

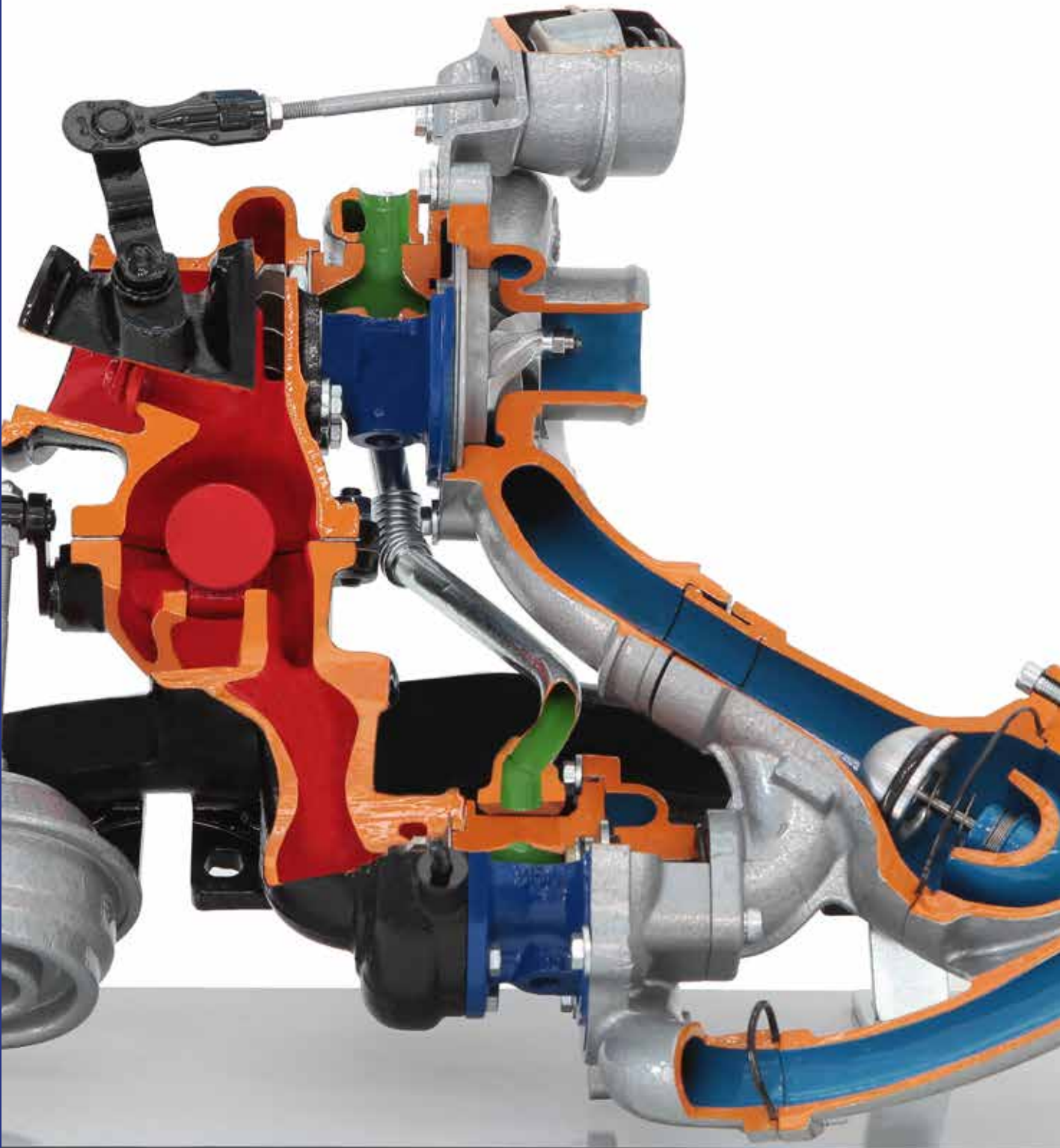
*MECHANICAL SECTIONS  
TRAINING EQUIPMENT*

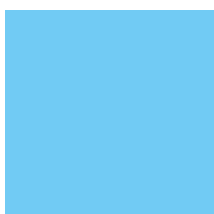
*MADE IN ITALY*



<b>ELECTRICAL AND ELECTRONIC COMPONENTS FOR CAR</b> .....	96 - 104
• Injection trainers .....	
• Ignition trainers.....	
• Various components- cutaway .....	
<b>PETROL/LPG FEEDING – CUTAWAY</b> .....	105 - 110
• Carburettors.....	
• Engine heads.....	
<b>DIESEL INJECTION - TRAINERS AND CUTAWAY</b> .....	111 - 121
• Injection trainers .....	
• Common rail.....	
• In-line injection pumps .....	
• Rotative injection pumps.....	
<b>SUPERCHARGERS - CUTAWAY</b> .....	122 - 124
• Waste gate .....	
• Variable geometry.....	
• Sequential twin turbo.....	
• Roots type.....	
• Intercooler.....	
<b>VARIOUS COMPONENTS – CUTAWAY</b> .....	125 - 127
• Oil pumps.....	
• Fuel pumps.....	
• Pistons .....	
• Silencer.....	
<b>AIR-CONDITIONING - TRAINERS AND CUTAWAY</b> .....	128 - 130
• Trainer .....	
• Various pumps.....	
<b>STEERING AND SUSPENSIONS – TRAINERS AND CUTAWAY</b> .....	131 - 137
• Electronic steering trainer .....	
• Steering box.....	
• Power steering .....	
• Suspensions.....	
• Fore-carriage .....	
• Rear axle .....	
<b>GEARBOXES AND CLUTCHES – CUTAWAY</b> .....	138 - 151
• Mechanical front drive .....	
• Mechanical rear drive.....	
• Automatic front drive.....	
• Automatic rear drive.....	
• Dsg (direct shift gearbox).....	
• Gearboxes for truck.....	
• Mechanical clutches.....	
• Hydraulic clutches.....	
• Hydraulic + mechanical clutches.....	
• Centrifugal clutches.....	
• Overdrive .....	

<b>TRANSMISSIONS – CUTAWAY .</b> .....	<b>152 - 158</b>
• Differential. ....	
• Epicycloidal reducer model. ....	
• Shafts and joints. ....	
<b>BRAKING SYSTEM – TRAINERS AND CUTAWAY .</b> .....	<b>159 - 167</b>
• Hydraulic. ....	
• Pneumatic. ....	
• Abs. ....	

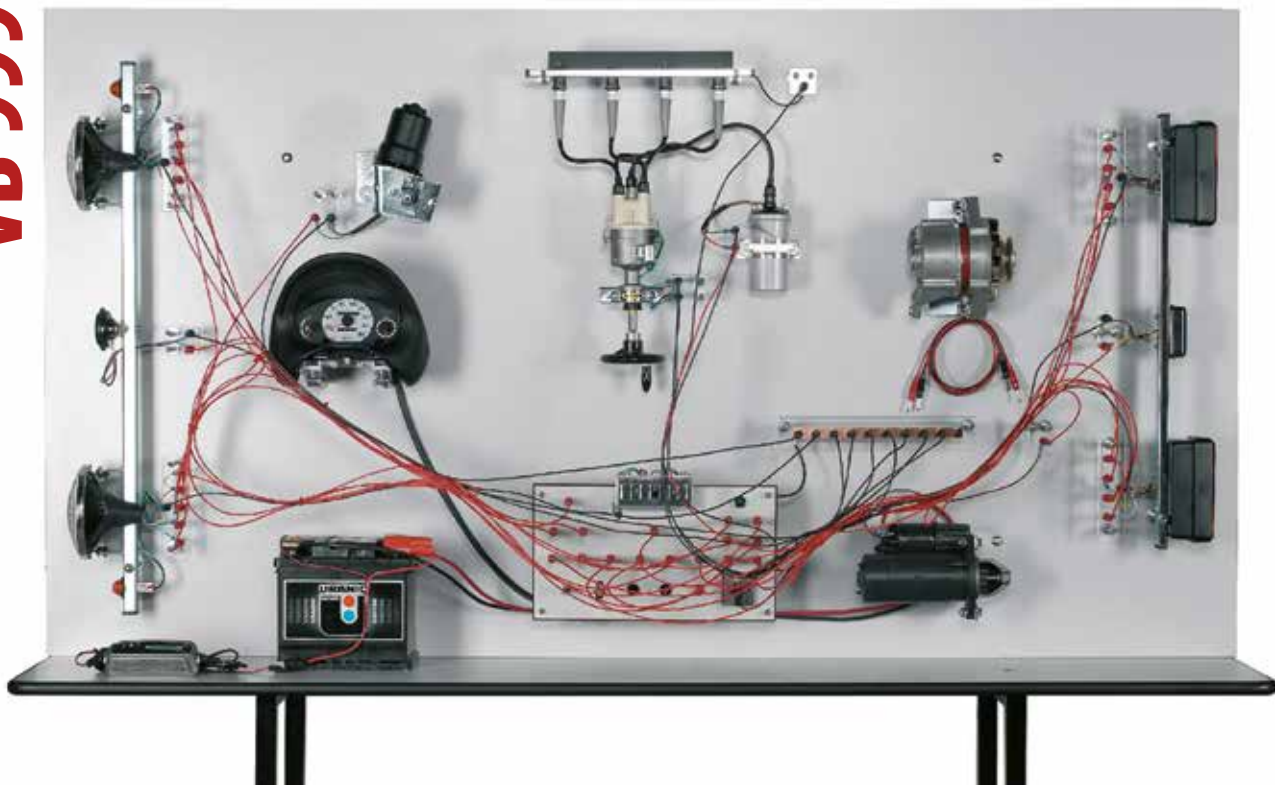




## Components & Accessories

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

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



### VB 9990 - VB 9991

All main components of the electric system of a car are fixed together on a board and can be operated at 220/12 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.

### VB 9990 - VB 9991

#### Approx. weight and dim.:

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

### Main technical specifications:

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

## VB 10022 GLOW PLUGS (on base) - electrical

---

### VB 10022

The unit is composed by:

- glow plug control unit
- 4 glow plugs
- Ignition switch
- indicator light
- car battery
- battery charger



### VB 10022

#### Approx. weight and dim.:

Cm 30x65x60h

Net Weight: kg 22

Gross Weight: kg 30

**VB 10022**

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

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

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



**VB 10000**

*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 10010**

*Same as VB 10000 with electronic ignition.*

**VB 10020**

*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 10000 - VB 10010 - VB 10020**

**Approx. weight and dim.:**

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



## VB 10030 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.

### VB 10030

#### Approx. weight and dim.:

Cm: 30x20x15h

Net Weight: kg 2

Gross Weight: kg 5



**VB 10030**

## VB 10040 BATTERY - static

---

## VB 10050 COIL - static

---

## VB 10060 DISTRIBUTOR - manual

---



**VB 10040**



**VB 10050**



**VB 10060**

**VB 10040 - VB 10050 - VB 10060**

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

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

---



**VB 10070 - VB 10071**

**Approx. weight and dim.:**

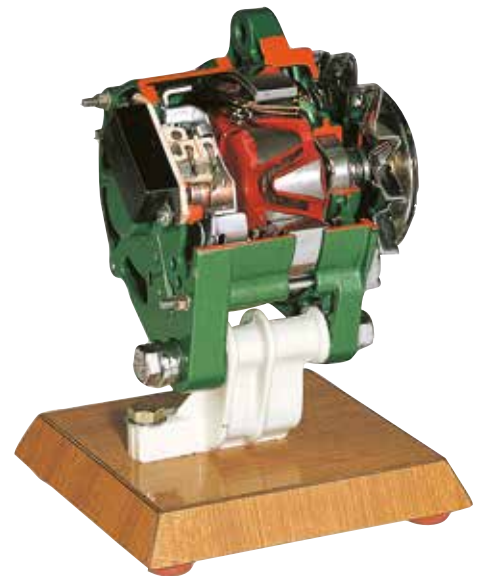
Cm: 25x20x20h  
Net Weight: kg 6  
Gross Weight: kg 10

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

---

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

---



**VB 10080 - VB 10081**

**Approx. weight and dim.:**

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

**VB 10090 DYNAMO - manual**

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**VB 10090**

**Approx. weight and dim.:**

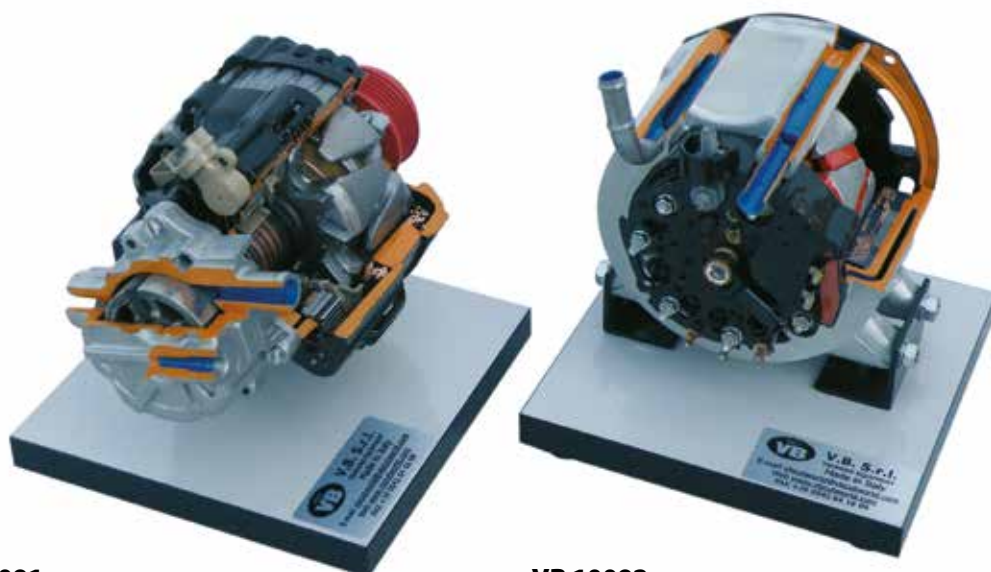
Cm: 25x20x20h  
Net Weight: kg 6  
Gross Weight: kg 10

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

---

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

---



**VB 10091**

**Approx. weight and dim.:**

Cm: 20x20x25h

Net Weight: kg 8

Gross Weight: kg 15

**VB 10092**

**Approx. weight and dim.:**

Cm: 20x20x25h

Net Weight: kg 8

Gross Weight: kg 15

**VB 10095 THROTTLE JACKING DEVICE - static**

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**VB 10096 EGR VALVE - static**

---

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

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**VB 10095**

**Approx. weight and dim.:**

Cm: 15x10x10h

Net Weight: kg 1

Gross Weight: kg 1,5

**VB 10096**

**Approx. weight and dim.:**

Cm: 20x10x10h

Net Weight: kg 1,5

Gross Weight: kg 2

**VB 10097**

**Approx. weight and dim.:**

Cm: 10x10x10h

Net Weight: kg 1

Gross Weight: kg 1,5

**VB 10091 - VB 10092**

**VB 10095 - VB 10096 - VB 10097**

## VB 9900 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)

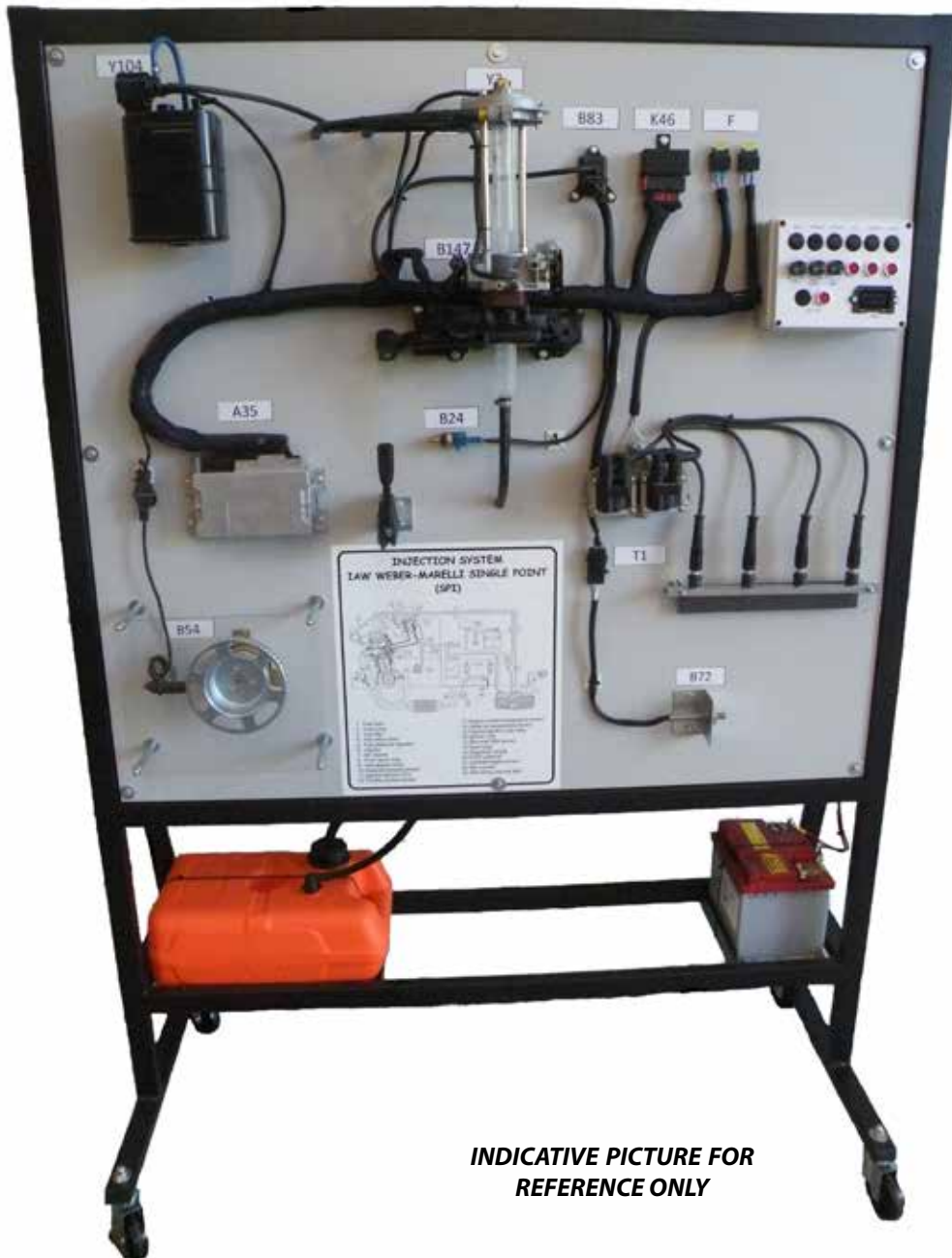
### VB 9900

#### Approx. weight and dim.:

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

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

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



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

### VB 9901

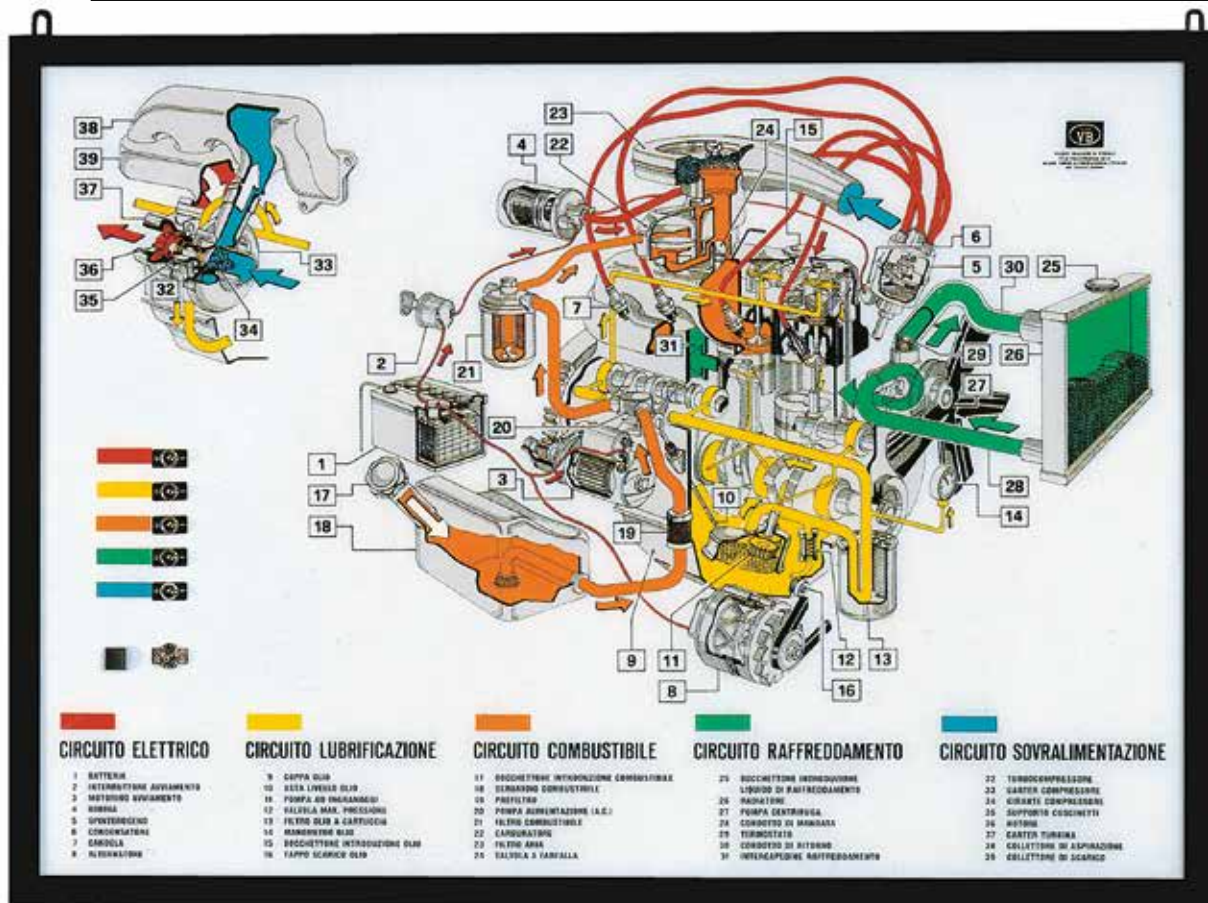
#### Approx. weight and dim.:

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

# VB 5500 - VB 5510

**VB 5500 ENGINE VIDEO SYSTEM (on panel) - electrical**

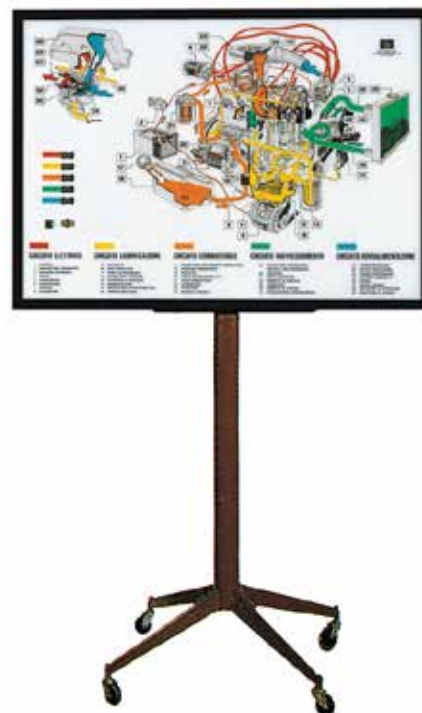
**VB 5510 ENGINE VIDEO SYSTEM (on stand with wheels) - electrical**



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 5510

Same as VB 5500 but on a wheeled stand.

**ENGLISH / FRENCH TEST AVAILABLE UPON REQUEST**  
**VB 5500**

## VB 5500

**Approx. weight and dim.:**

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

## VB 5510

**Approx. weight and dim.:**

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

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

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

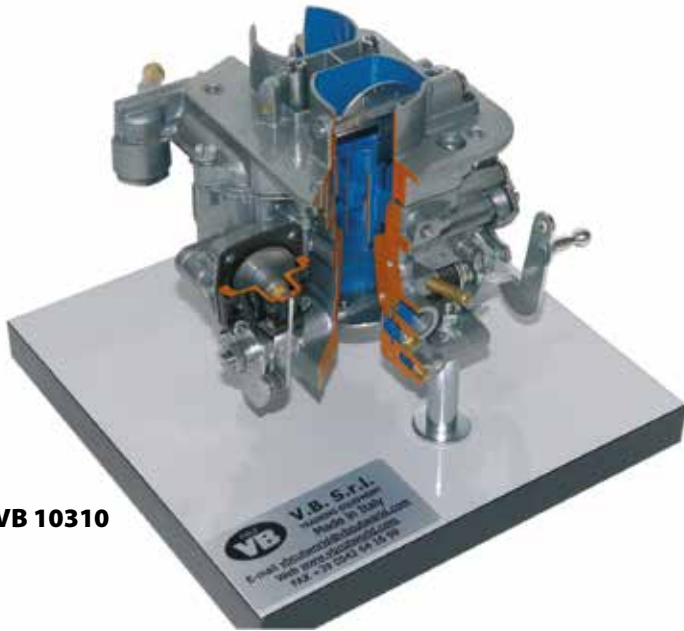
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**VB 10330 VACUUM CARBURETTOR (on base) - static**

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

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**VB 10310**



**VB 10320**



**VB 10330**



**VB 10340**

**Approx. weight and dim.:**

*Cm:* 25x30x30h

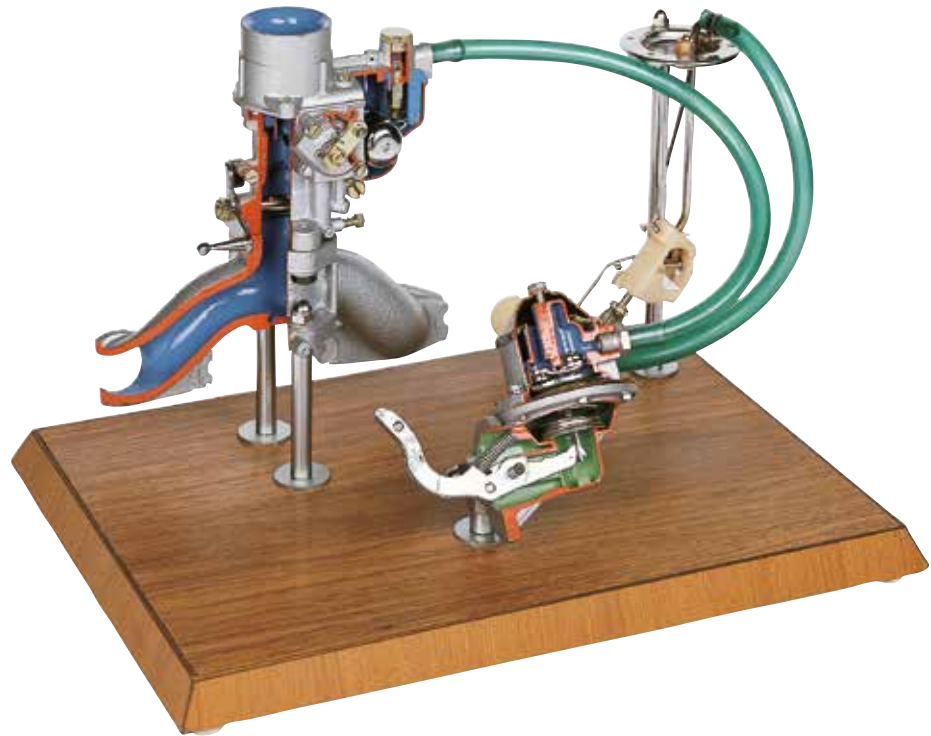
*Net Weight:* kg 1

*Gross Weight:* kg 2

**VB 10310 - VB 10320 - VB 10330 - VB 10340**

# VB 10350

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



### Main technical specifications:

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

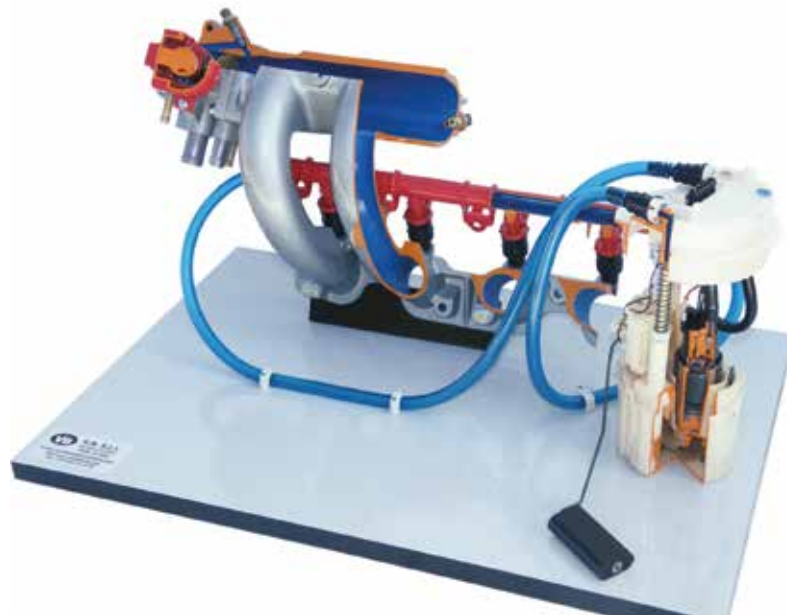
### VB 10350

#### Approx. weight and dim.:

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

# VB 10355

## VB 10355 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

### VB 10355

#### Approx. weight and dim.:

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



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

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

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



### VB 10360

#### Approx. weight and dim.:

Cm: 25x25x25h

Net Weight: kg 3

Gross Weight: kg 6

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

Cutaway model of an electro injector for multipoint injection engines.

The following parts are shown:

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



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

Internal combustion engine spark plug cutaway model.

The following part are shown:

- Spark plug body
- Ceramic insulator
- Earth electrode



VB 10360

VB 10361

VB 10365

# VB 10366

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



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

### VB 10366

#### Approx. weight and dim.:

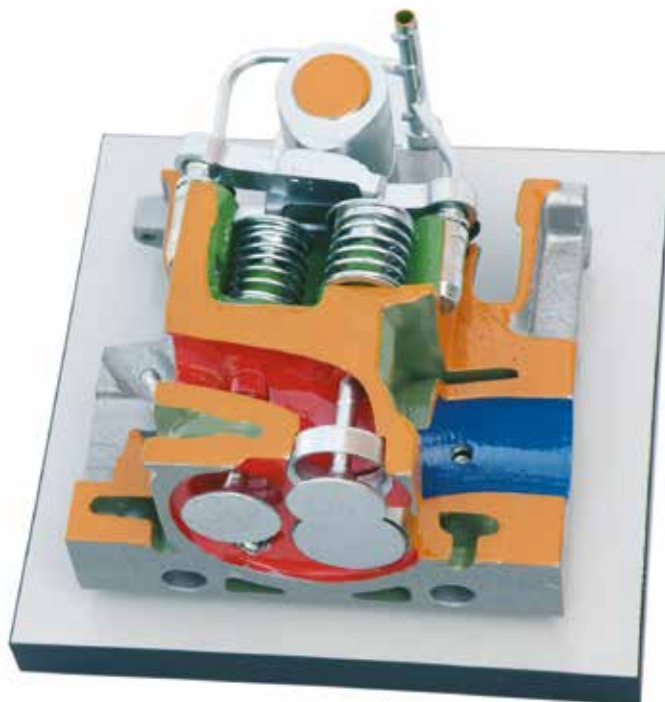
Cm: 25x20x20h

Net Weight: kg 7

Gross Weight: kg 7

# VB 10367

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



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

### VB 10367

#### Approx. weight and dim.:

Cm: 20x20x15h

Net Weight: kg 3,5

Gross Weight: kg 6

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



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

### **VB 10368**

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

Cm: 25x20x20h

Net Weight: kg 5

Gross Weight: kg 8

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



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

### **VB 10369**

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

Cm: 25x20x20h

Net Weight: kg 5

Gross Weight: kg 8

**VB 10368**

**VB 10369**

# VB 10525

## VB 10525 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.

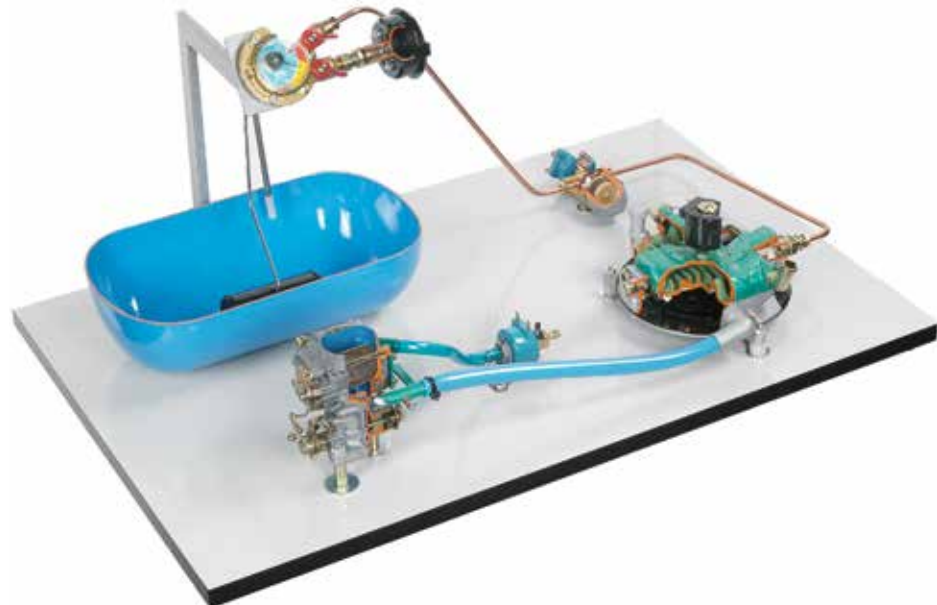
### VB 10525

#### Approx. weight and dim.:

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

# VB 10520

## VB 10520 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.

### VB 10520

#### Approx. weight and dim.:

Cm:	80x50x40h
Net Weight:	kg 12
Gross Weight:	kg 20

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

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

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

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

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



### Main components:

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

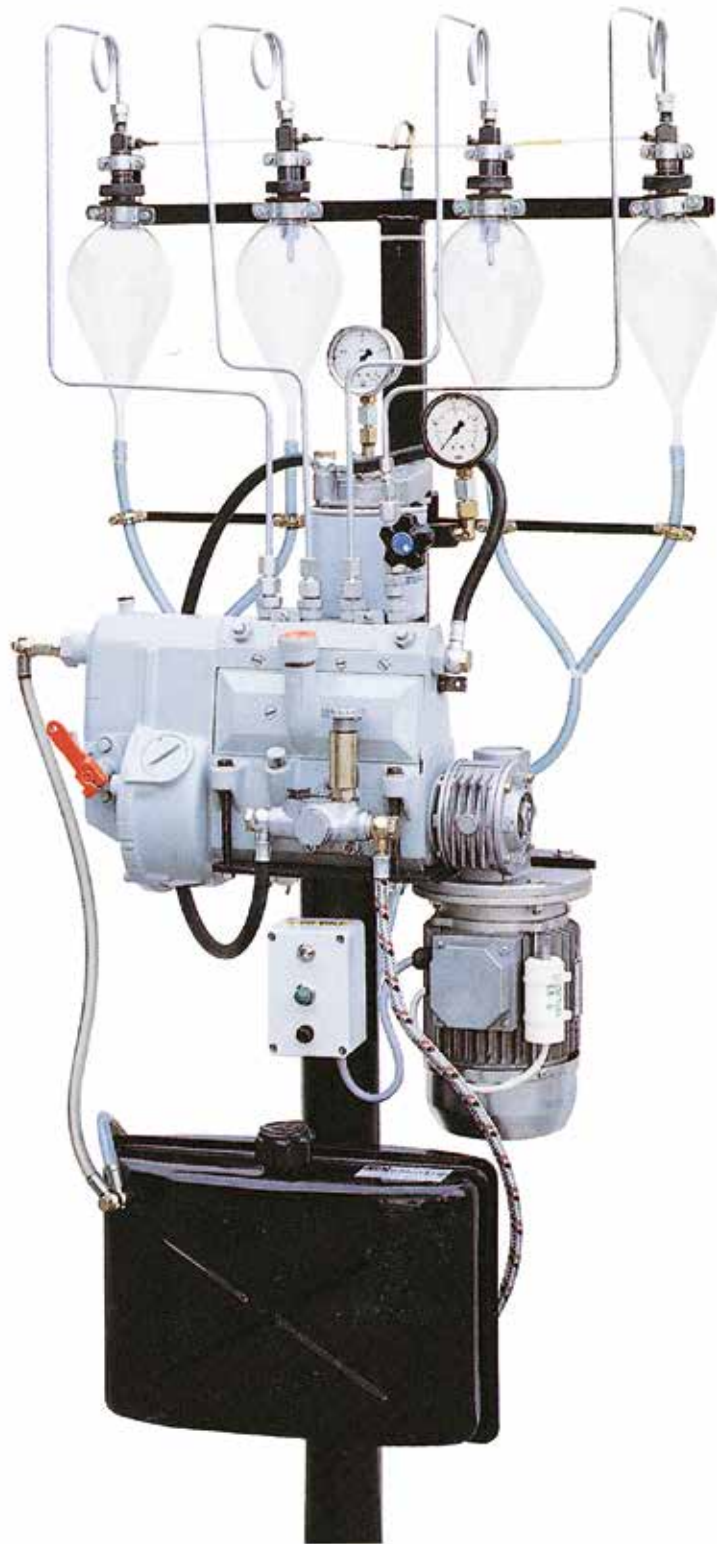
### VB 9148

#### Approx. weight and dim.:

Cm: 104x35x66h

Weight: kg 16

VB 9148



### VB 9150

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.

### VB 9150

#### Approx. weight and dim.:

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

## **VB 10104 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 10106 CP3 BOSCH HIGH-PRESSURE PUMP (on base) - manual**

---

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



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

---

*Cm:* 25x20x25h

*Net Weight:* kg 5

*Gross Weight:* kg 8

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

---

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



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

---

*Cm:* 25x20x25h

*Net Weight:* kg 4

*Gross Weight:* kg 8

**VB 10104**

**VB 10106**

**VB 10108**

# VB 10300

## VB 10300 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.*

### VB 10300

#### Approx. weight and dim.:

Cm: 50x20x30h

Net Weight: kg 8

Gross Weight: kg 15

# VB 10305

## VB 10305 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.

### VB 10305

#### Approx. weight and dim.:

Cm: 10x25x10h

Net Weight: kg 0,5

Gross Weight: kg 1



## VB 10110 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.



### VB 10110

#### Approx. weight and dim.:

Cm: 40x20x10h

Net Weight: kg 3

Gross Weight: kg 4

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

---



### VB 10112

#### Approx. weight and dim.:

Cm: 25x12x10h

Net Weight: kg 1

Gross Weight: kg 2

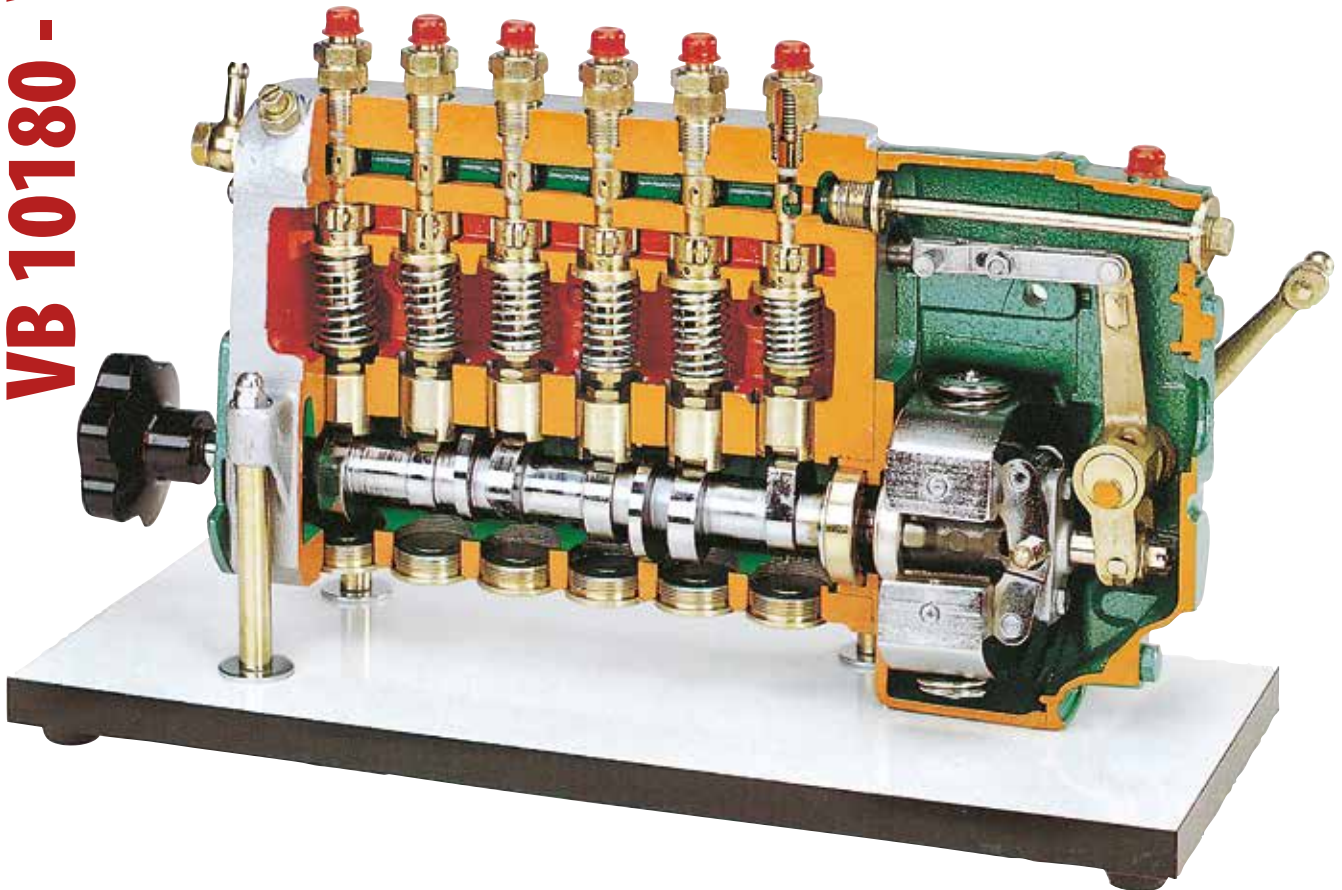
VB 10110

VB 10112

# VB 10180 - VB 10181

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

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



## **VB 10180**

### **Main technical specifications:**

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

Operated manually through a crank handle.

## **VB 10180**

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

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

## **VB 10181**

### **Main technical specifications:**

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

Operated manually through a crank handle.

## **VB 10181**

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

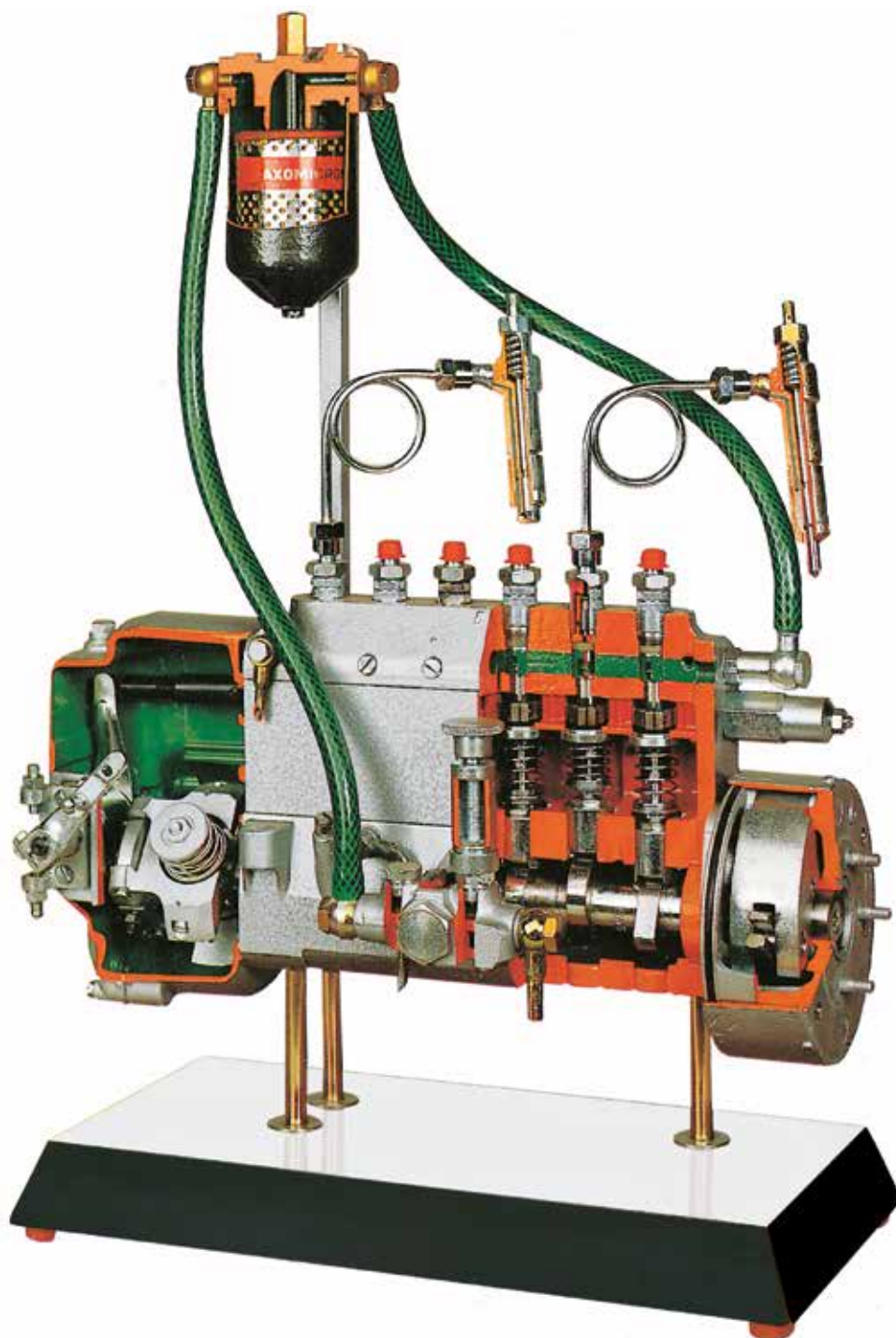
Cm: 20x40x30h  
Net Weight: kg 9  
Gross Weight: kg 15

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

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

---



**VB 10200**

**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 10210**

*Same as VB 10200 but on stand with wheels.*

**Approx. weight and dim.:**

---

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

**VB 10210**

**Approx. weight and dim.:**

---

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

**VB 10200 - VB 10210**

# VB 10220

## VB 10220 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.*

### VB 10220

#### Approx. weight and dim.:

Cm: 20x30x30h

Net Weight: kg 7

Gross Weight: kg 10



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

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

### VB 10230

#### Approx. weight and dim.:

Cm: 20x20x30h

Net Weight: kg 3

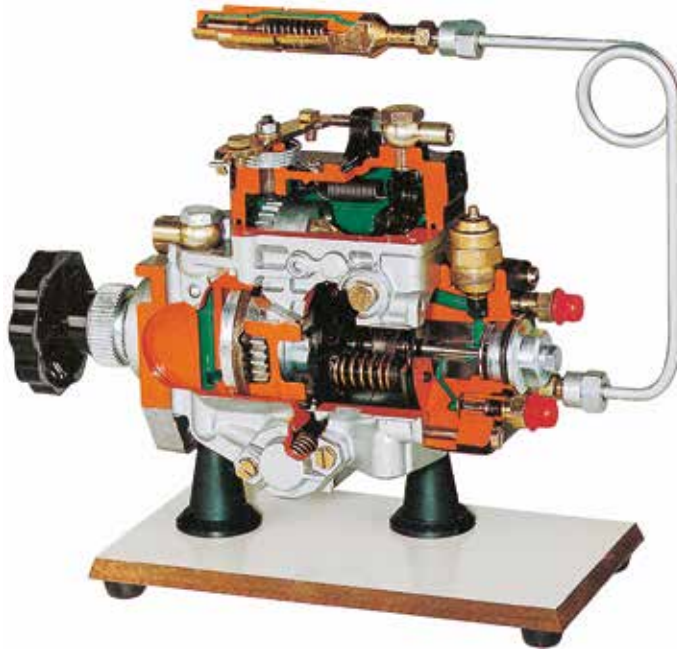
Gross Weight: kg 5

*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.*



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



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

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

It is supplied complete with an indirect injector.

*Operated manually through a crank handle.*

### VB 10240

#### Approx. weight and dim.:

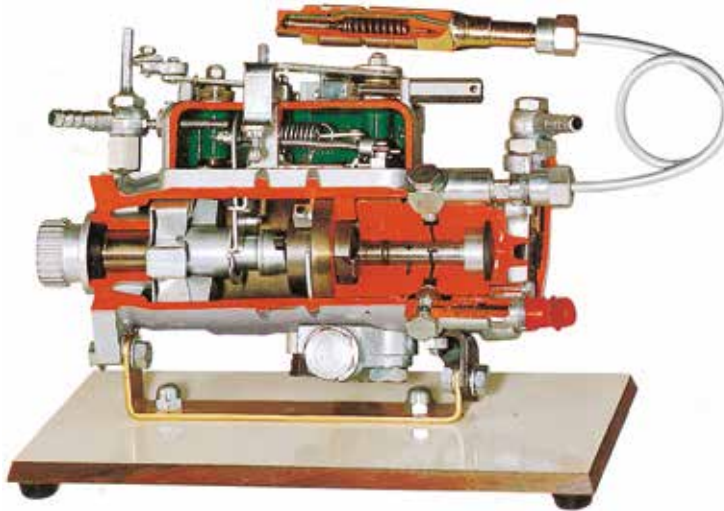
Cm: 30x15x30h

Net Weight: kg 5

Gross Weight: kg 8

VB 10240

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



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

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

*Operated manually through a crank handle.*

### VB 10250

#### Approx. weight and dim.:

Cm: 30x20x20h

Net Weight: kg 6

Gross Weight: kg 8

VB 10250

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 10260 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.*

### VB 10260

#### Approx. weight and dim.:

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



# VB 10270

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

### VB 10270

#### Approx. weight and dim.:

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

#### Main technical specification:

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



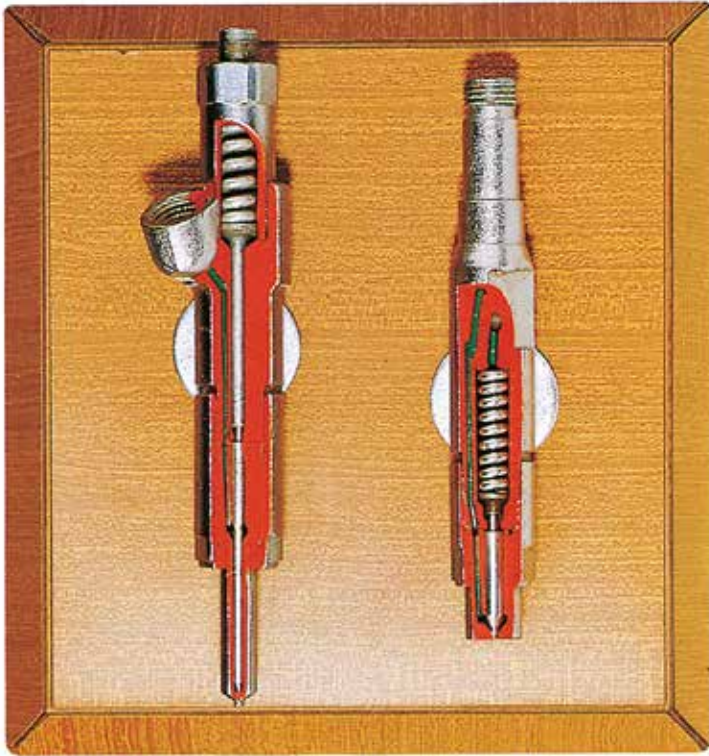
*Modern high-pressure rotary injection pump (approx. 1500 bars).*

*It is operated manually.*

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

## VB 10280 INJECTORS (on base) - static

---



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

### VB 10280

#### Approx. weight and dim.:

Cm: 30x20x15h

Net Weight: kg 1

VB 10280

## VB 10290 DIESEL PUMPING ELEMENT - manual

---

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

*It is operated manually.*



### VB 10290

#### Approx. weight and dim.:

Cm: 30x6x6h

Net Weight: kg 1

VB 10290

# VB 10430

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

### VB 10430

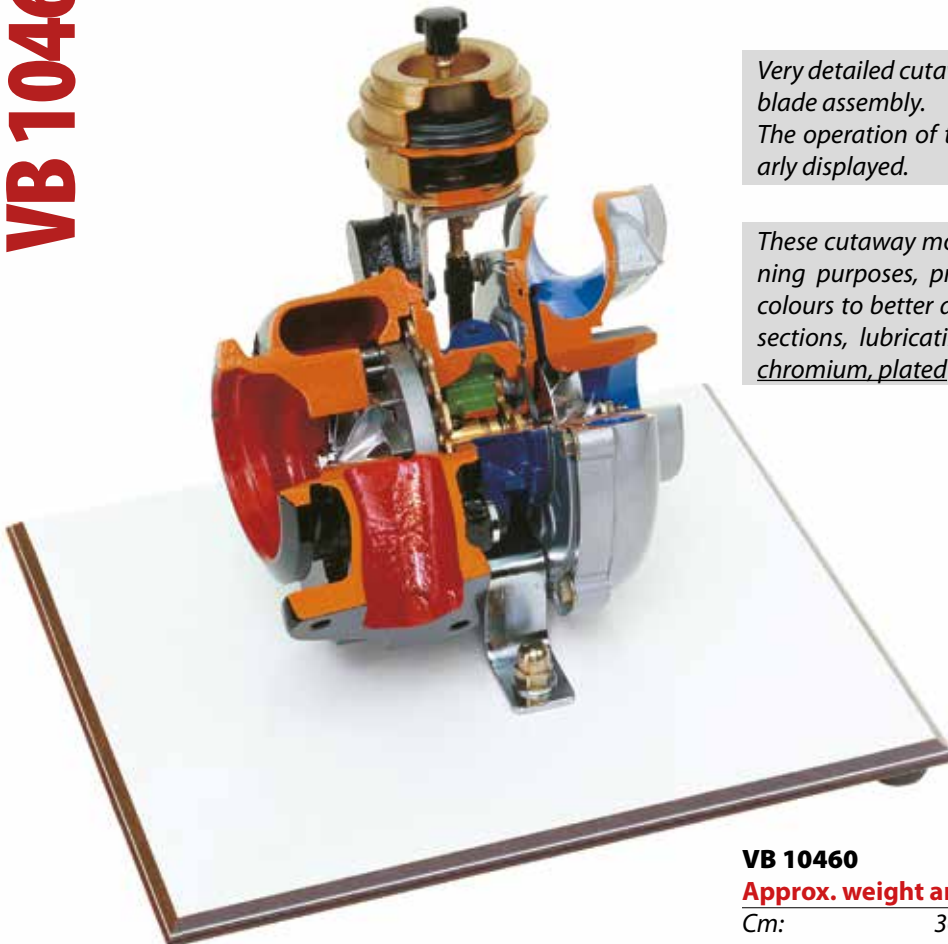
#### Approx. weight and dim.:

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



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

# VB 10460



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

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

### VB 10460

#### Approx. weight and dim.:

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



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



### VB 10441

#### Approx. weight and dim.:

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

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

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

### VB 10450

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

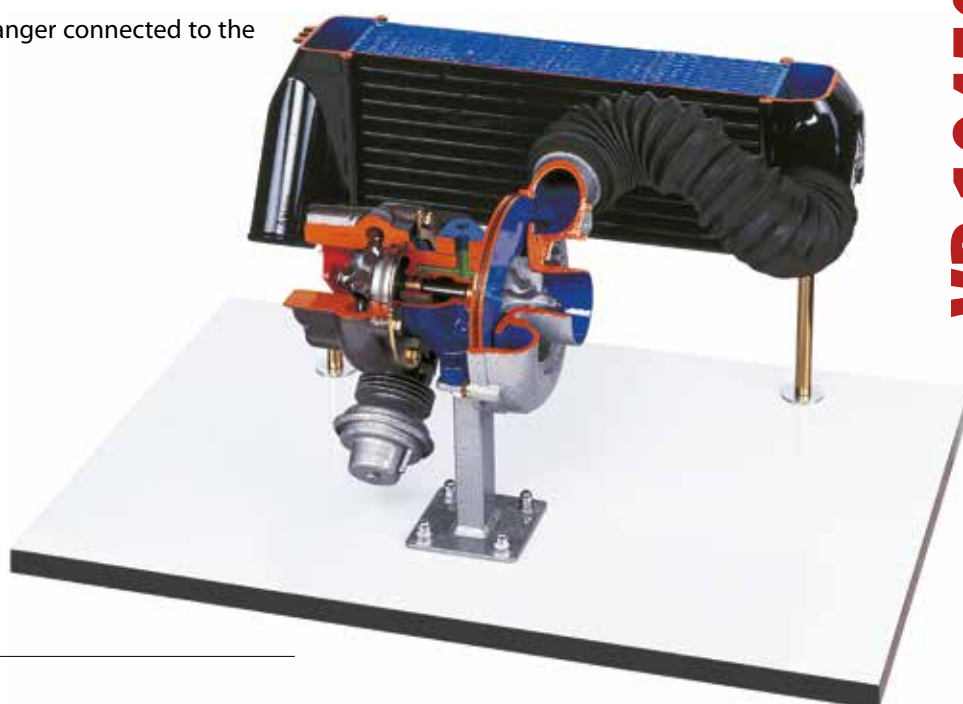
The cross-section of the turbo-supercharger highlights the following:

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

### VB 10451

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 10450 - VB 10451

#### Approx. weight and dim.:

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

VB 10441

VB 10450 - VB 10451

# VB 10442

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

### VB 10442

#### Approx. weight and dim.:

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



# VB 10452

## VB 10452 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.



### VB 10452

#### Approx. weight and dim.:

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

## VB 10500 DIRECT INJECTION PISTON - static

---

### VB 10500

#### Approx. weight and dim.:

---

Cm: 18x18x35h

Net Weight: kg 5

Gross Weight: kg 7



## VB 10510 INDIRECT INJECTION PISTON - static

---

### VB 10510

#### Approx. weight and dim.:

---

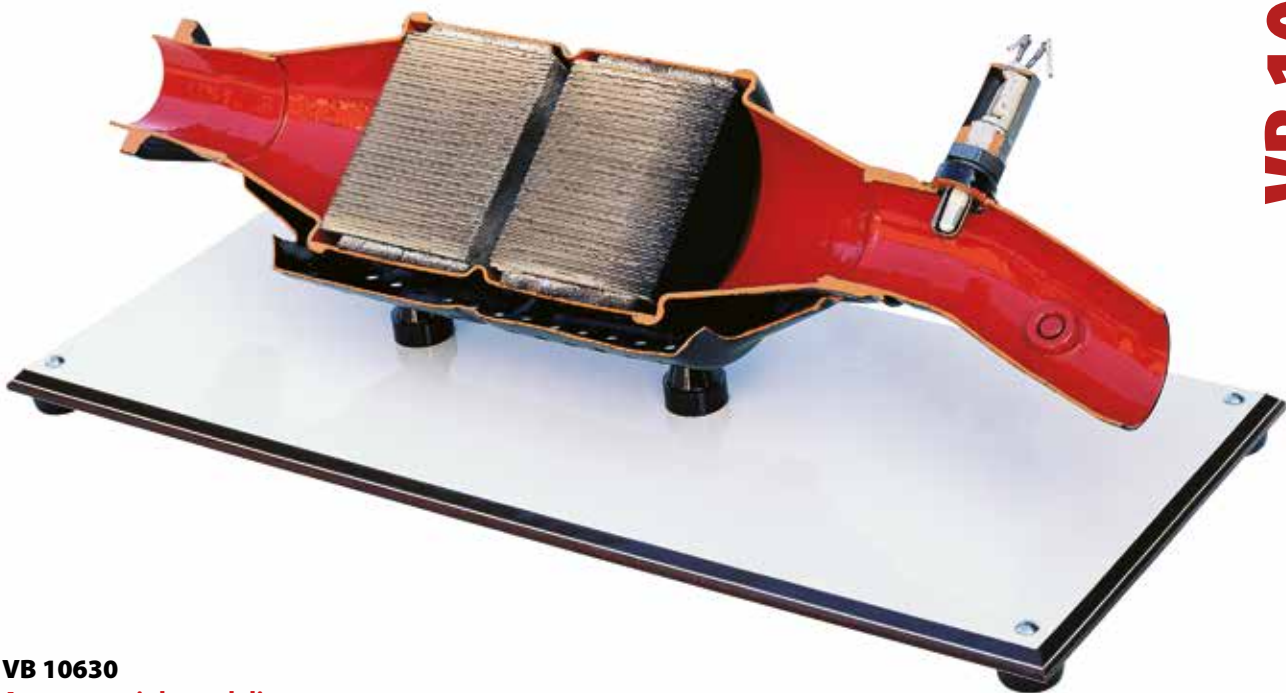
Cm: 12x12x22h

Net Weight: kg 2.5

Gross Weight: kg 4

## VB 10630 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 10500  
VB 10510  
VB 10630

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

---

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

---

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

---

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

---

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

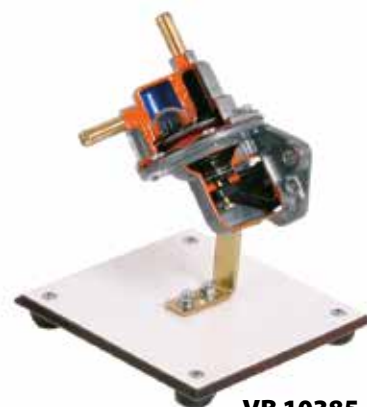
---



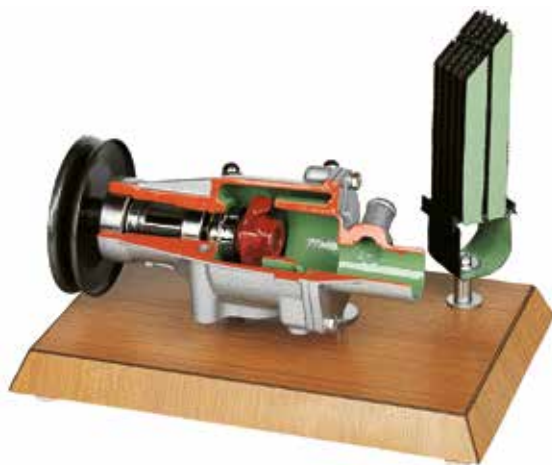
**VB 10370**



**VB 10380**



**VB 10385**



**VB 10390**



**VB 10400**

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

**Approx. weight and dim.:**

*Cm:* 15x15x15h

*Net Weight:* kg 0,5

*Gross Weight:* kg 1,0

**VB 10390 - VB 10400**

**Approx. weight and dim.:**

*Cm:* 30x20x30h

*Net Weight:* kg 3

*Gross Weight:* kg 6

**VB 10410 VANE PUMP - manual**

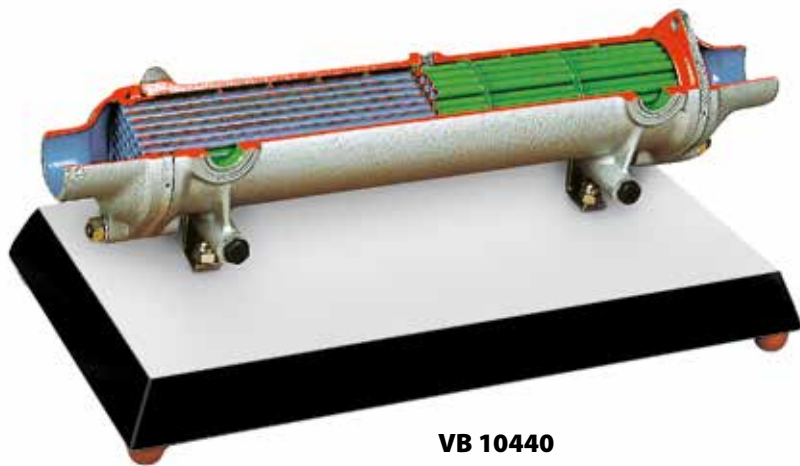
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**VB 10420 GEAR PUMP (on base) - manual**

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**VB 10440 INTERCOOLER HEAT EXCHANGER (on base) - static**

---

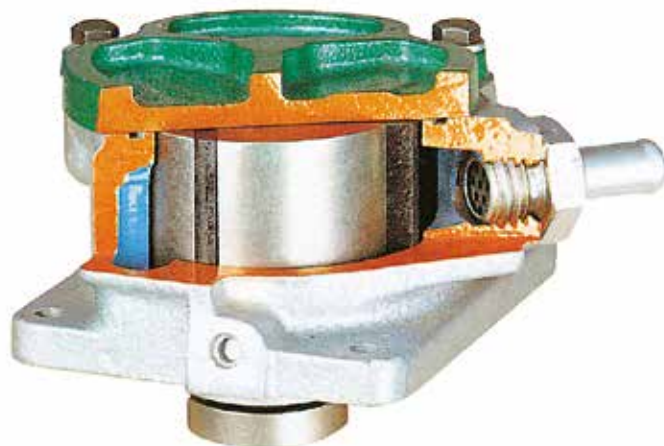


**VB 10440**



**VB 10420**

**VB 10410**



**VB 10420**

**Approx. weight and dim.:**

---

Cm: 25x20x30h

Net Weight: kg 1

Gross Weight: kg 2

**VB 10440**

**Approx. weight and dim.:**

---

Cm: 50x20x30h

Net Weight: kg 7

Gross Weight: kg 10

**VB 10410**

**Approx. weight and dim.:**

---

Cm: 15x15x20h

Net Weight: kg 1

Gross Weight: kg 2

**VB 10410 - VB 10420 - VB 10440**

## VB 9130 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



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

### VB 9130

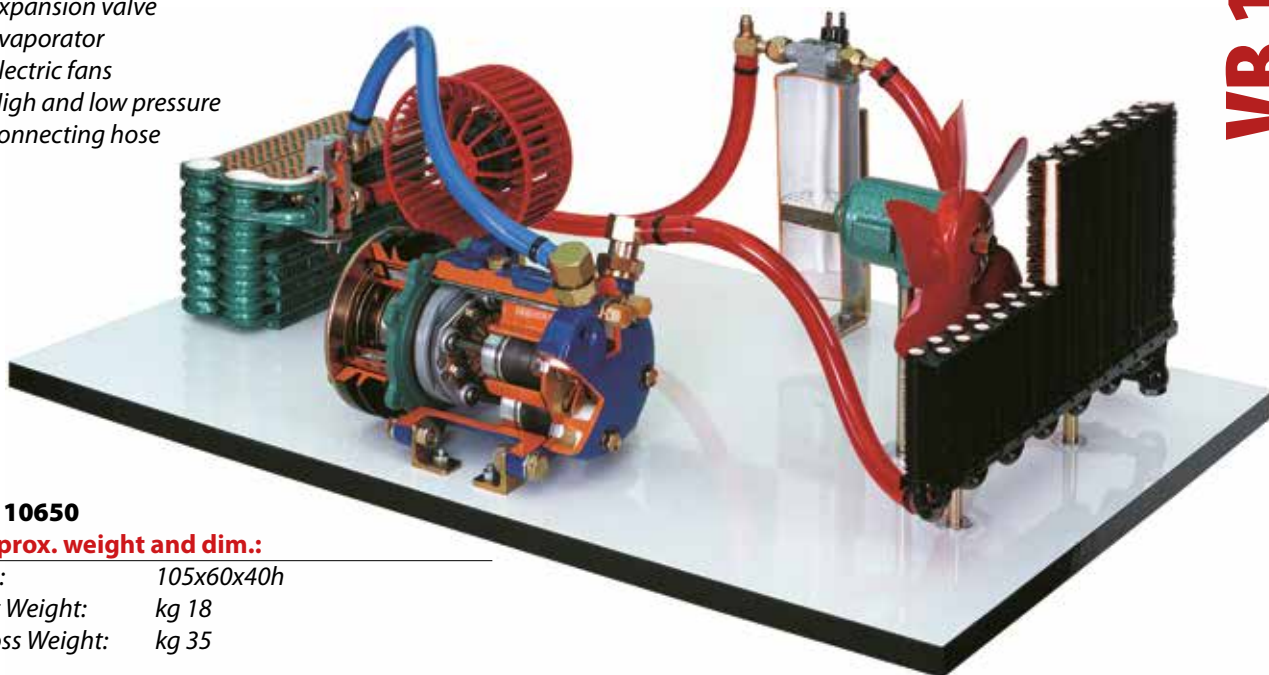
#### Approx. weight and dim.:

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

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

### Main technical specifications:

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



### VB 10650

#### Approx. weight and dim.:

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

## VB 10651 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 10650

VB 10651

# VB 10652 - VB 10653

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

---

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

---



**VB 10652**

**Approx. weight and dim.:**

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



**VB 10653**

**Approx. weight and dim.:**

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

# VB 10654 - VB 10655

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

---

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

---



**VB 10654**

**Approx. weight and dim.:**

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



**VB 10655**

**Approx. weight and dim.:**

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



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

---

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

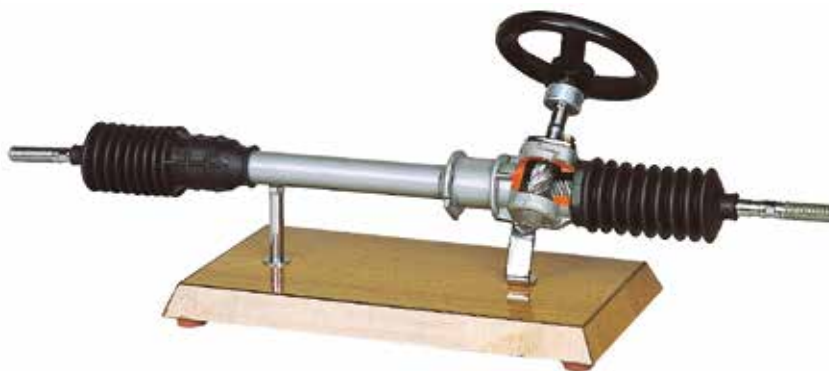
---

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

---

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

---



**VB 10700**

**Approx. weight and dim.:**

---

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

**VB 10710**

**Approx. weight and dim.:**

---

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

**VB 10720**

**Approx. weight and dim.:**

---

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

**VB 10730**

**Approx. weight and dim.:**

---

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

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

# VB 10750

## VB 10750 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.



### VB 10750

#### Approx. weight and dim.:

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

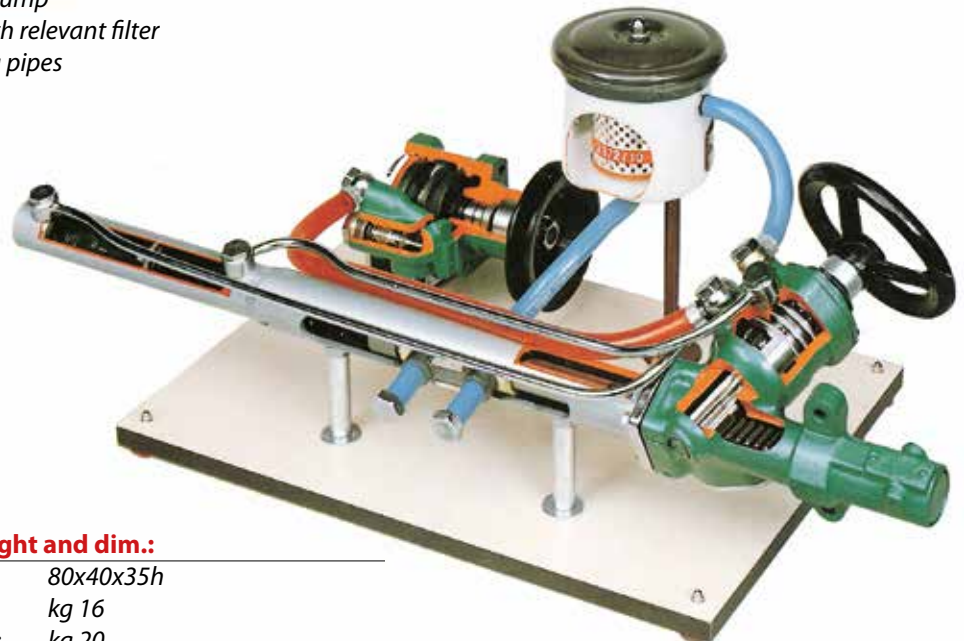
# VB 10760

## VB 10760 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.



### VB 10760

#### Approx. weight and dim.:

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

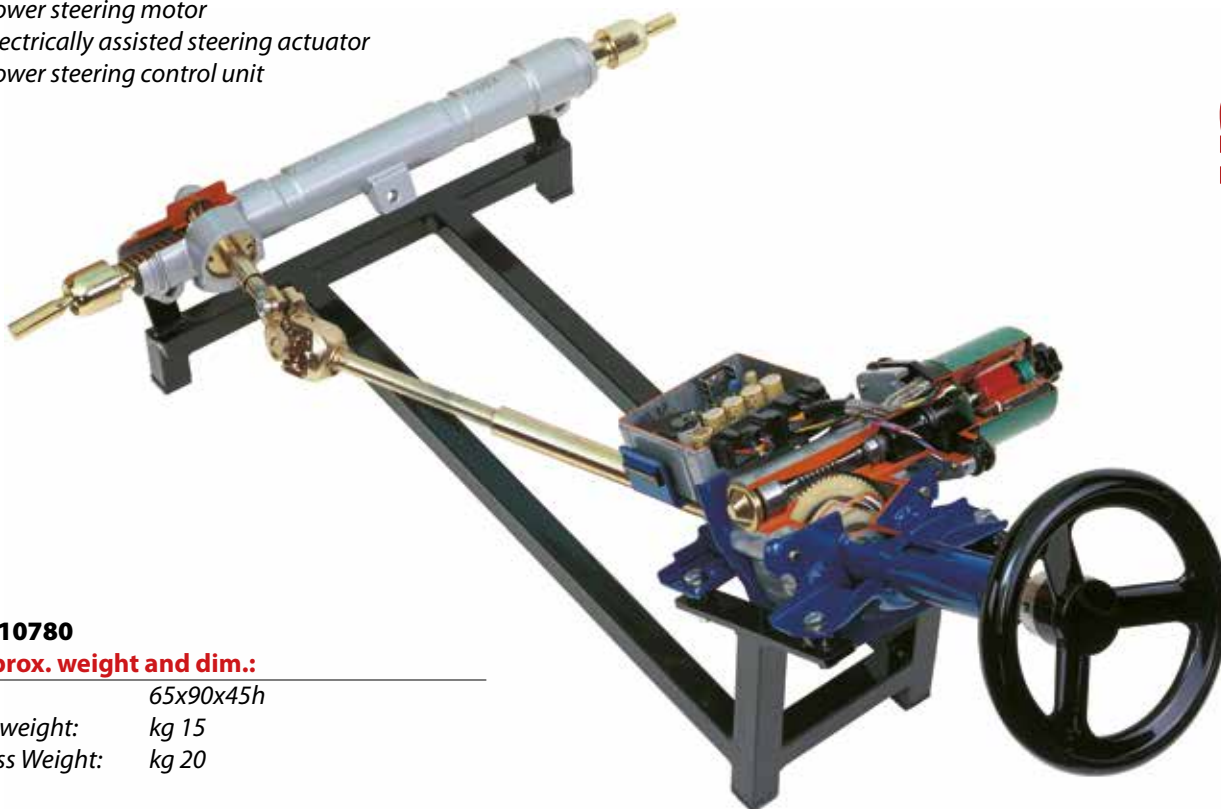
These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts, cross-sections. Many parts have been chromium, plated and galvanized for a longer life.

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

### Main technical specifications:

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

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



### VB 10780

#### Approx. weight and dim.:

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

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



### VB 10782

#### Approx. weight and dim.:

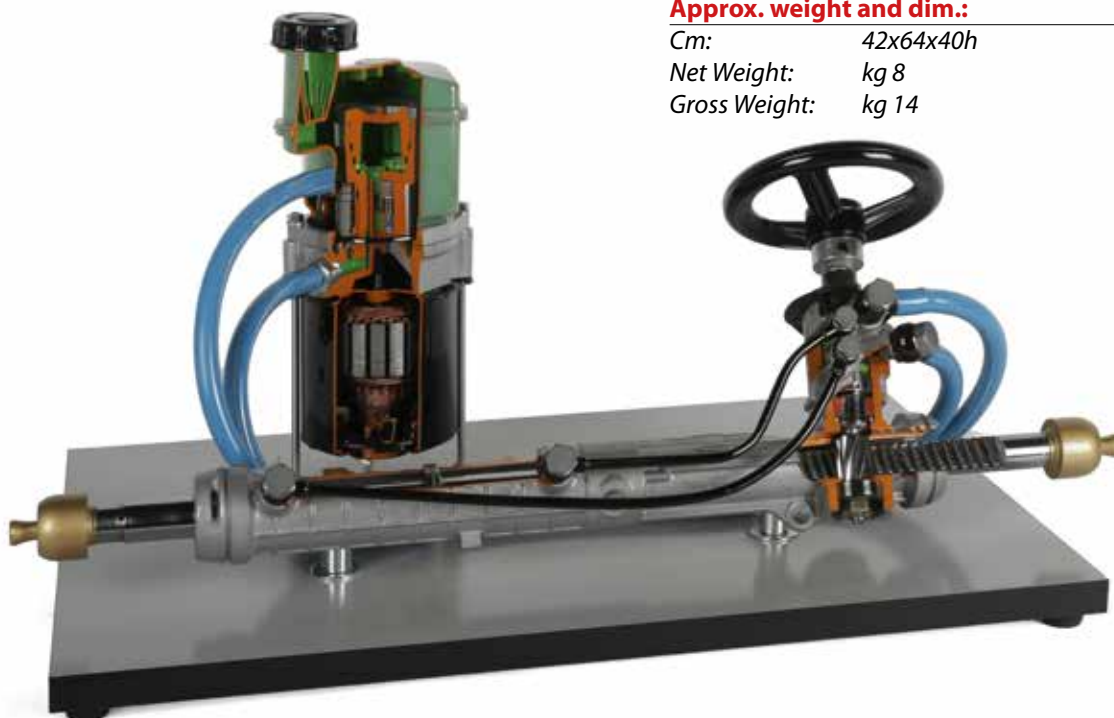
Cm: 70x30x40h  
Net Weight: kg 15  
Gross Weight: kg 22

VB 10780

VB 10782

## VB 10784 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.



### VB 10784

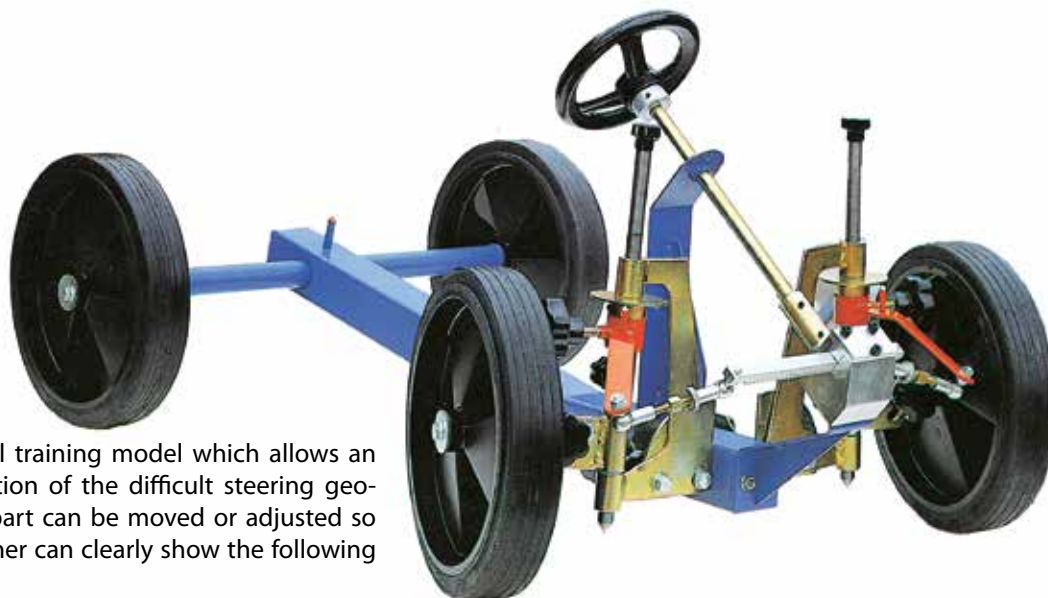
#### Approx. weight and dim.:

Cm: 42x64x40h

Net Weight: kg 8

Gross Weight: kg 14

## VB 11205 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

### VB 11205

#### 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.*

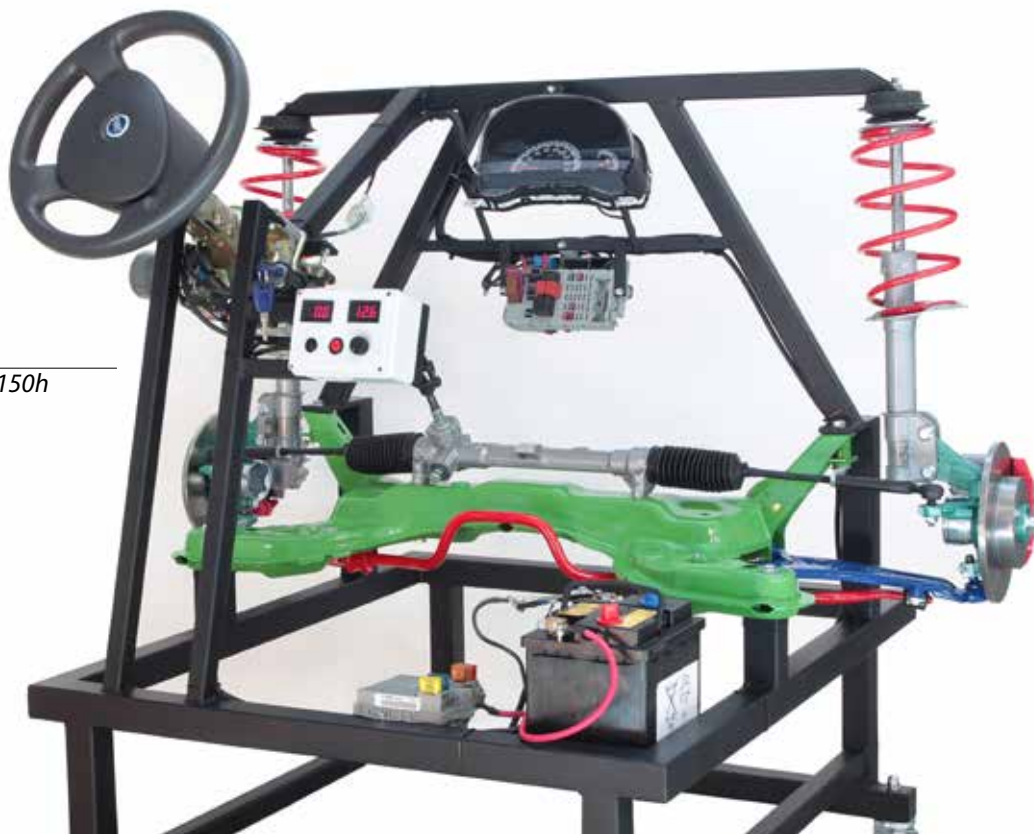
*On request we can supply a handbook with practical and theoretical instructions.*

## VB 10778 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)



### VB 10778

#### Approx. weight and dim.:

Cm: 160x130x150h

Net Weight: kg 150

Gross Weight: kg 230

## VB 10635 PNEUMATIC SUSPENSION COMPRESSOR (on base) - static



### VB 10635

#### Approx. weight and dim.:

Cm: 20x20x25h

Net Weight: kg 5

Gross Weight: kg 10

VB 10778

VB 10635

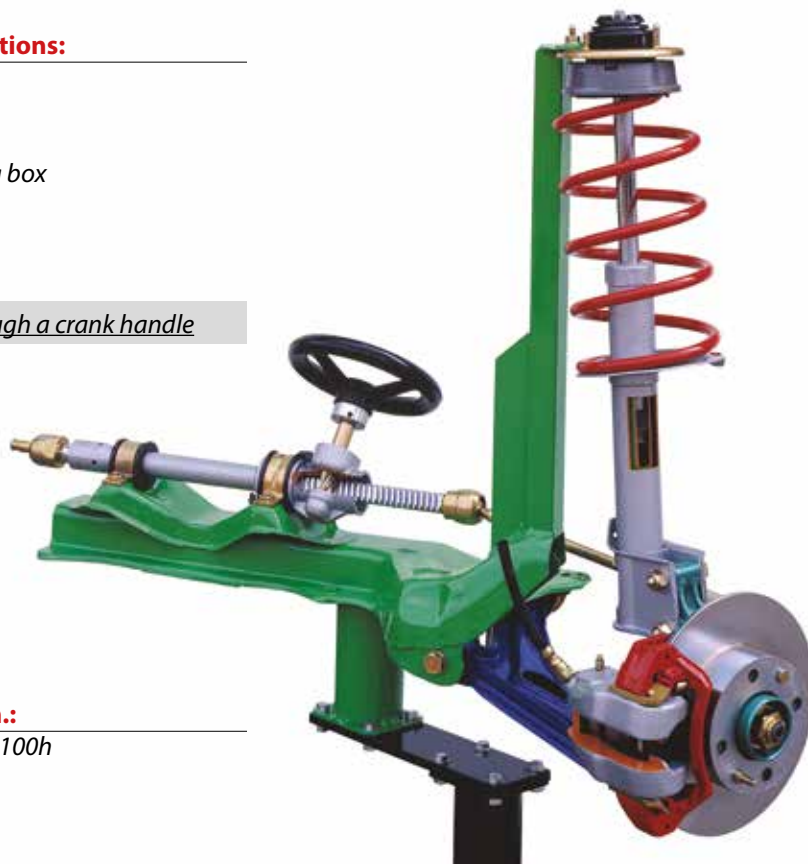
# VB 11210

## VB 11210 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*



### VB 11210

#### Approx. weight and dim.:

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

# VB 11220

## VB 11220 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*



### VB 11220

#### 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.*

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

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



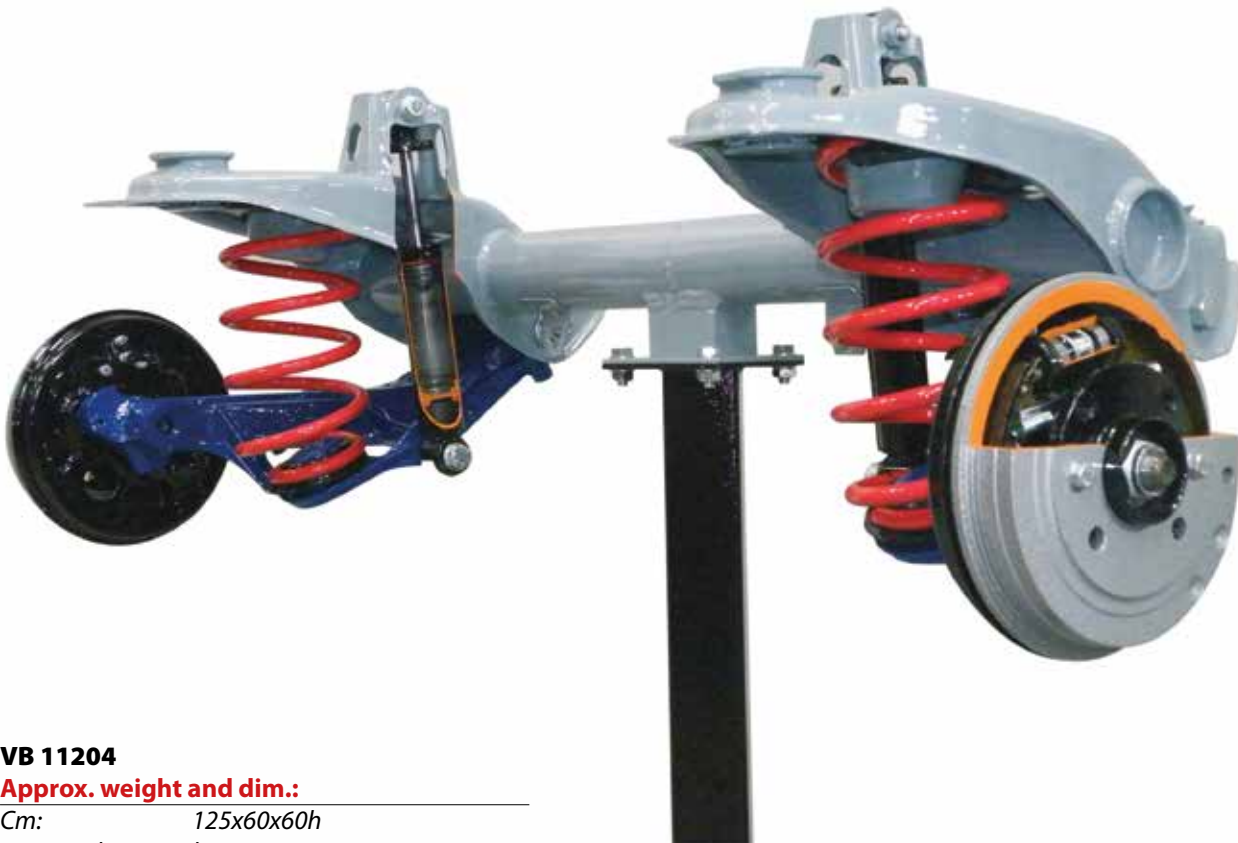
### VB 11202

#### Approx. weight and dim.:

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

VB 11202

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



### VB 11204

#### Approx. weight and dim.:

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

VB 11204

# VB 11006

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

*Operated manually through a hand wheel.*



### VB 11006

#### Approx. weight and dim.:

Cm: 70x70x80h

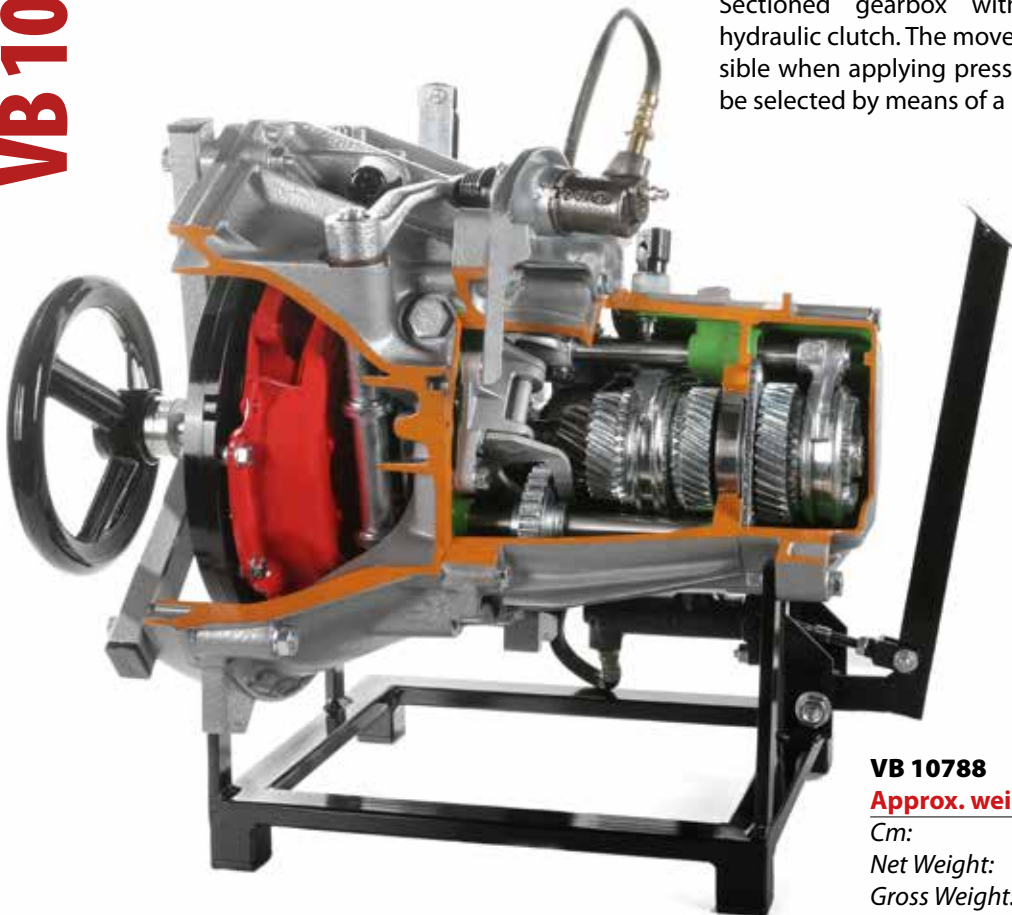
Net Weight: kg 40

Gross Weight: kg 55

# VB 10788

## VB 10788 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.



### VB 10788

#### Approx. weight and dim.:

Cm: 60x60x60h

Net Weight: kg 60

Gross Weight: kg 90



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

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

With possibility of selecting any speed.

*Operated manually through a hand wheel.*

### **VB 10980**

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

Cm: 85x65x30h

Net Weight: kg 40

Gross Weight: kg 60

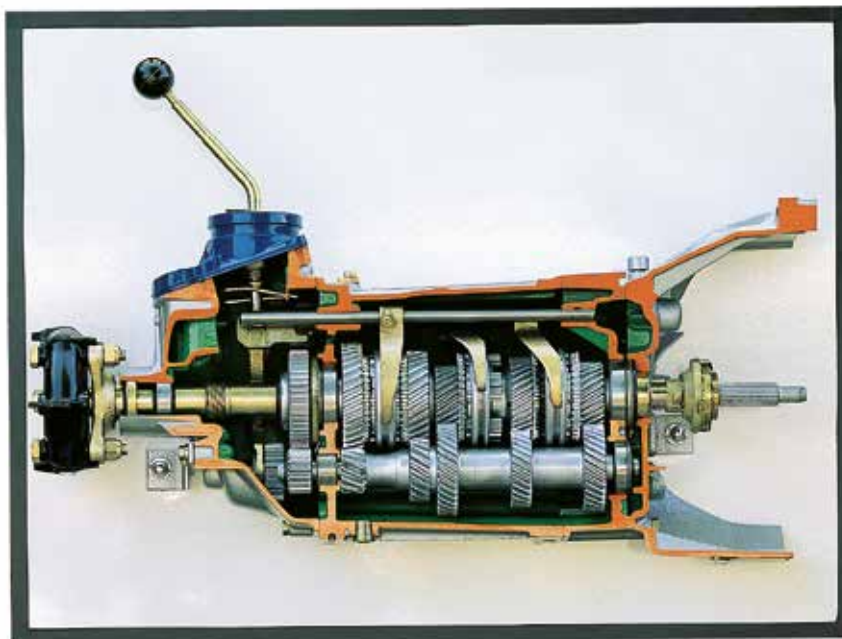
### **VB 10990**

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

Cm: 90x65x50h

Net Weight: kg 50

Gross Weight: kg 75



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

*Operated manually through a crank handle.*

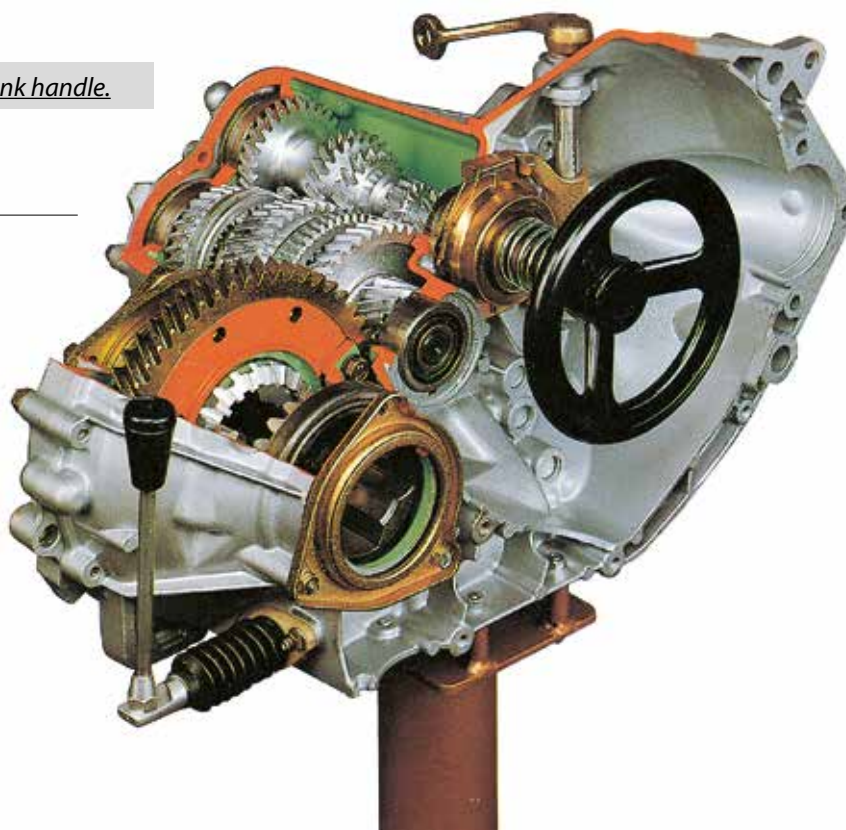
### **VB 11005**

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

Cm: 60x60x60h

Net Weight: kg 40

Gross Weight: kg 60



*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 10980 - VB 10990**

**VB 11005**

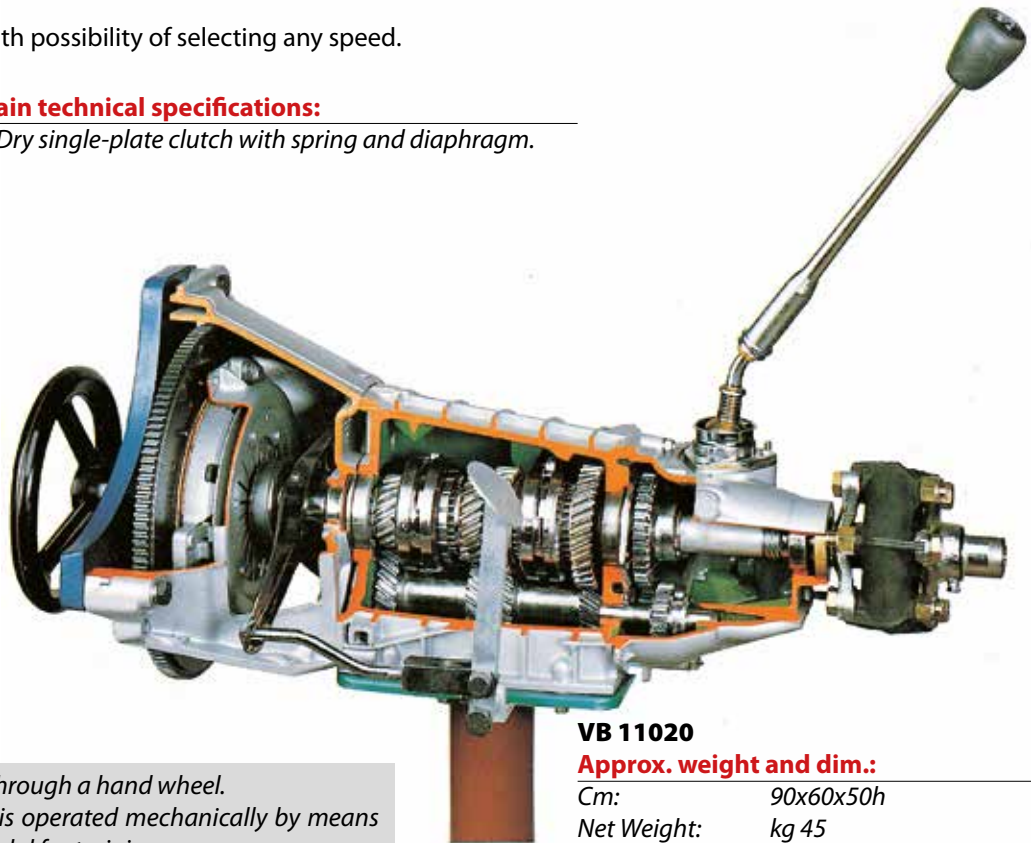
# VB 11020

## VB 11020 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.

### VB 11020

#### Approx. weight and dim.:

Cm: 90x60x50h

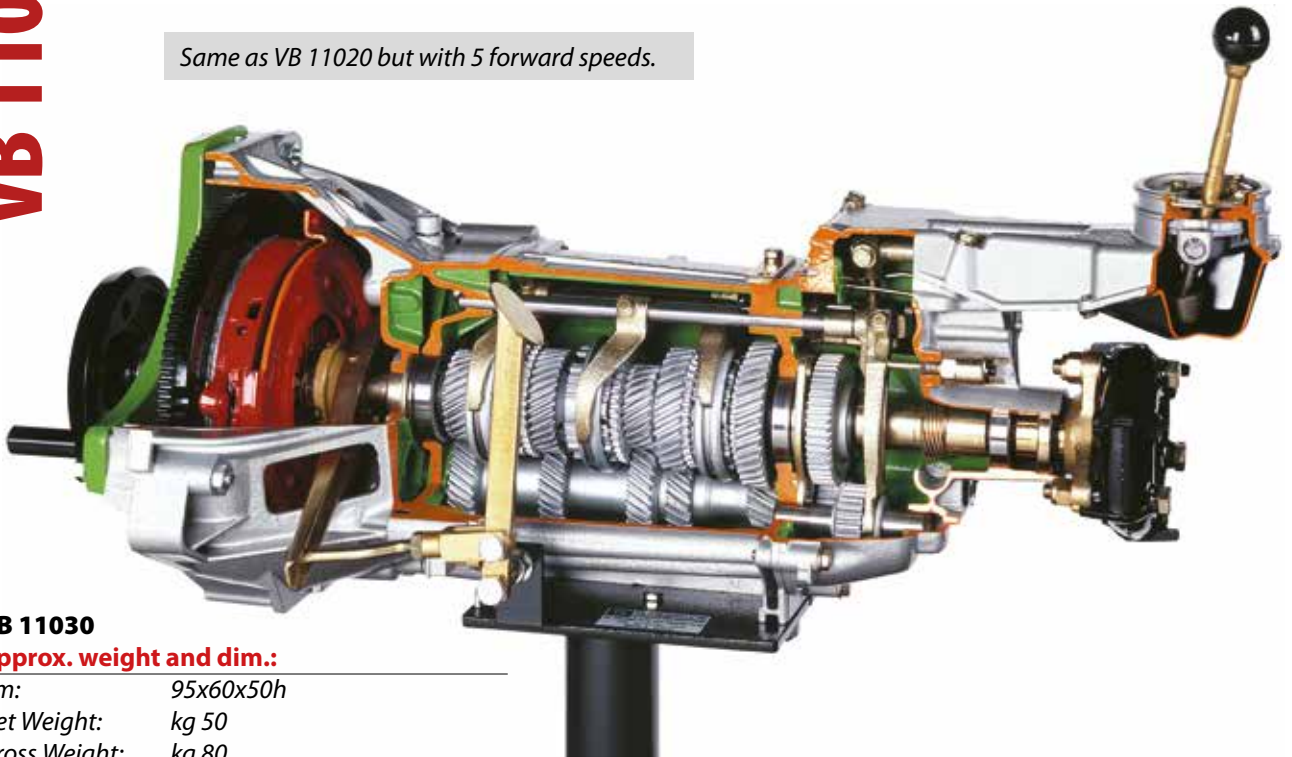
Net Weight: kg 45

Gross Weight: kg 65

# VB 11030

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

Same as VB 11020 but with 5 forward speeds.



### VB 11030

#### Approx. weight and dim.:

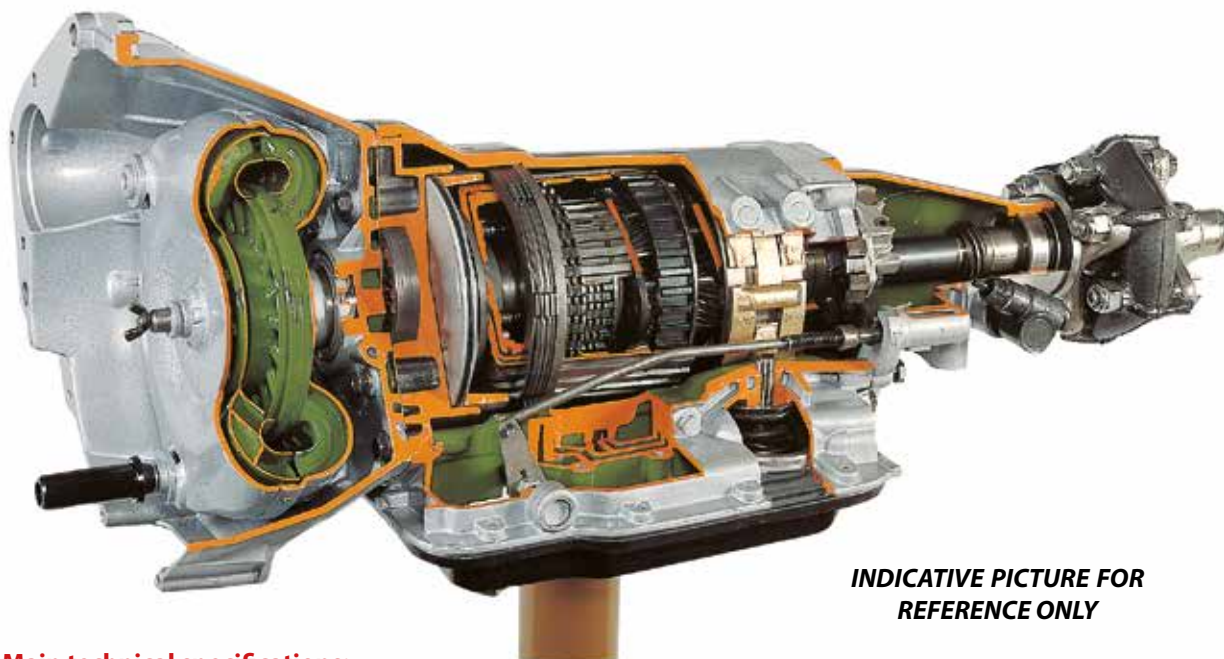
Cm: 95x60x50h

Net Weight: kg 50

Gross Weight: kg 80

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

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



INDICATIVE PICTURE FOR  
REFERENCE ONLY

### Main technical specifications:

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

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

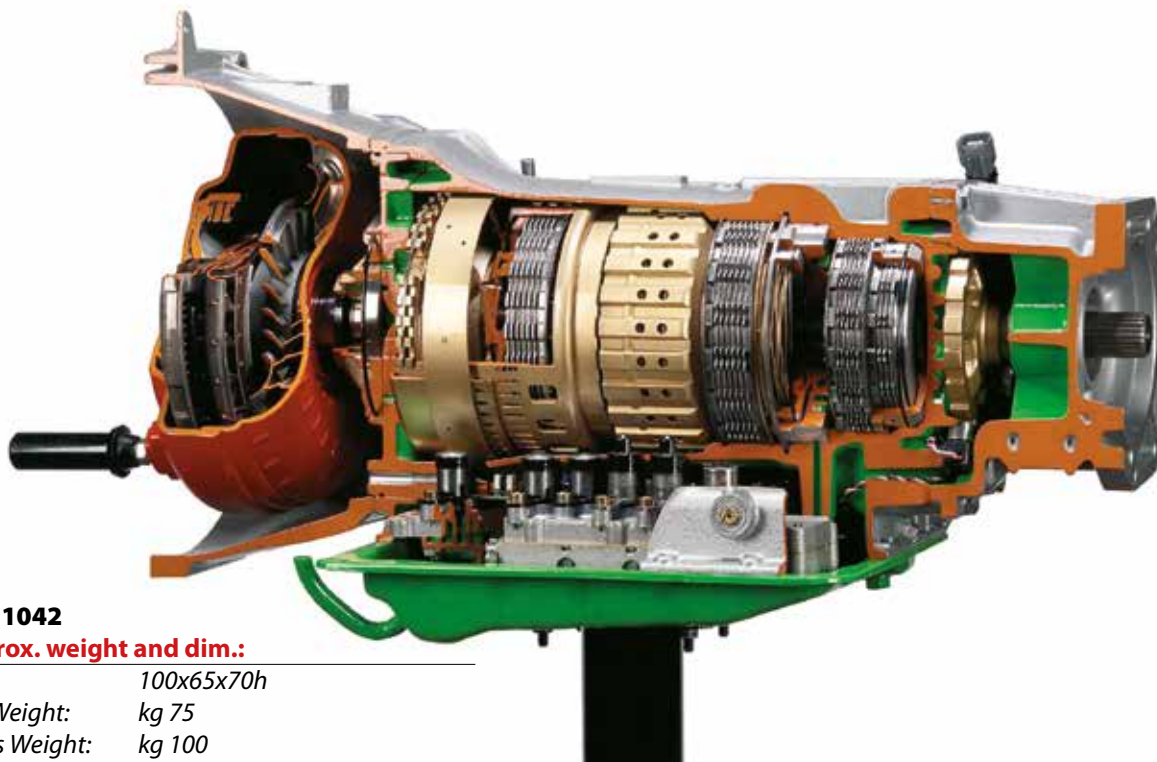
### VB 11040

#### Approx. weight and dim.:

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

## VB 11042 AUTOMATIC TRANSMISSION 4X4 VEHICLE 5 FORWARD SPEED + REVERSE (on stand with wheels) - manual

*Same as VB 11040 but with 5 forward speeds.*



### VB 11042

#### Approx. weight and dim.:

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

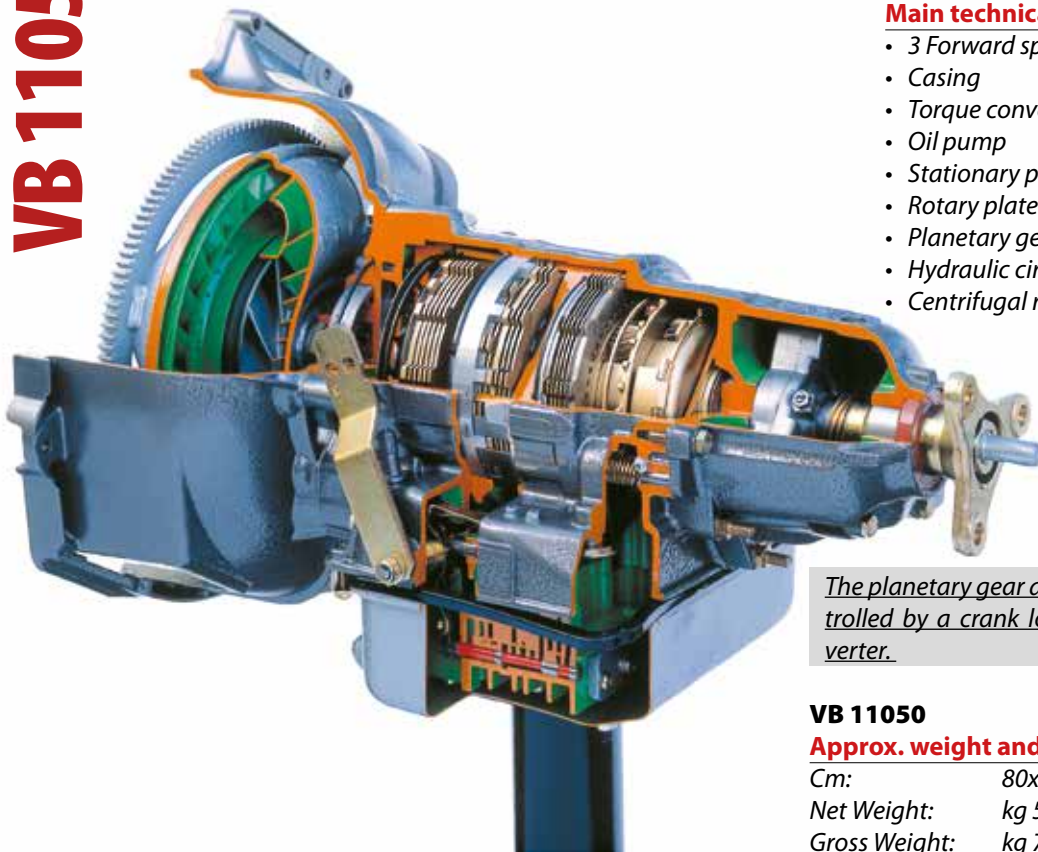
*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.  
Many parts have been chromium, plated and galvanized for a longer life.*

VB 11040

VB 11042

# VB 11050

## VB 11050 ZF 3HP AUTOMATIC TRANSMISSION (on stand with wheels) - manual



### Main technical specifications:

- 3 Forward speeds + reverse
- Casing
- Torque converter
- Oil pump
- Stationary plate clutch
- Rotary plate clutch
- Planetary gear train
- Hydraulic circuit valve
- Centrifugal regulator

*The planetary gear and clutch rotation are controlled by a crank located on the torque converter.*

### VB 11050

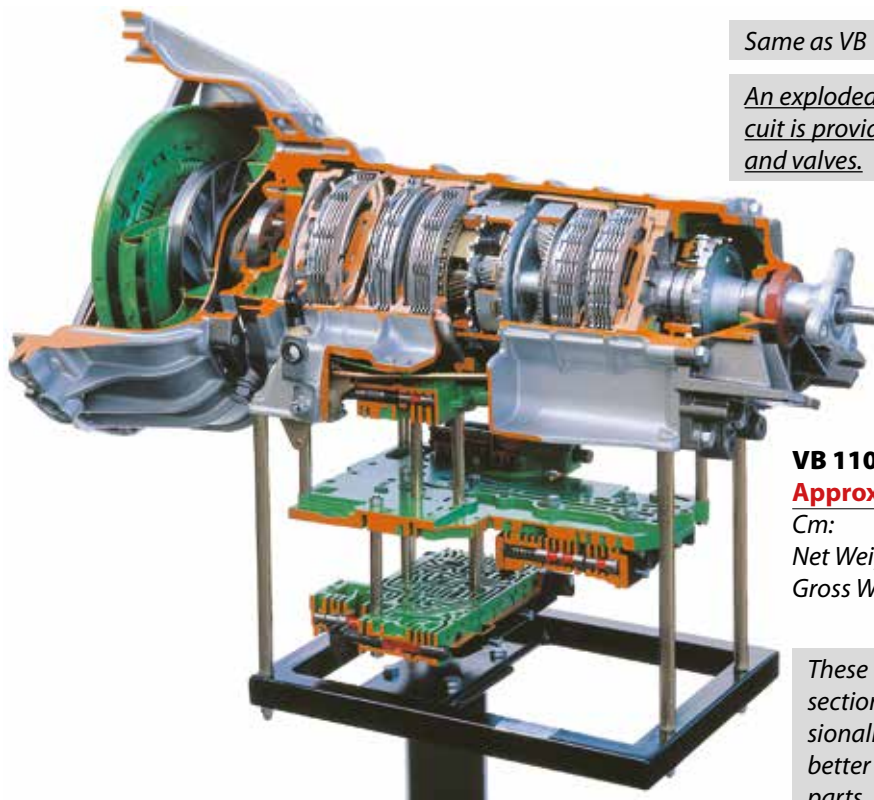
#### Approx. weight and dim.:

Cm:	80x60x80h
Net Weight:	kg 50
Gross Weight:	kg 70

## VB 11060 AUTOMATIC TRANSMISSION **REAR DRIVE** 4 FORWARD SPEED + REVERSE (on stand with wheels) - manual

## VB 11062 AUTOMATIC TRANSMISSION **FRONT DRIVE** 4 FORWARD SPEED + REVERSE (on stand with wheels) - manual

# VB 11060 - VB 11062



*Same as VB 11050 but with 4 forward speeds.*

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

### VB 11060 - VB 11062

#### 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.*

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

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

---

**VB11063/8 - AUTOMATIC GEARBOX 8 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

**VB 11050**

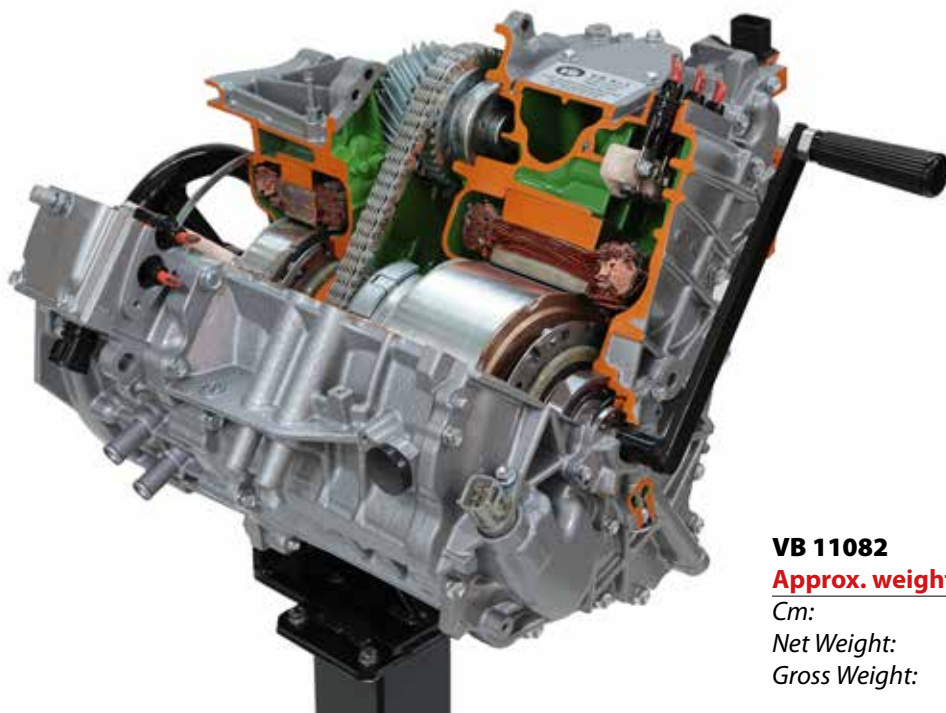
**Approx. weight and dim.:**

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

**VB 11082 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.



**VB 11082**

**Approx. weight and dim.:**

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

**VB 11063**

**VB 11082**



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.

### VB 11020

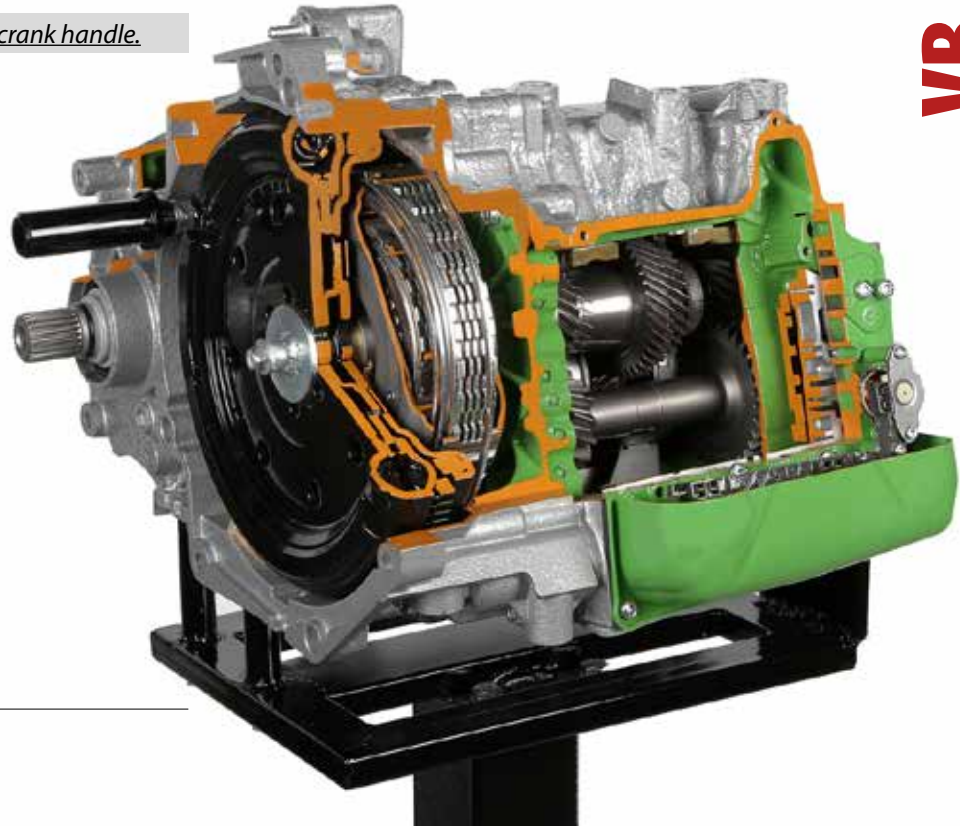
#### Approx. weight and dim.:

Cm: 100x70x85h  
 Net Weight: kg 295  
 Gross Weight: kg 350

## VB 11064 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.*



### VB 11064

#### Approx. weight and dim.:

Cm: 80x40x70h  
Net Weight: kg 60  
Gross Weight: kg 85

## VB 11066 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.*

### VB 11066

#### Approx. weight and dim.:

Cm: 60x50x80h  
Net Weight: kg 35  
Gross Weight: kg 55



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

VB 11064

VB 11066

# VB 11068

## VB 11068 CONTINUOUSLY VARIABLE TRANSMISSION (CVT) GEARBOX (on stand with wheels) - manual

Special gearbox that can change continuously through an infinite number of effective gear ratios between maximum and minimum values. There are two V-belt pulleys that are split perpendicular to their axes of rotation, with a V-belt running between them.

### Main technical features:

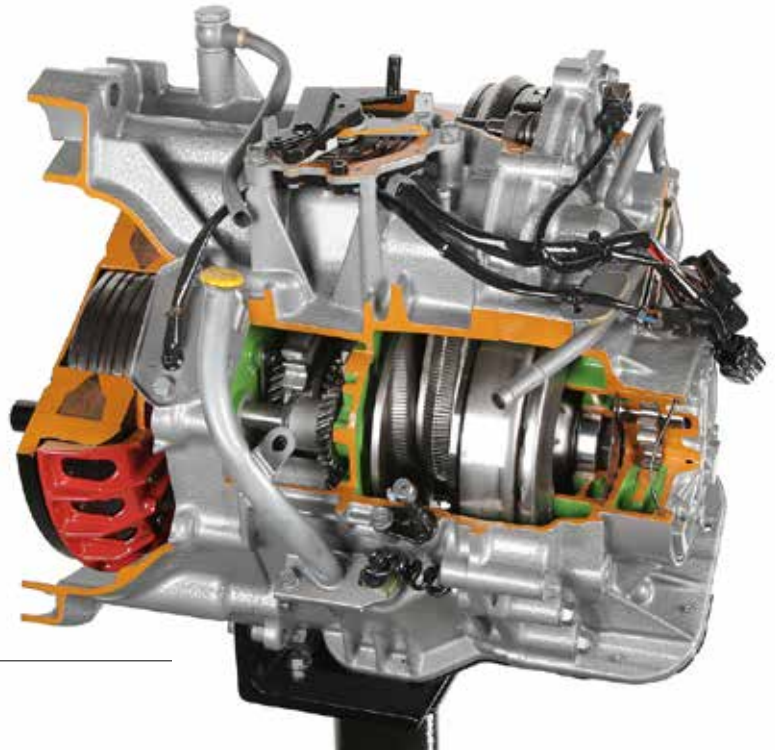
- Electro-magnetic clutch
- Forward and reverse insertion lever
- Primary pulley
- Secondary pulley
- Roller belt
- Final reduction unit
- Hydraulic command unit

*Operated manually through a crank handle.*

### VB 11068

#### Approx. weight and dim.:

Cm: 60x50x80h  
Net Weight: kg 45  
Gross Weight: kg 75



# VB 11069

## VB 11069 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.*

### VB 11069

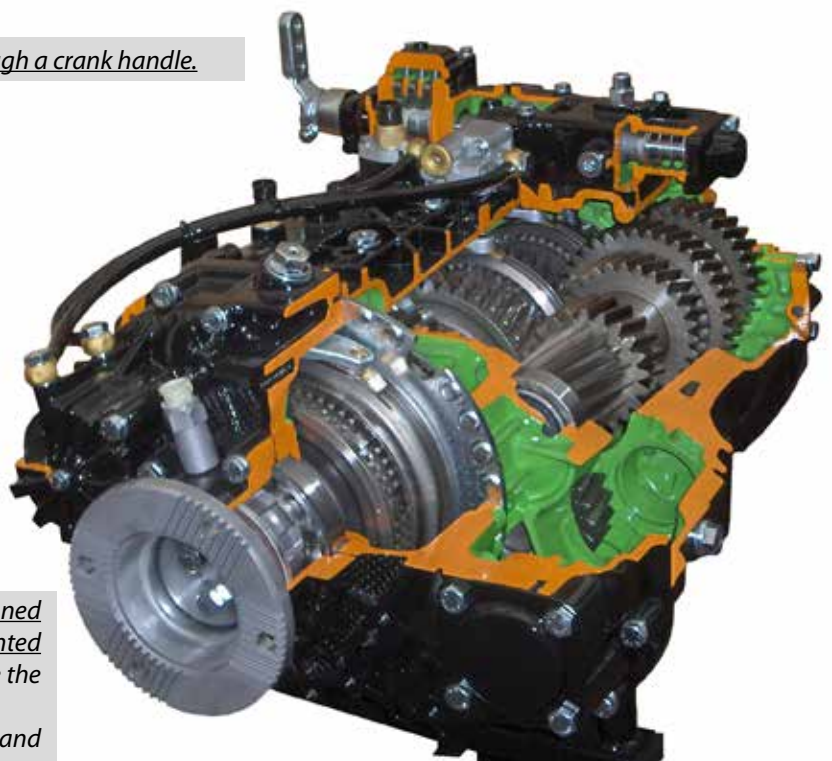
#### Approx. weight and dim.:

Cm: 90x110x130h  
Net Weight: kg 280  
Gross Weight: kg 380

**INDICATIVE PICTURE FOR  
REFERENCE ONLY**

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## VB 11070 FULLER 13 SPEED GEARBOX (on stand with wheels) - manual

Quick change gear box used in 300/400HP heavyweight vehicles with mechanical and pneumatic control.

It is a non-synchronized gearbox, the box is divided in 2 parts:

on the engine side are the 1st 2nd 3rd and 4th speed gears, reverse speed gears and extra low ratio pick-up speed gears.

All these gears are mechanically controlled by the change gear lever.

In the other part of the gearbox (on the output shaft side), there are the standard, low ratio and semi-low ratio speed gears, pneumatically controlled by the pre-selectors provided on the gear lever. This gearbox is made very sturdy by the presence of 2 auxiliary shafts sharing stress to an equal degree.



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### VB 11070

#### Approx. weight and dim.:

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

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

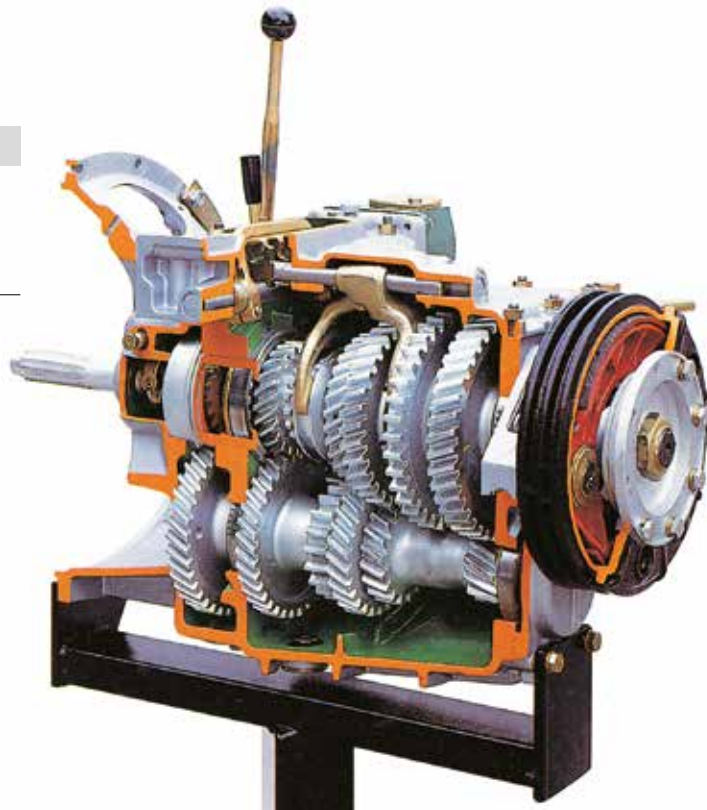
Gearbox for heavy vehicle.

*Operated manually through a crank handle.*

### VB 11080

#### Approx. weight and dim.:

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



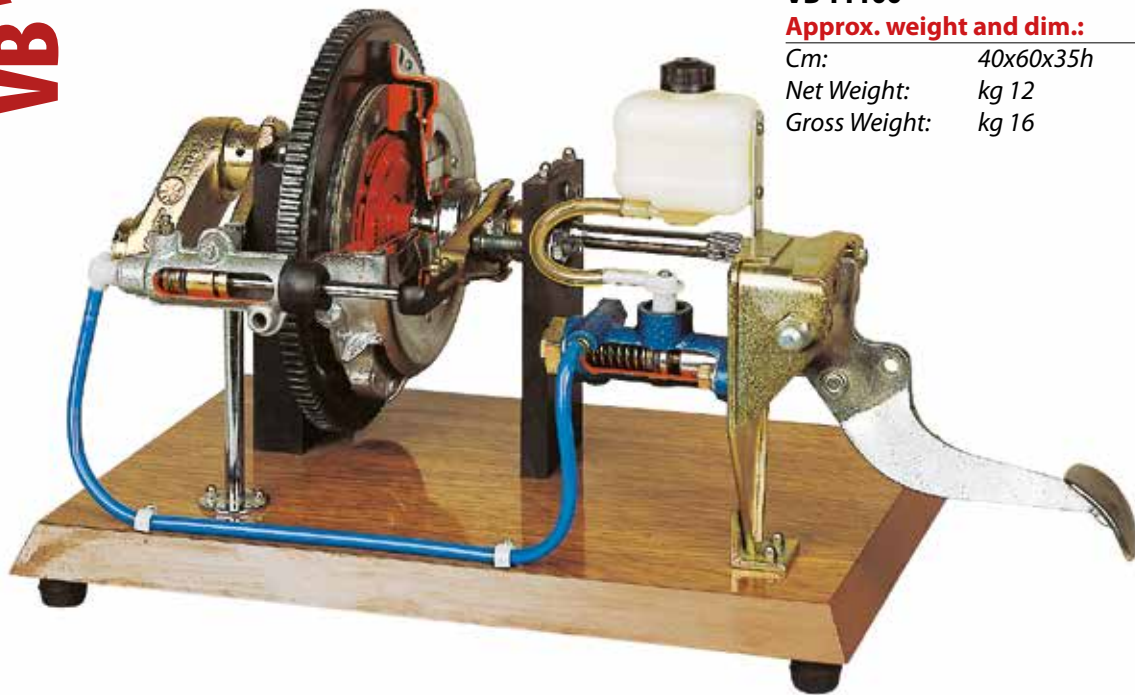
VB 11070

VB 11080

**VB 11100**

### **VB 11100 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.



#### **VB 11100**

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

Cm: 40x60x35h  
Net Weight: kg 12  
Gross Weight: kg 16

**VB 11110**

### **VB 11110 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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#### **VB 11110**

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

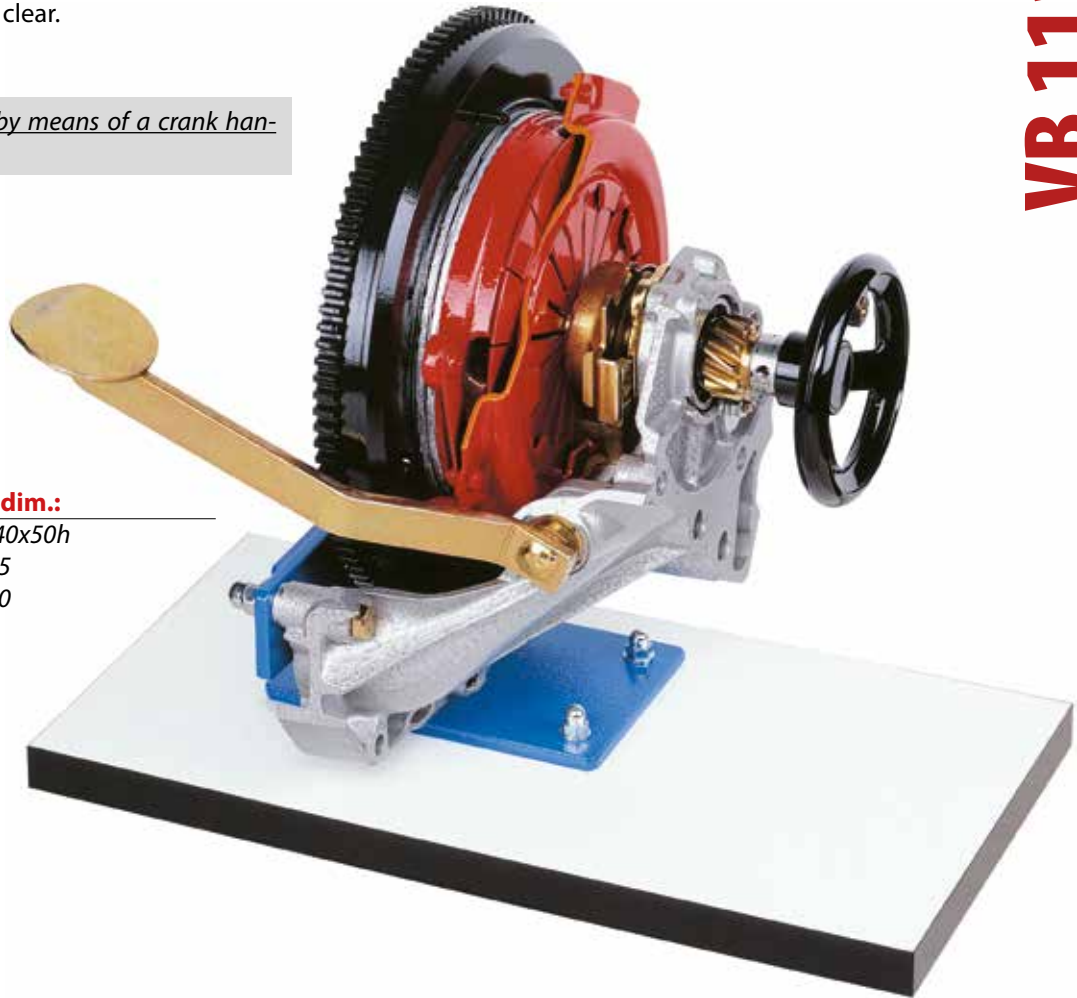
Cm: 30x30x30h  
Net Weight: kg 6  
Gross Weight: kg 10

## VB 11130 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.*



### VB 11130

#### Approx. weight and dim.:

Cm: 50x40x50h

Net Weight: kg 15

Gross Weight: kg 20

## VB 11140 TORQUE CONVERTER (on base) - static

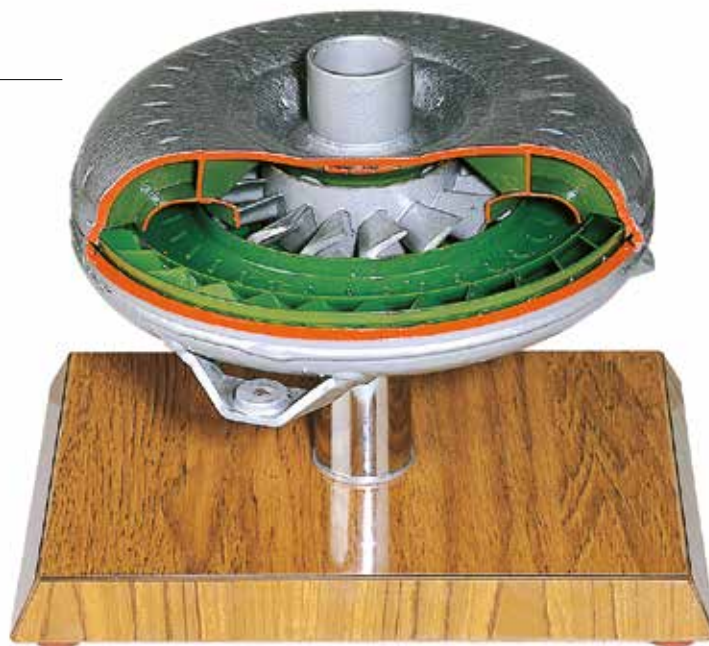
### VB 11140

#### Approx. weight and dim.:

Cm: 35x35x30h

Net Weight: kg 8

Gross Weight: kg 12



*These cutaway models are carefully sectioned for training purposes, professionally painted with different colours to better differentiate the various parts.*

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

VB 11130

VB 11140

# VB 11090

## VB 11090 DOUBLE CLUTCH (HYDRAULIC + MECHANICAL) FOR CARS (on base) - static

### VB 11090

#### Approx. weight and dim.:

Cm: 40x35x40h

Net Weight: kg 27

Gross Weight: kg 35



# VB 11095

## VB 11095 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.*

### VB 11095

#### 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.*

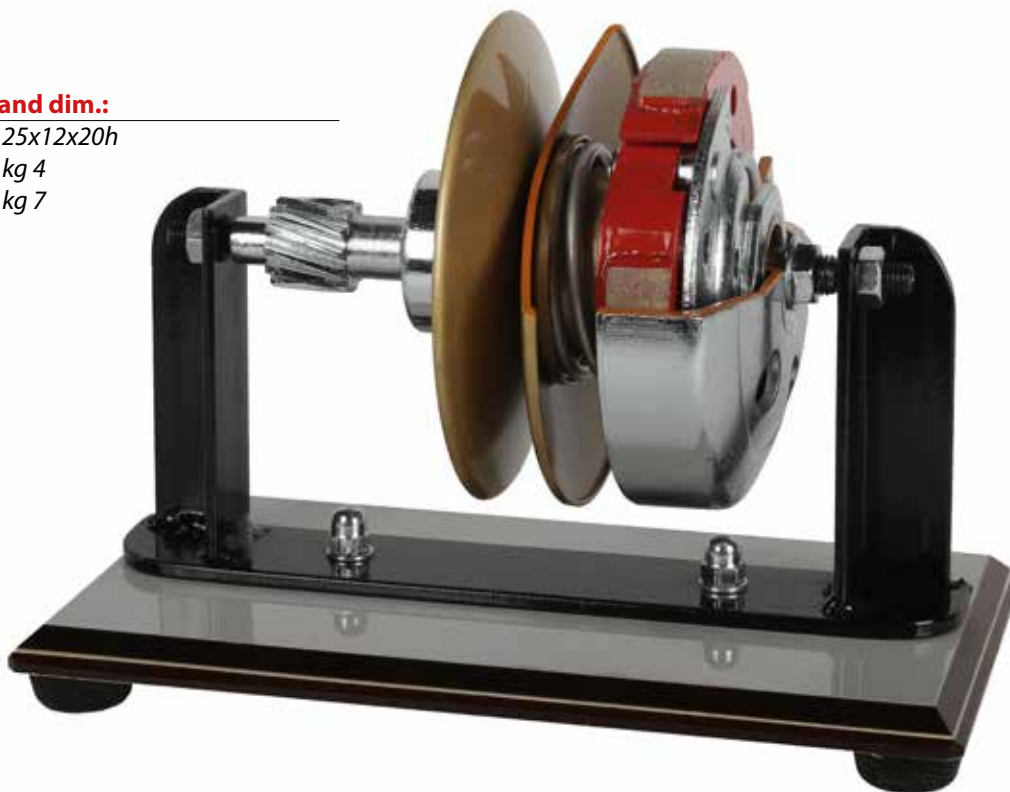
## VB 11141 CENTRIFUGAL CLUTCH (on base) - manual

Accurate section of a centrifugal clutch, moving parts type used in Mopeds.

### VB 11141

#### Approx. weight and dim.:

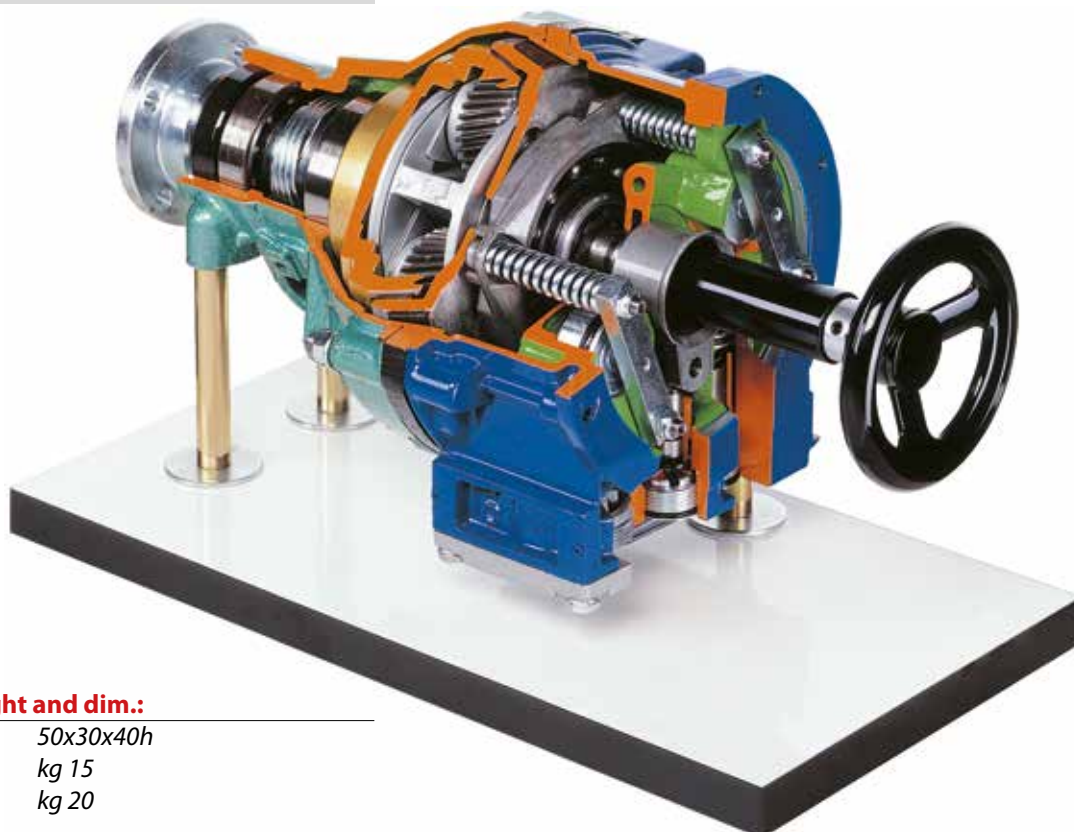
Cm: 25x12x20h  
Net Weight: kg 4  
Gross Weight: kg 7



## VB 11150 OVERDRIVE (on base) - manual

Epicyclic overdrive cutaway model, with electromagnetic actuator, of the type fitted to Volvo motorcars.

*Operated manually through a crank handle.*



### VB 11150

#### Approx. weight and dim.:

Cm: 50x30x40h  
Net Weight: kg 15  
Gross Weight: kg 20

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

VB 11141

VB 11150

# VB 10790

## VB 10790 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.

Typical as in every automatic motorcar transmission there is a planetary gear.



### VB 10790

#### Approx. weight and dim.:

Cm: 25x25x30h

Net Weight: kg 5

Gross Weight: kg 8

# VB 11200

## VB 11200 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.*



### VB 11200

#### Approx. weight and dim.:

Cm: 120x70x65h

Net Weight: kg 40

Gross Weight: kg 55

**VB 11198 - REAR AXLE HEAVY TRUCK WITH LOCKING DIFFERENTIAL (on stand with wheels) –manual**

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**VB 11199 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



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



**VB 11198 - VB 11199**

**Approx. weight and dim.:**

Cm: 235x95x1050h

Net Weight: kg 590

Gross Weight: kg 700

**VB 11198 - VB 11199**

## VB 11295 - 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.



### VB 11295

#### Approx. weight and dim.:

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

## VB 11084 - 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.



### VB 11084

#### Approx. weight and dim.:

Cm:	40x40x60h
Net Weight:	kg 25
Gross Weight:	kg 40



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

Accurate section of an assembly including a Ferguson type viscous coupling differential for four-wheel drive (4x4) motorcars.

### VB 11250

#### Approx. weight and dim.:

Cm: 30x40x30h  
Net Weight: kg 20  
Gross Weight: kg 25



## VB 11260 SELF-LOCKING HYPOID DIFFERENTIAL (on table stand) - manual

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

### VB 11260

#### Approx. weight and dim.:

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



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

Accurate section of Torsen bevel gear pair differential assembly, to show the complex operation system which works according to the worm screw principle. Fitted to top-of-the-range four-wheel drive (4x4) motorcars.

### VB 11270

#### Approx. weight and dim.:

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



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

VB 11250

VB 11260

VB 11270

# VB 11280

## VB 11280 HYPOID DIFFERENTIAL (on base) - manual

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COMPLETE WITH SHAFTS



### VB 11280

#### Approx. weight and dim.:

Cm: 50x40x30h

Net Weight: kg 30

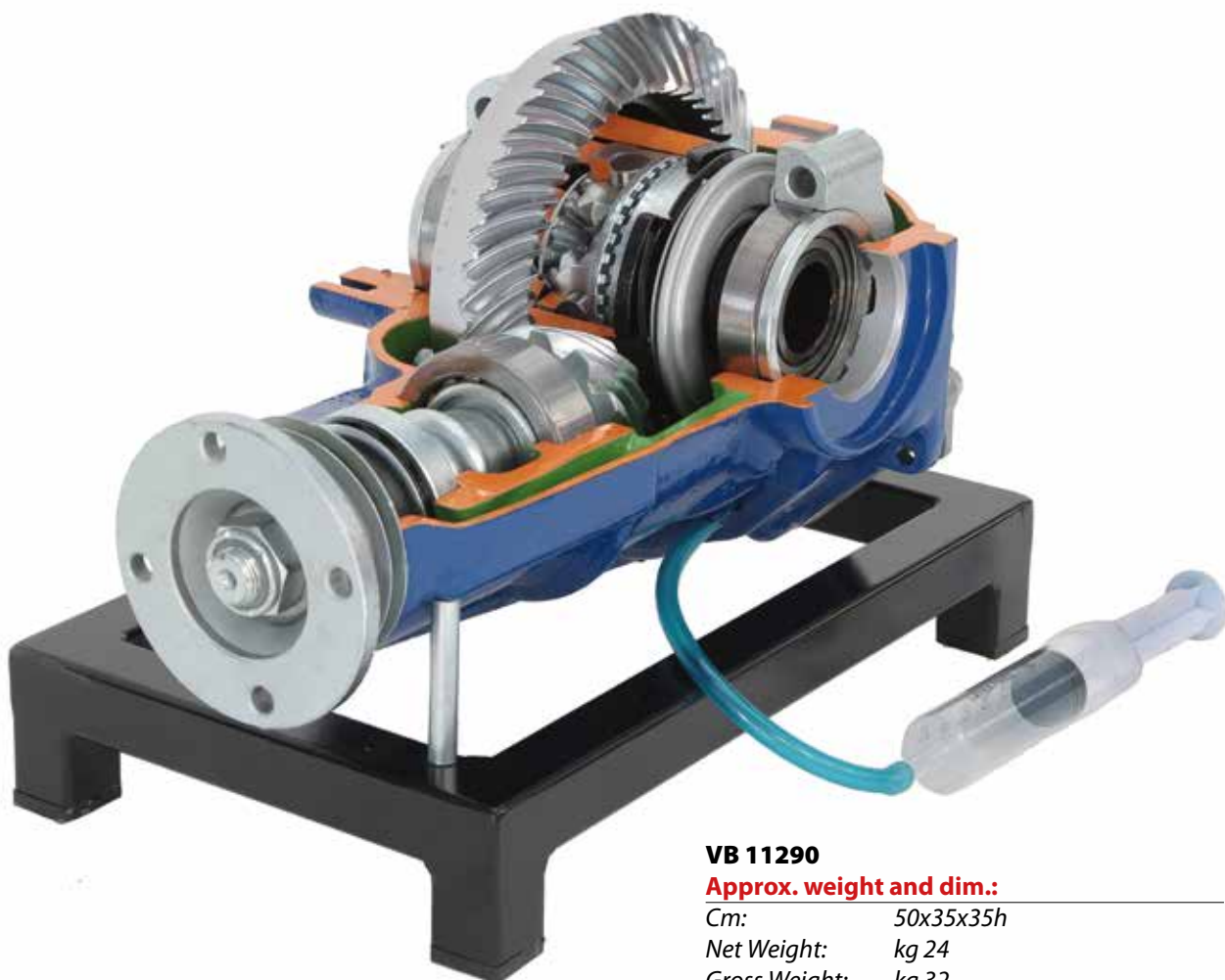
Gross Weight: kg 40

# VB 11290

## VB 11290 LOCKING DIFFERENTIAL 100% (on base) - manual

---

Full locking differential usually mounted on off-road vehicles.



### VB 11290

#### Approx. weight and dim.:

Cm: 50x35x35h

Net Weight: kg 24

Gross Weight: kg 32

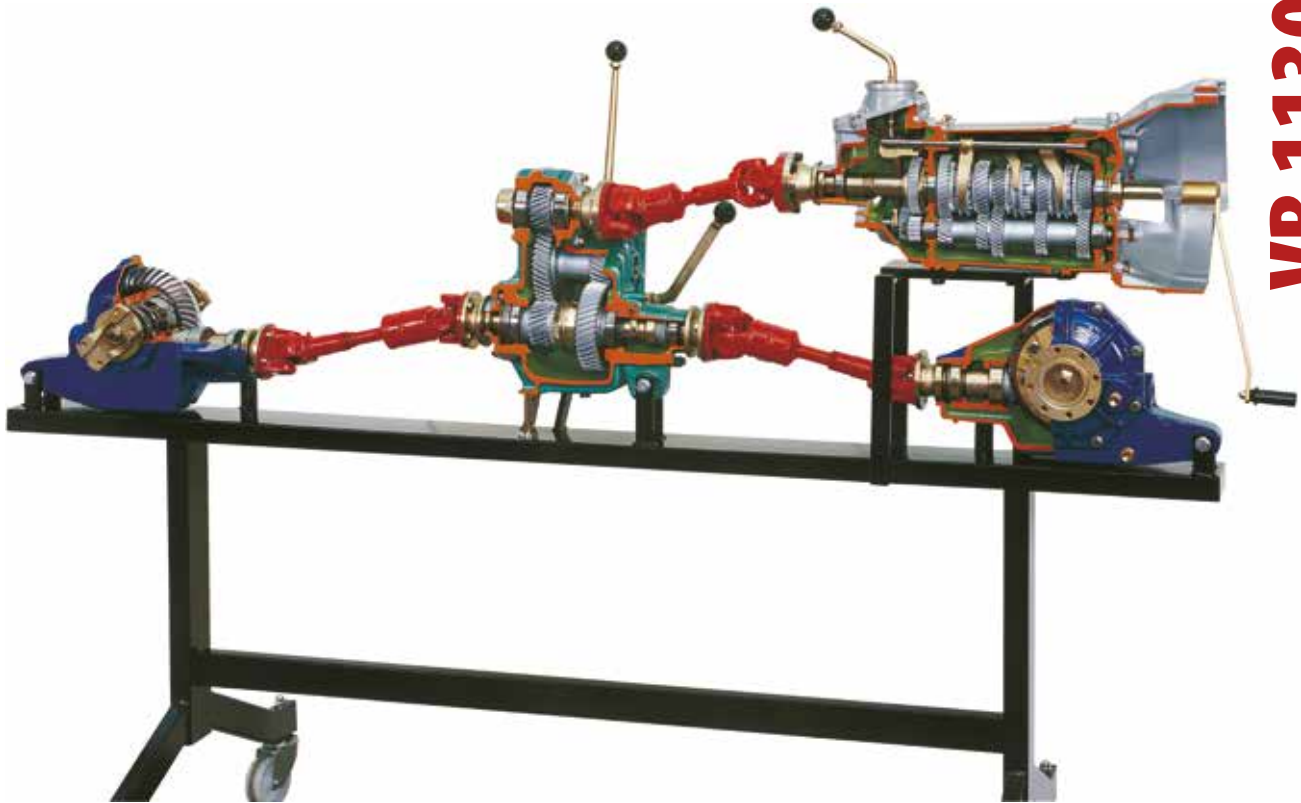
**VB 11300 4X4 VEHICLE TRANSMISSION ASSEMBLY WITH 5 SPEED MECHANICAL GEARBOX (on stand with wheels) - manual**

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**VB 11301 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 11300 - VB 11301**

**VB 11300**

**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 11301**

**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 11300 - VB 11301**

**Approx. weight and dim.:**

---

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

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

### VB 11201

#### Approx. weight and dim.:

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



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



### VB 11160

#### Approx. weight and dim.:

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

## 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

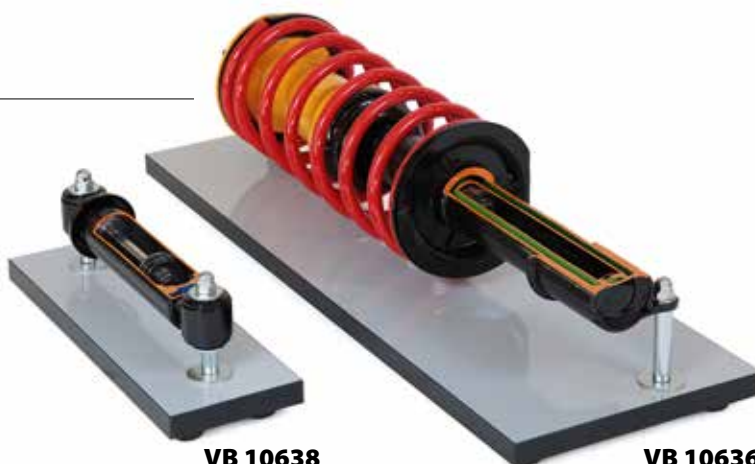
#### Approx. weight and dim.:

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 12275 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.

**VB 12275**



### 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

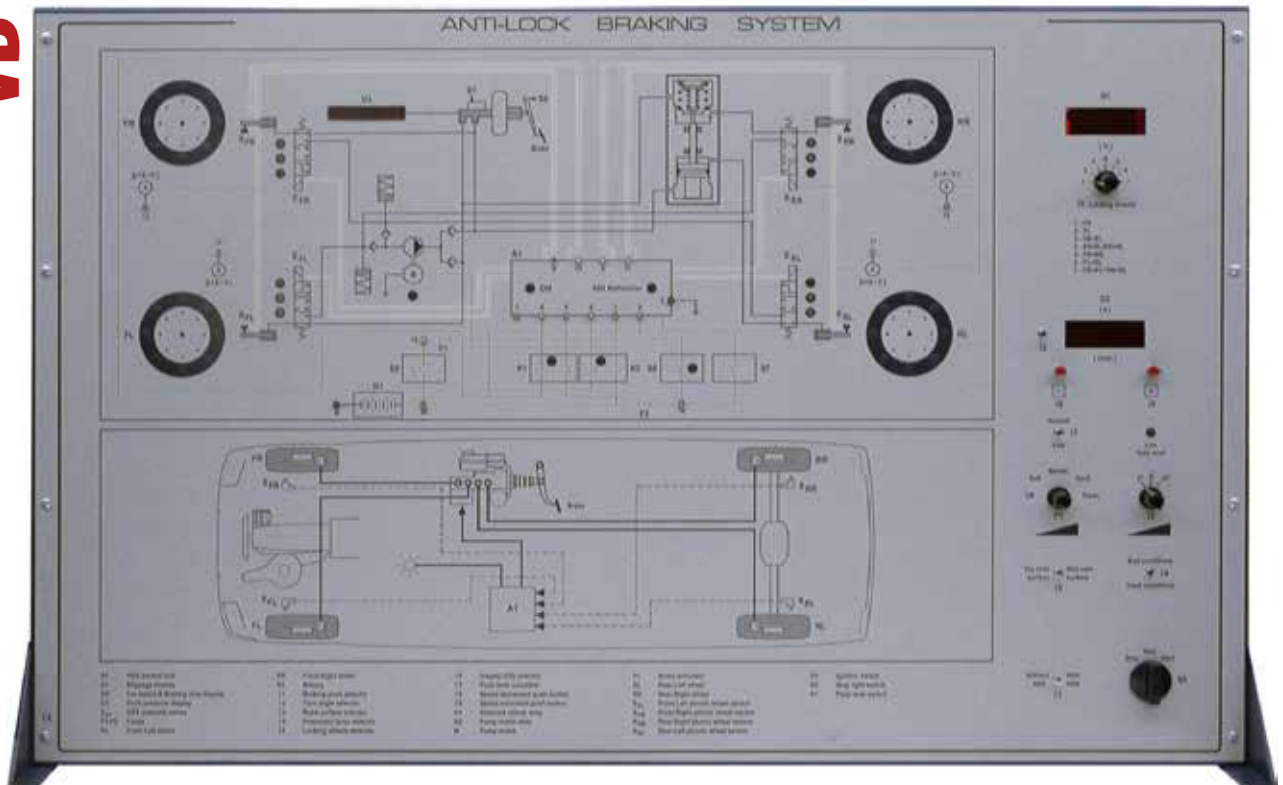
### VB 12275

#### Approx. weight and dim.:

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

## VB 12274 ABS SIMULATOR - electrical

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



### Experiments :

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

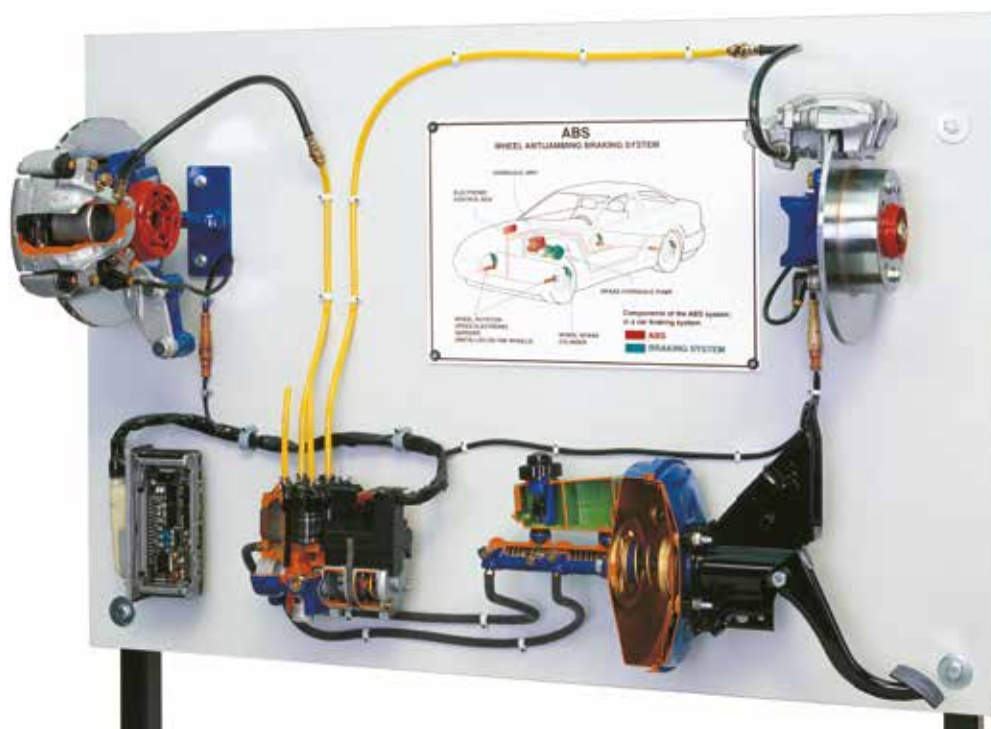
An educational manual with a theoretical and practical study is supplied.

### VB 12274

#### Approx. weight and dim.:

Cm: 104x35x66h  
Weight: kg 16

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



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

### VB 12230

#### Approx. weight and dim.:

*Cm:* 140x50x90h

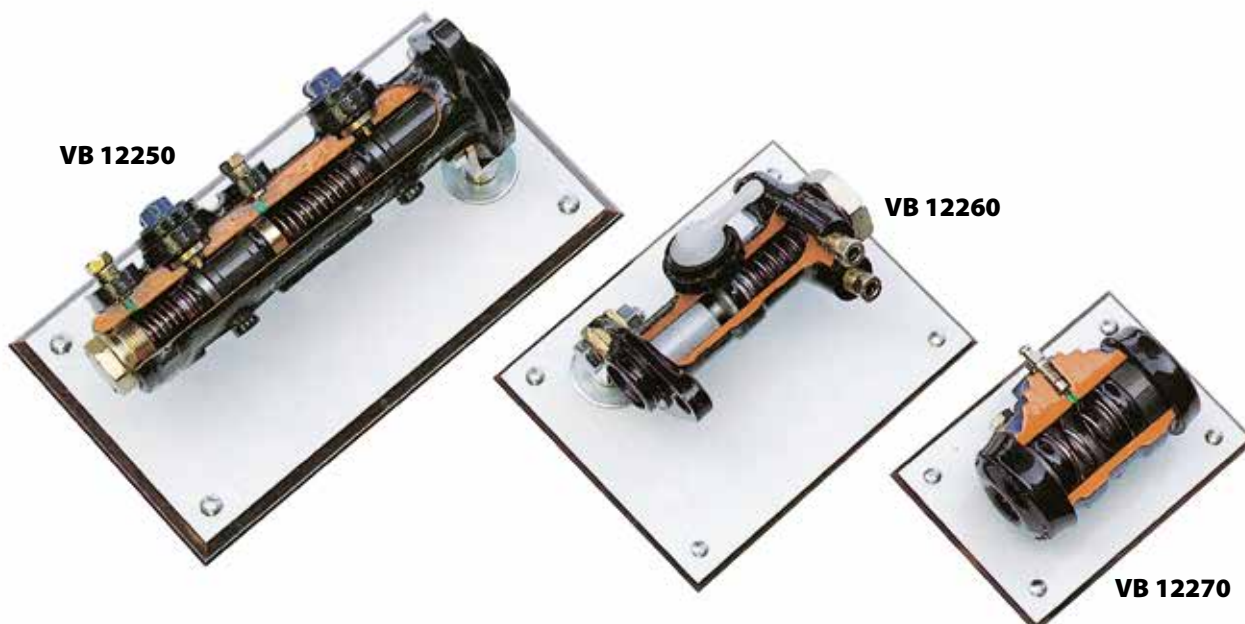
*Net Weight:* kg 60

*Gross Weight:* kg 120

## VB 12250 TANDEM MAIN BRAKE CYLINDER (on base) - static

## VB 12260 SINGLE-STAGE MAIN BRAKE (on base) - static

## VB 12270 DOUBLE-PISTON WHEEL CYLINDER (on base) - static



VB 12230

VB 12250 - VB 12260 - VB 12270

# VB 12000

## VB 12000 DISC BRAKE (on base) - manual

Section of a disc brake, floating type. The small piston and the brake strips are clearly shown.

### VB 12000

#### Approx. weight and dim.:

Cm: 35x40x40h  
Net Weight: kg 11  
Gross Weight: kg 15



# VB 12010

## VB 12010 DRUM BRAKE (on base) - manual

Section of a drum brake. The cylinder and shoes are clearly shown.

*Operated manually through the parking brake lever.*

### VB 12010

#### Approx. weight and dim.:

Cm: 35x35x35h  
Net Weight: kg 8  
Gross Weight: kg 12



# VB 12030

## VB 12030 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.*

### VB 12030

#### Approx. weight and dim.:

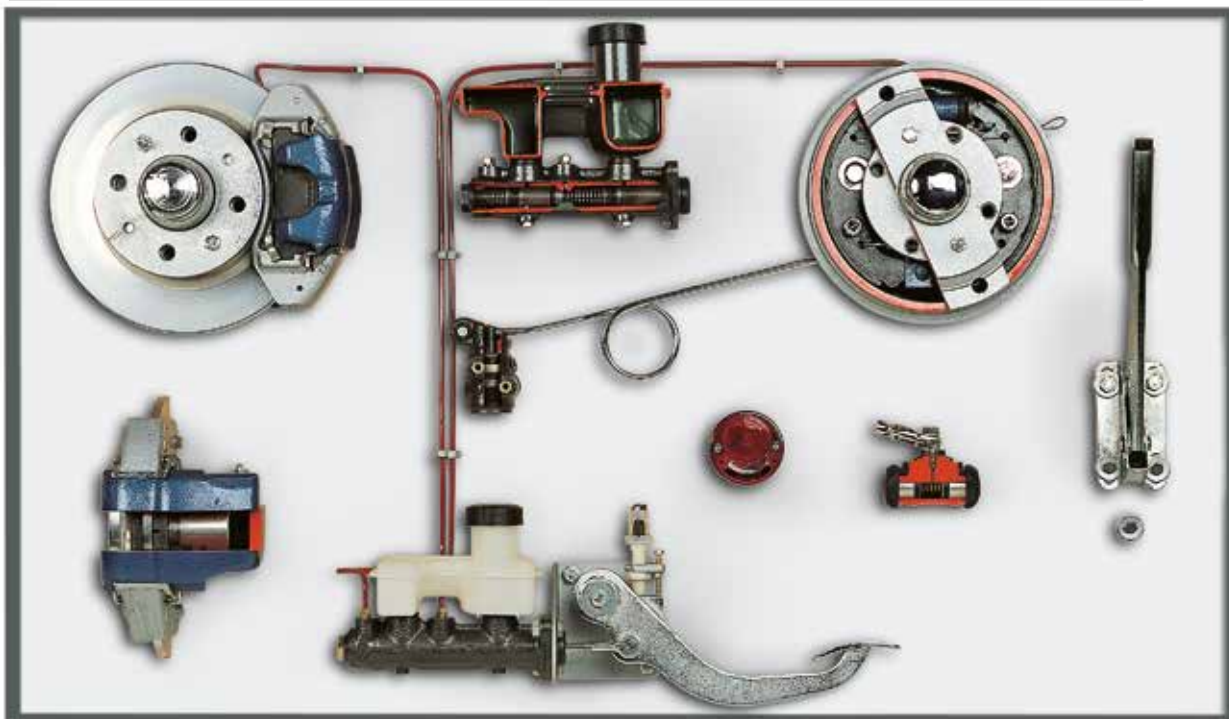
Cm: 40x35x40h  
Net Weight: kg 20  
Gross Weight: kg 26

*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 12050 DOUBLE CIRCUIT BRAKES (on panel) - manual



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.

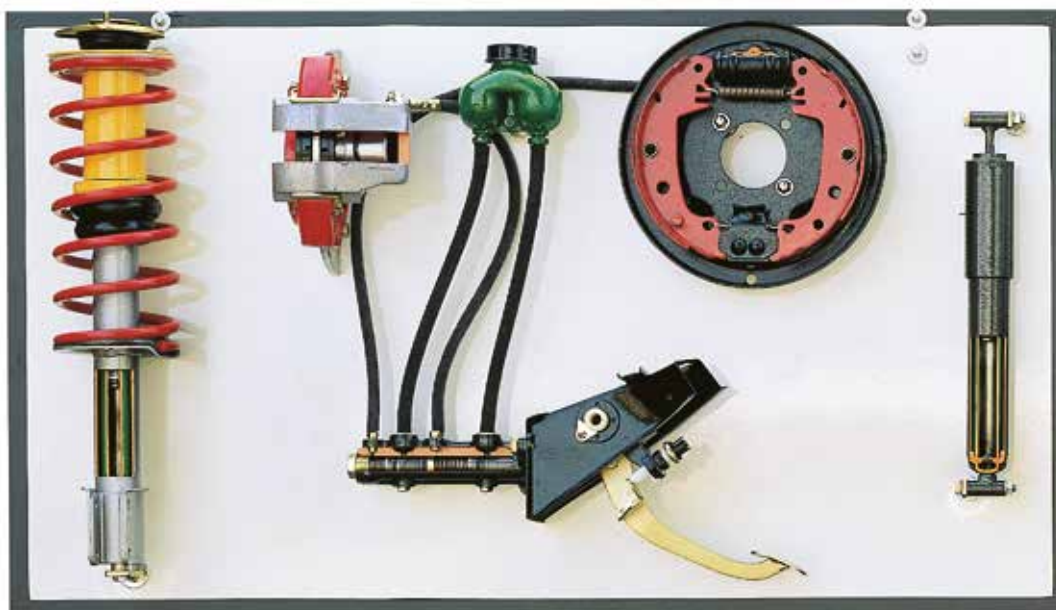
The same devices used in the circuit have been sectioned and added in the panel to clearly show their operation.

### VB 12050

#### Approx. weight and dim.:

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

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



This wall panel consists of:

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

### VB 12060

#### Approx. weight and dim.:

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

VB 12050

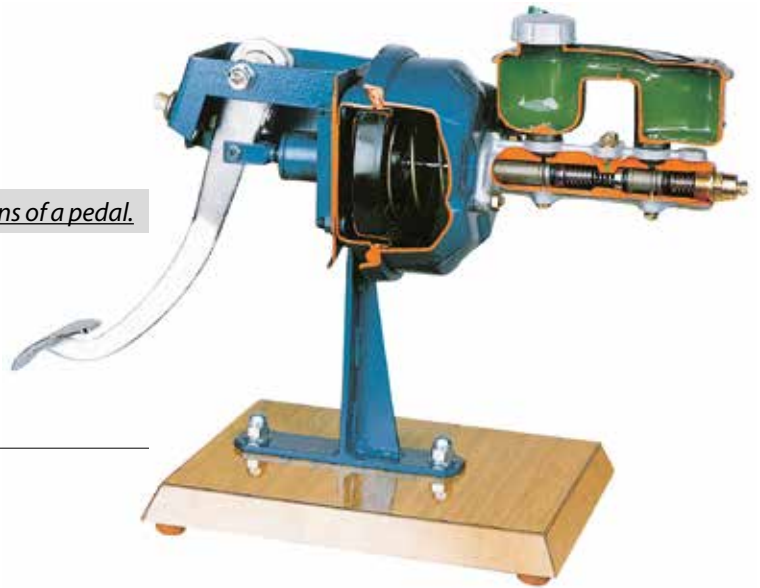
VB 12060

# VB 12300

## VB 12300 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.*



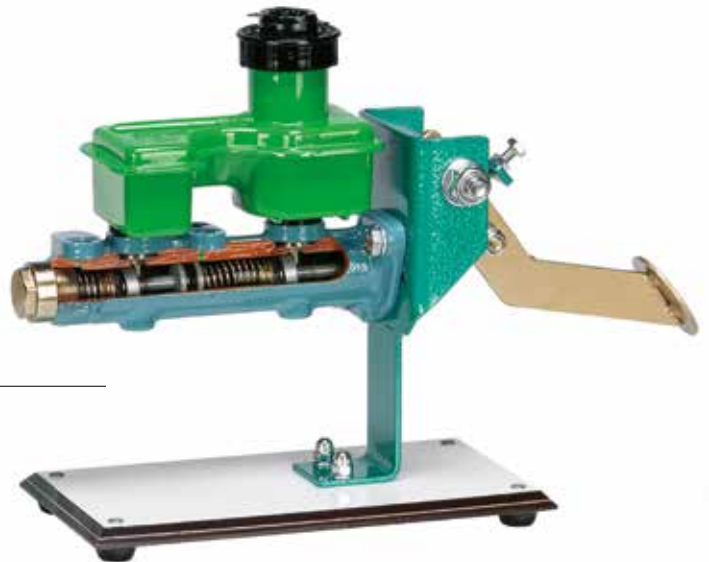
### VB 12300

#### Approx. weight and dim.:

Cm: 50x30x40h  
Net Weight: kg 6  
Gross Weight: kg 10

# VB 12302

## VB 12302 TANDEM MAIN BRAKE CYLINDER WITH PEDAL (on base) - manual



### VB 12302

#### Approx. weight and dim.:

Cm: 35x15x25h  
Net Weight: kg 2  
Gross Weight: kg 3

# VB 12304

## VB 12304 SINGLE-STAGE MAIN BRAKE WITH PEDAL (on base) - manual



### VB 12304

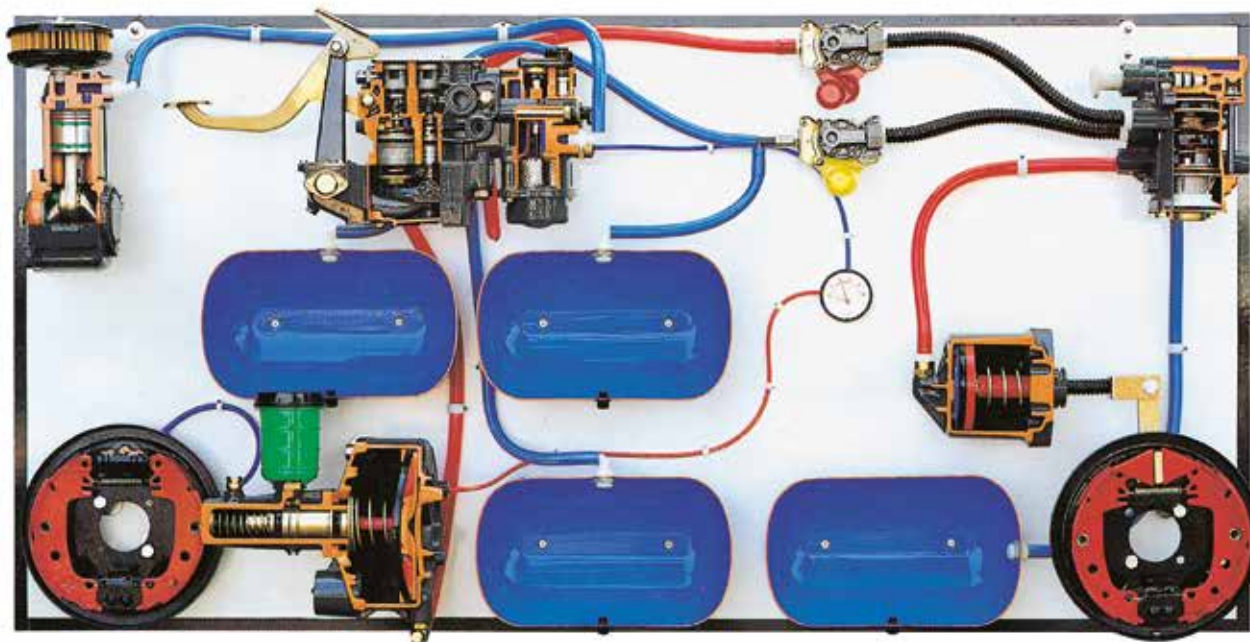
#### Approx. weight and dim.:

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.*

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

Wall panel showing the hydro-pneumatic braking elements of a truck (tractor-trailer) complete with: air compressor, triplex Marelli distributor with adjusting and control unit, pressure brake booster, tractor-trailer coupling joint, hydraulic control braking element, mechanical and air control braking element for parking braking, servo-distributor valve for the trailer, no. 4 air reservoirs (3 for the tractor). All elements are connected with rubber pipes of different colours to distinguish the various circuits.



### VB 12065

#### Approx. weight and dim.:

Cm: 170x35x105h

Net Weight: kg 60

Gross Weight: kg 100

## VB 12070 PRESSURE SERVOBRAKE (on base) - static

Section of a piston servo brake used for trucks and complete with brake pump.

### VB 12070

#### Approx. weight and dim.:

Cm: 30x30x40h

Net Weight: kg 6

Gross Weight: kg 10



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

VB 12065

VB 12070

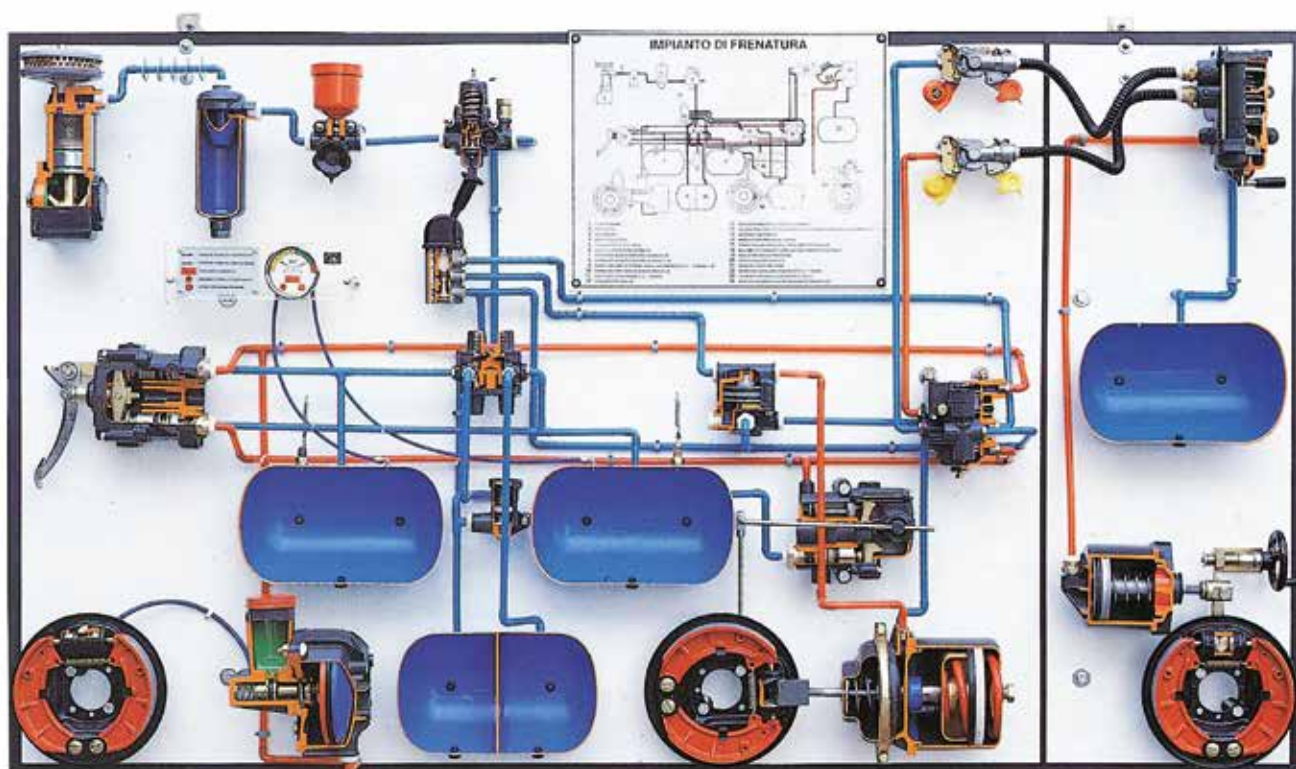
## VB 12170 – MOTOR/TRAILER AIR BRAKING SYSTEM WITH DOUBLE SPRING BRAKING UNIT WITH CHUCK DEVICE (on wall panel) -static

## VB 12180 – 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



### VB 12170

#### Approx. weight and dim.:

Cm: 220x36x140h  
 Net Weight: kg 95  
 Gross Weight: kg 135

### VB 12180

#### Approx. weight and dim.:

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

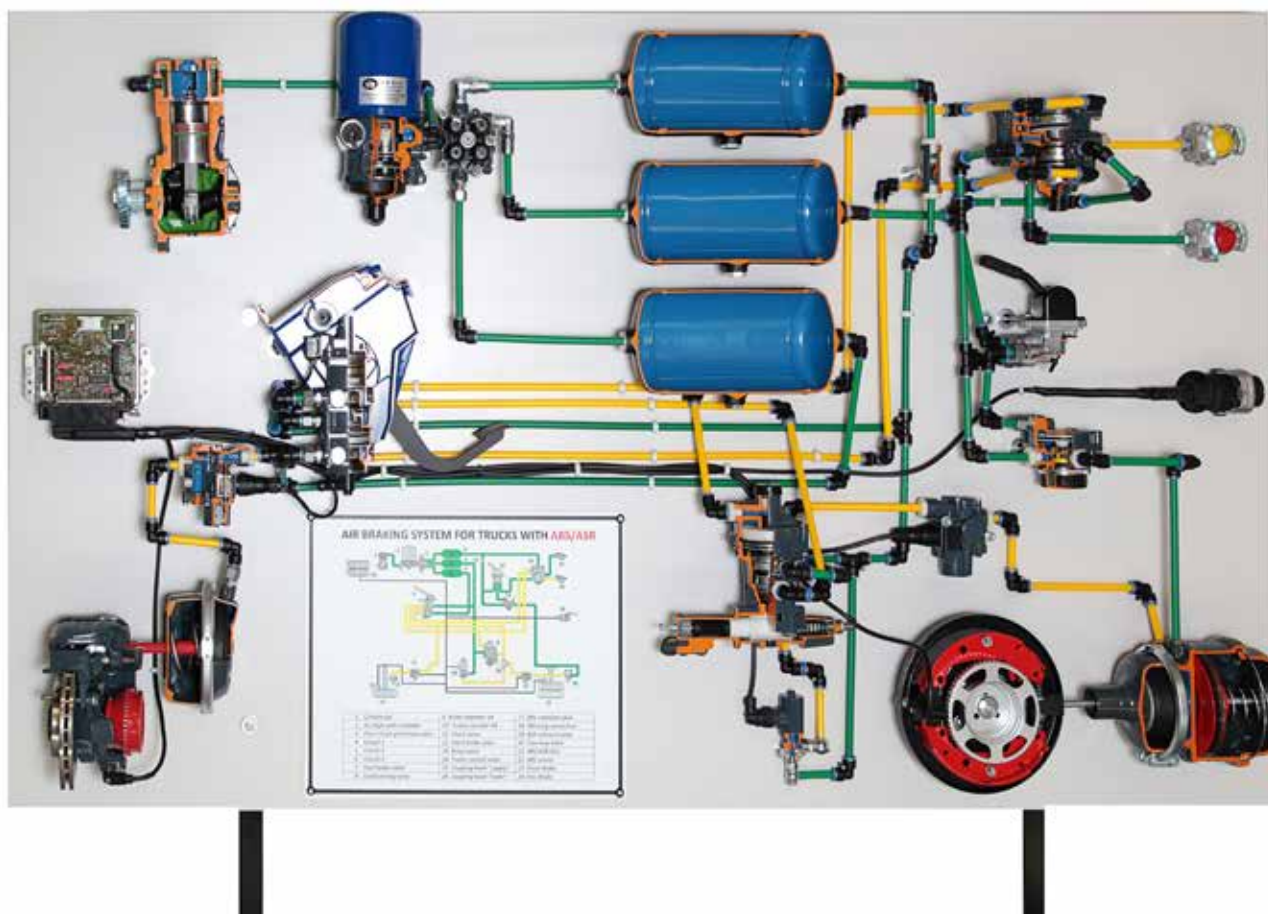
## VB 12190 – AIR BRAKING SYSTEM FOR TRUCKS WITH ABS/ASR (on wall panel) -static

## VB 12195 - 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



### VB 12190

#### Approx. weight and dim.:

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

### VB 12195

#### Approx. weight and dim.:

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

VB 12190 - VB 12195

## GENERAL SALES CONDITIONS

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### ORDERS

Orders are valid and binding for VB only after the receipt of written confirmation by the Customer, within 48 hours after verbal order. Order must be complete with the description of all elements, and, when necessary, with drawings to define them in a complete and unequivocal way. Any wrong interpretation or imperfection of the a.m. elements caused by an unclear order, shall give no right to any replacement, refund or discount whatsoever.

### MATERIALS

The samples shown are indicative only and they are not binding, considering the normal variation of the kinds of materials available on the market. All materials used, even first choice ones, are to be intended as commercial standard quality. As for painted materials, a retouch is to be considered as normal.

### PRICES

Pricelist agreed further to changes, are to be intended in € (Euro) and net of any discount; if not otherwise specified prices are considered for goods EXW our facilities.

### DELIVERY TERMS

The delivery terms run from the date of receipt of the order complete with the description of all necessary elements; they can be extended due to Force Majeure reasons, including lack of raw materials, energy supply, or because of mechanical breakdowns, lack of labour due to strikes, diseases, etc. If the delay is longer than 90 days, this gives right to the termination of the contract, but gives no right to any indemnity whatsoever.

### SHIPMENT

Goods are shipped at the Buyer's risk even if sold free destination.

In case of shipment by truck, VB declines any liability for possible damages to third parties or things which may be attributed to the carrier.

### PACKAGE

Returns of packaging are not accepted. If otherwise agreed, their return is to be intended free of charge or reimbursed at cost.

### COMMISSIONING

Commissioning assistance is excluded, except when expressly agreed in writing: in this case all expenses are at the Buyer's charge.

### PAYMENT

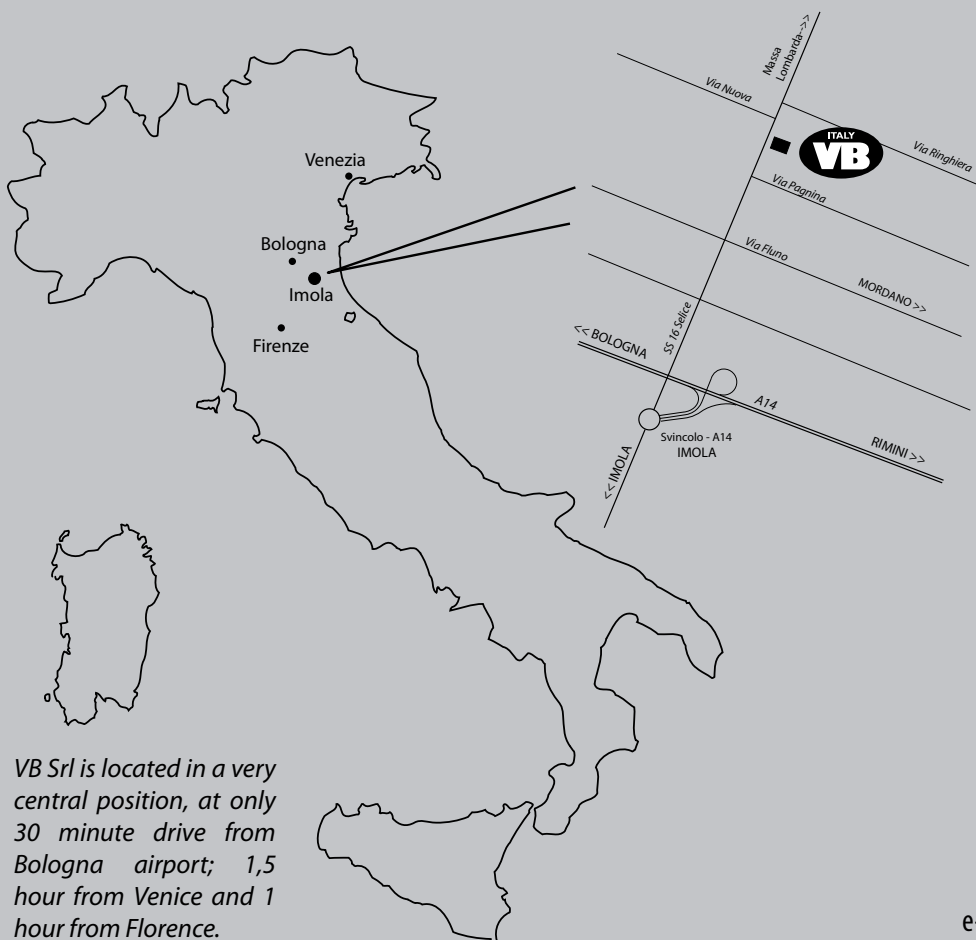
If not otherwise agreed, payments must be made at our offices in Mordano within the fixed terms. The non-payment on maturity, even if only partial, gives right to draw on the debtor, at the debtor's change, plus 20% yearly interest; furthermore it gives right to VB to suspend or cancel every supply on hand or to require the payment in advance. All suppliers are to be intended regulated by the conditional sale agreement till complete payment. VB shall be at same owner of the goods supplied and, in case of non-payment, even if partial, VB shall withdraw all supplies, and also keep the accounts already paid by the customer as partial cover. The invoice, even if formally received, does not involve the extinction of any obligation, in case it is covered by drafts or others.

### CLAIMS

All claims must be done in writing by registered letter within 8 days from receipt of the goods. VB, if the claim is well founded, shall provide for the replacement of the pieces; any refund is excluded.

### JURISDICTION

Any judicial dispute shall fall within the cognizance of Imola or Bologna Law-Court. VB has the right to previously submit the dispute to a Board of three Arbitrators, one to be appointed by VB, one by the Customer and the third by both of them or by the lower Court judge of Imola; in case of disagreement the above mentioned Board shall deliver a final Judgement.



VB Srl is located in a very central position, at only 30 minute drive from Bologna airport; 1,5 hour from Venice and 1 hour from Florence.

## **VB s.r.l.**

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