



VSV

ROAD MAINTENANCE VEHICLE





VSV is the first vehicle fully designed, developed and built for road maintenance professionals and their multiple associated missions securing roads.

Ergonomic, versatile, naturally stable and comfortable, ideal for biomass collection, **VSV** definitely offers productivity, safety and profitability.

Packed with innovations, **VSV** provides the perfect illustration of NOREMAT's mission: to do everything one can provide end-users with:

NOuvelle **RE**ntabilité du **MAT**ériel
(New Equipment Profitability)

Olivier ABGRALL
General Manager

“With VSV operators get a panoramic view, a spacious cab, low noise, many driving position adjustments, accessible controls ...”



VSV cab: especially designed for roadside maintenance specialists

Roadside maintenance is a tough business, which demands a fine touch at all times. This deserves an specially-designed cab to enable operators to carry out their tasks under the best safety, efficiency and profitability conditions.

When it comes to safety, comfort is not a luxury, but the guarantee for precise work throughout the day.



Passenger seat approved for roadside and work.



Full panoramic vision on cutting tools, roadside verge profile and surrounding traffic.

Curved cab for better downward view on tools also limiting dust deposits on windows. The roof protrudes the front and side of the cab to protect windows from direct sunlight and rain.



CLOSE-UP

- Sunroof with wiper, washer and sunshade
- Emergency escape hatch
- Adjustable sunshade (windshield+side windows)
- Automatic A/C CD MP3 radio
- Telephone holder
- Electric rear view mirrors
- Tinted windows
- Telescopic steering column adjustable in 2 articulations
- 7-vent ventilation
- Storage compartments
- Pneumatic suspension seat with armrest, headrest and safety belt
Seat orientation adjustable +/- 15°
Seat right-hand translation 200 mm

A design thought for the business

The cab, arm and engine are positioned to provide the ideal response to the vehicle's visibility, stability and multi-functionality requirements.

10%, 20%
and even 30%

“Productivity gain achieved by VSV end-users. Visibility and comfort have a direct impact on profitability.”



“Whether for targeted vegetation cutting, biomass collection, mechanical weeding, VSV is the right vehicle for roadside maintenance tasks. With its arm positioned behind the cab, VSV can carry out cutting work, drive a vacuum turbine and pull a trailer at the same time.”

CLOSEUP



Front cab offering perfect visibility (1), compact arm which frees up the rear of the vehicle for multiple applications (2), engine block used as a natural counterweight for greater stability... (3)

VSV is a vehicle designed for roadside maintenance tasks.

All controls are handy.

For easy control, the sliding armrest console is a compact unit grouping all controls of the platform, arm and front or rear tools. As it is integral with the seat, the console follows its movements, and is fully adjustable to adapt to all users. The sliding armrest's design offers excellent forearm support in all operating conditions.





Optimised power

4-cylinder, common rail turbo injection engine, proportional reversible fan, automatic engine rate setting according to the tools selected, hydraulic circuit design that reduces load loss, and much more...

All possible engine yield gain processes have been meticulously explored and implemented.

Always searching for...

(New Equipment Profitability)

2/4-wheel drive selection

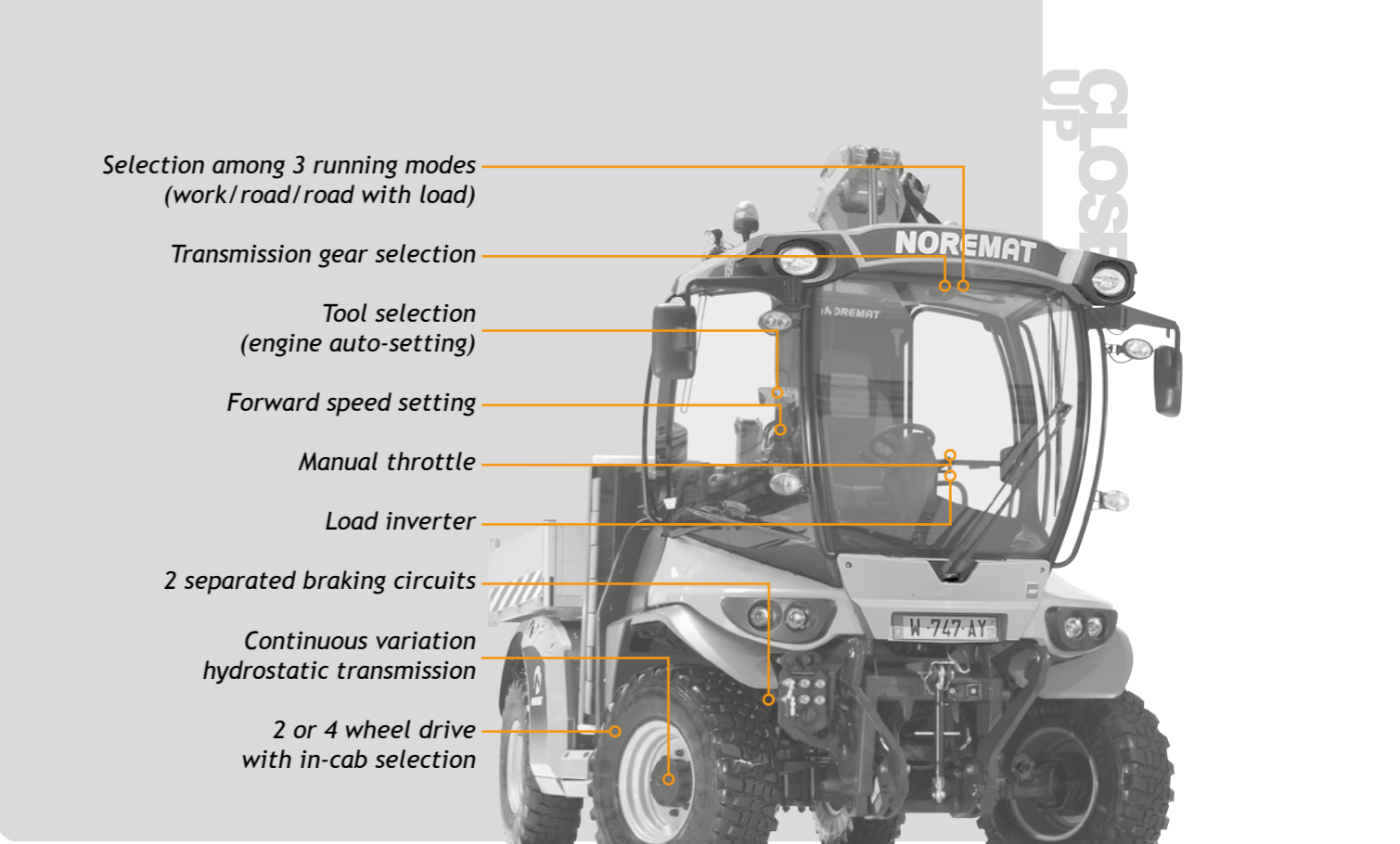
According to the worksite nature and conditions (asphalt, soil, mud, etc.), the operator selects 2 or 4 wheel drive.

When sufficient, the 2 wheel drive mode reduces the steering radius and transmission responsiveness.



Testimonies:

The productivity gains achieved with VSV shortened the time spent on the worksite while saving on fuel."



Selection among 3 running modes (work/road/road with load)

Transmission gear selection

Tool selection (engine auto-setting)

Forward speed setting

Manual throttle

Load inverter

2 separated braking circuits

Continuous variation hydrostatic transmission

2 or 4 wheel drive with in-cab selection

Low fuel consumption

According to the tool selected (mowing-head, branch-cutter, weeds brush, etc.), the VSV adapts the engine setting automatically for the right power at the right engine rate.



Up to -90% new CO2 emissions



Compatible with PUR-XTL® from Altens. This fuel is 100% produced from waste (used cooking oil ; animal fat).

This fuel could avoid up to -90% of CO2 emissions.

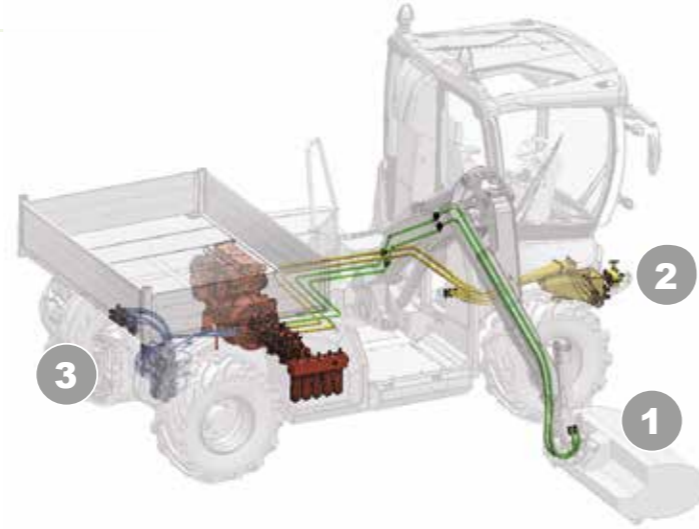
Every VSV are delivered with PUR-XTL® and without any change, you can fill the tank with PUR-XTL® or standard fuel.

Up to 3 simultaneous tools

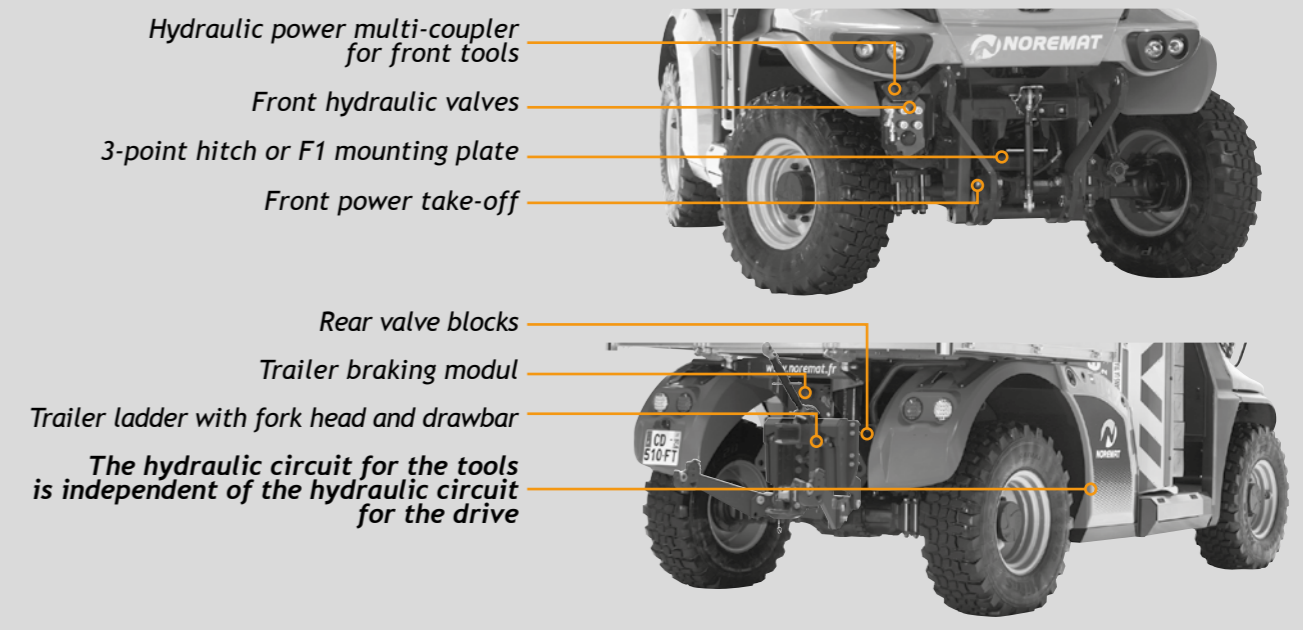
VSV can operate up to 3 tools simultaneously: a front tool, an arm tool and a rear tool.

Combining tools enhances the vehicle's productivity.

Tools are selected from the control unit, automatically activating the appropriate circuits and setting the right engine rate.



CLOSE-UP



For your work in the agricultural sector...



...and to expand your range of services for municipalities





“
Testimonies:
 Great additional comfort
 and time gain!”

M64T or M73T multifunction arm: details that make the difference

The multifunction arm was designed with the NOREMAT Visiobra concept: a forward offset telescopic arm for better visibility.

Left hand pivot, reversing shock absorber, dual-pressure retraction, curved jib... VSV's arm groups all functions for easier work and long equipment lifetime.



Active safety device against obstacles on cutting tool: when the arm reaches a pre-set angle, the vehicle automatically stops moving.



The curved jib facilitates working over nearby obstacles.



The arm's reversing shock absorber is built inside the rotation pivot.

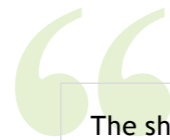


In transportation mode, the tool is perfectly integrated to VSV's dimensions.

The arm's moving speed is automatically reduced in case of a folding manoeuvre into transportation mode.

Incomparable maintenance ease

Over the last 35 years, for NOREMAT, equipment maintenance has become a differentiating factor. The company staff includes more than 50 specialist field technicians. They participated in VSV's development.



The shorter the maintenance times, the more profitable the equipment. Easy maintenance and component accessibility are top priorities in VSV's architecture."



Hinged covers for immediate access to engine and cooler compartments



A comprehensive management tool for operators and technicians, the HMI unit provides technical monitoring, indicates maintenance operations to be scheduled, stores the vehicle parameters... through a user-friendly colour control display.



Spacious and accessible tool unit, specific compartment for grease cartridges, fuel and Ad-Blue filling at man height, quick access to greasers, filters, oil holding tanks, water tank and so on. Everything was organised for easy maintenance to extend VSV's lifetime and increase its profitability.



The VSV supports your eco-responsible process



A compartment stores used grease cartridges. The tool unit is hence kept clean. A system ensuring proper waste management.

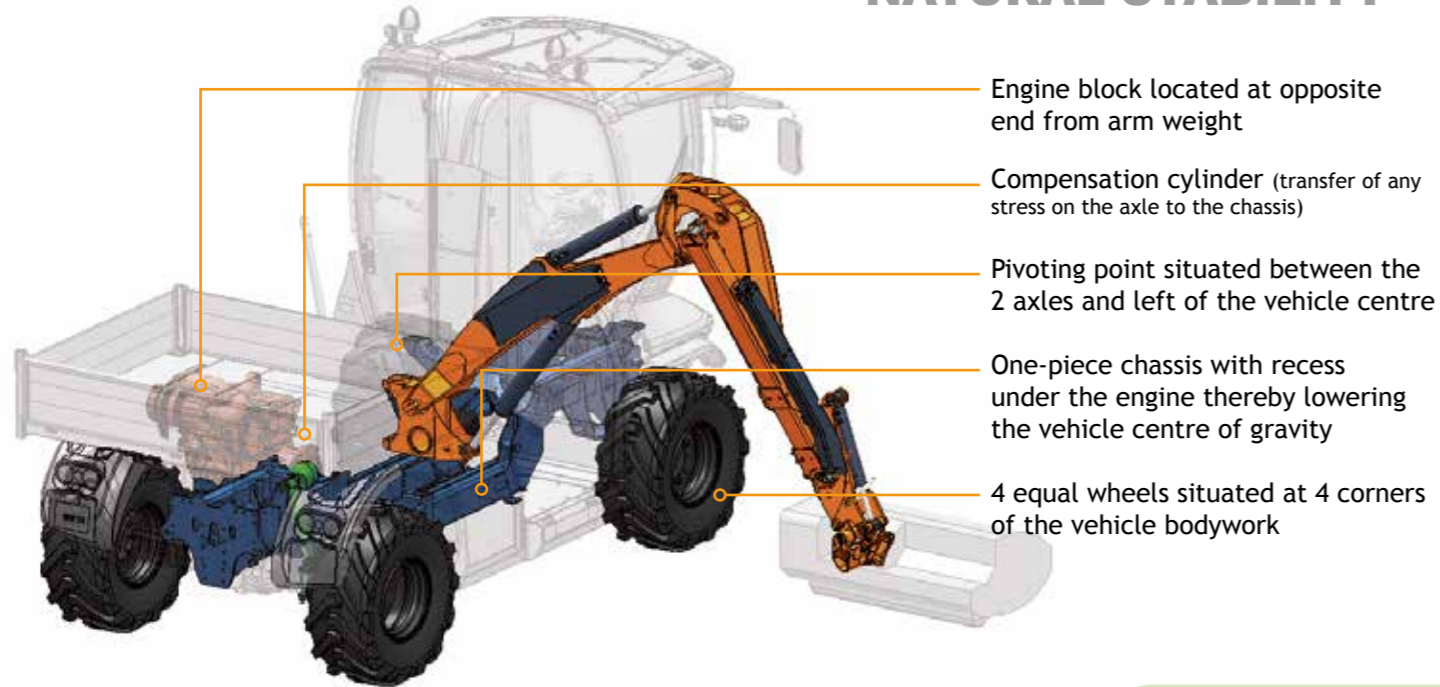


Have you ever wanted to wash your hands after a mechanical task performed on a worksite?

The right wheel fender also serves as a water tank fitted with a tap.

Close attention paid to safety

NATURAL STABILITY

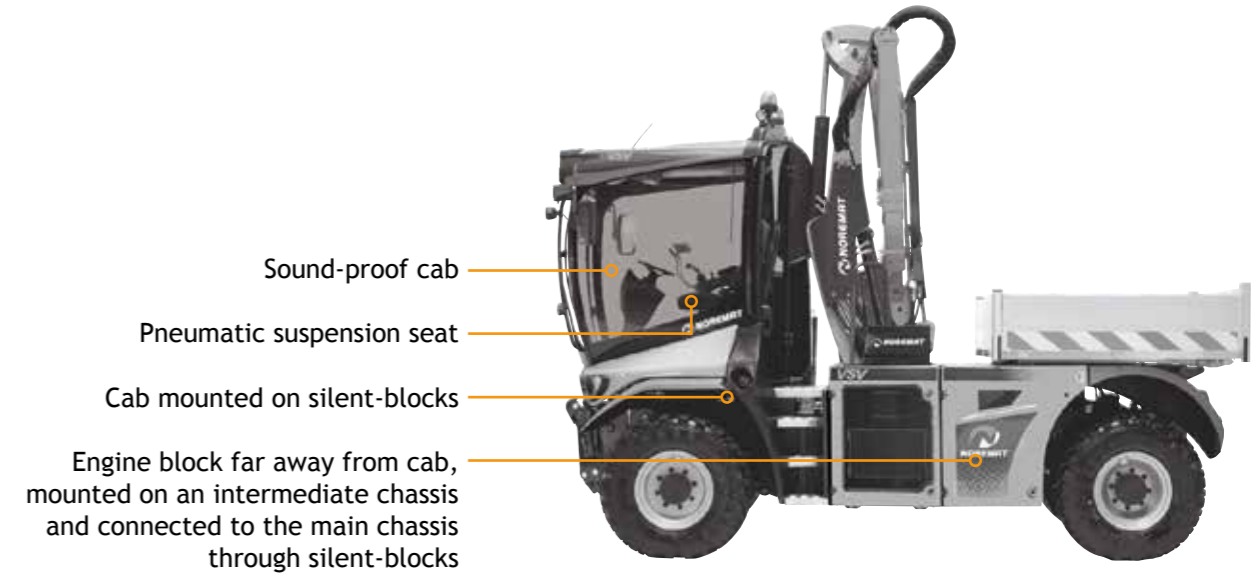


SOUND COMFORT: A REALITY

By design, the sound level in the cab is exceptionally low. The engine is far away from the cab and its vibrations are dispersed simply by a series of silent-blocks. Results: less fatigue, a constant level of attention for the driver and a better safety.



**Measures made in the cab while travelling at 6 kph. (Report from CETIM No. CET 0077146-01/ Ac of 14/03/2012)*



IN COMPLETE SAFETY

The cabin door opens to the rear over a lit platform, from which the operator can safely observe traffic before leaving the vehicle.

Other benefit of the front cab: At crossroads with low visibility, passing through villages with narrow country roads lined with hedges, the driver can see whether to move off while remaining safely behind the stop line.

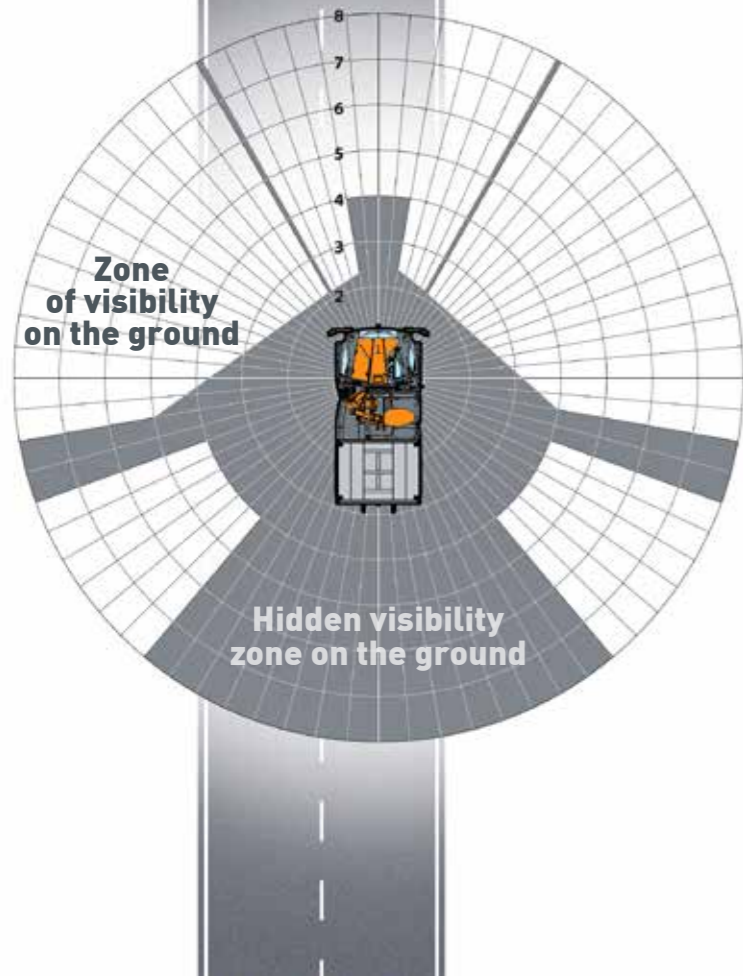


LOW IMPACT ON TRAFFIC

With the Portil G+ tool holder, no need to move the vehicle to the left-hand lane on close obstacles: the tool slides to the front of VSV.

The use of 2 combined tools increases work speed. Road traffic is sooner restored.





SEE WELL...

With VSV, the field of vision is definitely incomparable.

The white colour indicates areas on the ground visible from the driver's seat (measures made without turning the torso).



Testimonies:

A genuine communication tool

Active all year round along roads, VSV is a genuine tool for supporting and promoting the roadside maintenance business towards the general public. It conveys a professional image of a specialist. It imposes a form of respect. VSV can score points in tender processes. It is its own advertisement.

VSV's modern design demonstrates the dynamism of the local authority or company using it. VSV may encourage young individuals to pursue a career as roadside maintenance operators.

...AND BE SEEN

The upper lights are used when the lower lights are hidden by the front tool

With LED lights and 4 powerful working headlights that can be turned to suit your needs, VSV can be operated perfectly safely at night with excellent visual comfort for the operator.



Engine

STAGE 5

Manufacturer	PERKINS
Type	1204F-E44 TA
Cubic capacity	4,4 l
Number of Cylinders	4
Power	102 kW-138 ch (CS7 121), 102 kW-138 ch (CS7 222), 110 kW-149 ch (CS8 222 / CS8 233-C)
Standard	Stage V
Fuel tank capacity	190 l
Ad-Blue tank capacity	15 l

Transmission

	Hydrostatique à variation continue
Number of gears	2
Speed in road mode / automotive driving	0-25 / 0-40 km/h
Speed in working mode	0-10 / 0-20 km/h
Cruise control	As standard
Load inverter	As standard
Braking system	Oil bath multiple disc brakes on FR and RR axles
Number of braking circuits	2
Hydraulic tank capacity	40 l
Permanent drive wheels	2 ou 4
2WD to 4WD selection	As standard

Axles

Front axle	Front steering axle
Rear axle	Rear oscillating axle
Rear differential lock	As standard
Outside steering radius (with standard tyres)	6.50 m

Movement Circuit Hydraulics

Circuit type	Closed centre and load signal circuit (CCLS)
Pump type	Load sensing piston pump
Number of pumps	1

Hydraulic Front / Rear / Arm tool circuit

	CS7 121	CS7 222	CS8 222	CS8 233-C
Number of tool pumps	1	2	2	2
Number of tool circuits installed	2 (Front / Arm)	2 (Front / Arm)	2 (Front / Arm)	3 (Front / Arm / Rear)
Number of possible simultaneous tools	1	2	2	3
Pump capacity	53 cm ³	2 x 53 cm ³	2 x 53 cm ³	2 x 53 cm ³
Front circuit/arm circuit electric diverter	Option	-	-	-
Tool accumulator unit	-	-	-	As standard
Hydraulic tank capacity	130 l			
Biodegradable oil	Option			

Hydraulic cooling

Cooling capacity / transmission circuit	15 kW
Cooling capacity / tool circuits	30 kW
Fan type	Reversible proportional
Auto fan reversal for declogging	As standard
Manual fan reversal control	As standard

Cab

Right hand side window and sunroof	Polycarbonate thickness 8 mm
Access	By lit platform
Front and side wiper with washer	As standard
Roof wiper with washer	As standard
Two side and one front sunshades	As standard
Seat	Pneumatic, with head rest and safety belt
Passenger seat	Option
Seat orientation	+/- 15°
Right seat translation	Option (200 mm)
Steering column	Telescopic, adjustable according to 2 articulations
Control armrest	Multiple position adjustments
Onboard information and management system	Colour display - as standard
Self-regulating air conditioning	As standard
MP3 radio	As standard

Electricity / Lights and safety signalling

Halogen front lights	As standard
Additional upper lights	As standard
LED rear lights	As standard
Flash lights (x2)	As standard
Light triangle	Option
Working lights 2 FR / 1 side / 1 Rear	Option
Electric circuit	24 V
Battery section switch	As standard
Rear coupling bolt	As standard

Multifunction arm

M64T

M73T

Kinematics	Forward offset telescopic arm	
Pivot	Left hand pivot	
Side span (measured with Unibroyeur 1250 cutting head)	6.40 m	7.30 m
Vertical reach	7.37 m	8.35 m
Embankment reach	6.25 m	7.20 m
Ditch reach	3.73 m	4.70 m
Telescopic value	1.15 m	1.64 m
Passage under jib (measured at 1.50 m from vehicle centre)	1.40 m	1.40 m
Hydraulic valves	Three proportional movements digital control	
Reversing shock absorber	As standard	As standard
Dual pressure retraction	As standard	As standard
Automatic return into work position	As standard	As standard
Oleopneumatic arm suspension	As standard	As standard
Semi-automatic tool fitting	As standard	As standard
Quarter turn valves kit	As standard	As standard
Electronic sustentation	Option	Option

VSV was homologated in the EU as a tractor

Caractéristiques techniques

STAGE 5

Front tool mount

High power hydraulic multi-coupler	Option
Front valve block	Option (1 SA - 2 DA)
Cat II 3-point hitch - Lifting capacity 3.5 t	Option
Front power take-off 1000 rpm	Option
F1 coupling plate	Option

Loading platform

Dimensions (Width 2350 x Length 1780 mm)	As standard
Tipping function (1)	Option
Set of 4 boards/panels	Option
Additional panels (2)	Option

(1) Requires one of the rear valves options
(2) Requires the panels option

Adaptation des outils arrière

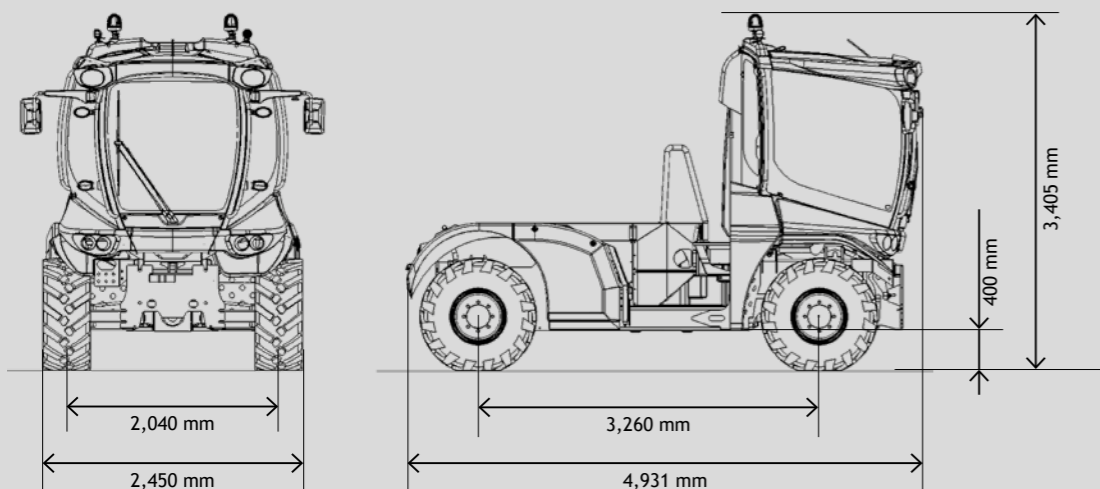
	CS7 121	CS7 222	CS8 222	CS8 233-C
Module 1 Rear valves (1SA + 1DA)	Option	Option	Option	Standard
Module 1+2 Rear valves (1SA + 3DA)	Option	Option	Option	Option
High power hydraulic multi-coupler	-	-	-	As standard
Trailer hitch	As standard	As standard	As standard	As standard
Trailer braking system	As standard	As standard	As standard	As standard

Tyres

Mitas 365/80R20	As standard
Michelin type XMCL	Option
Nokian type MPT Agile	Option
Alliance A580	Option
Alliance A624	Option

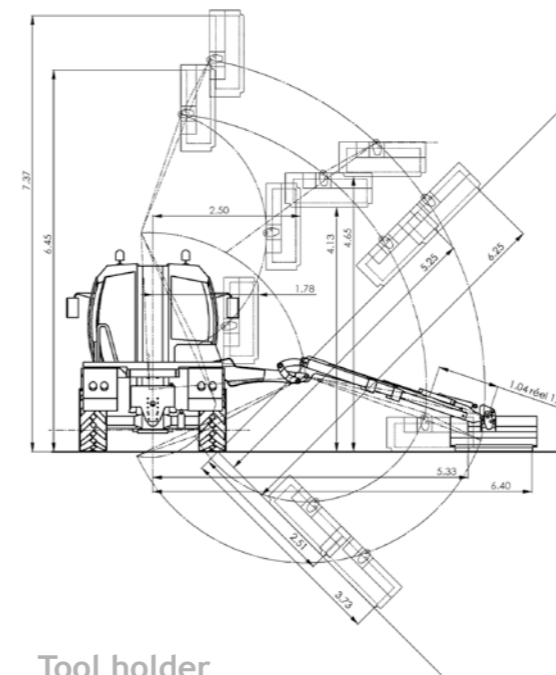
Weight

Empty weight	5,700 kg
GVWR (Gross vehicle weight rating)	12,500 kg
GCW (Gross combination weight)	32,500 kg

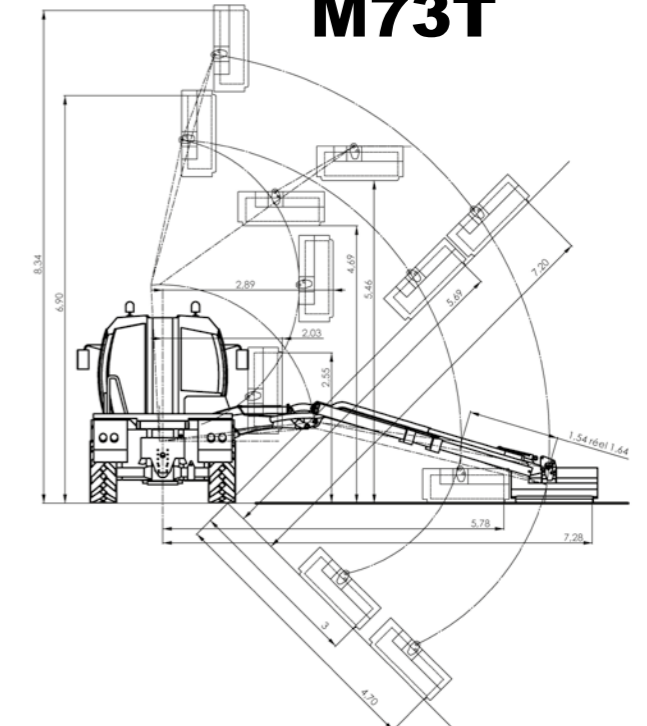


KINEMATICS

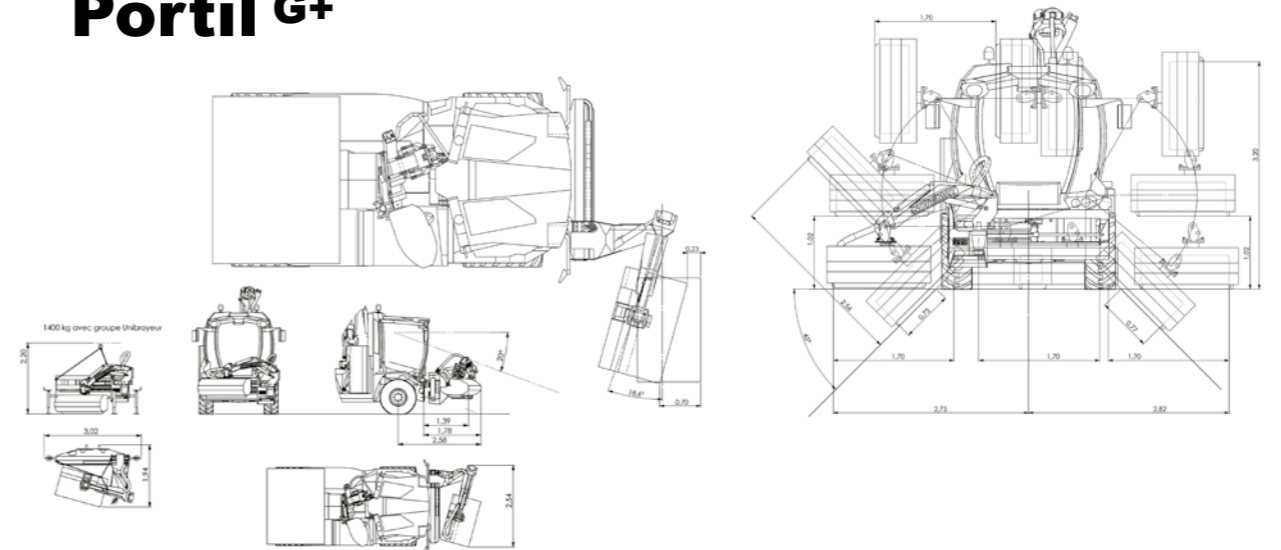
Multifunction arm M64T



Multifunction arm M73T



Tool holder Portil G+



PATENTS

VSV features 7 NOREMAT patents:

- Profession-specific cab
- Chassis
- Left-hand pivot and offset arm concept
- Visibra concept (forward telescopic arm)
- Double-pressure arm retraction
- Reversing shock absorber on arm
- Sliding armrest.



VSV is designed, developed, manufactured, and mounted in France

SERVICE, the key to equipment profitability

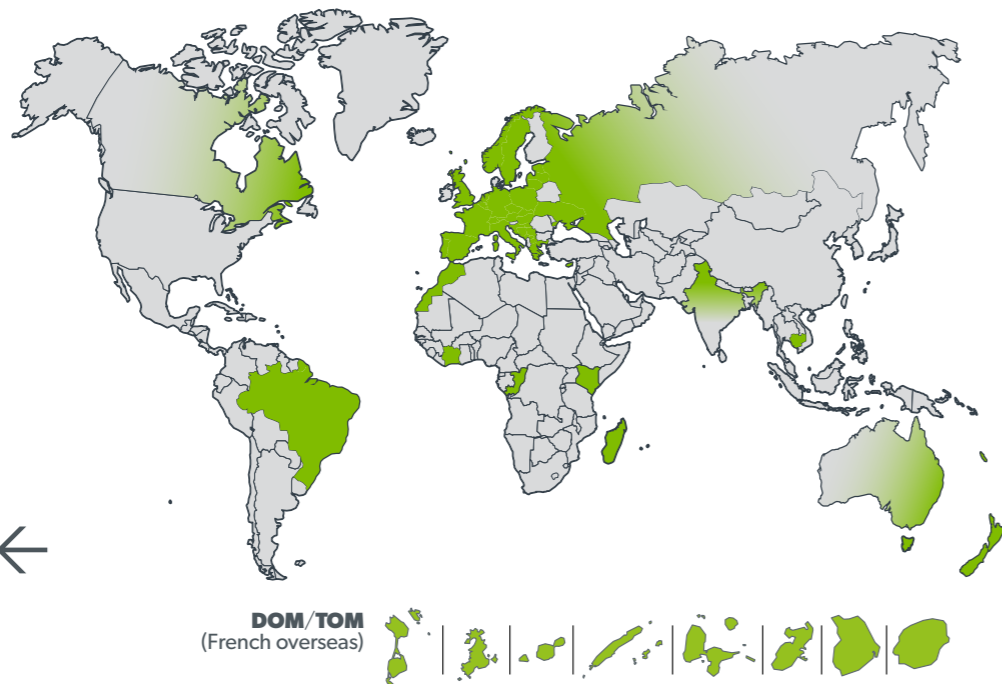
Your mission is to process and recycle green material in the best possible qualitative and economic conditions.

Our mission is to help you achieve yours, while paying attention to the people, the environment and profitability requirements.



NOREMAT is a family capital based independent company. Set up in 1981 to meet the needs of the roadside maintenance business by offering services and spare parts, the company has grown up into a major manufacturer in its market.

THE EXPORT MARKET



On the international scene, Noremat benefits from a network of exclusive importers selected for their professionalism, dedication to our solutions and sense of service.

EXPORT branch ←
 Dynapôle Ludres-Fléville
 166, rue Ampère - BP 60093
 54714 LUDRES Cedex
 Tel.: 03 83 25 96 12

REACH-MOWERS



ATTACHMENTS FOR REACH-MOWERS



FLAIL-MOWERS



TOOL-CARRIERS IN THE NOREMAT RANGE



WOOD AND GREENWASTE SHREDDERS FOR BIOMASS COLLECTION





www.noremat.fr