARY SCROLL COMPRESSOR (on base) - manual**

**VB 10655M VANE COMPRESSOR (on base) - manual**



## VB 10654M

### Approx. weight and dim.:

Cm: 20x20x20h  
Net Weight: kg 6  
Gross Weight: kg 12

## VB 10655M

### Approx. weight and dim.:

Cm: 20x20x20h  
Net Weight: kg 7  
Gross Weight: kg 12



**VB 10700M STEERING BOX WITH HOURGLASS SCREW (on base) - manual**

**VB 10710M SEGMENTAL STEERING (on base) - manual**

**VB 10720M STEERING BOX WITH RE-CIRCULATING BALL SYSTEM (on base) - manual**

**VB 10730M RACK STEERING BOX (on base) - manual**

Indicative picture for reference only



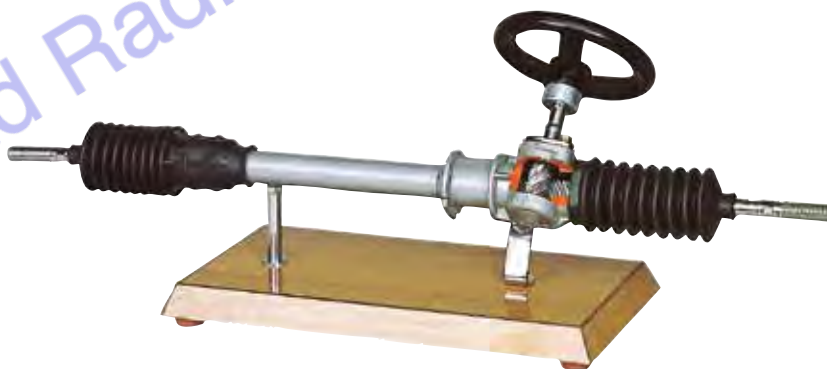
**VB 10700M**



**VB 10710M**



**VB 10720M**



**VB 10730M**

**VB 10700M**

**Approx. weight and dim.:**

Cm: 30x40x40h  
Net Weight: kg 7  
Gross Weight: kg 10

**VB 10710M**

**Approx. weight and dim.:**

Cm: 30x25x20h  
Net Weight: kg 4  
Gross Weight: kg 6

**VB 10720M**

**Approx. weight and dim.:**

Cm: 25x35x40h  
Net Weight: kg 8  
Gross Weight: kg 11

**VB 10730M**

**Approx. weight and dim.:**

Cm: 70x25x30h  
Net Weight: kg 4  
Gross Weight: kg 6

**VB 10700 - VB 10710 - VB 10720 - VB 10730**



## VB 10750M POWER STEERING WITH RE-CIRCULATING BALL SYSTEM (on base) - manual

### Main technical specifications:

- Ball type steering box
- Hydraulic vane pump
- Oil tank with relevant filter
- Connecting pipes

Operated through a hand wheel.



### Approx. weight and dim.:

Cm:	50x35x40h
Net Weight:	kg 20
Gross Weight:	kg 35

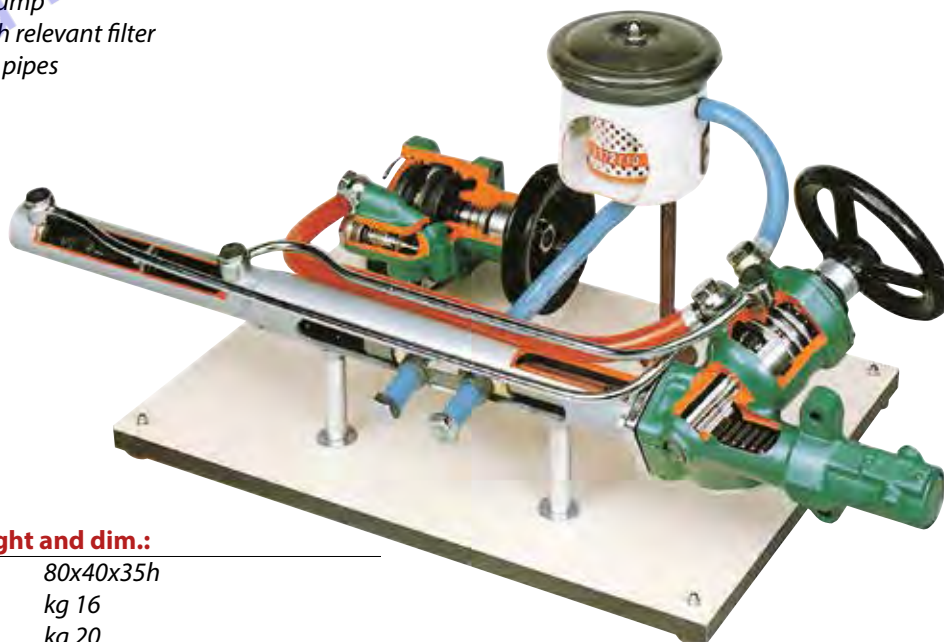
Indicative picture for reference only

## VB 10760M RACK POWER STEERING (on base) - manual

### Main technical specifications:

- Rack type steering box
- Hydraulic pump
- Oil tank with relevant filter
- Connecting pipes

Operated through a hand wheel.



### Approx. weight and dim.:

Cm:	80x40x35h
Net Weight:	kg 16
Gross Weight:	kg 20

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections.  
Many parts have been chromium, plated and galvanized for a longer life.

## VB 10780M ELECTRICALLY ASSISTED STEERING (on a table stand) - manual

### Main technical specifications:

- Rack steering box
- Power steering motor
- Electrically assisted steering actuator
- Power steering control unit

*Operated manually by means of a wheel fitted to the electric motor.*

**VB 10780**

### Approx. weight and dim.:

Cm: 65x90x45h

Net weight: kg 15

Gross Weight: kg 20

**VB 10782**

## VB 10782M ELECTRICAL RACK AND PINION STEERING (on base) - manual



### Approx. weight and dim.:

Cm: 70x30x40h

Net Weight: kg 15

Gross Weight: kg 22

**VB 10784**

**VB 10784M POWER-ASSISTED STEERING WITH ELECTRICALLY-CONTROLLED HYDRAULIC PUMP (on base) - manual**

The power-assisted steering consists of an electro-hydraulic system allowing power saving because the pump is driven by an electric motor.



**Approx. weight and dim.:**

Cm: 42x64x40h  
Net Weight: kg 8  
Gross Weight: kg 14

**VB 10777E**

**VB 10777E HYDRAULIC POWER STEERING (on stand with wheels) – electrical**



**NO MORE AVAILABLE**

**Approx. weight and dim.:**

Cm: 167x107x166h  
Net weight: kg 210  
Gross weight: kg 330

Indicative picture for reference only



## VB 10778E ELECTRIC POWER ASSISTED STEERING (EPS) WITH SUSPENSIONS (on stand with wheels) - electrical

Electrical power steering (EPS) trainer in working conditions with fully operating McPherson suspension, for the study of the steering system. Any information used by the steering (car speed, alternator, city, steering effort) can be varied by the user. An instrument cluster and two displays show all information concerning the operation.

Large production and diffusion EPS complete with:

- Operating McPherson struts, rack and pinion
- Adjustment of the steering effort directly on the rack
- Vehicle speed simulation from 0 to 120 km/h
- Normal/city push-button
- Alternator simulation
- Indicator lamp and voltage/current display
- Body computer with diagnostic socket (with low speed CAN) **OBD 16 pin**



### Approx. weight and dim.:

Cm:	160x130x150h
Net Weight:	kg 150
Gross Weight:	kg 230

## VB 11201S HOMOCYNETIC JOINT (on base) - static



### Approx. weight and dim.:

Cm:	55x20x15h
Net Weight:	kg 4
Gross Weight:	kg 6

## VB 11160S PROPELLER SHAFT WITH 2 TYPES OF COUPLING - static



### Approx. weight and dim.:

Cm:	15x15x60h
Net Weight:	kg 4
Gross Weight:	kg 6

VB 10778

VB 11201

VB 11160

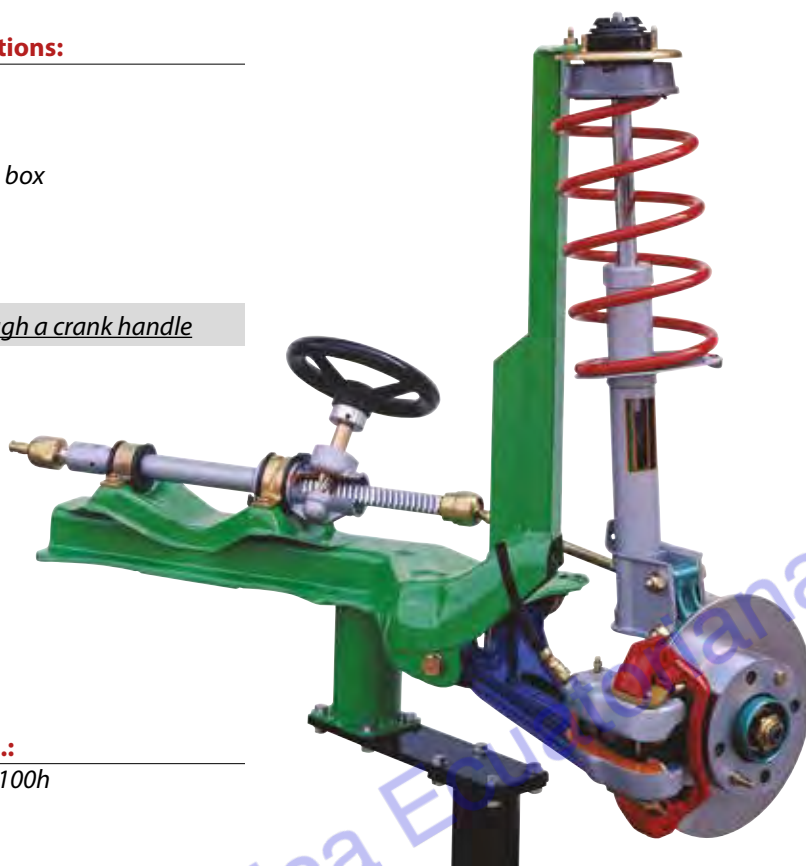
# VB 11210

## VB 11210M STEERING UNIT WITH McPHERSON SUSPENSIONS (on stand with wheels) - manual

### Main technical specifications:

- McPherson suspension
- Shock absorber
- Spring
- Rack and pinion steering box
- Disc brake
- Steering wheel

*Operated manually through a crank handle*



### Approx. weight and dim.:

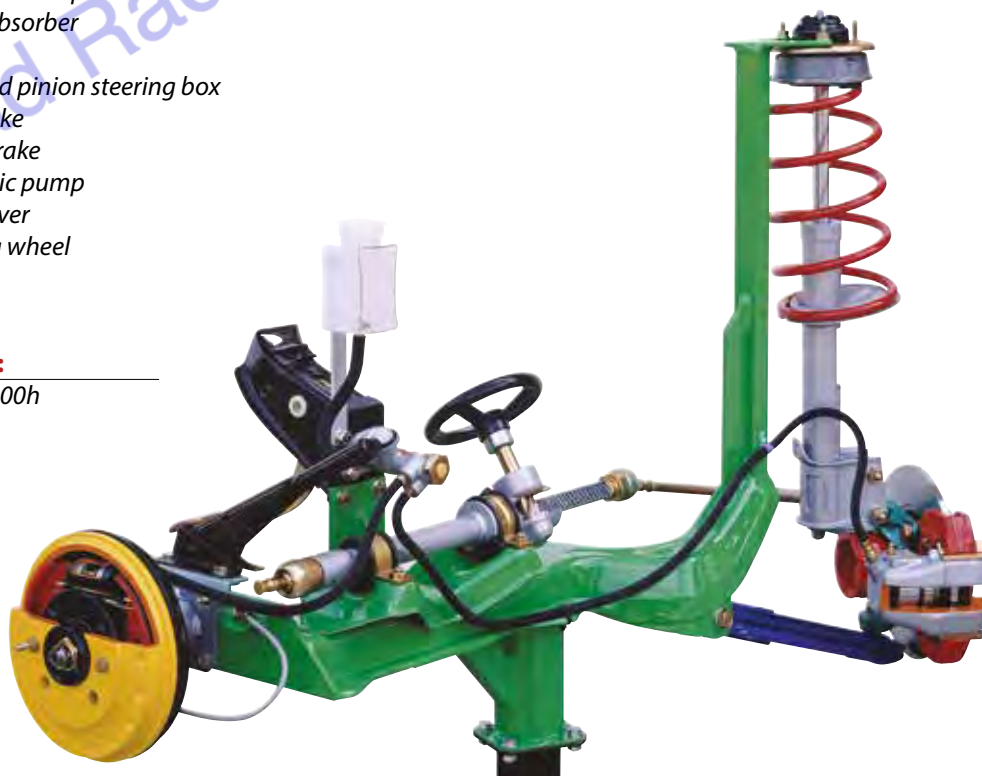
Cm: 100x60x100h  
Net Weight: kg 40  
Gross Weight: kg 65

## VB 11220M STEERING UNIT WITH McPHERSON SUSPENSIONS AND BRAKES (on stand with wheels) - manual

### Main technical specifications:

- McPherson suspension
- Shock absorber
- Spring
- Rack and pinion steering box
- Disc brake
- Drum brake
- Hydraulic pump
- Brake lever
- Steering wheel

*Operated manually through a crank handle*



### Approx. weight and dim.:

Cm: 120x60x100h  
Net Weight: kg 50  
Gross Weight: kg 75

*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.  
Many parts have been chromium, plated and galvanized for a longer life.*

*Indicative picture for reference only*

## VB 11202M CAR FORECARRIAGE (on stand with wheels) - manual

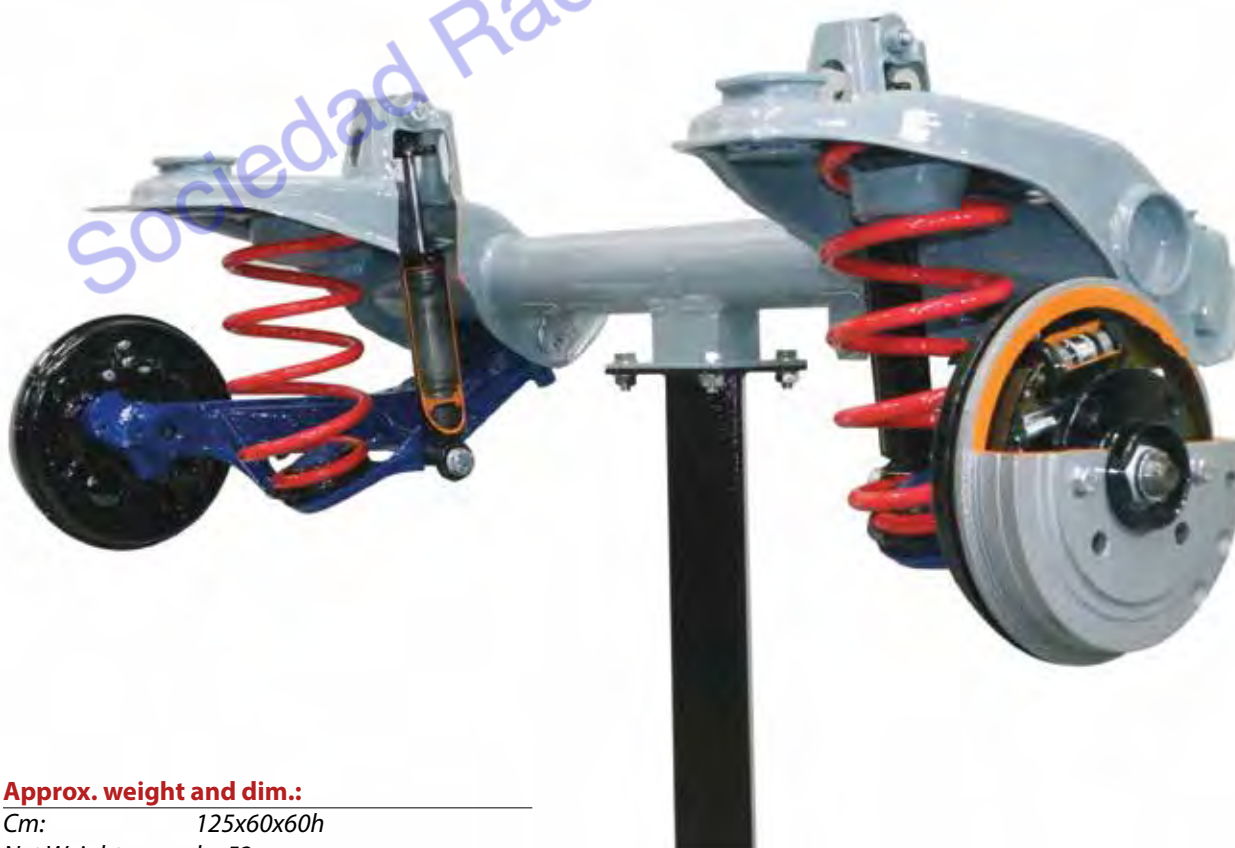
Standard car fore-carriage with McPherson suspension and steering box with pinion and rack. Complete with disc brakes. (This unit is not cross sectioned).



### Approx. weight and dim.:

Cm: 100x155x130h  
Net Weight: kg 80  
Gross Weight: kg 120

## VB 11204M REAR AXLE (on stand with wheels) - manual



### Approx. weight and dim.:

Cm: 125x60x60h  
Net Weight: kg 52  
Gross Weight: kg 70

VB 11202

VB 11204

Indicative picture for reference only



**VB 11206S MULTILINK SUSPENSIONS (on stand with wheels) – static**

Multilink system is an independent vehicle suspension type with multiple arms (5). It is mainly used for the rear axle in order to dampen the vibrations.

**Main technical specifications:**

- Used on Alfa Romeo, Mercedes, etc. cars
- Spherical/ball joint for each arm

**Approx. weight and dim.:**

Cm:	170x75x100h
Net Weight:	kg 84
Gross Weight:	kg 150



Indicative picture for reference only

**VB 10636 HYDRAULIC McPHERSON SHOCK ABSORBER****VB 10637 HYDRAULIC SHOCK ABSORBER****VB 10638 GAS SHOCK ABSORBER****VB 10636****Approx. weight and dim.:**

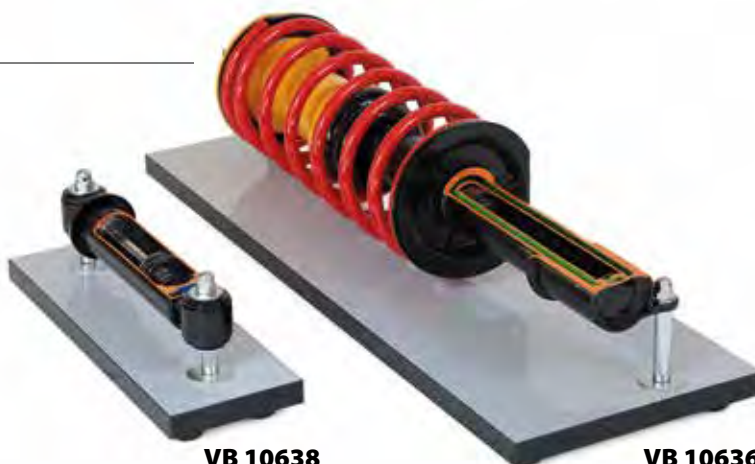
Cm:	65x25x20h
Net Weight:	kg 8
Gross Weight:	kg 10

**VB 10637****Approx. weight and dim.:**

Cm:	30x10x10h
Net Weight:	kg 1,5
Gross Weight:	kg 2

**VB 10638****Approx. weight and dim.:**

Cm:	30x10x10h
Net Weight:	kg 1,5
Gross Weight:	kg 2



VB 10638

VB 10636

## VB 11082M HYBRID TRANSMISSION MG (MOTOR/GENERATOR) Toyota Prius (on stand with wheels) - manual

The Motor Generator 1 (MG1) operates as the control element for the power splitting planetary gear set. It recharges the HV battery and also supplies electrical power to drive Motor Generator 2 (MG2). MG1 effectively controls the continuously variable transmission function of the transaxle and operates as the engine starter.



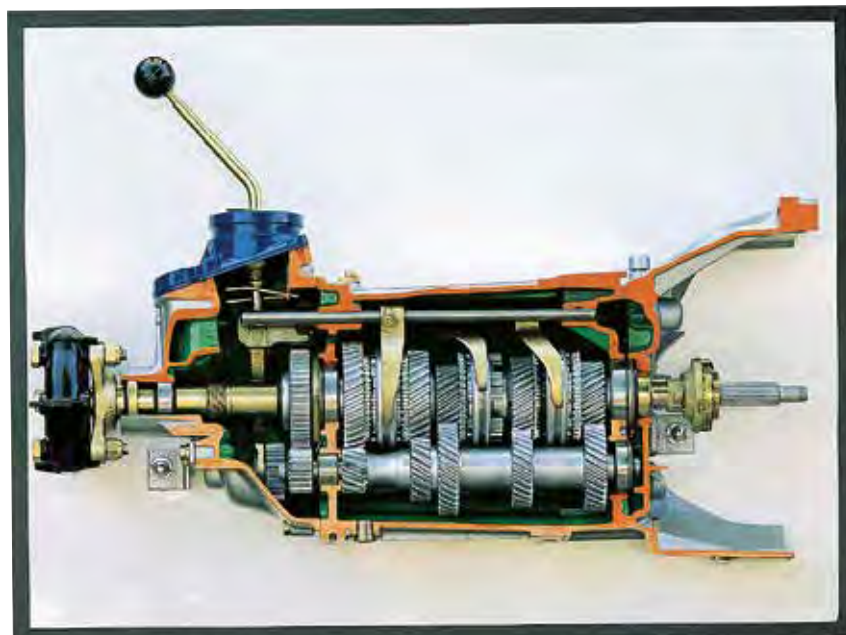
### Approx. weight and dim.:

Cm:	60x70x65h
Net Weight:	kg 100
Gross Weight:	kg 130

## VB 10990M GEARBOX 5 SPEEDS + REVERSE (on stand with wheels) - manual

With possibility of selecting any speed.

*Operated manually through a hand wheel.*



### VB 10990M

#### Approx. weight and dim.:

Cm:	90x65x50h
Net Weight:	kg 50
Gross Weight:	kg 75

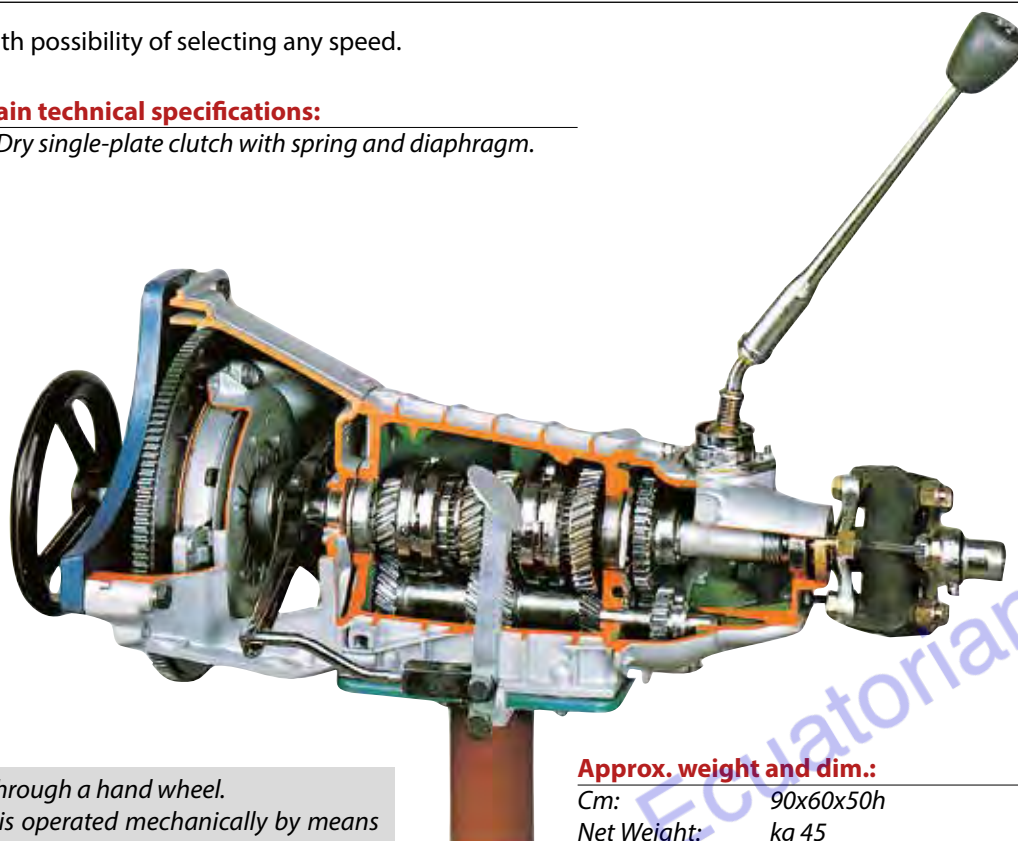
# VB 11020

## VB 11020M GEARBOX WITH CLUTCH 4 FORWARD SPEED + REVERSE (on stand with wheels) - manual

With possibility of selecting any speed.

### Main technical specifications:

- Dry single-plate clutch with spring and diaphragm.



Operated through a hand wheel.  
The clutch is operated mechanically by means  
of a foot pedal for training purposes.

### Approx. weight and dim.:

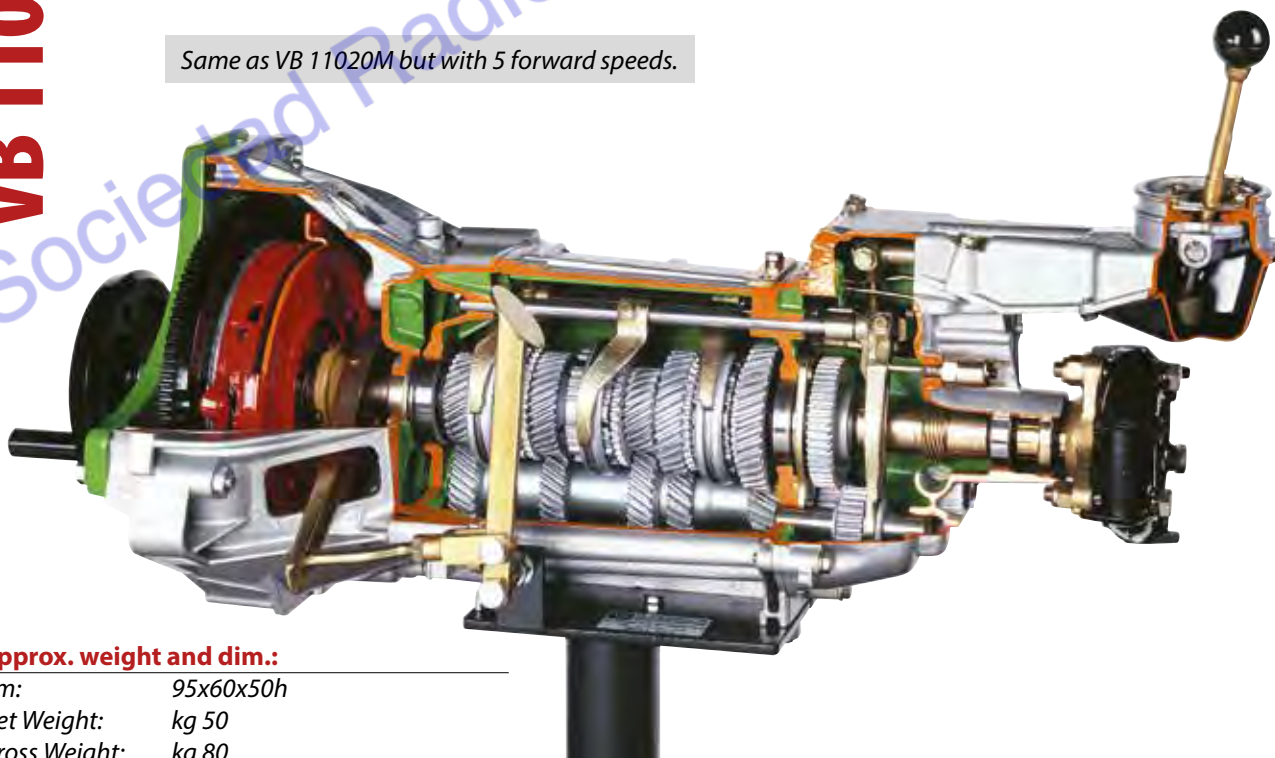
Cm: 90x60x50h  
Net Weight: kg 45  
Gross Weight: kg 65

Indicative picture for reference only

# VB 11030

## VB 11030M GEARBOX WITH CLUTCH 5 FORWARD SPEEDS + REVERSE (on stand with wheels) - manual

Same as VB 11020M but with 5 forward speeds.



### Approx. weight and dim.:

Cm: 95x60x50h  
Net Weight: kg 50  
Gross Weight: kg 80

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.  
Many parts have been chromium, plated and galvanized for a longer life.



**VB 11005M GEARBOX WITH DIFFERENTIAL 5 FORWARD SPEED + REVERSE**  
**(on stand with wheels) - manual**

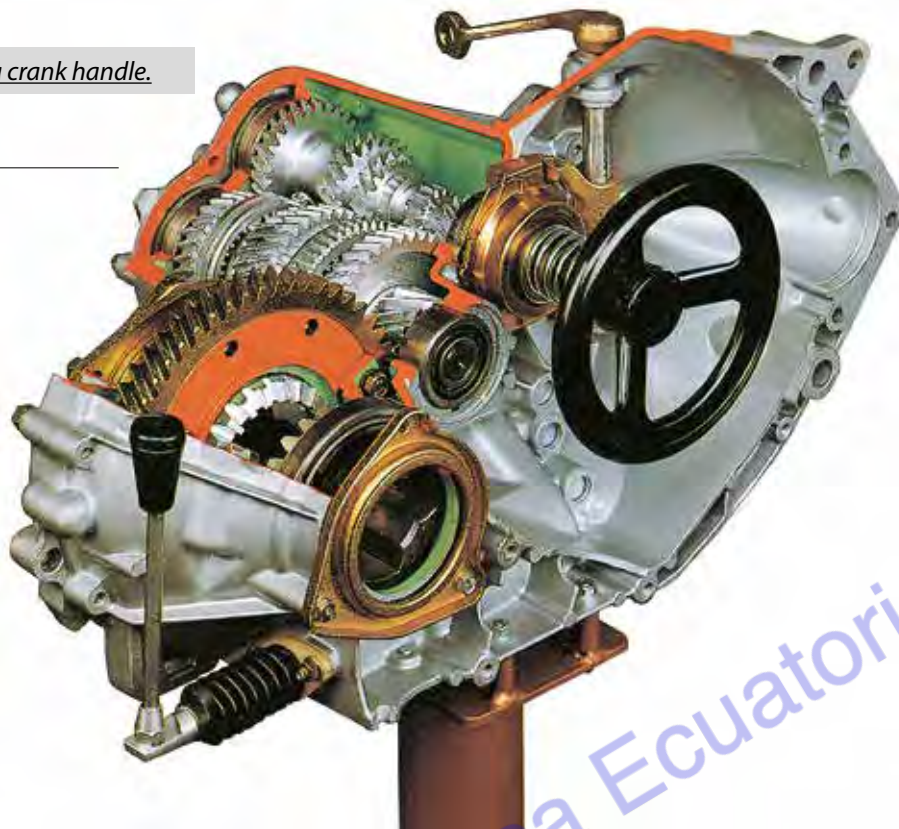
*Operated manually through a crank handle.*

**Approx. weight and dim.:**

Cm: 60x60x60h

Net Weight: kg 50

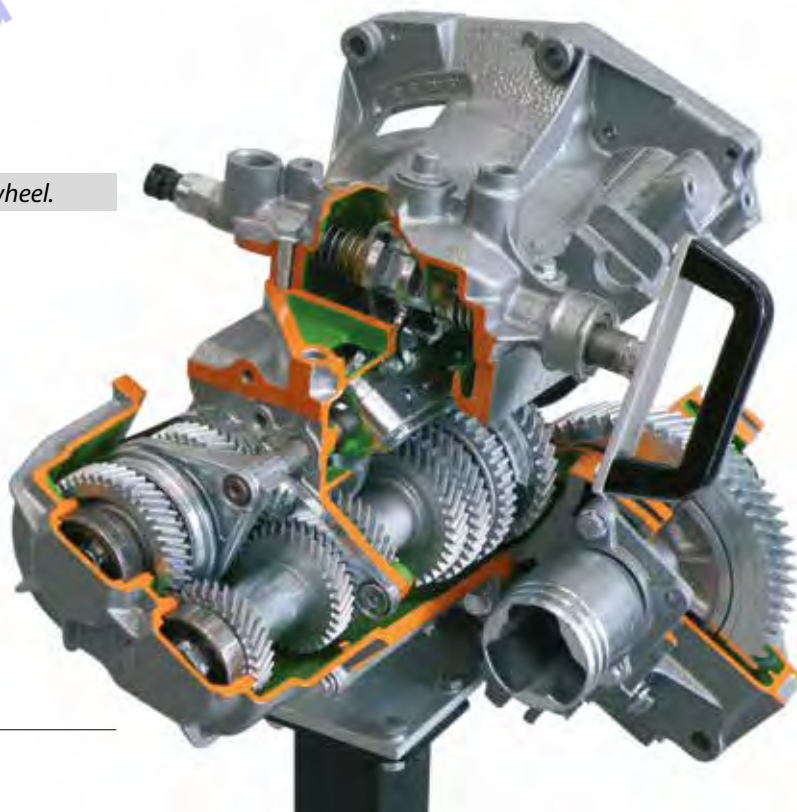
Gross Weight: kg 70



*These cutaways are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections.  
Many parts have been chromium, plated and galvanized for a longer life.*

**VB 11006M GEARBOX WITH DIFFERENTIAL 6 FORWARD SPEEDS + REVERSE**  
**(on stand with wheels) - manual**

*Operated manually through a hand wheel.*



**Approx. weight and dim.:**

Cm: 70x70x80h

Net Weight: kg 40

Gross Weight: kg 55

**VB 11005**

**VB 11006**

**VB 10788**

**VB 10788M GEARBOX WITH DIFFERENTIAL 5 FORWARD SPEED + REVERSE +  
HYDRAULIC CONTROL CLUTCH (on support) - manual**



Sectioned gearbox with working non-sectioned hydraulic clutch. The movement of the clutch disc is visible when applying pressure on the pedal. Gears can be selected by means of a mechanical lever.

**Approx. weight and dim.:**

Cm:	60x60x60h
Net Weight:	kg 60
Gross Weight:	kg 90

**VB 10789**

**VB 10789M FRONT DRIVE GEARBOX WITH DIFFERENTIAL 5 FORWARD SPEEDS +  
REVERSE + MECHANICAL FUNCTIONING OF THE CLUTCH (on support) - manual**



Just pushing the pedal you can observe the mechanical functioning of the clutch

**Approx. weight and dim.:**

Cm:	70x70x80h
Net Weight:	kg 65
Gross Weight:	kg 95

Indicative picture for reference only



## VB 11040M AUTOMATIC TRANSMISSION (on stand with wheels) - manual



### Main technical specifications:

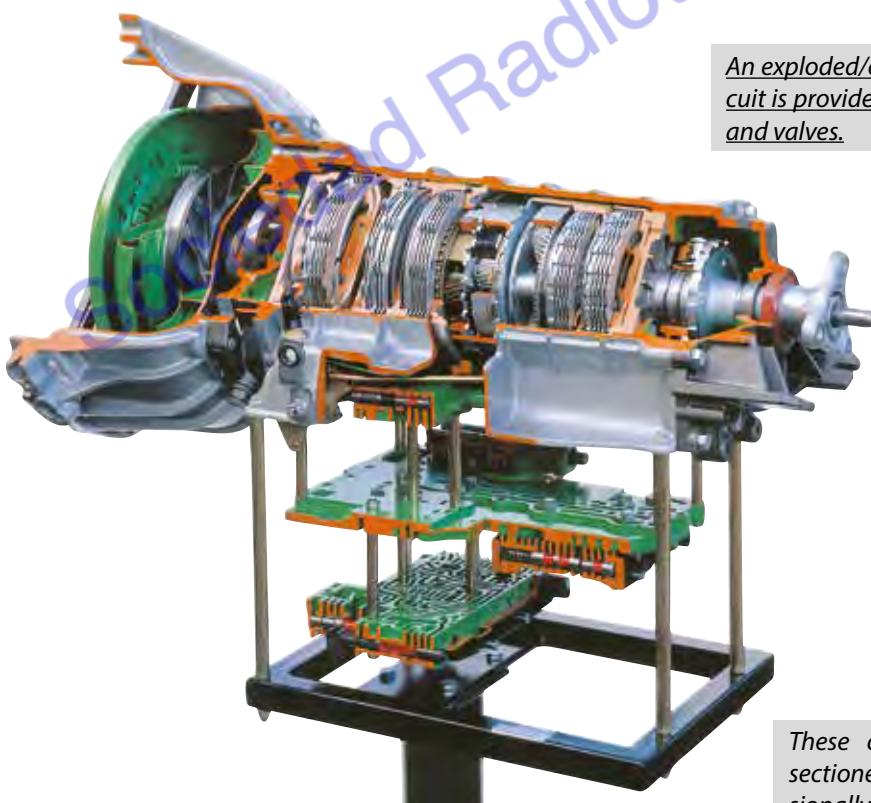
- Hydraulic converter
- Epicyclic gear with 3 forward speeds + reverse
- Multiple-plate clutches
- Control valves

Operated manually by means of a crank handle applied on the converter.

### Approx. weight and dim.:

Cm: 100x65x70h  
Net Weight: kg 70  
Gross Weight: kg 90

## VB 11060M AUTOMATIC TRANSMISSION REAR DRIVE 5 FORWARD SPEED + REVERSE WITH ELECTRONIC CONTROL (on stand with wheels) - manual



An exploded/cutaway view of the hydraulic circuit is provided to better show its various ducts and valves.

### Approx. weight and dim.:

Cm: 90x60x100h  
Net Weight: kg 60  
Gross Weight: kg 85

*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate among the various parts. Many parts have been chromium, plated and galvanized for a longer life.*

VB 11040

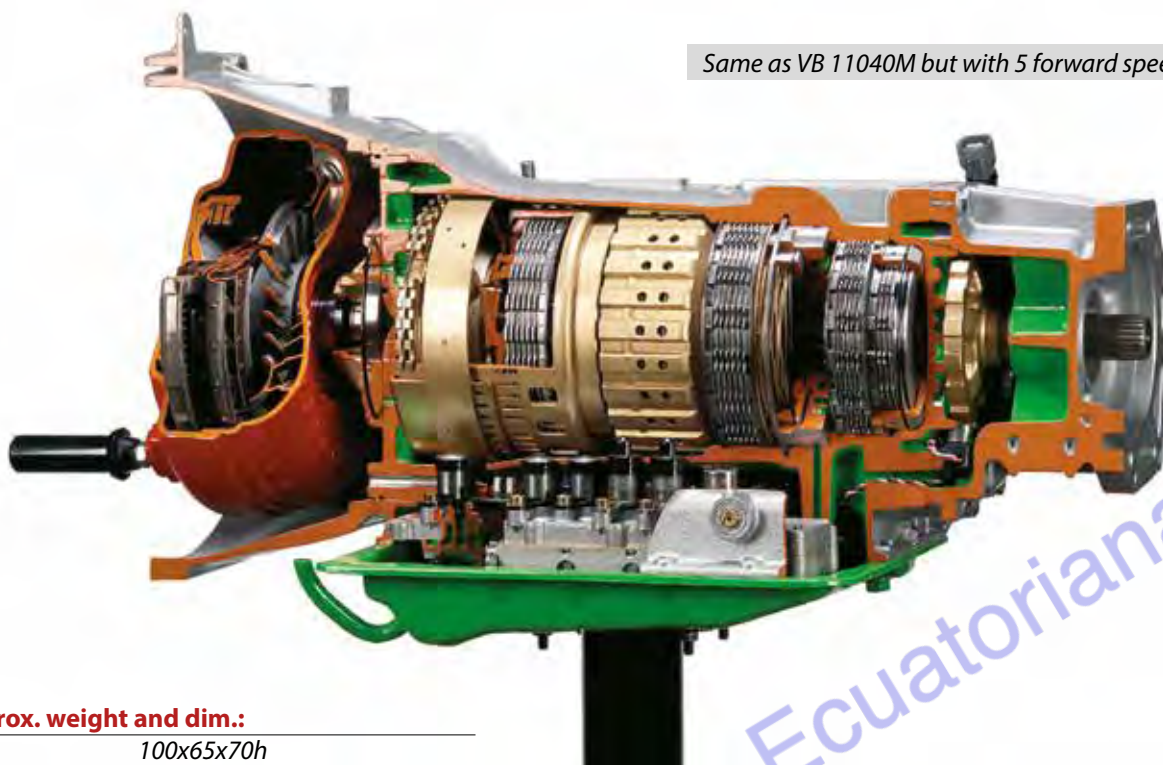
VB 11060



# VB 11042

## VB 11042M AUTOMATIC TRANSMISSION 5 FORWARD SPEED + REVERSE (on stand with wheels) - manual

Same as VB 11040M but with 5 forward speeds.



### Approx. weight and dim.:

Cm:	100x65x70h
Net Weight:	kg 75
Gross Weight:	kg 100

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts. Many parts have been chromium, plated and galvanized for a longer life.

Indicative picture for reference only

# VB 11063

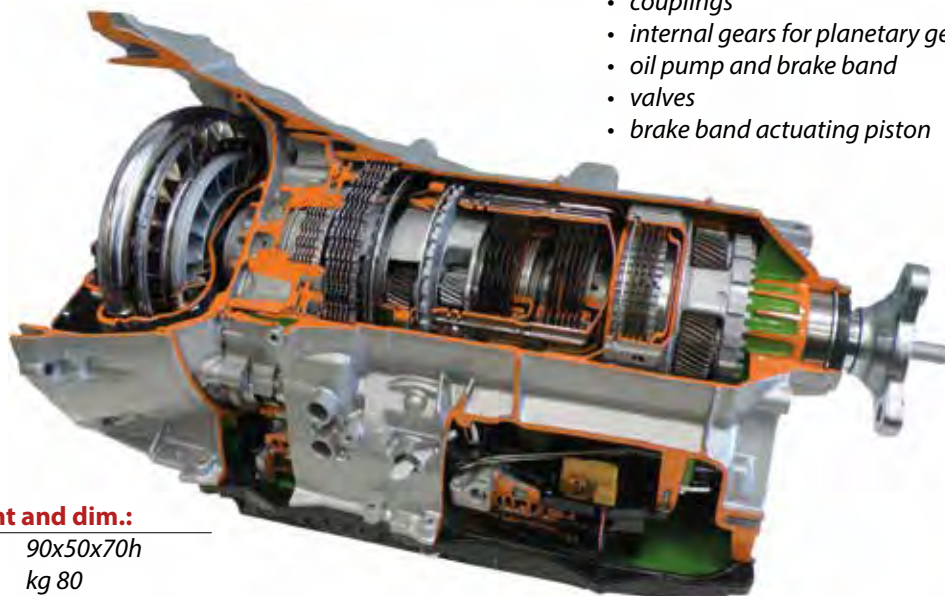
## VB11063/6M AUTOMATIC GEARBOX 6 SPEEDS + REVERSE (on base) - manual

## VB11063/7M AUTOMATIC GEARBOX 7 SPEEDS + REVERSE (on base) - manual

### 8 SPEEDS VERSION AVAILABLE

### Main technical specifications:

- torque converter with lock-up clutch
- couplings
- internal gears for planetary gear sets
- oil pump and brake band
- valves
- brake band actuating piston



### Approx. weight and dim.:

Cm:	90x50x70h
Net Weight:	kg 80
Gross Weight:	kg 110

## **VB 11061M AUTOMATIC ZF 5HP 4WD TRANSMISSION (on stand with wheels) – manual**

### **Main technical specifications:**

- 4 wheel drive
- 5 forward speeds + reverse
- Torque converter
- Sectioned hydraulic circuit
- Sectioned valves
- Sectioned front differential
- Sectioned epicyclical gear
- Multi disk clutch



### **Approx. weight and dim.:**

Cm: 100x80x75h  
Net weight: kg 125  
Gross Weight: kg 160

## **VB 11062M AUTOMATIC TRANSMISSION FRONT DRIVE 4 SPEEDS + REVERSE (on stand with wheels) – manual**

### **Main technical specifications:**

- Hydraulic torque converter
- Front differential
- Epicyclical gear train
- Multi disk clutches



### **Approx. weight and dim.:**

Cm: 50x70x70h  
Net weight: kg 75  
Gross Weight: kg 140

**VB 11061**

**VB 11062**

Indicative picture for reference only



## VB 11064M DSG - DIRECT-SHIFT GEARBOX (on stand with wheels) - manual

Also referred to as double-clutch gearbox, it has two main shafts; one for the odd gears and the other for the even gears. Each shaft is inserted into one of the discs of the coaxial clutches. The shafts connected to the clutches can transmit motion to an auxiliary shaft having the relevant speed-gears by means of a mechanism.

*Operated manually through a crank handle.*



### Approx. weight and dim.:

Cm:	80x40x70h
Net Weight:	kg 60
Gross Weight:	kg 85

Indicative picture for reference only

## VB 11066M ROBOTISED TIP-TRONIC GEARBOX (on stand with wheels) - manual

Electronically-assisted manual gearbox in which the driver's command is translated into motion of the clutch sleeve timers by means of levers similar to those of the mechanical gearbox, operated by electro-magnetic, electro-hydraulic or electro-pneumatic actuators.



*Operated manually through a crank handle.*

### Approx. weight and dim.:

Cm:	60x50x80h
Net Weight:	kg 35
Gross Weight:	kg 55

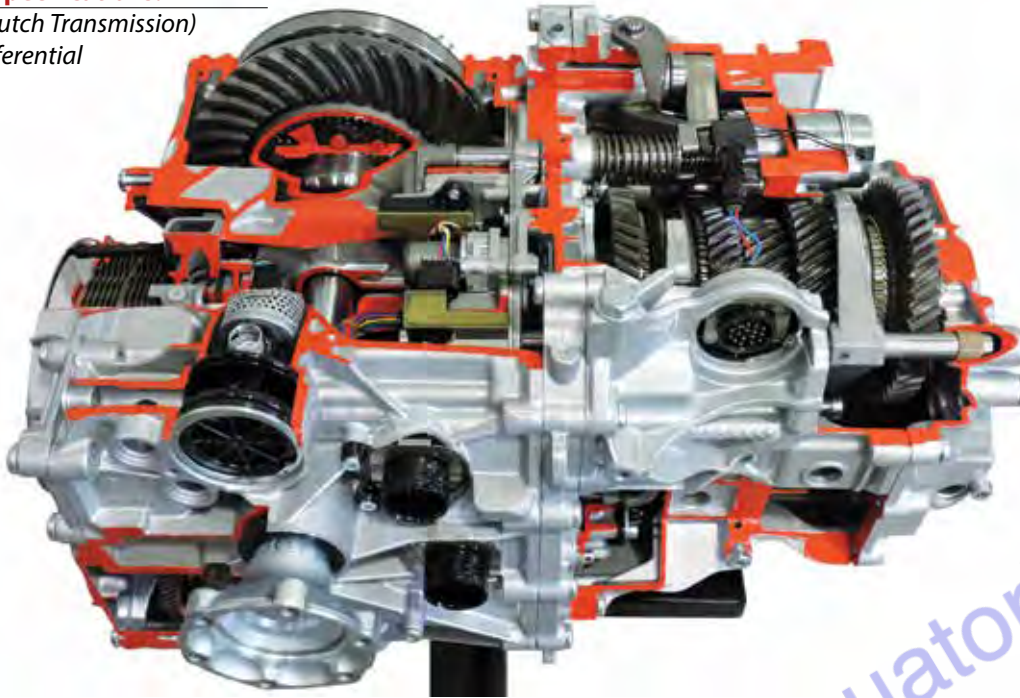
These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts. Many parts have been chromium, plated and galvanized for a longer life.



## VB 11067M GETRAG DCT 7 SPEEDS TRANSMISSION USED ON FERRARI/MERCEDES VEHICLES (on stand with wheels) – manual

### Main technical specifications:

- DCT (Double Clutch Transmission)
- Self-locking differential
- Gears
- Mechatronics
- Oil filter
- Oil pump
- Shift forks



### Approx. weight and dim.:

Cm:	80x80x70h
Net weight:	kg 140
Gross Weight:	kg 185

## VB 11068M CONTINUOUSLY VARIABLE TRANSMISSION (CVT) GEARBOX (on stand with wheels) - manual

Special gearbox that can change continuously through an infinite number of effective gear ratios between maximum and minimum values. There are two V-belt pulleys that are split perpendicular to their axes of rotation, with a V-belt running between them.

### Main technical features:

- Electro-magnetic clutch
- Forward and reverse insertion lever
- Primary pulley
- Secondary pulley
- Roller belt
- Final reduction unit
- Hydraulic command unit

*Operated manually through a crank handle.*



### Approx. weight and dim.:

Cm:	60x50x80h
Net Weight:	kg 45
Gross Weight:	kg 75

VB 11061

VB 11068

# VB 11071

## VB 11071M HEAVY TRUCK GEARBOX ZF 5HP (on stand with wheels) -manual



Sectioned heavy truck gearbox. Composed by:

- Torque converter with lock-up clutch
- Hydrodynamic retarder
- Rotating multi-disc clutches
- Fixed-position multi-disc brakes
- Oil cooler with oil-water exchanger
- Electro- valves

On stand with wheels – Operated manually through a crank handle.

### Approx. weight and dim.:

Cm:	100x70x85h
Net Weight:	kg 295
Gross Weight:	kg 350

# VB 11069

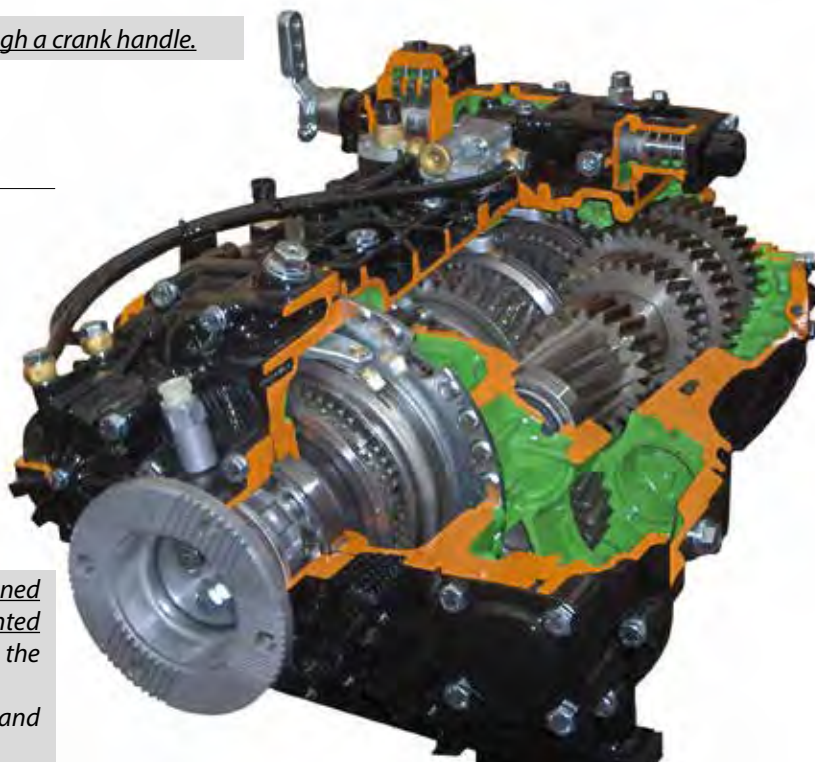
## VB 11069M ZF 16S ECOSPLIT GEARBOX FOR HEAVY TRUCKS 16F + 2R (on stand with wheels) - manual

The gearbox is composed of a central box containing 4 forward speeds gearings and 2 reverse speeds gearings, epicyclic unit for selecting the speed-gears mounted on the base and over-gear on top. The over-gear allows to divide each gear into slow or fast obtaining 16 forward gears which can be inserted and geared down in sequence.

Operated manually through a crank handle.

### Approx. weight and dim.:

Cm:	90x110x130h
Net Weight:	kg 280
Gross Weight:	kg 380



These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.

Many parts have been chromium, plated and galvanized for a longer life.

Indicative picture for reference only



## VB 11070M EATON FULLER 13 SPEED GEARBOX (on stand with wheels) - manual

Quick change gear box used in 300/400HP heavyweight vehicles with mechanical and pneumatic control.

It is a non-synchronized gearbox, the box is divided in 2 parts:

on the engine side are the 1st 2nd 3rd and 4th speed gears, reverse speed gears and extra low ratio pick-up speed gears.

All these gears are mechanically controlled by the change gear lever.

In the other part of the gearbox (on the output shaft side), there are the standard, low ratio and semi-low ratio speed gears, pneumatically controlled by the pre-selectors provided on the gear lever. This gearbox is made very sturdy by the presence of 2 auxiliary shafts sharing stress to an equal degree.



*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts. Many parts have been chromium, plated and galvanized for a longer life.*

### Approx. weight and dim.:

Cm:	110x100x130h
Net Weight:	kg 300
Gross Weight:	kg 400

## VB 11080M GEARBOX WITH REDUCTION GEAR (on stand with wheels) - manual

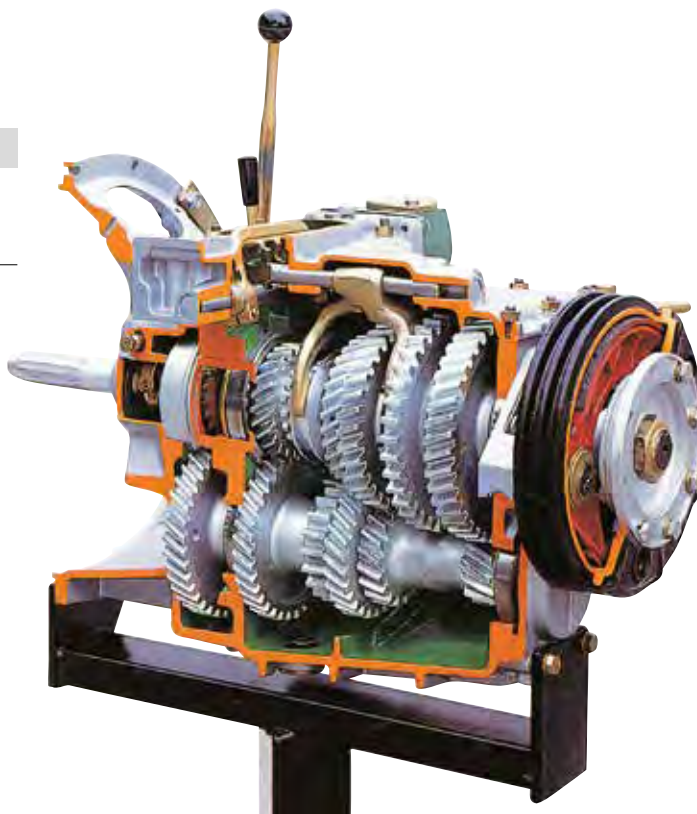
Gearbox for heavy vehicle.

*Operated manually through a crank handle.*

### Approx. weight and dim.:

Cm:	80x80x140h
Net Weight:	kg 150
Gross Weight:	kg 210

4 speeds + reverse gearbox with  
one lever for the speed selection  
one lever for the reducer insertion



VB 11070

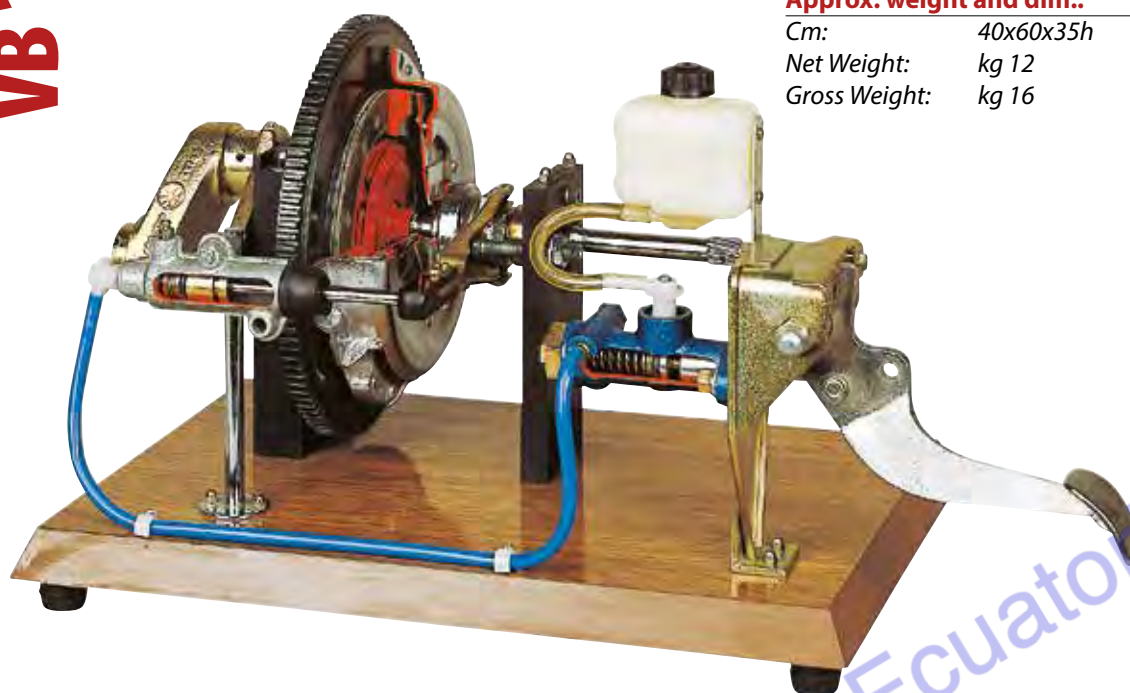
VB 11080



VB 11100

### VB 11100S HYDRAULIC CONTROL CLUTCH (on base) - static

This panel shows the hydraulic circuit which controls a diaphragm clutch. The pump, cylinder and clutch units are fully sectioned.



#### Approx. weight and dim.:

Cm: 40x60x35h

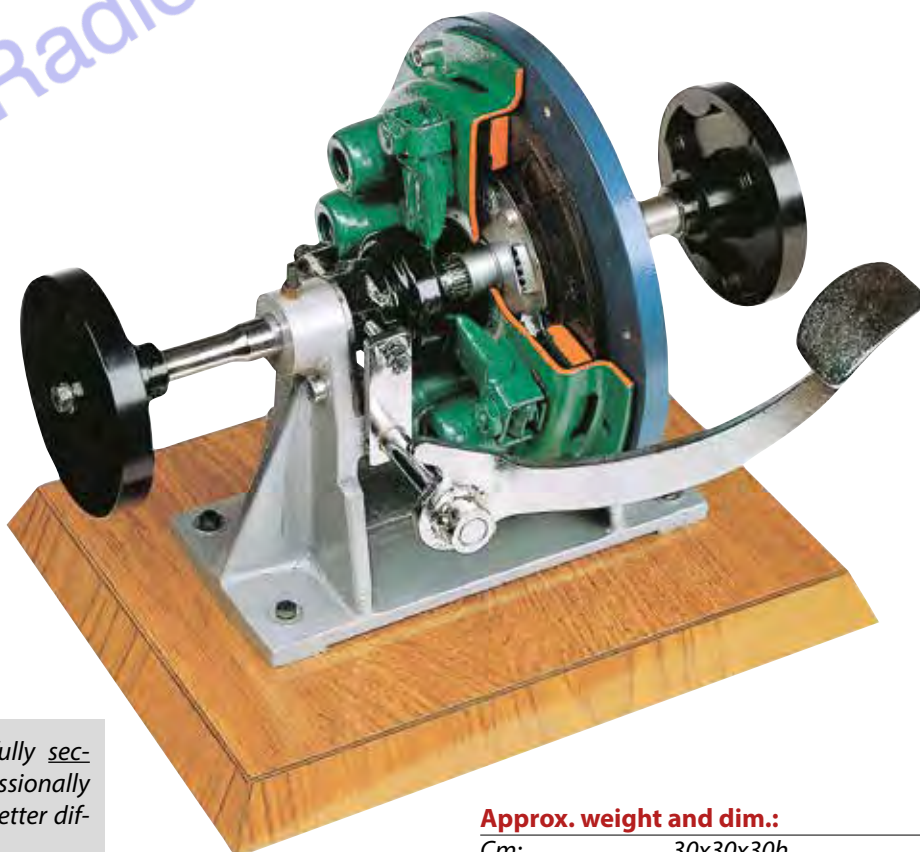
Net Weight: kg 12

Gross Weight: kg 16

VB 11110

### VB 11110M SINGLE DISC CLUTCH COIL SPRING (on base) - manual

Typical example of the most common car clutch, single disc type. Its operation can be clearly observed by pressing the foot control and rotating flywheel manually by means of the dedicated hand wheel.



#### Approx. weight and dim.:

Cm: 30x30x30h

Net Weight: kg 6

Gross Weight: kg 10

*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.*

*Many parts have been chromium, plated and galvanized for a longer life.*

Indicative picture for reference only

## VB 11130M MEMBRANE SPRING CLUTCH (on base) - manual

Accurate section of a car clutch assembly.

By pressing the foot control and turning the hand wheel connected to the disc the clutch operation will become immediately clear.

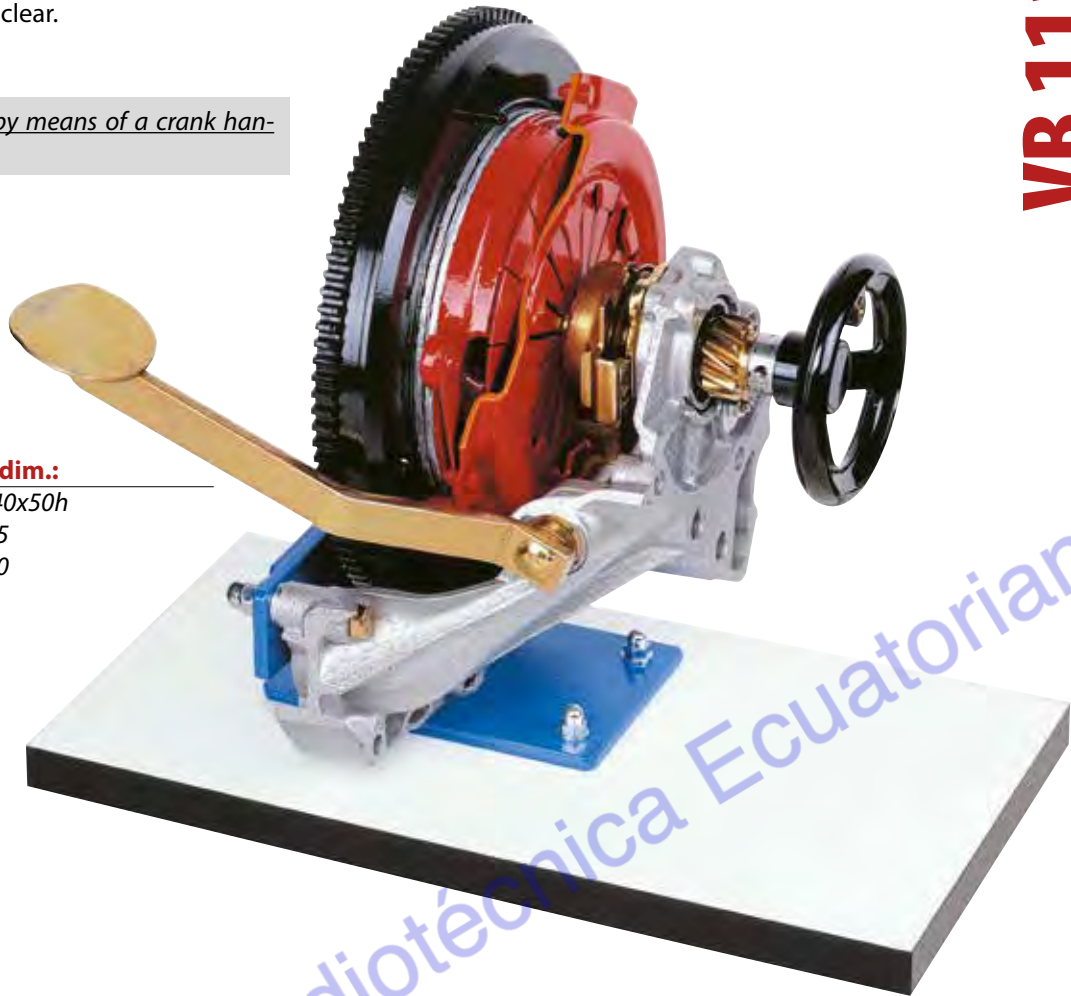
*Operated manually by means of a crank handle.*

### Approx. weight and dim.:

Cm: 50x40x50h

Net Weight: kg 15

Gross Weight: kg 20



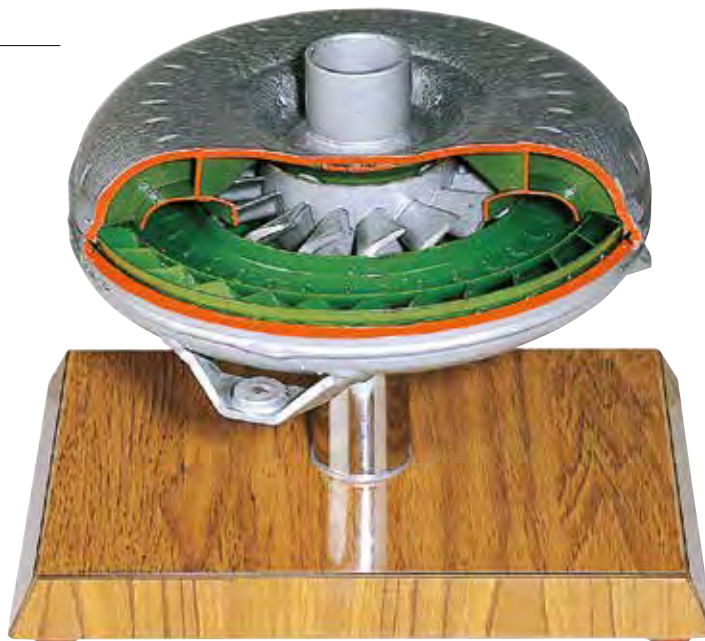
## VB 11140S TORQUE CONVERTER (on base) - static

### Approx. weight and dim.:

Cm: 35x35x30h

Net Weight: kg 8

Gross Weight: kg 12



*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.*

*Many parts have been chromium, plated and galvanized for a longer life.*

VB 11130

VB 11140

Indicative picture for reference only

# VB 11090

## VB 11090S DOUBLE CLUTCH (HYDRAULIC + MECHANICAL) FOR CARS (on base) - static

### Approx. weight and dim.:

Cm: 40x35x40h

Net Weight: kg 27

Gross Weight: kg 35



Indicative picture for reference only

# VB 11095

## VB 11095M DOUBLE CLUTCH (HYDRAULIC + MECHANICAL) FOR BUSES (on stand with wheels) - manual

Representation of a typical clutch used in buses, composed of a traditional mechanical dry clutch coupled to a hydraulic joint allowing soft starting.

*Operated manually through a crank handle.*

### Approx. weight and dim.:

Cm: 100x100x130h

Net Weight: kg 172

Gross Weight: kg 240



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*Many parts have been chromium, plated and galvanized for a longer life.*



## VB 11141M CENTRIFUGAL CLUTCH (on base) - manual

Accurate section of a centrifugal clutch, moving parts type used in Mopeds.

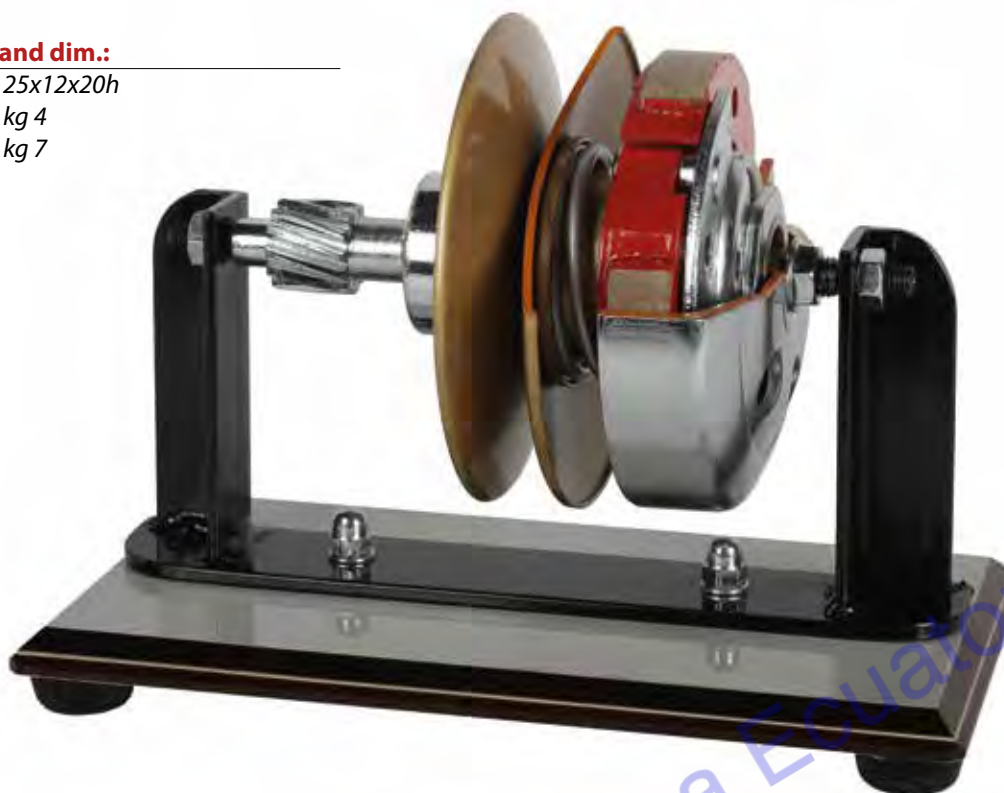
### VB 11141

#### Approx. weight and dim.:

Cm: 25x12x20h

Net Weight: kg 4

Gross Weight: kg 7



## VB 11142S MULTI DISK CLUTCH (on base) – static



#### Approx. weight and dim.:

Cm: 20x20x25h

Net Weight: kg 4

Gross Weight: kg 6

VB 11141

VB 11142

Indicative picture for reference only

VB 11200

### VB 11200M REAR AXLE WITH DIFFERENTIAL (on stand with wheels) - manual

Rigid rear axle complete with differential unit, axle shafts and rear drum brakes, carefully sectioned to show the operation of the differential unit where planetary gears, the ring gear and the pinion are clearly displayed. A brake drum and a cylinder are sectioned too.

*Operated manually through a crank handle.*



#### **Approx. weight and dim.:**

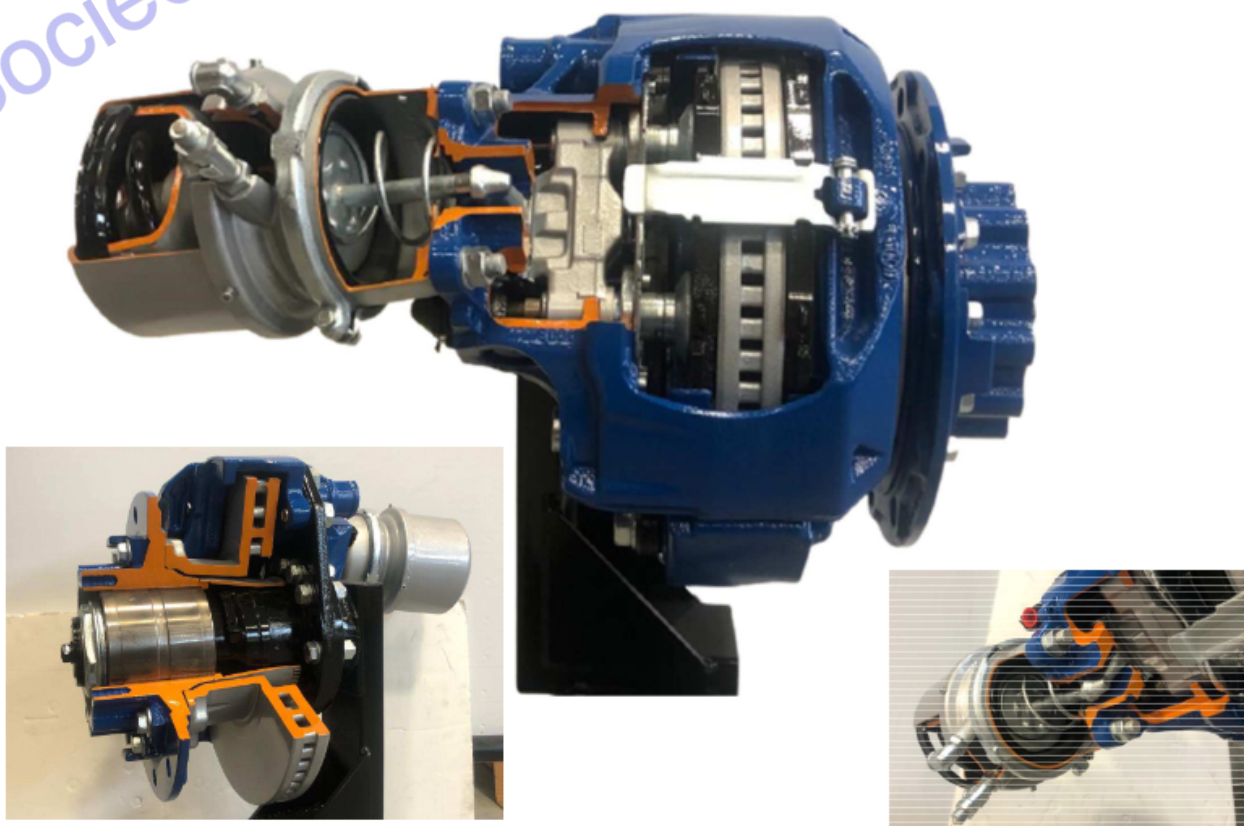
Cm:	120x70x65h
Net Weight:	kg 40
Gross Weight:	kg 55

VB 11197M

### VB11197M - CUTAWAY IVECO TRUCK DISC BRAKE WITH PNEUMATIC CONTROL

Accurate section of a pneumatic controlled disc brake mounted on IVECO Stralis truck from 2002

Approx. weight and dimensions of the packed equipment: cm 80x60x100 kg 200 (net weight 150 kg)



Indicative picture for reference only

**VB 11198M - REAR AXLE HEAVY TRUCK WITH LOCKING DIFFERENTIAL (on stand with wheels) –manual**

**VB 11199M REAR AXLE HEAVY TRUCK WITHOUT LOCKING DIFFERENTIAL (on stand with wheels) –manual**

Rear axle for heavy truck with locking differential.

Complete section of the rear axle. The main components are:

- Bevel gear (pinion – crown)
- Differential (satellite and planetary) with locking differential
- Axle shafts
- Reducer and planetary on the hub
- Brakes with jaws/drum
- Double air brake element



Indicative picture for reference only

On stand with wheels – Operated manually through a crank handle.



**Approx. weight and dim.:**

Cm:	235x95x1050h
Net Weight:	kg 590
Gross Weight:	kg 700

**VB 11198 - VB 11199**



**VB 11290M LOCKING DIFFERENTIAL 100% (on base) - manual**

Full locking differential usually mounted on off-road vehicles.

**Approx. weight and dim.:**

Cm:	50x35x35h
Net Weight:	kg 24
Gross Weight:	kg 32

Indicative picture for reference only

**VB 11291M DIFFERENTIAL WITH ELECTRONIC CONTROL WITH ELECTRO HYDRAULIC JOINTS (HALDEX Type) (on table support) – manual****Main technical specifications:**

- Pinion-crown group
- Differential group
- Multi disk clutch
- Control valve
- Hydraulic piston
- Outlet shafts

**Approx. weight and dim.:**

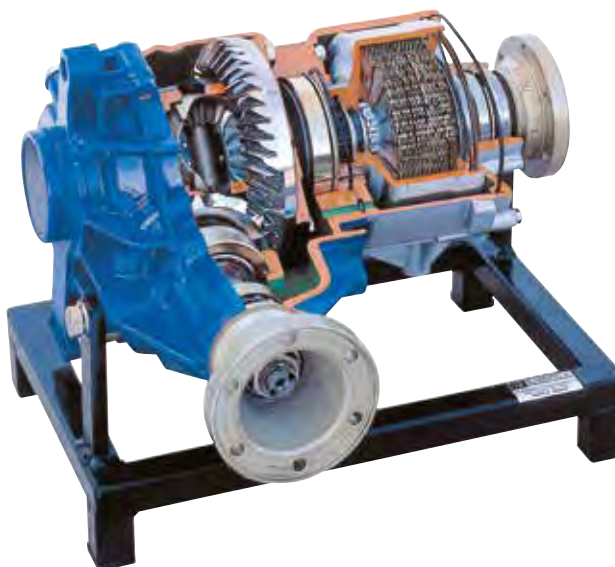
Cm:	40x60x40h
Net Weight:	kg 20
Gross Weight:	kg 30

## VB 11250M VISCOUS COUPLING DIFFERENTIAL (on table stand) - manual

Accurate section of an assembly including a Ferguson type viscous coupling differential for four-wheel drive (4x4) motorcars.

### Approx. weight and dim.:

Cm: 30x40x30h  
Net Weight: kg 20  
Gross Weight: kg 25



## VB 11260M SELF-LOCKING HYPOID DIFFERENTIAL (on table stand) - manual

Accurate section of an assembly including hypoid bevel gear pair with self-locking differential.

### Approx. weight and dim.:

Cm: 40x30x40h  
Net Weight: kg 25  
Gross Weight: kg 30



## VB 11270M TORSEN DIFFERENTIAL (on table stand) - manual

Accurate section of Torsen bevel gear pair differential assembly, to show the complex operation system which works according to the worm screw principle. Fitted to top-of-the-range four-wheel drive (4x4) motorcars.

### Approx. weight and dim.:

Cm: 40x40x40h  
Net Weight: kg 20  
Gross Weight: kg 25



*These cutaway items are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts. Many parts have been chromium, plated and galvanized for a longer life.*

VB 11250

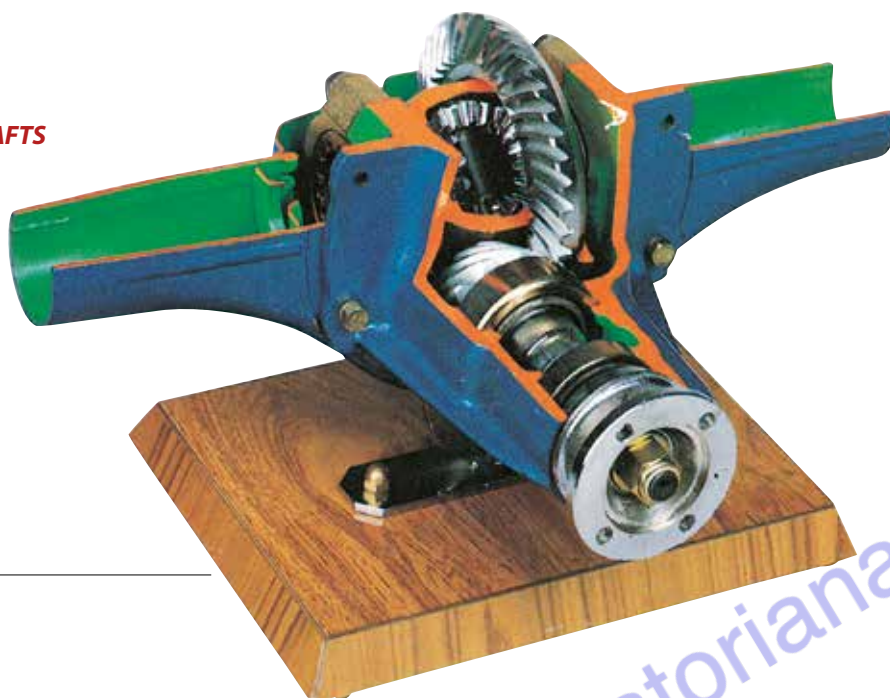
VB 11260

VB 11270

# VB 11280

## VB 11280M HYPOID DIFFERENTIAL (on base) - manual

**COMPLETE WITH SHAFTS**



**Approx. weight and dim.:**

Cm: 50x40x30h  
Net Weight: kg 30  
Gross Weight: kg 40

# VB 11281

## VB 11281S CROWN AND PINION DIFFERENTIAL GROUP (on base) - static



**Approx. weight and dim.:**

Cm: 30x40x26h  
Net Weight: kg 8  
Gross Weight: kg 10

Indicative picture for reference only



## VB 11300M 4X4 VEHICLE TRANSMISSION ASSEMBLY WITH 5 SPEED MECHANICAL GEARBOX (on stand with wheels) - manual

Transmission assembly fitted to most 4x4 cross-country vehicles.

The various parts are supplied as accurate real cutaway, connected together to show their operation in an easy and immediately understandable manner.

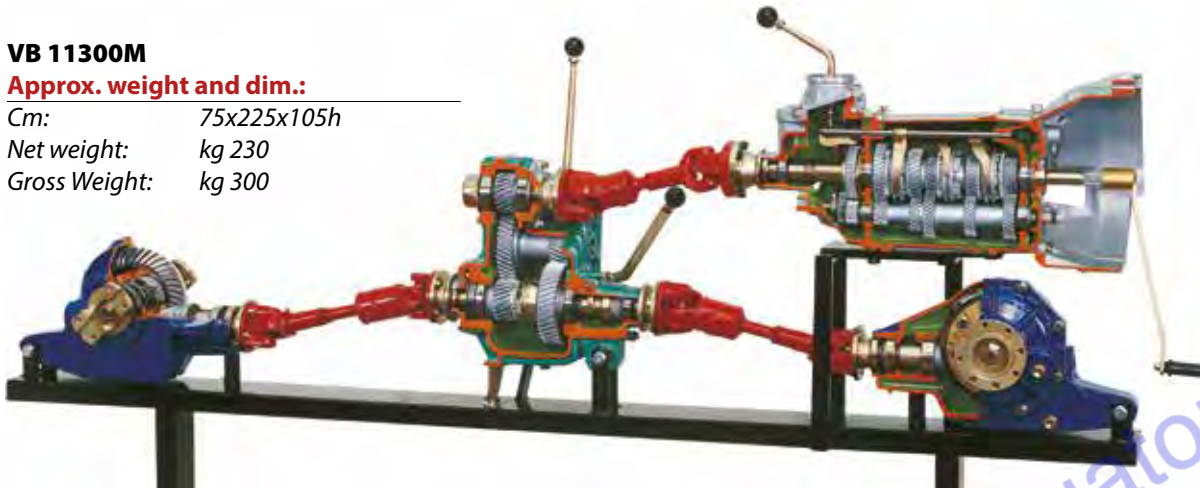
### VB 11300M

#### Approx. weight and dim.:

Cm: 75x225x105h

Net weight: kg 230

Gross Weight: kg 300



### VB 11300M

#### Main technical specifications:

- Gearbox: 5 forward speeds+ reverse
- 2-Speeds reduction gear
- Movement restorer with front wheel drive manual control
- Drive shafts with universal joints
- **Self-locking hypoid differentials**
- Manual operation

## VB 11084M - 4WD TRANSFER CASE WITH LOCKING DIFFERENTIAL (on base) – manual

Speed reducer transfer case for 4WD cars. It is permanent with possibility of differential locking in order to make the front axle independent from the rear one.

On base – Operated manually through a crank handle.



#### Approx. weight and dim.:

Cm: 40x40x60h

Net Weight: kg 25

Gross Weight: kg 40

VB 11300

VB 11084

# VB 10790

## VB 10790M EDUCATIONAL MODEL OF PLANETARY-GEAR (on base) - manual

This model shows very clearly and instructively the operating system of a planetary gear and the available gearshift possibilities.  
Topical as in every automatic motorcar transmission there is a planetary gear.

### Approx. weight and dim.:

Cm:	25x25x30h
Net Weight:	kg 5
Gross Weight:	kg 8



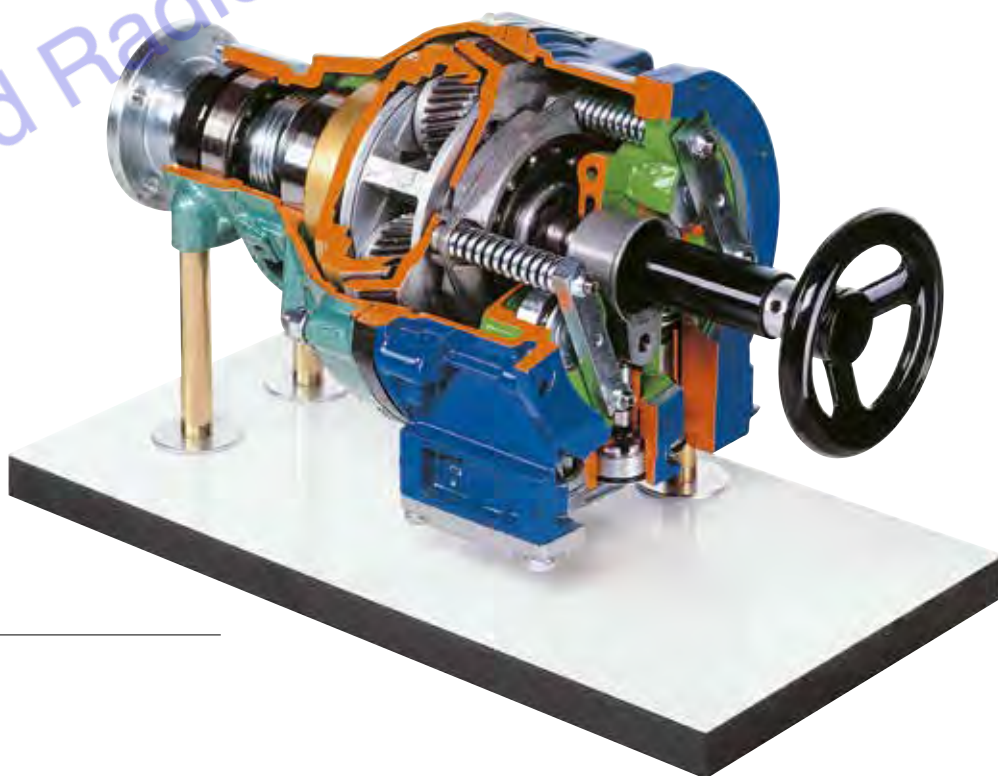
Indicative picture for reference only

# VB 11150

## VB 11150M OVERDRIVE (on base) - manual

Epicyclic overdrive cutaway model, with electromagnetic actuator, of the type fitted to Volvo motorcars.

Operated manually through a crank handle.



### Approx. weight and dim.:

Cm:	50x30x40h
Net Weight:	kg 15
Gross Weight:	kg 20

*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts and cross-sections.  
Many parts have been chromium, plated and galvanized for a longer life.*

## VB 12040S SELF-VENTILATING BRAKE APPARATUS WITH 4 SMALL PISTONS (on base) – static

Brake apparatus which can be installed either on front or rear wheels on high performances vehicles.

The section highlights:

- self-ventilating brake disk
- 4 pistons brake caliper with oil duct
- brake pads



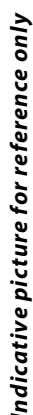
### Approx. weight and dim.:

Cm:	50x50x50h
Net Weight:	kg 18
Gross Weight:	kg 25

Indicative picture for reference only



# VB 12230



The assembly consist of:

- Approx. weight and dim.:**

Cm: 140x50x90h

*Net Weight:* kg 60

Gross Weight: kg 120

**VB 12252S ESP PUMP (on base) – static****VB 12252S**

**Approx. weight and dim.:**

**Cm:** 35x30x30h

*Net Weight:* kg 6

Gross Weight: kg 10

# VB 12251 - VB 12252

# VB 12000

## VB 12000M DISC BRAKE (on base) - manual

Section of a disc brake, floating type. The small piston and the brake strips are clearly shown.

### Approx. weight and dim.:

Cm:	35x40x40h
Net Weight:	kg 11
Gross Weight:	kg 15



# VB 12010

## VB 12010M DRUM BRAKE (on base) - manual

Section of a drum brake. The cylinder and shoes are clearly shown.

Operated manually through the parking brake lever.

### Approx. weight and dim.:

Cm:	35x35x35h
Net Weight:	kg 8
Gross Weight:	kg 12



Indicative picture for reference only

# VB 12030

## VB 12030M DISC + DRUM BRAKE (on base) - manual

Particular brake for luxury cars composed of brake pump, oil tank and brake lever and disc brake in which there is a drum brake.

Operated manually through the parking brake lever.

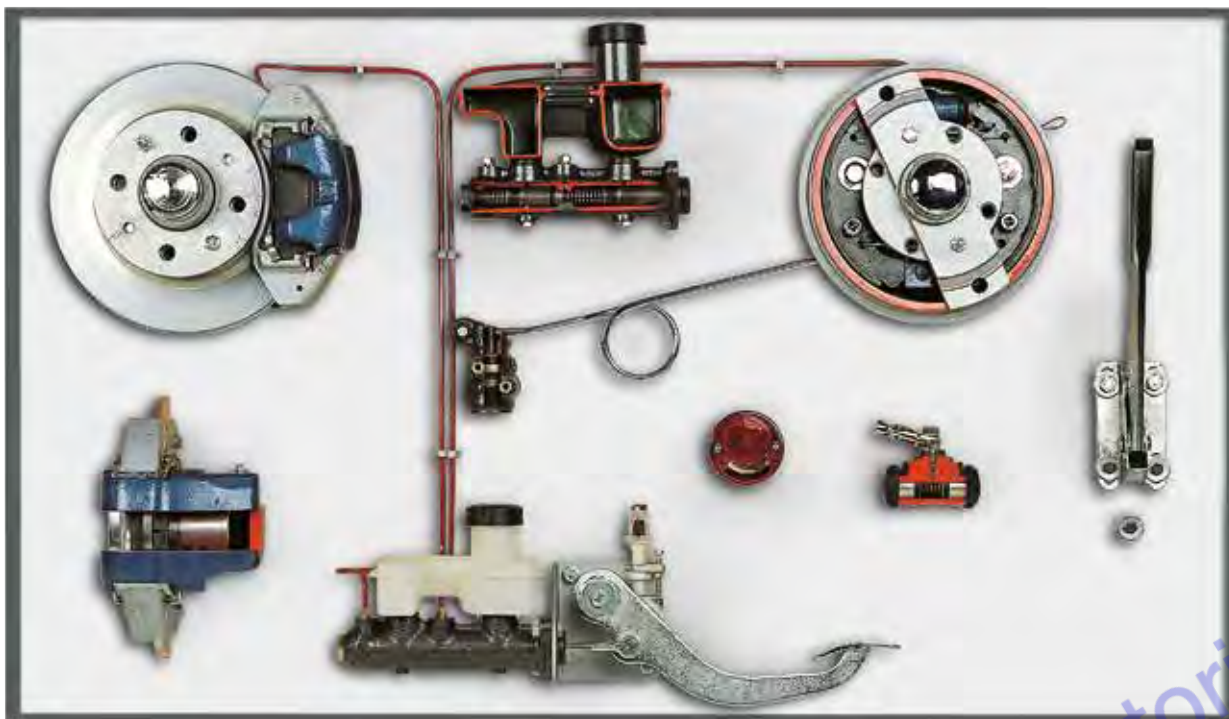
### Approx. weight and dim.:

Cm:	40x35x40h
Net Weight:	kg 20
Gross Weight:	kg 26

*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate among the various parts. Many parts have been chromium, plated and galvanized for a longer life.*







Wall panel representing a double circuit braking system. As in real conditions, it is operated by a hydraulic pump connected to the disc brake and a drum brake. A braking adjuster is placed between the pump and the (rear) drum brake in the circuit in order to avoid the rear wheels locking during the braking phase.

The same devices used in the circuit have been sectioned and added in the panel to clearly show their operation.

**Approx. weight and dim.:**

Cm: 110x30x85h

Net Weight: kg 35

Gross Weight: kg 65

**VB 12060S BRAKE + SUSPENSION (on panel) - static**



This wall panel consists of:

- Disc brake
- Drum brake
- Double brake pump
- Rear damper
- McPherson damper

**Approx. weight and dim.:**

Cm: 110x65x30h

Net Weight: kg 30

Gross Weight: kg 45



# VB 12300

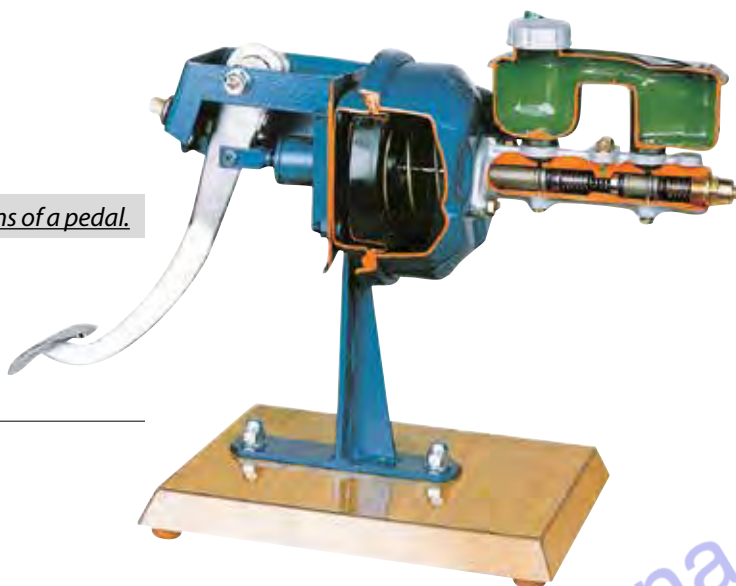
## VB 12300M VACUUM SERVOBRAKE (on base) - manual

Section of a diaphragm servo brake used for light vehicles, complete with double circuit brake pump.

*It is operated mechanically by means of a pedal.*

### Approx. weight and dim.:

Cm: 50x30x40h  
Net Weight: kg 6  
Gross Weight: kg 10



# VB 12302

## VB 12302M TANDEM MAIN BRAKE CYLINDER WITH PEDAL (on base) - manual

### Approx. weight and dim.:

Cm: 35x15x25h  
Net Weight: kg 2  
Gross Weight: kg 3



Indicative picture for reference only

# VB 12304

## VB 12304M SINGLE-STAGE MAIN BRAKE WITH PEDAL (on base) - manual

### Approx. weight and dim.:

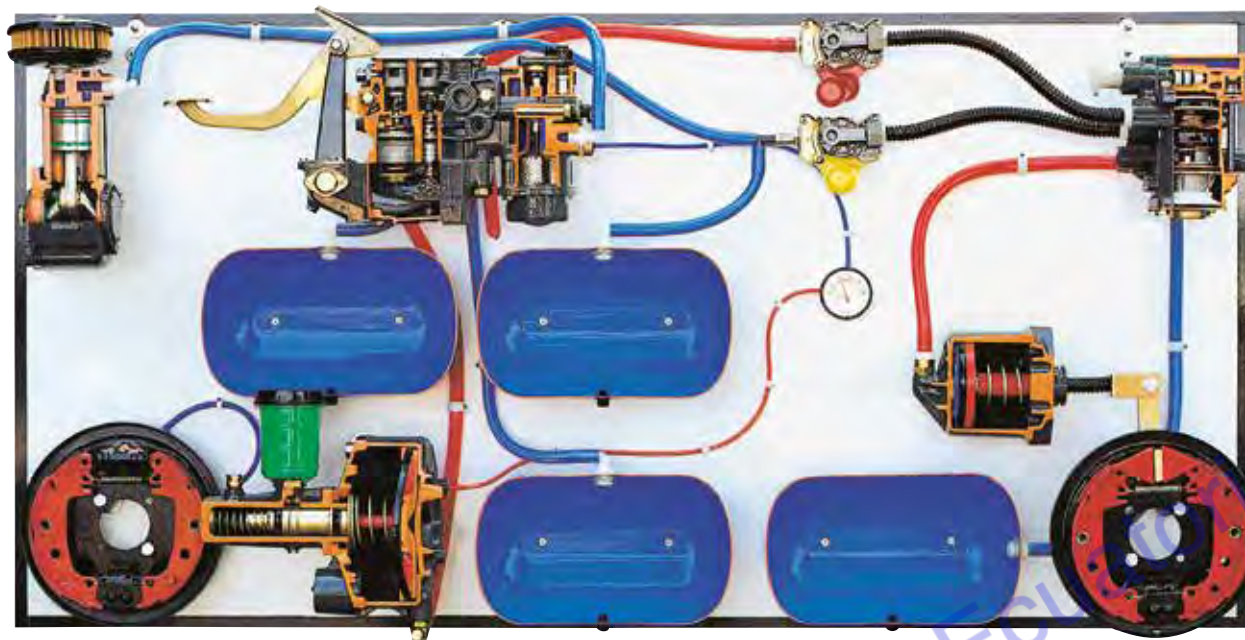
Cm: 30x15x25h  
Net Weight: kg 1  
Gross Weight: kg 2



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Many parts have been chromium, plated and galvanized for a longer life.*

## VB 12065S HYDROPNEUMATIC BRAKING SYSTEM (on panel) - static

Wall panel showing the hydro-pneumatic braking elements of a truck (tractor-trailer) complete with: air compressor, triplex Marelli distributor with adjusting and control unit, pressure brake booster, tractor-trailer coupling joint, hydraulic control braking element, mechanical and air control braking element for parking braking, servo-distributor valve for the trailer, no. 4 air reservoirs (3 for the tractor). All elements are connected with rubber pipes of different colours to distinguish the various circuits.



### Approx. weight and dim.:

Cm: 170x35x105h  
Net Weight: kg 60  
Gross Weight: kg 100

## VB 12070S PRESSURE SERVOBRAKE (on base) - static

Section of a piston servo brake used for trucks and complete with brake pump.

### Approx. weight and dim.:

Cm: 30x30x40h  
Net Weight: kg 6  
Gross Weight: kg 10



These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.  
Many parts have been chromium, plated and galvanized for a longer life.

VB 12065

VB 12070



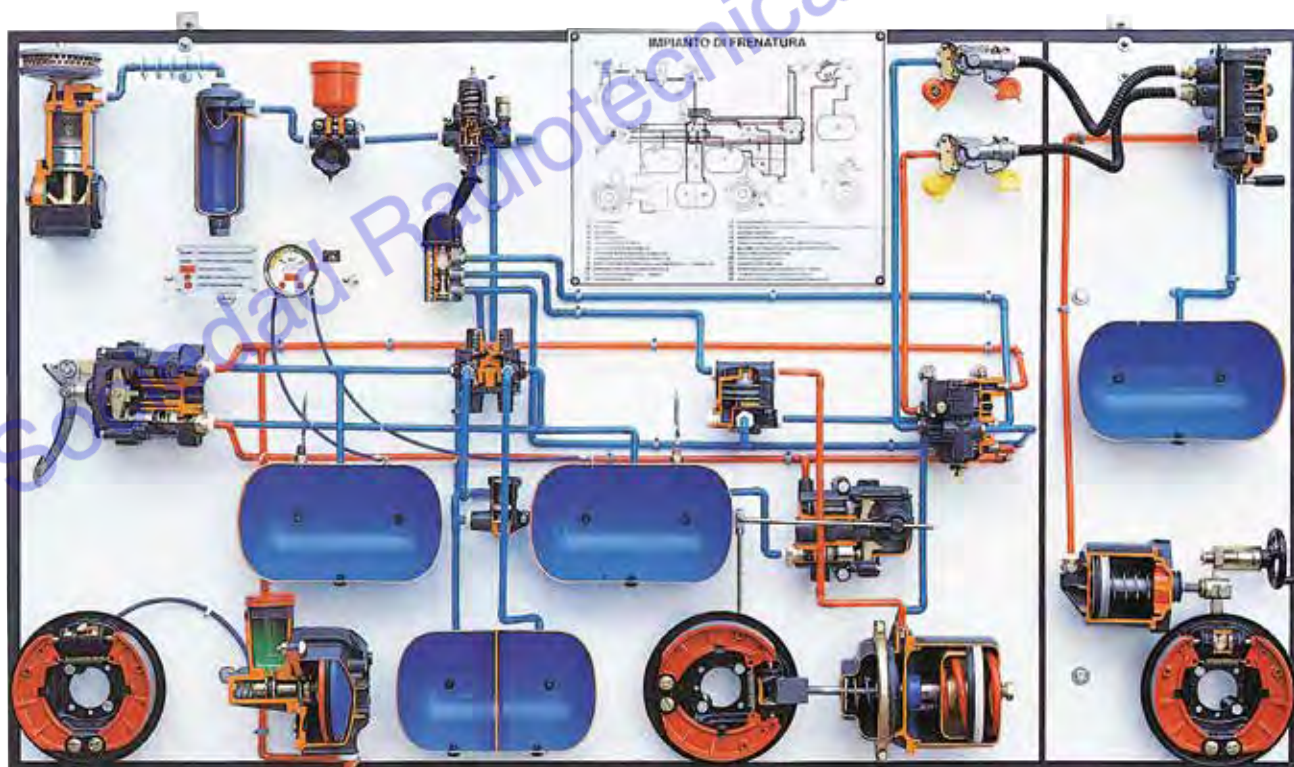
## VB 12170S MOTOR/TRAILER AIR BRAKING SYSTEM WITH DOUBLE SPRING BRAKING UNIT WITH CHUCK DEVICE (on wall panel) -static

## VB 12180S MOTOR/TRAILER AIR BRAKING SYSTEM WITH DOUBLE SPRING BRAKING UNIT WITH CHUCK DEVICE (on stand with wheels) -static

Wall panel including all the elements of a compressed air braking system. It is complete with all connection circuit components and everything else required for the teaching purposes this panel is intended for. The connection pipes are painted in different colours, in order to differentiate the different circuits. This panel is a must-have training instrument allowing the teacher to clearly describe and teach the running of a modern braking system. The hydro-pneumatic braking system and the braking system with the olive pivot are displayed.

The components shown are:

- compressor
- heating coil
- air purifier
- anti-freeze system
- pressure regulator
- pressure gauge
- safety valve tank
- front brakes air tank
- rear brakes air tank
- spring brake and trailer tank
- pressure reducer
- duplex distributor
- double-governor servo-distributor
- triple governor servo-distributor with built-in pulsed signalman
- jackknife
- charge-pressure modulator
- pneumo-hydraulic pump with braking element
- low pressure indicator
- double-spring wedge-shaped braking element
- ISO coupling joints
- servo-auto distributor
- auxiliary trailer tank
- olive pivot braking element
- parking brake trailer device
- service tank



Indicative picture for reference only

### VB 12170S

#### Approx. weight and dim.:

Cm: 220x36x140h  
Net Weight: kg 95  
Gross Weight: kg 135

### VB 12180S

#### Approx. weight and dim.:

Cm: 220x36x140h  
Net Weight: kg 110  
Gross Weight: kg 150



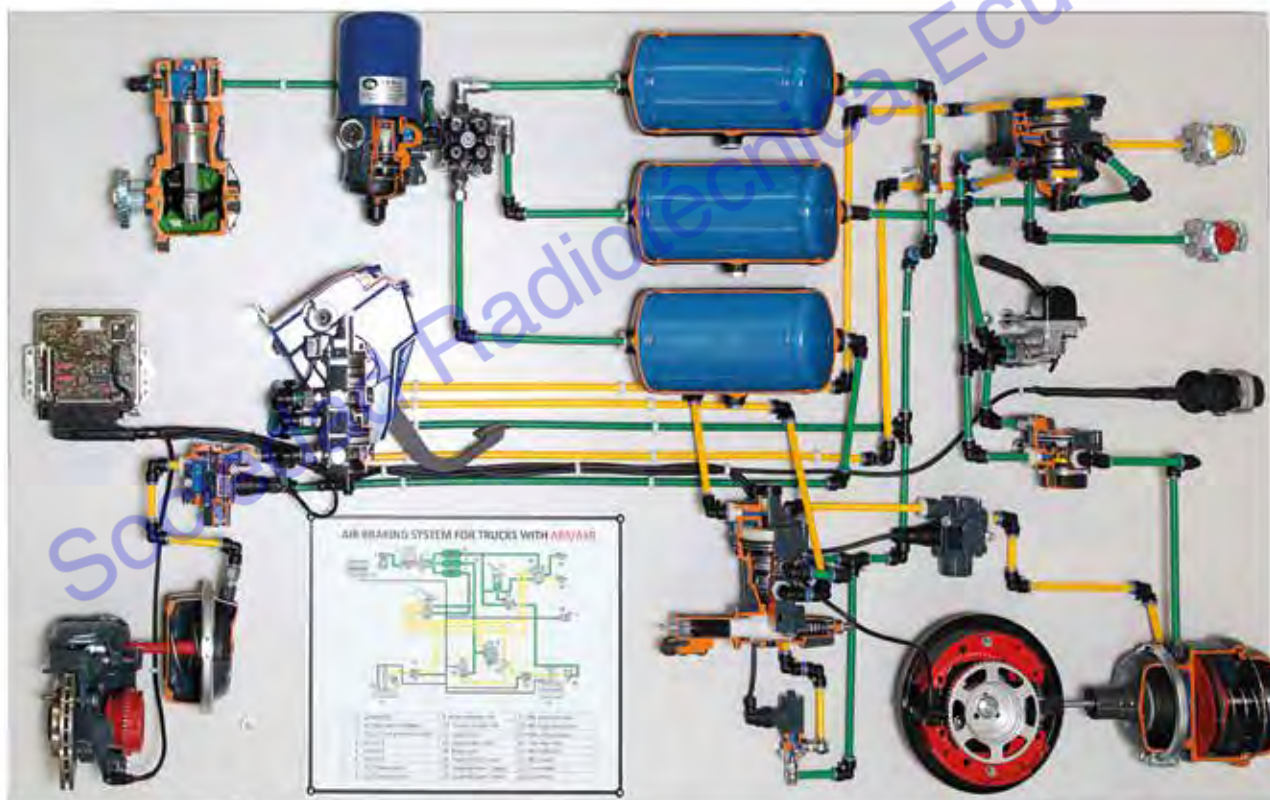
## **VB 12190S AIR BRAKING SYSTEM FOR TRUCKS WITH ABS/ASR (on wall panel)** **-static**

## **VB 12195S AIR BRAKING SYSTEM FOR TRUCKS WITH ABS/ASR (on stand with wheels) -static**

Wall panel including all the elements of a compressed air braking system. It is complete with all connection circuit components and everything else required for the teaching purposes this panel is intended for. The connection pipes are painted in different colours, in order to differentiate the different circuits. This panel is a must-have training instrument allowing the teacher to clearly describe and teach the running of a modern braking system. The hydro-pneumatic braking system and the braking system with the olive pivot are displayed.

The components shown are:

- |                                 |                          |               |
|---------------------------------|--------------------------|---------------|
| - compressor                    | - hand brake valve       | - ABS/ASR-ECU |
| - air dryer with unloader       | - relay valve            | - ABS sensor  |
| - four-circuit protection valve | - trailer control valve  | - drum brake  |
| - 3 tanks                       | - coupling head "supply" | - disc brake  |
| - foot brake valve              | - coupling head "brake"  |               |
| - load sensing valve            | - ABS solenoid valve     |               |
| - brake chamber VA              | - ABS plug connection    |               |
| - three-stop cylinder HA        | - ASR solenoid valve     |               |
| - check valve                   | - two-way valve          |               |



### **VB 12190S**

#### **Approx. weight and dim.:**

Cm: 220x36x140h  
Net Weight: kg 110  
Gross Weight: kg 150

### **VB 12195S**

#### **Approx. weight and dim.:**

Cm: 220x36x140h  
Net Weight: kg 125  
Gross Weight: kg 165

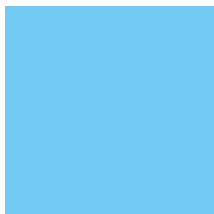
**VB 12190 - VB 12195**

Indicative picture for reference only

Sociedad Radiotécnica Ecuatoriana

*Indicative picture for reference only*

Sociedad Radiotécnica Ecuatoriana



## Fluid Mechanics & Refrigeration



Accurate section of an in-line piston pump showing:

- Pump head
- Suction and discharge valves
- Pistons
- Piston rods
- Bearings

**Approx. weight and dim.:**

Cm: 25x25x40h

Net Weight: kg 11

Gross Weight: kg 15



Indicative picture for reference only

**VB 13000S** SERIES OF 5 WATER PUMP ROTORS (on base) - static

**VB 13010M** MANUAL DIAPHRAGM PUMP FOR LIQUID TRANSFER (on base) - manual

**VB 13000S**



**VB 13010M**

**VB 13020M** SELF-PRIMING HIGH-LIFT CENTRIFUGAL ELECTRIC PUMP WITH BUILT-IN EJECTOR (on base) - manual

**VB 13030M** SELF-PRIMING CENTRIFUGAL ELECTRIC PUMP OPEN TYPE WHEEL FOR LIQUIDS CONTAINING SOLIDS - VALVE INCORPORATED IN THE SUCTION MOUTH (on base) - manual

**VB 13040M** CENTRIFUGAL ELECTRIC PUMP WITH PERIPHERAL CHANNELS (on base) - manual

**VB 13030M**

**Approx. weight and dim.:**

Cm: 35x30x25h

Net Weight: kg 6

Gross Weight: kg 9

**VB 13030M**



**VB 13020M**



**VB 13020M**

**Approx. weight and dim.:**

Cm: 40x30x30h

Net Weight: kg 8

Gross Weight: kg 13

**VB 13040M**



**VB 13040M**

**Approx. weight and dim.:**

Cm: 70x35x40h

Net Weight: kg 26

Gross Weight: kg 35

Indicative picture for reference only

**VB 13020 - VB 13030 - VB 13040 - VB 13000 - VB 13010**

# VB 13050 - VB 13060

## VB 13050M MULTI-STAGE CENTRIFUGAL ELECTROPUMP (on base) - manual

## VB 13060M OPEN ROTOR CENTRIFUGAL ELECTRIC PUMP (on base) - manual

### Approx. weight and dim.:

Cm:	60x30x30h
Net Weight:	kg 16
Gross Weight:	kg 20



VB 13050M

### Approx. weight and dim.:

Cm:	30x30x25h
Net Weight:	kg 6
Gross Weight:	kg 8



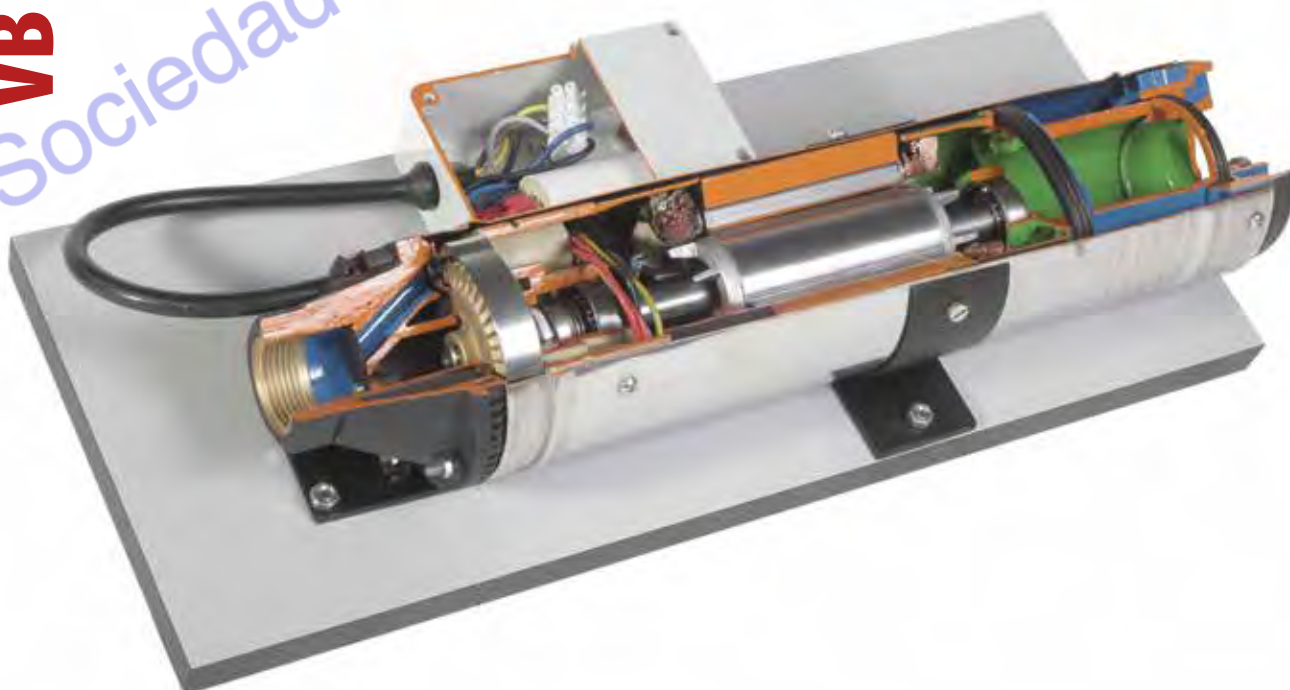
VB 13060M

The multi-stage electropump are able to develop a great pressure together with a great capacity of water with a little energy consumption. Due to the lack of noise and the good hydraulic characteristics, this type of pump is used for domestic systems, little drip irrigation or assembly of pressure systems.

Indicative picture for reference only

# VB 13065

## VB 13065S SUBMERSED ELECTROPUMP (on base) - static



### Approx. weight and dim.:

Cm:	50x20x15h
Net Weight:	kg 8
Gross Weight:	kg 15



**VB 13120S** CUTAWAY HYDRAULIC/PNEUMATIC BALL VALVE (on base)

**VB 13122S** CUTAWAY STEAM GATE VALVE (on base)



**Approx. weight and dim.:**

Cm: 20x25x30h

Weight: kg 5

**VB 13124S** CUTAWAY TWO-WAY VALVE WITH ELECTRIC MOTOR (on base)

**VB 13126S** CUTAWAY THREE-WAY BALL VALVE (on base)

**VB 13128S** CUTAWAY BALL VALVE WITH DRAIN OFF/COCK (on base)

**VB 13124S**

**VB 13128S**

**VB 13126S**



**Approx. weight and dim.**

Cm: 15x20x15h

Weight: Kg 2

**VB 13120 - VB 13122**

**VB 13124 - VB 13126 - VB 13128**

Indicative picture for reference only

# VB 13130 - VB 13132 - VB 13134 - VB 13136

**VB 13130S** CUTAWAY STANDARD BORE BALL VALVE (on base)

**VB 13132S** CUTAWAY STRAIGHT-WAY PLUG VALVE (on base)

**VB 13134S** CUTAWAY GATE VALVE (on base)

**VB 13136S** CUTAWAY COMPRESSION VALVE (on base)



Indicative picture for reference only

## **VB 13130S - VB 13132S - VB 13134S**

### **Approx. weight and dim.:**

Cm: 15x15x15h  
Weight: kg 1

## **VB 13136S**

### **Approx. weight and dim.:**

Cm: 15x15x10h  
Weight: kg 1

**VB 13138S** CUTAWAY LINE STRAINER VALVE (on base)

---

**VB 13140S** CUTAWAY STANDARD CLAPET FULL NON-RETURN VALVE (on base)

---

**VB 13142S** CUTAWAY CHECK VALVE WITH DRAIN (on base)

---

**VB 13144S** CUTAWAY PRESSURE VALVE REDUCER WITH FEMALE CONNECTION (on base)

---

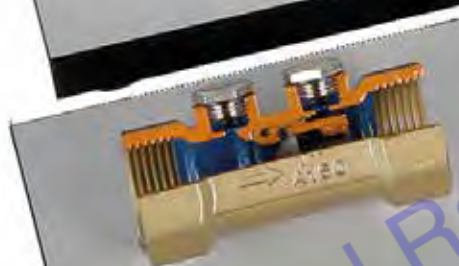
**VB 13138S**



**VB 13140S**



**VB 13142S**



**VB 13144S**



**VB 13138S - VB 13140S - VB 13142S**

**Approx. weight and dim.:**

Cm: 15x15x10h  
Weight: kg 1

**VB 13144S**

**Approx. weight and dim.:**

Cm: 10x10x5h  
Weight: kg 1

**VB 13138 - VB 13140 - VB 13142 - VB 13144**

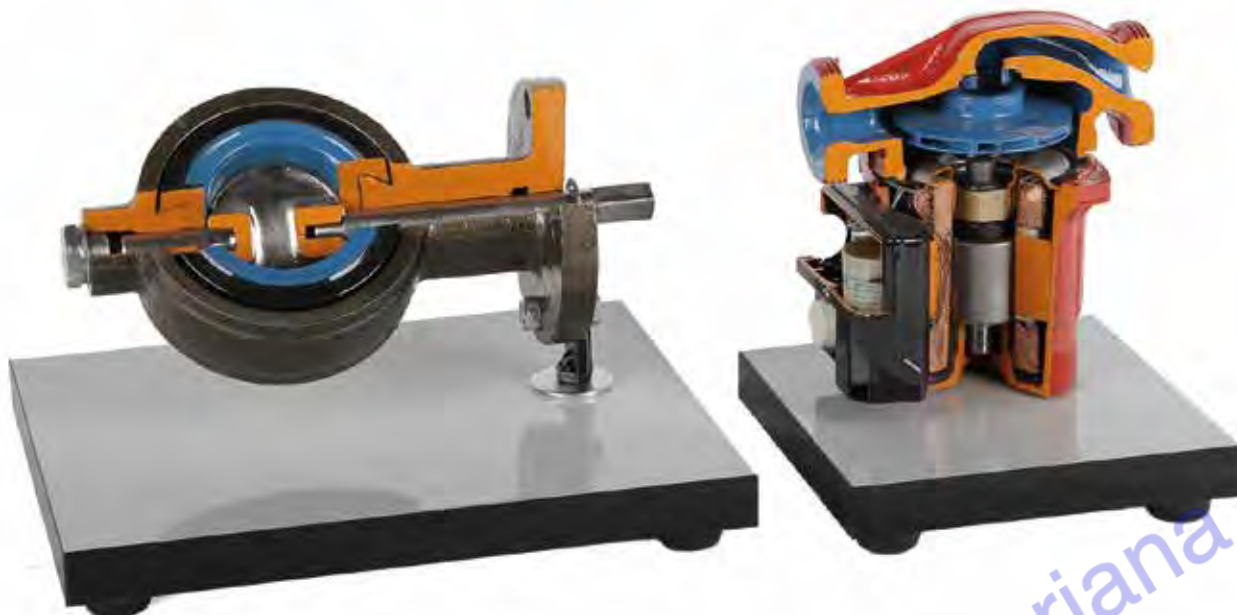
Indicative picture for reference only



VB 13146 - VB 13148

**VB 13146S CUTAWAY THROTTLE VALVE (on base)**

**VB 13148S CUTAWAY CIRCULATION PUMP (on base)**



**VB 13146S**

**Approx. weight and dim.:**

Cm: 25x20x20h

Weight: kg 3

**VB 13148S**

**Approx. weight and dim.:**

Cm: 15x15x20h

Weight: kg 2

Indicative picture for reference only

VB 13150 - VB 13152

**VB 13150S CUTAWAY WATER METER (on base)**

**VB 13152S CUTAWAY FILTER (on base)**



**VB 13150S**

**Approx. weight and dim.:**

Cm: 20x20x20h

Weight: Kg 2

**VB 13152S**

**Approx. weight and dim.:**

Cm: 20x20x25h

Weight: Kg 2,5

**VB 13160S CUTAWAY SOLENOID MEMBRANE ELECTRO VALVE (on base)**

**VB 13161S CUTAWAY NEEDLE TWIN DIRECTIONAL FLOW VALVE (on base)**



**VB 13160S**

**Approx. weight and dim.:**

Cm: 20x20x20h  
Net Weight: kg 1  
Gross Weight: kg 2

**VB 13161S**

**Approx. weight and dim.:**

Cm: 20x20x15h  
Net Weight: kg 1  
Gross Weight: kg 2

**VB 13162S CUTAWAY SAFETY VALVE (on base) - static**

**VB 13163S CUTAWAY BALANCING VALVE (on base) - static**



**VB 13162S**

**Approx. weight and dim.:**

Cm: 20x20x10h  
Net Weight: kg 0,5  
Gross Weight: kg 1

**VB 13163S**

**Approx. weight and dim.:**

Cm: 25x25x20h  
Net Weight: kg 1  
Gross Weight: kg 1,5

**VB 13160 - VB 13161**

**VB 13162 - VB 13163**

# VB 13164 - VB 13165

## VB 13164S CUTAWAY MEMBRANE VALVE (on base)



### VB 13164S

#### Approx. weight and dim.:

Cm: 25x25x20h  
 Net Weight: kg 3  
 Gross Weight: kg 4



### VB 13165S

#### Approx. weight and dim.:

Cm: 25x25x15h  
 Net Weight: kg 1  
 Gross Weight: kg 2

# VB 13166 - VB 13167

## VB 13166S CUTAWAY FLOOR MANIFOLD BRASS WITH MANUALLY VALVES WITH OPTION FOR THERMAL ACTUATOR (on base) – static

## VB 13167S CUTAWAY FLOOR MANIFOLD BRASS WITH MANUALLY VALVES WITH BALANCING FLOW METERS FOR CIRCUIT CALIBRATION (on base) – static



### VB 13166S

#### Approx. weight and dim.:

Cm: 25x25x10h  
 Net Weight: kg 1  
 Gross Weight: kg 2



### VB 13167S

#### Approx. weight and dim.:

Cm: 25x25x10h  
 Net Weight: kg 1  
 Gross Weight: kg 2

Indicative picture for reference only



### **VB 13168S** CUTAWAY PRESSOSTATIC VALVE (on base)

### **VB 13169S** CUTAWAY BALL VALVE TO INTERCEPT FLUIDS FREE FROM SOLID AND FILAMENTOUS SUSPENSION WITH PNEUMATIC (on base)



#### **VB 13168S**

##### **Approx. weight and dim.:**

Cm: 25x30x15h  
Net Weight: kg 2  
Gross Weight: kg 2,5

#### **VB 13169S**

##### **Approx. weight and dim.:**

Cm: 25x30x20h  
Net Weight: kg 2  
Gross Weight: kg 3

### **VB 13170S** CUTAWAY THERMOSTATIC VALVE (on base) – static



##### **Approx. weight and dim.:**

Cm: 25x30x15h  
Net Weight: kg 2,5  
Gross Weight: kg 3,5

**VB 13168 - VB 13169**

**VB 13170**

Indicative picture for reference only

# VB 13171 - VB 13172

**VB 13171S CUTAWAY ZONE VALVE 3 WAYS - 4 CONNECTIONS (on base)**

**VB 13172S CUTAWAY ZONE VALVE 4 WAYS - 4 CONNECTIONS (on base)**



## Approx. weight and dim.:

Cm:	25x25x10h
Net Weight:	kg 1,5
Gross Weight:	kg 2

# VB 13173

**VB 13170S CUTAWAY SET OF 5 DIFFERENT TYPES OF JOINTS (on base) – static**



## Approx. weight and dim.:

Cm:	40x25x10h
Net Weight:	kg 3
Gross Weight:	kg 5

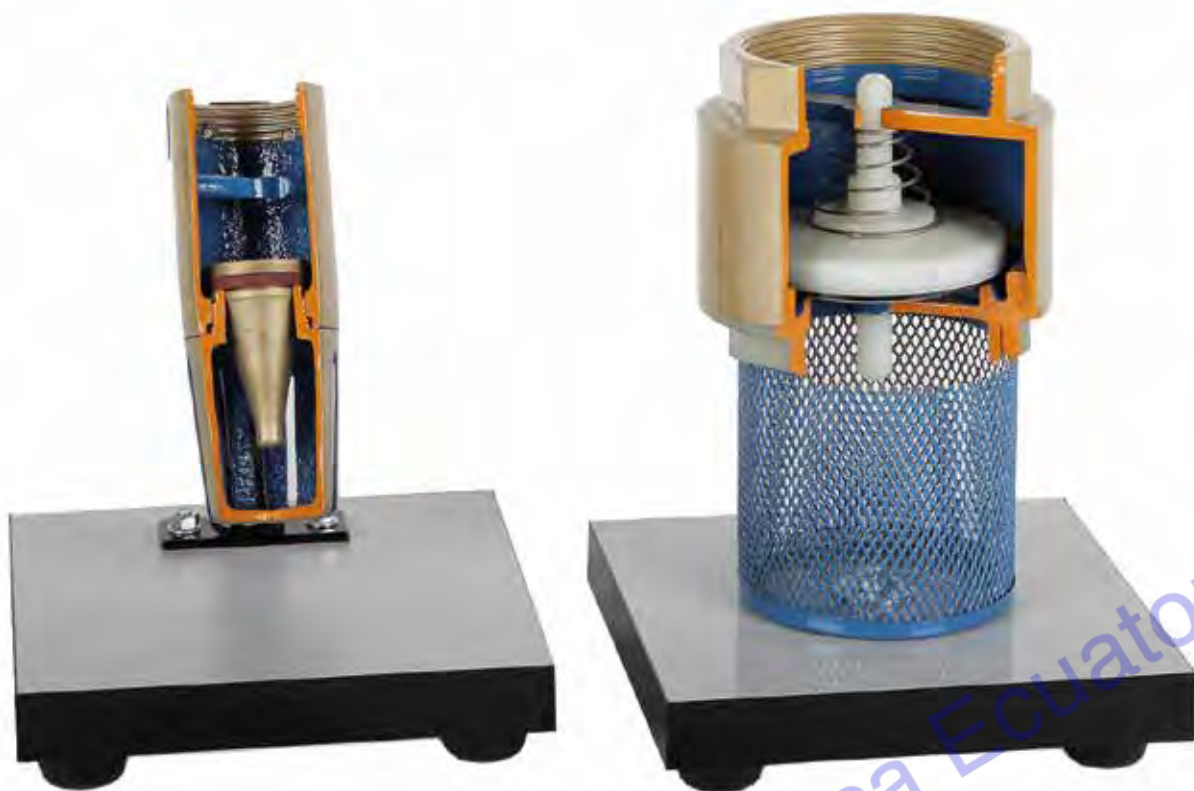
Indicative picture for reference only

**VB 13154S CUTAWAY BRASS FOOT TUBULAR VALVE (on base)**

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**VB 13156S CUTAWAY YACHT CHECK VALVE WITH STAINLESS STEEL FILTER (on base)**

---



**VB 13154S**

**Approx. weight and dim.:**

Cm: 15x15x15h

Weight: kg 1

**VB 13156S**

**Approx. weight and dim.:**

Cm: 15x15x20h

Weight: kg 1

**VB 13158S CUTAWAY SELF-CLEANING FILTER + PRESSURE GAUGE (on base)**

---



**Approx. weight and dim.:**

Cm: 20x30x10h

Weight: Kg 2

**VB 13154 - VB 13156**

**VB 13158**



# VB 13076

## VB 13076M SELF PRIMING MOTORPUMP (on base) - manual

### Main technical specifications:

- Model type 2 stroke engine
- Displacement: 25 cu. cm
- Specifications pump
- Suction 1"
- Delivery 1"
- Max suction head mt.6

### Approx. weight and dim.:

Cm: 30x30x40h

Net Weight: kg 6

Gross Weight: kg 10



Indicative picture for reference only

# VB 13078

## VB 13078M CENTRIFUGAL MOTORPUMP (on table support) - manual

### Main technical specifications:

- Model type 2 stroke engine
- Displacement: 46 cu. cm
- Specifications pump
- Suction 1"
- Delivery 1"
- Max suction head mt.8

### Approx. weight and dim.:

Cm: 40x30x40h

Net Weight: kg 10

Gross Weight: kg 15



These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

## VB 13071M RECIPROCATING COMPRESSOR (on base) - manual



### VB 13071M

#### Approx. weight and dim.:

Cm:	40x40x60h
Net Weight:	kg 30
Gross Weight:	kg 40

## VB 13074M AIR COMPRESSOR (on base) - manual



Section of a typical alternative compressor used in braking systems.

### VB 13074M

#### Approx. weight and dim.:

Cm:	20x20x30h
Net Weight:	kg 6
Gross Weight:	kg 10

## VB 13072 CUTAWAY AIR COMPRESSOR 2HP

An air compressor is a device that converts power (using an electric motor, diesel or gasoline engine, etc.) into potential energy stored in pressurized air. By one of several methods, an air compressor forces more and more air into a storage tank, increasing the pressure. When tank pressure reaches its upper limit the air compressor shuts off. The compressed air, then, is held in the tank until called into use. The energy contained in the compressed air can be used for a variety of applications, utilizing the kinetic energy of the air as it is released and the tank depressurizes. When tank pressure reaches its lower limit, the air compressor turns on again and re-pressurizes the tank.

#### Main technical specifications:

- 7.8 CFM direct air rating
- Compact 24 litres tank
- Reducer with pressure gauge
- Motor: 2HP 1500 Watt
- Max pressure: 116 PSI/ 8 bar
- Free air delivery: 222 l/min
- Lubricated
- RPM: 2850
- Voltage: 240V

#### Approx. weight and dim.:

Cm:	30x60x60h
Net Weight:	kg 25
Gross Weight:	kg 35





## VB 13075M SCREW COMPRESSOR (on base) - manual



### Approx. weight and dim.:

Cm:	40x30x30h
Net Weight:	kg 25
Gross Weight:	kg 35

These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts. Many parts have been chromium, plated and galvanized for a longer life.

## VB 13080S HERMETIC CONDENSING UNIT (on base) - static



### Main technical specifications:

- hermetic refrigerating compressor
- air condenser
- liquid receiver
- interception tap
- electro-fan + radiator

### Approx. weight and dim.:

Cm:	70x50x45h
Net Weight:	kg 20
Gross Weight:	kg 35

VB 13075

VB 13080

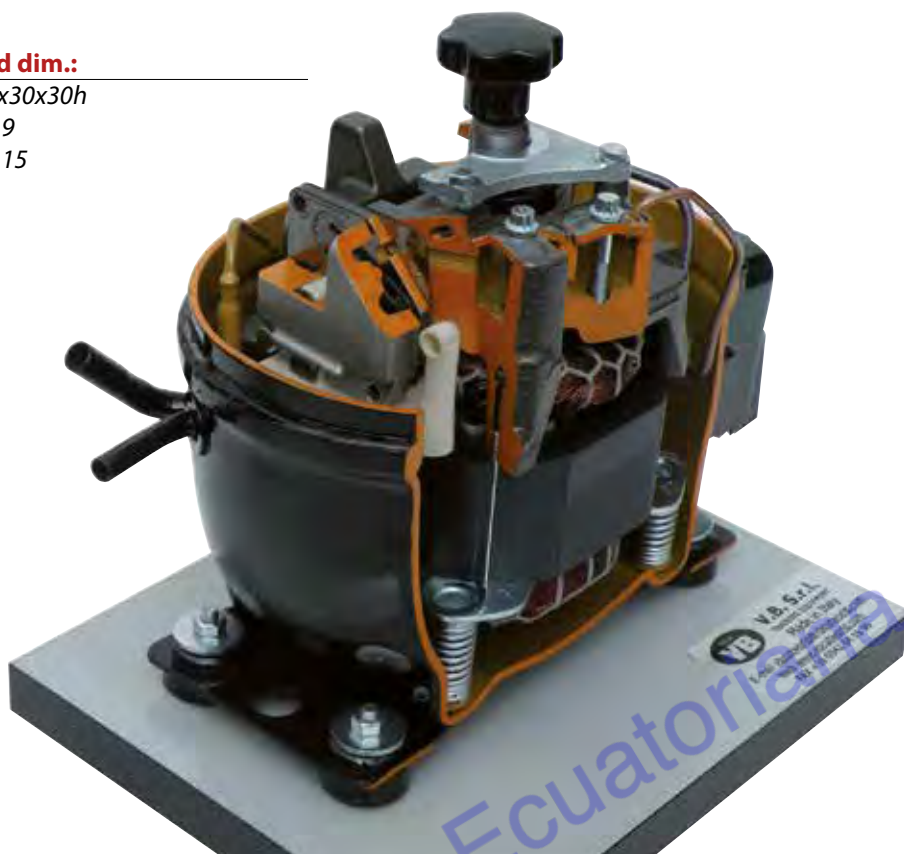


# VB 13082

## VB 13082M HERMETIC COMPRESSOR (on base) - manual

### Approx. weight and dim.:

Cm: 25x30x30h  
Net Weight: kg 9  
Gross Weight: kg 15



Indicative picture for reference only

# VB 13083

## VB 13083M OPEN COMPRESSOR (on base) - manual

### Approx. weight and dim.:

Cm: 25x30x25h  
Net Weight: kg 8  
Gross Weight: kg 15



## VB 13084S ROTATIVE COMPRESSOR (on base) - static

VB 13084



### Approx. weight and dim.:

Cm: 25x30x40h

Net Weight: kg 9

Gross Weight: kg 15

## VB 13085M SEMI-HERMETIC COMPRESSOR (on base) - manual

VB 13085

### Approx. weight and dim.:

Cm: 30x50x40h

Net Weight: kg 30

Gross Weight: kg 40



# VB 13174 - VB 13175

**VB 13174S CUTAWAY EVAPORATOR PRESSURE REGULATOR KVP (on base)**

**VB 13175S CUTAWAY CONDENSING PRESSURE REGULATOR KVR (on base)**



**Approx. weight and dim.:**

Cm: 16x25x10h

Net Weight: kg 0,5

Gross Weight: kg 1

# VB 13176

**VB 13176S CUTAWAY THERMAL EXPANSION VALVE (on base) – static**



**Approx. weight and dim.:**

Cm: 15x20x10h

Net Weight: kg 0,5

Gross Weight: kg 1

Indicative picture for reference only



Indicative picture for reference only



**Approx. weight and dim.:**

Cm: 60x50x50h

Net Weight: kg 25

Gross Weight: kg 35

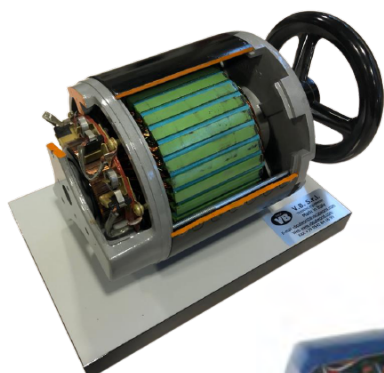
*In electricity generation, a generator is a device that converts mechanical energy to electrical energy for use in an external circuit. The source of mechanical energy may vary widely from a hand crank to an internal combustion engine. Generators provide nearly all of the power for electric power grids.*

**VB 13087M** DC MOTOR (on base) - manual

**VB 13088M** THREE-PHASE SELF-BRAKING ELECTRIC MOTOR (on base) - manual

**VB 13089M** SINGLE-PHASE ELECTRIC MOTOR (on base) - manual

**VB 13090M** THREE-PHASE ELECTRIC MOTOR (on base) - manual



**VB 13087M**

**Approx. weight and dim.:**

Cm:	69x38x40h
Net weight:	kg 14
Gross weight:	kg 20



**VB 13088M**

**Approx. weight and dim.:**

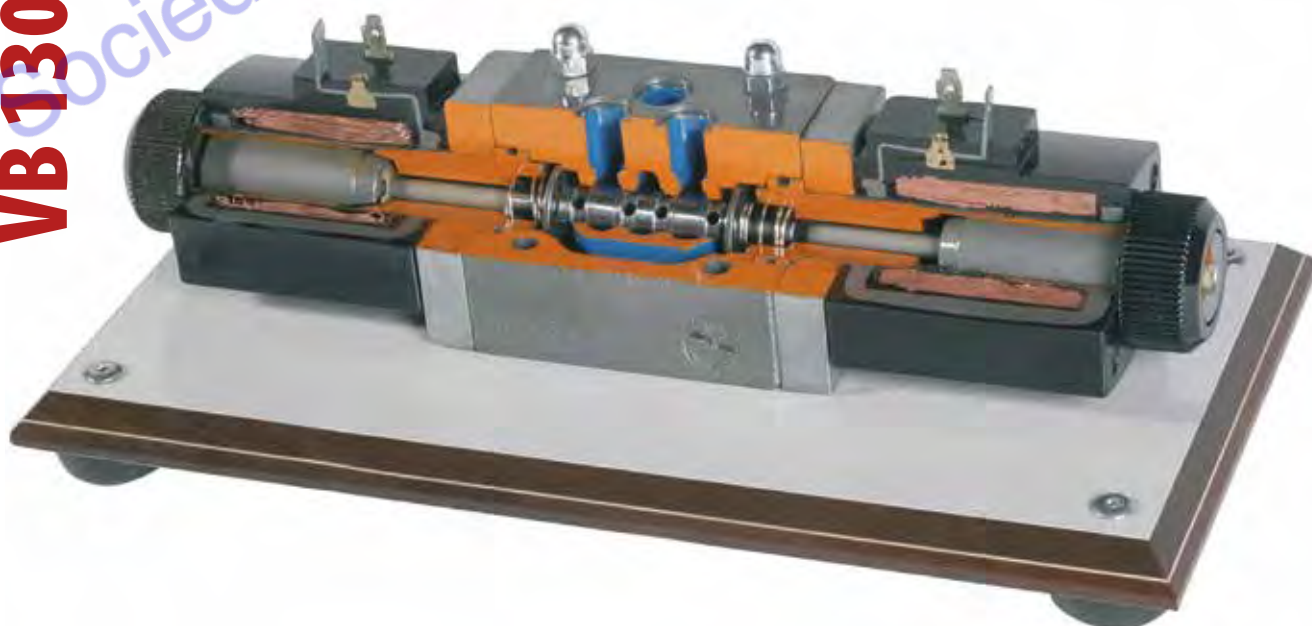
Cm:	38x20x25h
Net Weight:	kg 10
Gross Weight:	kg 16

**VB 13089M - VB13090M**

**Approx. weight and dim.:**

Cm:	30x30x25h
Net Weight:	kg 9
Gross Weight:	kg 15

**VB 13091S** ELECTROVALVE (on base) - static



**Approx. weight and dim.:**

Cm:	25x15x10h
Net Weight:	kg 2
Gross Weight:	kg 4

Indicative picture for reference only

**VB 13092M** ANGLE REDUCER (on base) - manual

**VB 13093M** RIGHT ANGLE REDUCER (on base) - manual

**VB 13094M** WORM GEAR REDUCER (on base) - manual

**VB 13095M** WORM GEAR REDUCER WITH PRE-STAGE GEAR (on base) - manual



**VB 13092M**

**Approx. weight and dim.:**

Cm: 20x20x16h  
Net Weight: kg 5  
Gross Weight: kg 7

**VB 13093M**

**Approx. weight and dim.:**

Cm: 20x20x15h  
Net Weight: kg 2  
Gross Weight: kg 3

**VB 13094M**

**Approx. weight and dim.:**

Cm: 20x20x20h  
Net Weight: kg 5  
Gross Weight: kg 7

**VB 13095M**

**Approx. weight and dim.:**

Cm: 20x20x20h  
Net Weight: kg 4  
Gross Weight: kg 6

**VB 13096M** SINGLE-STAGE REDUCER (on base) - manual

**VB 13097M** REDUCER WITH SPEED CONVERTER (on base) - manual

**VB 13098M** CO-AXIAL REDUCER (on base) - manual



**VB 13096M**

**Approx. weight and dim.:**

Cm: 30x30x30h  
Net Weight: kg 9  
Gross Weight: kg 15

**VB 13097M**

**Approx. weight and dim.:**

Cm: 24x20x20h  
Net Weight: kg 5  
Gross Weight: kg 7

**VB 13098M**

**Approx. weight and dim.:**

Cm: 30x30x25h  
Net Weight: kg 15  
Gross Weight: kg 21

**VB 13096 - VB 13097 - VB 13098 VB 13092 - VB 13093 - VB 13094 - VB 13095**



**VB 13099M** EPYCYCLOYD COAXIAL REDUCER (on base) - manual

**VB 13100M** COMBINED WORM GEAR REDUCER (on base) - manual



**VB 13099M**

**Approx. weight and dim.:**

Cm: 38x20x16h

Net Weight: kg 8

Gross Weight: kg 14

**VB 13100M**

**Approx. weight and dim.:**

Cm: 38x20x16h

Net Weight: kg 7

Gross Weight: kg 12

**VB 13101M** HYDRAULIC GEAR ENGINE (on base) - manual

**VB 13102M** ORBITAL HYDRAULIC MOTOR (on base) - manual

**VB 13103M** VARIABLE CAPACITY HYDRAULIC PUMP (on base) - manual



**VB 13102M**

**VB 13103M**

**VB 13101M**

**VB 13101M**

**Approx. weight and dim.:**

Cm: 20x20x14h

Net Weight: kg 3

Gross Weight: kg 4

**VB 13102M**

**Approx. weight and dim.:**

Cm: 20x20x25h

Net Weight: kg 8

Gross Weight: kg 14

**VB 13103M**

**Approx. weight and dim.:**

Cm: 20x20x28h

Net Weight: kg 7

Gross Weight: kg 12

Indicative picture for reference only

## VB 13110M BEVEL HELICAL REDUCER (on base) - manual



### Approx. weight and dim.:

Cm: 25x20x20h  
Net Weight: kg 5  
Gross Weight: kg 8

## VB 13111S KOYO BALL BEARING (on base) - static



### Approx. weight and dim.:

Cm: 25x20x20h  
Net Weight: kg 4  
Gross Weight: kg 6

VB 13110

VB 13111

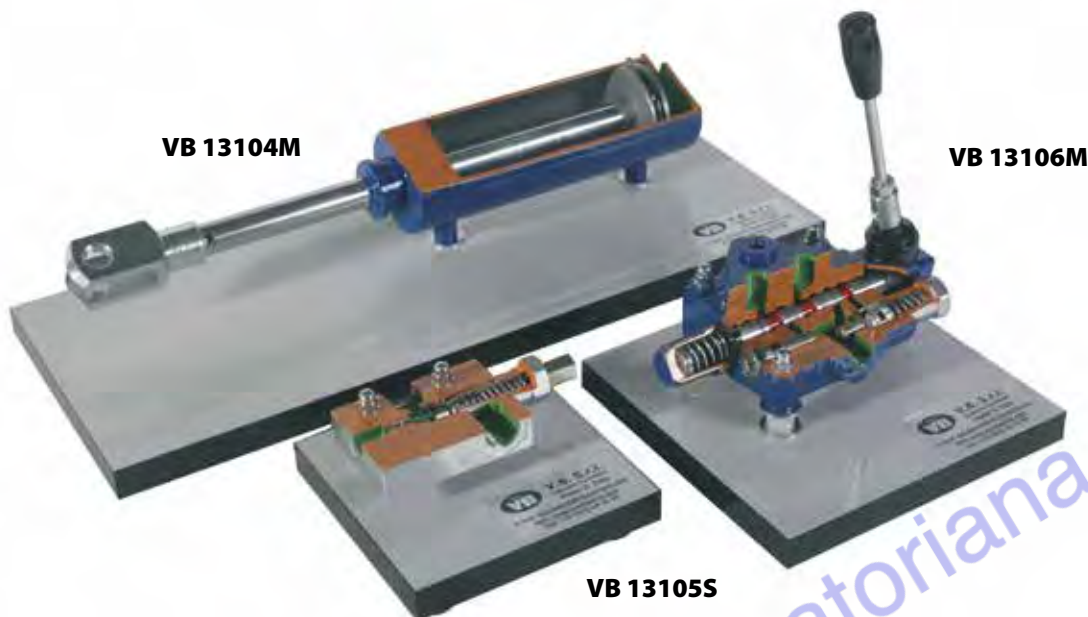
Indicative picture for reference only



**VB 13104M** SIMPLE EFFECT PISTON (on base) - manual

**VB 13105S** PRESSURE REGULATOR VALVE (on base) - static

**VB 13106M** SIMPLE EFFECT DISTRIBUTOR WITH PRESSURE VALVE (on base) - manual



**VB 13104M**

**Approx. weight and dim.:**

Cm: 50x20x14h

Net Weight: kg 3

Gross Weight: kg 4

**VB 13105S**

**Approx. weight and dim.:**

Cm: 15x15x10h

Net Weight: kg 1

Gross Weight: kg 1,5

**VB 13106M**

**Approx. weight and dim.:**

Cm: 20x20x28h

Net Weight: kg 1

Gross Weight: kg 1,5

**VB 13107M** DOUBLE EFFECT HYDRAULIC CYLINDER (on base) - manual

**VB 13108S** TELESCOPIC HYDRAULIC CYLINDER with hydraulic jack (on base) - static

**VB 13109M** SIMPLE EFFECT HYDRAULIC CYLINDER (on base) - manual

**VB 13107M**

**Approx. weight and dim.:**

Cm: 12x40x15h

Net Weight: kg 3

Gross Weight: kg 6

**VB 13108S**

**Approx. weight and dim.:**

Cm: 40x20x15h

Net Weight: kg 5

Gross Weight: kg 9

**VB 13109M**

**Approx. weight and dim.:**

Cm: 12x40x15h

Net Weight: kg 4

Gross Weight: kg 7



Indicative picture for reference only



Sociedad Radiotécnica Ecuatoriana



Driving School Equipment

## VB 13560E CAR LIGHT AND ACOUSTIC SYSTEM SWITCHBOARD (wall assembly) - electrical

Control panel with switches, push-buttons and pilot light for various lamps complete with horn – rear fog guards – reverse – emergency.

Operated at 220 volts.



VB 13560

### Approx. weight and dim.:

Cm: 80x110x20h

Gross Weight: kg 25

## VB 13580E MOTORCYCLE LIGHT SYSTEM SWITCHBOARD (wall assembly) - electrical

Operated at 220 volts.



VB 13580

### Approx. weight and dim.:

Cm: 80x110x20h

Gross Weight: kg 20



*The following picture is an example and it is subject to change.*

#### Main technical specifications:

- English language;
- Adjustable seat;
- Software update;
- Steering wheel: 900° rotation, resistance in turns and it vibrates as a real one;
- Accelerator, clutch and brake pedals + automatic devices;
- High performances PC;
- High-definition screen, 29 inches screen (ratio 21:9);
- Sound system surround 5.1.

#### Configurations:

- Indication of the traffic offences;
- driving weather conditions:  
sun, clouds, fog, wind, rain, ice, night and various light conditions;
- Driving under alcohol or drugs effects;
- Wing and driving mirror;
- GPS;
- Gear: automatic, sequential, manual;
- Different vehicles with different driving characteristics;
- Different driving settings: town, city, highway, etc.;
- Ecological/green driving;
- Moreover;
- There are various “driving lessons”, so the students can practice without aid of the teacher;
- Driving aids: coloured lines, which show the student the correct trajectory;
- Driving statistics;
- Simulation of presence/absence of safety devices.





*The following picture is an example and it is subject to change.*

#### Main technical specifications:

- English language;
- Adjustable seat;
- Software update;
- Steering wheel: 900° rotation, resistance in turns and it vibrates as a real one;
- Accelerator, clutch and brake pedals + automatic devices;
- High performances PC;
- 50 Inch 4k TV (ratio 16:9);
- Audio surround 3D;
- Equipped with wheels to improve mobility;

#### Configurations:

- Indication of the traffic offences;
- Driving weather conditions:  
sun, clouds, fog, wind, rain, ice, night and various light conditions;
- Driving under alcohol or drugs effects;
- GPS;
- Gear: automatic, sequential, manual;
- Different vehicles with different driving characteristics;
- Different driving settings: town, city, highway, etc.;
- Moreover;
- There are various “driving lessons”, so the students can practice without aid of the teacher;
- Driving aids: coloured lines, which show the student the correct trajectory;
- Driving statistics;
- Simulation of presence/absence of safety devices.

## GENERAL SALES CONDITIONS

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### ORDERS

Orders are valid and binding for VB only after the receipt of written confirmation by the Customer, within 48 hours after verbal order. Order must be complete with the description of all elements, and, when necessary, with drawings to define them in a complete and unequivocal way. Any wrong interpretation or imperfection of the a.m. elements caused by an unclear order, shall give no right to any replacement, refund or discount whatsoever.

### MATERIALS

The samples shown are indicative only and they are not binding, considering the normal variation of the kinds of materials available on the market. All materials used, even first choice ones, are to be intended as commercial standard quality. As for painted materials, a retouch is to be considered as normal.

### PRICES

Pricelist agreed further to changes, are to be intended in € (Euro) and net of any discount; if not otherwise specified prices are considered for goods EXW our facilities.

### DELIVERY TERMS

The delivery terms run from the date of receipt of the order complete with the description of all necessary elements; they can be extended due to Force Majeure reasons, including lack of raw materials, energy supply, or because of mechanical breakdowns, lack of labour due to strikes, diseases, etc. If the delay is longer than 90 days, this gives right to the termination of the contract, but gives no right to any indemnity whatsoever.

### SHIPMENT

Goods are shipped at the Buyer's risk even if sold free destination.

In case of shipment by truck, VB declines any liability for possible damages to third parties or things which may be attributed to the carrier.

### PACKAGE

Returns of packaging are not accepted. If otherwise agreed, their return is to be intended free of charge or reimbursed at cost.

### COMMISSIONING

Commissioning assistance is excluded, except when expressly agreed in writing: in this case all expenses are at the Buyer's charge.

### PAYMENT

If not otherwise agreed, payments must be made at our offices in Mordano within the fixed terms. The non-payment on maturity, even if only partial, gives right to draw on the debtor, at the debtor's change, plus 20% yearly interest; furthermore it gives right to VB to suspend or cancel every supply on hand or to require the payment in advance. All suppliers are to be intended regulated by the conditional sale agreement till complete payment. VB shall be at same owner of the goods supplied and, in case of non-payment, even if partial, VB shall withdraw all supplies, and also keep the accounts already paid by the customer as partial cover. The invoice, even if formally received, does not involve the extinction of any obligation, in case it is covered by drafts or others.

### CLAIMS

All claims must be done in writing by registered letter within 8 days from receipt of the goods. VB, if the claim is well founded, shall provide for the replacement of the pieces; any refund is excluded.

### JURISDICTION

Any judicial dispute shall fall within the cognizance of Imola or Bologna Law-Court. VB has the right to previously submit the dispute to a Board of three Arbitrators, one to be appointed by VB, one by the Customer and the third by both of them or by the lower Court judge of Imola; in case of disagreement the above mentioned Board shall deliver a final Judgement.

# 50<sup>VB</sup>

## ANNIVERSARY

1967 - 2017

REPRESENTANTE PARA ECUADOR

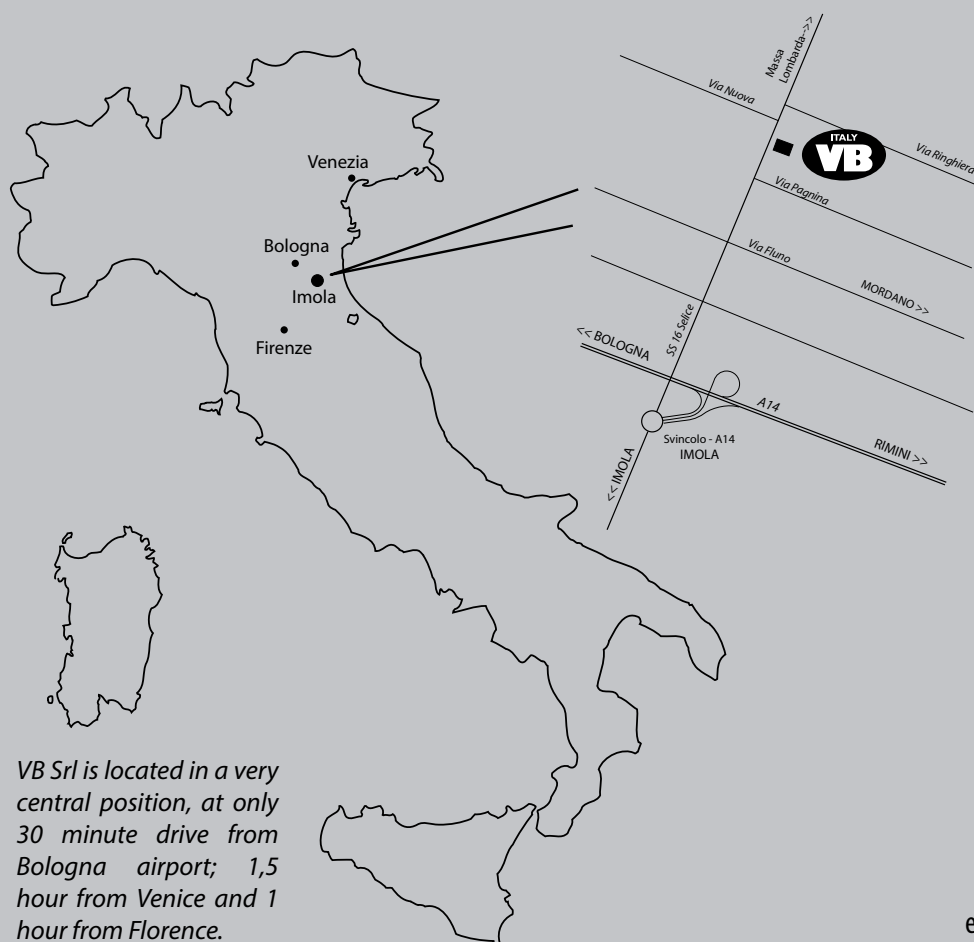


**SOCIEDAD RADIOTÉCNICA  
ECUATORIANA**

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*VB Srl is located in a very central position, at only 30 minute drive from Bologna airport; 1,5 hour from Venice and 1 hour from Florence.*

**VB s.r.l.**

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