



VALIANT 650 VOLCAN 950

MT SERIES

MT SERIES SUCCESS IS NEVER A COINCIDENCE

In order to be successful, a large project must include the greatest number of possible solutions: so for the **MT series** we created **two machine versions**, each one designed for the various needs that our customers motivate us to satisfy each day.

Performance, dimensions, manoeuvrability, comfort and safety are the qualities our technicians gave emphasis to in order to create this project: those that really make **the difference between a specialised BCS tractor and a regular tractor.**





VALIANT 650 and VOLCAN 950

reversible isodiametric tractors, hay-making version

The MT series was designed by BCS for companies whose core-business includes hay-making. They are extremely versatile and high performance machines made for use in hillside areas where performance, reliability, stability and safety during use are essential characteristics in order to be able to operate well and have the highest yield.

MT tractors were designed and built for heavy duty under maximum stress conditions. Therefore, particular attention was dedicated to the driver's comfort: post frames, approved cabs and a comfortable driving position, make the driving area practical and comfortable. Comfort, ergonomics, functionality and safety are also combined in an original and exclusive manner



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.







At the time of purchase of a **MT SERIES** 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.





MT SERIES: THE QUALITY CHOICE GOES A LONG WAY

LATEST GENERATION TECHNOLOGY

because for as long as we've been building them we continue to redefine the rules in the world of specialised compact tractors

REDUCED EMISSIONS AND CONSUMPTION

thanks to the new latest generation engine technology

TRANSMISSIONS WITH MULTIPLE-DISK OIL BATH "LONG-LIFE" CLUTCH.

which serve the machines throughout their lives, and axles with epicycloidal step-down gears for maximum power transmission

MULTIPLE-DISK OIL BATH BRAKES

guaranteeing maximum reliability and safety

GREAT STABILITY WHEN USED ON STEEP SLOPES

a very low center of gravity guaranteeing maximum grip on hillsides without sacrificing ground clearance

ADVANCED SYSTEMS FOR IMPROVING MACHINE RELIABILITY

the Self Cleaning System® takes care of the cooling system

ADVANCED SYSTEMS TO OPTIMISE THE RELATIONSHIP BETWEEN THE TRACTOR AND EQUIPMENT

the Dual Floating System® balances the machine/equipment combination on any type of terrain

HYDRAULIC SYSTEM WITH LARGE OIL OUTPUT

to the many distributors using oversized hydraulic pumps which guarantee high pressure and maximum performance

▶ DRIVER'S SEAT THAT CAN BE REVERSED IN JUST A FEW SECONDS

to make the machines more versatile and allow the driver to be able to easily operate both the front and rear equipment

COMPACT AND COMFORTABLE APPROVED CABS

which give a sensation of wellness and safety



Engines: performance

is the heart of evolution

The reduction of fuel consumption and emissions to a minimum and the maximisation of engine performance are the results of the innovative technological approach that distinguishes the propellers supplied with the **MT SERIES**.

With the new **VM D753 AND D754** the **MT SERIES** are equipped with an even larger and higher performance core.

The new engines are distinguished by greater efficiency: more powerful due to the use of the intercooler, cleaner and quieter due to the new technology adopted in full compliance with the continually more restrictive regulations and even simpler in order to further enhance the choice of an **MT SERIES** tractor, able to give you fantastic response from the start.

There are two VM engines available for the MT SERIES, dedicated to harnessing the power of each individual drop of fuel.

VALIANT 650 VM D753 TE3 engine 3 inline cylinder 2.2 liter diesel turbo engine. Up to 56 hp at 2600 rpm/min.

VOLCAN 950 VM D754 IE3 engine 4 inline cylinder 3 liter diesel turbo engine. With the help of the Intercooler it reaches up to 91 hp at 2300 rpm/min.

SERIE MT	Туре	Power (kW/hp)	No. of Cylinders	Displacement	Aspiration	Cooling
VALIANT 650	VM D753 TE3	41,2 / 56	3	2230	Turbo	Liquid
VOLCAN 950	VM D754 IE3	66,9 / 91	4	2970	Turbo Intercooler	Liquid

For these models, VM has developed the new EGR System located inside the engine. The system provides for the recycling of the exhaust gases which, properly mixed, return to the combustion chamber, drastically reducing the nitrogen oxide (NOx) emissions and fuel consumption.



The decision to use a lower number of rpms, **2600 rpm/min for Valiant** and **2300 rpm/min for Volcan**, was conceived to reduce consumption, noise level and vibrations, with the benefit of savings and comfort.

CHARACTERISTICS:

THE TUNNEL BORE BASE allows great torsion and flexural rigidity.

ROTARY MECHANICAL INJECTION PUMPS

that make these propellers perform in all conditions, 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 power is required.

BALANCING SHAFTS to eliminate vibrations.

Scsystem Self Cleaning System®

Heat disposal, from both 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.

Heat disposal

Considering the primary uses for MT SERIES tractors, a special cooling system was designed to allow the engine and the entire hydraulic system to always operate with the maximum safety

The engine is protected by a large radiator assisted by the patented SCS (Self Cleaning System®). A series of watertight grills on the engine hood also allows the propeller to breathe better and protects the radiator cores from clogs due to dust and debris raised by work equipment.

On the **VOLCAN** tractors, a heat exchanger also stabilises the hydraulic system temperature.





Engine performance would be nothing if it weren't supported by the excellence of the transmissions.

The MT SERIES tractors are provided with OS-Frame transmissions which, 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 up to 15° with respect to the rear axle (maximum slewing angle), stabilising the machines on steep terrain.

4WD for maximum traction in total safety

Four wheel drive allows you to move efficiently on steep slopes as well as on uneven ground and optimises the transfer of loads on the road.





4-wheel drive with electro-hydraulically controlled release of the front one



Prevention is better than treatment!



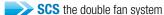
Always clean air

The special cooling system is assisted by the patented SCS (Self Cleaning System®), characterised by two fans with combined intermittent operation: an electromagnetically controlled intake and an electric blower.

The system prevents dangerous overheating of the engine and hydraulic system, keeping the radiators and ventilation grills always clean, thus preventing continuous stops in order

Besides the SCS (Self Cleaning System®) function, the cooling system in MT TRACTORS allows, at the operator's discretion, to adjust the radiator fans in order to activate or deactivate them according to the climatic and operational needs.

The system is controlled by a three function button, which activates in order:



ECO the single intake fan with intermittent function that activates/deactivates upon reaching a certain temperature

CMF the single intake fan which functions constantly

The operator can thus select the most suitable function based on the various uses and needs



Absolutely unique transmissions

Gearboxes with the best speed range

The new **Sincro** gearboxes with synchronised reverser and helical gears offer the best performance in driveability and comfort.

The logical speed sequence, without overlapping for all ranges, allows you to always select the right gear ratio for the requested use, allowing an efficient use of the machines: fuel savings, less stress on the mechanical components, less engine fatigue and, above all, better quality of work.

The graph shows the perfect progression of ratios with no overlapping of speeds in no forward gear range.

Graph of the speeds in km/h with 33x15.50-15 tyres for VALIANT MT tractors.



Graph of the speeds in km/h with 340/65R20 tyres for VOLCAN MT tractors.



8 SERIE MT SERIE MT 9



Superior quality clutch

Transmission clutch

The **LONG-LIFE clutches** designed for the **MT SERIES** are multiple-discs in oil bath and do not need adjusting and maintenance. Modular and progressive, they are inserted in the transmissions in order to reduce motor overhang and consequently the length of the unit. This technologically advanced solution, especially adopted on conventional, high-powered machinery, was preferred to the more economical and less reliable "dry monodisc" one used by most of the **MT SERIES** direct competitors.

PLUS

The clutch designed for the **VOLCAN** model also has a **proportional hydraulic control** that perfectly modulates coupling and uncoupling, much more powerful than the traditional hydraulic controls that operate dry mechanical clutches.

Operational comfort is also ensured by the **PRO-ACT System**, a system that allows the drive to operate the clutch in a convenient and efficient manner using a parallelogram-shaped progressive action pedal with adjustable backlash.



Enhance performance



Superior quality axles

We have reserved only the best for the MT SERIES. The choice to use only axles with epicycloidal step-down gears was determined by the need to keep the wheel-base to a minimum, increasing manoeuvrability, besides increasing the prestige and reliability of the machine.

In comparison to older and more economical axles with "cascading" gears used by the competition, the fundamental characteristics of epicycloidal step-down gears are their nearly unlimited duration and greater transmission of power (they have three gears always engaged in comparison to only one in the more economical version).

Brakes that always rise to the occasion

The efficiency of the braking system, with **the latest generation multiple disc wet brakes**, ensure completely safe braking in the **MT SERIES** tractors.

VALIANT 650

Have got a **double series of brakes** which act on the rear wheels. The parking brake, for this model, was designed with a practical and ergonomic handle for ease of use even when the driver is operating in the reverse position.

VOLCAN 950

Have got **four brakes with a hydrostatic control** that acts as a brake distributor, constantly and simultaneously acting on the 4 wheels when the pedal is pressed. Exclusive to this category of machinery is the **independent BRAKE-OFF parking brake** that is automatically inserted when the engine is off. When the unit is operating, on the other hand, it is controlled with a practical button on the dashboard, equipped with a safety catch.





Hydraulic system: never so efficient

VALIANT

The hydraulic system in the VALIANT version is made up of a **double circuit pump** whose maximum overall flow rate is 32 lt/min, supported by a throttle valve

Hydraulic operating pressure is 180 bar.

For the VALIANT, there are up to a maximum of 4 hydraulic control valves on the rear of the machine, which allow you to use equipment that requires a large hydraulic flow rate.

VOLCAN

The hydraulic system of the VOLCAN version is also a **double circuit one**, **but with independent pumps and dedicated heat exchanger**.

The hydroguide pump has a flow rate of 31 lt/min, like the one for the attachments. Hydraulic operating pressure is 180 bar.

For the VOLCAN, there are up to a maximum of 8 rear hydraulic control valves, which allow you to use equipment that requires a large hydraulic flow rate.

PLUS

Everything in one handful

The value of an equipment greatly depends on the flexible qualities with which it was designed. For our most demanding customers we designed an **electronically controlled Joy-Stick** specifically for the **Volcan** version which allows you to keep the entire hydraulic system under control with a single device.

The **Joy-Stick** in the **Volcan MT** tractors, in fact, controls not only the hydraulic system, powering 7 rear hydraulic control valves but also the lifts, making every manoeuvre involving the machine's hydraulics practical and secure.

Dual Floating System®

World is not perfectly flat

For equipment that must adapt to the contour of the terrain and follow depressions and bumps without damaging the surface, BCS technicians have designed the **Dual Floating System®** for the **MT SERIES**, a patented system that optimises the ground load of the equipment connected to the third point, making it highly performing on any terrain.

The system uses two cylinders connected to an independent hydraulic system equipped with a nitrogen accumulator which, combined with those supplied with the rear lift, ensure the autonomous suspension of the equipment with respect to the lift.

The **Dual Floating System®** ensures that the position of the equipment is always parallel to the ground and allows the precise setting, according to weight, of the adjustment of the load to the ground, for all equipment.





With an easily accessible control linked to the **analogical gauge**, the operator can adjust the internal pressure of the hydrostatic suspension system at any time, optimising the suspension capacity to the requirements at the time.





When the **MT SERIES cabs** were designed, we decided to set our expectations higher than anyone else had ever done.

The cabs, in fact, available in the **Lusso** and **Comfort** versions, were carefully designed in every detail to quarantee interior comfort.

Equipped with fabulous, spacious and ergonomic interiors, they have large windows that optimise the driver's view when driving either in the normal position or in reverse.

The structure is mounted on a suspended platform completely, independent from the tractor chassis, to cushion noise and vibrations.

Air conditioning and heating is ensured by a reliable and efficient system.



Lifting Equipment

The force of the levers

The MT SERIES is often used with performance equipment set on the lift. The **robust rear lifts** that are supplied with the machine rely on practical and versatile multipurpose attachments, designed to easily and quickly adapt to all equipment on the market.

The lifting arms are available with: standard couplers, standard quick couplers and L-shaped quick couplers.

PLUS

For the **Volcan** model, there is also a hydraulically controlled upper link and tie rod that allows the adjustment of the equipment alignment, by simply using the distributor levers.

For the **Volcan** there is also a performing **front lift** supplied with four hydraulic control valves, indispensable for using combined equipment.



Driver's Seat

Reserved for the driver

The pleasure in driving a BCS tractor doesn't come only from the performance of the machine but also from the area reserved for the driver. The MT SERIES driving area was designed to guarantee comfort, ergonomics, functionality and safety in an absolutely original manner.

The driver's seat, with its platform suspended on a silent-block, ensures maximum comfort for the driver. Reverse is achieved in just a few seconds thanks to the rotating console that allows for practical and efficient operation with both rear and frontal equipment.

An **instrument console** with anti-reflective screen gathers all the function in a logical manner in a central display and ensures control over the machinery status. **Instrumentation** is available in both the analog and digital version: the latter provides for simultaneous reading of the engine rpms,

drive speed and PDF rotation speed.

The steering wheel with an interactive hydroguide and adjustable according to the driver's physical stature, controls a steering system that guarantees particularly low turning radii.

This, in addition to the machine's structural characteristics, ensures maximum manoeuvrability in any use conditions.





Another good reason for choosing the MT series

MT SERIES tractors are specialised like few others. Built for those who want only the best. Its large range of options and original accessories makes it even more unique

- Third point line
- Weight line
- Prefilter line
- Pneumatic seat (for the Volcan model)

Compatible with every need

The width and height, the degree of ground compaction, the more or less aggressive "GRIP" are only some of the aspects that give the wheels on specialised tractors a fundamentally important role.

We have tested and reserved for MT SERIES tractors, the best alternatives available on the market so that our clients can always find the right solution for their every need.

Towing in safety

The high towing capacity of MT TRACTORS is guaranteed by towing hitches approved according to the current rules in various countries. The towing hitches can also be supported by the frames that quickly adjust their height in order to optimise the use of the various towed equipment.

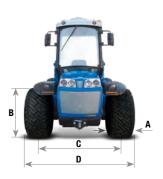


Technical Features _ VALIANT MT





TYPE OF TYRE AND RIM	31x15.50-15 XTC o STG	33x15.50-15 XTC
	WITH FIXED RIM	WITH FIXED RIM
A Tyre width mm.	389	391
B Tyre height mm.	800	843
C Wheel track min/max mm.	1316	1316
D Width min/max mm.	1705	1707



VALIANT MT DIMENSIONS WITH CAB

VALIANT 650 MT	E	F	G	н	 Min-Max	L Min-Max
mm	1040	1390	450	2880	2106	190/295

STEERING RADIUS **VALIANT MT** WITH THE FORESEEN WHEEL

TYRE TYPE	TYRE TYPE 31x15.50-15	
mm	3200	3250



Technical Features _ VOLCAN MT

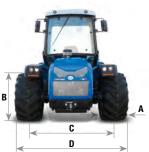








TYPE OF TYRE AND RIM	31x15.50-15 XTC o STG	425/55-17 AC70G	340/65R20	440/50-17 All-Ground
	WITH FIXED RIM	WITH FIXED RIM	WITH ADJUSTABLE RIM	WITH FIXED RIM
A Tyre width mm.	390	428	343	431
B Tyre height mm.	790	884	958	873
C Wheel track min/max mm.	1510	1471	1354 - 1618	1471
D Width min/max mm.	1900	1899	1697 - 1961	1902



VOLCAN MT DIMENSIONS WITH CAB

VOLCAN 950 MT	E	F	G	н	 Min-Max	L Min-Max
mm	1142	1495	563	3200	2050/2150	237/337



TYRE TYPE	31x15.50-15	425/55-17	340/65R20	440/50-17
mm	3340	3350	3280	3350





16 SERIE MT SERIE MT 17

TECHNICAL FEATURES	VALIANT 650 MT
CHASSIS	Swinging integral chassis OS-FRAME with steering wheels
DRIVE	Four-wheel drive, permanent
ENGINE	, od. mod ding pomaton
Manufacturer	VM
Model	D753 TE3
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 / 1950
Cooling	Water
Tank capacity (It.)	45
Radiator and air suction grille cleaning system	Self Cleaning System
TRANSMISSION	Synchronized gearbox: 24 speeds (12 FWD and 12 REV) with synchronized reverser
Main clutch	Multidisc, in oil bath
DIFFERENTIAL	Front and rear differential lock, electro-hydraulically controlled
AXLES	Front and rear, with epicyclic reduction units
POWER TAKE-OFF	Rear, independent from gearbox and synchronized with forward speed
PTO clutch	Multidisc, in oil bath
Engagement control	Electro-hydraulic
Independent PTO rotation speed (rpm)	540 / 750
HYDRAULIC SYSTEM	Double circuit
Flow rate to hydraulic pump which controls the hydroguide and electro-hydraulic control (I/min.)	6
Flow rate to the hoist and the distributors (I/min.)	26
Maximum hydraulic pressure (bar)	180
DISTRIBUTORS	Mechanical control to max. 4 hydraulic couplers
Rear (Standard)	1 single acting and 1 double acting with float
Rear (optional)	2 double acting
HYDRAULIC ACCUMULATOR	Standard
For weight compensation of the mower	Dual Floating System
ELECTRIC SYSTEM	
Battery (Ah)	70
Alternator (A)	55
REAR LIFT	By four external rams
Three-point hitches	Standard: standard couplers cat. 1 - Optional: quick couplings cat. 1 and lift rods adjustable in length or quick couplings cat. 1, L-shaped lift arms, lift rods adjustable in length and hooks adjustable in width
Three-point tie bar	With manual adjustment
Lifting capacity at the end of the arms kg	1800
DRIVING UNIT	With suspended platform on "silent-block"
Driving platform	Reversible with rotating platform and twin pedal assembly
Steering wheel	Adjustable in height
SEATS with safety belts	Standard: sprung seat
SERVICE BRAKES	Oil immersed multidisc, acting on the rear transmission, simultaneously or independently
Parking brake	Acting on the service brakes
STEERING	With hydrostatic steering, acting on the front wheels. Flow deviator for steering unit
SAFETY	
Roll-bar frame (standard)	By several posts with roof, front and rear windscreen and windscreen wipers, telescopic rear view mirrors and headlights
Cabin (optional) CONSOLE	Sound-proof, mounted on 'Silent block', heating and ventilation systems. Optional: air conditioning Digital type with reading of rpm, forward speed and rotation speed of power takeoff, water thermometer, warning light for oil
	pressure and acoustic alarm
TYRES	
Standard	31x15.50-15 XTC
Optional	31x15.50-15 STG * 33x15.50-15 XTC
TOW HOOKS	
Standard	Rear cat. C and front tow hook
Optional	Rear rotating or rear adjustable in height (Slider type) tow hooks, both EC approved
WEIGHT OPERATIONAL	
WEIGHT OPERATIONAL With chassis (kg)	1555
WEIGHT OPERATIONAL	1555 1625 Front weight

TECHNICAL FEATURES	VOLCAN 950 MT
CHASSIS	Swinging integral chassis OS-FRAME with steering wheels
DRIVE	Four-wheel drive. Front-wheel drive disengagement with electro-hydraulic control
ENGINE	
Manufacturer	VM
Model Number of cylinders	D754 IE3 4
Displacement cm3	2970
Suction	Turbo intercooler
Emission level	Tier 3
Power KW/HP	67 / 91
Nominal speed (rpm)	2300
Maximum tractor torque (Nm/rpm)	420 / 1000
Cooling Tank capacity (lt.)	Water 55
Air filter	With cyclone prefilter with external air intake
Radiator and air suction grille cleaning system	Self Cleaning System
TRANSMISSION	Synchronized gearbox: 32 speeds (16 FWD and 16 REV) with synchronized reverser
Main clutch	With multiple discs in oil bath with hydraulic control PRO ACT SYSTEM
DIFFERENTIAL	Front and rear. Differential lock: simultaneous front and rear or only rear with electro-hydraulic control
AXLES	Front and rear with epicyclic reduction gear
POWER TAKE-OFF PTO clutch	Rear, independent from gear and synchronized with forward speed. Engageble under load with brake in disengaged position With multiple discs in oil bath
Engagement control	Electro-hydraulic
Independent PTO rotation speed (rpm)	Standard: 540/1000 - Optional: 540/750
HYDRAULIC SYSTEM	Double circuit with independent pumps and heat exchanger
Flow rate to hydraulic pump which controls the hydroguide and electro-hydraulic control (I/min.)	31
Flow rate to the hoist and the distributors (I/min.)	31
Maximum hydraulic pressure (bar)	180
DISTRIBUTORS	Mechanical control to max 8 hydraulic couplers
Rear (Standard)	1 single acting and 2 double acting
Rear (optional)	1 single acting or 1 double acting or 1 double acting with float
Joystick (optional) HYDRAULIC ACCUMULATOR	Electronic control of hydraulic couplers composed of: 1 single acting and 3 double-acting Standard
HTDRAULIC ACCUMULATOR	Statioard
For weight compensation of the mower	Dual Floating System
ELECTRIC SYSTEM	
Battery (Ah)	100
Alternator (A)	55
REAR LIFT	By two external rams
Three-point hitches	Quick couplings cat. 1 and 2, L-shaped lift arms, lift rods adjustable in length and hooks adjustable in width
Three-point tie bar	Standard: with manual adjustment - Optional: hydraulically controlled upper link and tie rod link arm
Lifting capacity at the end of the arms kg	2300
FRONT LIFT (optional)	By two external rams with front guard and 2 double acting control valves
Three-point hitches	Rigid with quick couplings cat. 1
Lifting capacity kg	800
DRIVING UNIT Driving platform	With suspended platform on "silent-block" Reversible with rotating platform, suspended brake and clutch pedals mounted on revolving control column
Steering wheel	Adjustable in height
Gas spring SEATS with easy adjustment and seat belt	Standard: comfortable sprung seat, adjustable according to the driver's weight - Optional: pneumatic seat
SERVICE BRAKES	Oil immersed, multidisc brakes, acting on the wheels with hydrostatic control
Parking brake	Automatic and independent with BRAKE-OFF SYSTEM
STEERING	With hydrostatic steering by two rams, acting on the front wheels. Flow deviator for steering unit
SAFETY	
Roll-bar frame (standard)	By several posts with roof, front and rear windscreen and windscreen wipers, telescopic rear view mirrors and headlights
Cabin (optional)	Sound-proof, mounted on 'Silent block', safety cell integrated in the structure. Optional: air conditioning Digital type with reading of rpm, forward speed and rotation speed of power takeoff, water thermometer, warning light for oil
CONSOLE TYRES	pressure and acoustic alarm
Standard	31x15.50-15 XTC
Optional	31x15.50-15 STG * 425/55-17 AC70G * 340/65R20 * 440/50-17 All-Ground
TOW HOOKS	CIATOLOGIC TO CIC TECTION IT ACTION CHOCKED THOUGHT AHEALIGUILU
Standard	Rear cat. C and front tow hook
Optional	Rear rotating or rear adjustable in height (Slider type) tow hooks, both EC approved
WEIGHT OPERATIONAL	
With chassis (kg)	2185
With cabin (kg)	2255
OPTIONAL	Protecton for muffler, Oil filter proctection, Turbine air prefilter, Front weight and weights for wheels



