**VALIANT V650 AR**
Isodiametric, monodirectional or reversible, with central articulation

It is the reference version in the field of specialized tractors and is subject to the standards established according to the type of use for which they were conceived and, above all, to be compatible with the environment in which they will operate.

Its compact size, the performance of the hydraulic system, and the small turning radius make **VALIANT V650 AR** tractors extremely versatile to perform all the tasks for which they were designed: crops in rows, processing in greenhouses, greens maintenance of parks and municipalities.

All this brings out the great character of these machines and makes them irreplaceable for use in tight spaces.

**VALIANT V650 RS**
Isodiametric, monodirectional or reversible, with steering wheels

This is the most used version among the specialized tractors, the one offering the largest number of applications. Performance and comfort make these machines high performers for winegrowing and vegetable cultivations. They are also ideal for the greens maintenance both in Summer and Winter.

Remarkable stability, even on sloping areas, compact overall dimensions, excellent manoeuvrability and proper weight distribution on the axles while working, are features that enhance the value of **VALIANT V650 RS** Tractors, making them unrivalled equipments for the purposes which they were designed for.

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A project created by a team of competent and determined people. Hundreds of hours of work dedicated to research and development activities entirely for the production of a range of specialized medium-power tractors with unique features.

The goal was shared by all of us at BCS and was completed with the commitment and professionalism that has always made us stand out.

**Valiant V650** tractors are the result of all this: high quality machines, extremely versatile and reliable, manufactured with attention to even the smallest details. These tractors are guaranteed by a great brand name and a professional distribution network in over 100 countries all over the world.

With the **Valiant** series, BCS has strengthened its position of prestige in the sector.

MADE IN ITALY
Seeking for maximum efficiency has been the focal point of developing the Valiant series. This is how concrete tractors were built, with attention to the smallest details, with generous and staid engines supported by solid and compact transmissions for optimal weight distribution on the axles. Particular attention was given to volumes to minimize the overall dimensions, the most compact of its category, without affecting the mechanical efficiency, comfort and durability.

We are an international company, one of the most successful in the field of farm machinery and for greens maintenance.

Established in 1943 and certified ISO 9001 since 1994, we distinguish ourselves by the high quality of our products and the operational capability which embraces every stage of the process: design, production and distribution.

The BCS dealers, an integral part of our sales network, are expert professionals who are qualified to advise and assist every customer in choosing the most suitable machine for their own needs.

We carefully attend the quality of our after-sales services: authorized dealers and parts dealers, with technical and business support, are available to anyone who needs prompt and safe servicing.

The reasons for choosing us

At the time of purchase of a Valiant tractor, we issue a two-year warranty which is included in the price and also covers the engine. Because safety and satisfaction of our Customers are dear to our hearts.

And choosing them

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THE BENEFITS:

- **HIGH POWER AND LOW FUEL CONSUMPTION** thanks to the use of high efficiency engines with great operation economy
- **OS-FRAME TRANSMISSIONS** to ensure maximum stability and mechanical efficiency, even on uneven terrain
- **PERFECT WEIGHT DISTRIBUTION** on the axles, so as to optimize the performance and traction of the vehicle in the working position
- **LOW CENTRE OF GRAVITY** to ensure maximum stability on the slopes without penalising the ground clearance
- **REVERSIBLE DRIVE**, available as an option on all models
- **HIGH FLOW RATE OF OIL** to the distributors to allow the use of different pieces of equipment combined in order to curb processing costs and time
- **ELECTRONIC JOY-STICK**, available as an option on all models
- **SMALL WHEEL-BASE** only 139 cm so the machine can easily move in any type of crop field and on every type of soil
- **COMFORT** for the protection and respect of “our most valuable asset”: the driver
For the model D753 TE3, VM has developed the new EGR System located inside the engine. The system recycles the exhaust gases that, properly blended, return to the combustion chamber, thereby drastically reducing the emissions of nitrogen oxides (NOx) and fuel consumption.

The choice to use a maximum of 2600 rpm was designed to reduce power consumption, noise and vibration to the benefit of economy management and comfort. However, the powers that count are not altered: all the engines reach peak torque between 1950 and 2100 RPM.

<table>
<thead>
<tr>
<th>Type</th>
<th>Power (kW/ hp)</th>
<th>No. of Cylinders</th>
<th>Displacement</th>
<th>Aspiration</th>
<th>Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>VALIANT V650</td>
<td>VM D753 TE3</td>
<td>41,2 / 56</td>
<td>3</td>
<td>2230</td>
<td>Turbo</td>
</tr>
</tbody>
</table>

THE CHARACTERISTICS:

- **TUNNEL BORE BASE** which allows a great flexural and torsion rigidity.
- **ROTARY MECHANICAL INJECTION PUMPS** that make these propellers perform in every condition of use, increasing reliability and lifespan.
- **GEAR DISTRIBUTION WITH FORCED LUBRICATION**, the maximum that you can ask for from a diesel.
- **HYDRAULIC TAPPETS** to minimise noise and eliminate maintenance.
- **LOW-INERTIA TURBOCHARGERS** for an immediate response when it demands power.

The roads to travel are always uphill, the jobs to be done are always on a tight deadline, the crops cannot be subordinate to the needs of your vehicle.

That’s why you need the most out of the performance levels provided by the VM D753 engines supplied with the VALIANT series: engines that are winning and will always allow you to hit your mark because they are built with the understanding that the activities of our Customers depend on the efficiency, reliability and economy of their equipment.

The VM engine available for the VALIANT V650 is a Turbo diesel with three inline cylinders of 2.2 litres, developing 56 hp at 2600 rpm.

The choice to use a maximum of 2600 rpm was designed to reduce power consumption, noise and vibration to the benefit of economy management and comfort. However, the powers that count are not altered: all the engines reach peak torque between 1950 and 2100 RPM.
The chassis of the tractor is fitted out with OS-Frame transmissions that, with a sole shaft and a sole central joint, guarantee maximum mechanical output. It is a “monolithic” structure in a single cast iron casting. The joint in the middle of the machine lets the front axle oscillate by up to 15° with respect to the rear axle, stabilising the trim on slopes to guarantee maximum stability and safety, as well as constant traction on all types of terrain. The same transmission allows you to have a particularly low centre of gravity, without sacrificing any ground clearance. Such characteristics are essential for the uses which these vehicles are intended.

**Superior quality axles**

The choice of using only axles with planetary reduction gears was determined by the need to minimize the pitch of the machine in order to increase its manoeuvrability, enhance its prestige and, most important, its reliability.

**Brakes that always rise to the occasion**

Multi-discs brakes in oil bath of latest generation ensure safe braking. The parking brake is designed with a practical and ergonomic grip for easy use even when the operator is seated for reverse drive.

**Gearbox: always the right gear ratio**

The gearbox is synchronized with 24 speeds with a synchro reverser which can be engaged while the engine is running. The gears have a helical profile to obtain the maximum manoeuvrability with gentle and progressive clutches. Designed without overlapping speeds in three ranges so you can always find the right gear ratio for each type of work.

**Traction 4WD**

The 4-wheel drive allows to work safely on every type of soil, by maximizing the traction and safety features designed especially for Valiant tractors.

**.osgi FRAME**

**PTO: effective and efficient**

The rear PTO with electro-hydraulic control and progressive clutch runs at 540/750 rpm, is independent from the gearbox and synchronized with all the travel speeds. It can be engaged under load, it has the brake in the released position and the safety mechanism that prevents accidental engagement.

**A clutch with plenty of added value**

The LONG-LIFE clutch of the transmission has multi-discs in oil bath, without need for adjustment or maintenance. Modular and progressive, it is introduced into the transmission to reduce the overhang of the engine and consequently the length of the unit.
The digital display is integrated in the instrument panel with its non-glare screen. It includes the reading of engine rpm, travel speed and rotation speed of the PTO.

On the instrument panel, having a refined design, all the functions are grouped in an optimal manner to allow you to control the conditions of the vehicle.

The driving position of VALIANT tractors one of the best in its category: it combines comfort, ergonomics, functionality and safety in an absolutely original way.

The driving position, monodirectional or reversible, was tailored to the driver: the drive module, with platform suspended on a silent block, ensures maximum comfort.

The reversibility is also safe and practical, and can be done in a few seconds.

New solutions for the driver

When the cabs of the Valiant were designed, it was decided to bring our expectations higher than anyone else had previously done.

The cabs were very carefully designed to ensure maximum comfort and pleasant livability inside. The suspension is fully independent from the tractor chassis. The visibility is provided by large windows, a door on the roof and a four-post frame that allows large glass doors. The structure itself is designed to enable its use in crop rows placed in extremely tight rows with luxuriant vegetation.

They are available in the Luxus and Comfort versions, the latter equipped with air conditioning system located inside the roof frame in order not to increase the height of the machine.

BCS cabs: the best of the best
The hydraulic system consists of a double circuit with two independent pumps: one of 24.8 l/min dedicated to the lift and distributors, the other of 18.9 l/min dedicated to the hydroguide and electro-hydraulic control. An optional a 37.2 l/min oversize pump with heat stabilizer is available. Hydraulic operating pressure is 180 bar.

**The force of the levers**

The rear lifts are sturdy and reliable, with a “Third point” and normal or rapid connectors. Practical and versatile, well suited to all equipment on the market.

They are supported by a high performing hydraulic system and, on request, can be supported by a draft and position control.

**The steering**

One of the features of compact tractors for specialized agriculture is the degree of maneuverability of the units: the power-assisted steering of VALIANT tractors, combined with the unique features of the transmission, give these machines excellent performance on bends.

**Hydraulic system:**

**it has never been so efficient**

The distributors

The hydraulic control valves, in the rear side of the tractor, allow you to use equipments absorbing a large hydraulic flow rate, widely used for crops in rows.

To operate the hydraulic system and the lift by a single device, the VALIANT tractors can be fitted with an **electronically controlled Joy-Stick** to make every manoeuvre involving the hydraulic system of the tractor precise and practical. The Joy-Stick is always accompanied by the increased pump and heat exchanger.
Prevention is better than cure!

The heat disposal
The heat disposal, both from the engine and the hydraulic system, is essential to enable compact and powerful tractors to perform the demanding jobs for which they are intended without any problems.

For the VALIANT series a cooling system is available as optional allowing the engine and the whole hydraulic system to always operate within the maximum safety margin.

Tyre Range
The width and height, the degree of compaction on the ground, the more or less aggressive ‘GRIP’ are just some of the aspects that give the wheels of specialized tractors a capital role. We tested and reserved for the VALIANT the best alternatives on the market, so that our customers can always find the right solution for their needs.

3-point hitch
To make the implement application on the tractor easier, the rear three-point hitch can be fitted with practical quick couplers which are available in two versions:
- Quick couplers cat. 1 with tie-rods adjustable in length
- L-shaped quick couplers cat. 1 with arms and tie rods adjustable in length and hooks adjustable in width

The air is always clean
For applications where there is a strong presence of “particulate”, such as mowing the grass or shredding vine-branches, the standard system can be also supported by the SCS (Self Cleaning System®) that eliminates the annoying clogging problems of grilles and radiators, avoiding the overheating of engine and hydraulic system.

The system consists of a better performing engine cooling system, combined with two fans with intermittent/combined operation: a suction fan with electromagnetic control and a compact electric blower fan.

The Self Cleaning System® is programmed by mean of a 3-function button, which respectively activates:
- SCS the SCS dual-fan system
- ECO the suction fan only with intermittent operation
- CMF only the suction fan with constant operation

The operator can select the function according to the different uses and needs.

Range of weights
For some operations or special loads to be connected to the tractor, a range of weights is available to be mounted on the wheels or on the forepart of the machine next to the engine.

HDR hydraulic suspension
The accumulator for weight compensation HDR is perfect to help you to adjust the pressure on the terrain of the equipment mounted on rear lift of the tractors.

Other good reasons for choosing Valiant

VALIANT tractors are specialized like few others. Built for those who want only the best. The BCS original and optional attachments available make them even more unique.

Tow hooks
As for towing, there are three types of hooks: the Curta hook, the CEE hook and the CEE hook with quick height adjustment.

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Technical Features _ VALIANT V650 AR

### Technical Features

**VALIANT V650 AR**

1. **STEERING**
   - **Type**: Hydrostatic steering on articulated joint
   - **Flow deviator for steering unit**: Front and rear steering

2. **Parking brake**
   - Acting on the service brakes

3. **Oil immersed multidisc**
   - Acting on the rear transmission

4. **DISTRIBUTORS**
   - Mechanical control to max. 6 hydraulic couplers

5. **Rear (standard)**
   - 1 double acting (Hydraulic lift by ram)
   - 1 double acting and 1 single acting (Hydraulic lift by ram)

6. **Rear (optional)**
   - 1 double acting and 1 single acting (Hydraulic lift by ram)
   - 1 double acting and 1 single acting (Hydraulic lift by ram)

7. **Joy stick (optional)**
   - Electronic control of distributors composed of: 1 single-acting with adjustable flow and 1 double-acting with adjustable flow

8. **ELECTRIC SYSTEM**
   - **Alternator (A)**: 70
   - **Battery (Ah)**: 70

9. **HYDRAULIC SYSTEM**
   - **Maximum hydraulic pressure (bar)**: 180

10. **PTO clutch**
    - Multidisc, in oil bath

11. **POWER TAKE-OFF**
    - Rear, independent from the gearbox, 540/750 rpm, and synchronized with the gearbox

12. **REAR LIFT**
    - Standard: by two external rams
    - Optional: draft and position control

13. **STEERING UNIT**
    - With hydraulic lift and the distributors

14. **DISTRIBUTORS**
    - Standard: standard cat. 1
    - Optional: quick couplings cat. 1, L-shaped lift arms, lift arm adjustable in length and hooks adjustable in width

15. **STEERING**
    - With hydrostatic steering on articulated joint

16. **SAFETY**
    - Roll bar frame (standard)
    - Standard: front and rear safety

17. **CONSOLE**
    - Sound proof, mounted on “silent block”

18. **ELECTRICAL SYSTEM**
    - Standard: spring seat
    - Optional: Bostrom seat

19. **WEIGHT OPERATIONAL**
    - With chassis (kg): 1700
    - With chassis (kg): 1540

20. **ENGINE**
    - Model: D753 TE3
    - Manufacturer: VM

### Technical Features (AR VERSION) WITH FRONT FRAME (mm):

<table>
<thead>
<tr>
<th>Tyre Type</th>
<th>8.25-16</th>
<th>250/80-18</th>
<th>250/70-18</th>
<th>31x15.50-16 XTC</th>
<th>31x13.50-15 Garden</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Tyre width mm.</td>
<td>212</td>
<td>240</td>
<td>282</td>
<td>319</td>
<td></td>
</tr>
<tr>
<td>B Tyre height mm.</td>
<td>848</td>
<td>879</td>
<td>849</td>
<td>873</td>
<td></td>
</tr>
<tr>
<td>C Wheel track mm/min./mm.</td>
<td>794 - 1100</td>
<td>865 - 1107</td>
<td>869 - 1119</td>
<td>931 - 1119</td>
<td></td>
</tr>
<tr>
<td>D Wheel track mm/min./mm.</td>
<td>1006 - 1312</td>
<td>1105 - 1347</td>
<td>1151 - 1401</td>
<td>1250 - 1438</td>
<td></td>
</tr>
</tbody>
</table>

### Technical Features (AR VERSION) WITH FRONT FRAME (mm):

<table>
<thead>
<tr>
<th>Tyre Type</th>
<th>31x15.50-15 XTC</th>
<th>31x13.50-15 Garden</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Tyre width mm.</td>
<td>258</td>
<td>368</td>
</tr>
<tr>
<td>B Tyre height mm.</td>
<td>782</td>
<td>800</td>
</tr>
<tr>
<td>C Wheel track mm/min./mm.</td>
<td>846 - 1120</td>
<td>1003</td>
</tr>
<tr>
<td>D Wheel track mm/min./mm.</td>
<td>1371</td>
<td>1397</td>
</tr>
</tbody>
</table>

### TRACTOR DIMENSIONS (AR VERSION) WITH FRONT FRAME (mm):

<table>
<thead>
<tr>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>M</th>
<th>N</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>1150</td>
<td>1390</td>
<td>730</td>
<td>3270</td>
<td>2071/266</td>
<td>2220</td>
<td>675</td>
</tr>
</tbody>
</table>

### Weights:

<table>
<thead>
<tr>
<th>Weight</th>
<th>Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700 kg</td>
<td>Chassis (kg)</td>
</tr>
<tr>
<td>1540 kg</td>
<td>Chassis (kg)</td>
</tr>
</tbody>
</table>

### Optional:

- Flash light, radiator and air suction grille cleaning system: “Self Cleaning System”, front weight and weights for wheels
Technical Features _ VALIANT V650 RS

**CHASSIS**
Swinging integral chassis OS-FRAME with steering wheels

**DRIVE**
Four-wheel drive, permanent

**ENGINE**
Manufacturer VM
Number of cylinders 3
Displacement cm³ 2230
Suction Turbo
Emission level Tier 3
Power kW/HP 41.2 / 56
Nominal speed (rpm) 2600
Maximum tractor torque (Nm/rpm) 185 / 1400
Cooling Water
Tank capacity (lt) 45

**TRANSMISSION**
Synchronized gearshift: 12 forward and 12 reverse speeds with synchronized reverse
Main-reverser Multidisc, in oil bath

**DIFFERENTIAL**
Front and rear differential lock, electro-hydraulically controlled

**AXLES**
Front and rear, with independent reduction units

**POWER TAKE-OFF**
Revers: independent from the gearshift, 540/750 rpm, and synchronized with the gearbox
PTO clutch Multidisc, in oil bath

**ELECTRIC SYSTEM**
Electronic control to max. 6 hydraulic couplers

**REAR LIFT**
Standard: by two external rams - Optional: draft and position control

**DRIVE**
Four-wheel drive, permanent

**STEERING**
With half-platform for the monodirectional version - With suspended platform on "silent-block" for the reversible version

**DISTRIBUTORS**
Mechanical control to max. 6 hydraulic couplers

**SERVICE BRAKES**
Mechanical control to up to 6 hydraulic couplers

**STEERING**
With hydrostatic steering, acting on the front wheels. Flow devator for steering unit

**SAFETY**
For all frame standards:
- Front, normalized
- Cabin (optional)
  - Sound-proof, mounted on "silent block", heating and ventilation systems, Optional: air conditioning

**CONSOLE**
Chassis type with chronograph-gyrometer, water thermometer, control-warning lights, reading of rpm, forward speed and rotation speed of power takeoff

**TYRES**
Standard 8.25-16
Optional 250/80-18 280/70 R18 * 31x15.50-15 XTC and STG * 31x13.50-15 Garden

**TOW HOOKS**
Standard Rear CUNA and front tow hook
Optional Rear rotating or rear adjustable in height (Slider type) tow hooks, both EC approved

**WEIGHT OPERATIONAL**
With chassis (kg) 1700

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**TRACTOR DIMENSIONS (RS VERSION) WITH FRONT FRAME (mm):**

<table>
<thead>
<tr>
<th>8.25-16</th>
<th>250/80-18</th>
<th>280/70 R18</th>
<th>250/70 R18</th>
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<td>879</td>
<td>849</td>
<td>873</td>
<td></td>
</tr>
<tr>
<td>C Wheel track min/max mm.</td>
<td>999 - 1305</td>
<td>996 - 1312</td>
<td>984 - 1324</td>
<td>1074 - 1324</td>
<td></td>
</tr>
<tr>
<td>D Width min/max mm.</td>
<td>1211 - 1517</td>
<td>1236 - 1552</td>
<td>1266 - 1606</td>
<td>1393 - 1643</td>
<td></td>
</tr>
</tbody>
</table>

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**STEERING PACKAGES (RS VERSION WITH THE FORERIEN WHEELS):**

<table>
<thead>
<tr>
<th>Tyre type</th>
<th>8.25-16</th>
<th>250/80-18</th>
<th>250/70 R18</th>
<th>250/70 R18</th>
<th>250/70 R18</th>
<th>31x15.50-15</th>
<th>31x13.50-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyre type</td>
<td>2800</td>
<td>2830</td>
<td>2990</td>
<td>2990</td>
<td>3350</td>
<td>3250</td>
<td>3200</td>
</tr>
</tbody>
</table>
You can pay a visit to your local BCS dealer or visit our website www.bcsagri.it to discover which novelties are waiting for you!