50 VB ANNIVERSARY

1967 - 2017

ITALY

VB

&

MECHANICAL SECTIONS
TRAINING EQUIPMENT

MADE IN ITALY

14th Edition

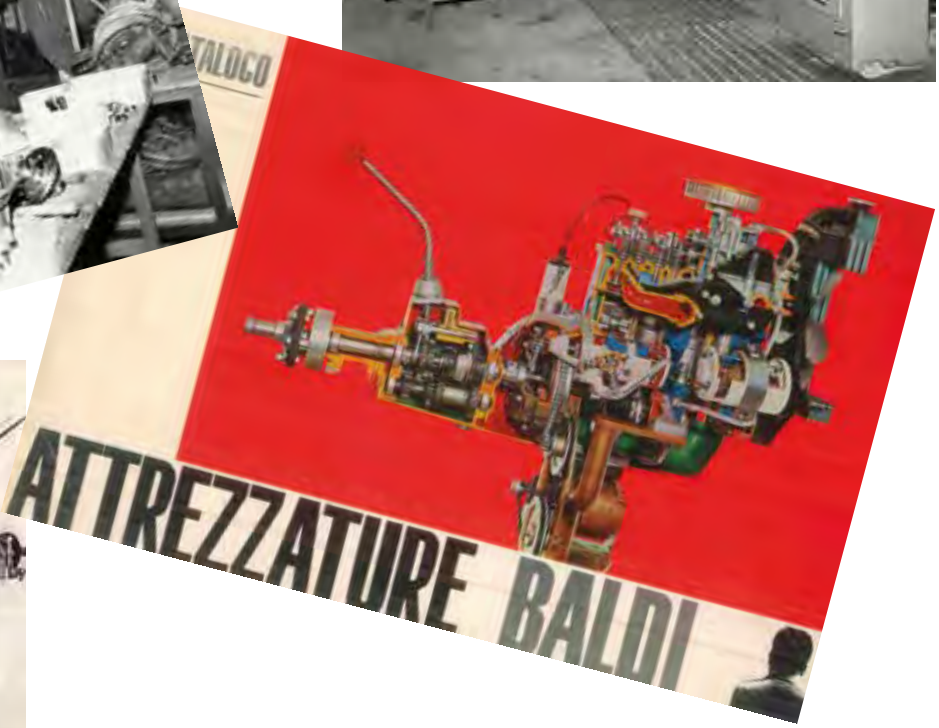
V.B. Srl

V.B. Srl is the leading Italian manufacturer of educational equipment since 1967; V.B. Srl was the first company who started producing cutaway items for driving schools and soon after expanded the production up to the current range of products which covers the various educational fields such as automotive, agricultural, aviation and marine engineering.

Our products are carefully sectioned and come from real industrial components which are polished and painted in order to give maximum educational value without compromising the real functioning, and most important, VB products are self-explanatory – even the most complex ones.

V.B. Srl is the supplier of Technical Schools, Vocational Schools, Military Academies, Colleges and Universities in more than 90 countries all over the world. Besides its products range, V.B. Srl is also able to supply items not included in the present catalogue; Customers are more than welcome to send their requests and inquiries VB staff will be happy to assist them.

Our History



V.B. Srl was founded in 1967 in a garage in the city centre of Imola from the passion for engines and their mechanical parts. Thanks to the immediate increase in the demand for cutaway mechanical items, during the following years V.B. Srl headquarters moved to Via Valverda 16 / A in Imola where the company settled for more than 30 years.

In 2010, following on from the strong expansion and increasing demand for V.B. Srl sectioned products, the company was moved to a new location next to the highway toll-gate of Imola, which is the current company head office and production site.

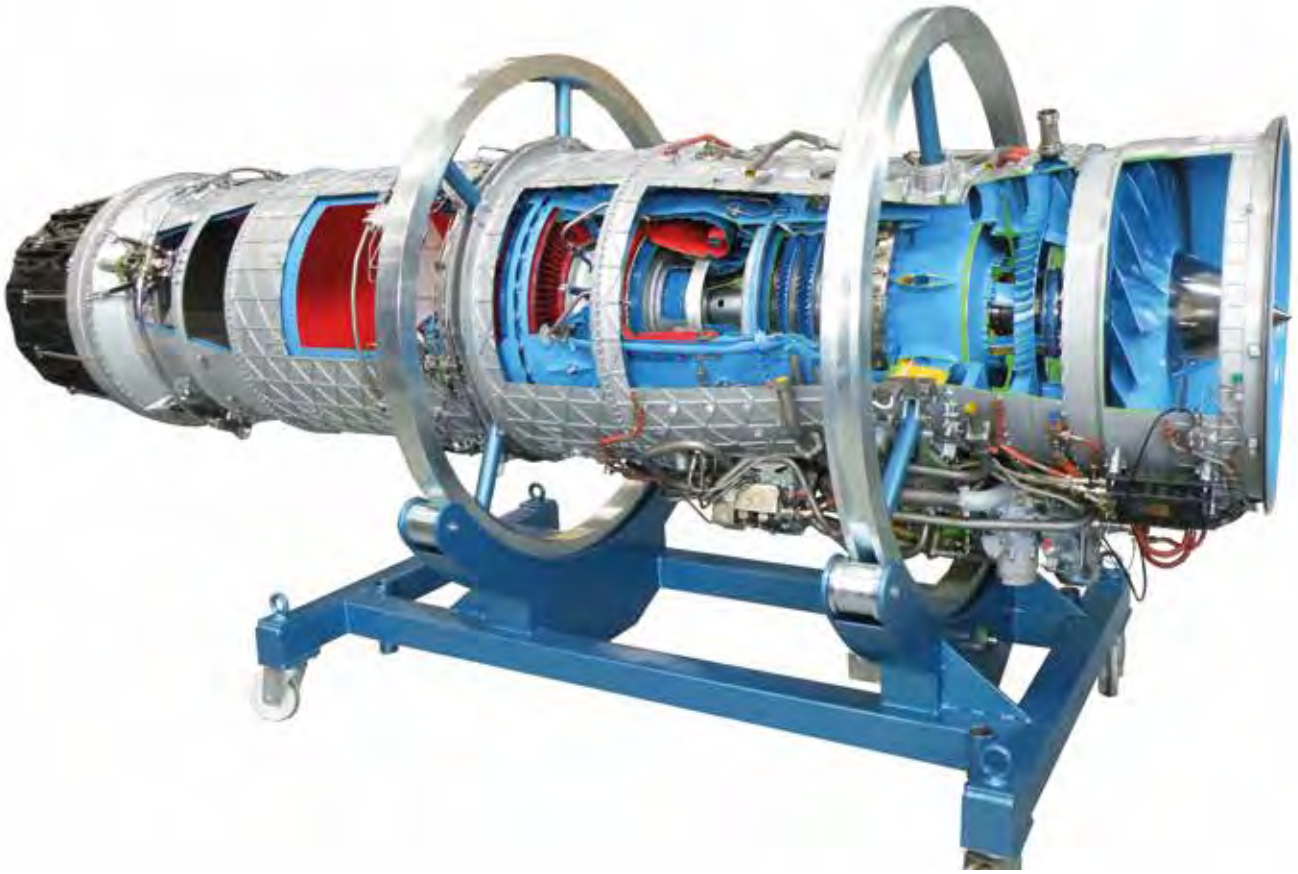
Current Location

V.B. Srl is located at 5 km from Imola toll-gate, in a very strategic position easy to reach from everywhere in Italy and from abroad thanks to Bologna international airport (BLQ) which is at only 30 minute drive.

V.B. Srl production site and warehouse cover a surface of more than 1.650 m^2; offices of 150 m^2 are located on the first floor.

SPECIAL TRAINING ITEMS

TURBOFAN EUROJET EJ 200
Mounted on Eurofighter EF-200



Indicative picture for reference only

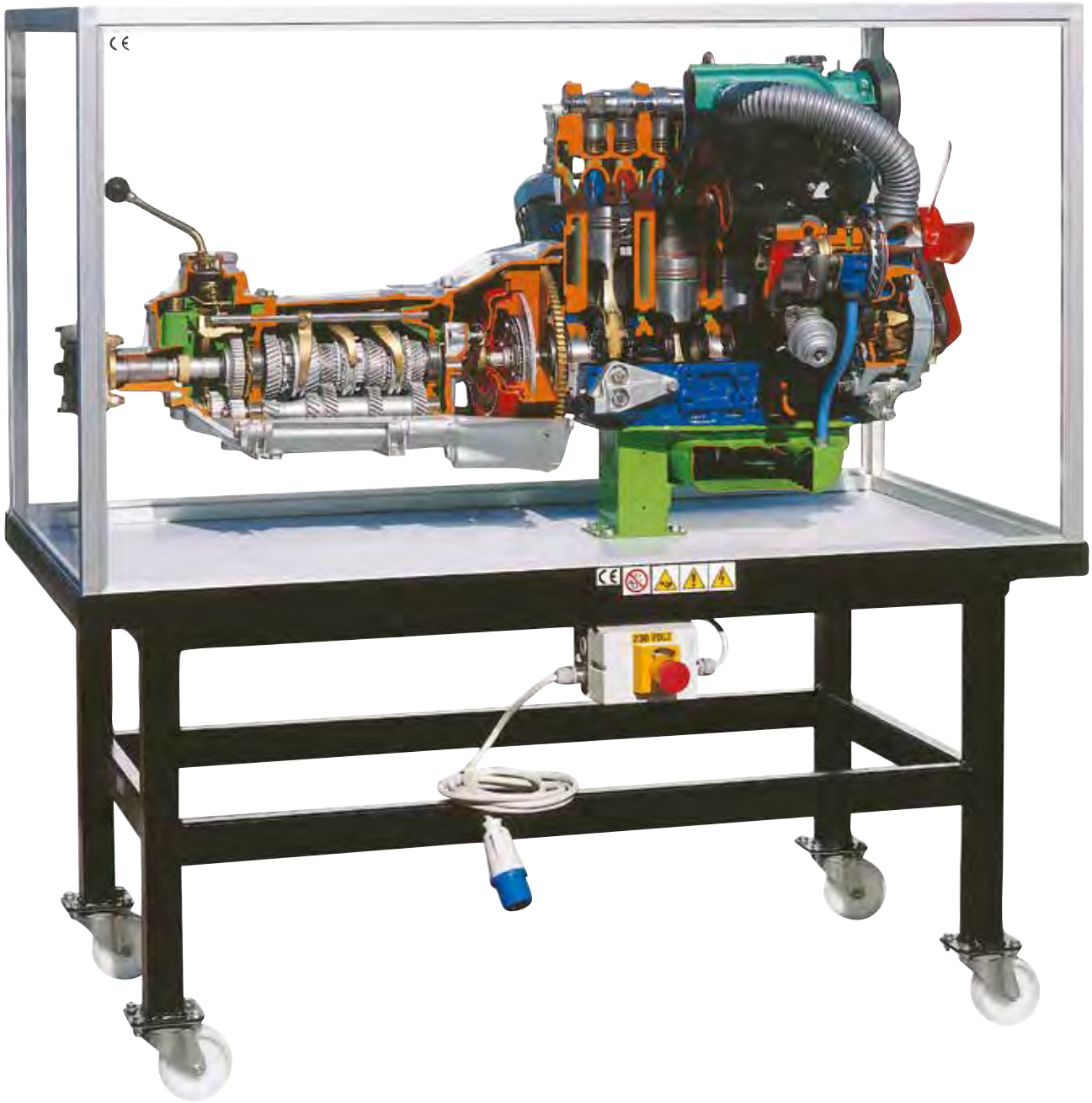
CASTOLDI HYDROJET

We do not produce the engine shown on this page.
However we could process them, provided that the engines are supplied by our customers.

EEC STANDARD COMPLIANCE

Under the EC regulations, all the cutaway educational units which are 110V – 220V – 380V power-supplied must be put into the European Community Market according to the provisions in force:
EEC Directive 98/37 (Machine Directive)
EEC Directive 73/23 (Low Voltage)
EEC Directive 89/336 and following changes and integrations (Electromagnetic Compatibility)

Using the following specific and technical standards:
EN 292/1 EN 292/2 EN 294 EN 349 EN 60204/1 EN 954/1
Certified through issue of a certificate of compliance released for each of our articles which is subject to regulations.



Indicative picture for reference only

The plexiglass cover protects all the mechanical moving parts of the electrically operated items.
For this special realization please send us your request.

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FLUID MECHANICS & REFRIGERATION

DRIVING SCHOOL EQUIPMENT

LEGEND

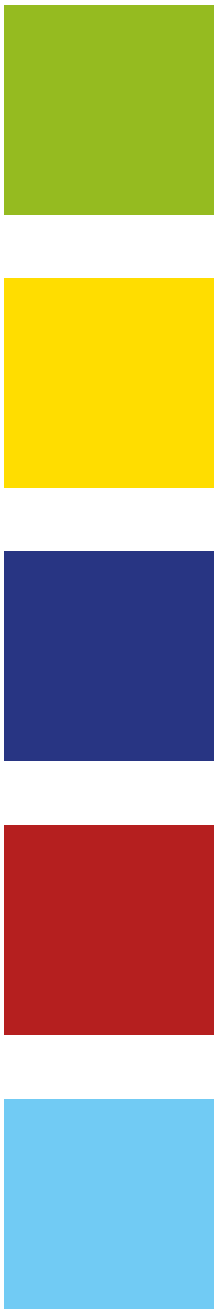
List and meaning of the LETTERS near the VBcode.

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

Code Index

Code Index

Code Index



Engines & Models

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.

Indicative picture for reference only

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*
- *Epicyclical 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.:

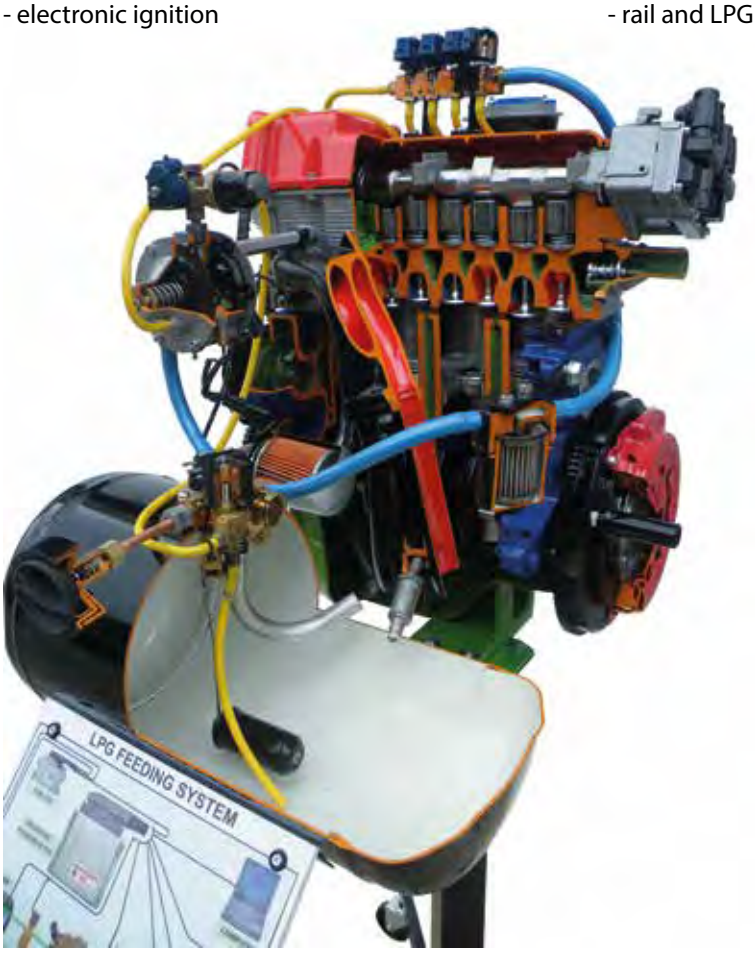
Cm:	*130x90x155h*
Net Weight:	*kg 190*
Gross Weight:	*kg 300*

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:

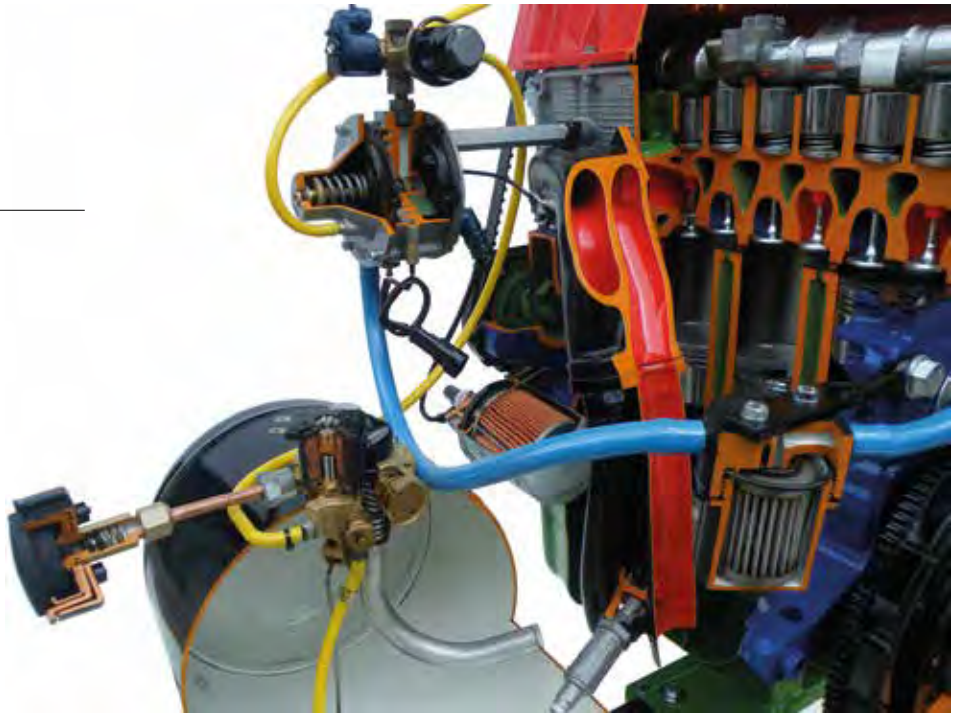
Petrol feeding circuit:
- electro-injectors
- throttle body
- rail
- sensors/ phonic wheel
- Lambda probe
- electronic ignition

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



Indicative picture for reference only

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 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.

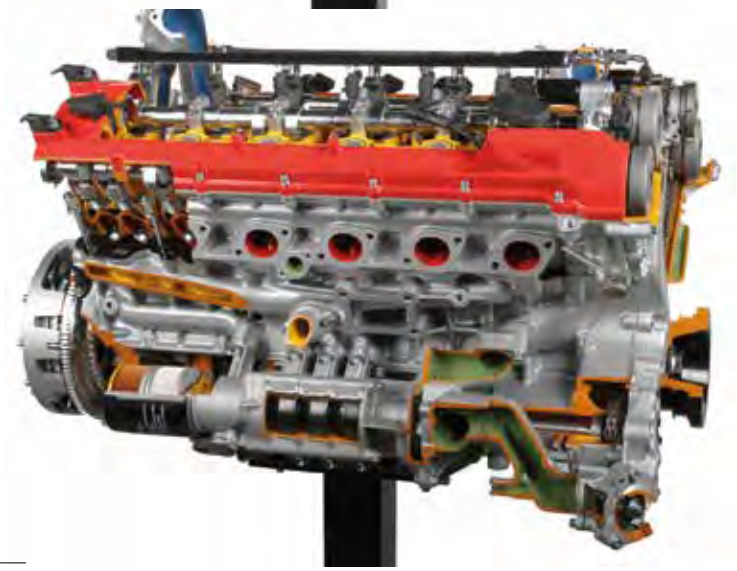
Approx. weight and dim.:

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:

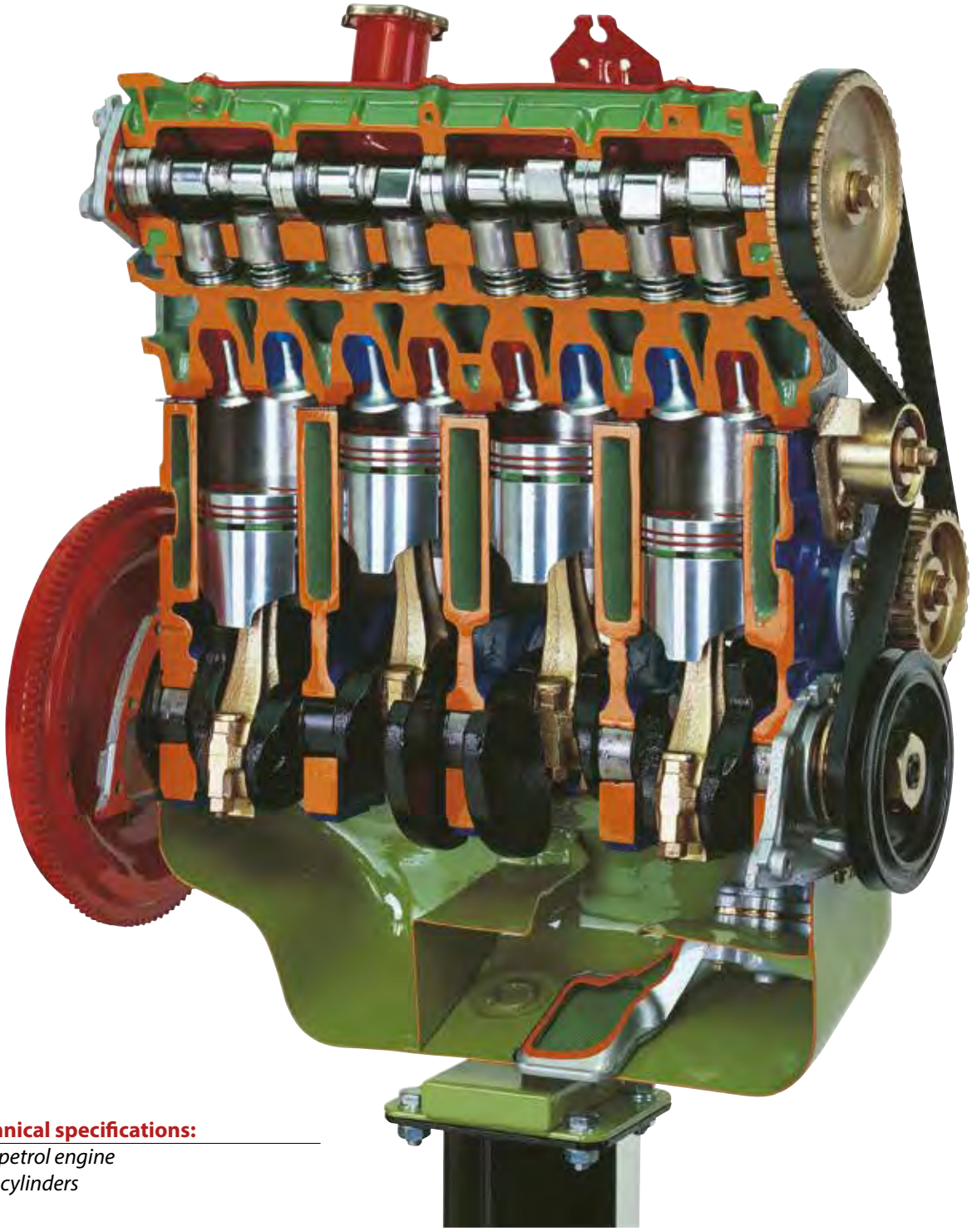
- *8 V cylinders*
- *4 valves per cylinder*
- *Displacement: 3000 cc*
- *DOHC overhead camshaft*
- *Mechanic injection with electronic governor KE3 Jetronic*
- *Belt distribution*
- *Oil pump*
- *Water pump*
- *Alternator*

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

VB 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



Indicative picture for reference only

Main technical specifications:

- *4 stroke petrol engine*
- *4 in-line cylinders*

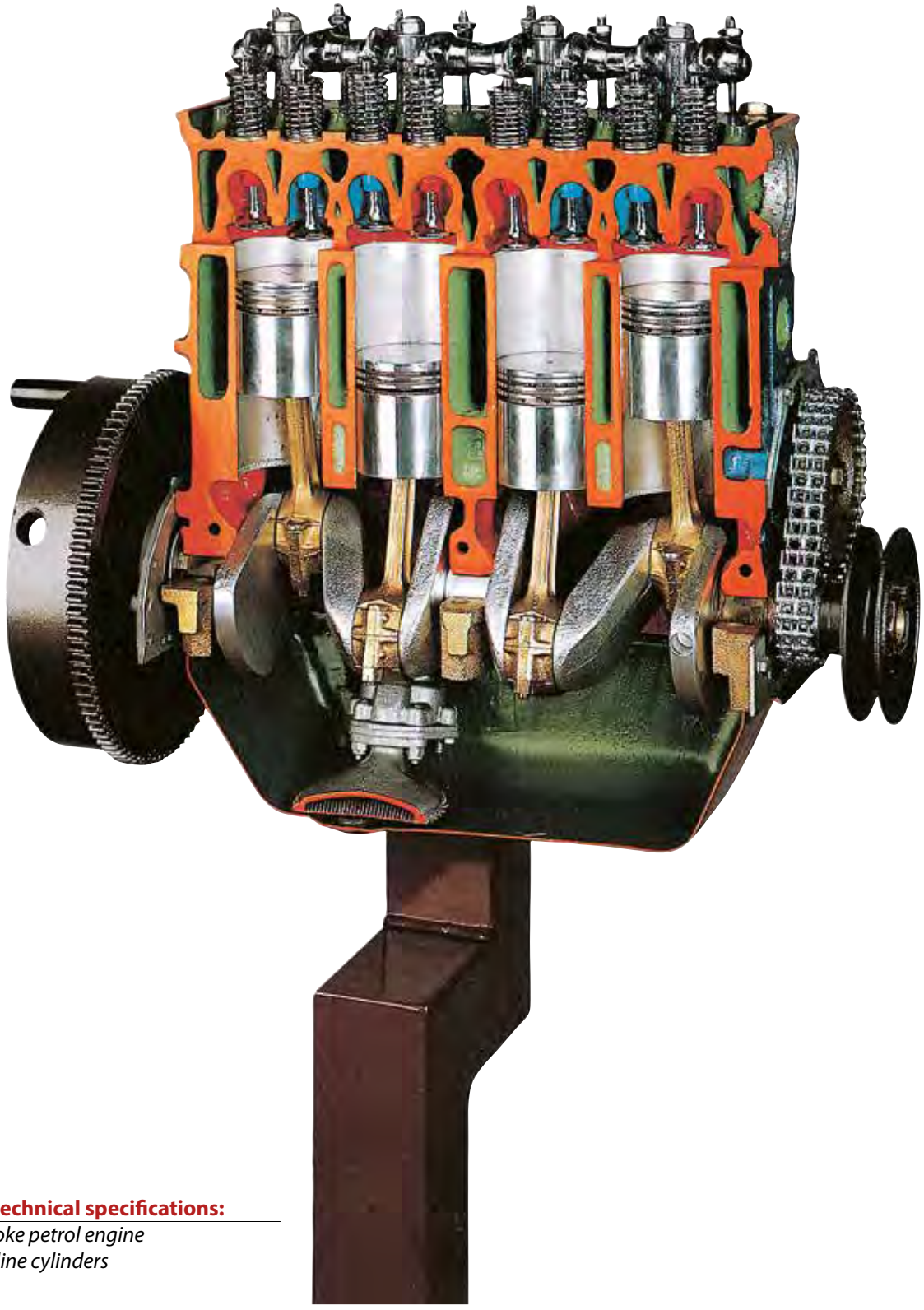
The engine is operated manually through a crank handle.

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



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*

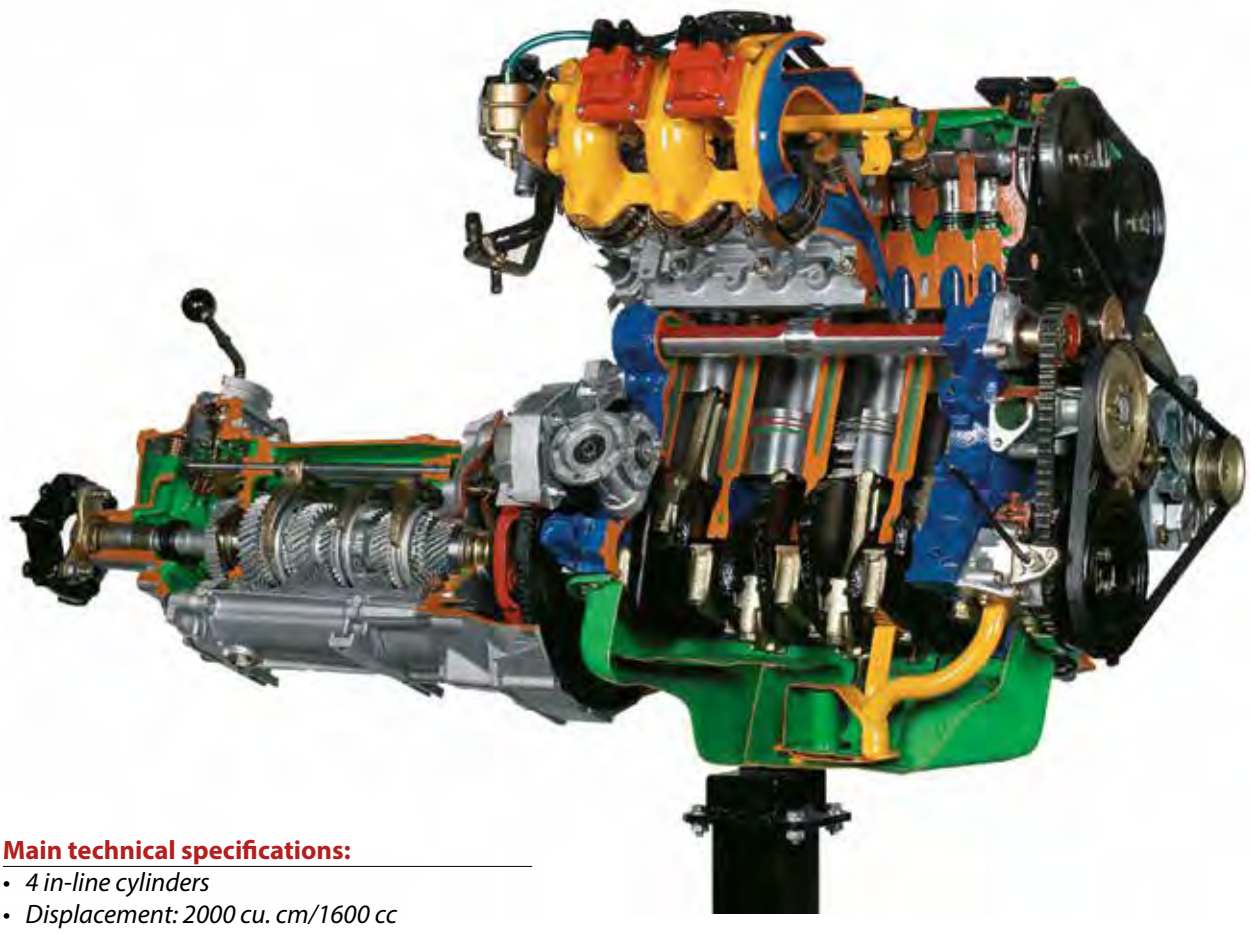
VB 4805E 16 VALVE 4 CYLINDERS FIAT ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + REAR DRIVE GEARBOX 5 SPEEDS + REVERSE (on stand with wheels) - electrical

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

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

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

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 4600 - VB 4601

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
VB 4600/J - Alfa Romeo JTS

Indicative picture for reference only

VB 4600 F/G/J

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/J

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.

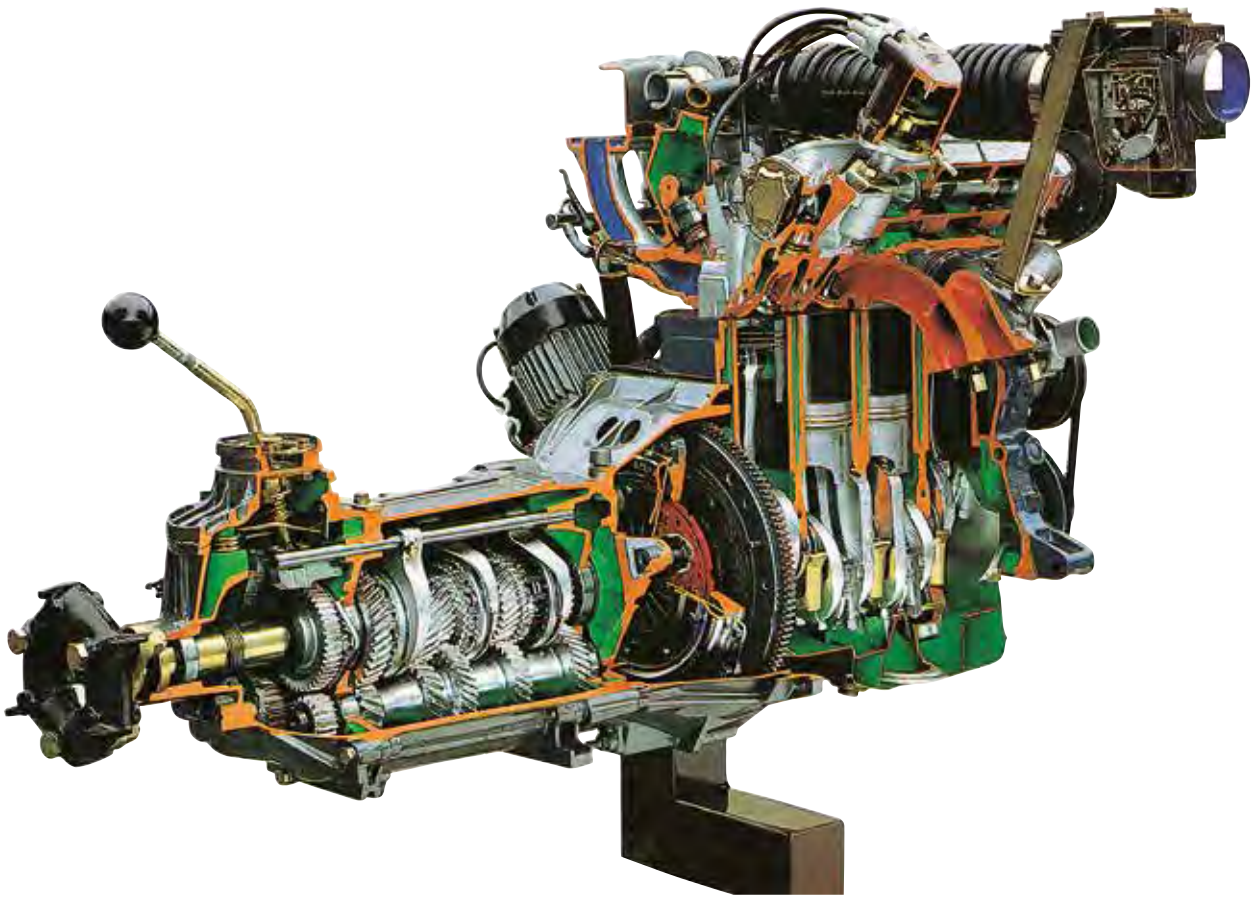
VB 4600 - VB 4601

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 5150E

Main technical features:

- *Displacement: 2000 cu. cm*
- *2 overhead camshafts - DOHC*
- *MULTIPOINT electronic injection*
- *4 in-line cylinders*
- *Gearbox: 5 forward speeds + reverse*
- *Max power: 140 hp.*
- *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.:

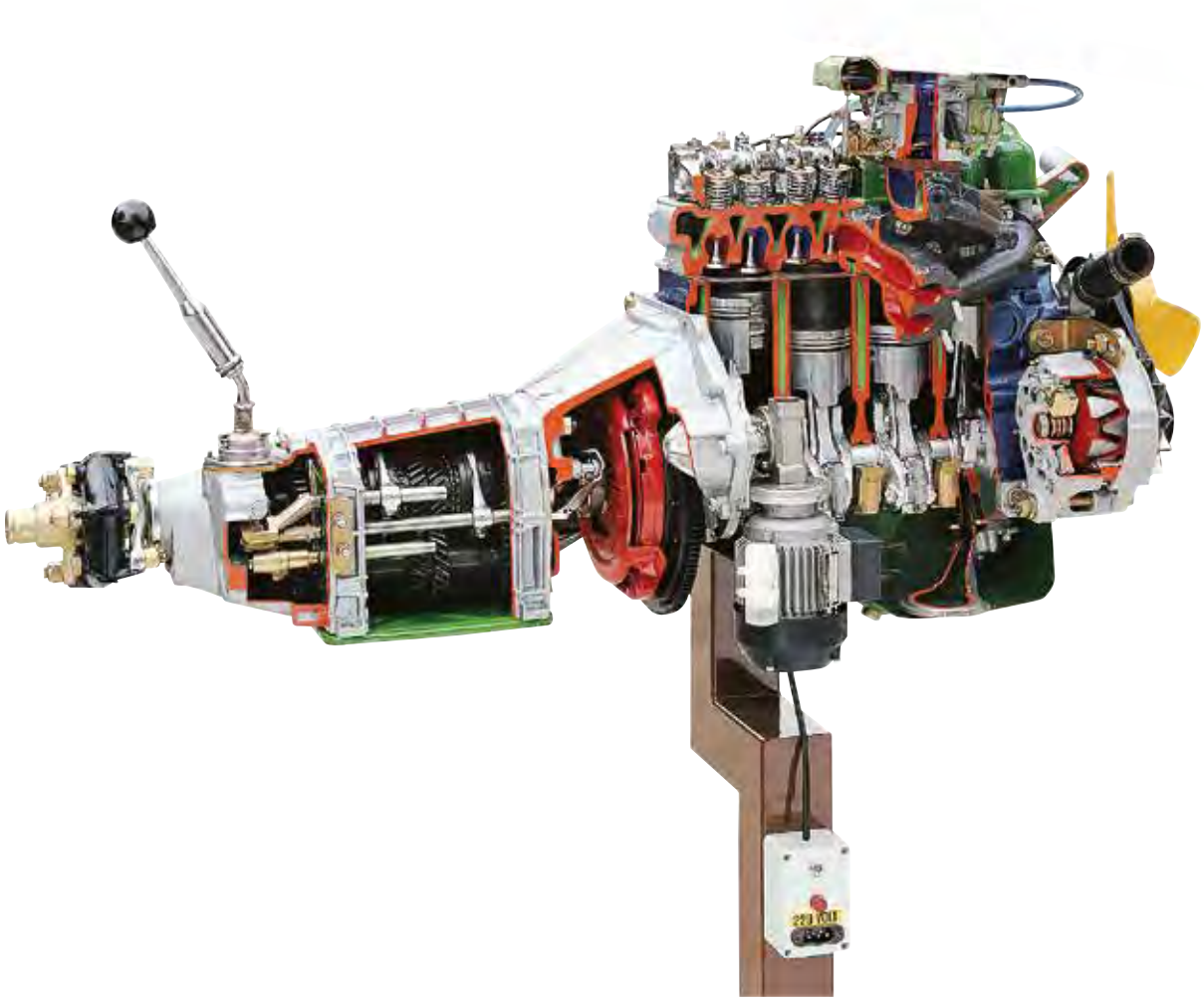
Cm:	*80x140x110h*
Net Weight:	*kg 140*
Gross Weight:	*kg 200*

VB 5000 - VB 5010 - VB 5020

VB 5000E FIAT 4 CYLINDERS PETROL ENGINE CARBURETTOR (on stand with wheels) - electrical

VB 5010E FIAT 4 CYLINDERS PETROL ENGINE CARBURETTOR WITH SIMULATED IGNITION (on stand with wheels) - electrical

VB 5020M FIAT 4 CYLINDERS PETROL ENGINE CARBURETTOR (on stand with wheels) - manual



Indicative picture for reference only

VB 5000E

Main technical specifications:

- *Displacement: 1200/2000 cu. cm approx.*
- *Camshaft in the crankcase, belt/chain drive - OHV*
- *In-line overhead valves*
- *Coil ignition*
- *Mechanical petrol pump*
- *Gearbox 4 forward speeds + reverse*
- *Dry single-plate 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 5010E

Same as VB 5000 with simulated ignition (small bulbs, located at the end of the relevant spark plug, lighting up during the combustion phase).

VB 5020M

Same as VB 5000 but operated manually through a crank handle (without geared motor and simulated ignition).

VB 5000E - VB 5010E - VB 5020M

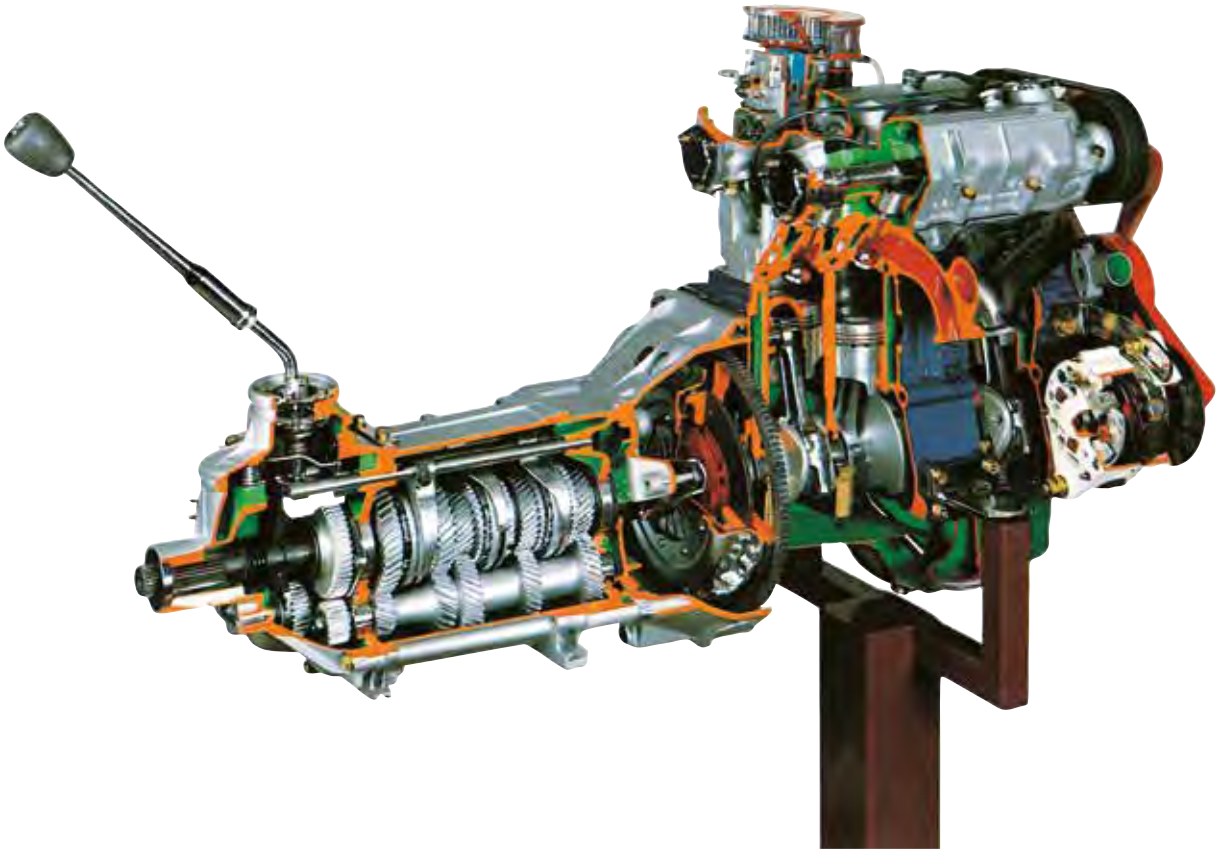
Approx. weight and dim.:

Cm:	*60x155x90h*
Net Weight:	*kg 140*
Gross Weight:	*kg 185*

VB 5100E FIAT 4 CYLINDERS PETROL ENGINE TWIN-SHAFT CARBURETTOR (on stand with wheels) - electrical

VB 5110E FIAT 4 CYLINDERS PETROL ENGINE TWIN-SHAFT CARBURETTOR WITH SIMULTATED IGNITION (on stand with wheels) - electrical

VB 5120E FIAT 4 CYLINDERS PETROL ENGINE TWIN-SHAFT CARBURETTOR WITH KKK TURBOSUPERCHARGER + PRESSURE CONTROL VALVE (on stand with wheels) - electrical



Indicative picture for reference only

VB 5100E

Main technical specifications:

- *Displacement: 1600/2000 cu. cm*
- *2 overhead camshaft driven by a toothed belt - DOHC*
- *Overhead valves with V-arrangement*
- *Coil ignition*
- *Alternator*
- *Twin-carburettor*
- *Gearbox: 5 forward speeds + reverse*
- *Dry single-plate 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 5110E

Same as VB 5100 with simulated ignition (small bulbs, located on the relevant spark plugs, light up during the combustion phase).

VB 5120E

Same as VB 5100 but complete with KKK turbo-supercharger and pressure control valve.

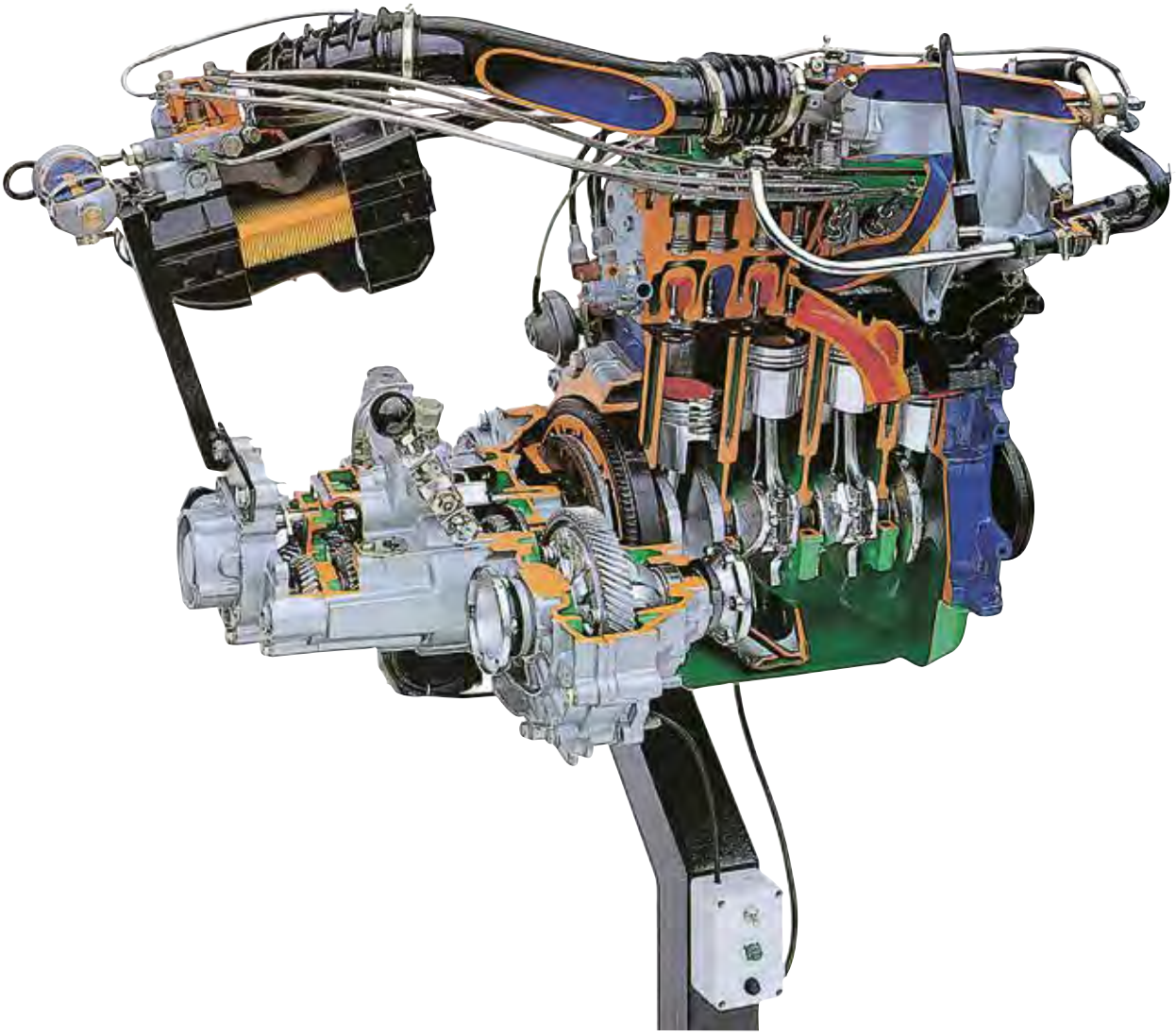
VB 5100E - VB 5110E - VB 5120E

Approx. weight and dim.:

Cm:	*76x140x100h*
Net Weight:	*kg 150*
Gross Weight:	*kg 220*

VB 5165E VOLKSWAGEN 4 CYLINDERS PETROL ENGINE WITH K-JETRONIC INJECTION (on stand with wheels) - electrical

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



Indicative picture for reference only

VB 5165E

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 5165E - VB 5166E

Approx. weight and dim.:

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

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

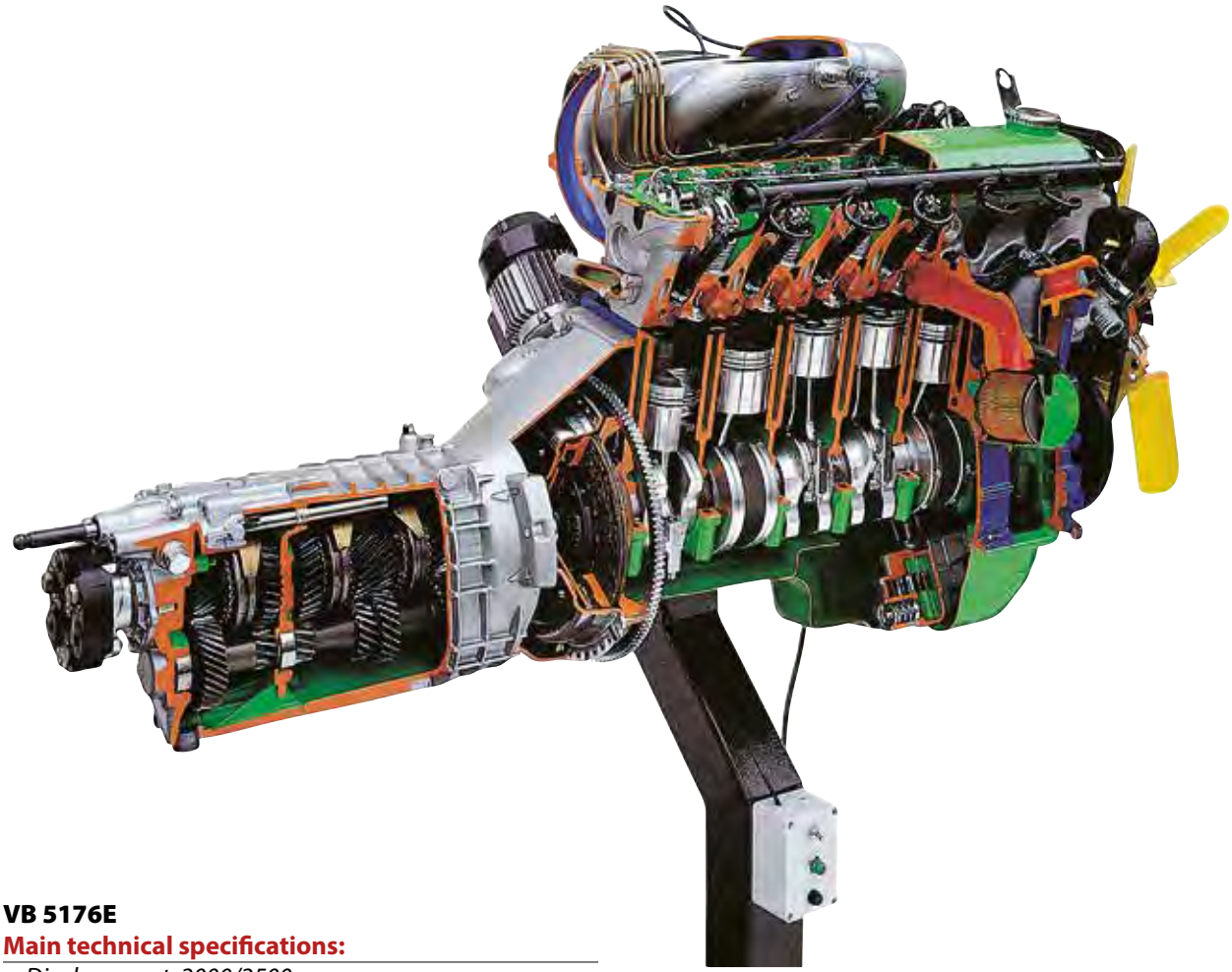
VB 5176E BMW 6 CYLINDERS PETROL ENGINE 24 VALVES WITH MULTI-POINT ELECTRONIC INJECTION AND TWIN OVERHEAD CAMSHAFT (DOHC) (on stand with wheels) - electrical

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

VB 5179M TOYOTA LEXUS ENGINE 8 V-TYPE CYLINDERS 32 VALVES + GEARBOX (on stand with wheels) - manual

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*

VB 5179M

Same as VB 5178, provided with AISIN AW automatic gearbox with 4 forward speeds.

Indicative picture for reference only

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

VB 5178M

Approx. weight and dim.:

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

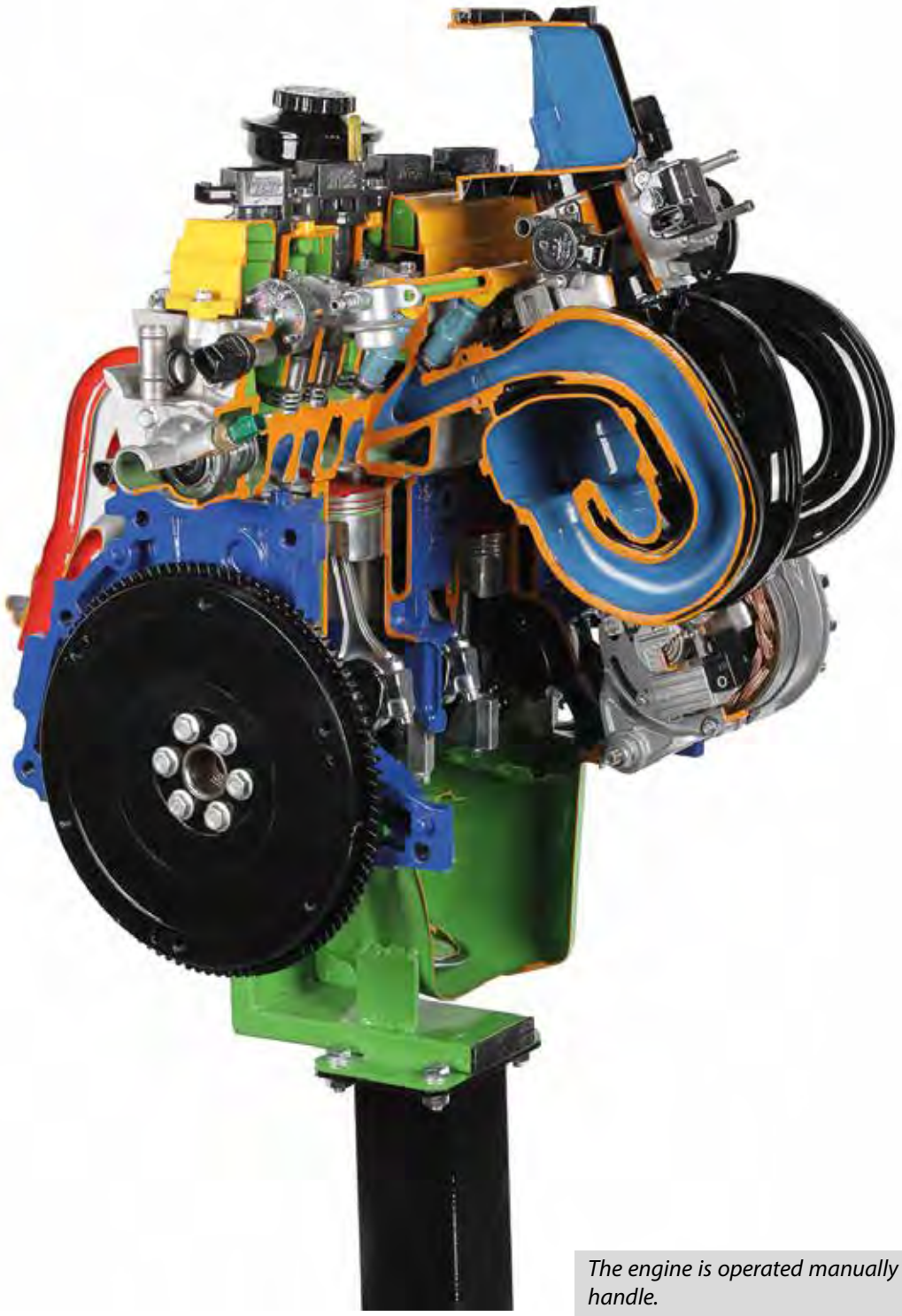
VB 5179M

Approx. weight and dim.:

Cm:	*140x90x160h*
Net Weight:	*kg 230*
Gross Weight:	*kg 340*

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



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*

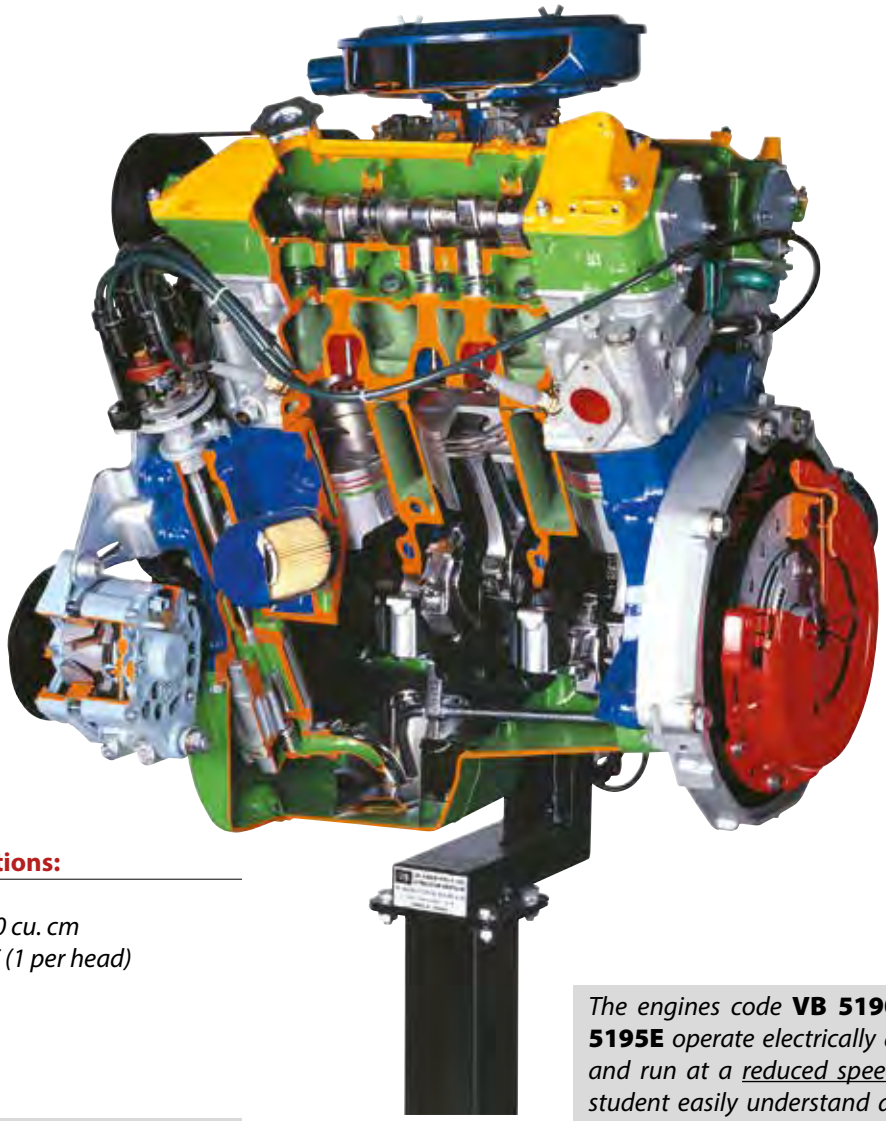
VB 5190 - VB 5195

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.

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*

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 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 5210 IEE FIAT PETROL ENGINE WITH ELECTRONIC FUEL INJECTION - MONOJETRONIC (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:

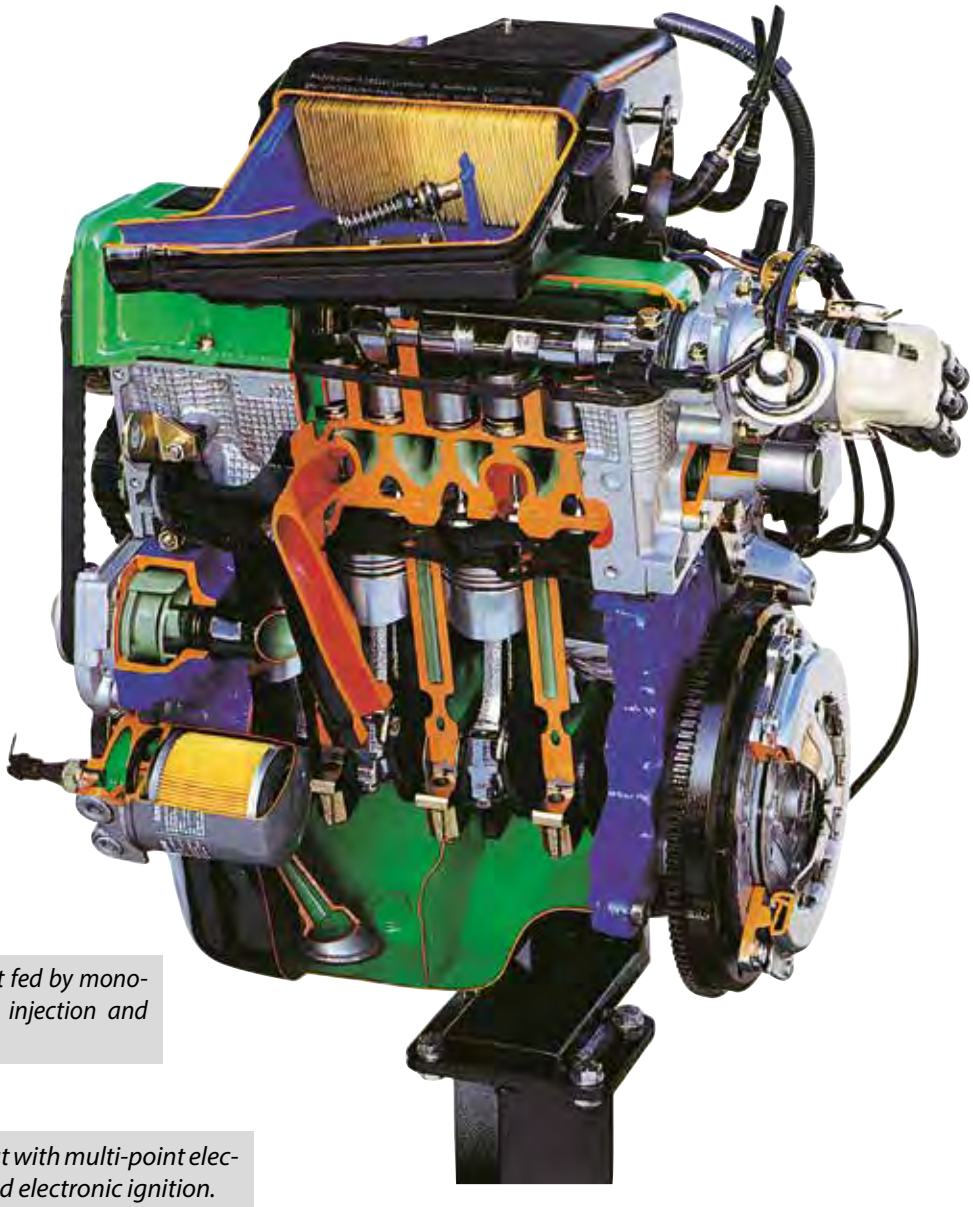
- *4 in-line cylinders*
- *Displacement: 1000/1300 cu. cm*
- *Overhead camshaft - OHC*
- *Carburettor*
- *Electronic ignition*
- *Alternator*
- *Toothed belt*

VB 5210 IEE - VB 5212 IEE

Main technical specifications:

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

Indicative picture for reference only



VB 5210 IEE

Same as VB 5210CE but fed by monojetronic electronic fuel injection and electronic ignition.

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 - VB 5210 IEE - VB 5212 IEE

Approx. weight and dim.:

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

VB 5210 C - VB 5210 IE - VB 5212 IE

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*

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.

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.:

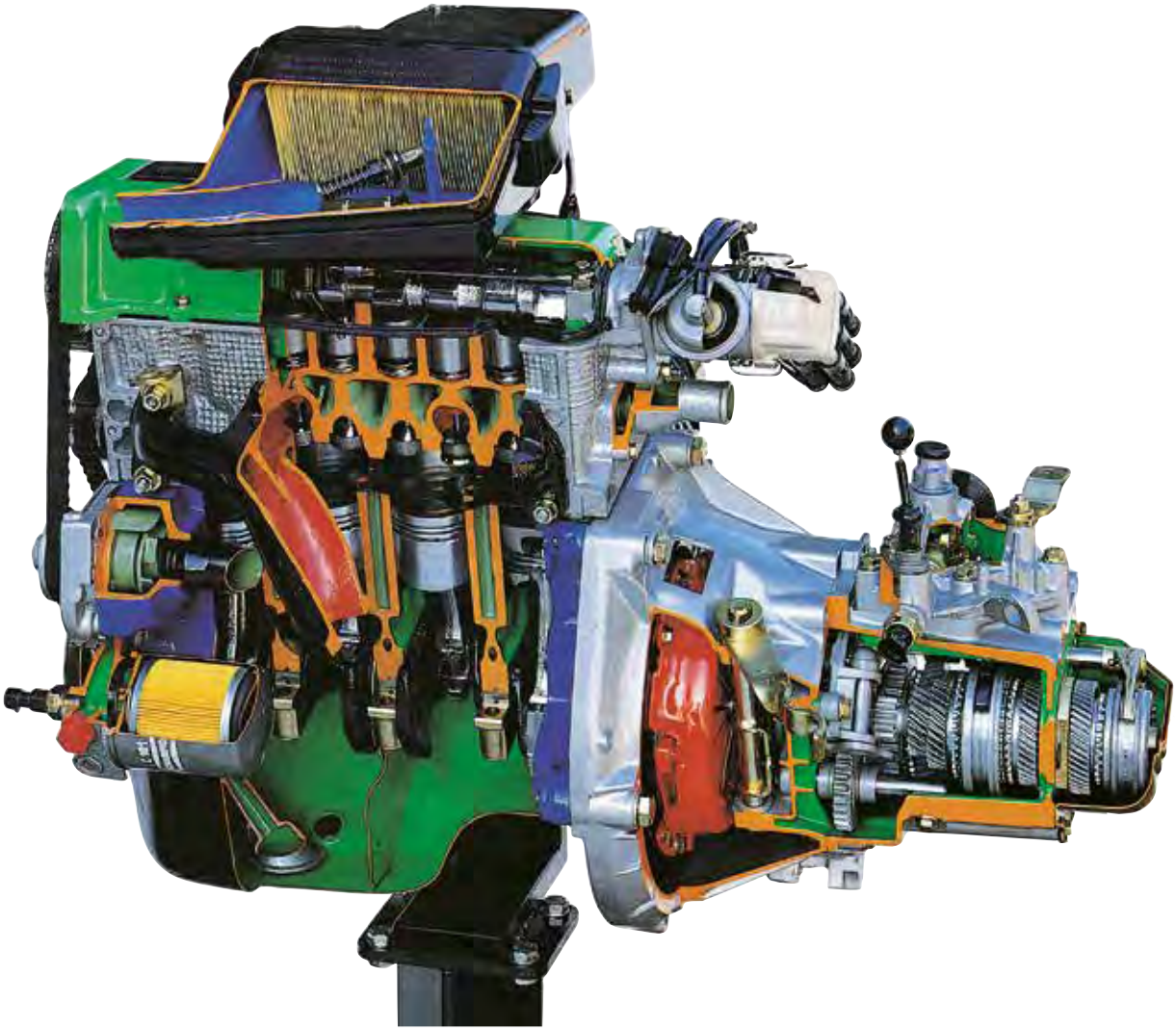
Cm:	*67x87x85h*
Net Weight:	*kg 60*
Gross Weight:	*kg 120*

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

VB 5220 IEE FIAT PETROL ENGINE WITH ELECTRONIC INJECTION - MONOJETRONIC + 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 IEE

Same as VB 5220CE but with electronic mono-jetronic fuel injection.

VB 5220 CE - VB 5220 IEE - VB 5222 IEE

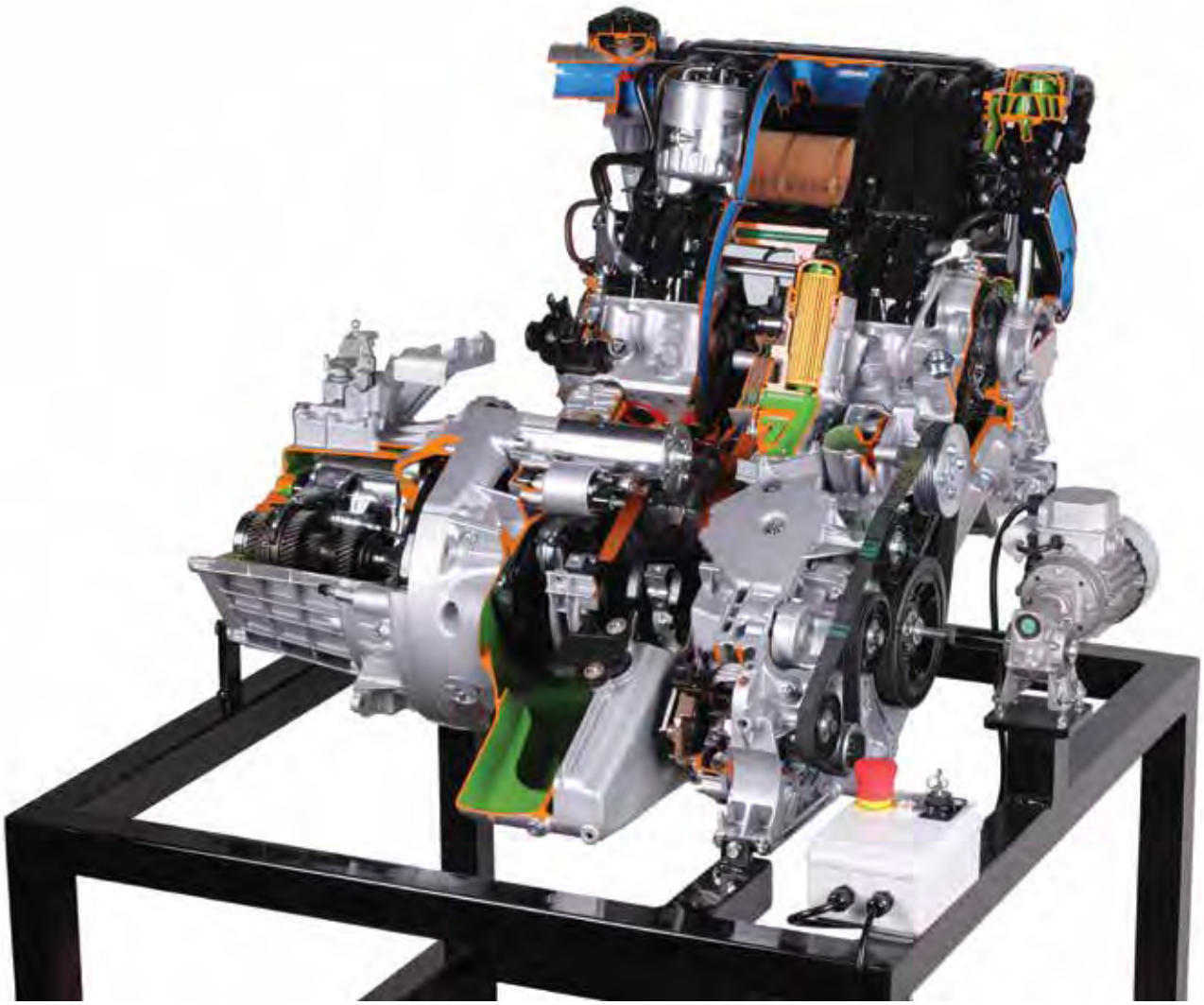
Approx. weight and dim.:

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

VB 5243

VB 5243E MERCEDES A CLASS PETROL ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + GEARBOX (on stand with wheels) – electrical

VB 5243M MERCEDES A CLASS PETROL ENGINE WITH MULTI-POINT ELECTRONIC INJECTION + GEARBOX (on stand with wheels) - manual



Indicative picture for reference only

Main technical specifications:

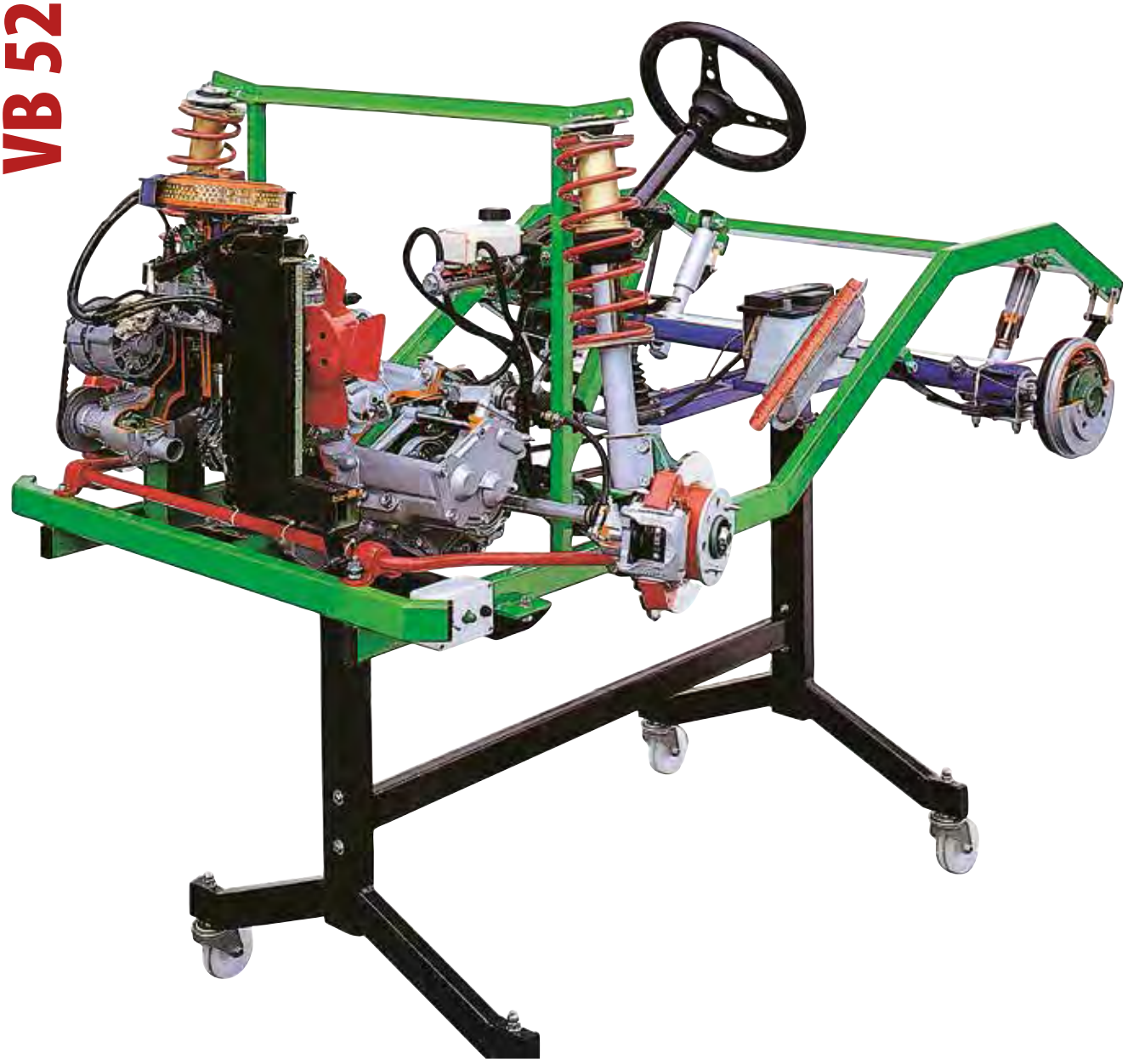
- *Mercedes A class petrol engine*
- *4 stroke, 4 cylinders*
- *Displacement: 1600 cc*
- *Overhead camshaft OHC*
- *8 valves*
- *Multipoint electronic injection*
- *Oil pump, oil filter*
- *Air filter, water cooling*
- *Intake manifold*
- *Air-mass flow sensor*
- *Clutch*
- *Gearbox 5 forward speeds + reverse*
- *Differential*

Approx. weight and dim.:

Cm:	*110x110x150h*
Net Weight:	*kg 170*
Gross Weight:	*kg 250*

CARBURETTOR CHASSIS

VB 5250 PE FRONT DRIVE PETROL ENGINE CHASSIS WITH CARBURETTOR (on stand with wheels) - electrical



Indicative picture for reference only

Main technical specifications:

- *Displacement: 900 cu. cm approx.*
- *Camshaft in the crankcase*
- *Single body carburettor*
- *Coil ignition*
- *Gearbox: 4 forward speed + reverse, with differential*
- *Mc Pherson front suspension*
- *Rear suspensions + leaf spring*
- *Hydraulic shock absorbers*
- *Front disc brake/rear drum brake*
- *Rack steering box*

Working light system on request.

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:	*140x210x90h*
Net Weight:	*kg 250*
Gross Weight:	*kg 350*

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*

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.

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*

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 5276E PETROL SINGLE-POINT ENGINE CHASSIS WITH WORKING LIGHT SYSTEM (on stand with wheels) - electrical

VB 5277E PETROL SINGLE-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 5276E

Main technical specifications:

- *Fiat chassis with front drive (transversally mounted engine)*
- *Petrol engine, 4 cylinders, displacement: 1100/1200 Cu. Cm, complete of all accessories*
- *Electronic injection SPI (Single-point) and electronic ignition controlled by a single electronic ECU (engine control unit)*
- *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*
- *Independent wheels McPherson front suspensions with oscillating arms*
- *Rear independent suspension with coil spring and gas shock absorbers*
- *Working front and rear light system controlled by a dashboard*

Indicative picture for reference only

VB 5275E

Same as VB 5274E, but without light system.

VB 5277E

Same as VB 5276E, 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 - VB5276E - VB 5277E

Approx. weight and dim.:

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

Indicative picture for reference only

VB 5274 - VB 5275 - VB 5276 - VB 5277

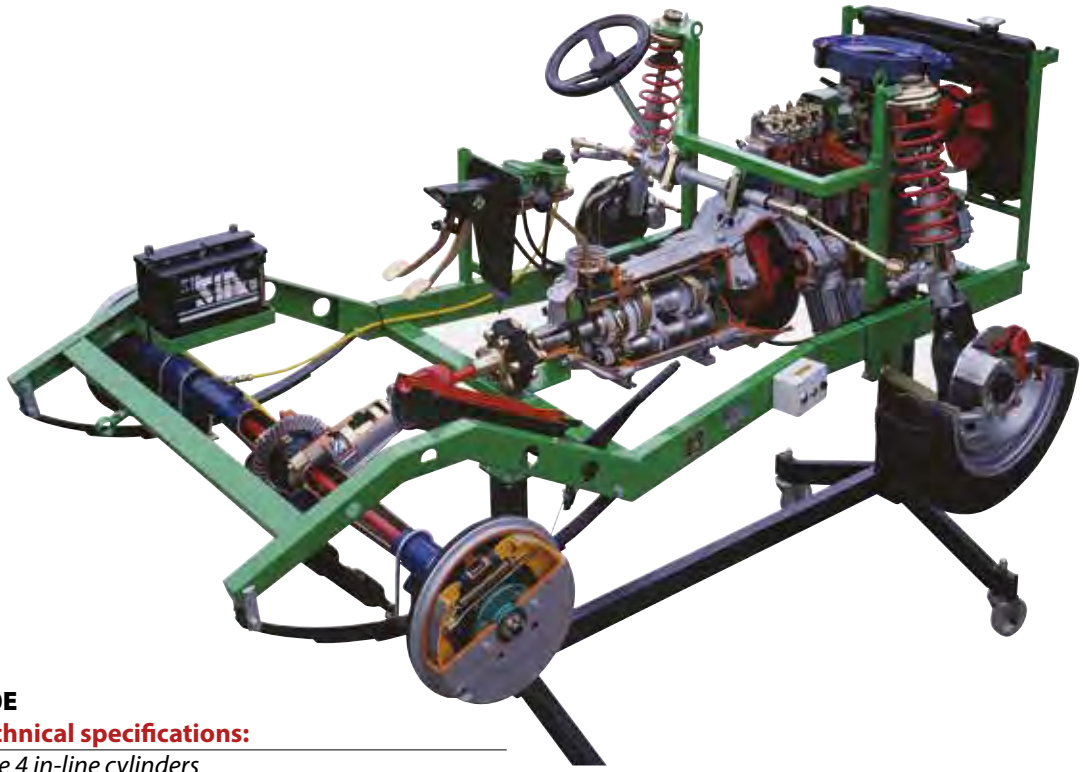
CARBURETTOR CHASSIS

VB 5300E FIAT CAR CHASSIS FRONT ENGINE CARBURETTOR WITH REAR DRIVE (on stand with wheels) - electrical

VB 5310E FIAT CAR CHASSIS FRONT ENGINE CARBURETTOR WITH REAR DRIVE WITH SIMULATED IGNITION (on stand with wheels) - electrical

VB 5320E FIAT CAR CHASSIS FRONT ENGINE CARBURETTOR WITH REAR DRIVE (on stand with wheels) - manual

VB 5330E FIAT CAR CHASSIS FRONT ENGINE CARBURETTOR WITH REAR DRIVE WITH WORKING LIGHT SYSTEM (on stand with wheels) - electrical



Indicative picture for reference only

VB 5300E
Main technical specifications:

- *4-stroke 4 in-line cylinders*
- *Displacement: 2000 cu. cm*
- *Gearbox: 4/5 forward speeds + reverse*
- *Hypoid differential*
- *Camshaft in the crankcase*
- *Vertical twin carburettor*
- *Water cooling*
- *Spring single plate clutch*
- *McPherson front suspension*
- *Front disc brakes and rear drum brakes*
- *Rack steering box*
- *Drive shaft with mechanical and flexible joint*
- *Rear leaf spring suspension*

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 5310E

Same as VB 5300E, but with simulated ignition (small bulbs, located on the relevant spark plug, which light up during the combustion phase).

VB 5320E

Same as VB 5300E, but operated manually through a crank handle (without geared motor and simulated ignition).

VB 5330E FIAT SINGLE SHAFT CHASSIS WITH LIGHTS

Same as VB 5300E complete with working light system. Complete with regulation lights, rear fog lights, reverse and emergency lights, etc.
The electrical controls are assembled on a dashboard complete with warning lights.

VB 5300E - VB 5310E - VB 5320E - VB 5330E
Approx. weight and dim.:

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

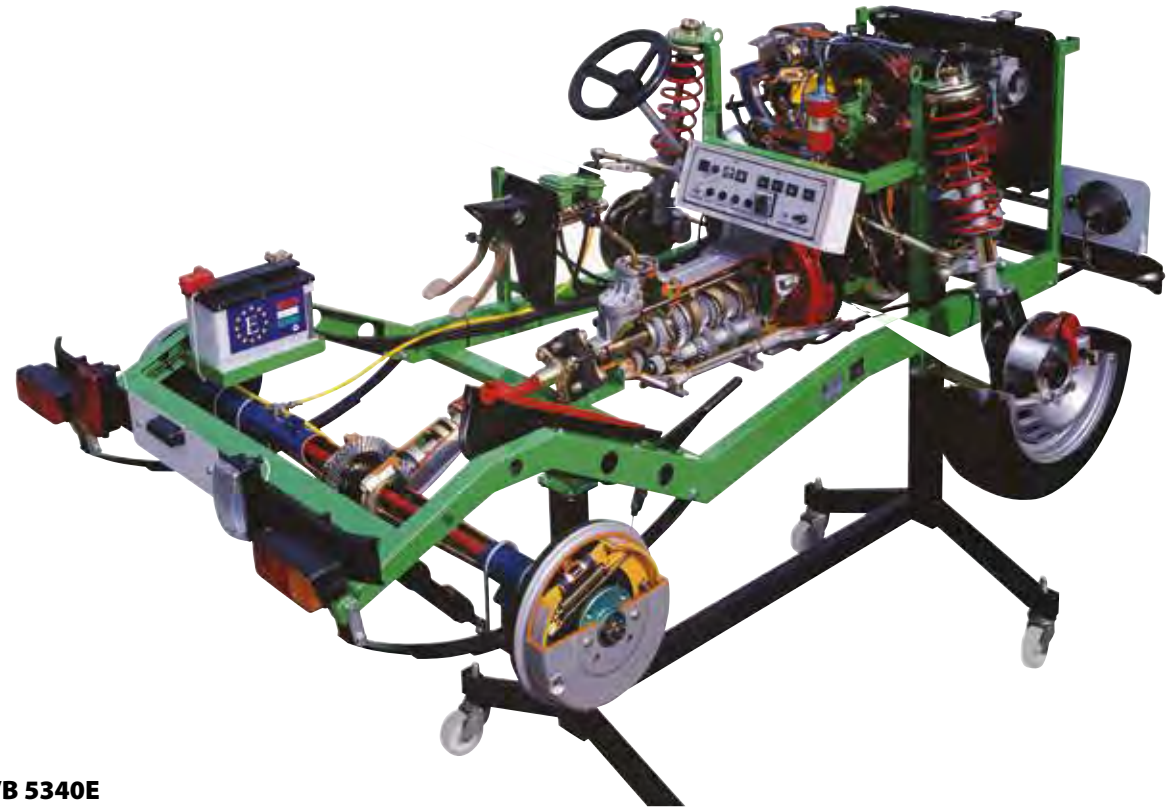
INJECTION CHASSIS

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

VB 5360E FIAT DOUBLE SHAFT (DOHC) WITH PETROL ENGINE CARBURETTOR (on stand with wheels) - electrical

VB 5370E FIAT DOUBLE SHAFT (DOHC) WITH PETROL ENGINE CARBURETTOR WITH WORKING LIGHT SYSTEM (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*
- *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 5360E

Same as VB 5350, but with petrol engine double shaft (DOHC) carburettor (same engine as of VB 5100)

VB 5370E

Same as VB 5360E complete with working light system.

VB 5340E - VB 5350E - VB 5360E - VB 5370E

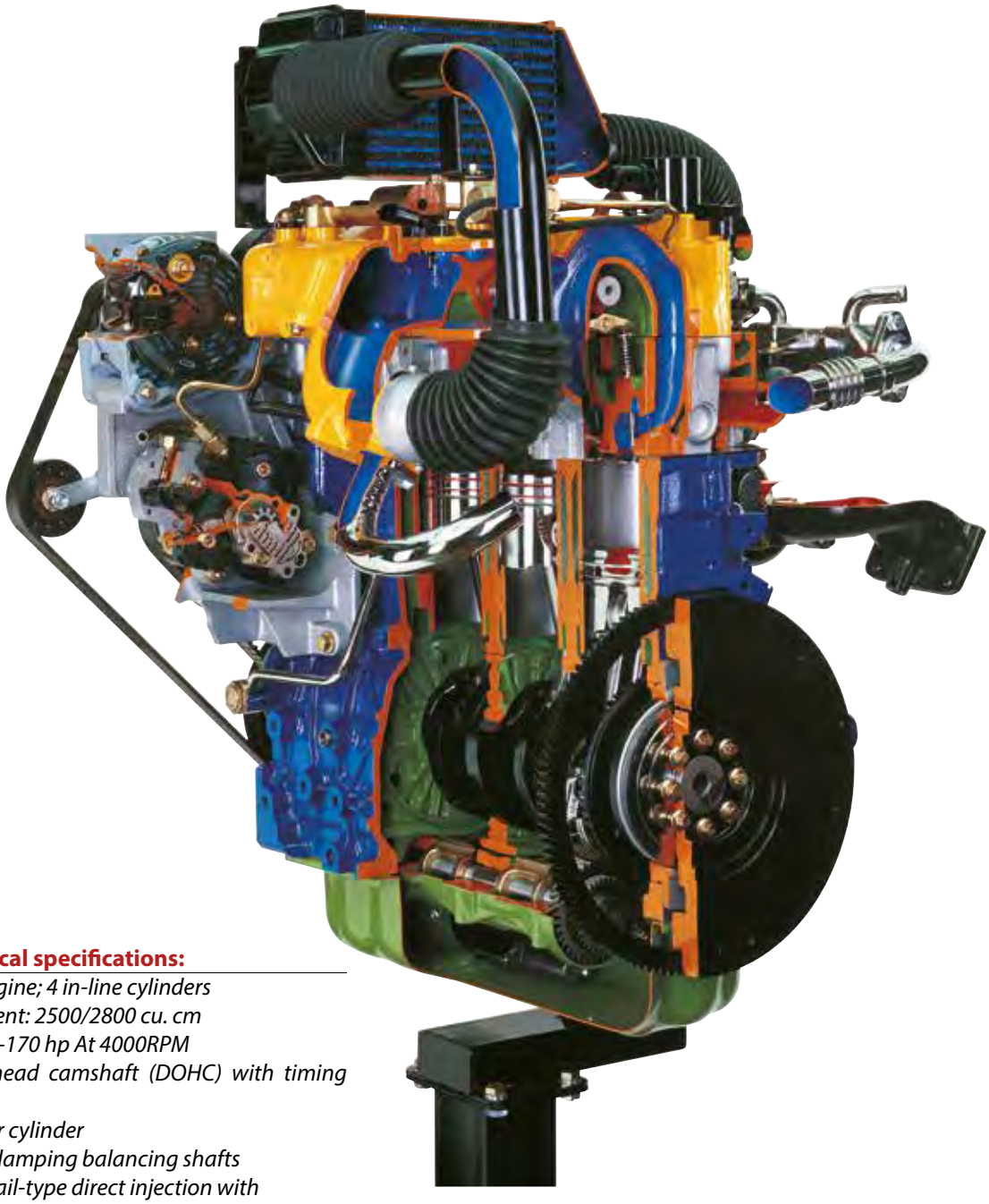
Approx. weight and dim.:

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

VB 6010

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

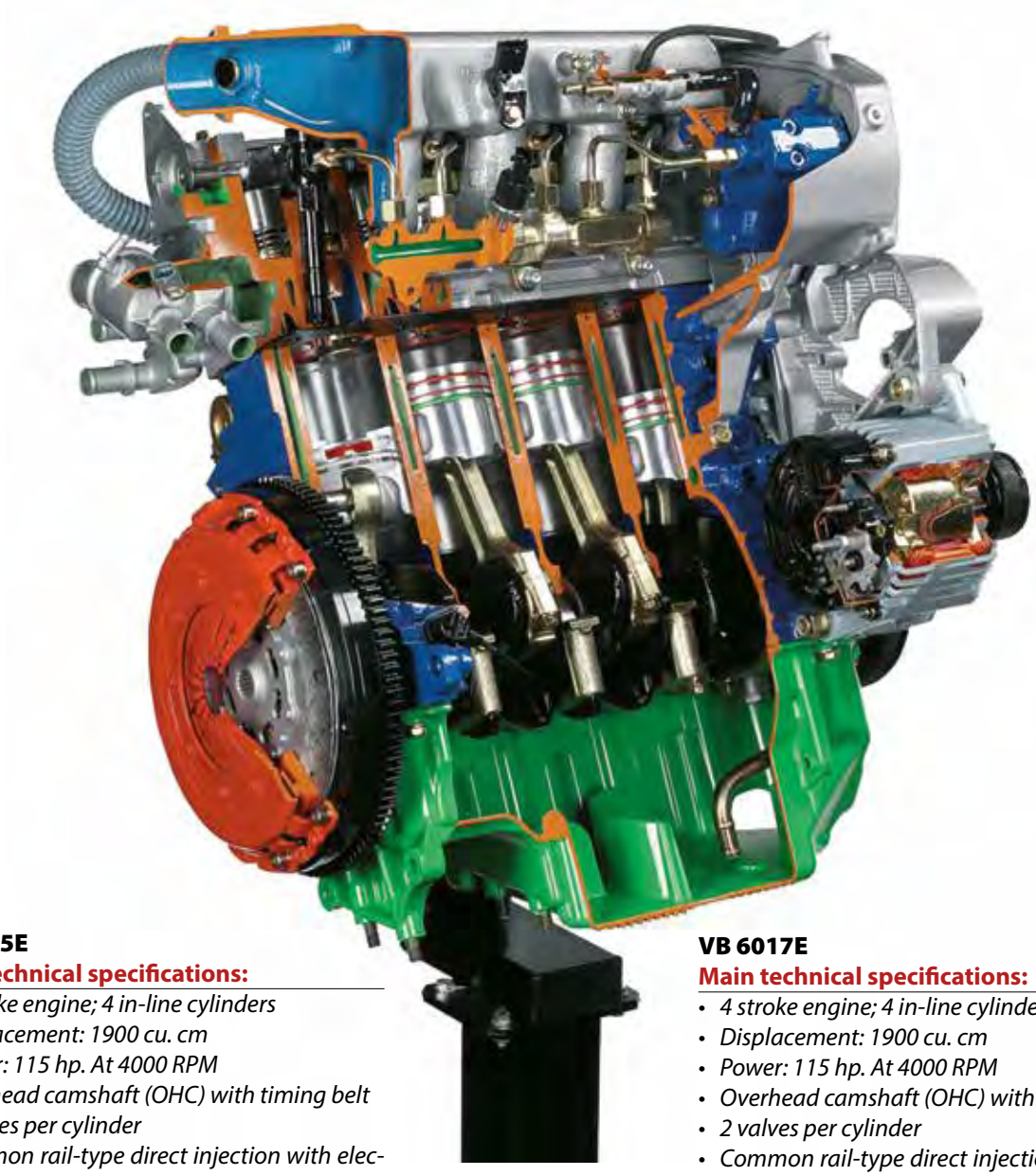
Approx. weight and dim.:

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 COMMN-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



Indicative picture for reference only

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.

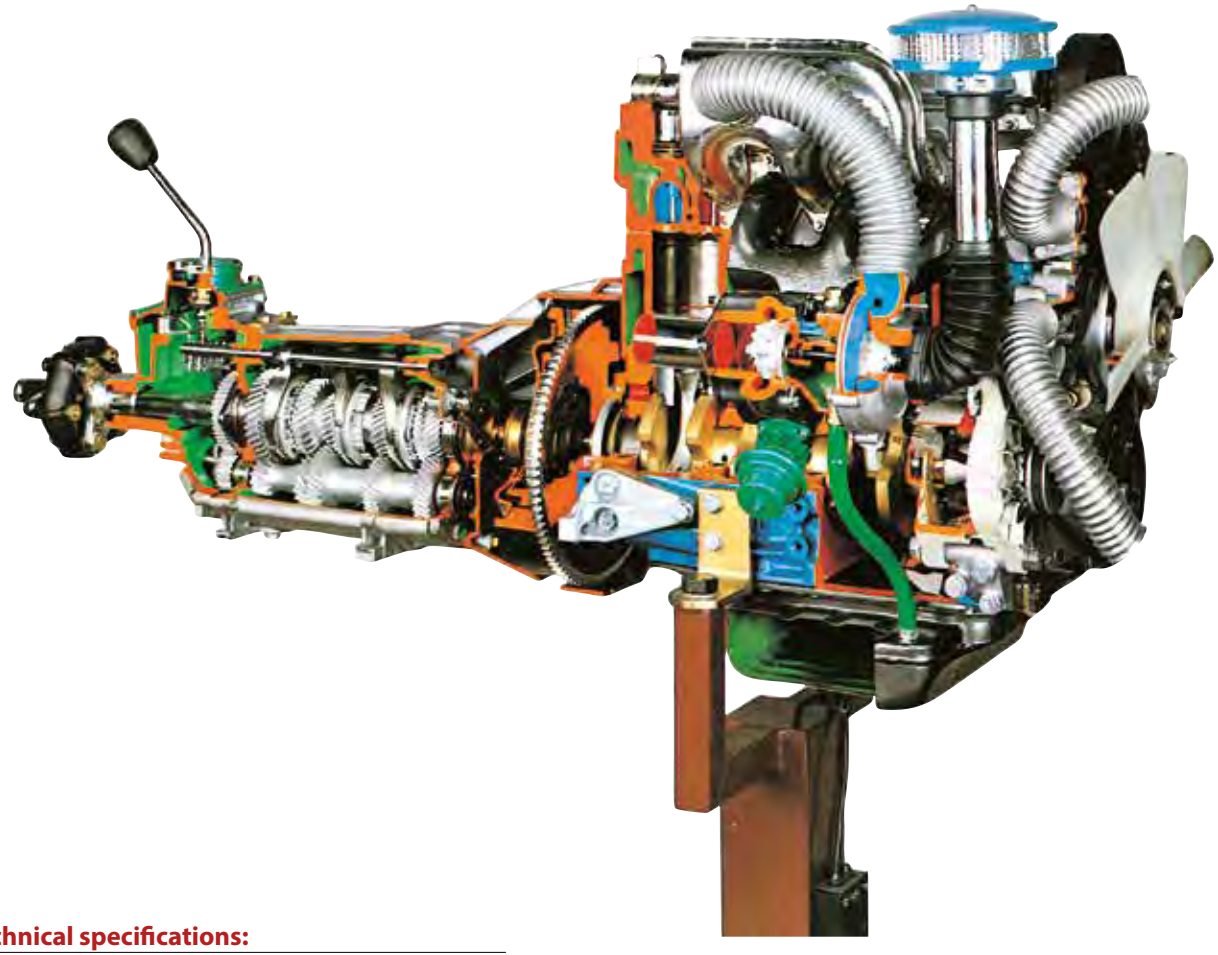
VB 6015E - VB 6015M - VB 6017E

Approx. weight and dim.:

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

VB 6020E FIAT TURBO DIESEL ENGINE FOR CAR AND LORRY (on stand with wheels) - electrical

VB 6040E FIAT DIESEL ENGINE FOR CAR AND LORRY WITHOUT TURBOSUPERCHARGER (on stand with wheels) - electrical



Indicative picture for reference only

Main technical specifications:

- *4 stroke engine; 4 in-line cylinders*
- *Displacement: 1900 cu. cm*
- *Indirect injection*
- *VE Bosch type rotary injection pump*
- *Overhead camshaft (OHC)*
- *Distribution through a toothed belt*
- *Alternator*
- *Thermostatic valve*
- *Gearbox: 5 forward speeds + reverse*
- *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.

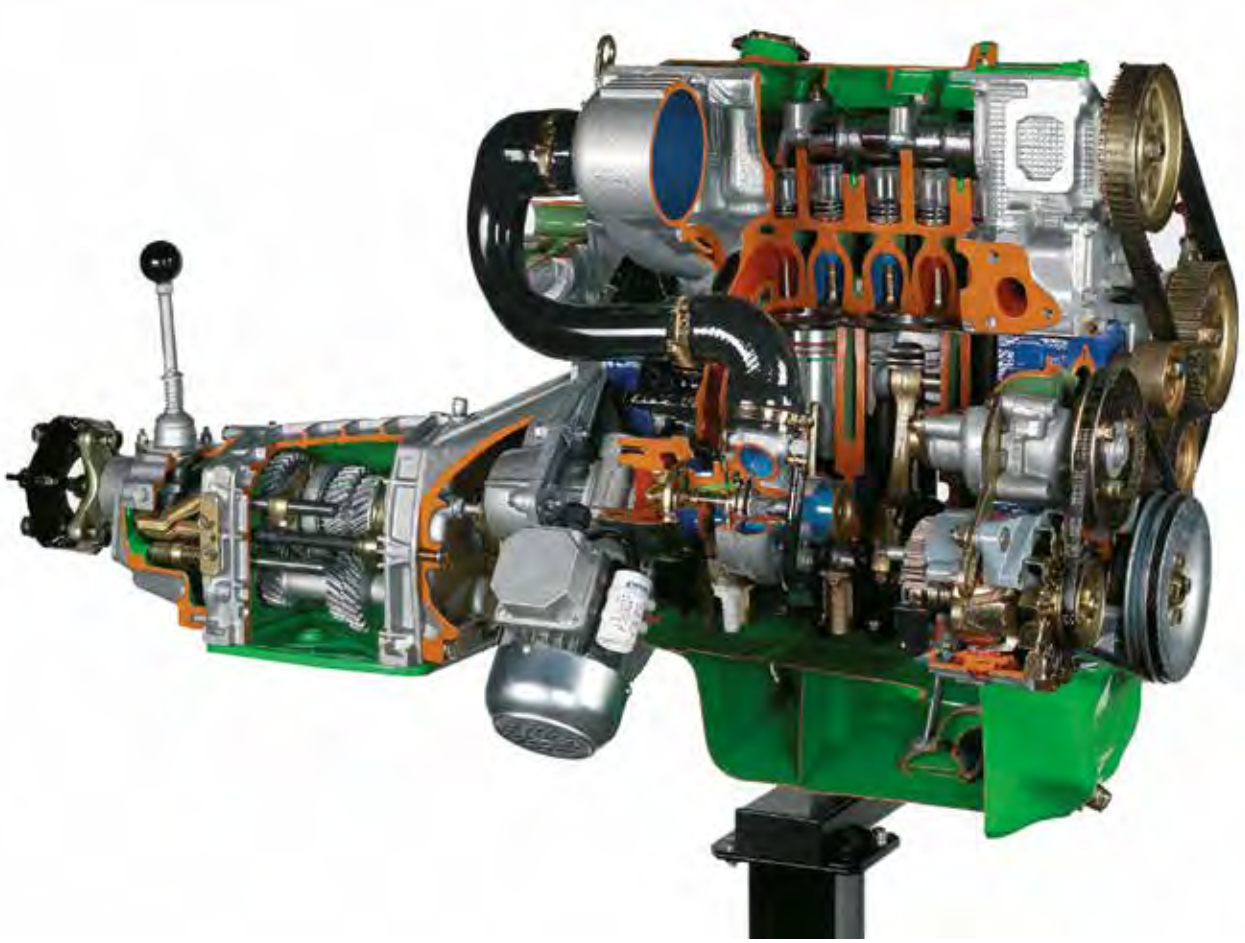
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

Approx. weight and dim.:

Cm:	*85x160x100h*
Net Weight:	*kg 220*
Gross Weight:	*kg 280*

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 6070E

Main technical specifications:

- *4 stroke engine; 4 cylinders in line*
- *Displacement: 1400/1700 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*

VB 6071E

Same as VB 6070E but without turbo-supercharger.

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

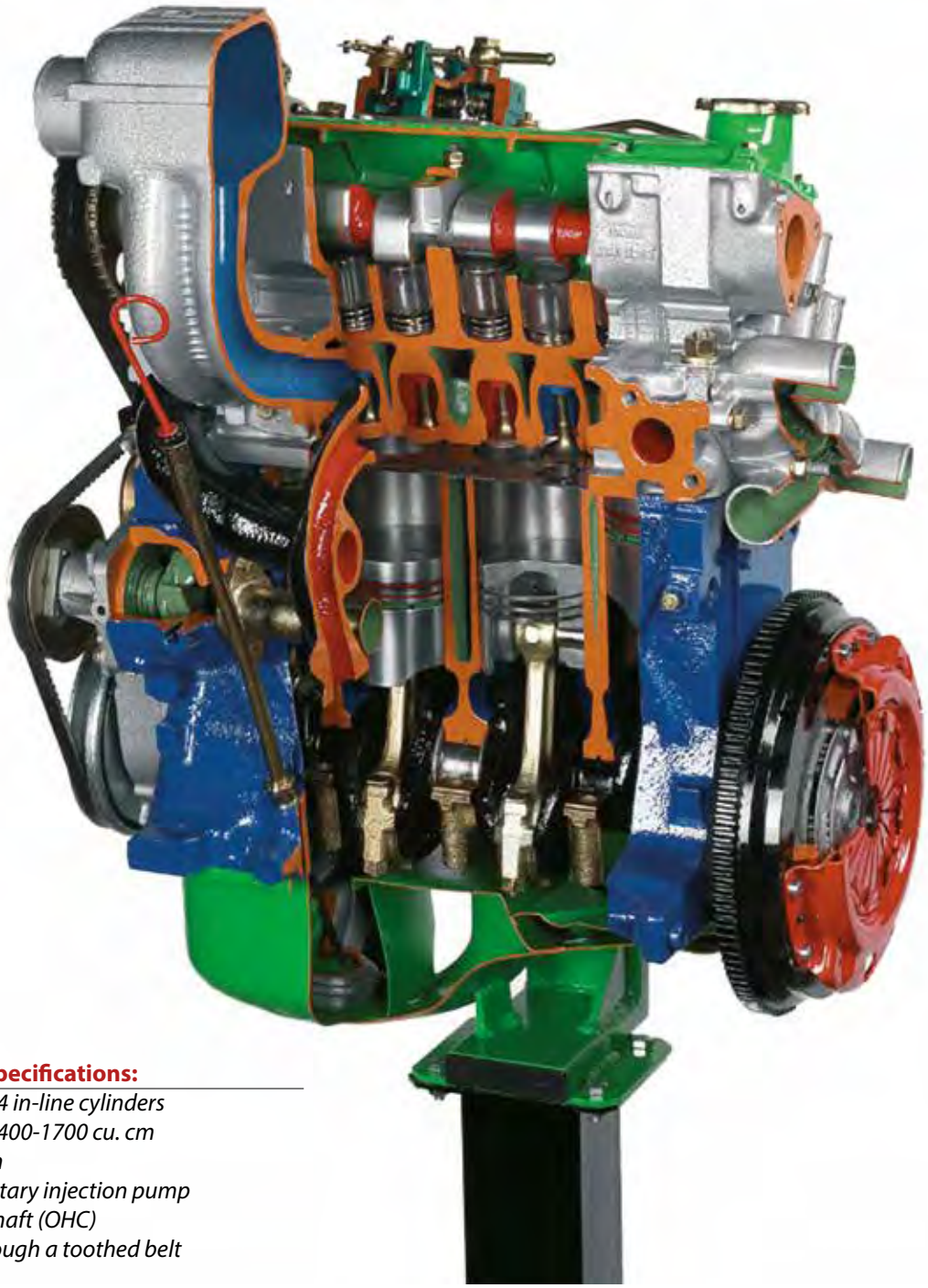
Approx. weight and dim.:

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

VB 6065

VB 6065E DIESEL ENGINE FOR SMALL CAR (on stand with wheels) - electrical

VB 6065M DIESEL ENGINE FOR SMALL CAR (on stand with wheels) - manual



Indicative picture for reference only

VB 6065E

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 hp.*
- *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.

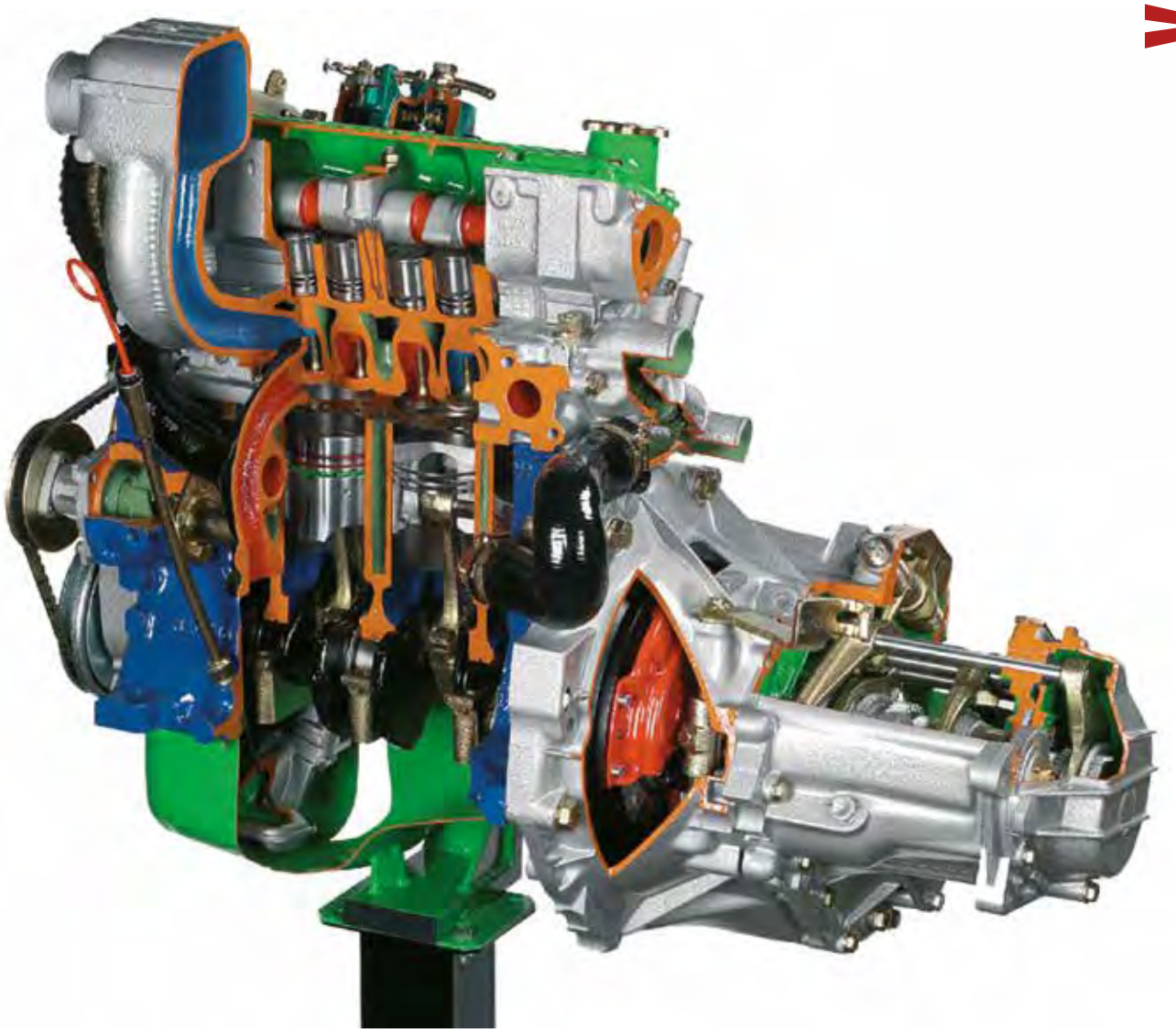
VB 6065E - VB 6065M

Approx. weight and dim.:

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

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

VB 6068M FRONT DRIVE DIESEL ENGINE WITH CLUTCH-GEARBOX (on stand with wheels) - manual



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 6068M

Same as VB 6068E but operated manually through a crank handle.

VB 6068E - VB 6068M

Approx. weight and dim.:

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

VB 6075 - VB 6076

VB 6075M TURBO DIESEL ENGINE (CAR AND LORRY) WITH DIRECT FUEL INJECTION (on stand with wheels) - manual

VB 6076M TURBO DIESEL ENGINE (CAR AND LORRY) WITH INDIRECT FUEL INJECTION (on stand with wheels) - manual

Indicative picture for reference only

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*

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

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*

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.

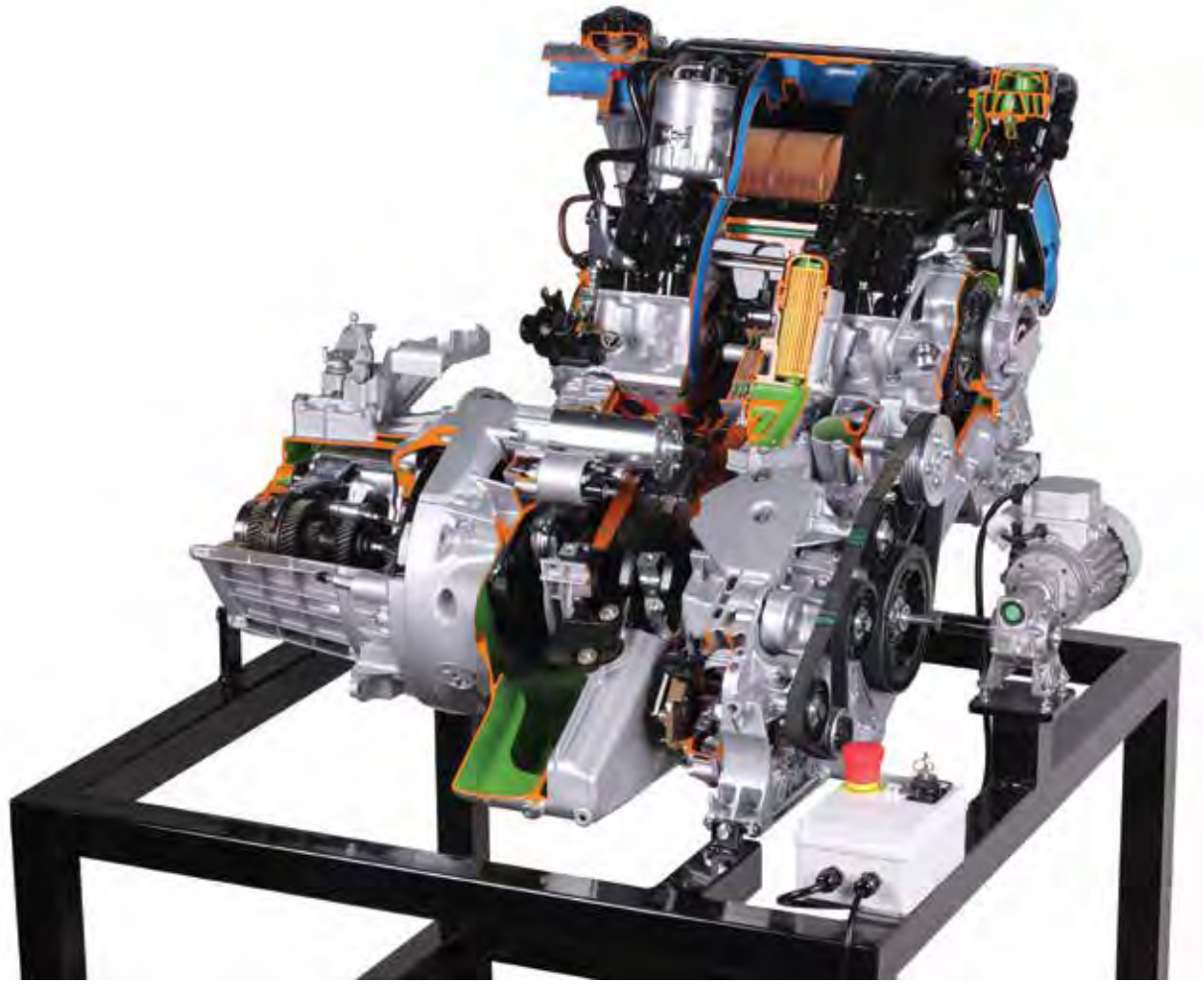
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

Approx. weight and dim.:

Cm:	*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*

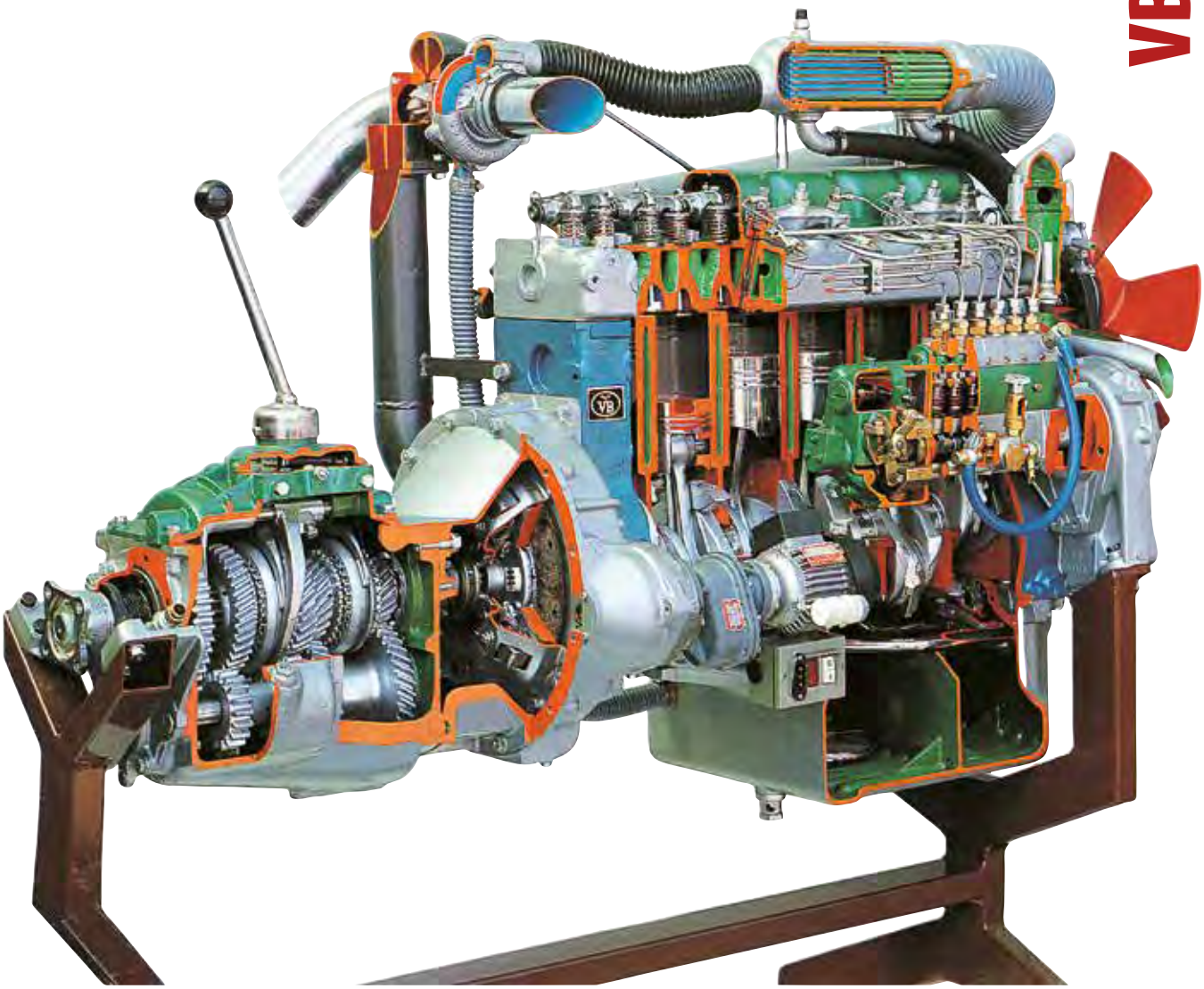
The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

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



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*

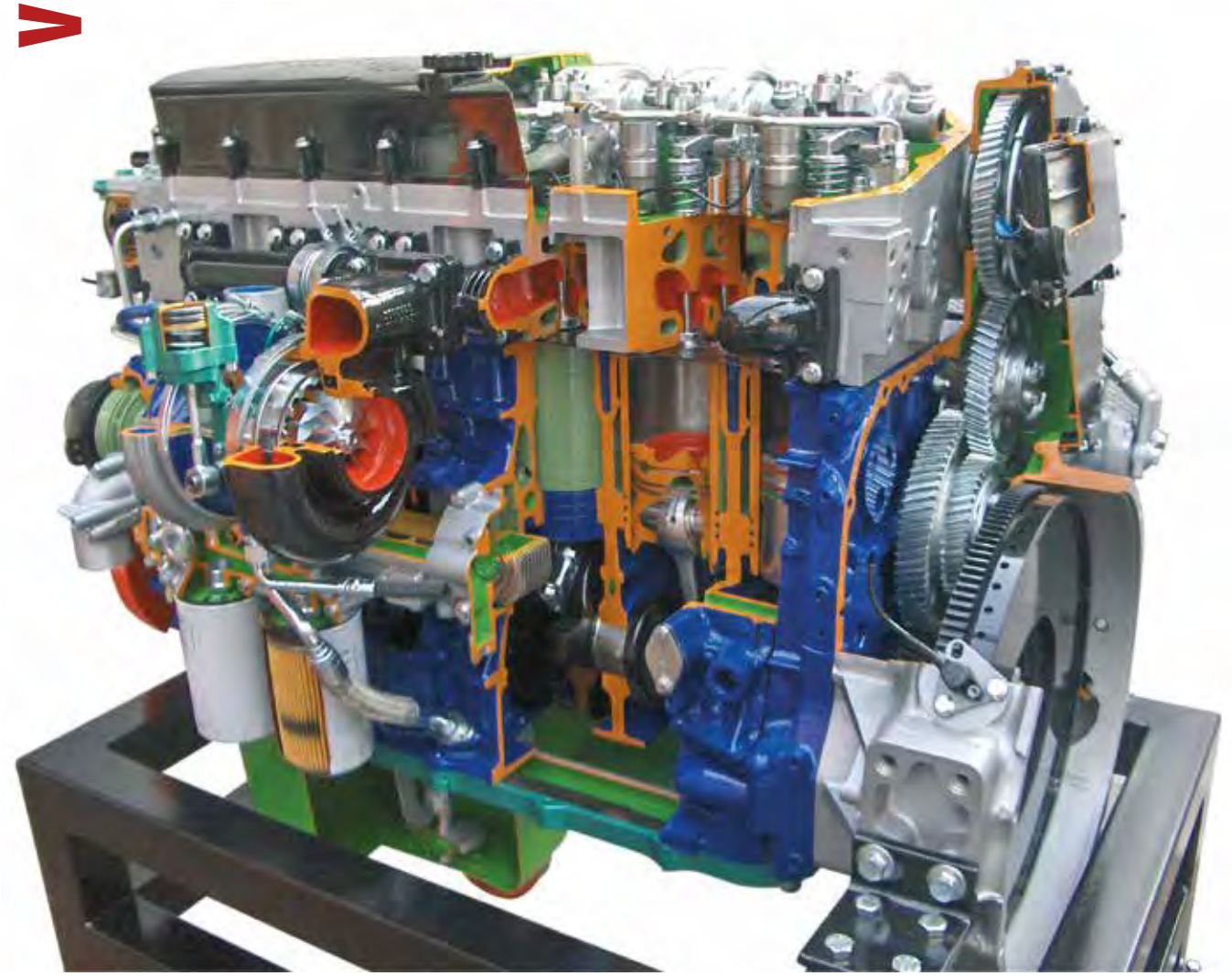
The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

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*

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:	*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

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.

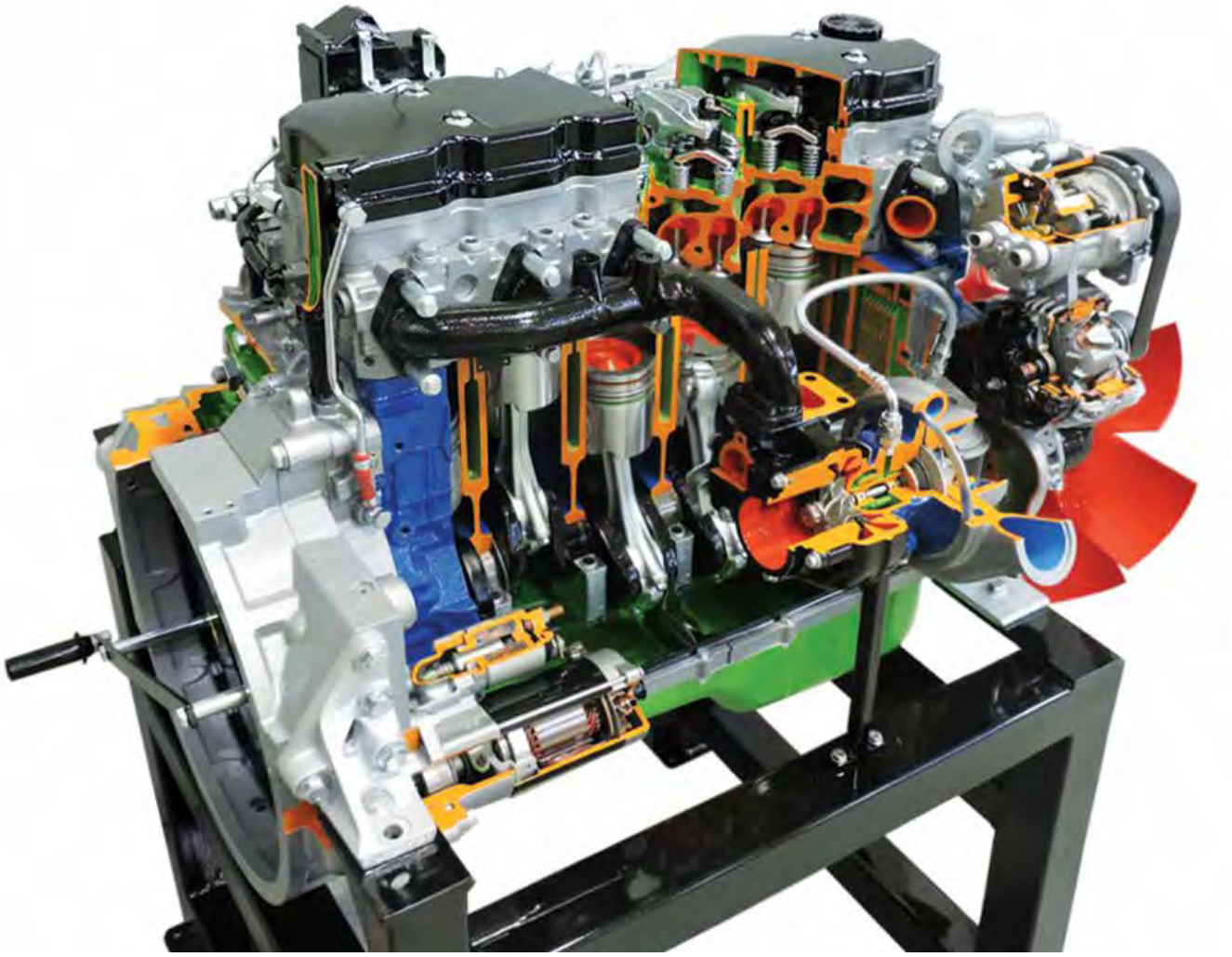
Approx. weight and dim.:

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

VB 6091

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*

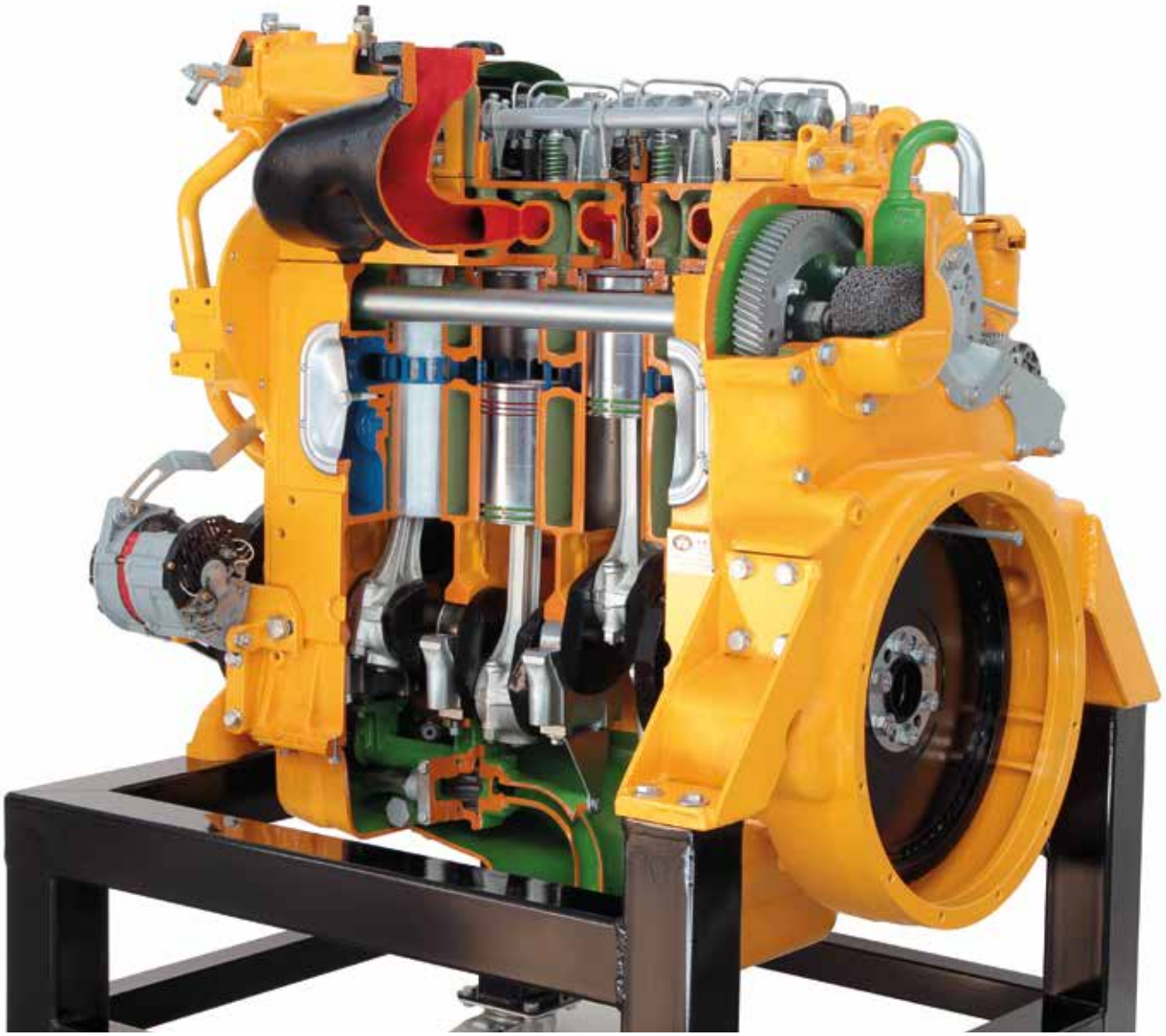
VB 6122E 2 STROKE 4 CYLINDERS DETROIT DIESEL ENGINE (on stand with wheels) - electrical

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*

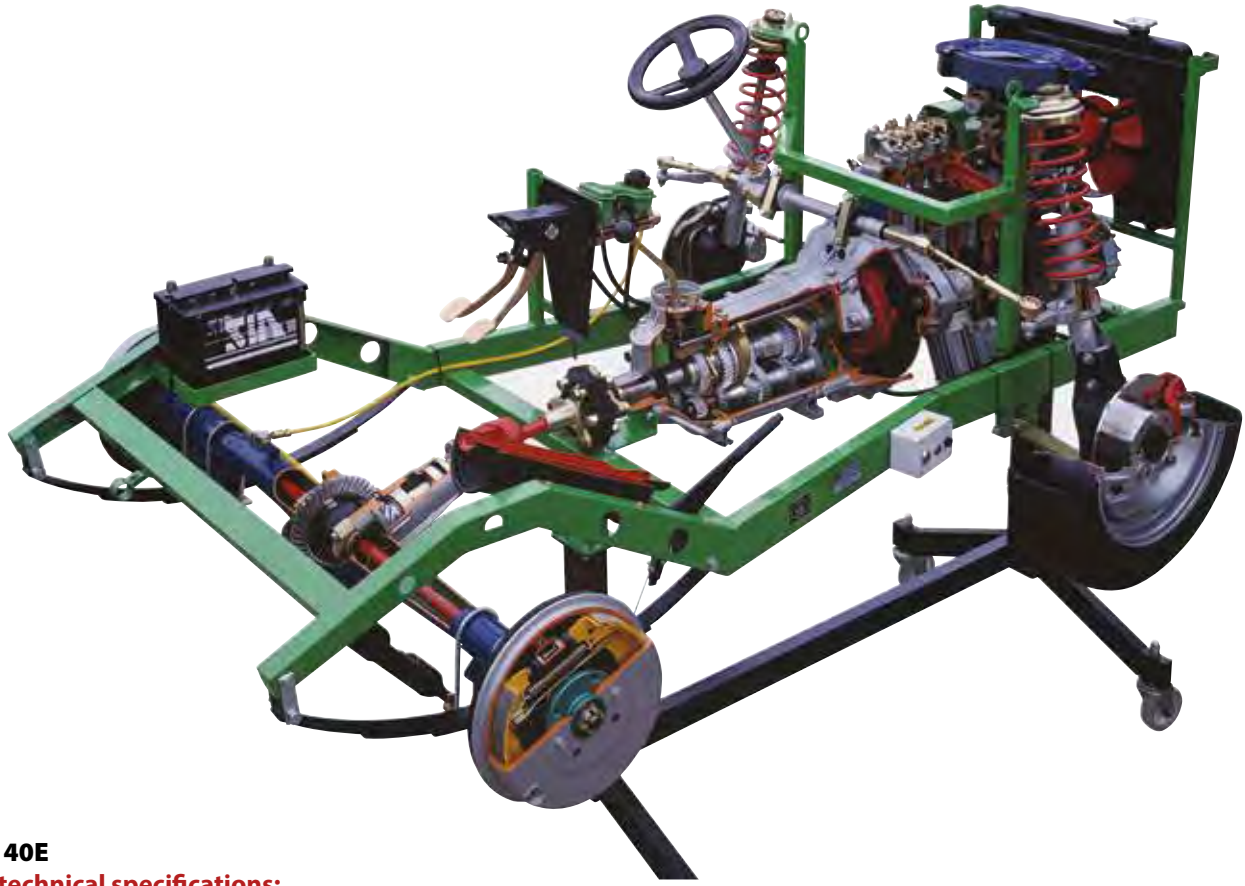
VB 6140 - VB 6150 - VB 6160 - VB 6170

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: 2000/2500 cu. cm*
- *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 7800

VB 7800E "MOTO GUZZI" MOTORCYCLE 2 CYLINDERS 4 STROKES OHV SHAFT DRIVE TRANSMISSION WITH IGNITION PLUGS (on stand with wheels) - electrical

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*

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.

VB 7820

VB 7820M "DUCATI" MOTORCYCLE PETROL ENGINE (on table support) - manual

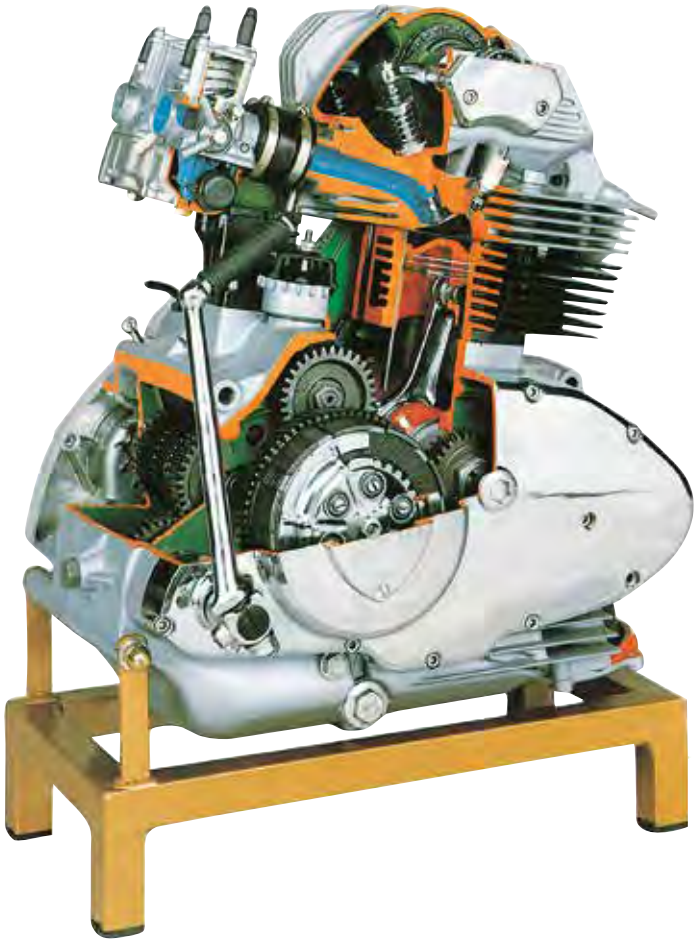
Main technical specifications:

- *4 stroke engine; 2-cylinders*
- *Displacement: 350/500 cu. cm*
- *Gearbox: 5 forward speeds*
- *Camshaft in the crankcase*
- *Point ignition*
- *Alternator;*
- *Oil bath plate-clutch*
- *Air cooling*

The engine is operated manually through a crank handle.

Approx. weight and dim:

Cm:	*50x45x70h*
Net Weight:	*kg 67*
Gross Weight:	*kg 80*



VB 7840

VB 7840M "VESPA - PIAGGIO" 2 STROKE ENGINE (on stand with wheels) - manual

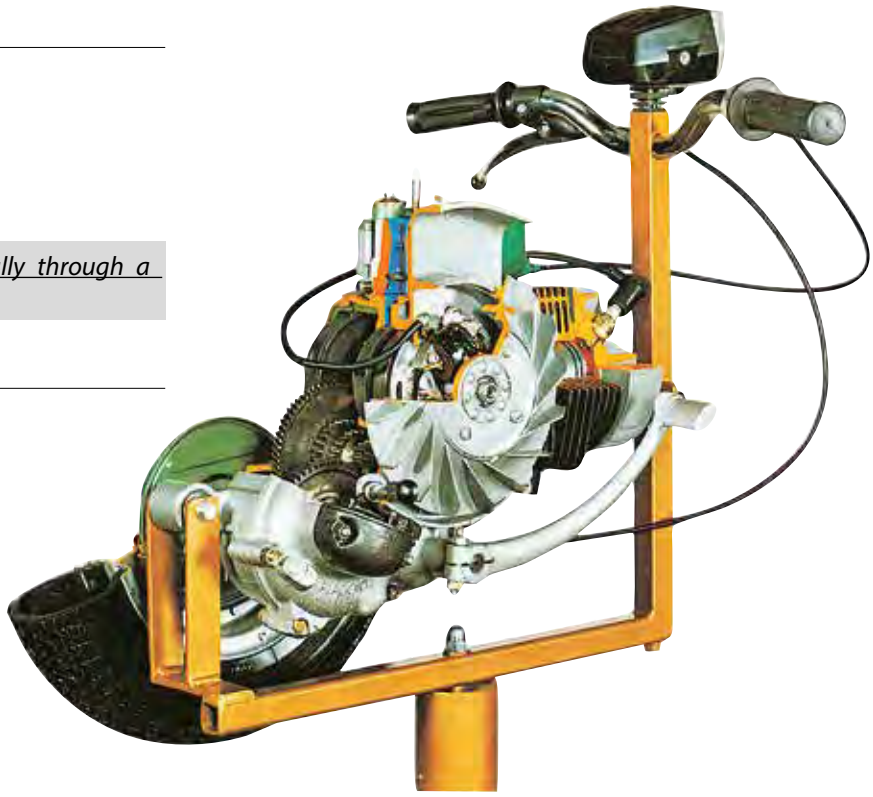
Main technical specifications:

- *Displacement: 125/150 cu. cm*
- *Multiple-disc clutch*
- *Distribution by rotary valve*
- *Carburettor*
- *Gearbox: 3/4 forward speeds*

The engine is operated manually through a crank handle.

Approx. weight and dim:

Cm:	*80x80x60h*
Net Weight:	*kg 30*
Gross Weight:	*kg 45*



Indicative picture for reference only

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 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*

Indicative picture for reference only

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*

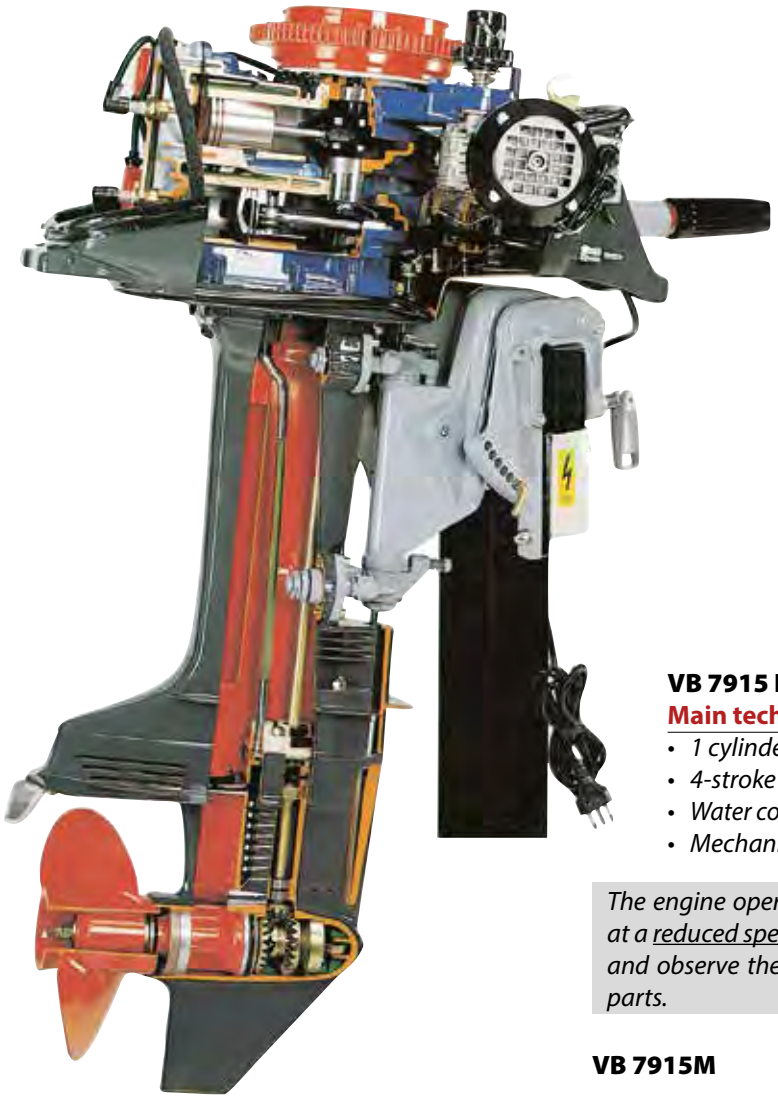
VB 7900 - VB 7915

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



Indicative picture for reference only

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

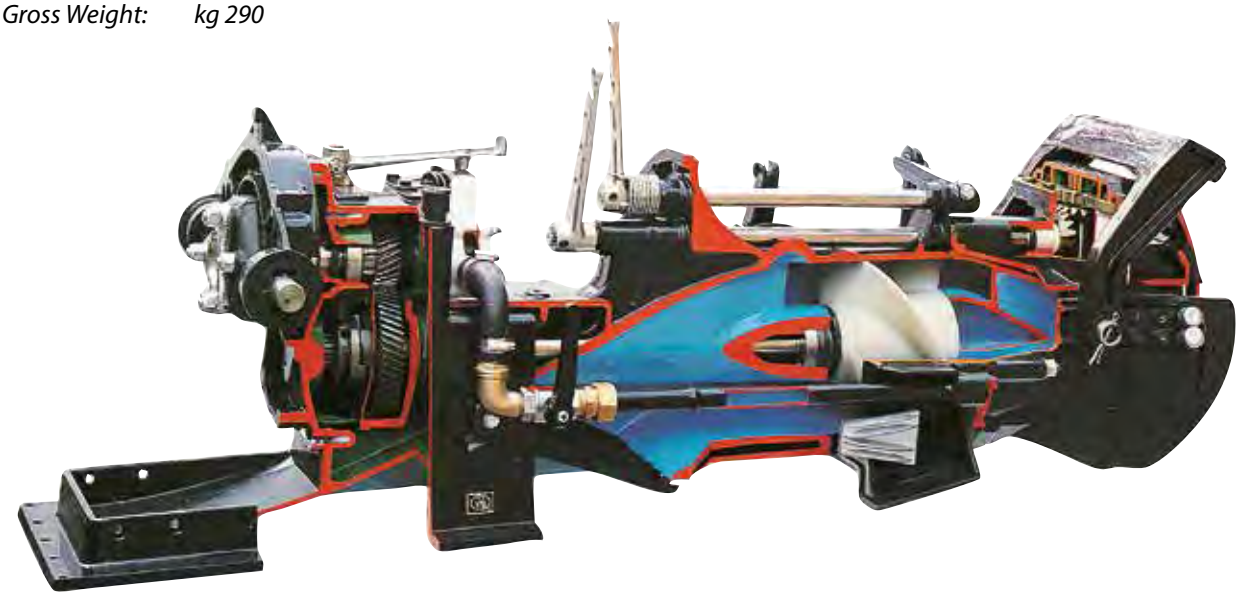
Approx. weight and dim:

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

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

Approx. weight and dim:

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



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

The engine is operated manually through a crank handle.

VB 7920

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:

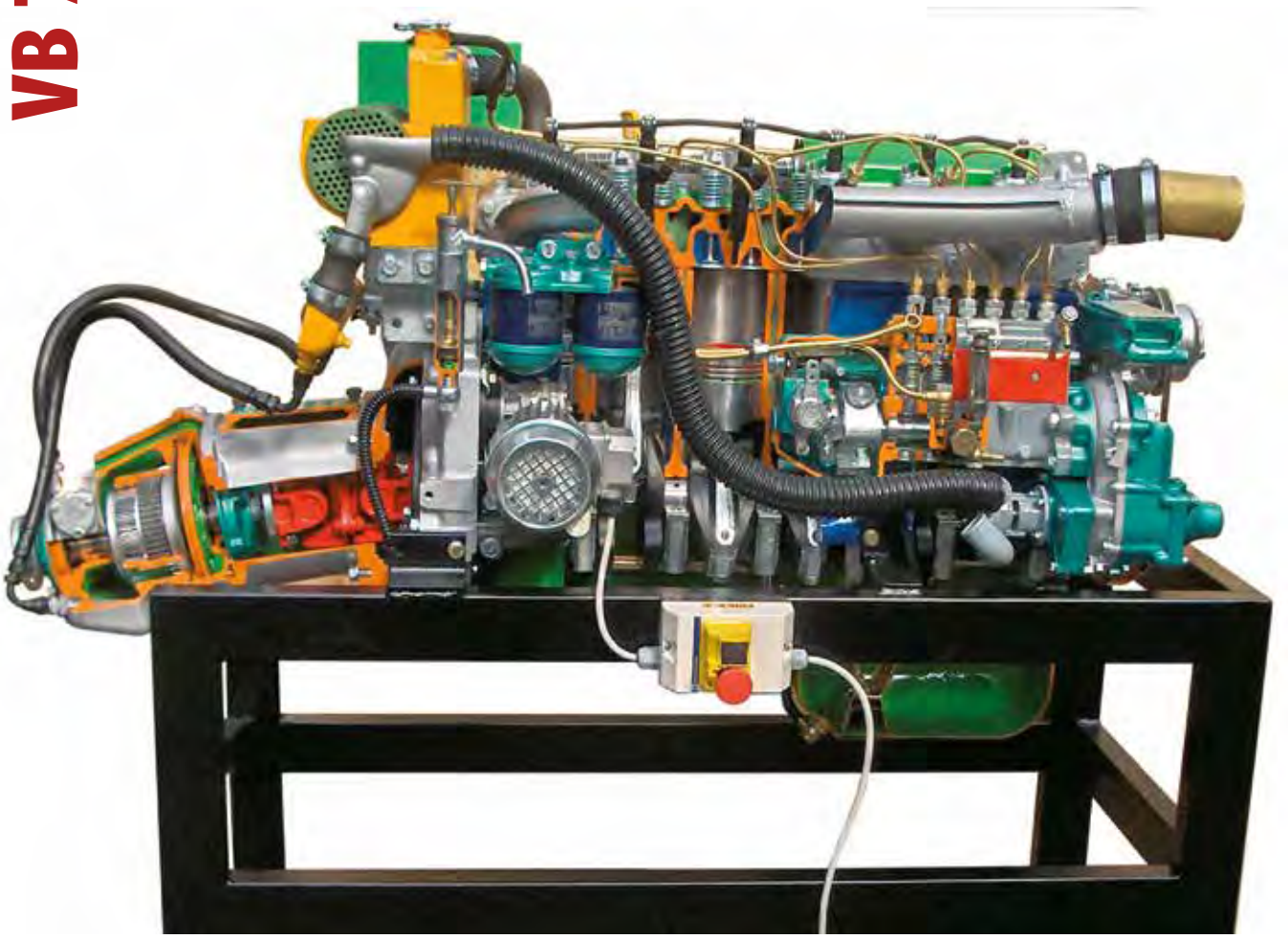
Cm:	*50x40x75h*
Net Weight:	*kg 8*
Gross Weight:	*kg 15*

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 7930

Indicative picture for reference only

VB 7940E MARINE INBOARD DIESEL ENGINE WITH INVERTER - 4/6 CYLINDERS (on stand with wheels) - electrical



Indicative picture for reference only

Main technical specifications:

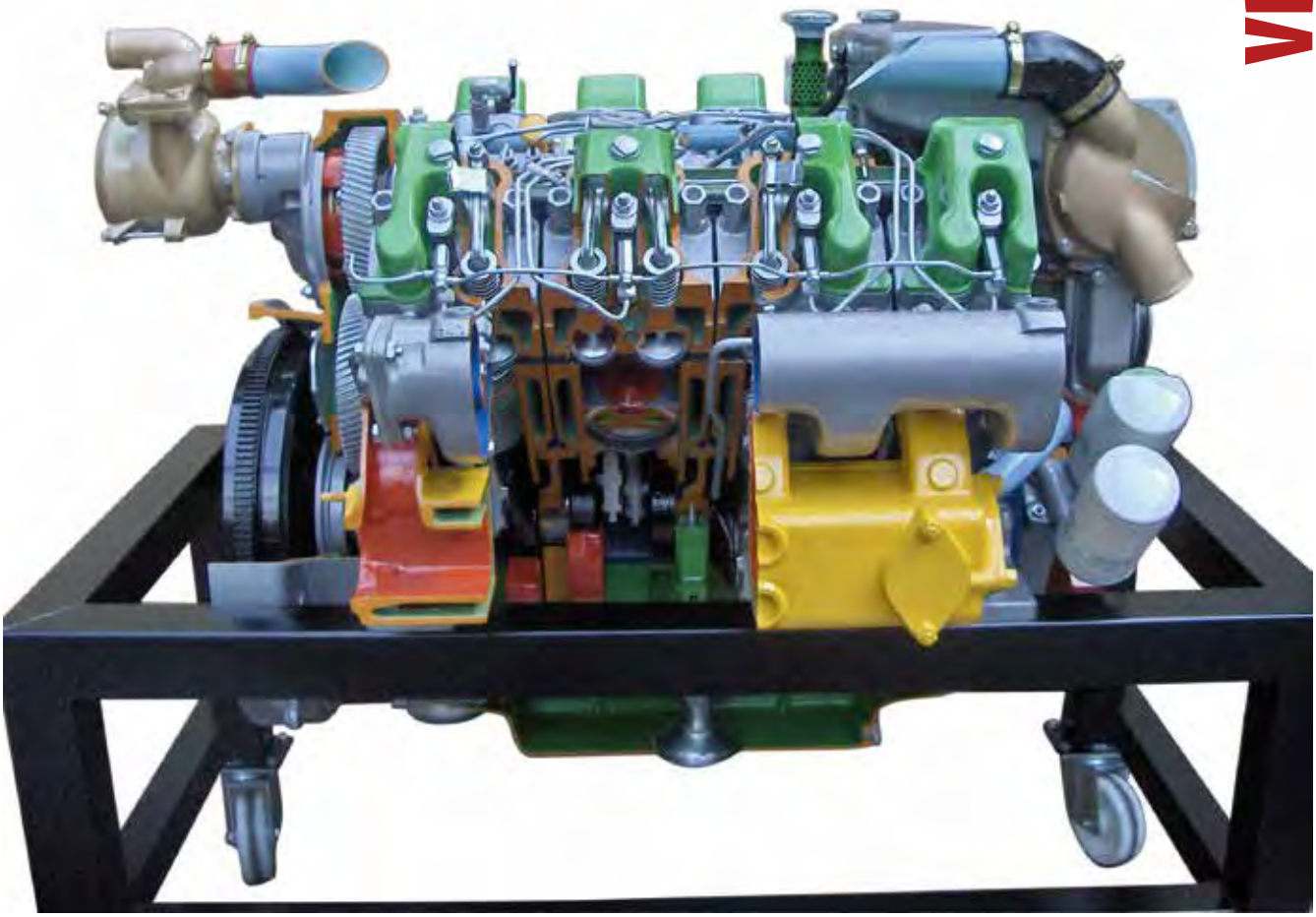
4 cylinders in line engine or 6 cylinders in line engine according to market availability.
Complete of accessories and closed circuit.

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



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).

VB 8000E 4 DRIVING WHEEL TRACTOR "KUBOTA" (on stand with wheels) - electrical

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*

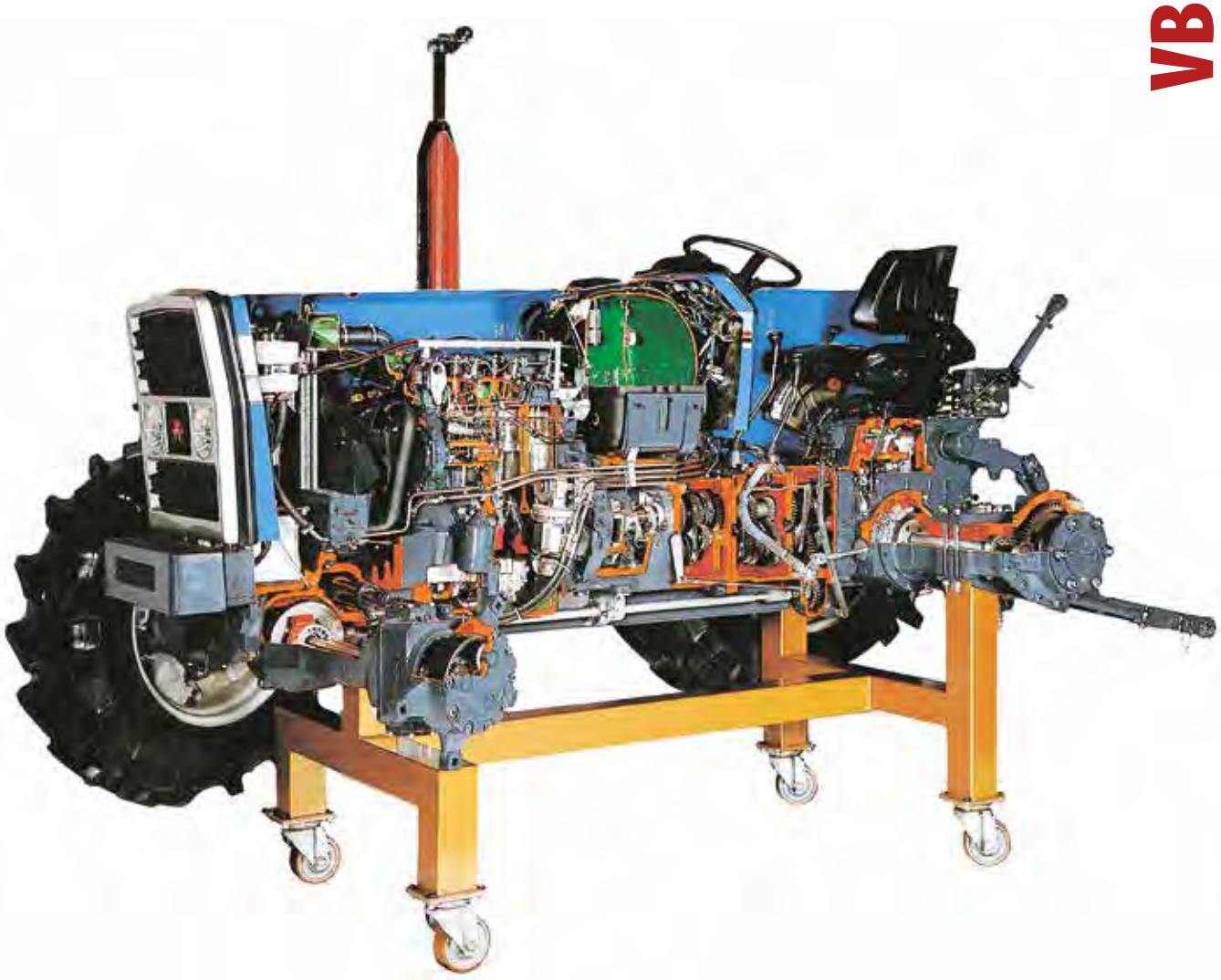
The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

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



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.

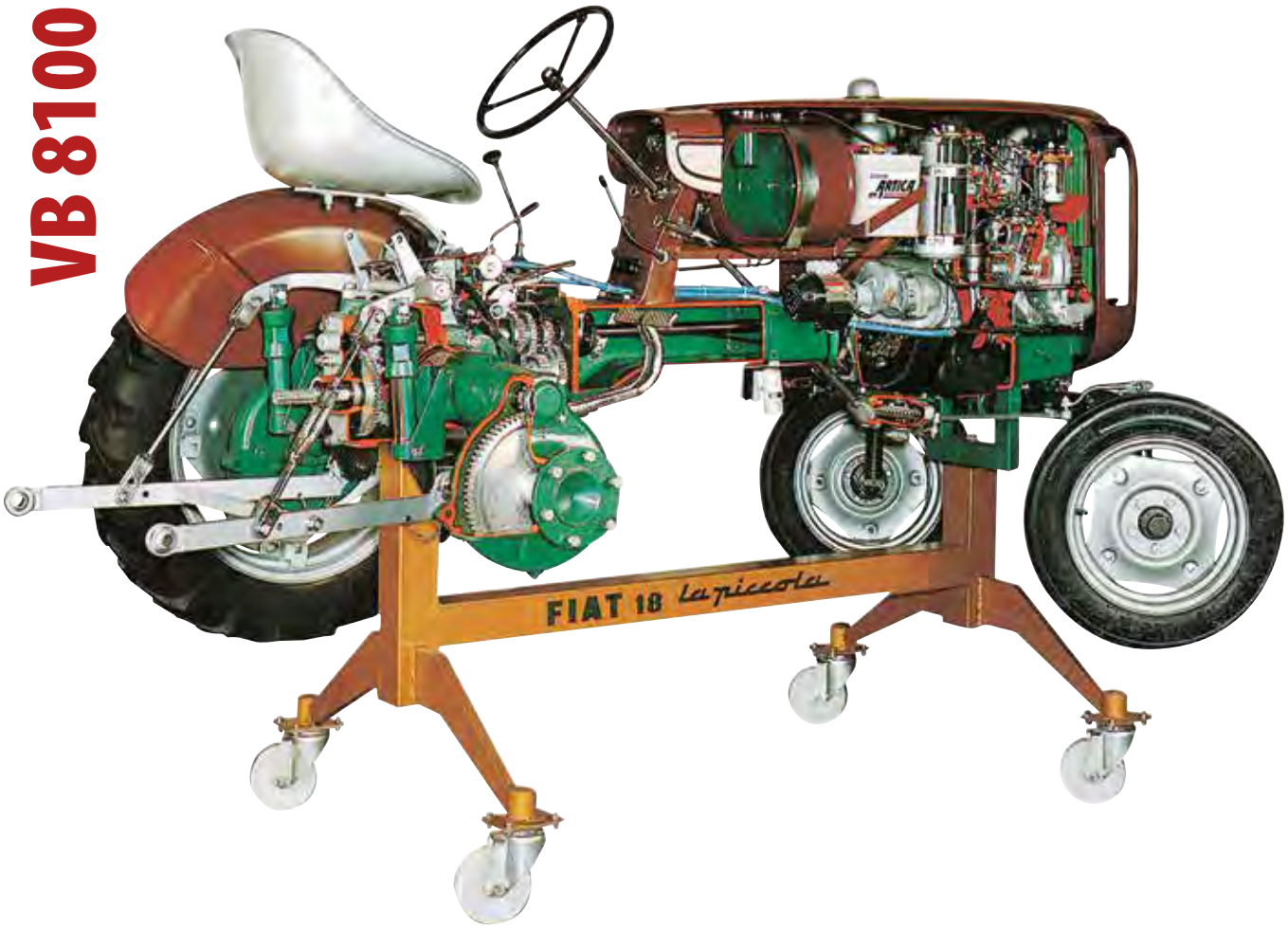
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc. Many parts have been chromium, plated and galvanized for a longer life.

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*
- *Globe-shaped steering box*
- *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

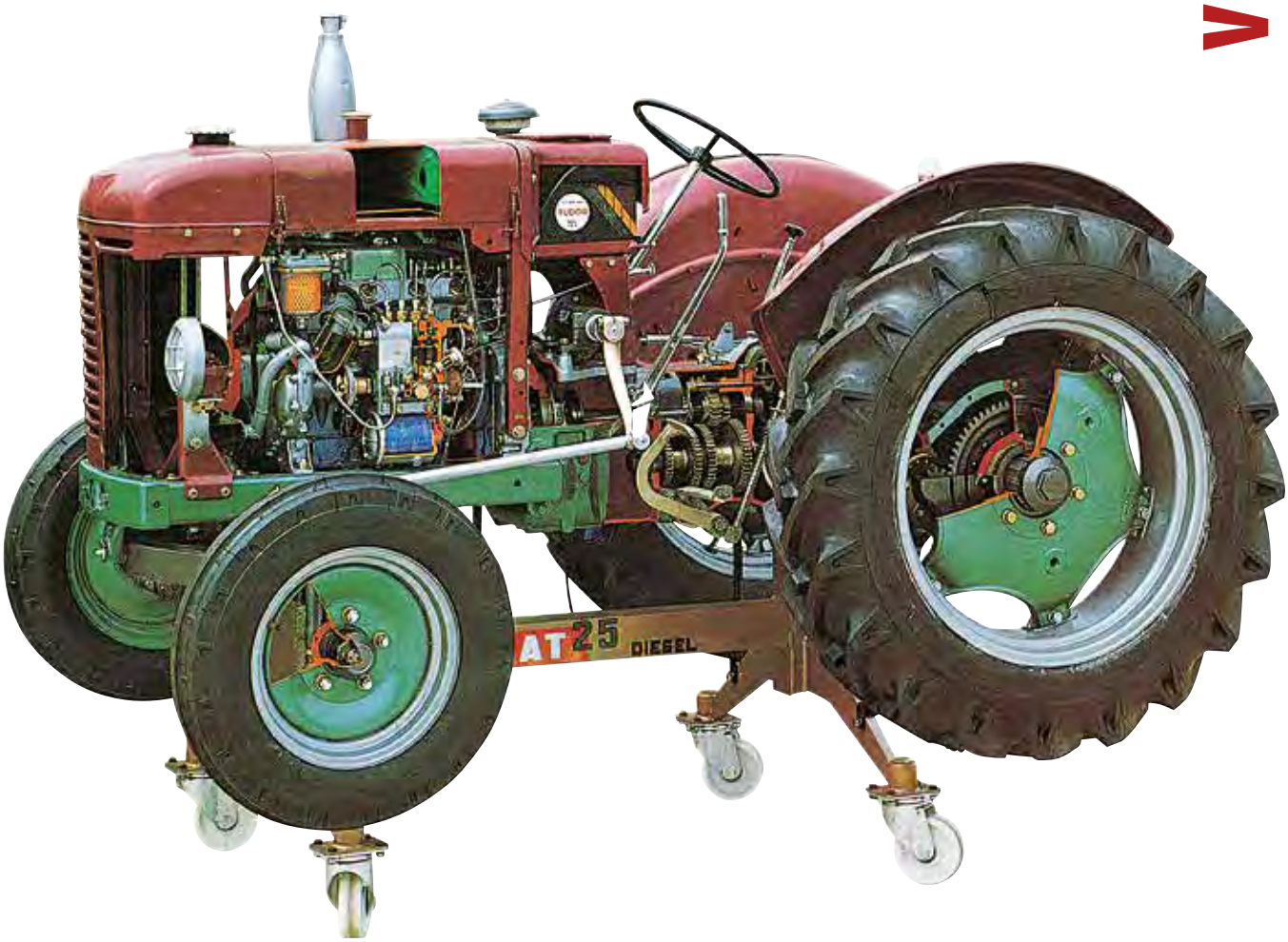
Same as VB 8100E with hydraulic hoist.

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



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*

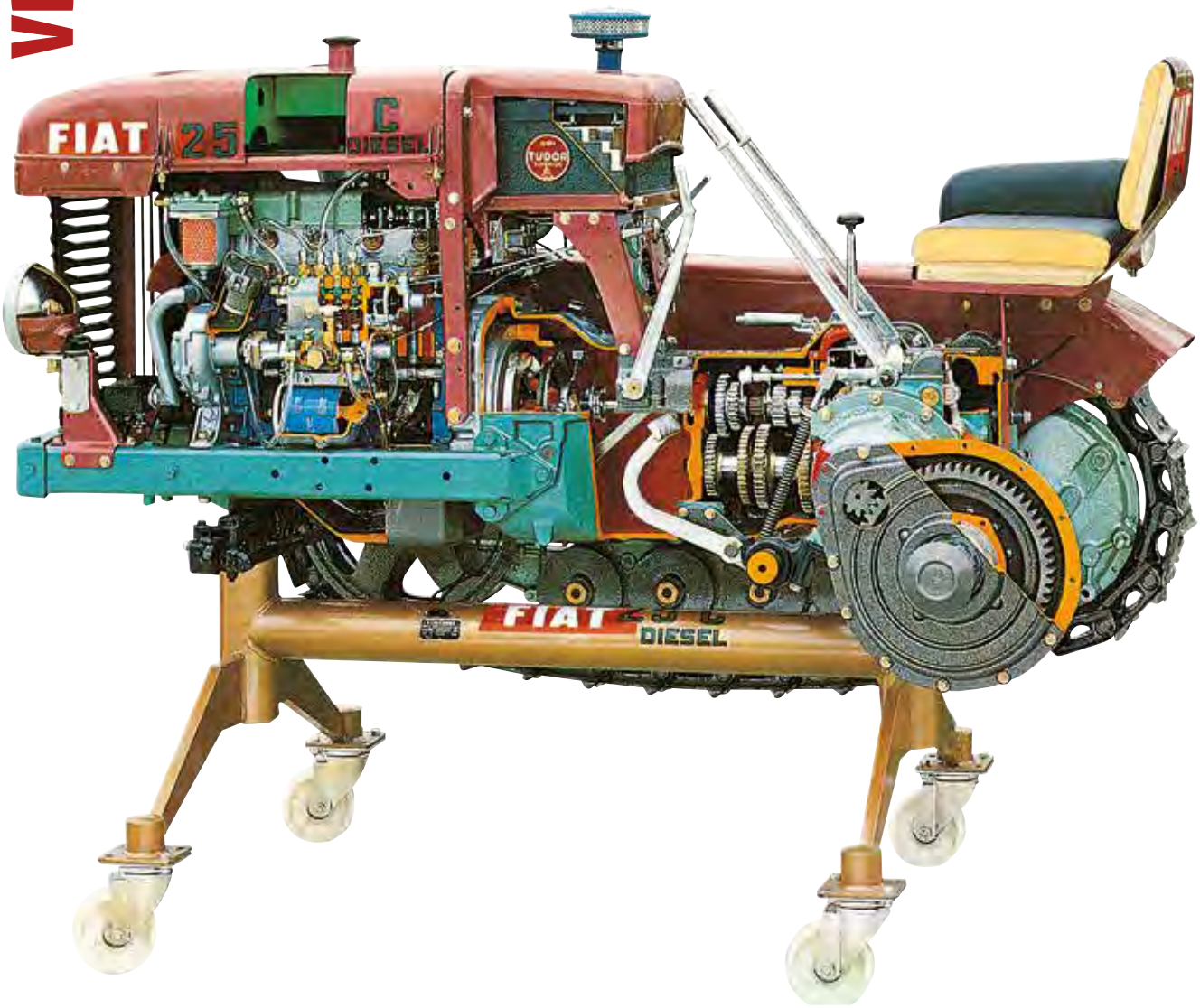
The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

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 8350E TRACKED TRACTOR WITH DIESEL ENGINE - FIAT 25C (on stand with wheels) - electrical



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*
- *Multiple-plate steering clutch*
- *Gearbox: 4 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.

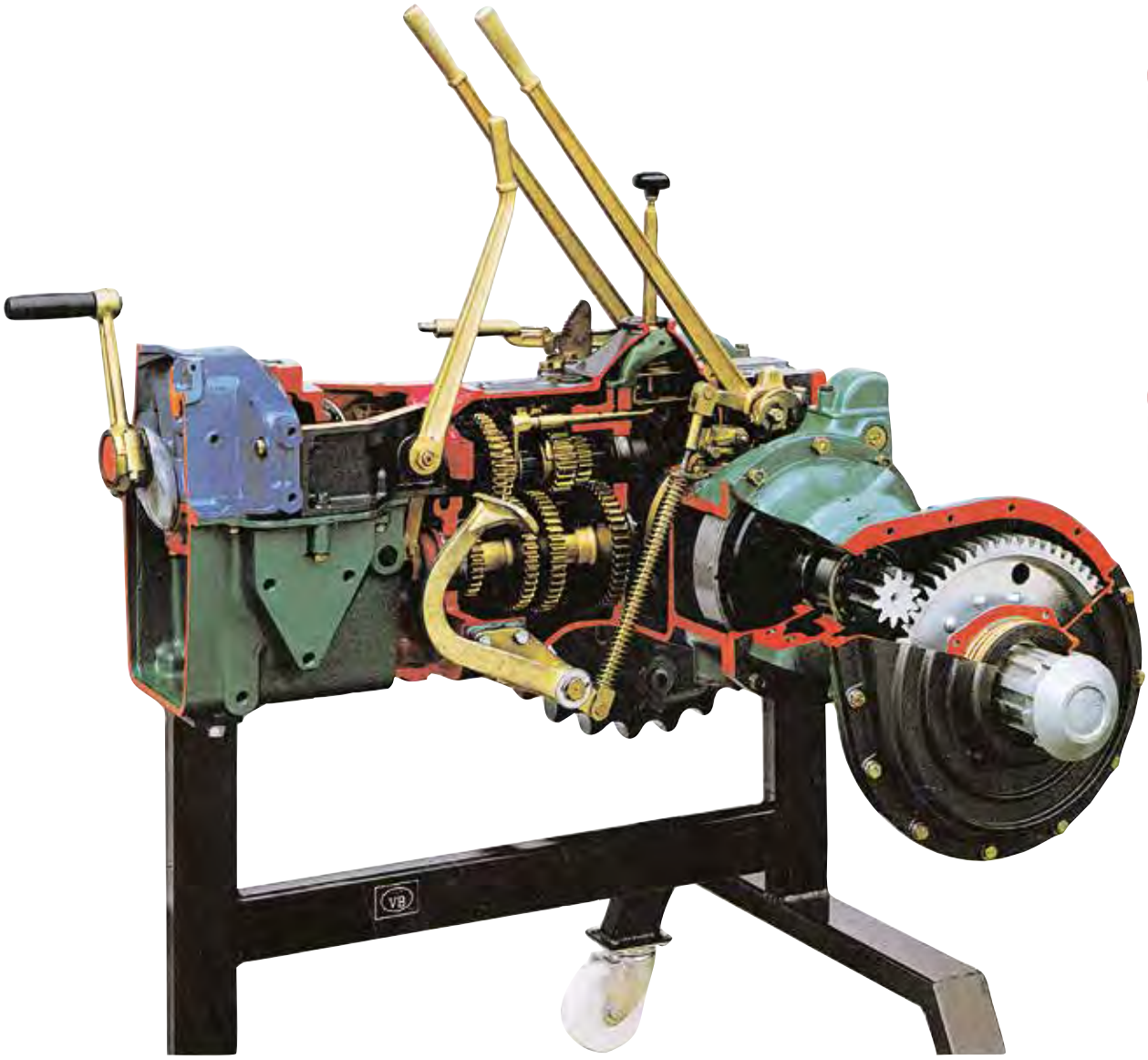
The engine operates electrically at 220 volts and runs at a reduced speed to let the student easily understand and observe the operation of the various mechanical parts.

Approx. weight and dim.:

Cm:	*230x132x180h*
Net Weight:	*kg 910*
Gross Weight:	*kg 1200*

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

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



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*

VB 8380

VB 8380M ENGINE POWERED CHAINSAW - manual

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*

VB 8390

VB 8390M TRANSPLANTER (on stand with wheels) - electrical

For the transplant of seedlings of vegetables, flowers, tobacco, nursery plants etc. having bare or conical roots, pyramidal or cubic peat rootball.

Main technical features:

- *Support wheel*
- *Distributor*
- *Seat*
- *Plant cassette*
- *Ridging and transmission wheel*
- *Ploughshare*
- *Coupling for motor-cultivator*

Indicative picture for reference only

Approx. weights and dim.:

Cm:	*220x87x127h*
Net Weight:	*kg 160*
Gross Weight:	*kg 300*

Operated at 220V by means of gear-motor.

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 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.

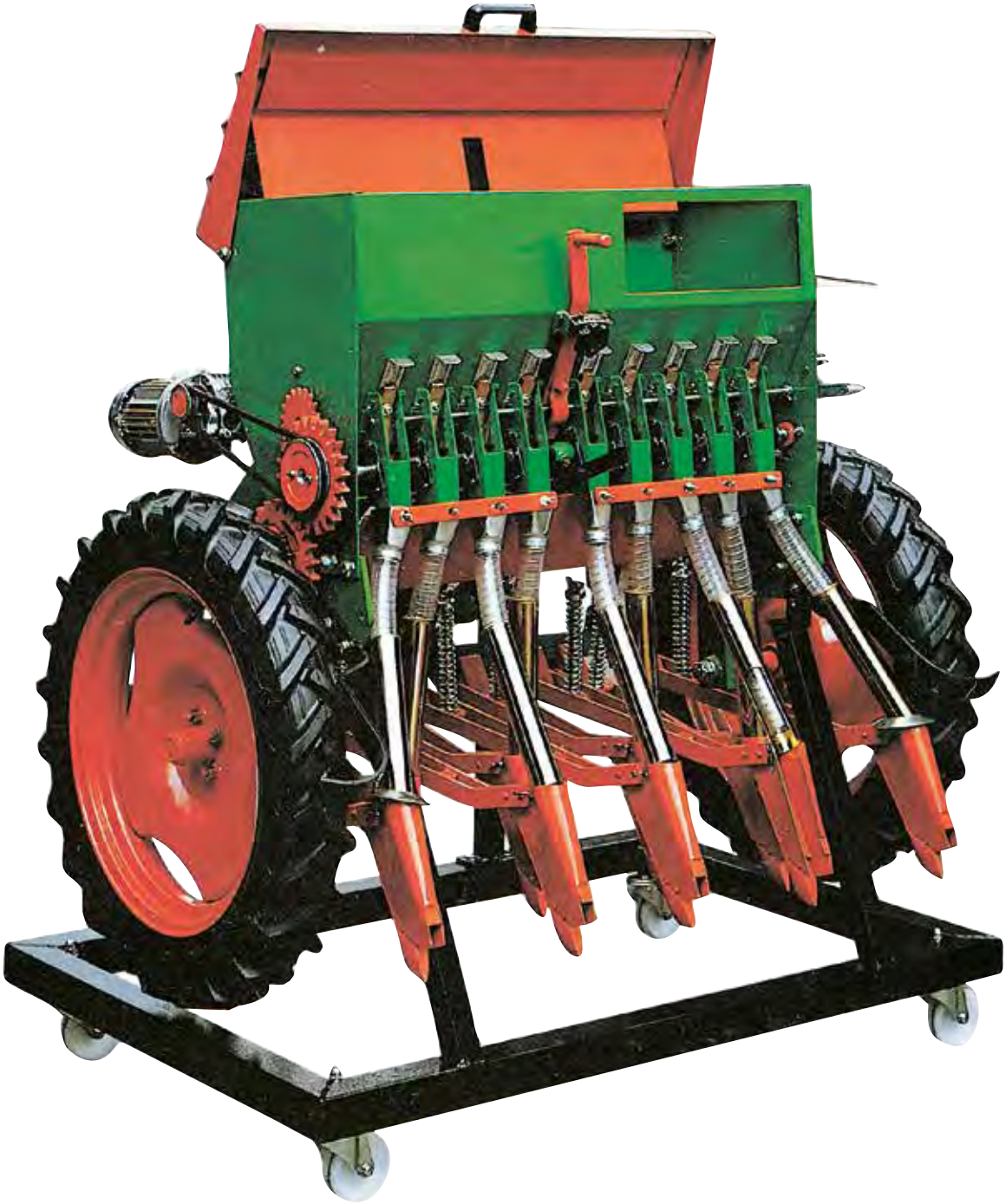
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections, lubricating circuits, fuel system, cooling system etc.

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 8610E 9-ROW MECHANICAL SEEDER (on stand with wheels) - electrical



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.

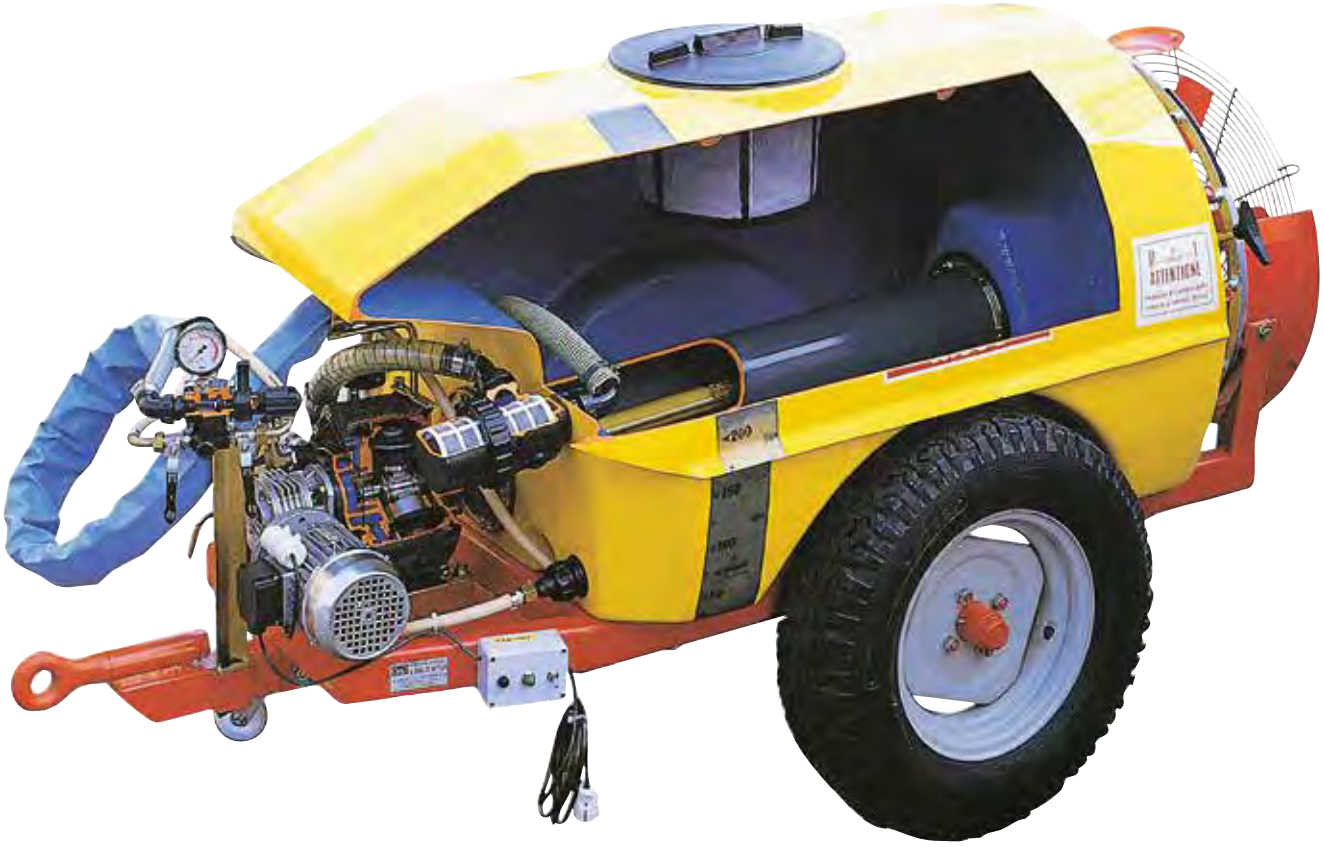
This cutaway model is carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.

Approx. weight and dim.:

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

VB 8620E ATOMIZER - electrical

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 8640

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*

VB 8650

VB 8650M FERTILIZER - manual

Sectioned unit composed of a fertilizer and two irrigators of different types placed on suitable delivery pipes.
The fertilizer (fully sectioned) is complete with pressure gauge, gate valve, rubber hoses, etc., so that its real working principle is reproduced.

Approx. weight and dim.:

Cm:	*95x70x160h*
Net Weight:	*kg 55*
Gross Weight:	*kg 90*

These cutaway items 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

VB 8660E MODEL OF WHEAT HARVERSTER (on base) - electrical

Indicative picture for reference only

This is a model of a wheat harvester machine. This model clearly shows the combine harvester main elements. Moreover, it has been sectioned in order to show the functioning principles of the internal parts.

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.

The model shows:

- *Cabin*
- *Engine compartment*
- *Wheat tank*
- *Tailing elevator*
- *Shaking screen*
- *Fan*
- *Threshing drum*
- *Beater*
- *Conveyor*
- *Auger*
- *Grain auger*
- *Cutter*
- *Revolving wheel*

Approx. weight and dim.:

Cm:	*110x60x60h*
Net Weight:	*kg 30*
Gross Weight:	*kg 40*

VB 8661

VB 8661E MODEL OF PICK-UP BALER (on base) - electrical

This is a model of a pick-up baler which is a dragged agricultural machine. It is used for the collection of the forage which is also pressed into balers.
The model clearly shows its main elements. Moreover, it has been sectioned in order to show the working principles of the internal parts.

This model is composed by 4 main parts:

- *The collecting device*
- *The woven-wire*
- *A piston system*
- *A tying 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.

Approx. weight and dim.:

Cm:	*45x80x30h*
Net Weight:	*kg 15*
Gross Weight:	*kg 25*

VB 8662

VB 8662E GROUND HANDLING AGRICULTURAL MACHINE STEERING MODEL WITH MULTIPLE DISCS DRY CLUTCHES (on base) - electrical

This is a model of a steering of an agricultural machine for land motion with dry clutches (multiple discs). This model clearly shows the main elements.

Main technical specifications:

- *Transversal axle supports*
- *Dry clutches multiple discs*
- *Band brake*
- *Crown*
- *Engine and conical pinion*

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:	*50x50x30h*
Net Weight:	*kg 18*
Gross Weight:	*kg 30*

Indicative picture for reference only

VB 9000A PETROL ENGINE FOR ASSEMBLING & DISASSEMBLING OPERATIONS (on rotating workbench)

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

Indicative picture for reference only

Approx. weight and dim.:

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

PETROL AND DIESEL ENGINES IN WORKING CONDITIONS (on stand with wheels)

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.

FOR DETAILED DESCRIPTIONS, PLEASE SEE NEXT PAGE

VB 9001F IAW-MARELLI MONOJETRONIC ELECTRONIC INJECTION - functioning

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

Approx. weight and dim.:

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

VB 9002F BOSCH MONOMOTRONIC ELECTRONIC INJECTION - functioning

- *4 cylinders FIAT/1400 cc engine*
- *3 valves per cylinder*
- *Overhead camshaft (OHC)*
- *Electronic ignition*
- *Displacement: 1400 cu. Cm*
- *Diagnostic connector*

Approx. weight and dim.:

Cm:	*130x140x140h*
Net weight:	*kg 280*
Gross weight:	*kg 350*

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*

Indicative picture for reference only

VB 9007F LU-LE JETRONIC BOSCH MULTI-POINT ELECTRONIC INJECTION - functioning

- *4 cylinders FIAT engine*
- *2 valves per cylinder*
- *2 Overhead camshaft (DOHC)*
- *Electronic ignition*
- *Displacement: 2000 cu. Cm*
- *Diagnostic connector*

Approx. weight and dim.:

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

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*

DIESEL ENGINES COMPLETELY RECONDITIONED AND IN WORKING CONDITIONS

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*

Indicative picture for reference only

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*

VB 9110F COMMON-RAIL CHASSIS TRAINER - functioning

- *Common rail engine 4 cyl. 4 strokes*
- *Displacement: 1900 cu.Cm*
- *Direct injection*
- *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*
- *OBD socket*

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 46 cc*
- *power 1 hp at 5000 rpm*
- *recoil starting system*
- *consumption Kg 0,380 HPH*
- *electronic ignition*
- *forced air cooling system*
- *carburettor*

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***

Indicative picture for reference only

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***

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

VB 5245

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*

Indicative picture for reference only

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

VB 6120

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*

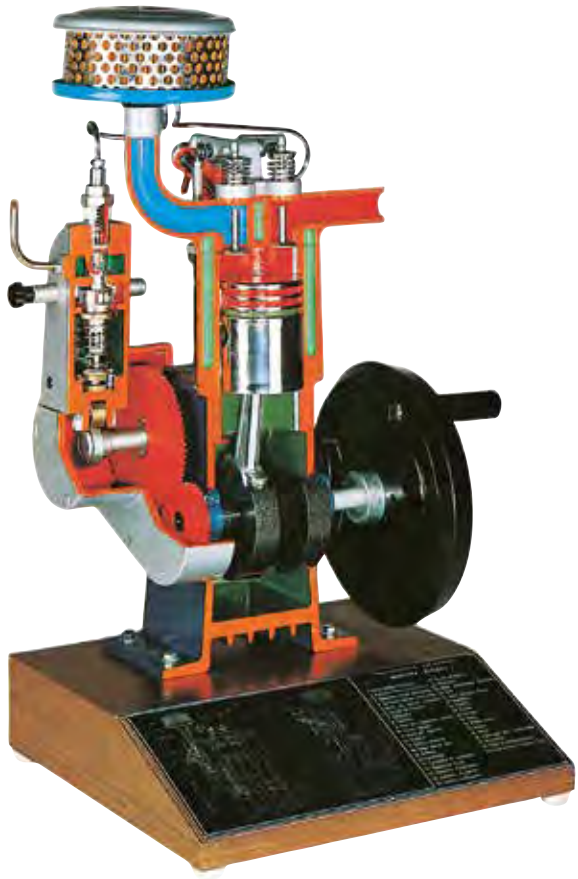
Approx. weight and dim:

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

VB 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.



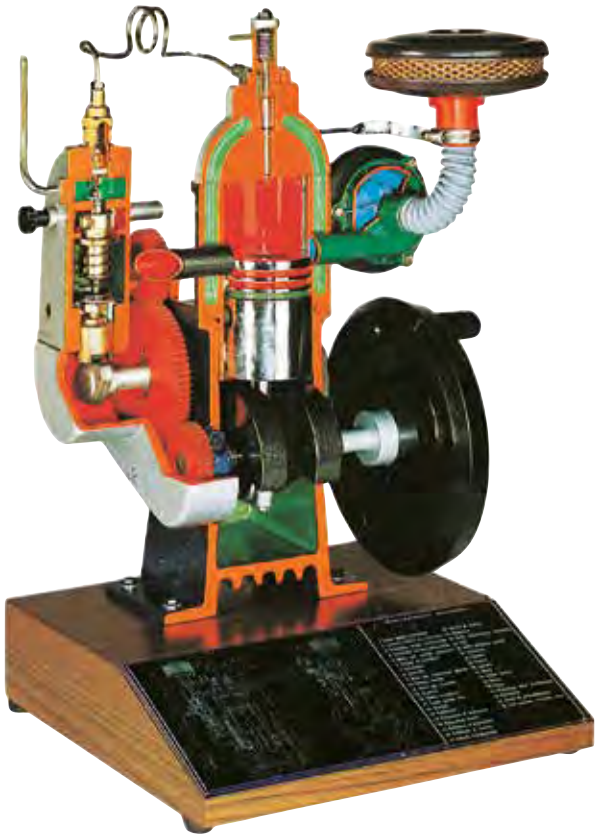
Approx. weight and dim.:

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

VB 7100

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*

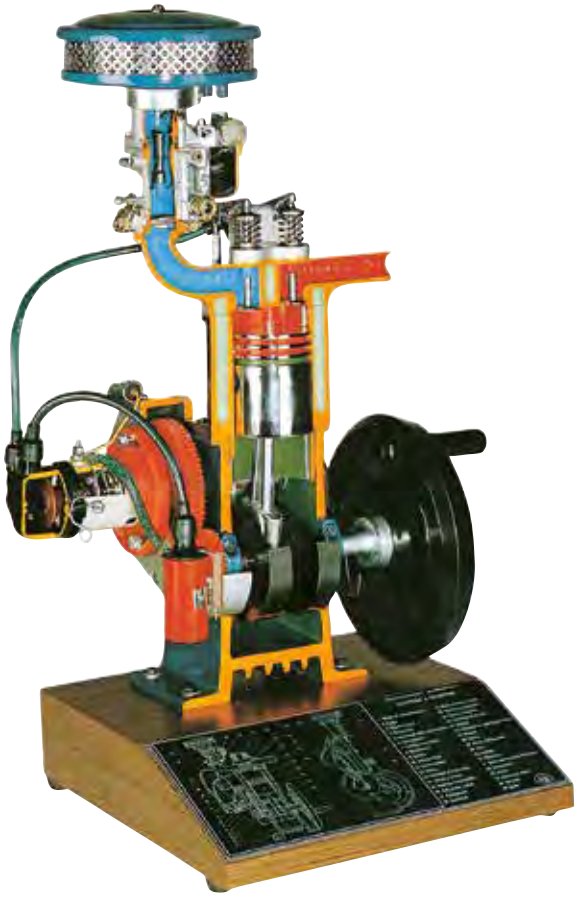
Indicative picture for reference only

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 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*

Indicative picture for reference only

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.

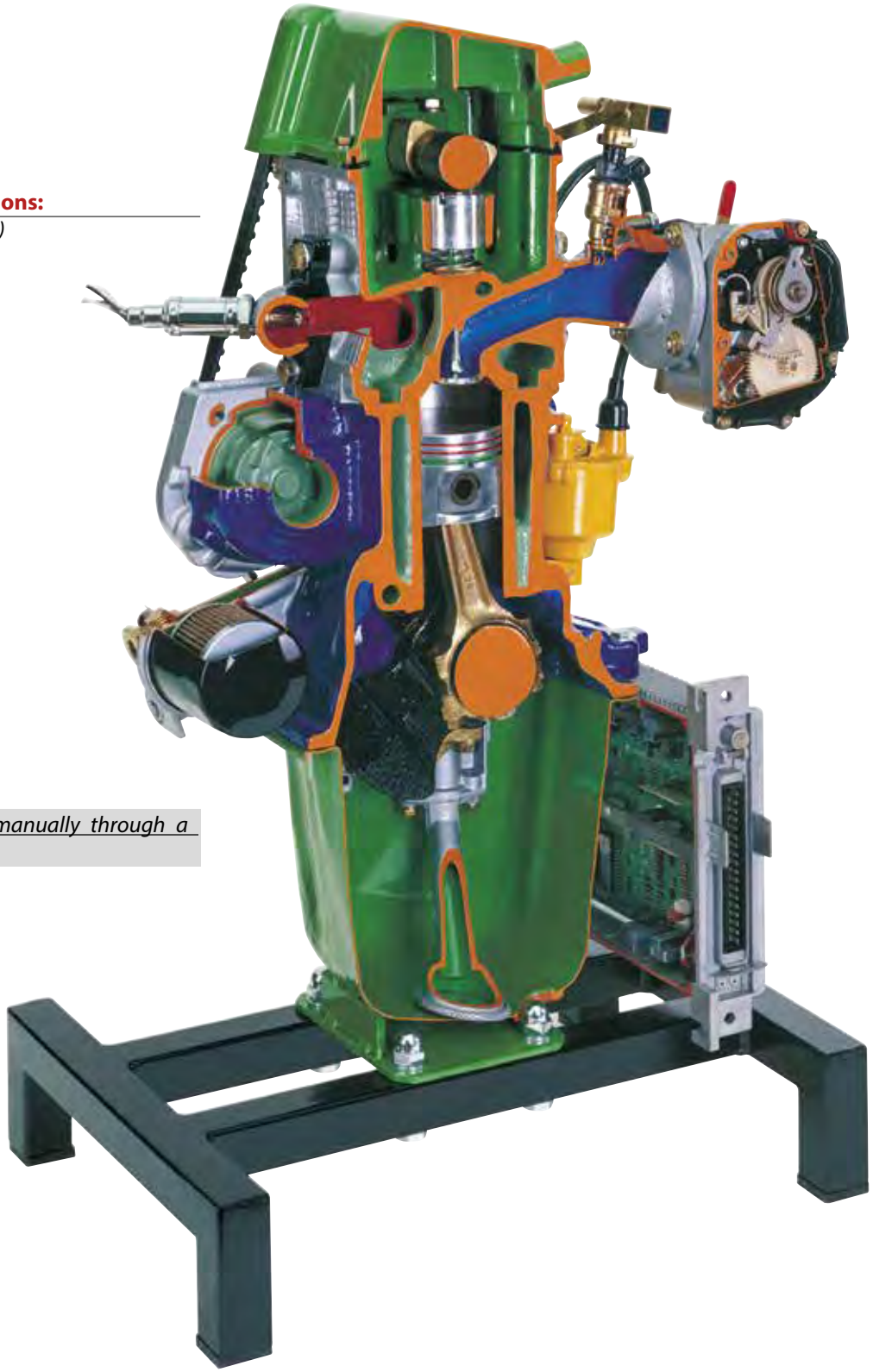
VB 7490

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*



Indicative picture for reference only

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

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

VB 7450

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 is easy to learn the cycle.

Main technical specifications:

- *Piston displacement 46 cu. cm*
- *Air cooling system*
- *Electronic ignition*
- *Box carburettor*

The engine is operated manually through a crank handle.

Approx. weight and dim.:

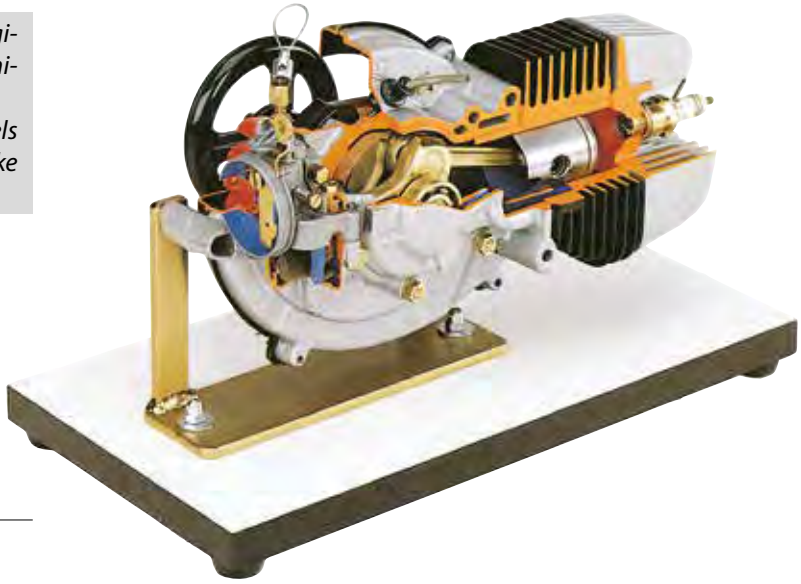
Cm:	*30x30x40h*
Net Weight:	*kg 8*
Gross Weight:	*kg 15*

Indicative picture for reference only

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

VB 7400

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.



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.

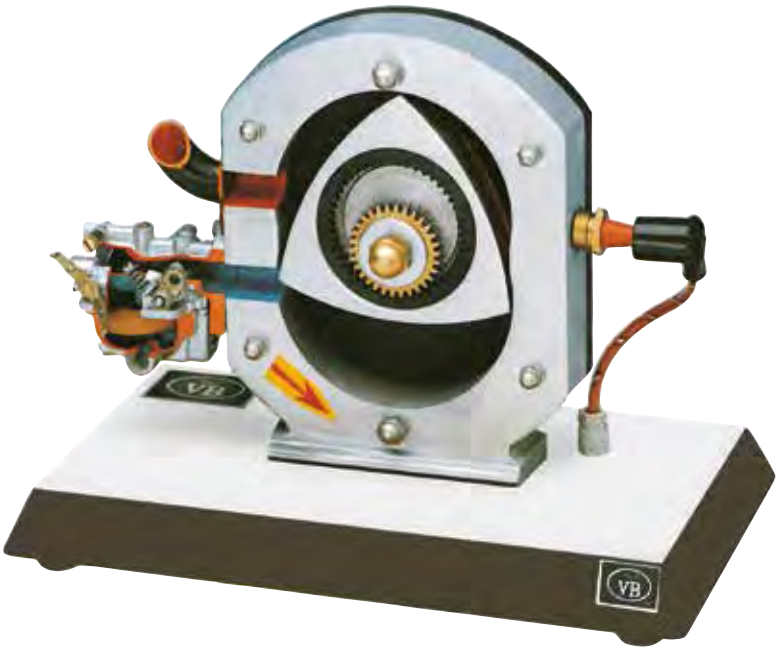
Approx. weight and dim.:

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.

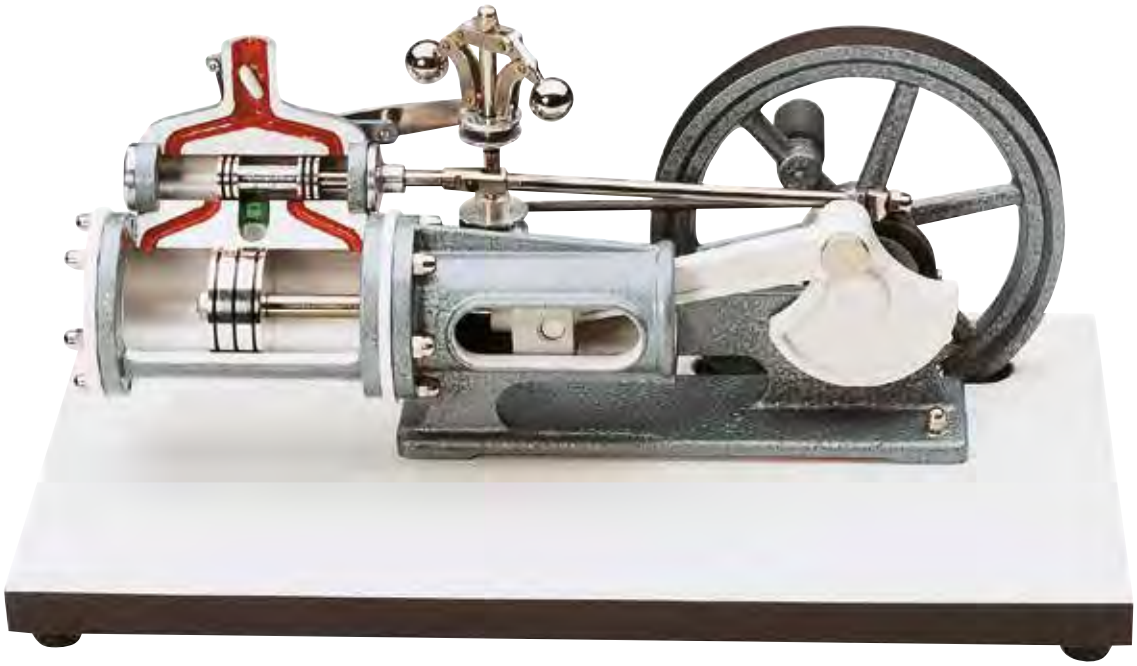
The engine is operated manually through a crank handle.

Approx. weight and dim.:

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

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*

Indicative picture for reference only

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

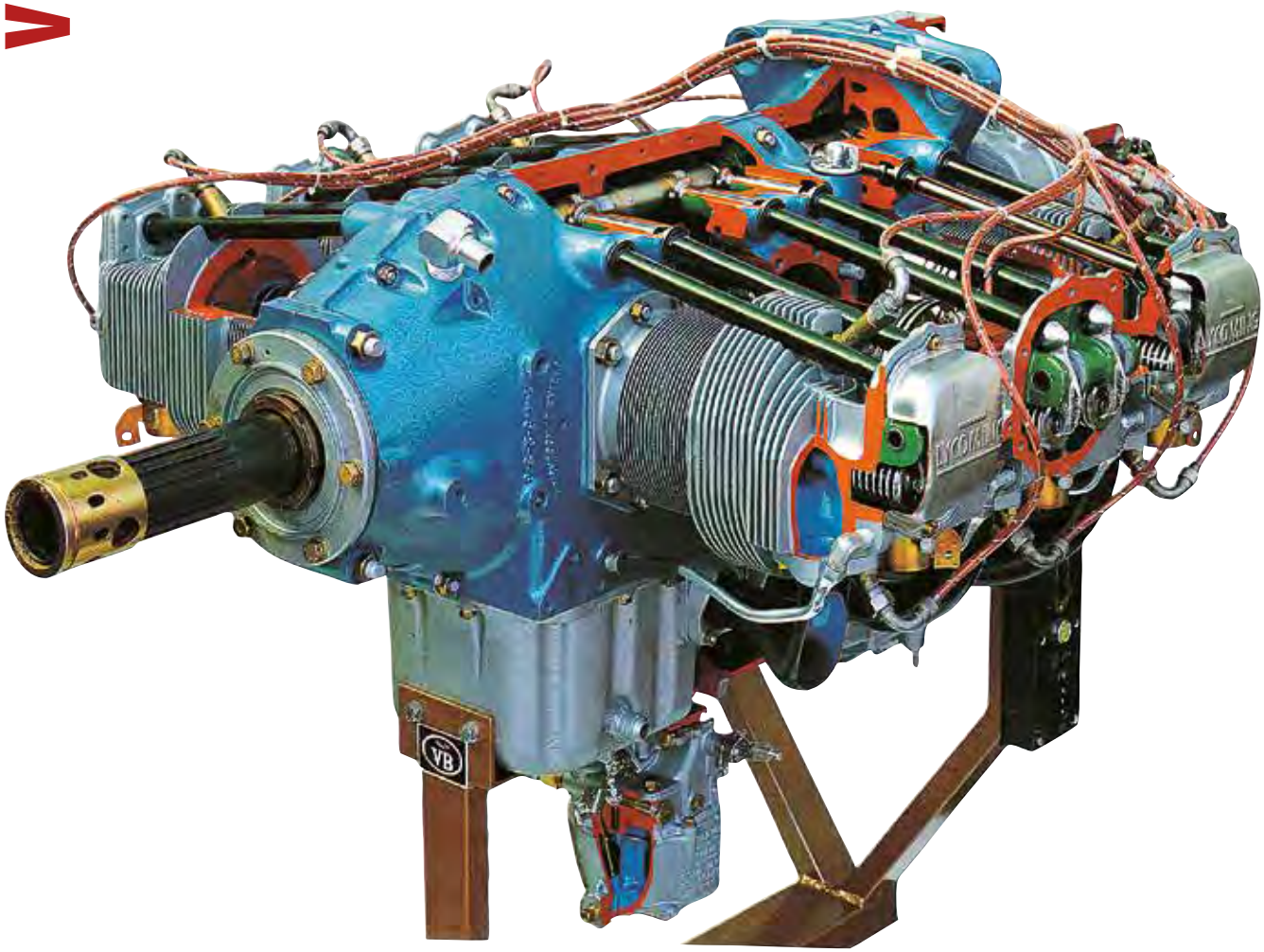
VB 9210E TURBO JET ENGINE MODEL WITH HIGH-PRESSURE COMPRESSOR (on base) - electrical

This super-model of a modern two-wave turbine shows in detail the construction and the operating system of such a motor. High-pressure compressor, high pressure turbine are readily recognisable, as well as the combustion chambers with the injection nozzles and starting plugs. These can be easily seen thanks to the section cut housing. The turbines can be set in motion by means of the built-in electro-motor.

Approx. weight and dim.:

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

VB 9260E OPPOSED-PISTON ENGINE (on stand with wheels) - electrical



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.

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*

Indicative picture for reference only

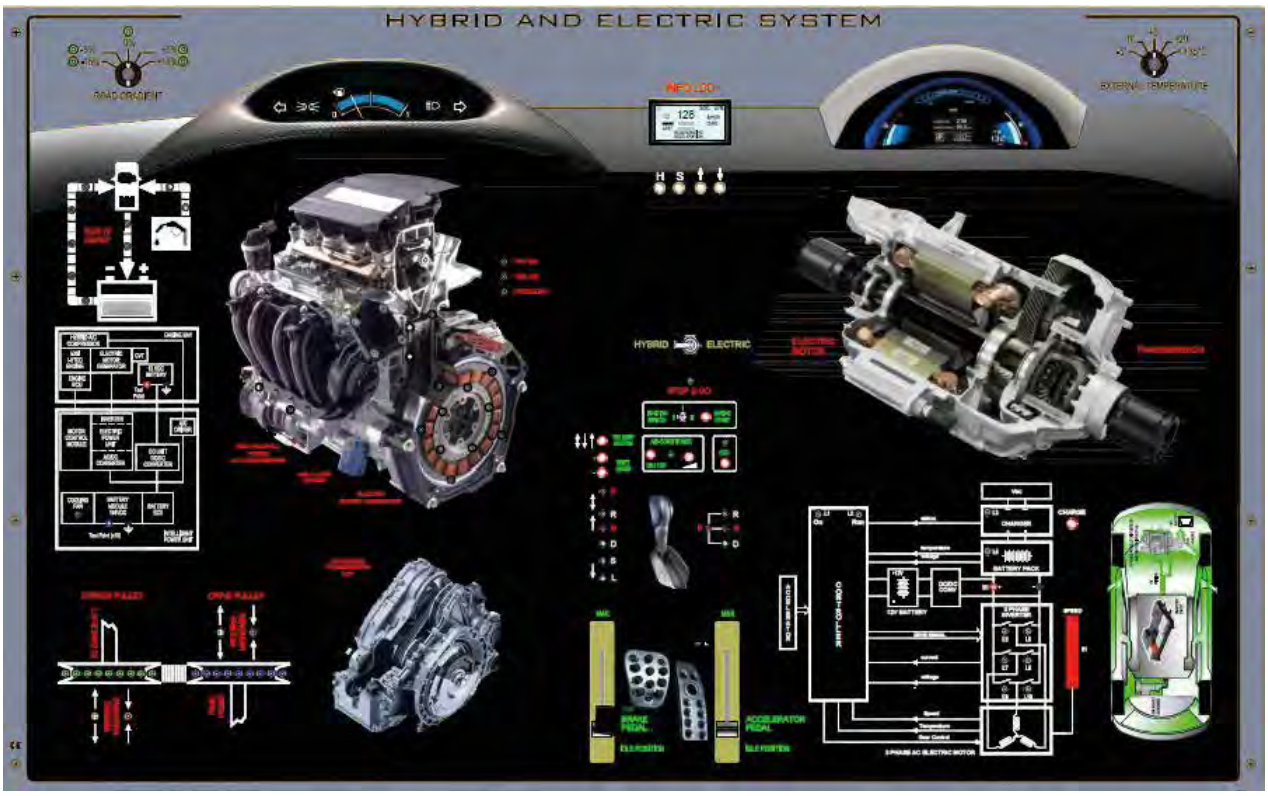
Simulators

VB 4503

VB 4503E HYBRID AND ELECTRIC SYSTEM SIMULATOR - electrical

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 thw 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*

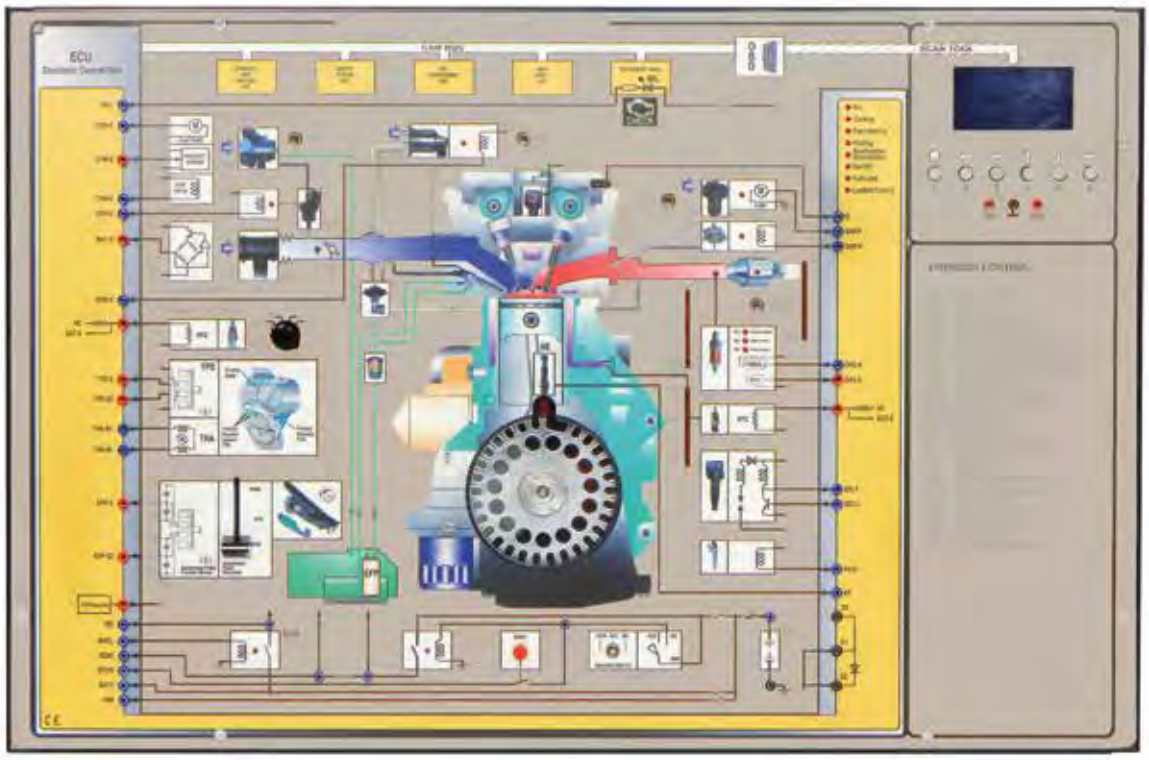
VB 4504 EMISSION CONTROL

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.

Indicative picture for reference only

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*

VB 9149 COMMON RAIL DIESEL ENGINE MANAGEMENT SYSTEM

This demonstration panel shows the operating of the electronic, mechanic and hydraulic elements that constitute the control and fuel feed system of the contemporary CR/EDC ignition diesel engine.
The trainer consists in a vertical panel with frame made of aluminum with insulated front panel and it is mounted on a movable support frame made of light profile; the front panel includes real components.

Indicative picture for reference only

The system is composed of two main modules:
- Common rail pump and injector control system for demonstration of its working and for the study of the electric and hydraulic parameters of the high-pressure pump and electro-injector control system. The module works autonomously or together with the Diesel Common Rail engine electronic control unit.
- Diesel Common Rail engine control unit, equipped with a microprocessor controller used for the demonstration of the high-pressure pump and electro-injector control system. The module only works with the pump and injector control module.

The fuel system enables presentation of the subassemblies' working and a change of the fuel dose. The measuring panel enables easy installation of the check meters for all the system sensors and working subassemblies.
The pump drive control allows the simulation of the full rotational speed range from the start phase to full capacity. The fault simulation console enables creating of breaks in chosen circuits and observing the reaction of the control system to the occurred position.
It is possible to install the diagnostic device to the relevant socket and observe the parameters of the system.
Complete with user manual that will allow teachers to develop their own experiments.

Approx. weight and dim.:

Cm:	*100x51x179h*
Net Weight:	*kg 150*

VB 12273

VB 12273 ABS/ASR BRAKE POWER CONTROL SYSTEM

Didactic equipment - This demonstration panel representS the working of the automatic brake power system ABS and the anti-slip regulation system ASR in motor vehicles with the aid of a microprocessor controller. It is manufactured to allow laboratory practices aiming at measurement of voltage and sequence of input signals and responses of the programmer to the dynamic changes of the above-mentioned input signals as well as testing of changes of pressure on hydraulic circuits.

The system facilitates the representation of normal states of programmer in the conditions of simulated driving, braking and braking with triggering of ABS/ASR (ABS/ABD) system response to extensive delays. Additionally, the functioning of the anti-skidding ASR system also is presented. The system allows also the demonstrating of reaction of a system to the most frequently observed types of failures, such as interruptions in wheel sensor circuits or in output circuits, i.e. electro-hydraulic valves or too small values of controlling signals (amplitudes of those signals).

The experimental stand facilitates the measurement of the following signals:

1. Characteristics of four different makes of speed of wheel rotation sensors.
2. Characteristics of voltage from the sensors in function of speed of rotation of toothed wheel rim.
3. Characteristics of the voltage in function of depth of gap for a given value of spinning velocity.
4. Depth of modulation of amplitude of sensor signal resulting from run-out of the toothed wheel rim in function of gap width.
5. Value of pressure in hydraulic circuits (in the brake master cylinder and after correction done by ABS/ASR system).

The trainer consists in a vertical panel with frame made of aluminum with insulated front panel and it is mounted on a movable support frame made of light profile; the front panel includes real components.

The station is powered from 230V/50Hz supply through a safety transformer and power supply with a output of 12V and constant current 40A.

To protect main circuits from damage, several safety devices is used; four fuses protect the following circuits:

main power supply circuit	25A
"15" supply circuit	10A
driver motors circuit	15A
break out box circuit	5A

Indicative picture for reference only

The panel includes the following external elements:

1. station power switch - ignition switch;
2. control lamps of power supply;
3. fuses for supply circuits;
4. potentiometer for regulation of spinning velocity of wheels;
5. drive transmission switch (RIGHT - BOTH - LEFT);
6. fault simulation switch- right front,
7. spinning velocity sensor - right front;
8. toothed wheel rim;
9. fault simulation switch- left front;
10. spinning velocity sensor - left front;
11. spinning velocity sensor - left rear;
12. spinning velocity sensor - right rear;
13. fault simulation switch- right rear,
14. fault simulation switch- left rear;
15. manometer in brake servo-motor regulation circuit - left front;
16. manometer in brake servo-motor regulation circuit - right front;
17. manometer in booster circuit;
18. wheel cylinder simulator;
19. manometer in brake servo-motor regulation circuit - right rear;
20. manometer in brake servo-motor regulation circuit - left rear;
21. STOP light control lamp;
22. main circuit breaker;
23. transformer 220/24V 50Hz.;
24. STOP switch;
25. connector pipe for vacuum pump;
26. brake fluid supply tank;
27. manometer in brake master cylinder;
28. electro-hydraulic actuator;
29. system control unit;
30. diagnostic socket - OBDII;
31. schematic diagram with break out box,
32. system control light.

The panel includes the following main components:

- No. 4 wheel rotational speed sensors
- toothed wheel rim electric engine control circuit
- ABS system programmer and numbering of programmer connection pins
- electro-hydraulic generator
- generator pump engine
- control lamp of ABS system failure
- measurement control desk
- relays board
- modular circuit breaker with residual current tripping
- brake pedal proximity sensor
- ABS system transmitter
- ABS pump transmitter
- electric engine for toothed wheel rims - left
- electric engine for toothed wheel rims - right
- switched-mode power supply 220V/14V
- switch-ignition switch of the demonstration station
- switches for simulation of interruptions in wheel speed sensor circuits
- LED diode - power voltage control lamp (circuit "15")
- LED diode - power voltage control lamp (circuit "50")
- LED indicator lamp simulating STOP light

The system allows the performing of the following experiments.

Functioning of the system:

- Functioning of the station for ABS system
- Functioning of the station for ASR system

Testing the ABS system with hand-held auto scanner:

- Fault simulation - Right front wheel sensor
- Faults simulation - Left front wheel sensor
- Faults simulation - Right rear wheel sensor
- Faults simulation - Left rear wheel sensor

This trainer is supplied with a noiseless compressor and is supplied with manual in English language.

Indicative picture for reference only

VB 12273

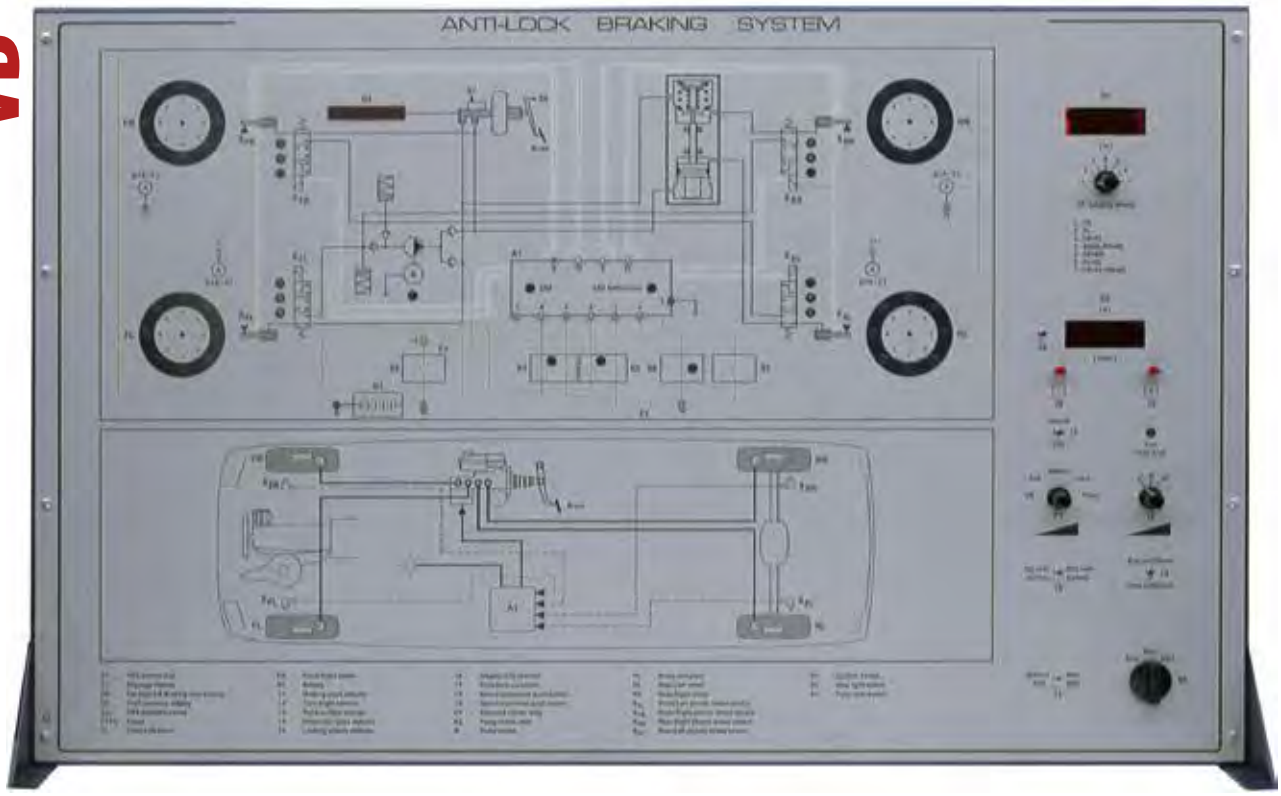
Approx. weight and dim.:

Cm:	*140x160x185h*
Net Weight:	*kg 150*

VB 12274

VB 12274E ABS SIMULATOR - electrical

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



Indicative picture for reference only

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*

VB 12272 VEHICLE SENSOR SYSTEM

This demonstration panel enables learning in terms of combination, test and evaluation of the parameters of the vehicle system subassemblies. It is possible to configure it in different ways.

Indicative picture for reference only

The trainer includes the following systems:

1. Mass and volume air flow meters check system
2. MAP sensor check system
3. Knock sensor
4. Engine and air temperature sensor
5. Lambda sensor
6. Rotation speed active sensor
7. Speedometer sensor
8. Acceleration sensor
9. Rotation direction sensor
10. Set of the main vehicle system sensors
11. Differential pressure sensor
12. Oil pressure sensor
13. Fuel level sensor

Training includes the learning of the marks and graphics symbols of the sensors and testing the sensors with measuring instruments.
Complete with user manual that will allow teachers to develop their own experiments.

Approx. weight and dim.:

Cm:	*104x35x66h*
Net Weight:	*kg 16*

VB 12271

VB 12271 SRS AIRBAG SYSTEM

This demonstration panel represents the AIRBAG system construction allowing evaluation of its parameters.
The experimental stand is manufactured to suit laboratory practices and it also demonstrates the reaction of a system for the most frequently observed types of failures, such as interruptions in circuits.
The trainer consists in a vertical panel with frame made of aluminum with insulated front panel and it is mounted on a movable support frame made of light profile; the front panel includes real components.

The experimental stand is powered from 220V/50/60Hz supply through a safety transformer and power supply with an output of 12V and constant current 15A.
To protect main circuits from damage, several safety devices are used.
Two fuses protects the following circuits from the top and the rectifier 12/24V- 10A stand feed system also.
Main power supply circuit 15A
Supply circuit 10A
The elements of a typical SRS system is:

- a system controller,
- a frontal airbag,
- a passenger's airbag,
- side airbags,
- tensioners and sensors of side crashes.

These elements enables diagnosing of the system.

- The fault simulation console enables the creation of breakdowns in selected circuits and the observation of the reaction of the control system to the occurred conditions.
- The used subassemblies enables the diagnosis of the SRS system and of the modern control panel where the SRS airbag system warning lamp is located.
- The panel is equipped with an engine diagnostic connector for the installing of the diagnostic device, which enables the reading and the erasing of breakdown codes and current parameters plus the control of the control panel's indicators and many other functions.

Indicative picture for reference only

The trainer includes the following elements:

1. Ignition switch
2. Control lamps of power supply
3. Fuse unit
4. Schematic diagram with break out box
5. System control unit
6. Diagnostic socket – OBD II
7. Airbag assembly - driver
8. Airbag assembly - passenger
9. Airbag side assembly - driver
10. Airbag side assembly - passenger
11. Seat belt pretensioner
12. Seat belt pretensioner
13. Airbag crash sensor – driver
14. Airbag crash sensor - passenger
15. Schematic diagram of positioning of the elements inside of vehicle
16. Instrument panel

With this trainer supplied with relevant hand-held scanner, it is possible to perform the following fault simulation exercises:

1. Front Driver side, Airbag igniter test
2. Seat Belt tensioner igniter - Driver side test
3. Airbag igniter, Driver side test
4. Airbag igniter, Passenger side test
5. Seat Belt tensioner igniter, Passenger side test
6. Front Passenger side, Airbag igniter test
7. Crash Sensor side airbag, Driver side test
8. Crash Sensor side airbag, Passenger side test

This trainer is supplied with a noiseless compressor.

Approx. weight and dim.:

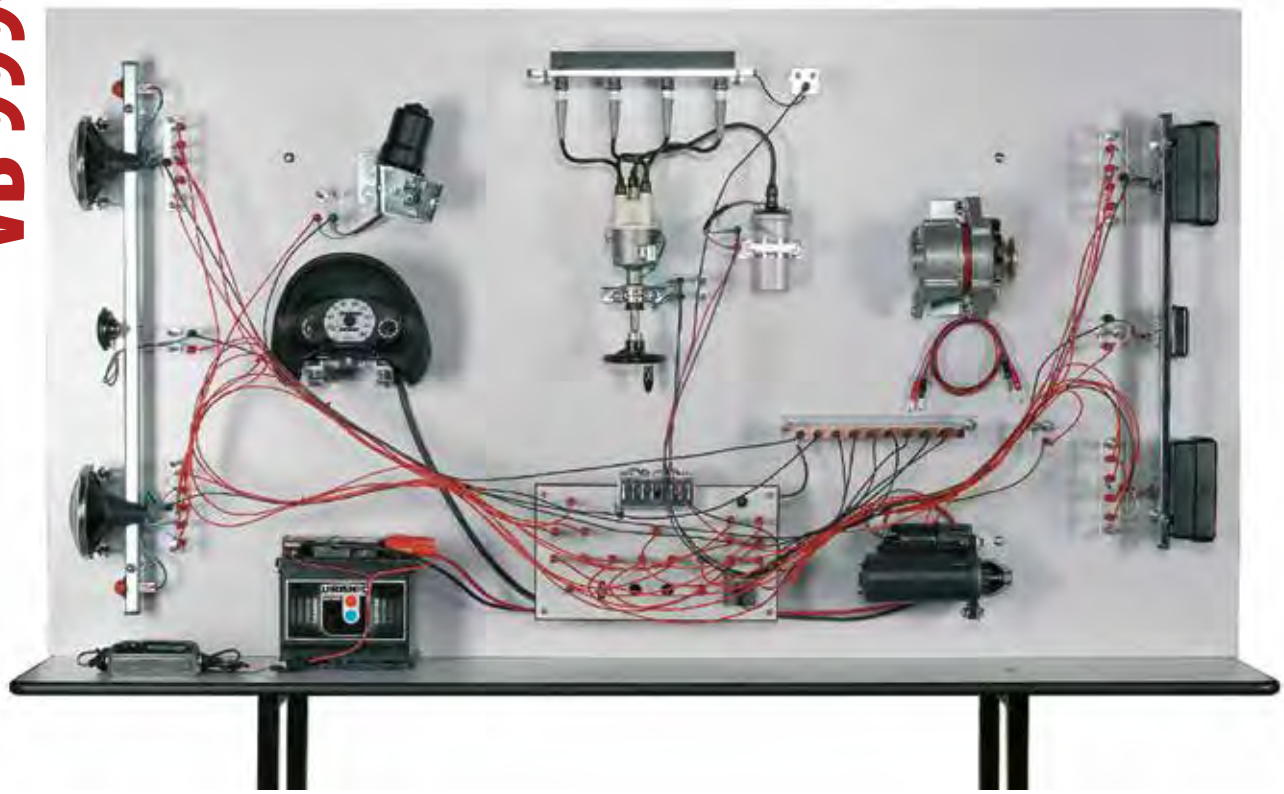
Cm:	*100x51x180h*
Net Weight:	*kg 150*

Components & Accessories

VB 9990 - VB 9991

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.*

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*

Approx. weight and dim.:

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

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*

Indicative picture for reference only

Approx. weight and dim.:

Cm: 130x100x206h
Net weight : kg 110
Gross weight: Kg 220

VB 10000 - VB 10010 - VB 10020

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

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

VB 10020E PREHEATING PLUG CIRCUIT OPERATING SYSTEM (on base) - electrical

Indicative picture for reference only

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 10020E

The glow plug preheating circuit of an indirect injection diesel engine is shown.
By pressing the proper push-button a transformer which is placed inside the battery makes the glow plug filament incandescent. 220V power supply.

VB 10000E - VB 10010E - VB 10020E

Approx. weight and dim.:

Cm:	*70x25x55h*
Net Weight:	*kg 10*
Gross Weight:	*kg 15*

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*

Indicative picture for reference only

VB 10040S BATTERY - static

VB 10050S COIL - static

VB 10060M DISTRIBUTOR - manual

VB 10040S

VB 10050S

VB 10060M

VB 10040 - VB 10050 - VB 10060

VB 10030

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

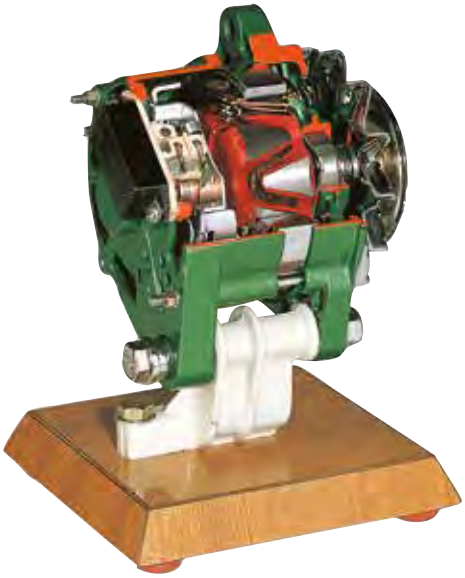
VB 10071M STARTER MOTOR WITH REDUCTION GEARS FOR CARS (on base) - manual

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

Indicative picture for reference only

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 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).

Indicative picture for reference only

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*

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 200 rom 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.

Indicative picture for reference only

Main technical specifications:

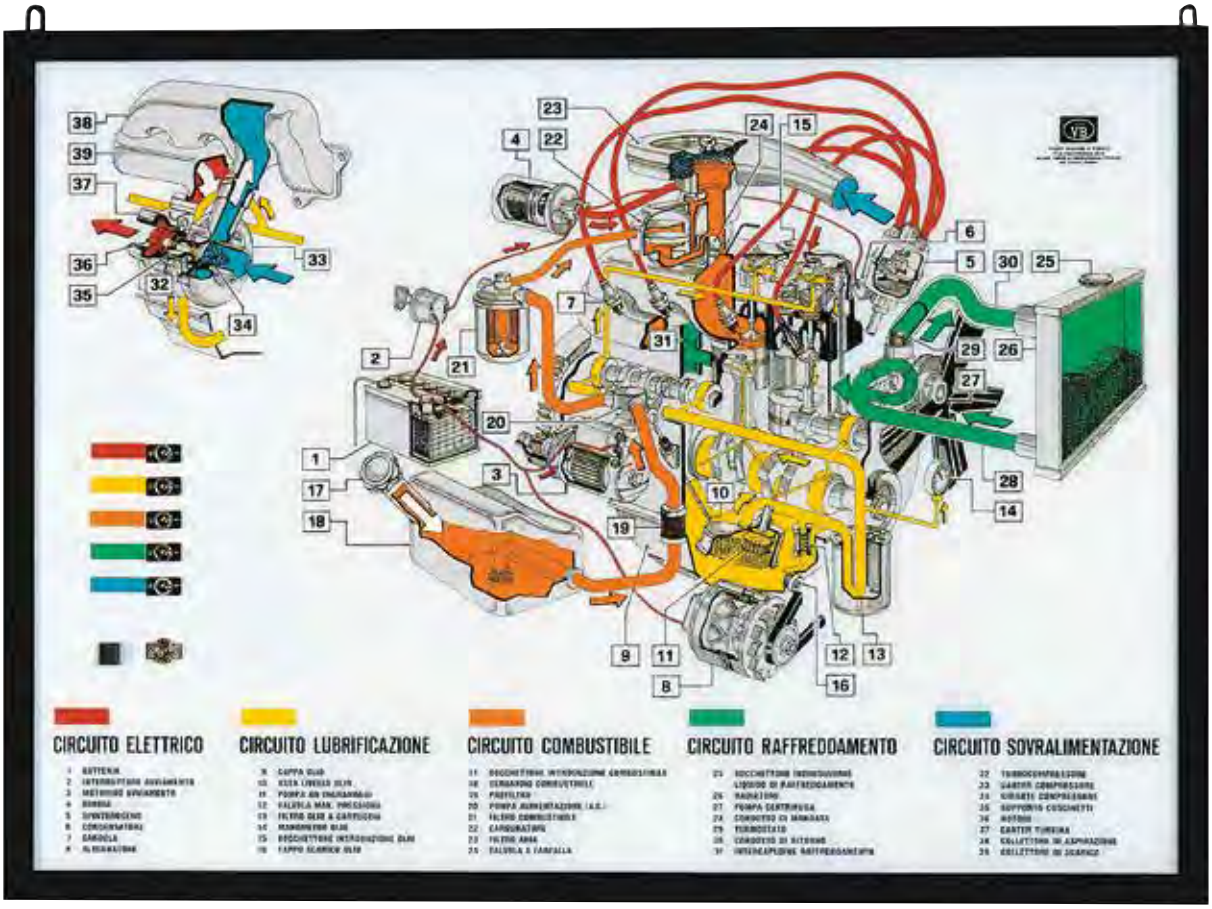
- *Fuel tank*
- *Fuel pump*
- *Fuel pressure regulator*
- *Injector*
- *Fuel vapour trap*
- *Idle stepper motor*
- *Absolute pressure sensor*
- *Injection/ignition ECU*
- *Throttle position sensor*
- *Engine coolant temperature sensor*
- *Intake air temperature sensor*
- *Injection/ignition duel relay*
- *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

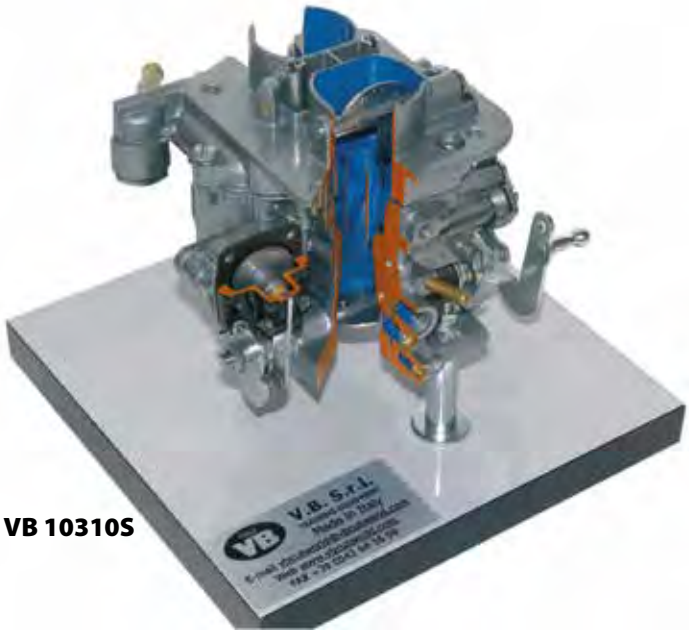
VB 10310S VERTICAL TWIN CARBURETTOR (on base) - static

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

VB 10330S VACUUM CARBURETTOR (on base) - static

VB 10340S HORIZONTAL TWIN CARBURETTOR (on base) - static

Indicative picture for reference only



VB 10310S

VB 10320S

VB 10330S

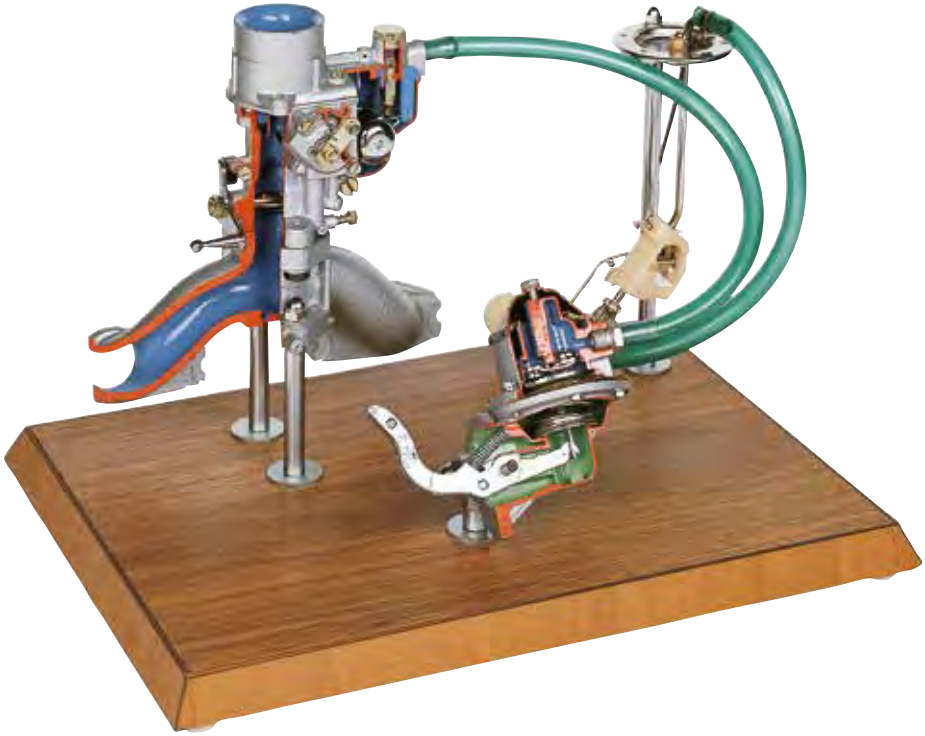
VB 10340S

Approx. weight and dim.:

Cm:	*25x30x30h*
Net Weight:	*kg 1*
Gross Weight:	*kg 2*

VB 10350

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



Main technical specifications:

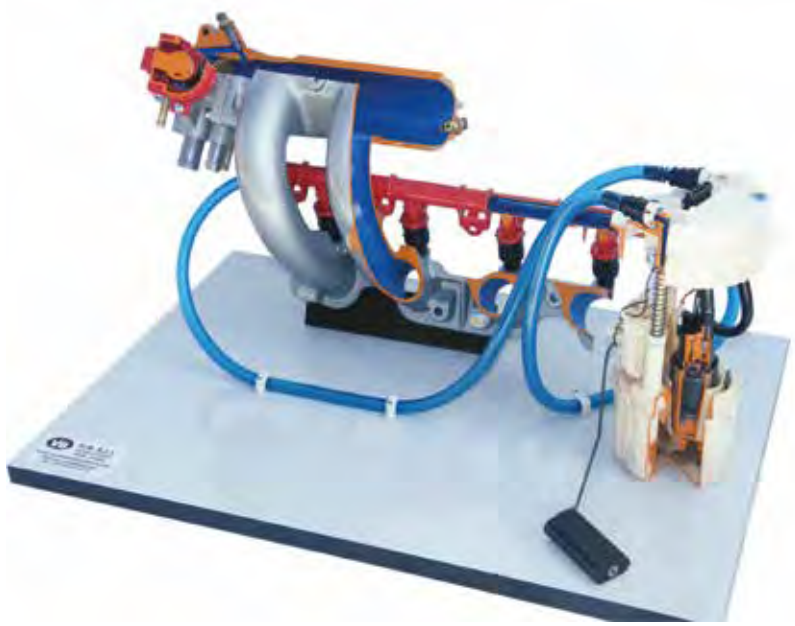
- *Float with fuel level gauge (tank)*
- *Diaphragm pump*
- *Single-body carburettor*
- *Inlet manifold*

Approx. weight and dim.:

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

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*

Indicative picture for reference only

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

VB 10360

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

VB 10361

Cutaway model of an electro injector for multipoint injection engines.
The following parts are shown:

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

Indicative picture for reference only

VB 10365S SPARK PLUG (on base) - static

VB 10365

Internal combustion engine spark plug cutaway model.
The following part are shown:

- *Spark plug body*
- *Ceramic insulator*
- *Earth electrode*

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*

VB 10367

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

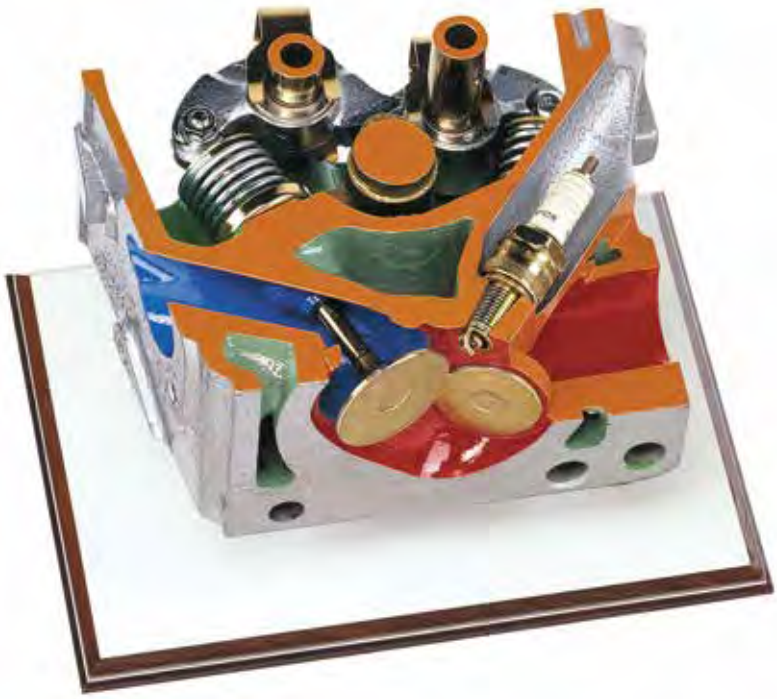
Accurate section of FIAT three-valve engine head with hydraulic tappet.

Approx. weight and dim.:

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

Indicative picture for reference only

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*

Indicative picture for reference only

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 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

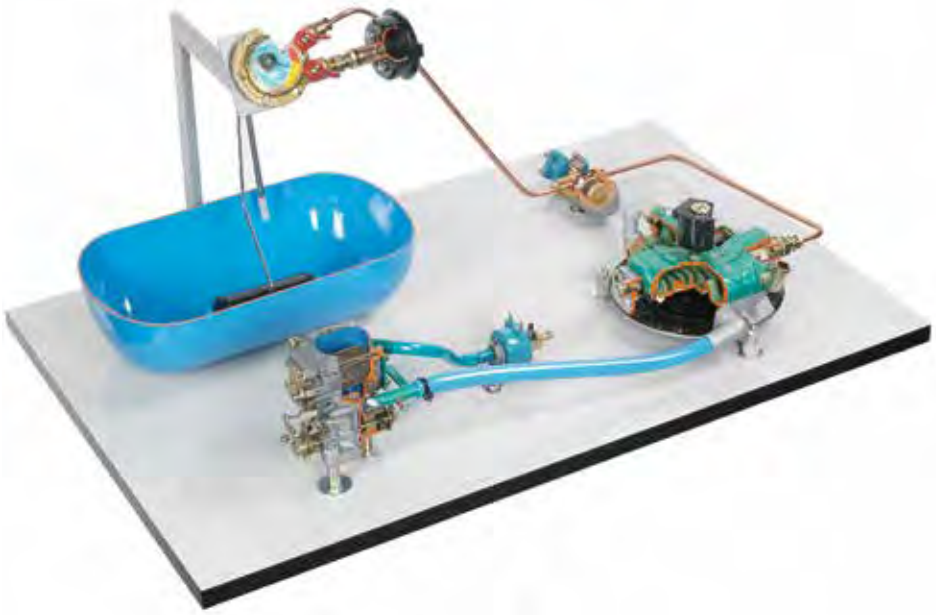
The panel is equipped with nomenclature table.

Approx. weight and dim.:

Cm	*70x120x15h*
Net Weight:	*kg 16*
Gross Weight:	*kg 30*

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*

Indicative picture for reference only

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 10104

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

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

Indicative picture for reference only

Approx. weight and dim.:

Cm:	*25x20x25h*
Net Weight:	*kg 5*
Gross Weight:	*kg 8*

VB 10106

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

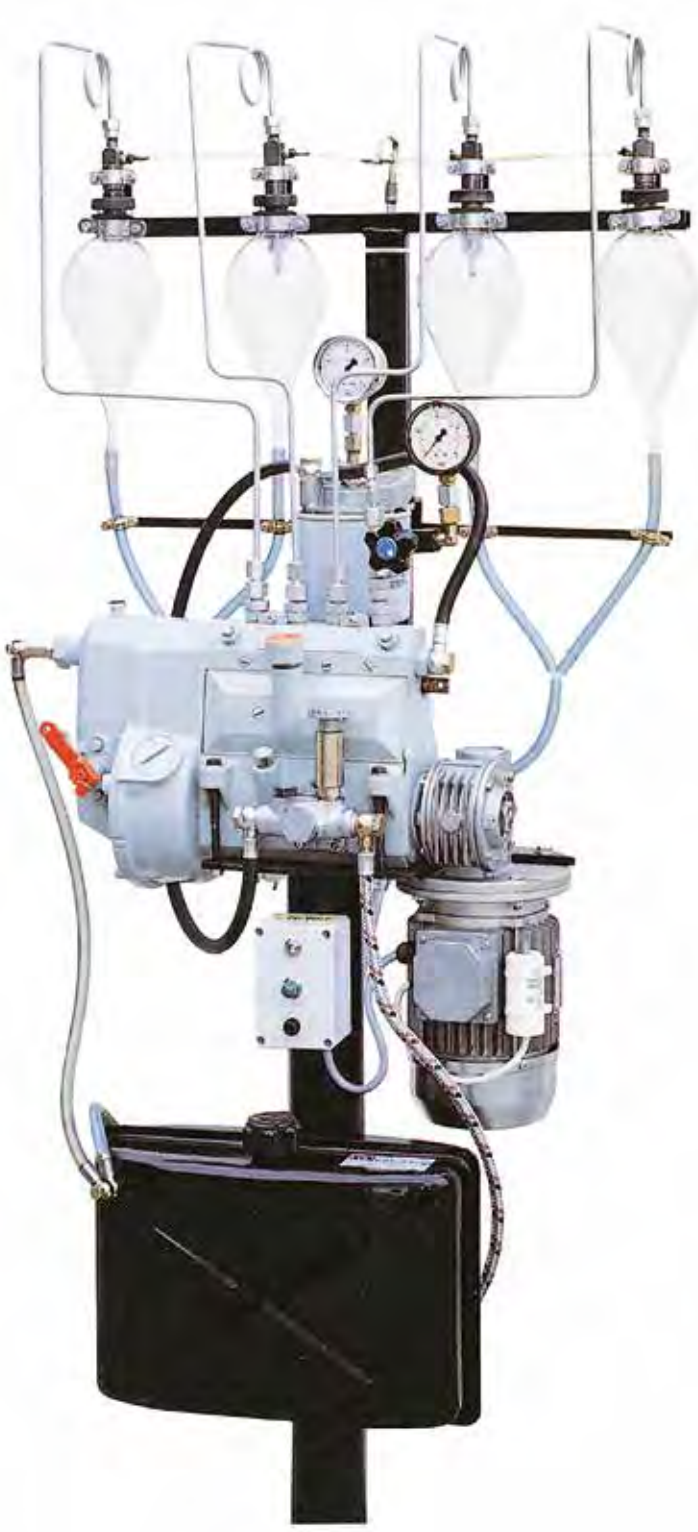
Radial-piston pump for common rail engine, pressure 2000 bar, fuel lubrication, two plungers.

Approx. weight and dim.:

Cm:	*25x20x25h*
Net Weight:	*kg 4*
Gross Weight:	*kg 8*

VB 10108

VB 9150E BOSCH 4 CYLINDERS IN LINE INJECTION UNIT (on stand with wheels) - electrical



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 9140E BOSCH VE 4 CYLINDERS ROTARY INJECTION UNIT (on stand with wheels) - electrical

Indicative picture for reference only

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

- *2 direct injectors;*
- *2 indirect injectors;*
- *fuel filter;*
- *Bosch VE rotary injection pump;*
- *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 50*
Gross Weight:	*kg 85*

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*

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*

Indicative picture for reference only

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.

Indicative picture for reference only

Approx. weight and dim.:

Cm:	*40x20x10h*
Net Weight:	*kg 3*
Gross Weight:	*kg 4*

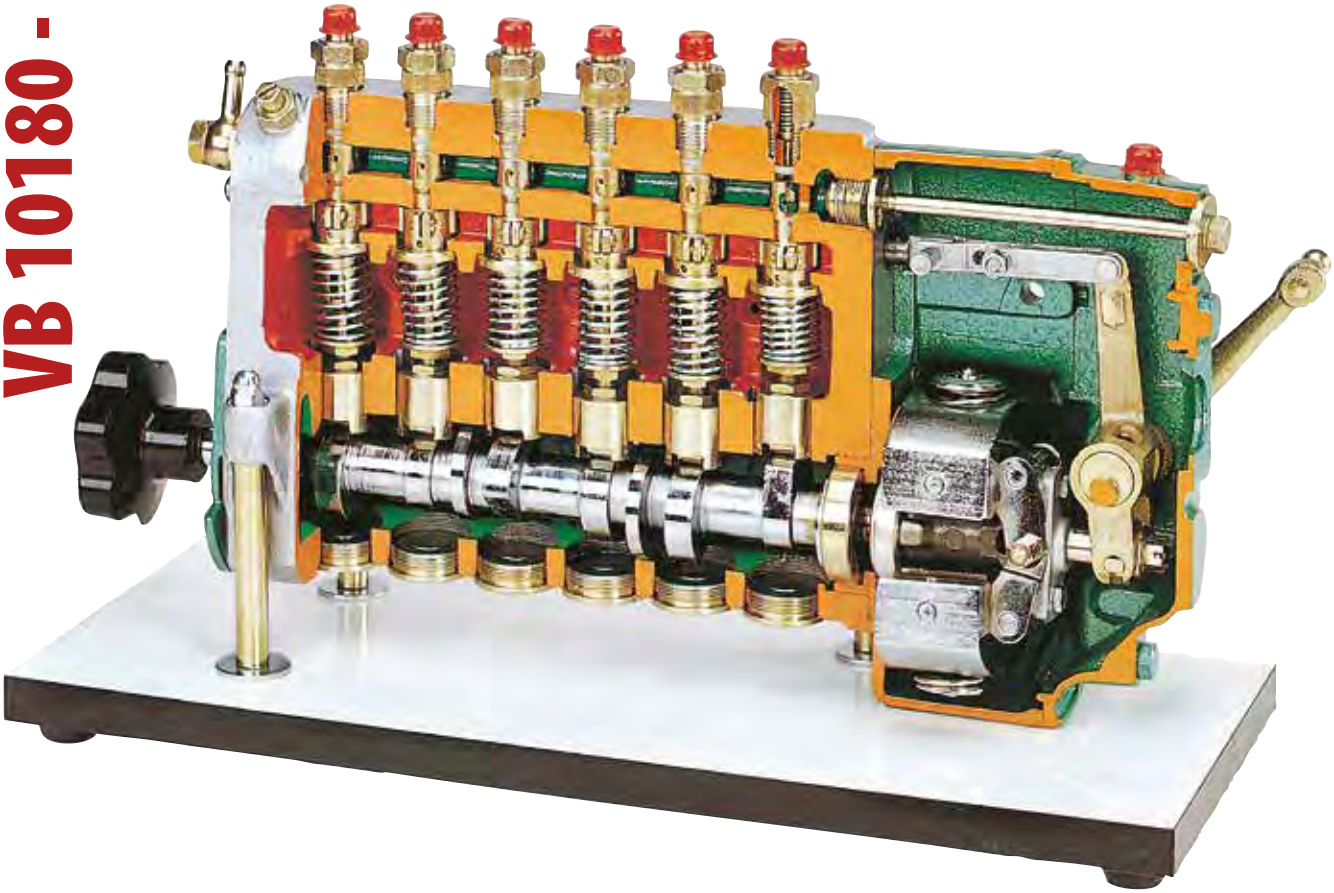
VB 10112S PIEZO IN-LINE INJECTOR (on base) - static

Approx. weight and dim.:

Cm:	*25x12x10h*
Net Weight:	*kg 1*
Gross Weight:	*kg 2*

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.

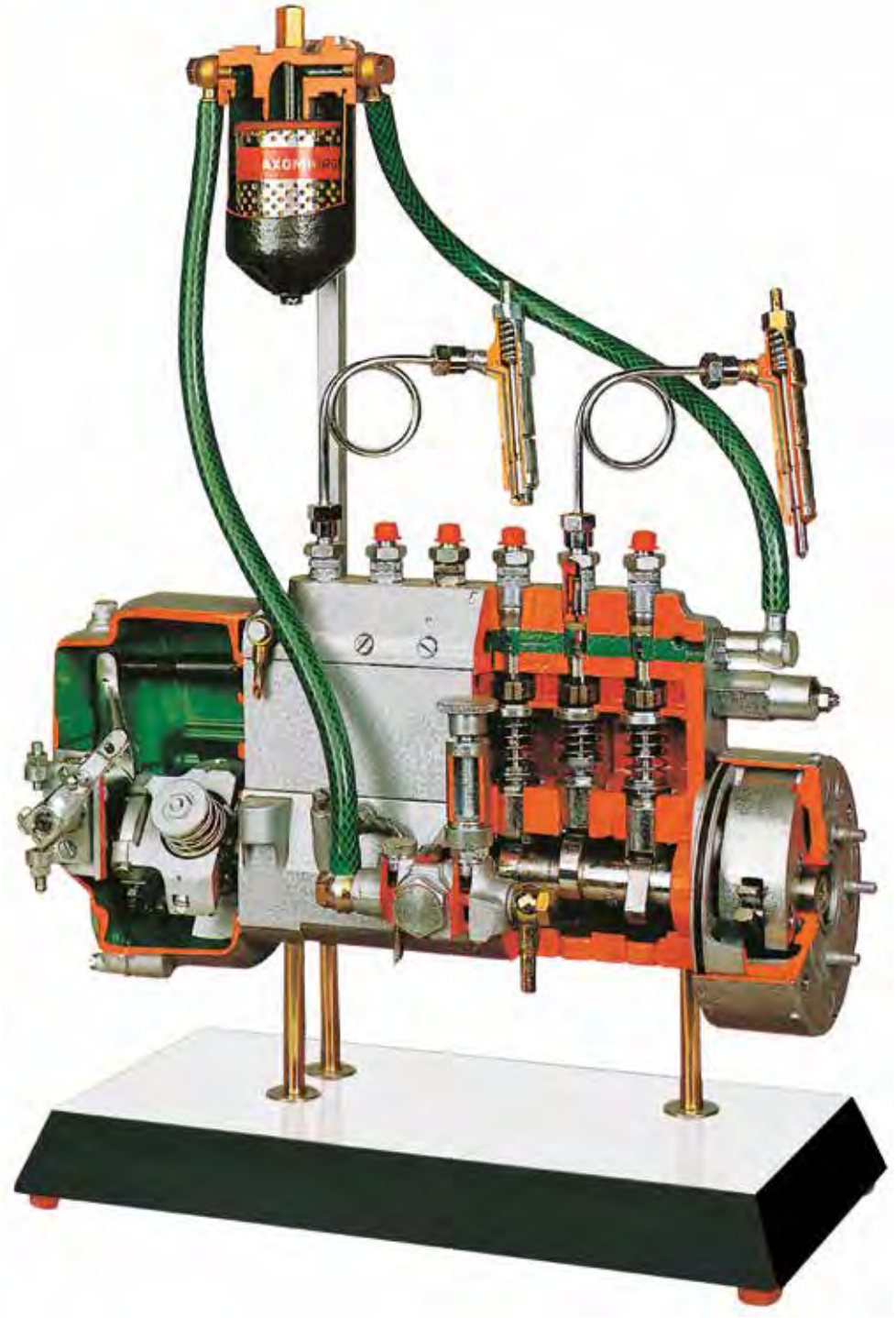
VB 10181M

Approx. weight and dim.:

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

VB 10200M INJECTION PUMP WITH 6 IN-LINE CYLINDERS (on base) - manual

VB 10210M INJECTION PUMP WITH 6 IN-LINE CYLINDERS (on stand with wheels) - manual



Indicative picture for reference only

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*

Operated manually through a crank handle.

VB 10210M

Same as VB 10200M but on stand with wheels.

Approx. weight and dim.:

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

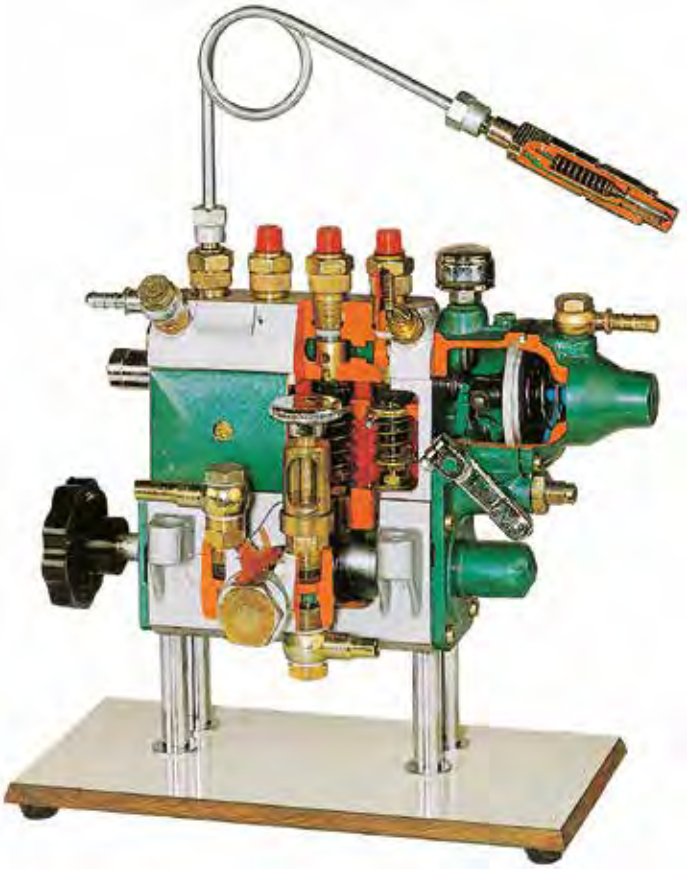
VB 10210M

Approx. weight and dim.:

Cm:	*80x60x50h*
Net Weight:	*kg 31*
Gross Weight:	*kg 45*

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

VB 10240

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.

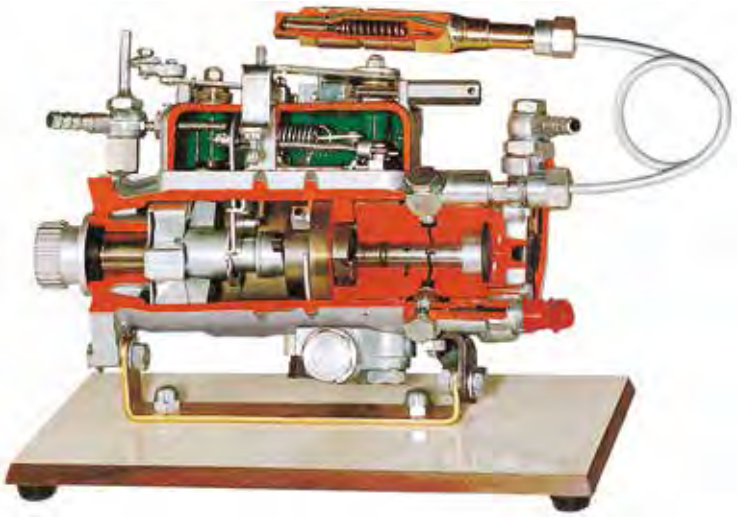
Approx. weight and dim.:

Cm:	*30x15x30h*
Net Weight:	*kg 5*
Gross Weight:	*kg 8*

Indicative picture for reference only

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

VB 10250



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 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).

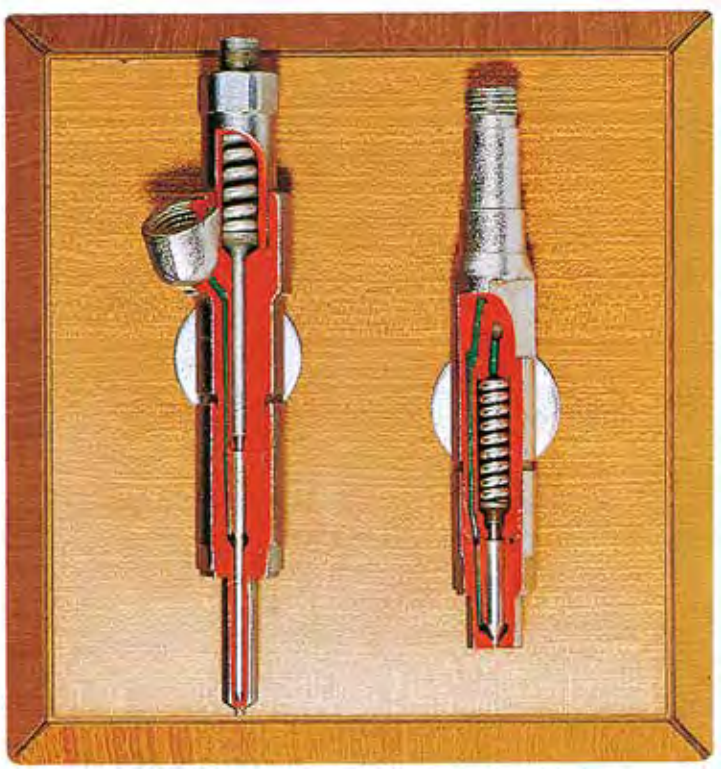
It is operated manually.

Indicative picture for reference only

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 10280S INJECTORS (on base) - static

VB 10280



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*

Indicative picture for reference only

VB 10500S DIRECT INJECTION PISTON - static

VB 10510S INDIRECT INJECTION PISTON - static

VB 10500 - VB 10510

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 10290M DIESEL PUMPING ELEMENT - manual

VB 10290

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 10430

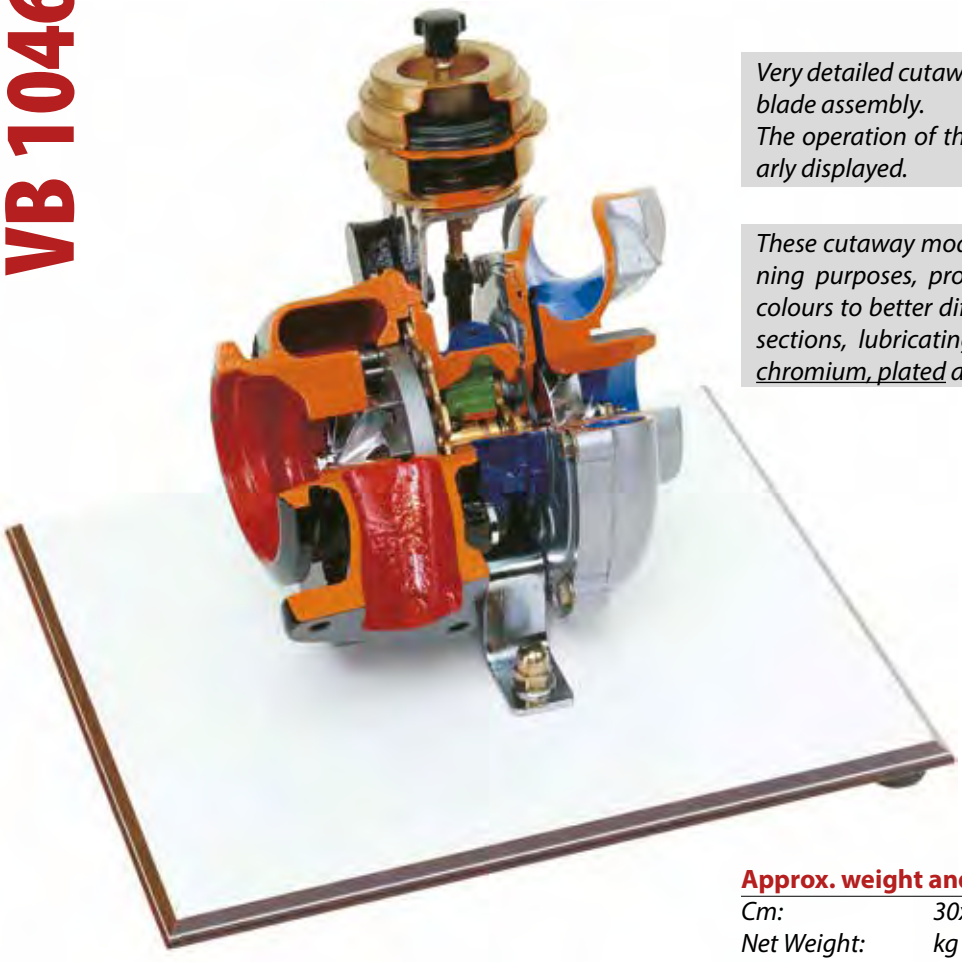
VB 10430M TURBOSUPERCHARGER WITH WASTE-GATE VALVE (on base) - manual

Approx. weight and dim.:

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

VB 10460

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.

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*

Indicative picture for reference only

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

VB 10451M TURBO-INTERCOOLER WITH VARIABLE GEOMETRY (on base) - manual

VB 10450M

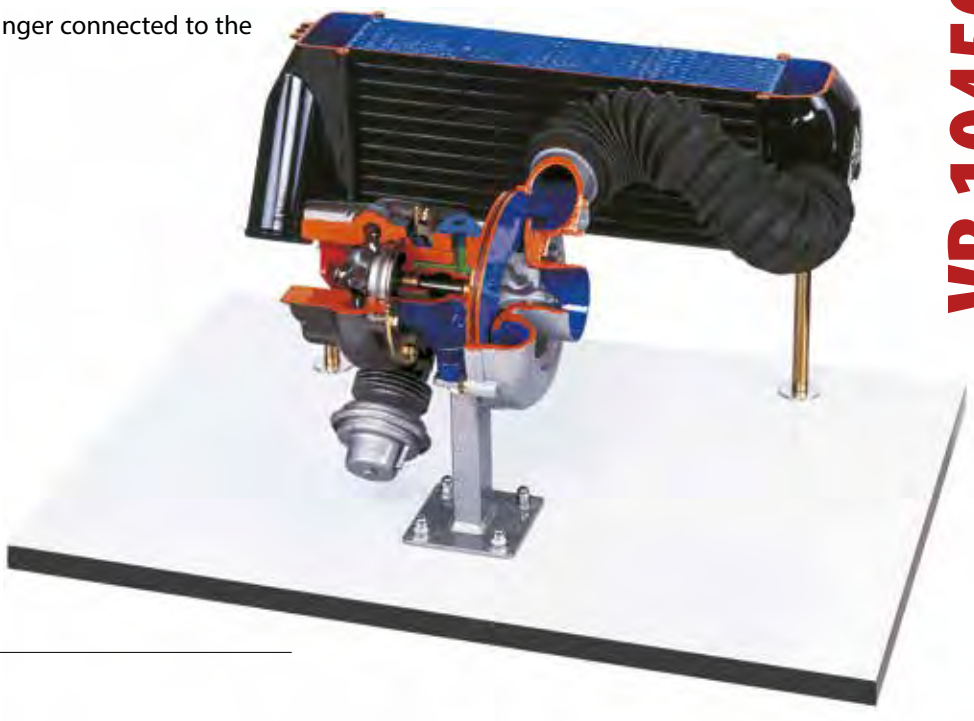
Accurate section of a supercharging unit for Diesel or petrol motorcars.
The cross-section of the turbo-supercharger highlights the following:

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

VB 10451M

Accurate cross-section of the turbo-supercharger highlighting the:

- Exhaust gas turbine with variable geometry
- Centrifugal compressor
- Lubricating circuit
- Cutaway air-air heat exchanger connected to the turbo-supercharger.



VB 10450M - VB 10451M

Approx. weight and dim.:

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

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

VB 10453

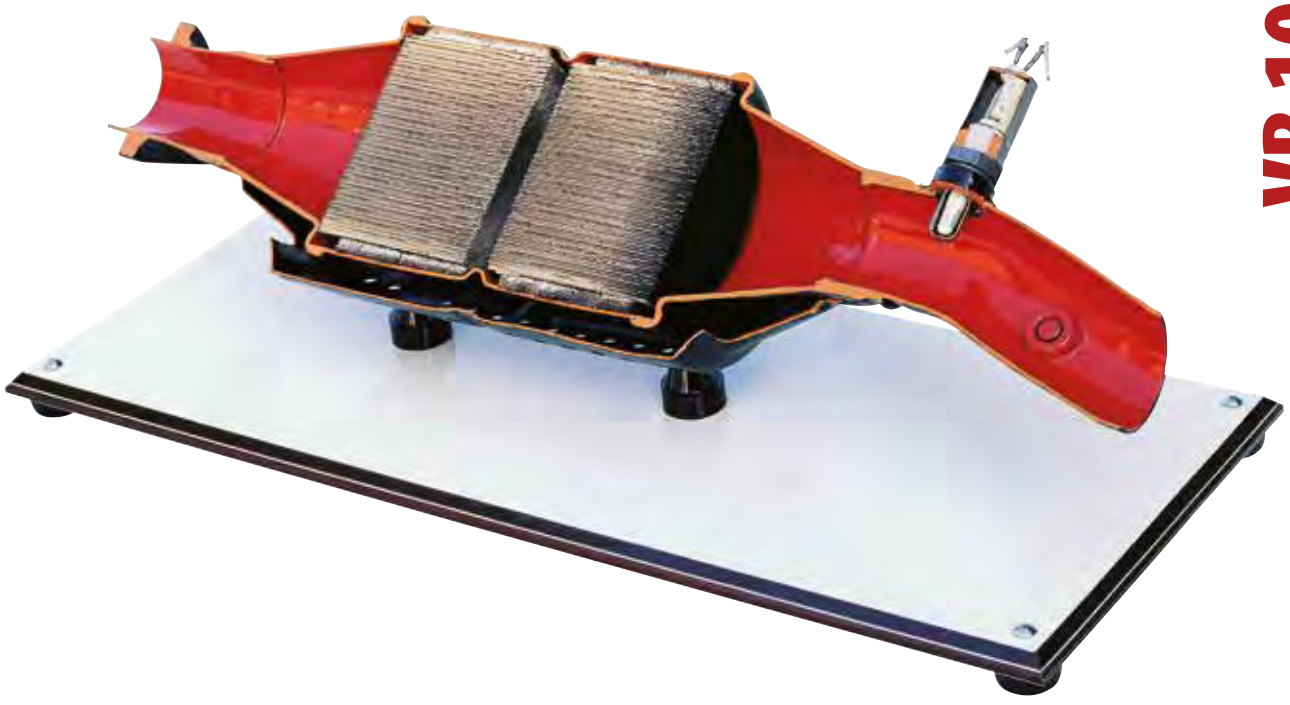
Indicative picture for reference only

Approx. weight and dim.:

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

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

VB 10630



Approx. weight and dim.:

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

VB 10370 - VB 10380 - VB 10385 - VB 10390 - VB 10400

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

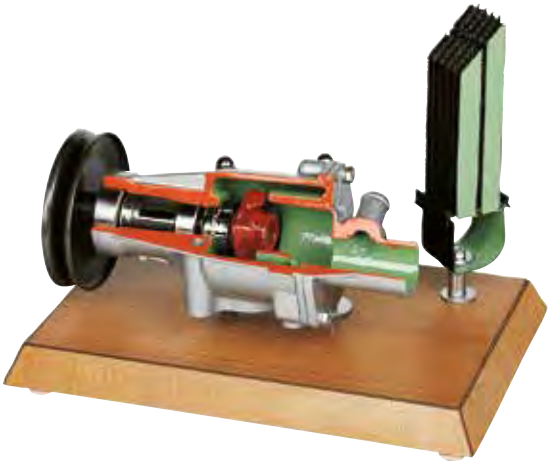
VB 10400M OIL PUMP WITH FILTER (on base) - manual

VB 10370S

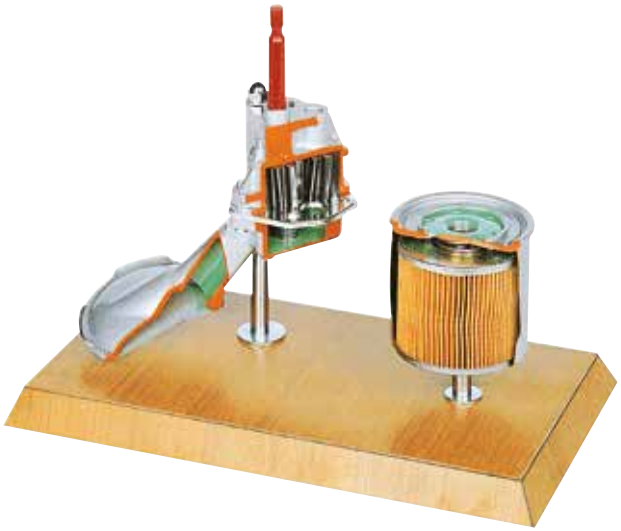
VB 10380S

VB 10385S

Indicative picture for reference only



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.:

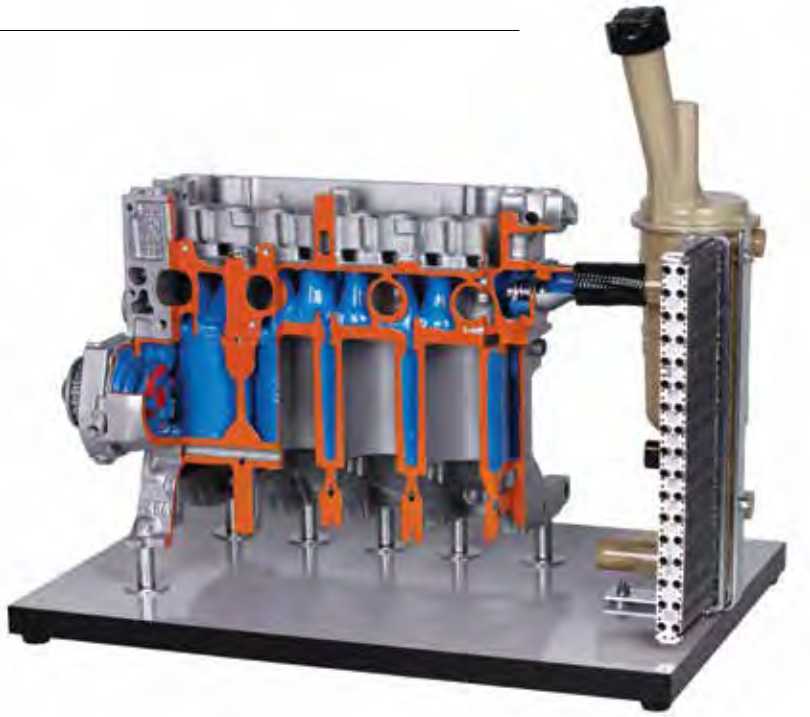
Cm:	*30x20x30h*
Net Weight:	*kg 3*
Gross Weight:	*kg 6*

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

Indicative picture for reference only

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*

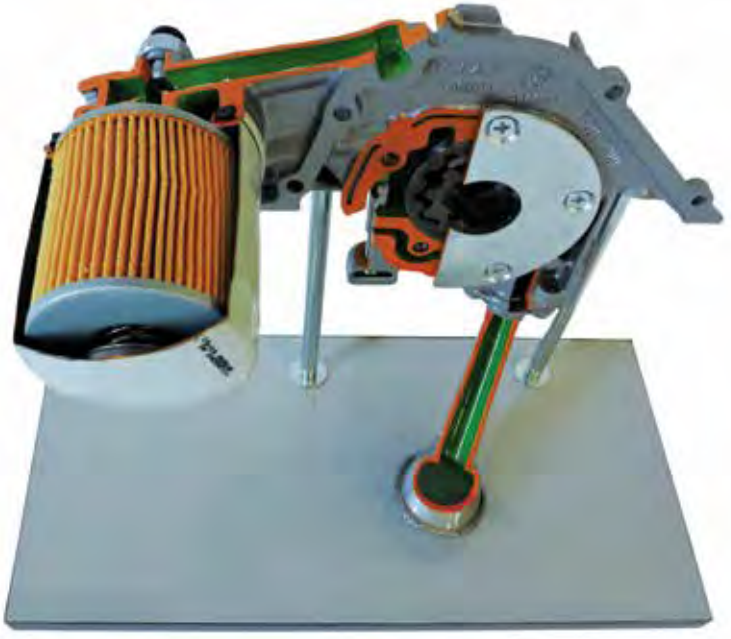
VB 10403

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*

VB 10404

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*

Indicative picture for reference only

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

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

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

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 9130

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.:

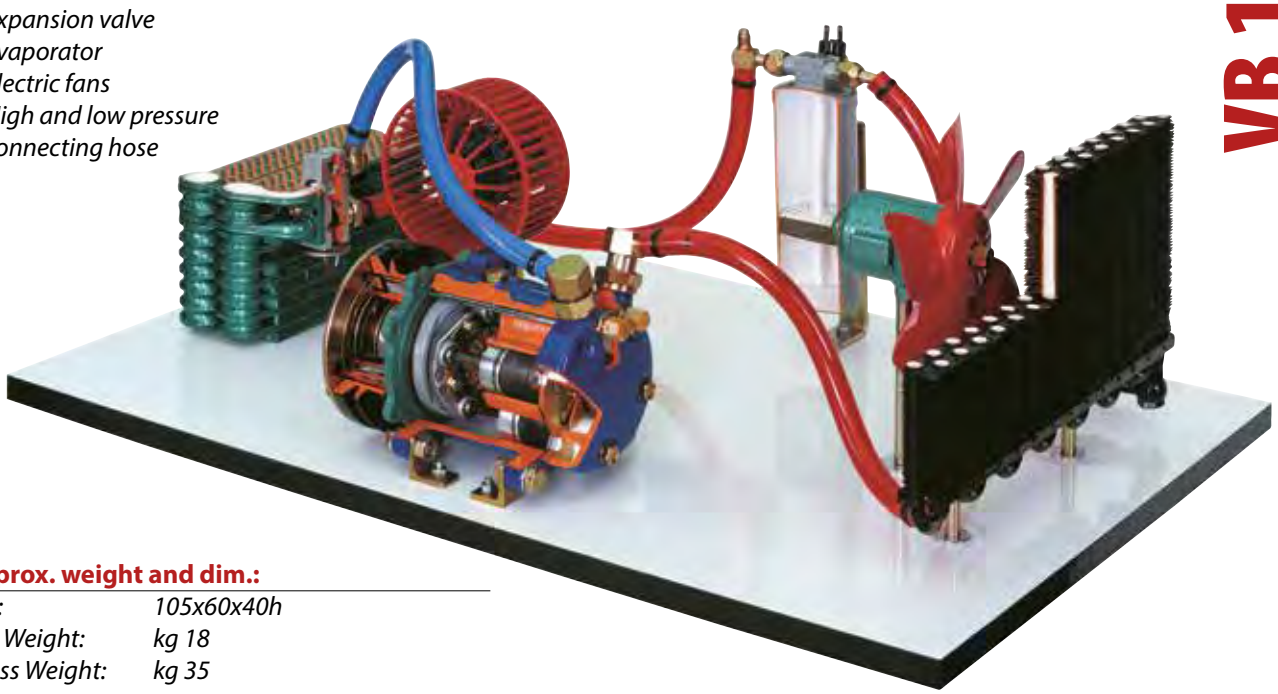
Cm:	*105x75x130h*
Net Weight:	*kg 70*
Gross Weight:	*kg 120*

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

VB 10650

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*

Indicative picture for reference only

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

VB 10651

Approx. weight and dim.:

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

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

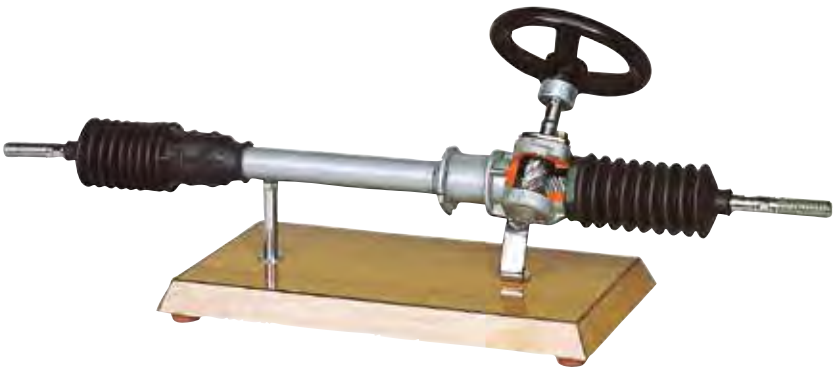
VB 10730M RACK STEERING BOX (on base) - manual

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 10750

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*

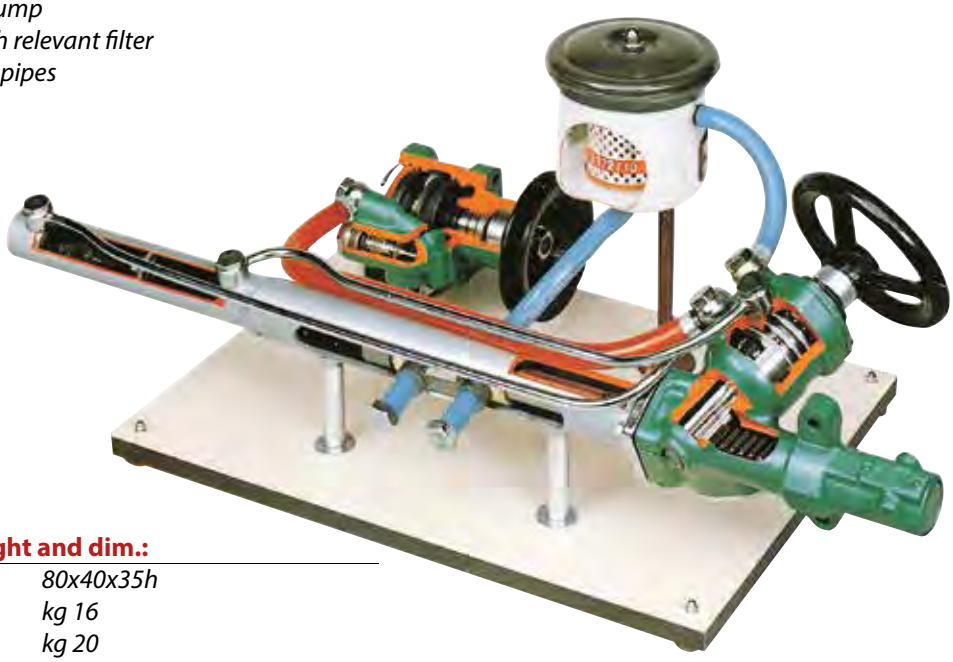
VB 10760

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.

Indicative picture for reference only

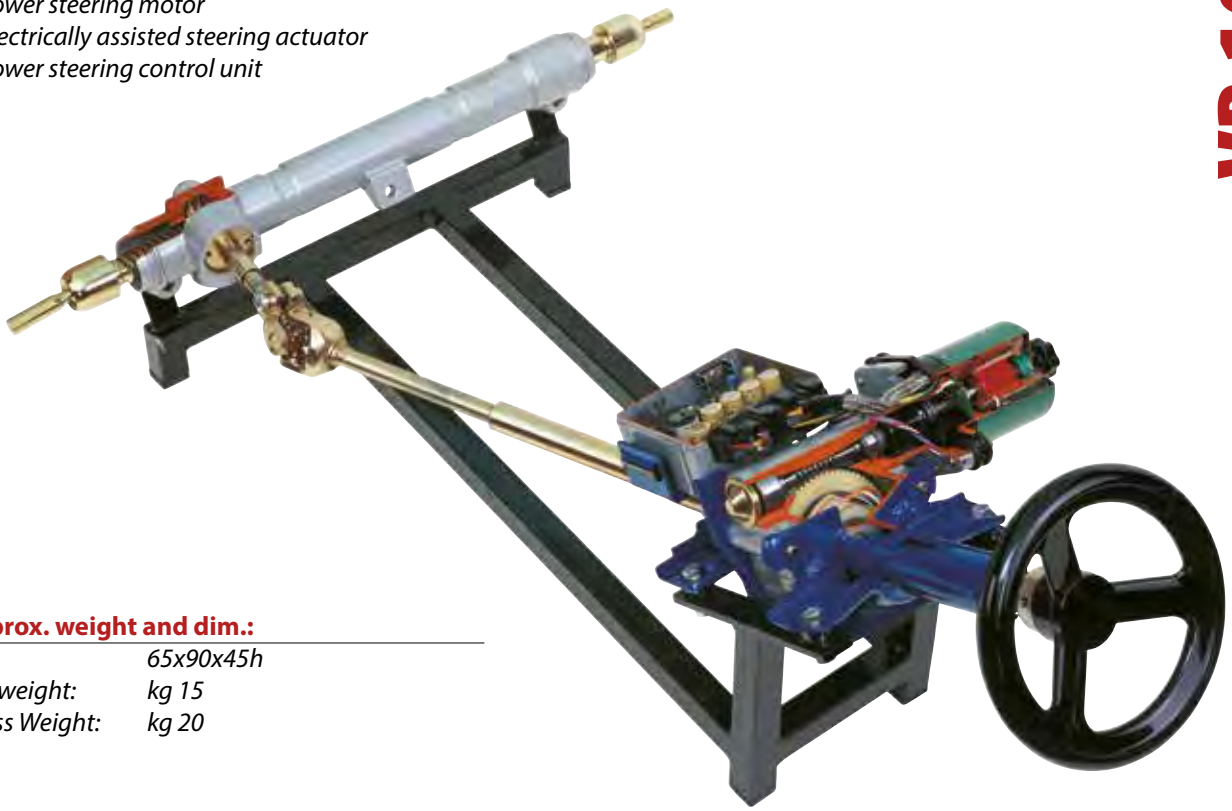
VB 10780M ELECTRICALLY ASSISTED STEERING (on a table stand) - manual

VB 10780

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.



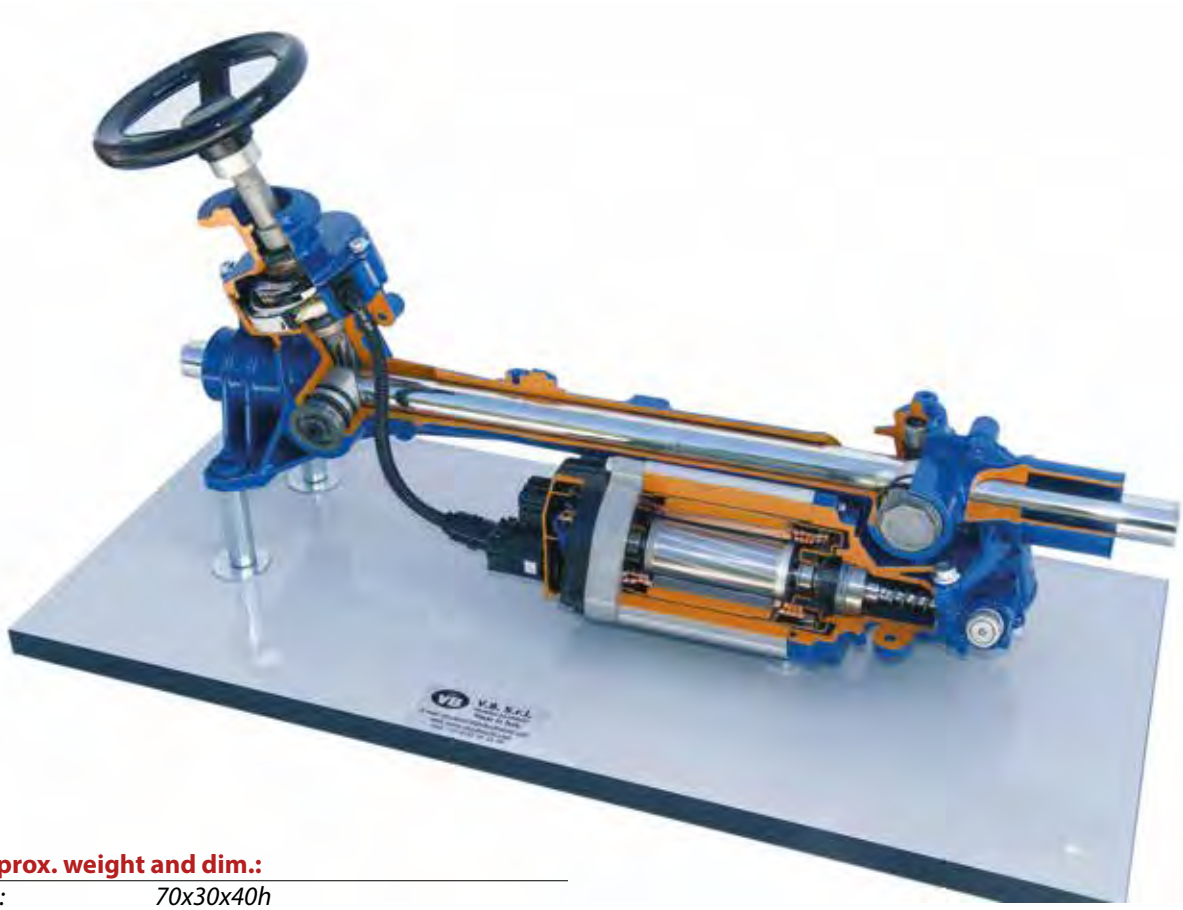
Approx. weight and dim.:

Cm:	*65x90x45h*
Net weight:	*kg 15*
Gross Weight:	*kg 20*

Indicative picture for reference only

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

VB 10782



Approx. weight and dim.:

Cm:	*70x30x40h*
Net Weight:	*kg 15*
Gross Weight:	*kg 22*

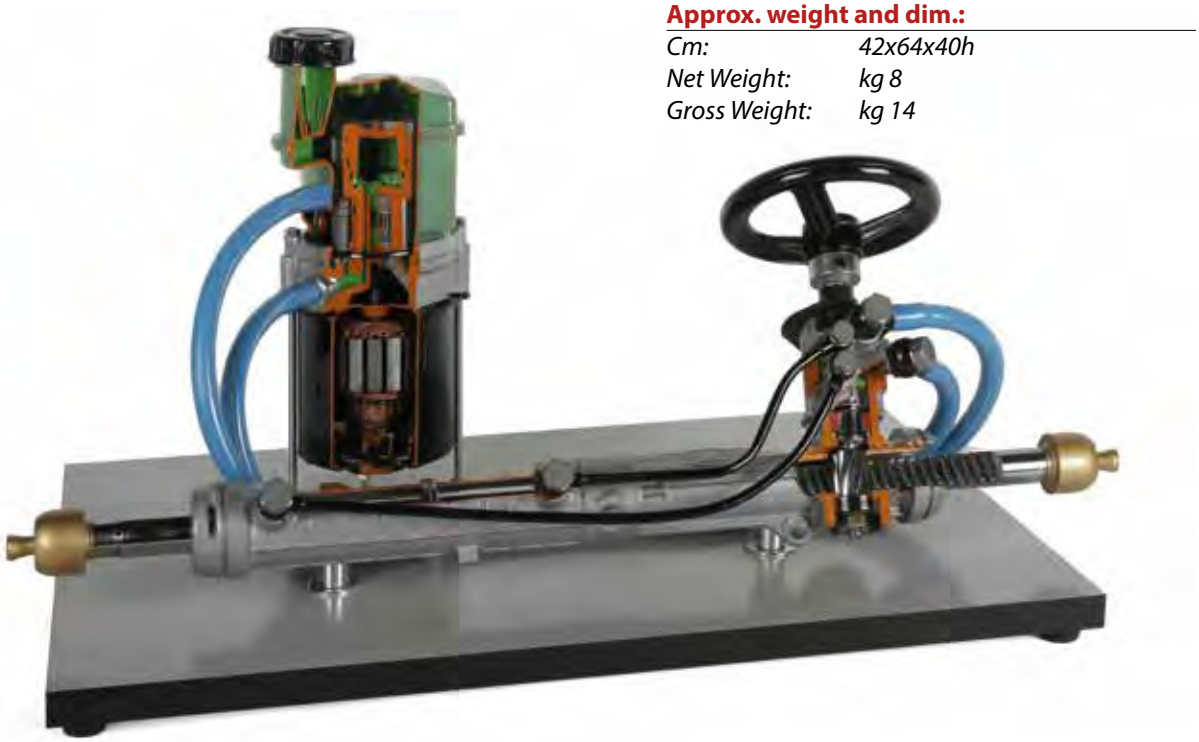
VB 10784

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.

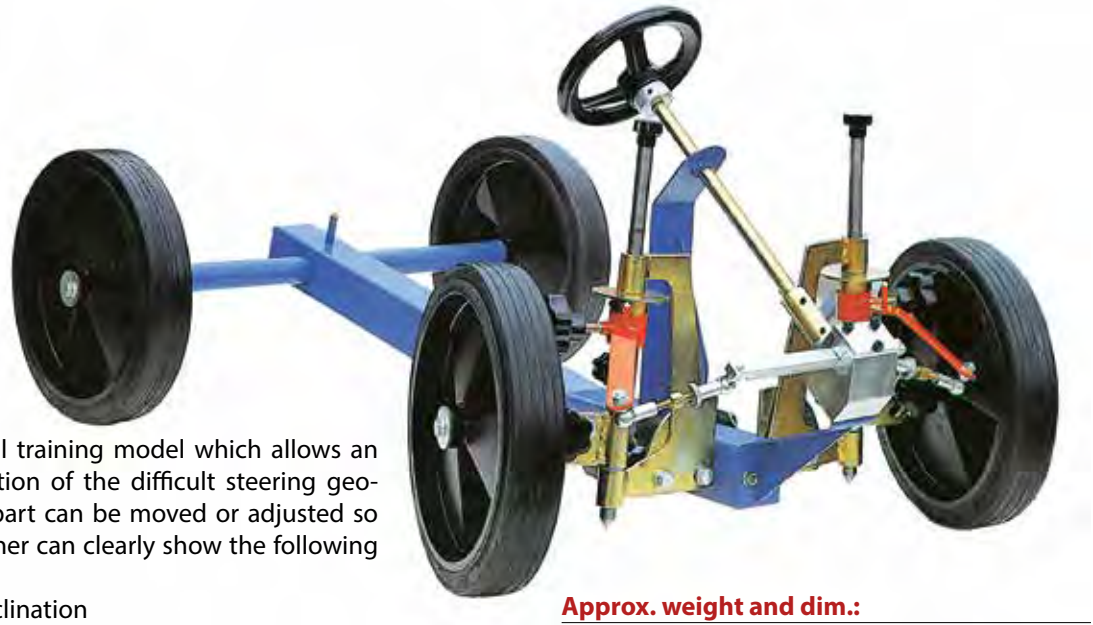
Approx. weight and dim.:

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



VB 11205

VB 11205M TRAINING MODEL SHOWING THE STEERING GEOMETRY (on ground) - manual



It is a rational training model which allows an easy explanation of the difficult steering geometry. Each part can be moved or adjusted so that the teacher can clearly show the following parts:

- Wheel inclination
- Rolling radius
- Caster
- King pin inclination
- Toe-in and toe-out

Approx. weight and dim.:

Cm:	*80x70x45h*
Net Weight:	*kg 15*
Gross Weight:	*kg 25*

In particular the teacher can clearly show the effects of the steering trapezium.
This model can be arranged on the ground to simulate driving conditions.
It is provided with active suspensions.
The wheels can be adjusted separately to emphasize all the faults which can occur in a car having fore carriage functional defects.
On request we can supply a handbook with practical and theoretical instructions.

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*

Indicative picture for reference only

VB 10778

VB 11201S HOMOCYNETIC JOINT (on base) - static

Approx. weight and dim.:

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

VB 11201

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 11160

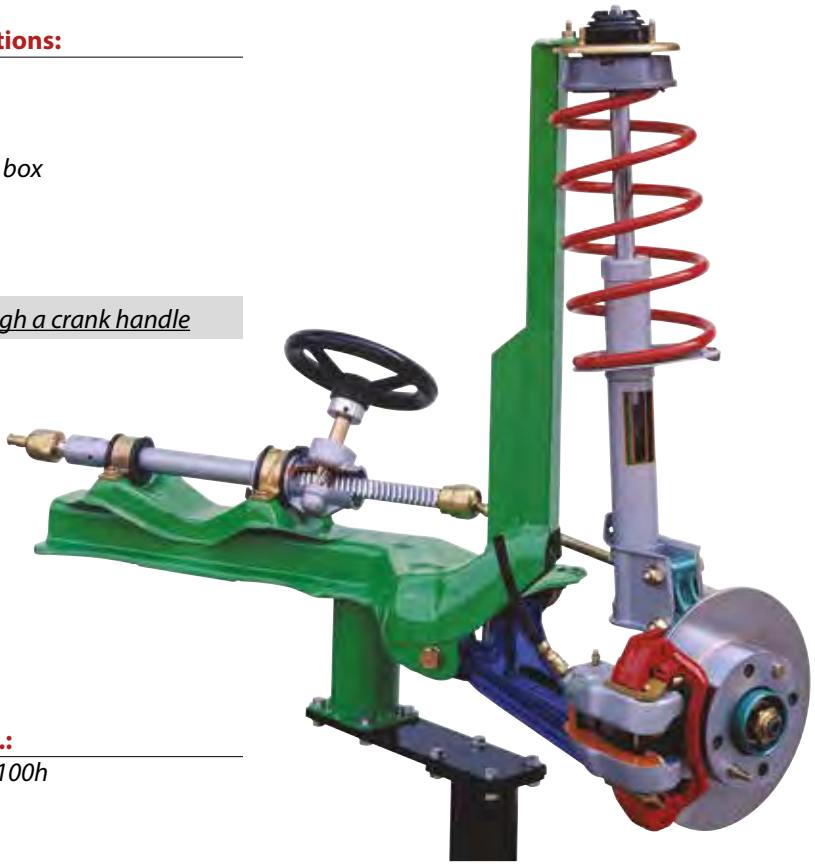
VB 11210

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*

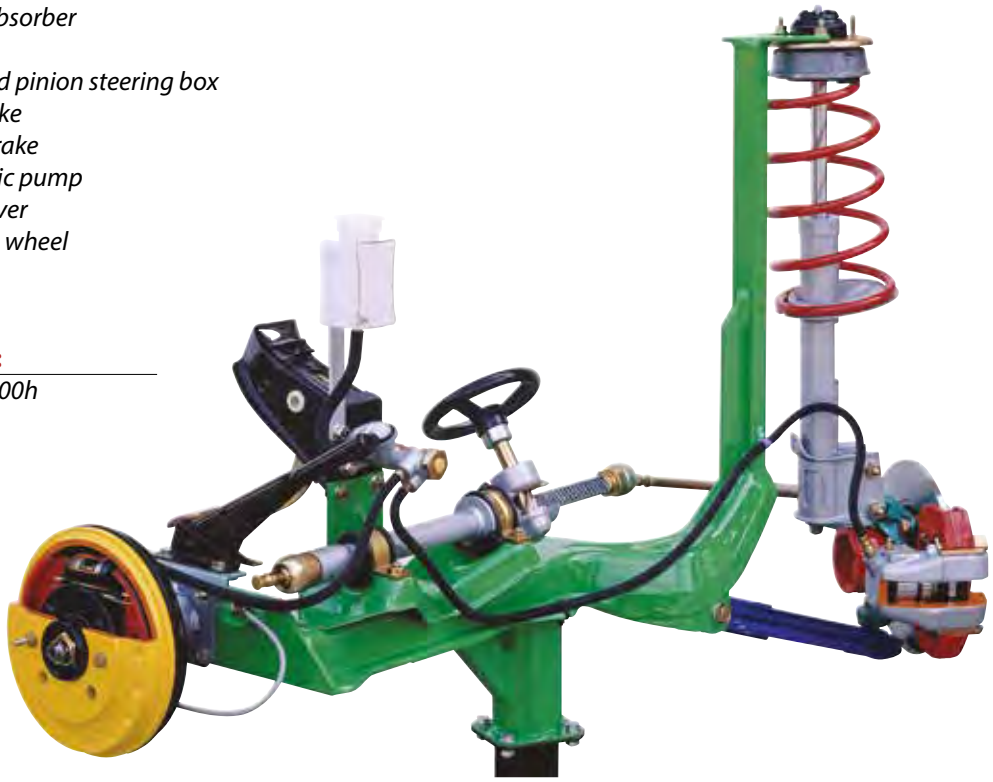
VB 11220

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

VB 11202

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

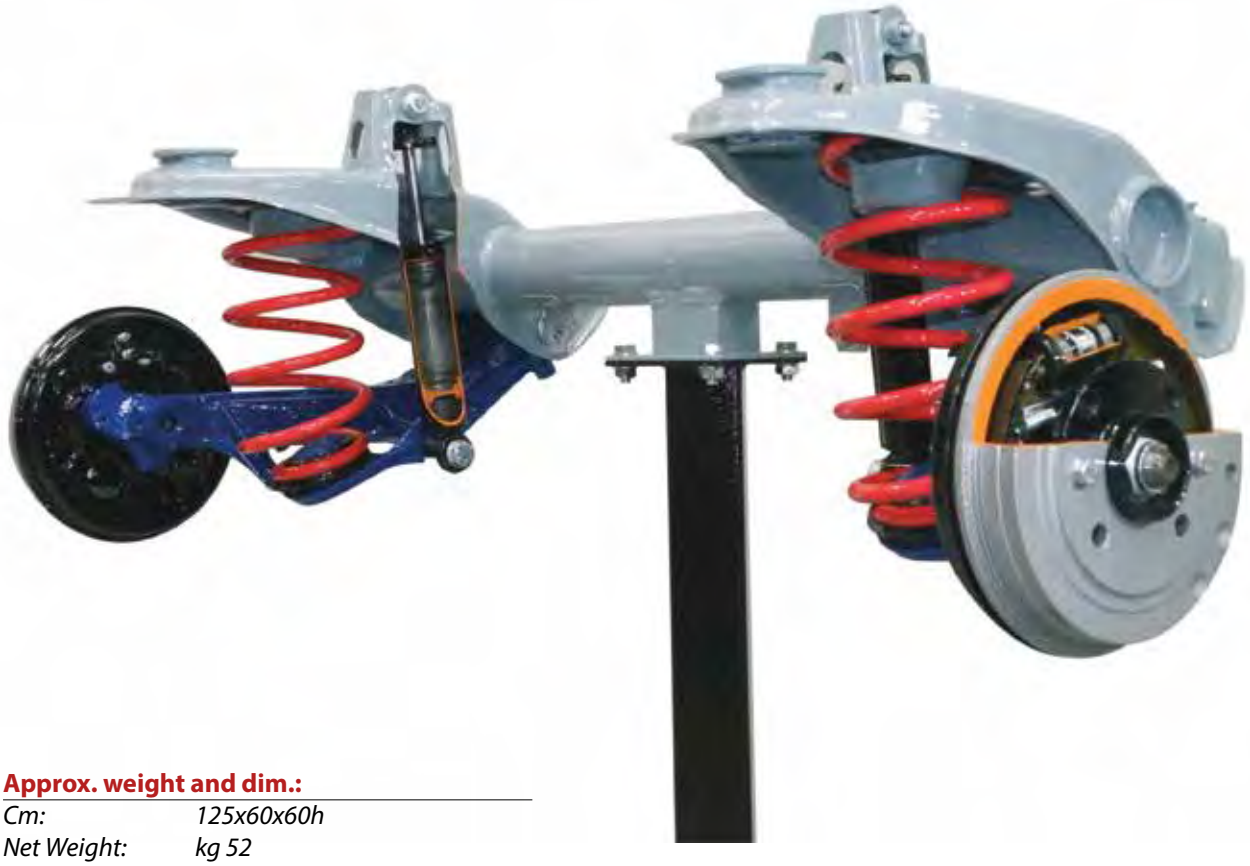
Approx. weight and dim.:

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

Indicative picture for reference only

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

VB 11204



Approx. weight and dim.:

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

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

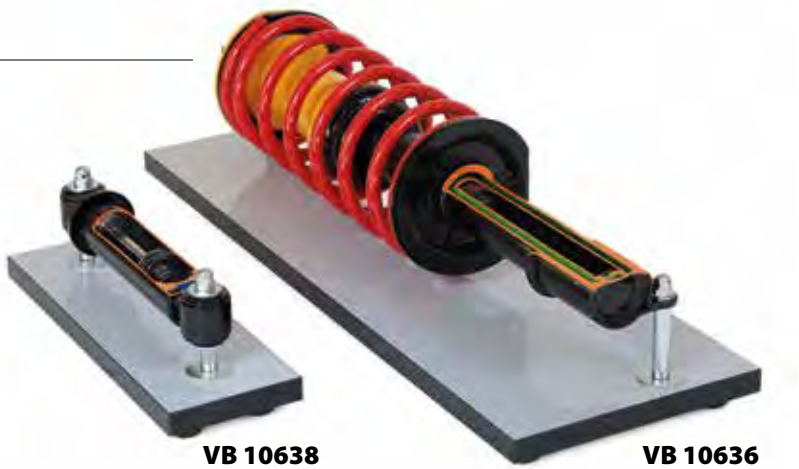
Approx. weight and dim.:

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.

Indicative picture for reference only

Approx. weight and dim.:

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

VB 10980M GEARBOX 5 SPEEDS + REVERSE (on panel) - manual

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

With possibility of selecting any speed.

Operated manually through a hand wheel.

VB 10980M

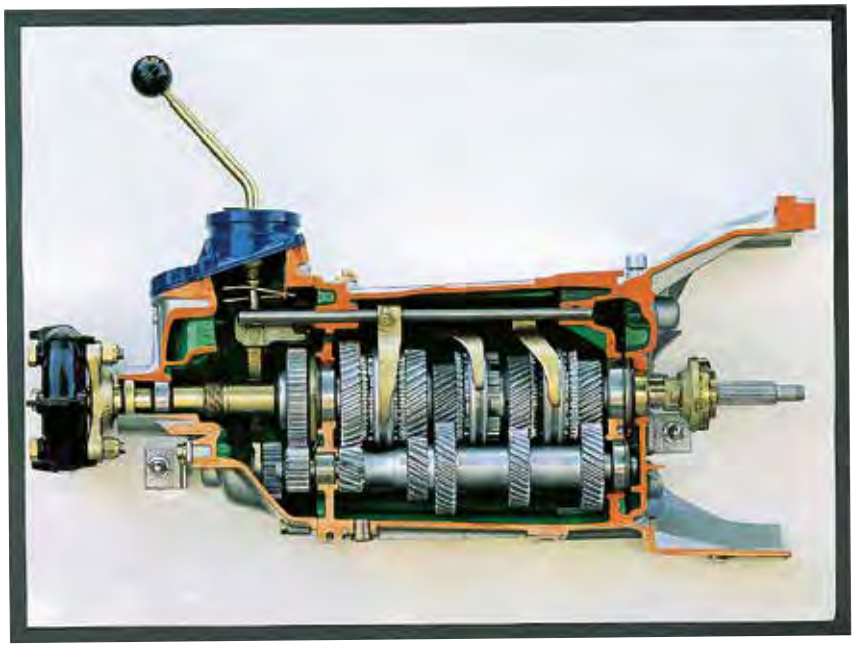
Approx. weight and dim.:

Cm:	*85x65x30h*
Net Weight:	*kg 40*
Gross Weight:	*kg 60*

VB 10990M

Approx. weight and dim.:

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



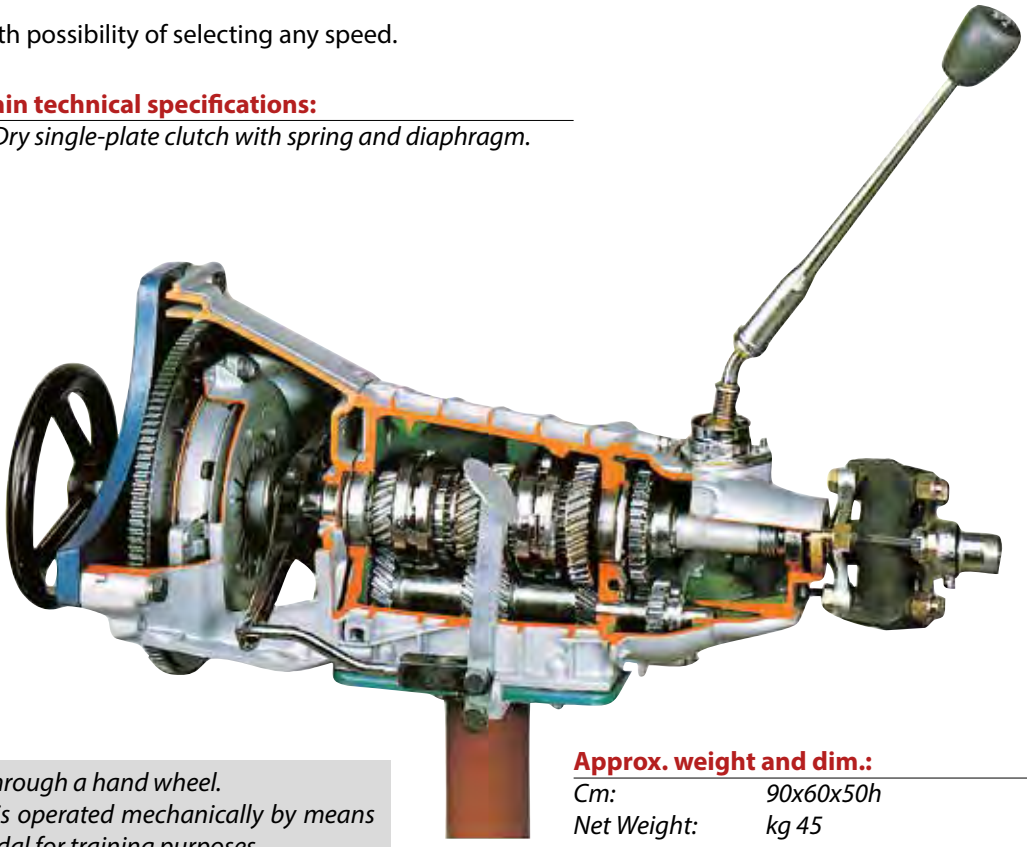
VB 11020

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.

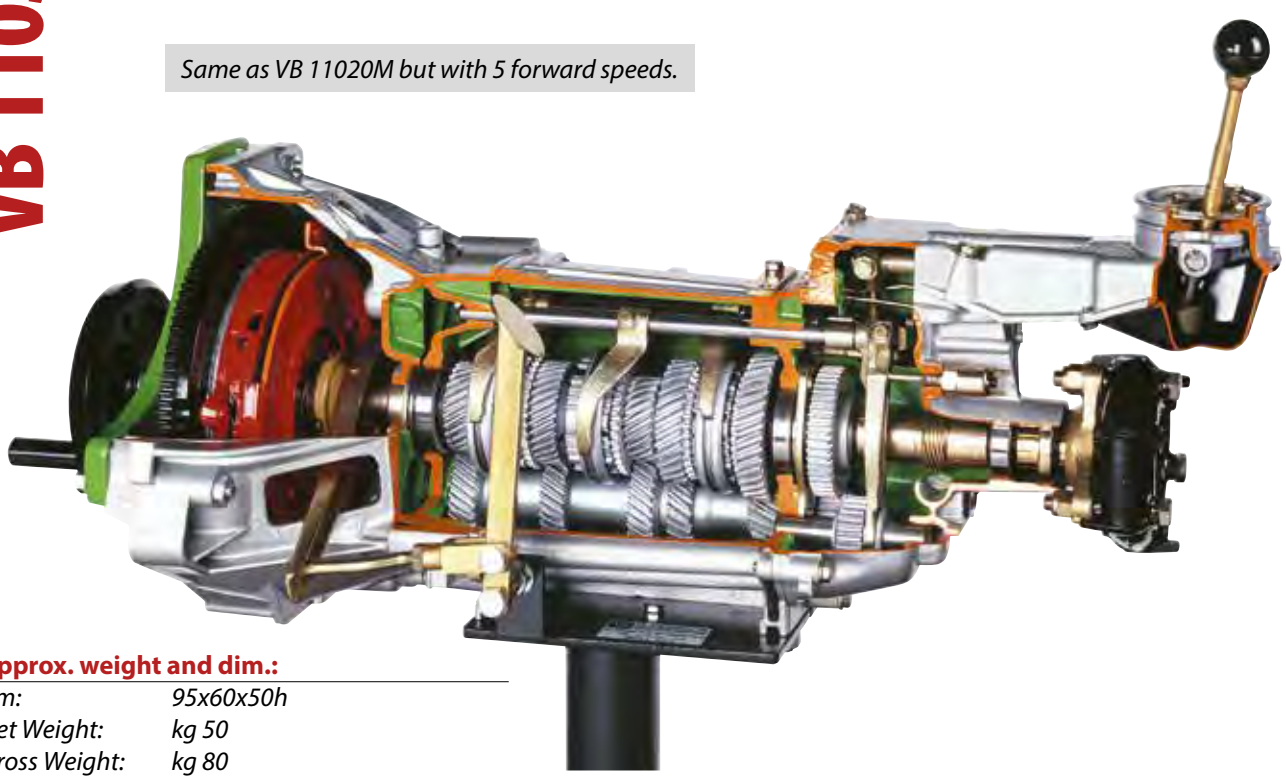
Approx. weight and dim.:

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

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.

Indicative picture for reference only

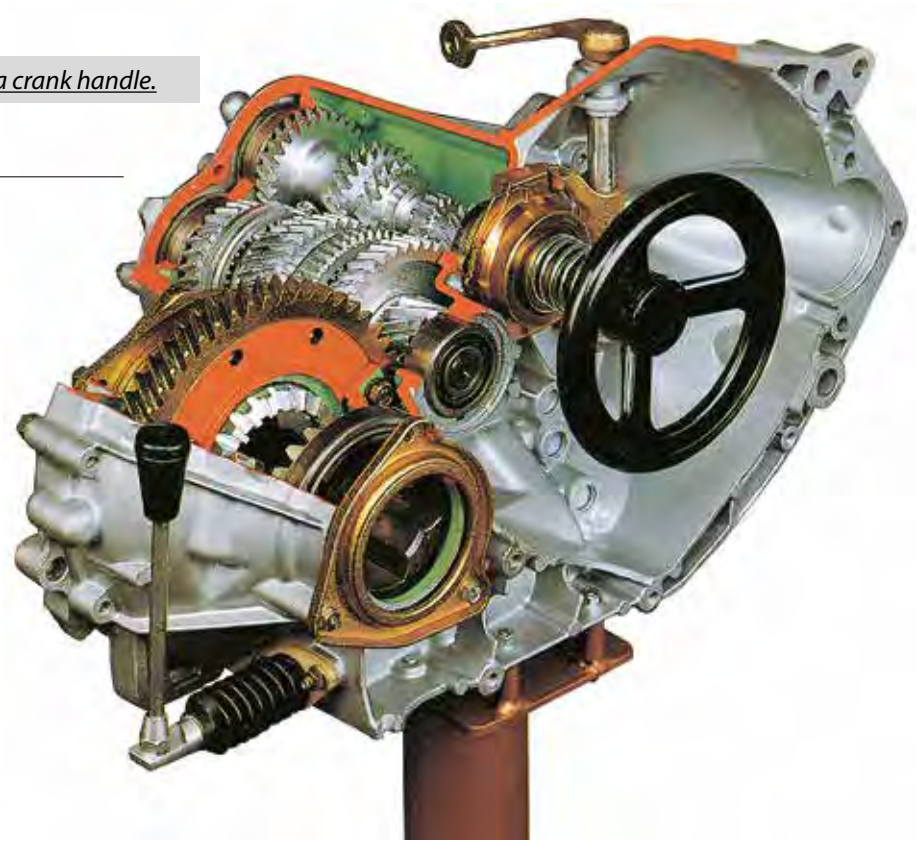
VB 11005M GEARBOX WITH DIFFERENTIAL 5 FORWARD SPEED + REVERSE (on stand with wheels) - manual

VB 11005

Operated manually through a crank handle.

Approx. weight and dim.:

Cm:	*60x60x60h*
Net Weight:	*kg 50*
Gross Weight:	*kg 70*



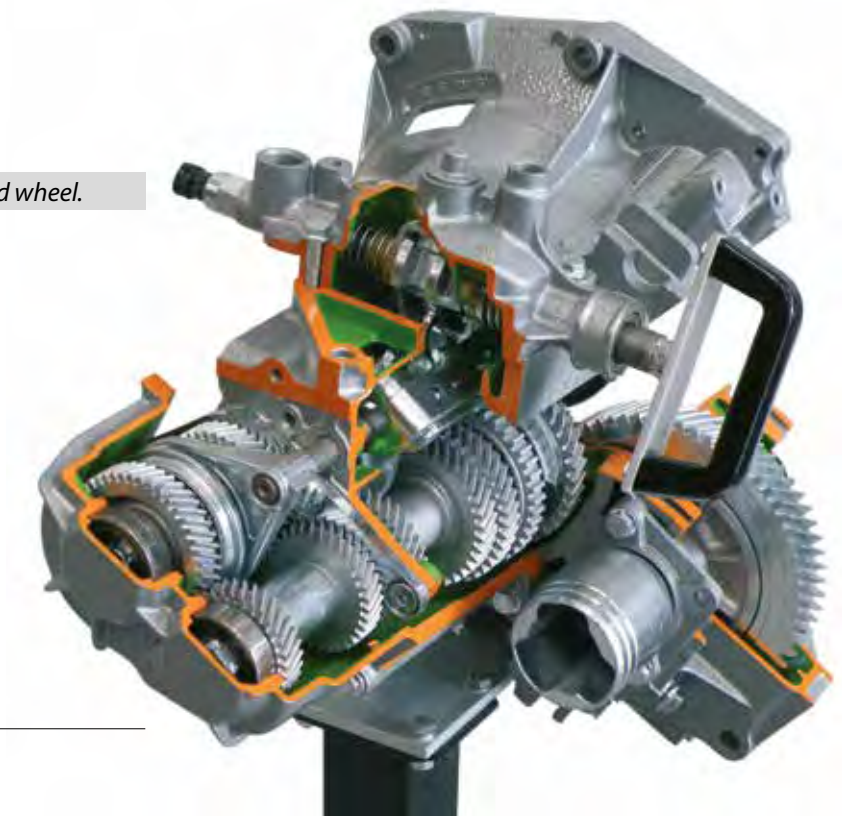
Indicative picture for reference only

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

VB 11006

Operated manually through a hand wheel.



Approx. weight and dim.:

Cm:	*70x70x80h*
Net Weight:	*kg 40*
Gross Weight:	*kg 55*

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

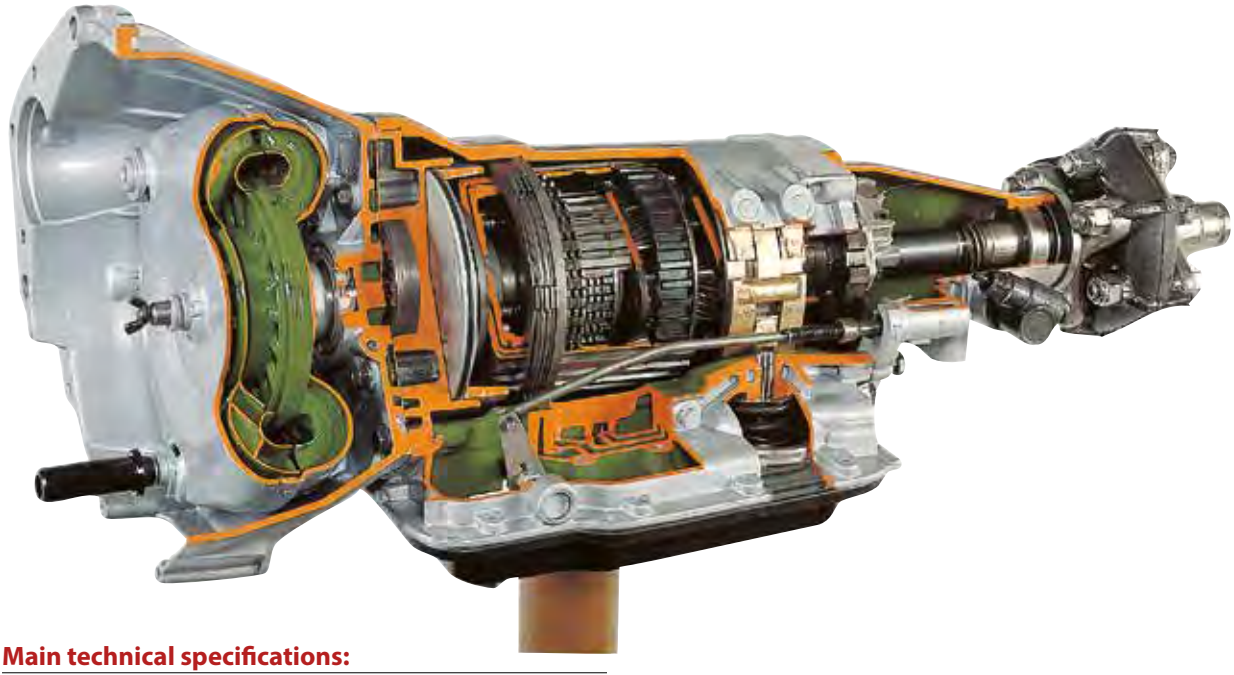
Approx. weight and dim.:

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

Indicative picture for reference only

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

VB 11040



Main technical specifications:

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

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

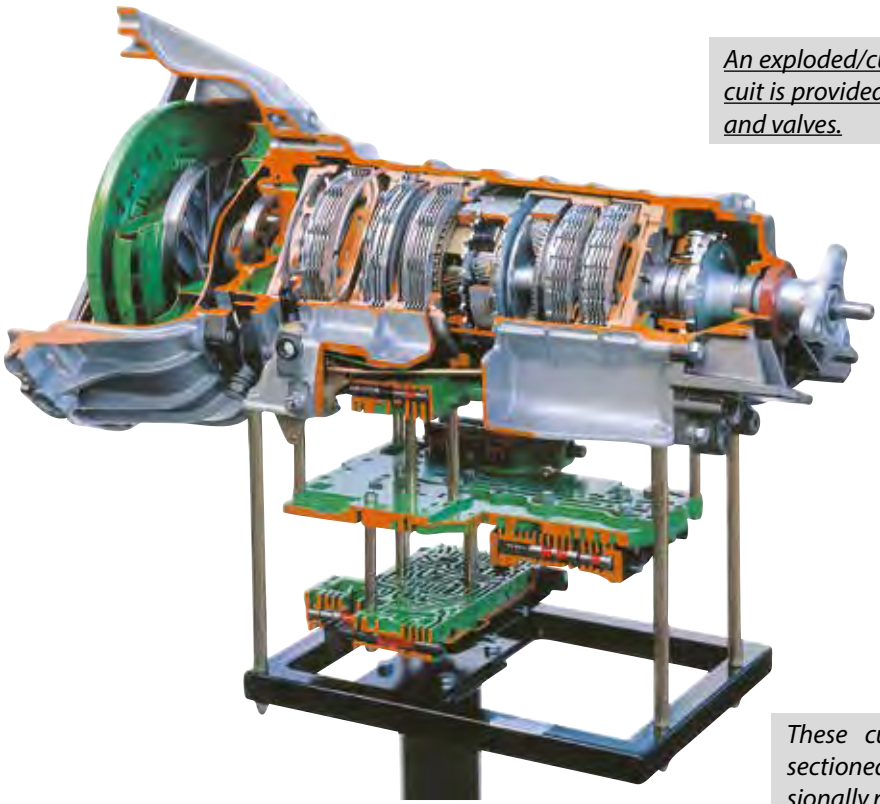
Approx. weight and dim.:

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

Indicative picture for reference only

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

VB 11060



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

Approx. weight and dim.:

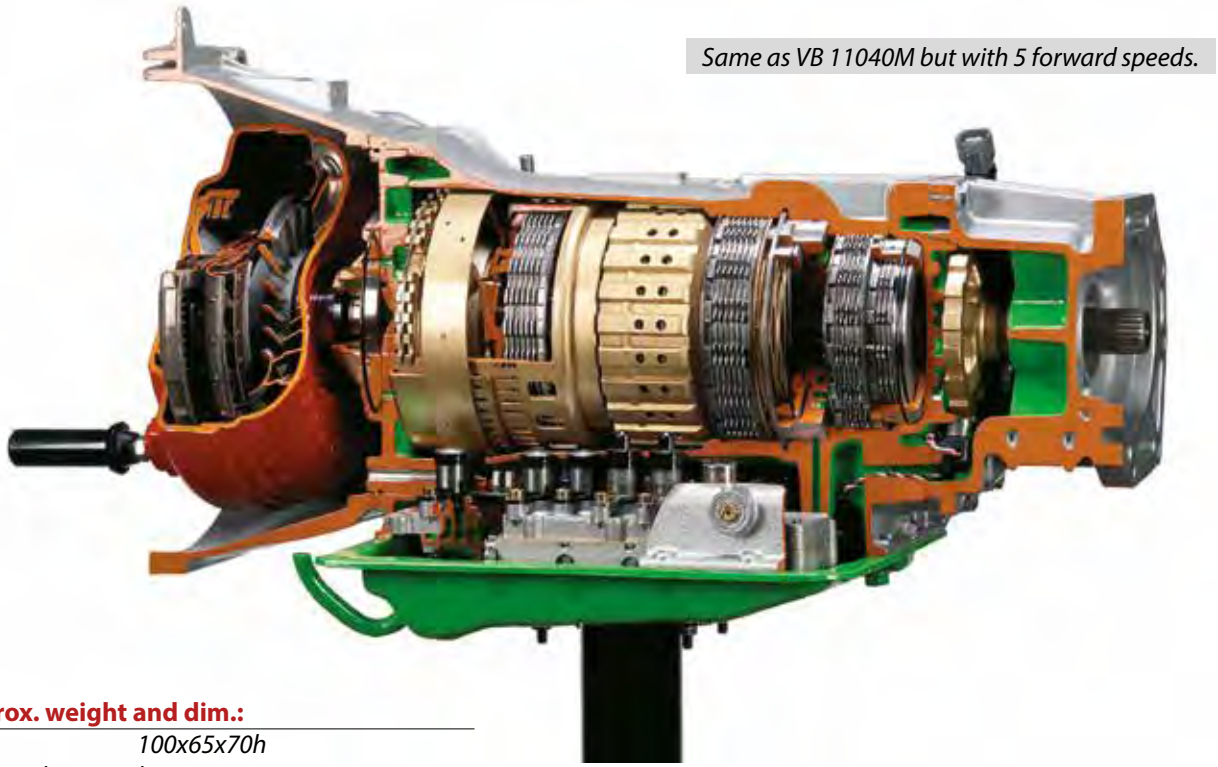
Cm:	*90x60x100h*
Net Weight:	*kg 60*
Gross Weight:	*kg 85*

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 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*

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

Indicative picture for reference only

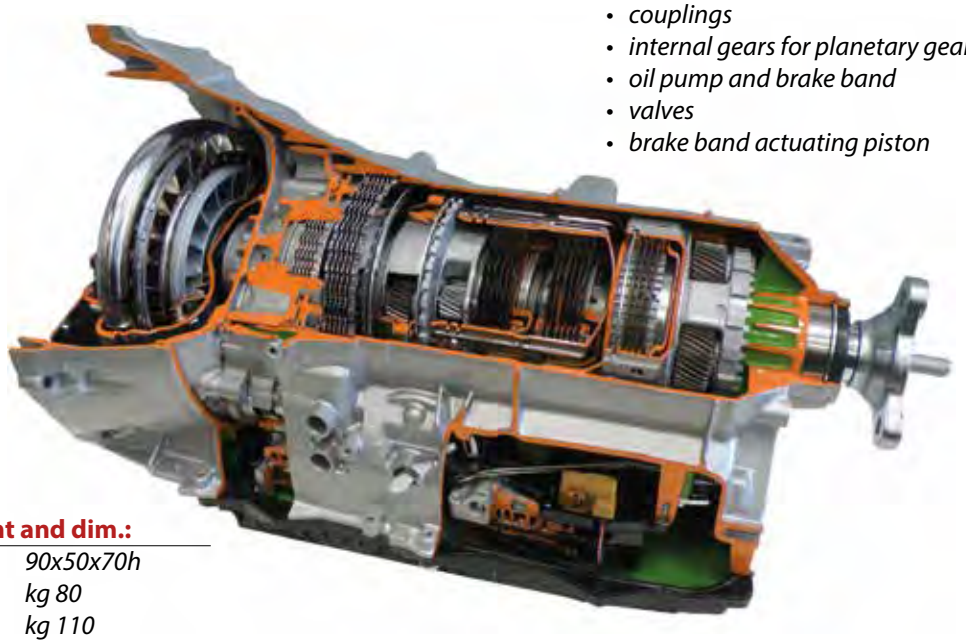
VB 11063

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

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

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

VB 11061

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*

Indicative picture for reference only

VB 11062M AUTOMATIC TRANSMISSION FRONT DRIVE 4 SPEEDS + REVERSE (on stand with wheels) – manual

VB 11062

Main technical specifications:

- *Hydraulic torque converter*
- *Front differential*
- *Epicyclical gear train*
- *Multi disk clutches*

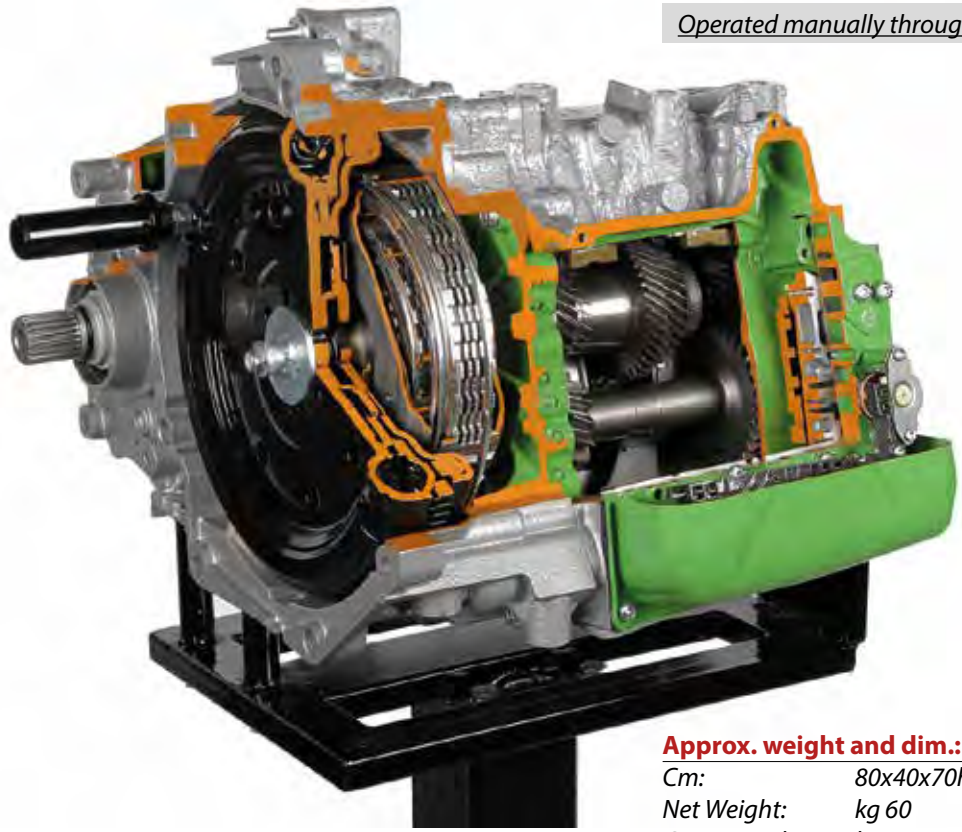
Approx. weight and dim.:

Cm:	*50x70x70h*
Net weight:	*kg 75*
Gross Weight:	*kg 140*

VB 11064

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*

VB 11066

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.

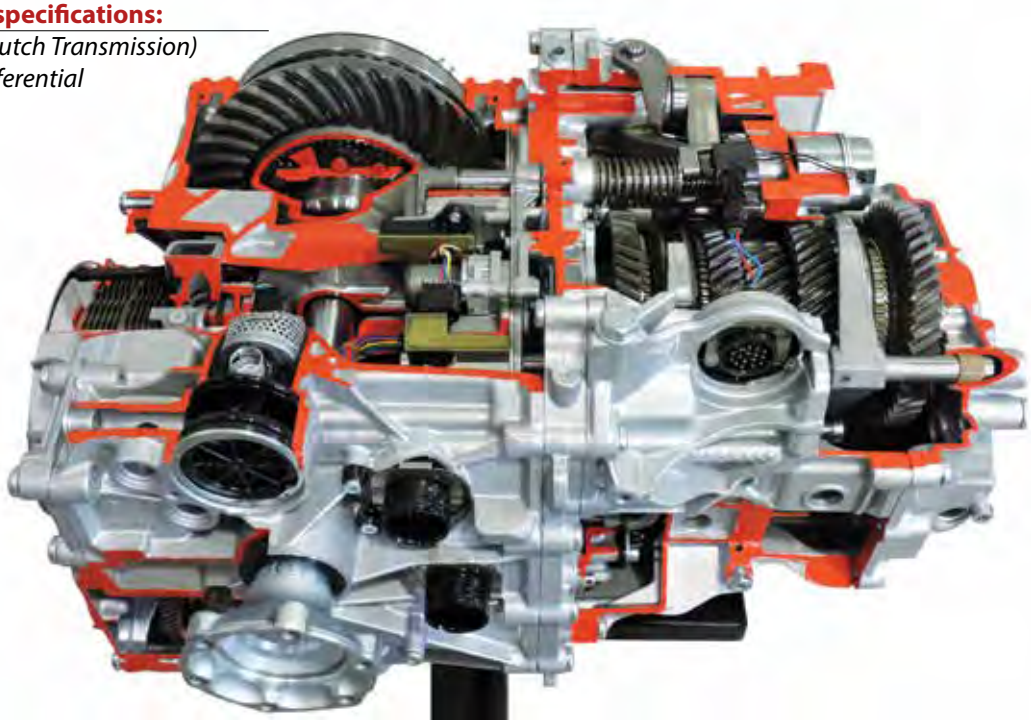
Indicative picture for reference only

VB 11067M GETRAG DCT 7 SPEEDS TRANSMISSION USED ON FERRARI/MERCEDES VEHICLES (on stand with wheels) – manual

VB 11061

Main technical specifications:

- *DCT (Double Clutch Transmission)*
- *Self-locking differential*
- *Gears*
- *Mechatronics*
- *Oil filter*
- *Oil pump*
- *Shift forks*



Indicative picture for reference only

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

VB 11068

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 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

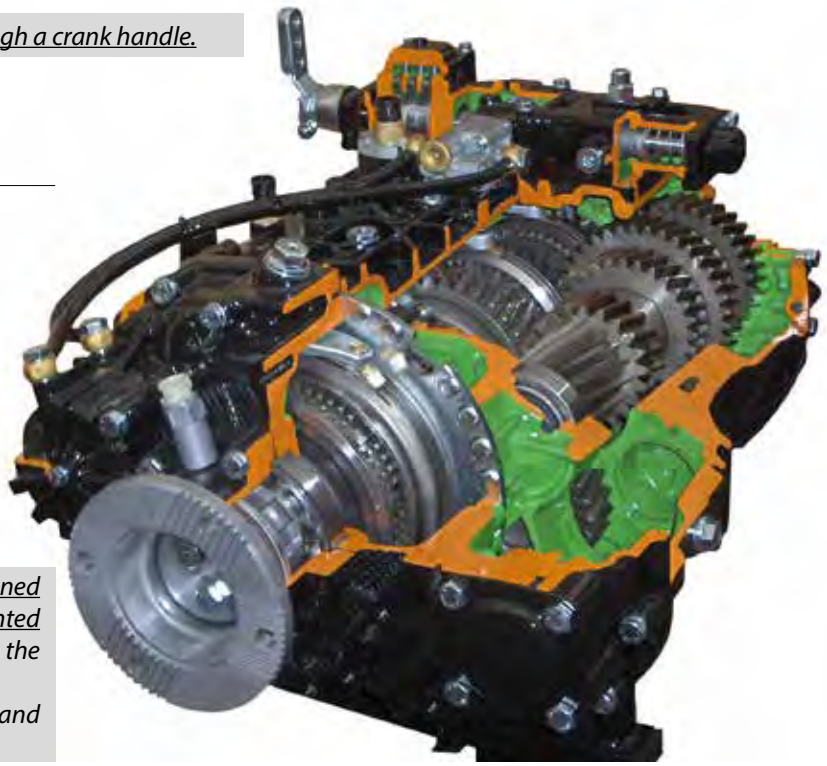
VB 11069M ZF 16S ECOSPLIT GEARBOX FOR HEAVY TRUCKS 16F + 2R (on stand with wheels) - manual

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

VB 11070

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.

Indicative picture for reference only

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.:

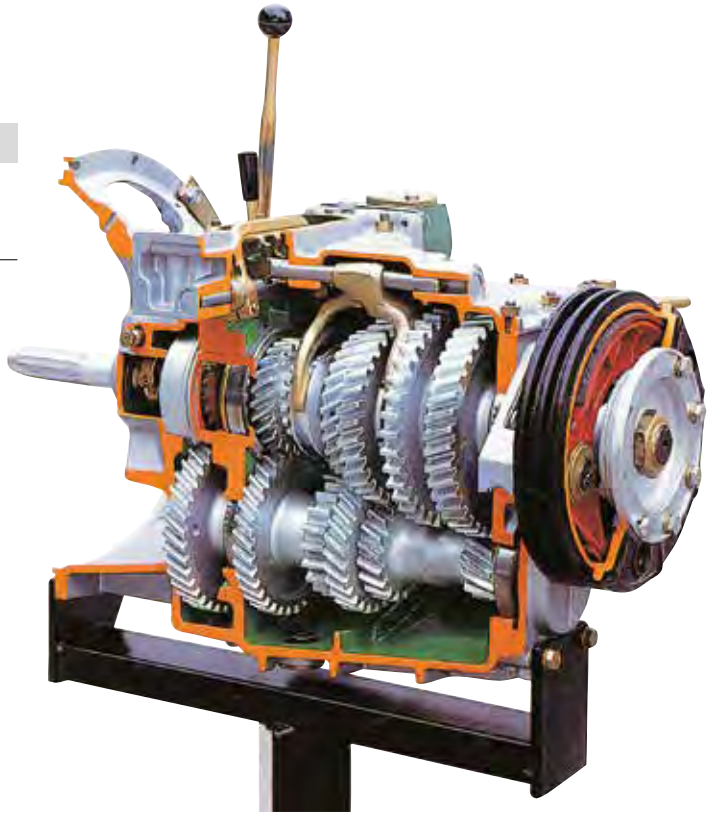
Cm:	*110x100x130h*
Net Weight:	*kg 300*
Gross Weight:	*kg 400*

VB 11080M GEARBOX WITH REDUCTION GEAR (on stand with wheels) - manual

VB 11080

Gearbox for heavy vehicle.

Operated manually through a crank handle.



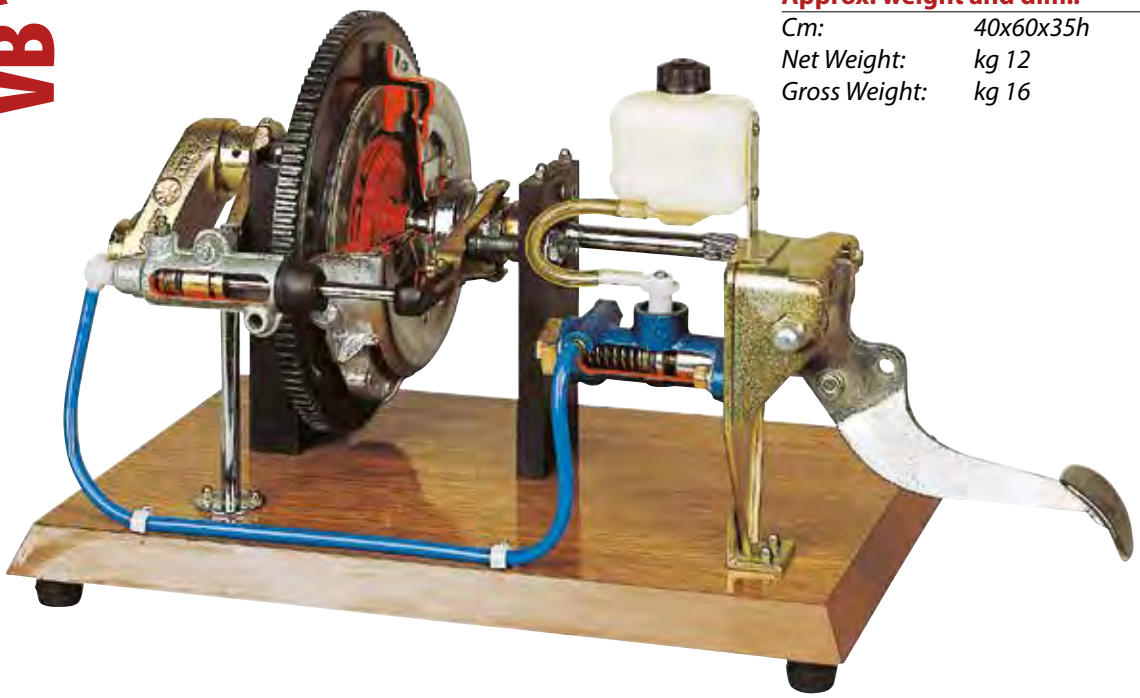
Approx. weight and dim.:

Cm:	*80x80x140h*
Net Weight:	*kg 150*
Gross Weight:	*kg 210*

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.



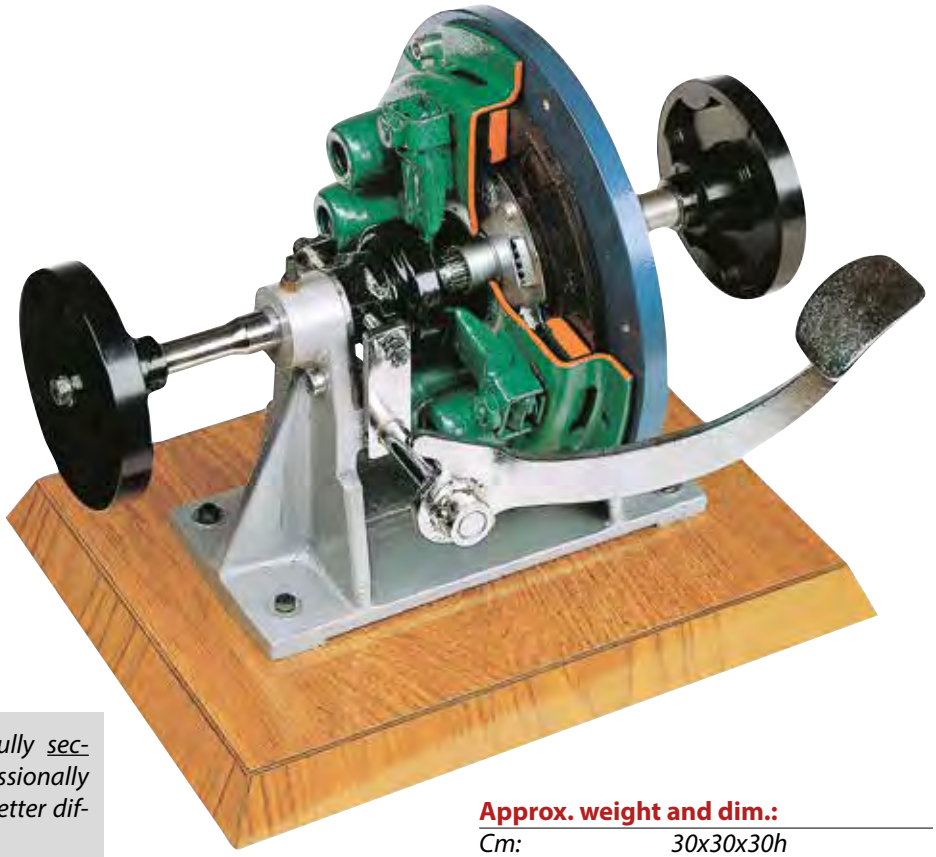
Approx. weight and dim.:

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.



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

Approx. weight and dim.:

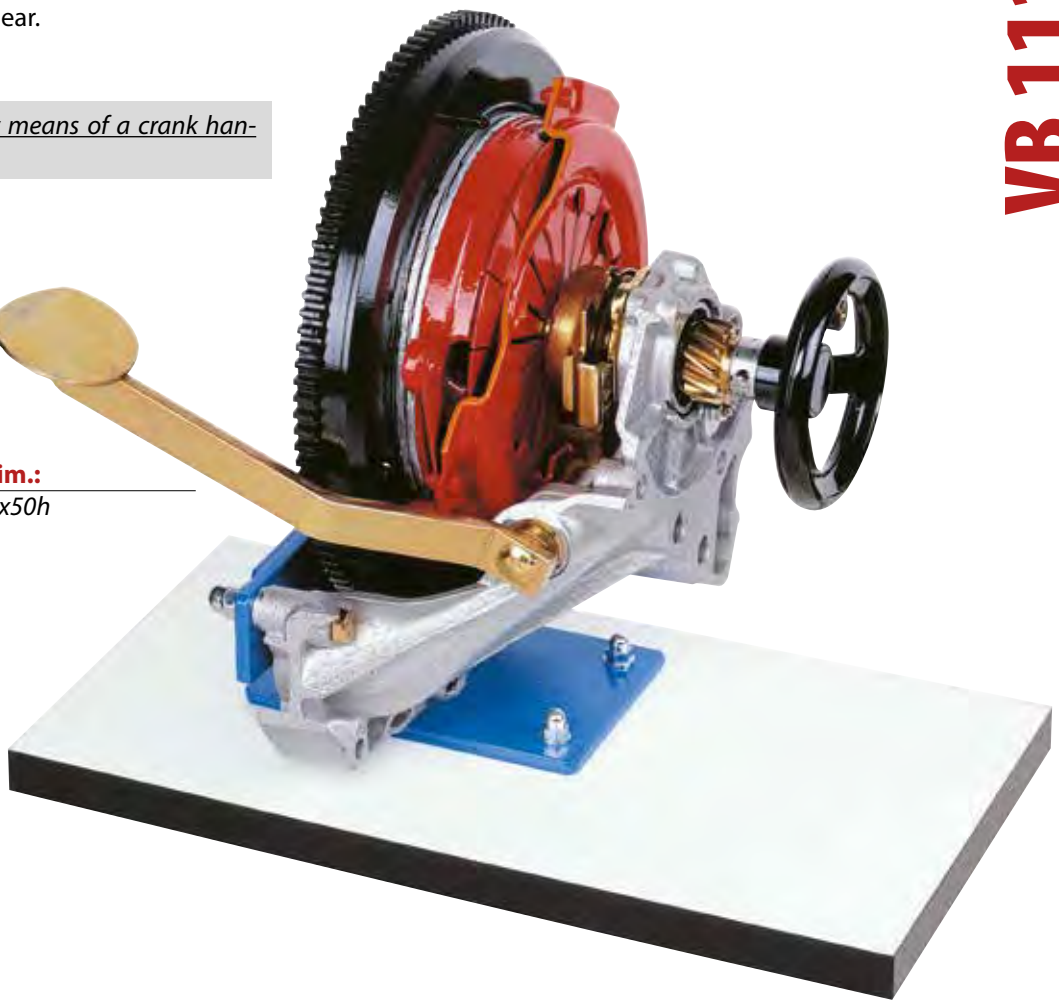
Cm:	*30x30x30h*
Net Weight:	*kg 6*
Gross Weight:	*kg 10*

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*

Indicative picture for reference only

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 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*

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*

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

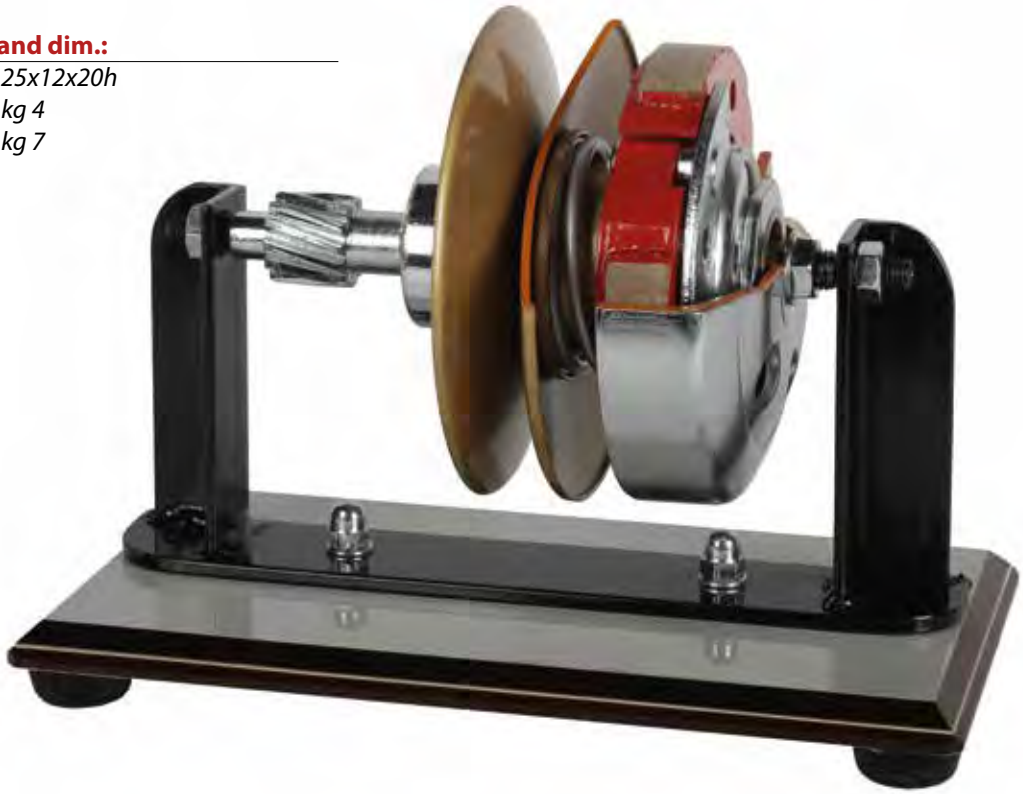
VB 11141M CENTRIFUGAL CLUTCH (on base) - manual

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*



Indicative picture for reference only

VB 11142S MULTI DISK CLUTCH (on base) – static

Approx. weight and dim.:

Cm:	*20x20x25h*
Net Weight:	*kg 4*
Gross Weight:	*kg 6*

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 11295

VB 11295M - TRUCK DIFFERENTIAL WITH DOUBLE REDUCER UNIT (on stand with wheels) -manual

Reducer/differential for heavy trucks. Composed by:
- I Gear reducer with bevel gear
- II Differential reducer with cylindrical gear

On stand with wheels – Operated manually through a crank handle.

Approx. weight and dim.:

Cm:	*90x70x70h*
Net Weight:	*kg 185*
Gross Weight:	*kg 230*

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 11290

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*

VB 11291

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.:

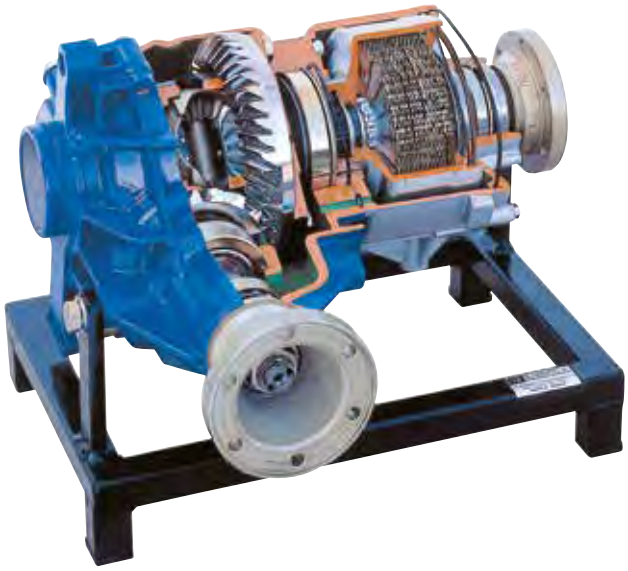
Cm:	*40x60x40h*
Net Weight:	*kg 20*
Gross Weight:	*kg 30*

Indicative picture for reference only

VB 11250M VISCOUS COUPLING DIFFERENTIAL (on table stand) - manual

VB 11250

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

VB 11260

Accurate section of an assembly including hypoid bevel gear pair with self-locking differential.

Indicative picture for reference only

Approx. weight and dim.:

Cm:	*40x30x40h*
Net Weight:	*kg 25*
Gross Weight:	*kg 30*

VB 11270M TORSEN DIFFERENTIAL (on table stand) - manual

VB 11270

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.:

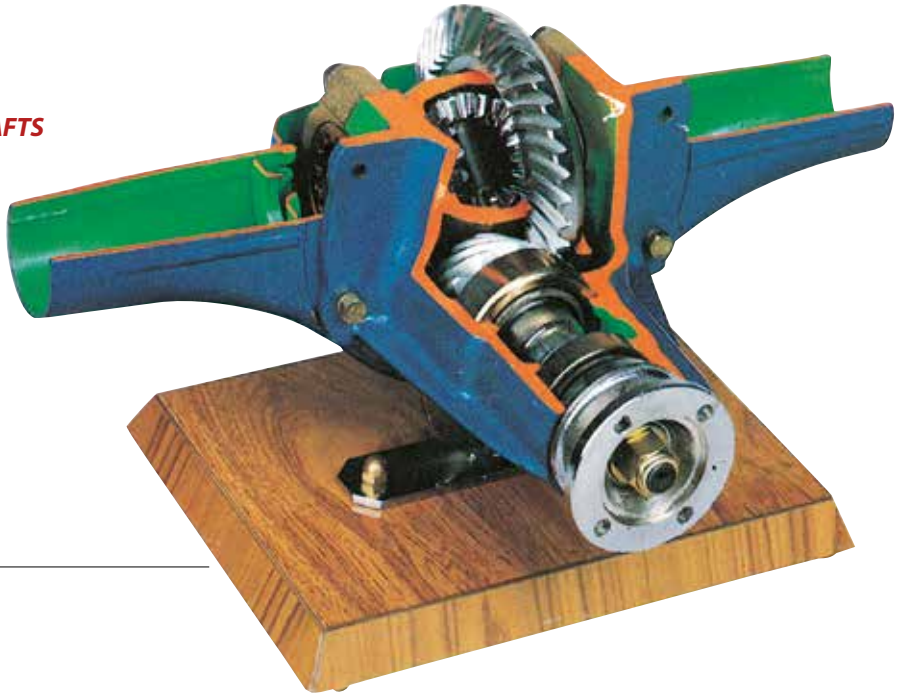
Cm:	*40x40x40h*
Net Weight:	*kg 20*
Gross Weight:	*kg 25*

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 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

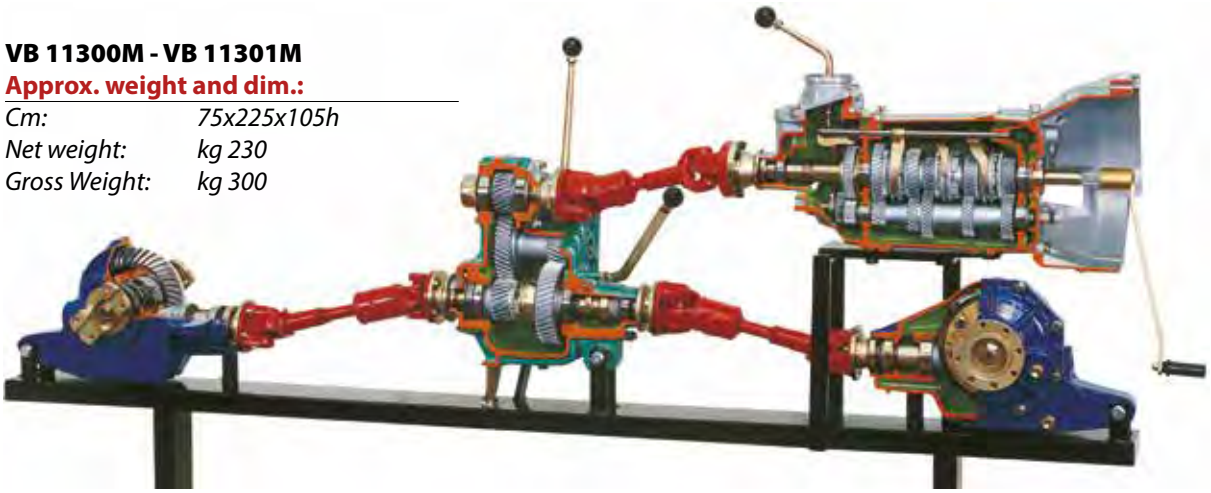
VB 11301M 4X4 VEHICLE TRANSMISSION ASSEMBLY WITH 3 SPEED AUTOMATIC GEARBOX (on stand with wheels) - manual

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 - VB 11301M

Approx. weight and dim.:

Cm:	*75x225x105h*
Net weight:	*kg 230*
Gross Weight:	*kg 300*



Indicative picture for reference only

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 11301M

Main technical specifications:

- *Gearbox: automatic transmission 3 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 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.:

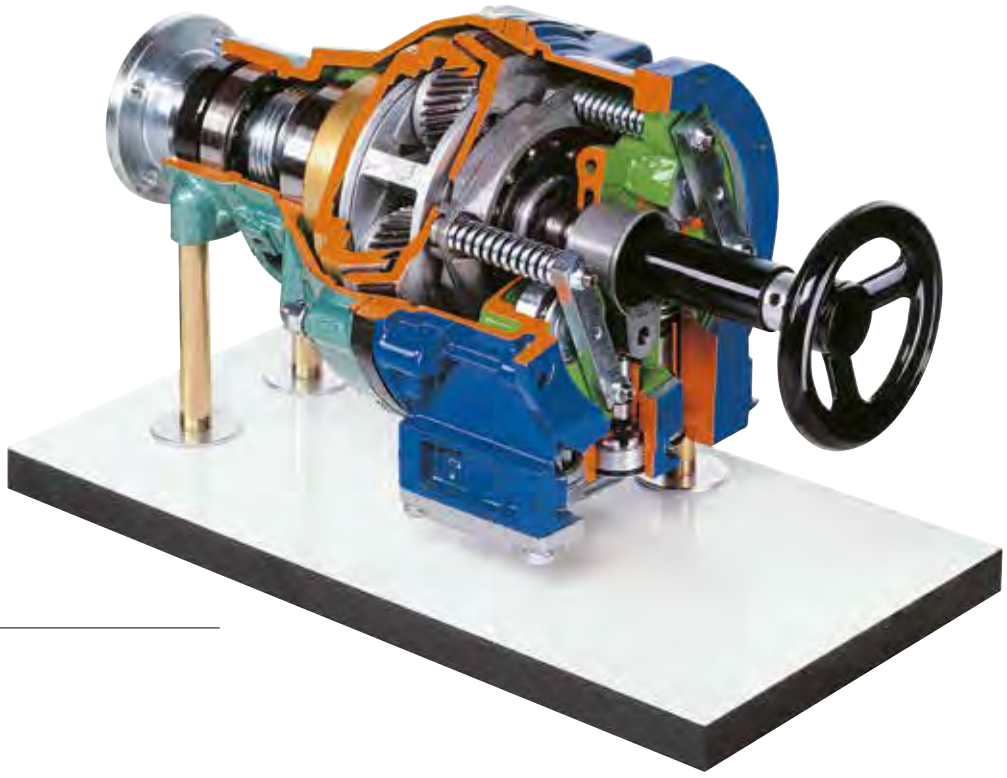
Cm:	*25x25x30h*
Net Weight:	*kg 5*
Gross Weight:	*kg 8*

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.

Indicative picture for reference only

VB 12275E HYDRAULIC DOUBLE CIRCUIT BRAKE SYSTEM SIMULATOR - electrical

The simulator is composed by authentic elements from the braking system of a medium powered vehicle.
The functioning is guaranteed by means of a three-phase electric motor 380V, which transmits the motion to the front and to the rear wheels in the two directions by means of an hydraulic engine.
The servo brake is connected to a vacuum pump in order to simulate its motion. A range of manometers and taps allow to measure and to change the pressure in the two systems (front and rear).
The brake pedal is connected to a lever in order to measure the foot effort during the braking phase.

Indicative picture for reference only

Main technical specifications:

- *2 Disc brakes connected to a constant-speed joint*
- *2 Drum brakes connected to axle shafts*
- *Double circuit hydraulic brake pump with tank*
- *Depression servo brake with pedal*
- *Hand brake lever connected to rear drums*
- *Hydraulic diverter to reverse the spin direction*
- *Hydraulic ECU connected to an hydraulic engine in order to transmit the motion to the wheels*
- *A range of manometers to measure the pressures*
- *A range of taps to simulate circuit interruptions*
- *Vacuum pump for servo brake*

Purposes:

This item has been created in order to make the students:

- *practice the maintenance of the braking system*
- *test the efficiency of the braking system*
- *simulate the front and rear circuit failures*
- *simulate the presence of water in the braking system*
- *recognize whether there is the servo brake or not*
- *observe the functioning of the service brake*
- *test the efficiency of the braking system when the brake temperature changes*

Approx. weight and dim.:

Cm:	*120x160x154h*
Net Weight:	*kg 270*
Gross Weight:	*kg 400*

VB 12040

VB 12040S SELF-VENTILATING BRAKE APPARATUSWITH 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*

VB 12041

VB 12041S SELF-VENTILATING BRAKE APPARATUS WITH 6 SMALL PISTONS (on base) – static

Brake apparatus which can be installed on high performances vehicles such as Ferrari, Lamborghini, Porsche, etc.

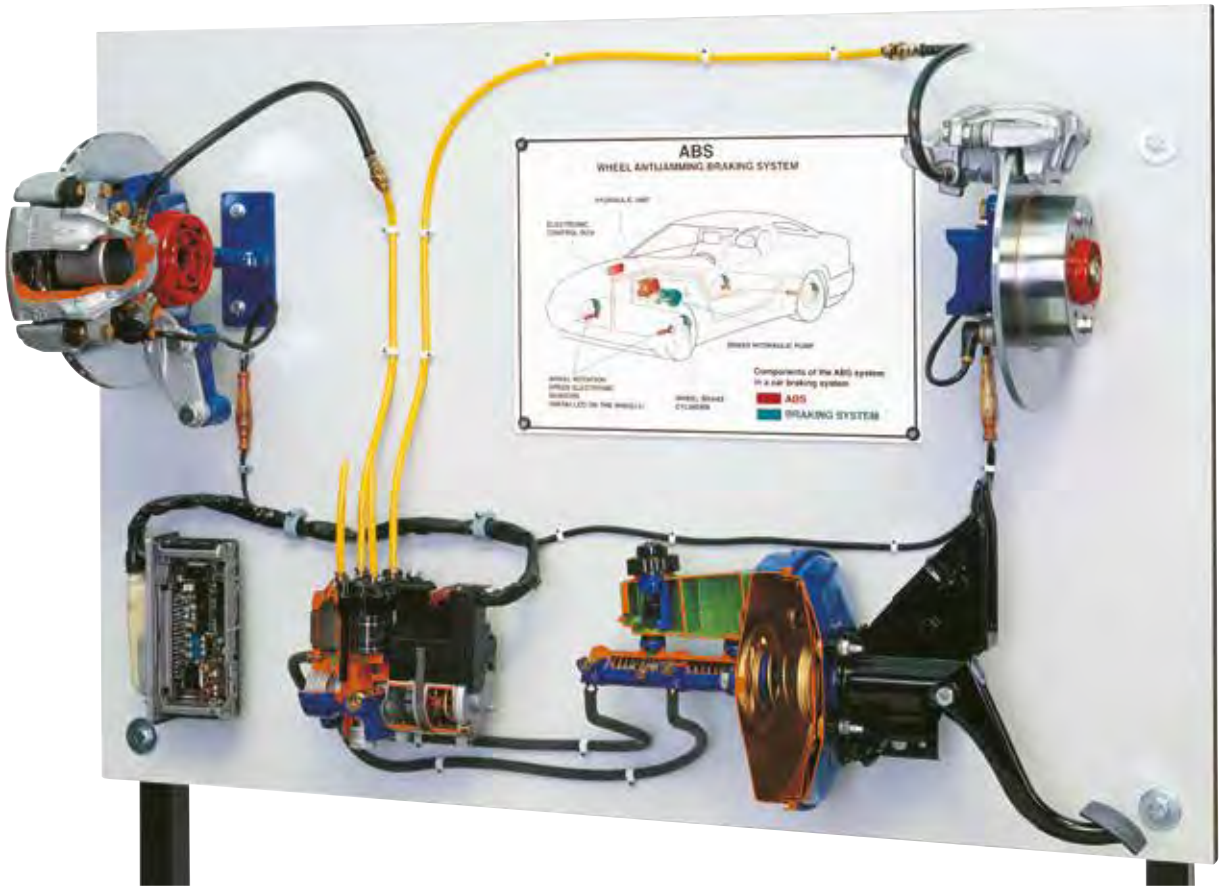
The section highlights:
- self-ventilating brake disk
- 6 pistons brake caliper with hydraulic connection
- brake pads

Approx. weight and dim.:

Cm:	*50x50x50h*
Net Weight:	*kg 22*
Gross Weight:	*kg 30*

Indicative picture for reference only

VB 12230 ABS BRAKE BOARD (on stand with wheels) - static



Indicative picture for reference only

Educational model of a modern ABS braking system for motorcars. All the brake parts are provided as detailed cutaway models, connected together to enable easy understanding of the brake assembly operation.
The assembly consist of:

- Self-ventilating disc brake with phonic wheel and sensor
- Rear disc brake with phonic wheel and sensor
- Servo brake with foot control panel and brake pump
- Electronic control unit
- Oil tank

Approx. weight and dim.:

Cm:	*140x50x90h*
Net Weight:	*kg 60*
Gross Weight:	*kg 120*

VB 12251S ABS PUMP (on base) – static

VB 12252S ESP PUMP (on base) – static

VB 12251S

Approx. weight and dim.:

Cm:	*40x35x40h*
Net Weight:	*kg 8*
Gross Weight:	*kg 15*

VB 12252S

Approx. weight and dim.:

Cm:	*35x30x30h*
Net Weight:	*kg 6*
Gross Weight:	*kg 10*

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.

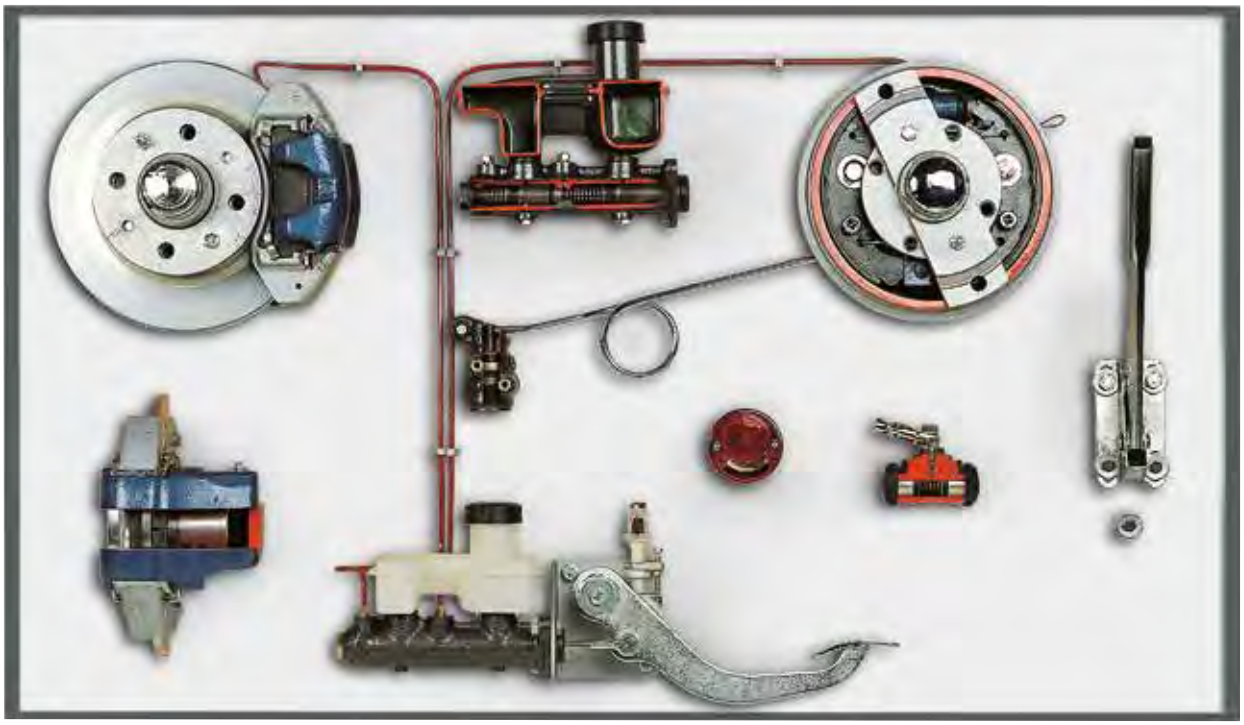
Approx. weight and dim.:

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.

VB 12050M DOUBLE CIRCUIT BRAKES (on panel) - manual

VB 12050



Indicative picture for reference only

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.

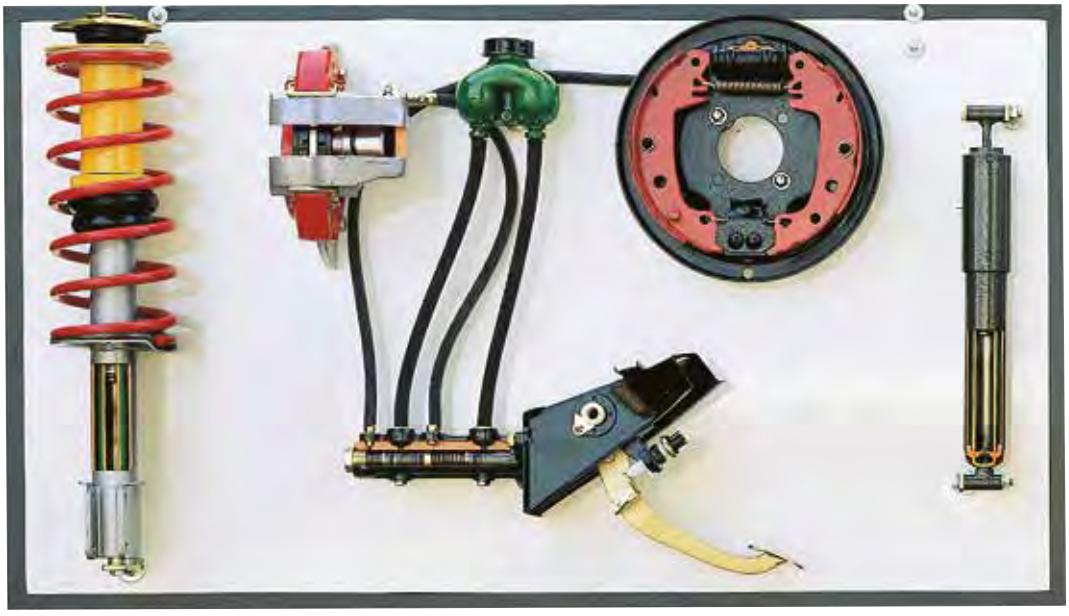
The same devices used in the circuit have been sectioned and added in the panel to clearly show their operation.

Approx. weight and dim.:

Cm:	*110x30x85h*
Net Weight:	*kg 35*
Gross Weight:	*kg 65*

VB 12060S BRAKE + SUSPENSION (on panel) - static

VB 12060



This wall panel consists of:

- Disc brake
- Drum brake
- Double brake pump
- Rear damper
- McPherson damper

Approx. weight and dim.:

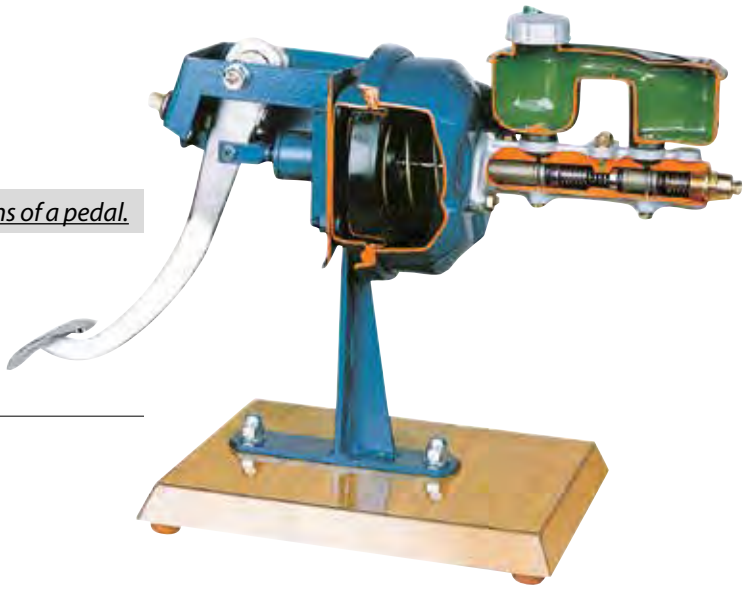
Cm:	*110x65x30h*
Net Weight:	*kg 30*
Gross Weight:	*kg 45*

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*

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*

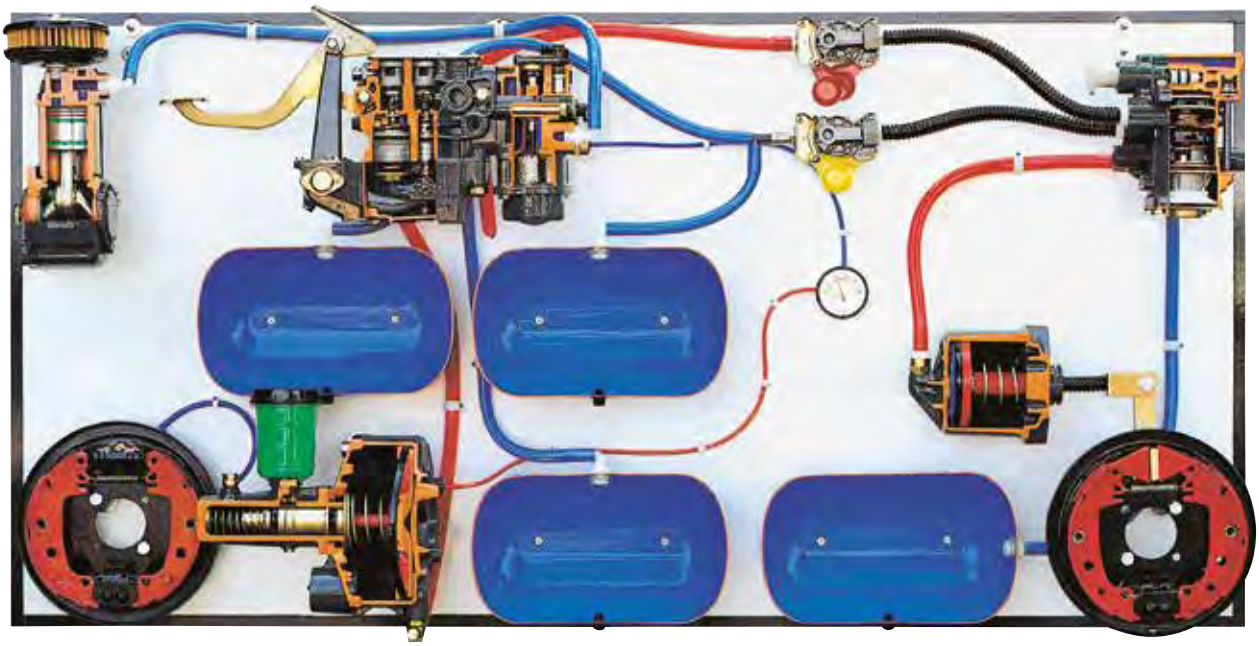
These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.
Many parts have been chromium, plated and galvanized for a longer life.

Indicative picture for reference only

VB 12065S HYDROPNEUMATIC BRAKING SYSTEM (on panel) - static

VB 12065

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.



Indicative picture for reference only

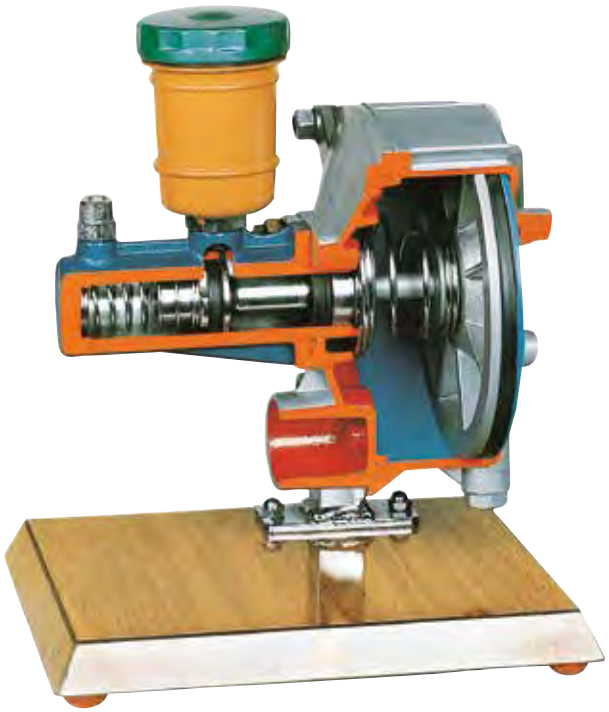
Approx. weight and dim.:

Cm:	*170x35x105h*
Net Weight:	*kg 60*
Gross Weight:	*kg 100*

VB 12070S PRESSURE SERVOBRAKE (on base) - static

VB 12070

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.

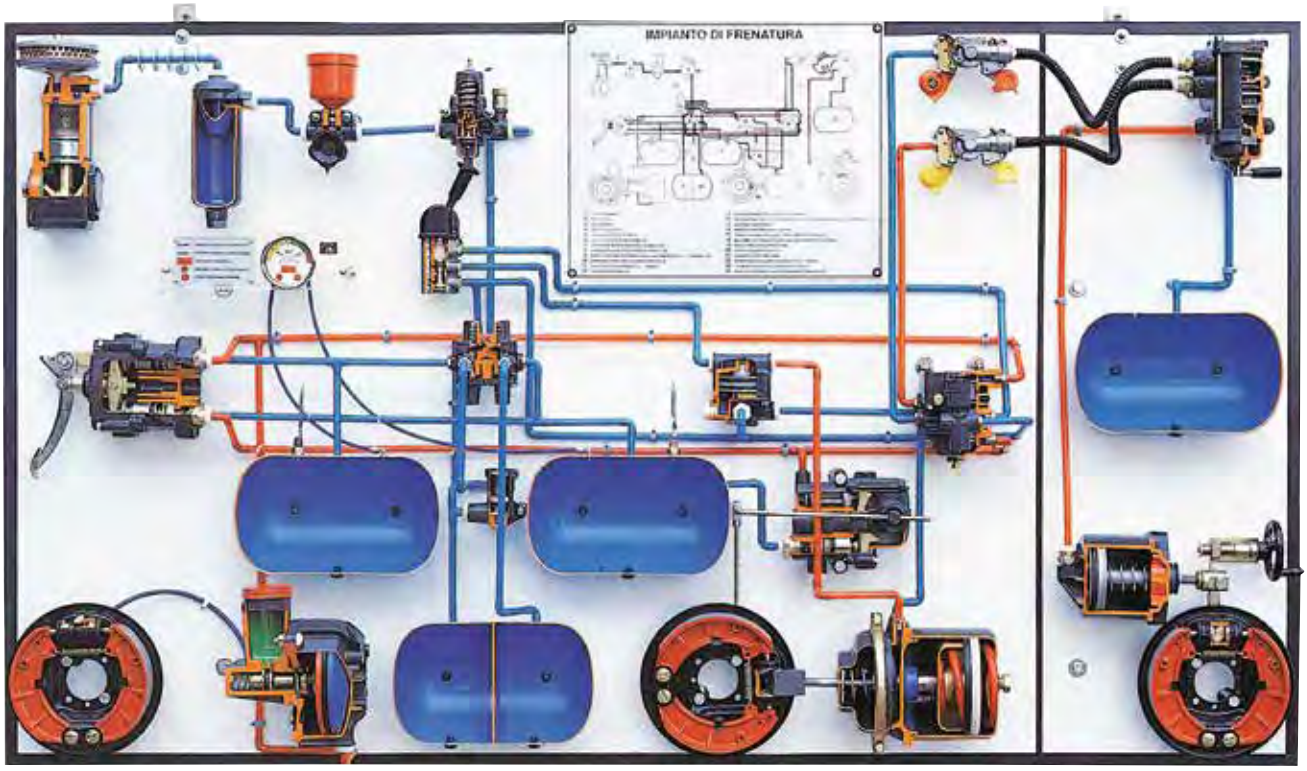
VB 12170S MOTOR/TRAILER AIR BRAKING SYSTEM WITH DOUBLE SPRING BRAKING UNIT WITH CHUCK DEVICE (on wall panel) -static

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

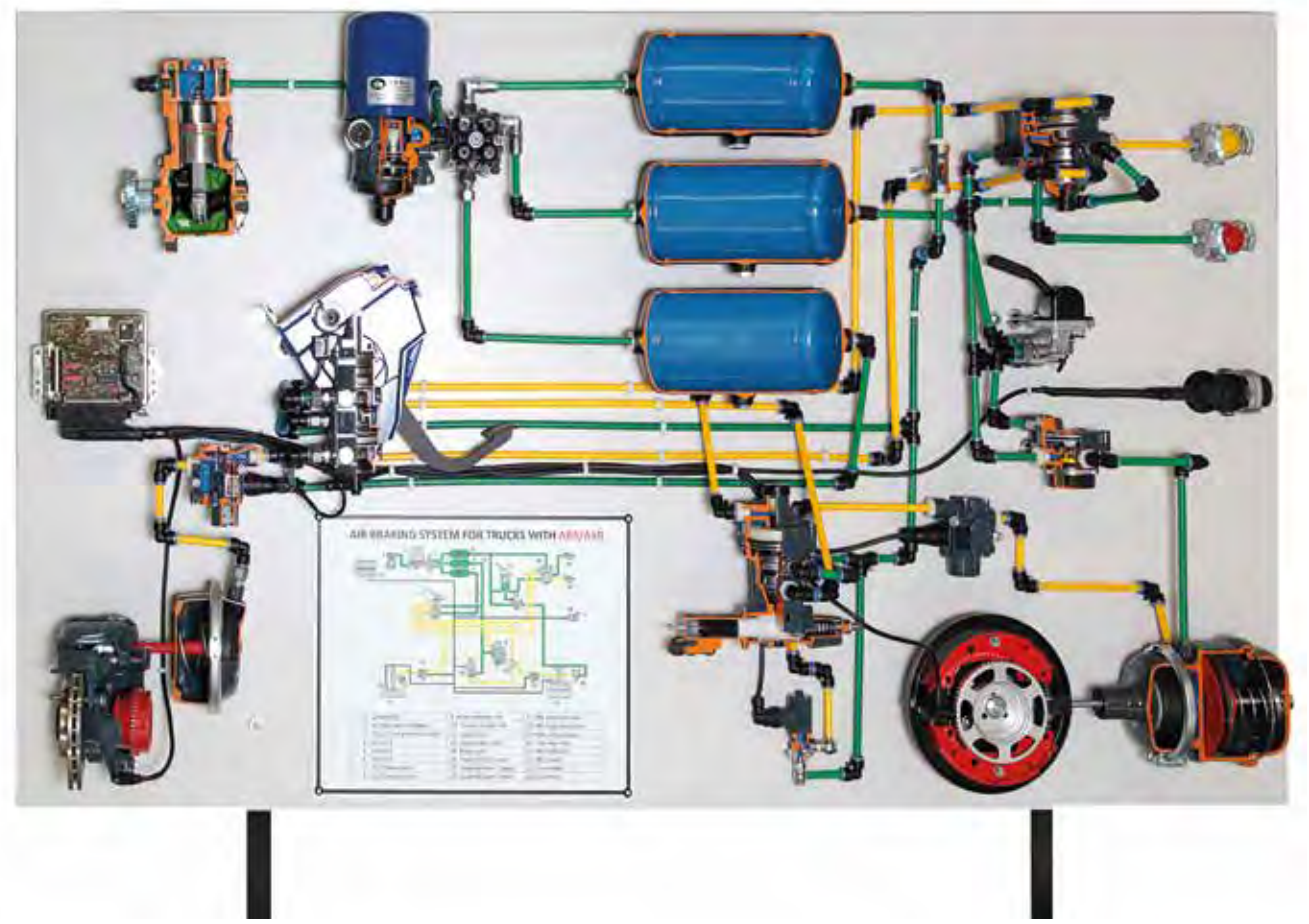
VB 12195S AIR BRAKING SYSTEM FOR TRUCKS WITH ABS/ASR (on stand with wheels) -static

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
- air dryer with unloader
- four-circuit protection valve
- 3 tanks
- foot brake valve
- load sensing valve
- brake chamber VA
- three-stop cylinder HA
- check valve
- hand brake valve
- relay valve
- trailer control valve
- coupling head "supply"
- coupling head "brake"
- ABS solenoid valve
- ABS plug connection
- ASR solenoid valve
- two-way valve
- ABS/ASR-ECU
- ABS sensor
- drum brake
- disc brake

Indicative picture for reference only



VB 12190S

Approx. weight and dim.:

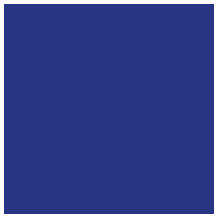
Cm:	*220x36x140h*
Net Weight:	*kg 110*
Gross Weight:	*kg 150*

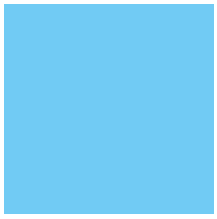
VB 12195S

Approx. weight and dim.:

Cm:	*220x36x140h*
Net Weight:	*kg 125*
Gross Weight:	*kg 165*

Indicative picture for reference only





Fluid Mechanics & Refrigeration

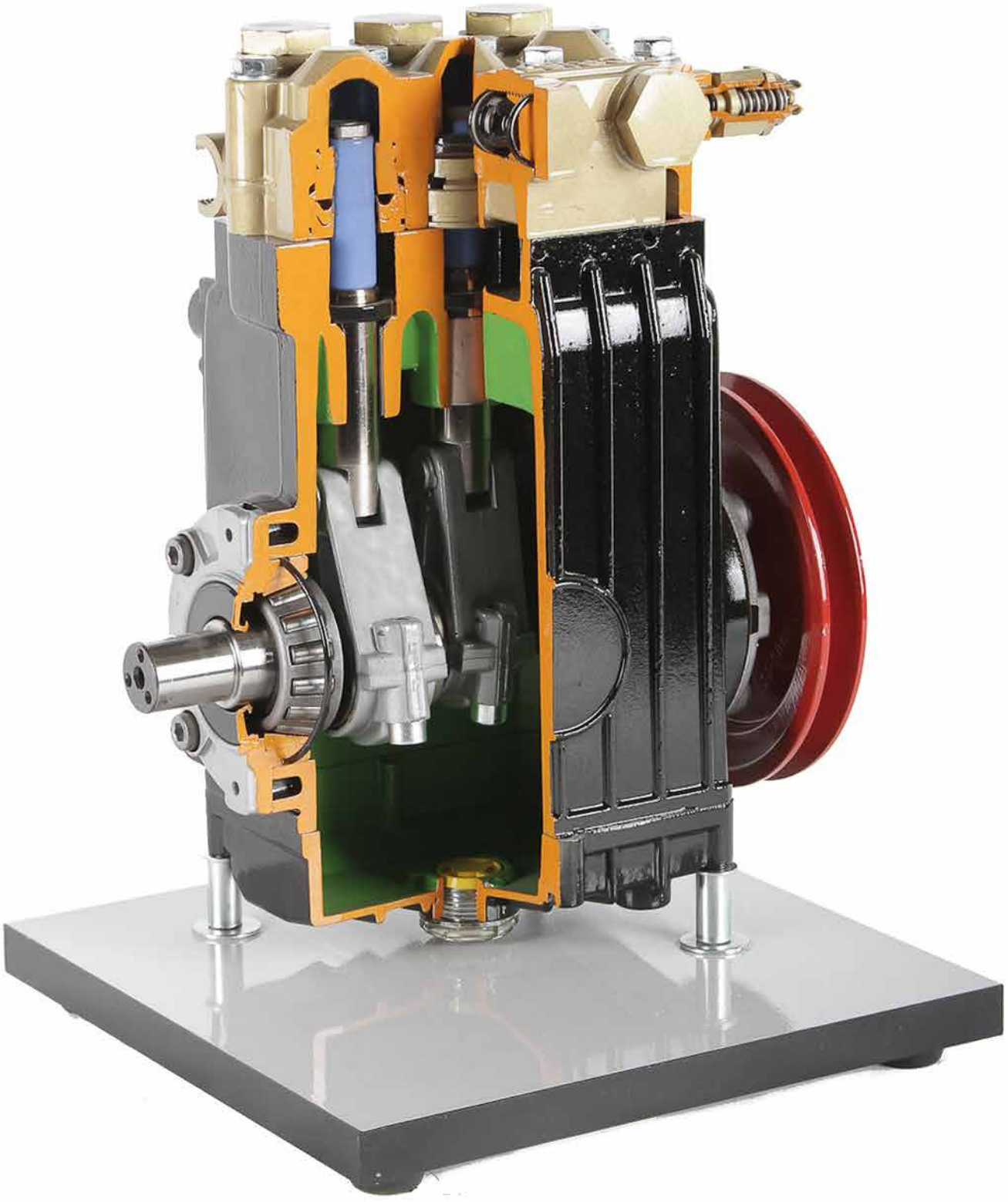
VB 12999M IN-LINE PISTON PUMP (on base) - manual

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

Indicative picture for reference only

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

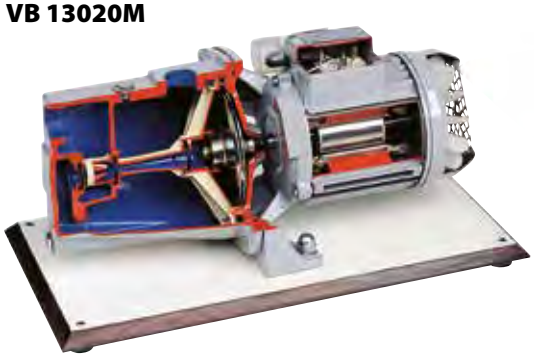
VB 13030M

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*

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*

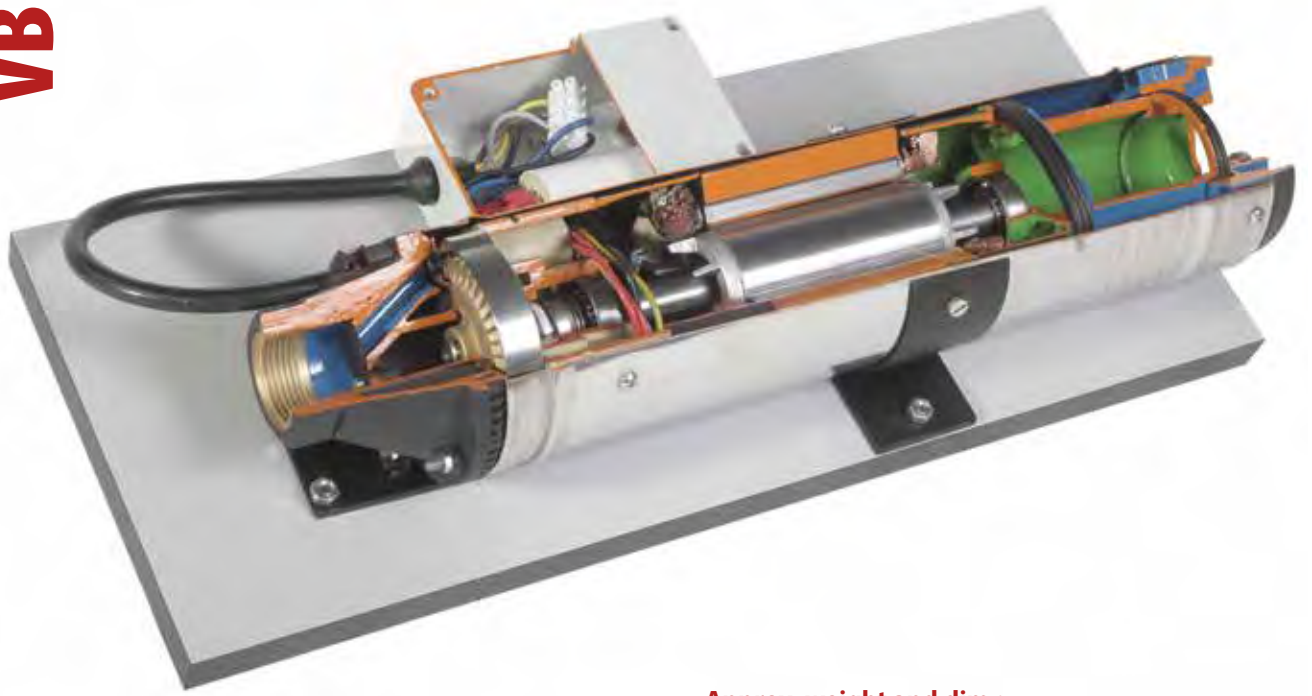
VB 13060M

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)

Indicative picture for reference only

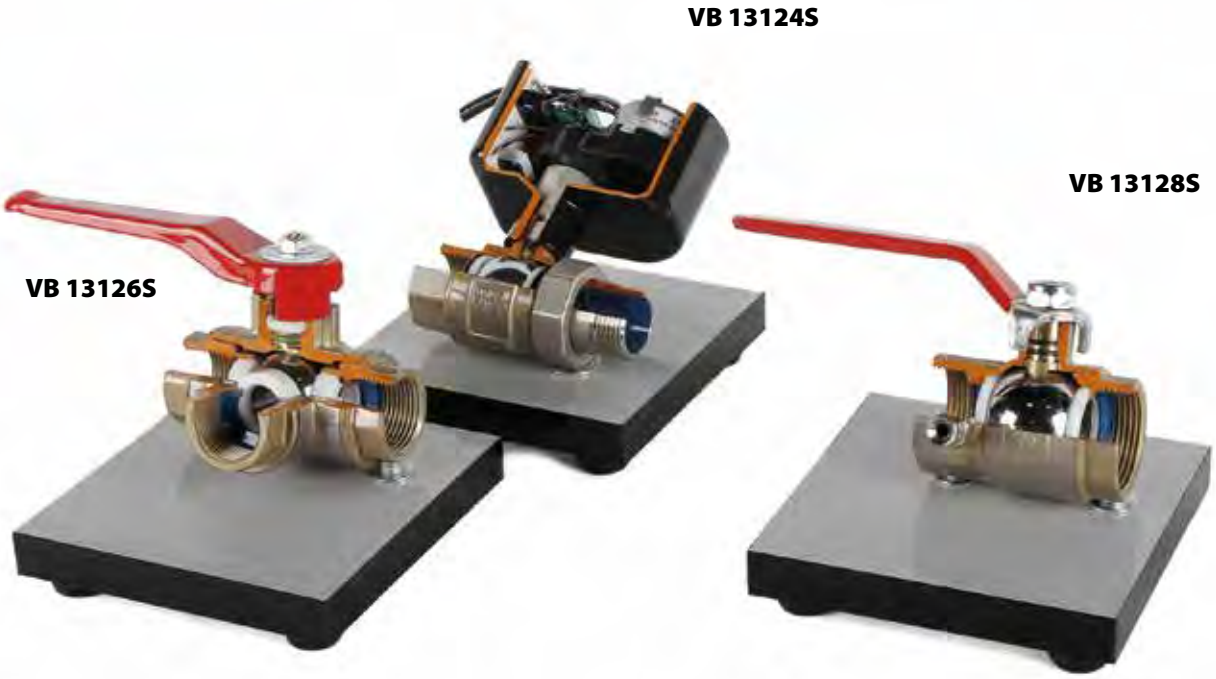
Approx. weight and dim.:

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)



Approx. weight and dim.

Cm:	*15x20x15h*
Weight:	*Kg 2*

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*

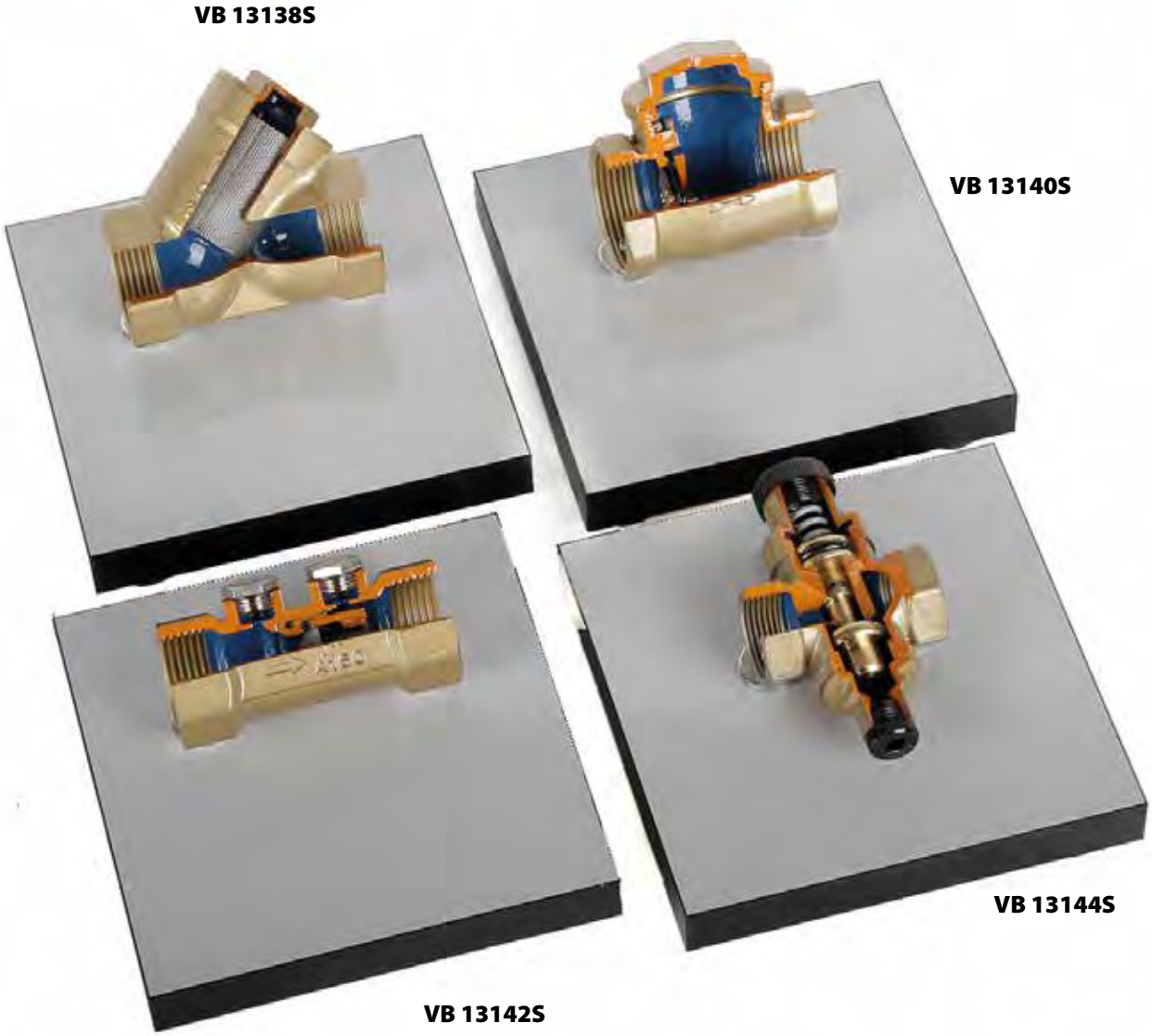
VB 13138S CUTAWAY LINE STRAINER VALVE (on base)

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)

Indicative picture for reference only



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 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*

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

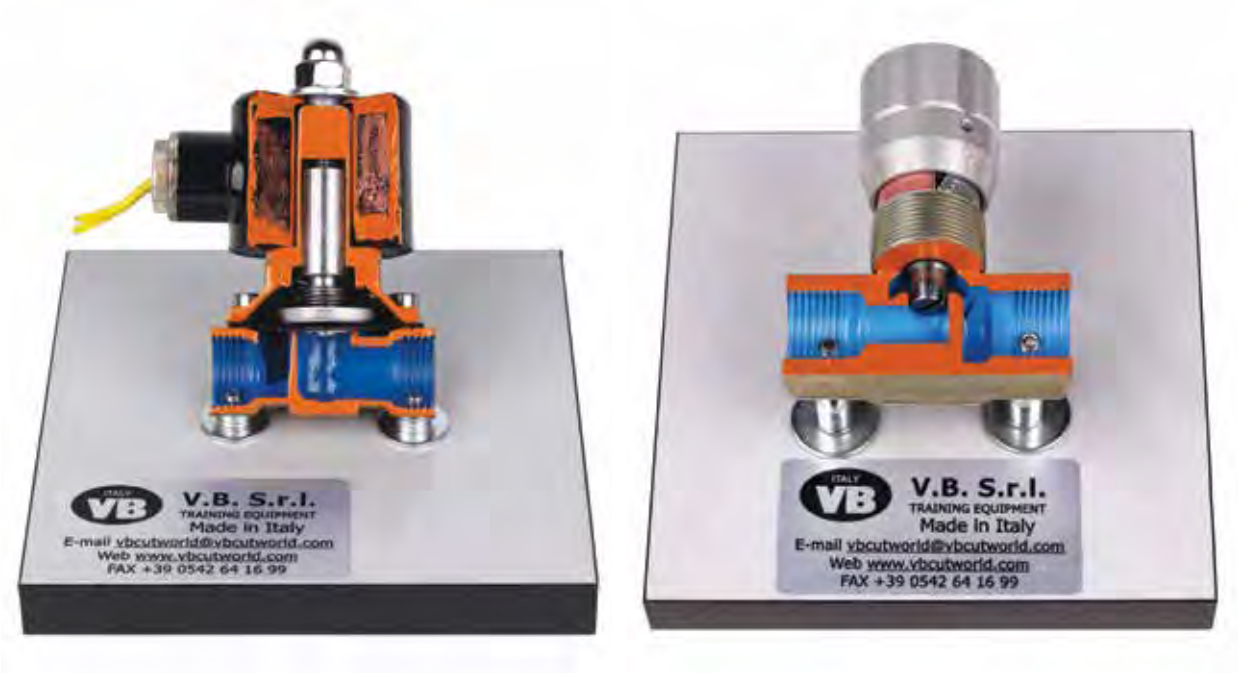
Approx. weight and dim.:

Cm:	*20x20x25h*
Weight:	*Kg 2,5*

Indicative picture for reference only

VB 13160S CUTAWAY SOLENOID MEMBRANE ELECTRO VALVE (on base)

VB 13161S CUTAWAY NEEDLE TWIN DIRECTIONAL FLOW VALVE (on base)



Indicative picture for reference only

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 13164 - VB 13165

VB 13164S CUTAWAY MEMBRANE VALVE (on base)

VB 13165S CUTAWAY MANIFOLD 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*

Indicative picture for reference only

VB 13170S CUTAWAY THERMOSTATIC VALVE (on base) – static

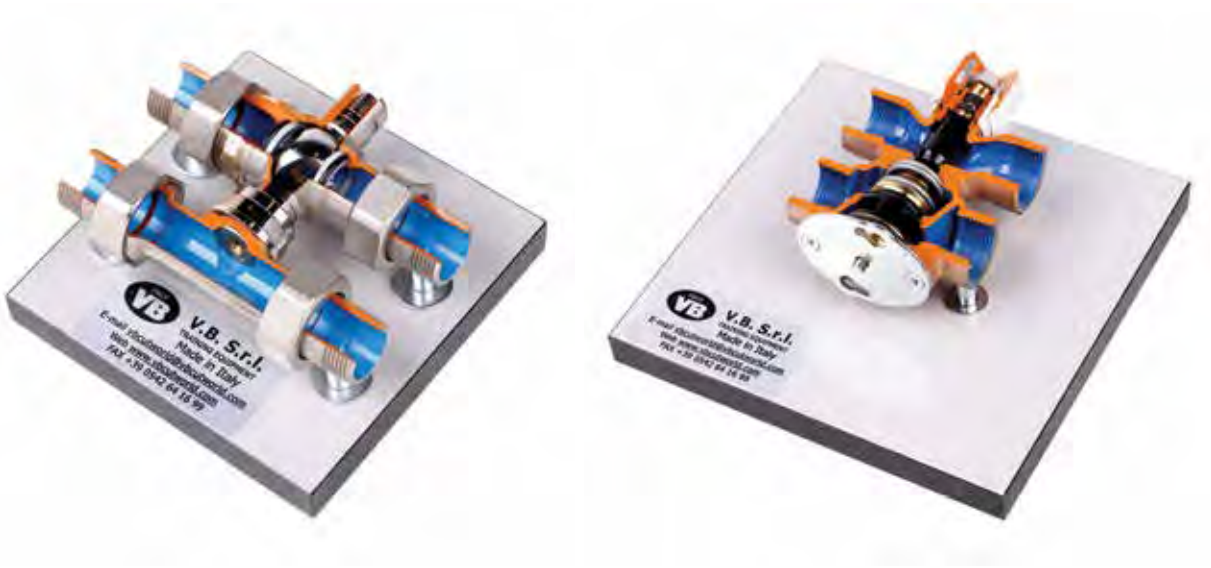
Approx. weight and dim.:

Cm:	*25x30x15h*
Net Weight:	*kg 2,5*
Gross Weight:	*kg 3,5*

VB 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*

Indicative picture for reference only

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*

VB 13154S CUTAWAY BRASS FOOT TUBULAR VALVE (on base)

VB 13156S CUTAWAY YACHT CHECK VALVE WITH STAINLESS STEEL FILTER (on base)

Indicative picture for reference only

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 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*

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.

Indicative picture for reference only

VB 9180M FRANCIS TURBINE (on base) - manual

Sectioned model of "Francis " Turbine.
Operated manually.

Approx. weight and dim.:

Cm:	*25x40x40h*
Net Weight:	*kg 7*
Gross Weight:	*kg 10*

Indicative picture for reference only

VB 9190M PELTON TURBINE (on base) - manual

Sectioned model of "Pelton" turbine.
Operated manually.

Approx. weight and dim.:

Cm:	*40x30x20h*
Net Weight:	*kg 6*
Gross Weight:	*kg 10*

VB 13071 - VB 13074

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*

Indicative picture for reference only

VB 13072

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

VB 13075

Approx. weight and dim.:

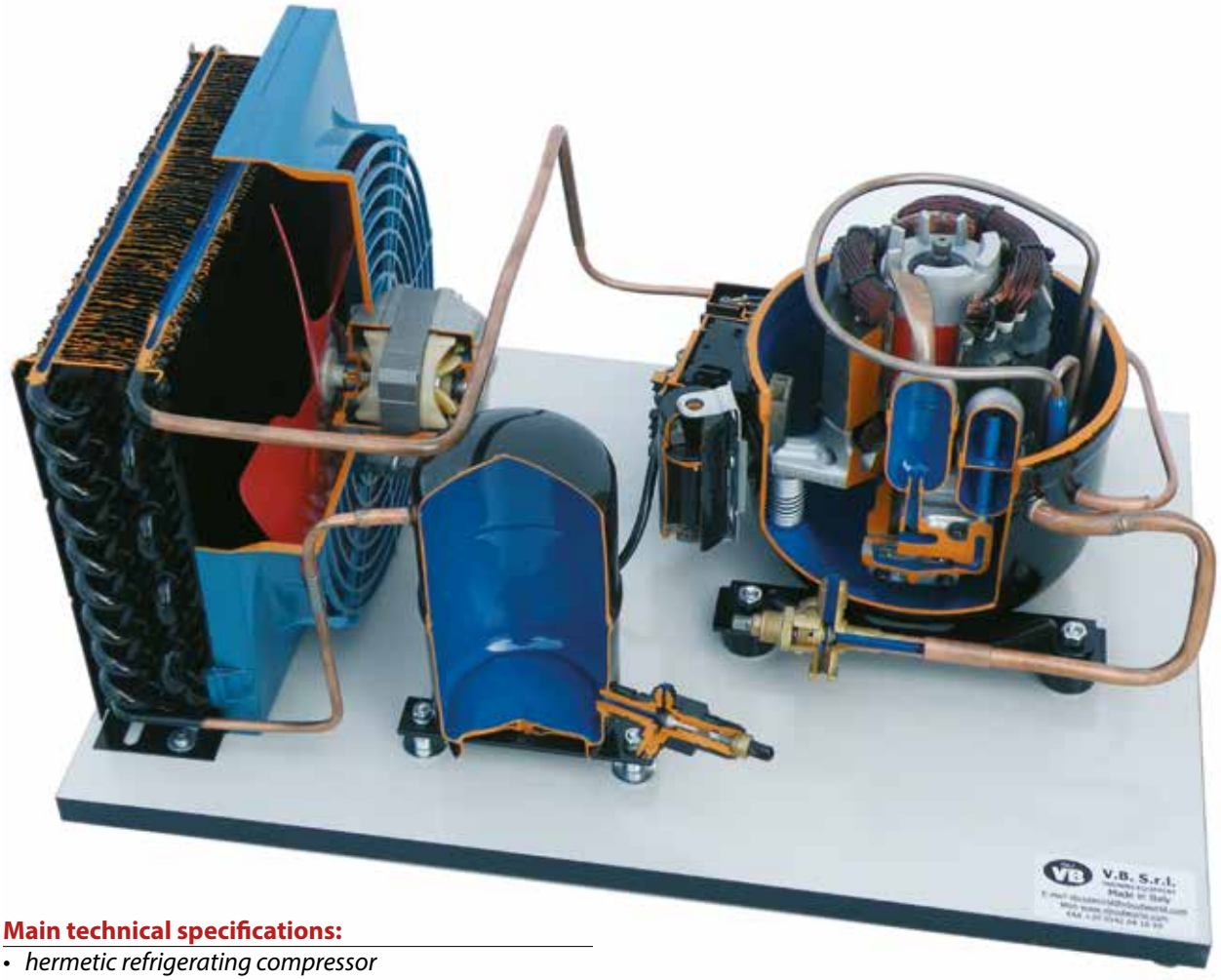
Cm:	*40x30x30h*
Net Weight:	*kg 25*
Gross Weight:	*kg 35*

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

VB 13080

Indicative picture for reference only



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 13082

VB 13082M HERMETIC COMPRESSOR (on base) - manual

Approx. weight and dim.:

Cm:	*25x30x30h*
Net Weight:	*kg 9*
Gross Weight:	*kg 15*

VB 13083

VB 13083M OPEN COMPRESSOR (on base) - manual

Approx. weight and dim.:

Cm:	*25x30x25h*
Net Weight:	*kg 8*
Gross Weight:	*kg 15*

Indicative picture for reference only

VB 13084S ROTATIVE COMPRESSOR (on base) - static

VB 13084

Approx. weight and dim.:

Cm:	*25x30x40h*
Net Weight:	*kg 9*
Gross Weight:	*kg 15*

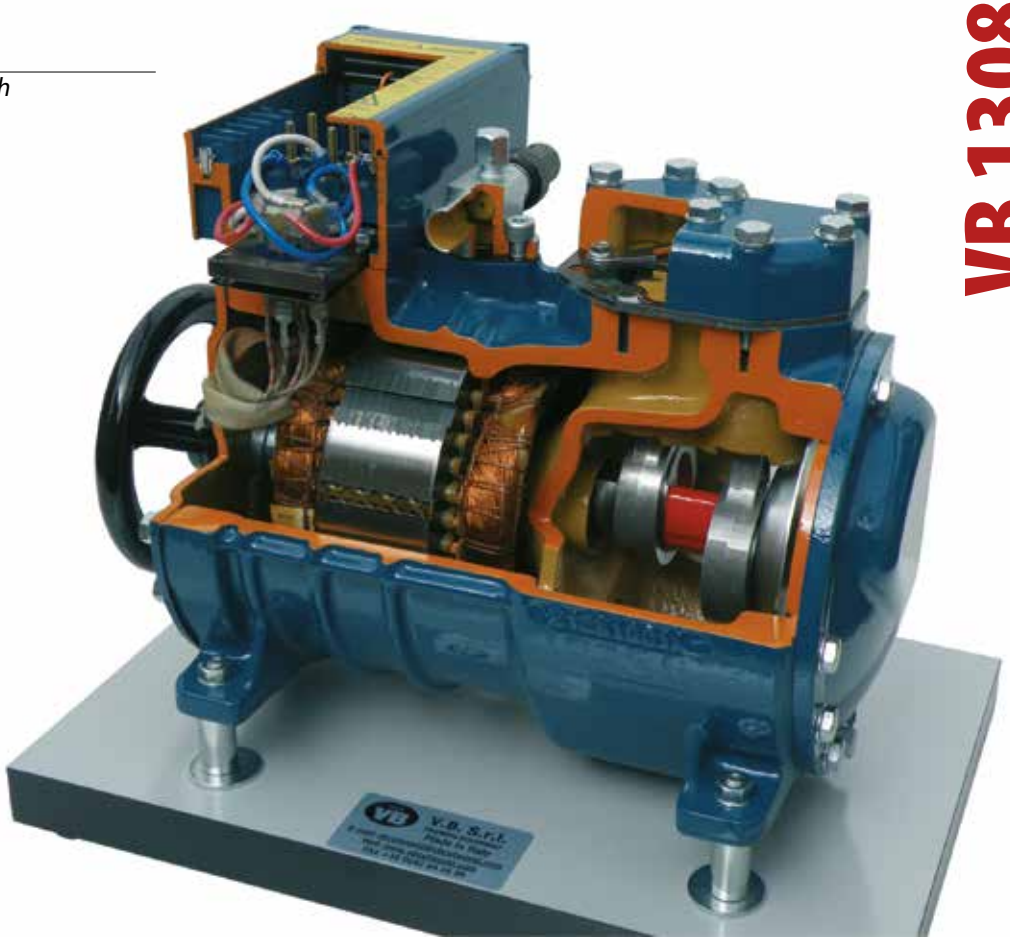
Indicative picture for reference only

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

VB 13177S CUTAWAY ELECTRIC GENERATOR (on table-stand support)

Indicative picture for reference only

Approx. weight and dim.:

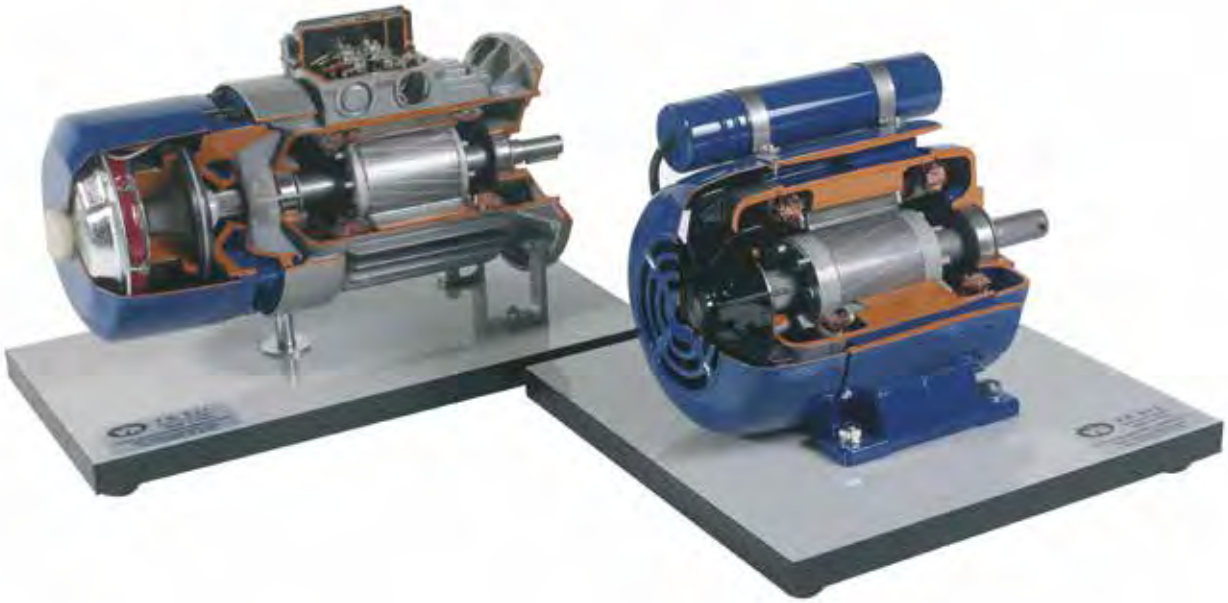
Cm:	*60x50x50h*
Net Weight:	*kg 25*
Gross Weight:	*kg 35*

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 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



Indicative picture for reference only

VB 13088M

Approx. weight and dim.:

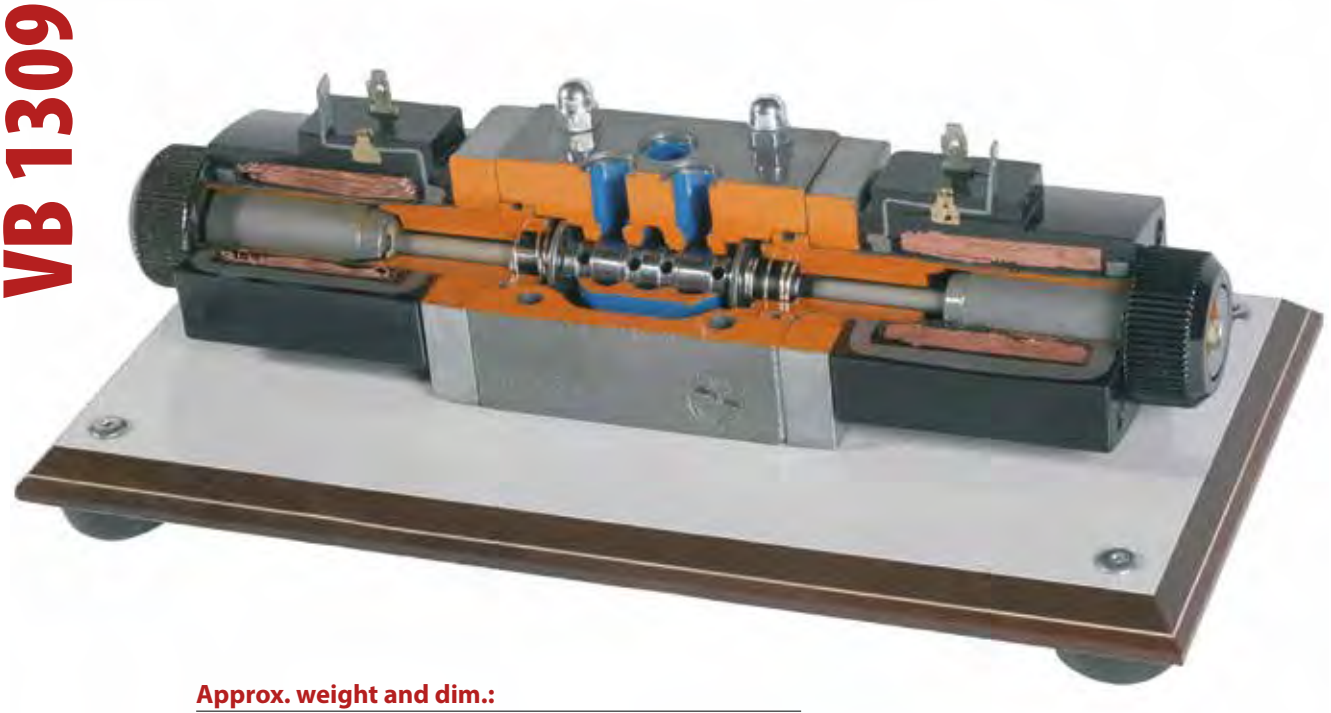
Cm:	*38x20x25h*
Net Weight:	*kg 10*
Gross Weight:	*kg 16*

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*

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

Indicative picture for reference only

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 13099M EPYCICLOYD 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 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*

Indicative picture for reference only

VB 13111S KOYO BALL BEARING (on base) - static

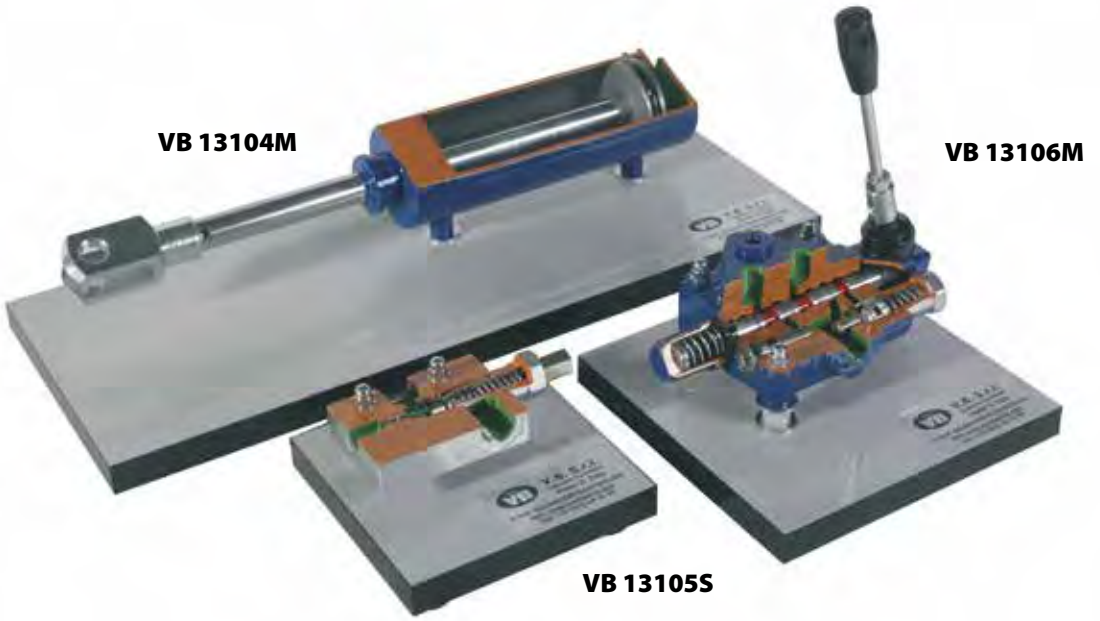
Approx. weight and dim.:

Cm:	*25x20x20h*
Net Weight:	*kg 4*
Gross Weight:	*kg 6*

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*

Indicative picture for reference only

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.:

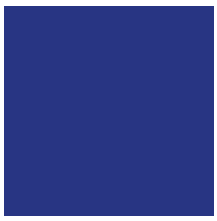
Cm:	*12x40x15h*
Net Weight:	*kg 3*
Gross Weight:	*kg 6*

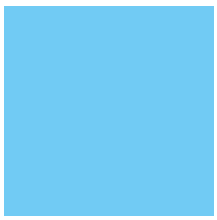
VB 13108S
Approx. weight and dim.:

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*

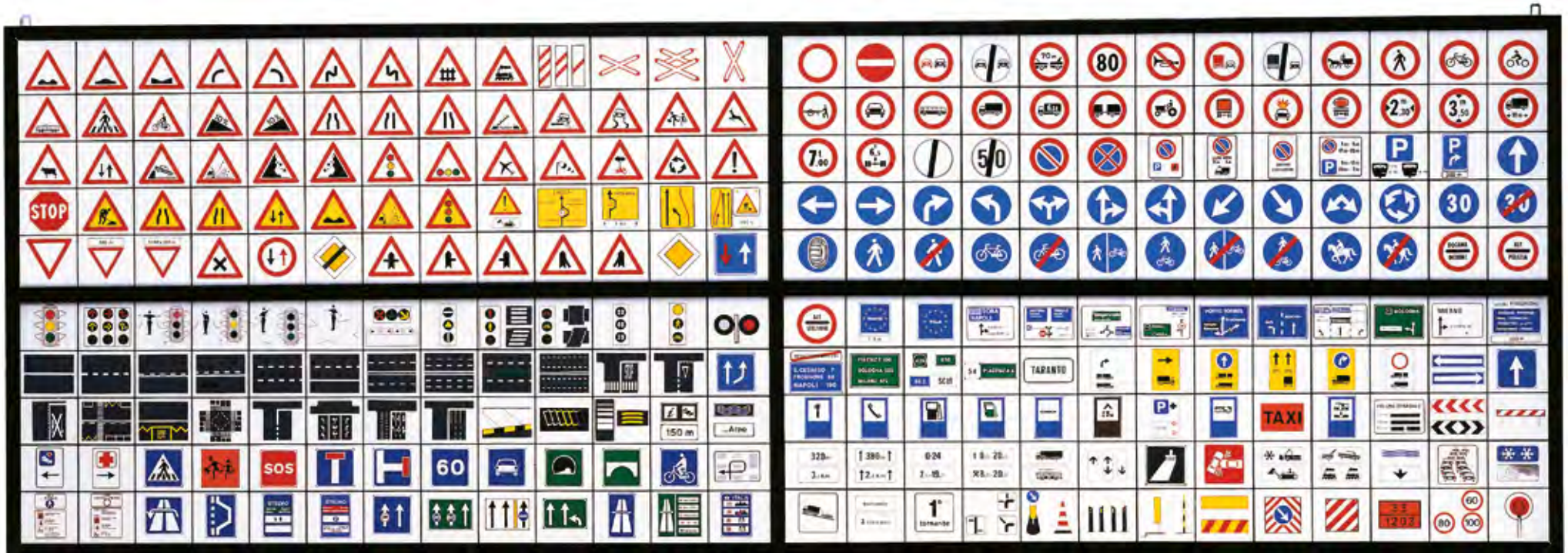




Driving School Equipment

VB 13500

VB 13500S LUMINOUS ROAD SIGNS PANEL WITH TOTAL LIGHTING (wall-panel)



- *260 road signals*
- *total lighting system with internal light bulbs in order to have a better observation of the panel*
- *safety CE electric system 220V*

Approx. weight and dim.:

Cm:	*160x40x120h*
Net Weight:	*kg 80*
Gross Weight:	*kg 150*

Indicative picture for reference only

VB 13560E CAR LIGHT AND ACOUSTIC SYSTEM SWITCHBOARD (wall assembly) - electrical

VB 13560

Control panel with switches, push-buttons and pilot light for various lamps complete with horn – rear fog guards – reverse – emergency.

Operated at 220 volts.

Indicative picture for reference only

Approx. weight and dim.:

Cm:	*80x110x20h*
Gross Weight:	*kg 25*

VB 13580E MOTORCYCLE LIGHT SYSTEM SWITCHBOARD (wall assembly) - electrical

VB 13580

Operated at 220 volts.

Approx. weight and dim.:

Cm:	*80x110x20h*
Gross Weight:	*kg 20*

VB 13590E DRIVING SIMULATOR - electrical

Approx weight and dimensions:

Cm:	*196x77x142h*
Net Weight:	*kg 80*
Gross Weight:	*kg 160*

Indicative picture for reference only

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

VB 13591E NAKED DRIVING SIMULATOR - electrical

Approx weight and dimensions:

Cm:	*170x77x115h*
Net Weight:	*kg 70*
Gross Weight:	*kg 150*

Indicative picture for reference only

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, 27 inches screen (ratio 16:9)
- sound system 2.1

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
- 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

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.

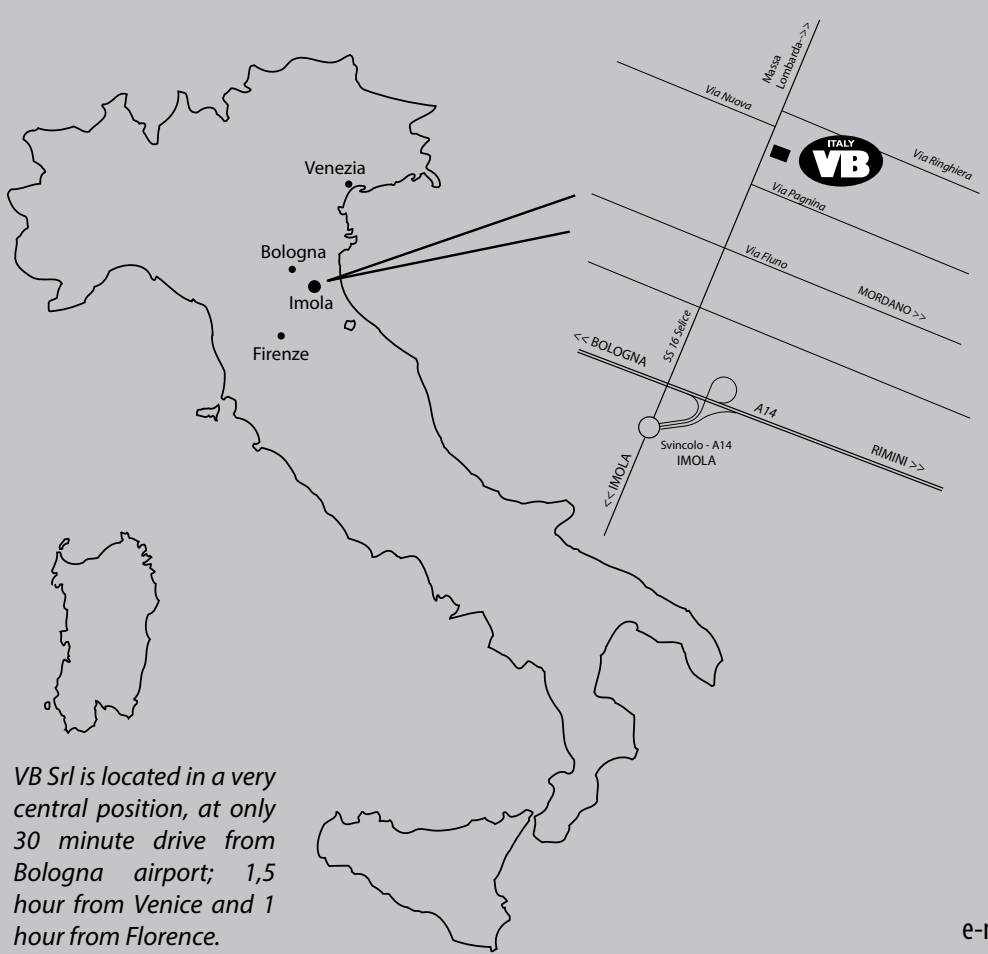
PAYMENT
If not otherwise agreed, payments must be made at our offices in Mordano within the fixed terms. The non-payment on maturity, even if only partial, gives right to draw on the debtor, at the debtor's change, plus 20% yearly interest; furthermore it gives right to VB to suspend or cancel every 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 VB ANNIVERSARY

1967 - 2017



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.

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14th Edition