



SIDE ARMS FOR VERGE MOWING AND HEDGE CUTTING

Professional range from 5 to 5.50 metres

Tonica M50 - M55



The strength of versatility...

 **NOREMAT**

Top-of-the-range quality standards

ACCESSIBILITY



The casing is hinged over the radiator to provide easy access to the latter as well as to the hydraulic distributor (vertical opening within the machine dimensions...). Hydraulic components protected with a removable cover.

PROTECTION



Hydraulic hoses incorporated into the arms and compensating arm for unequalled protection.

DESIGN



Exceptional accessibility and handling. Thanks to its innovative design Tonica is unique in its field.

SAFETY BETWEEN SITES



In the transport position, Tonica remains within the tractor dimensions. A semi-automatic latching system controlled from the drivers cab blocks the machine mechanically.



TONICA :
Reach 5 metres.
Second arm cranked
to the front or
straight.

Reach 5.50 metres.
Second arm
cranked to
the front.

Power 78 HP
at a PTO speed
of 1,000 rpm

...You also can have quality equipment !

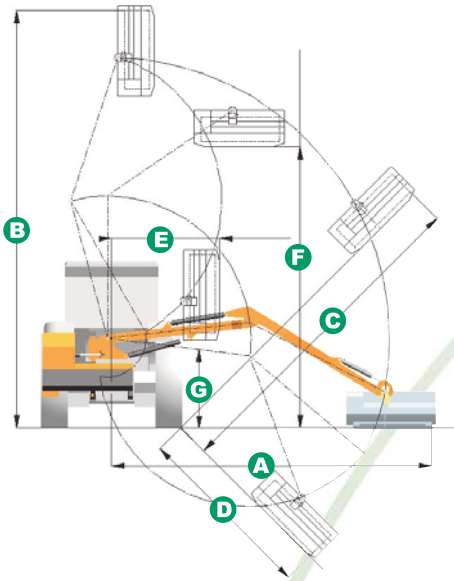
Thanks to the combination of offset pivot and cranked arm (PATENTED innovation), the Tonica models offer unequalled operating comfort during roadside work. High-quality hydraulic components provide maximum yield with a rotor power rating of 78 HP.

The MCS (Master Control System) control panel with sliding armrest and multidimensional adjustments provides exceptional user comfort and high working precision. Tonica will remain a reference in this field for a long time to come.



Work with state-of-the-art equipment

Reach kinematics



Tonica

Kinematics	50 and M 50	M 55
A Max. horizontal reach*	5,00 m	5,50 m
B Max. vertical reach	6,50 m	7,00 m
C Lower embankment reach	5,00 m	5,25 m
D Upper embankment reach	3,00 m	3,50 m
E Min. lateral reach*	1,75 m	2,05 m
F Max. height on hedge, rotor horizontal	4,60 m	4,85 m
G Passage under 1 st arm	0,80 m	0,90 m
Transport height**	3,80 m	3,80 m
Slew angle	102°	102°
Head rotation angle	230°	230°
Overall width in transport position	2,40 m	2,40 m
Operating weight	1375 kg	1465 kg

* measured from the tractor axis
** may vary according to tractor type

Safe and stable travel

The offset pivot and arm cranked to the front principle increases tractor stability and provides the driver with a better view of the mowing/head.



The offset pivot also enables work on narrow paths without the use of additional elements.



Ergonomics and comfort

Sliding armrest

The sliding armrest eliminates friction of the lower arm on the rest and reduces flexion and torsion of the wrist by 30 %.

Tonica

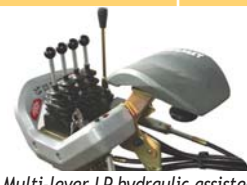
Type of controls	50 et M 50	M 55
- multi-lever cable controls	standard	—
- multi-lever LP hydraulic assisted	optional	standard
- single-lever LP mixed (elec. + hydr.)	optional	optional
- single-lever electrical proportional	optional	optional
3 rd proportional movement (mowing head)	option, if electrical control	
Electronic support	option, if electrical control	



Single-lever mixed controls (electrical, LP hydraulic)



Multi-lever cable controls



Multi-lever LP hydraulic assisted controls

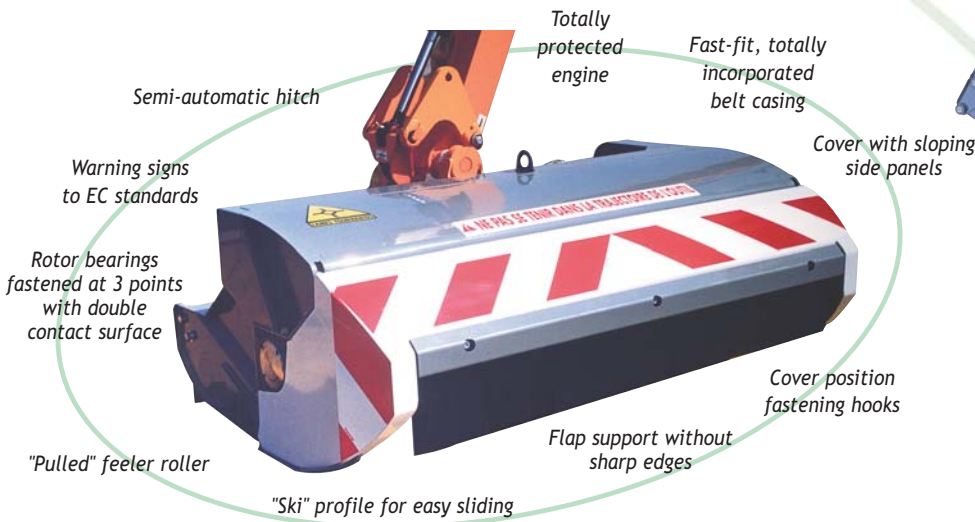


Simple lever electrical proportional controls

The correct tool for each task

Unibroyeur 1250

The unibroyeur is a versatile head for mowing and hedge-cutting

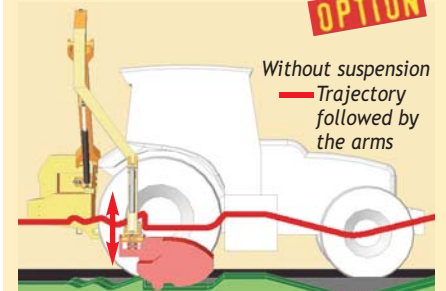
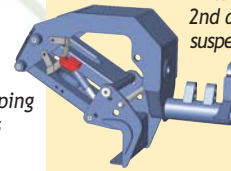


Construction	HY steel (high yield)
Cutting width	1,25 m
Overall width	1,43 m
Rotor rotation speed	2,950 rpm (+/- 50 rpm)
Double rotation direction	Yes (electrical control)
Float* position	Electrical standard feature
Motor	Axial pistons
Cubic capacity	35 cc
Drive	Synchronous belt
Cutting height	Adjustable in three positions 5, 7 and 9 cm
Bearing protection	Double chicane
Anti-projection cover	No sharp edges (improves slide)

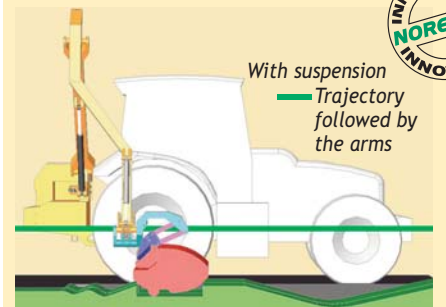
* enables automatic following of the terrain to be cut

MECHANICAL SUSPENSION

- Placed between the end of the 2nd arm and the mowing head, this suspension enables the machine to automatically adapt to ground height variations without modifying the arm position.



The arms bear all the travel-related mechanical stress.



The mechanical suspension absorbs ground irregularities, all stress is removed from the arm.



Universal flails

Serial fitted.



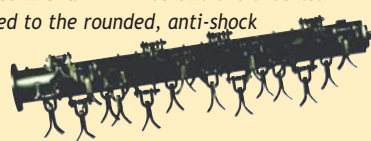
FIXA SPEED system

Fast fitting mowing flails.



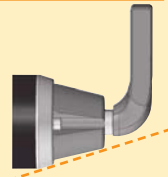
UNIVERSAL ROTOR

Equipped with \varnothing 14 mm screws and shackles
Fastened to the rounded, anti-shock lugs.



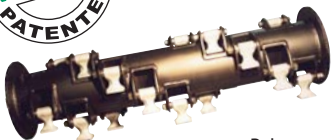
FEELER ROLLER

- The rounded profile of the support favours sliding along the bottom of the ditch.
- Removable end-cap with double-roller bearings.



ROLMAX

Bush-cutting rotor



Rolmax

- Single-piece tubular frame.
- Equipped with heavy flails.
- Flails fitted in spiral layout for optimum suction and grinding of bush

14 AND 16 MAX

Special extra-wide mowing



- Cutting width 1.40 m or 1.60 m.
- Reinforced rotor bearings.

SAW-BLADE UNIT



- Swinging blades used for light cutting tasks (\varnothing up to 30 mm).

OPTION



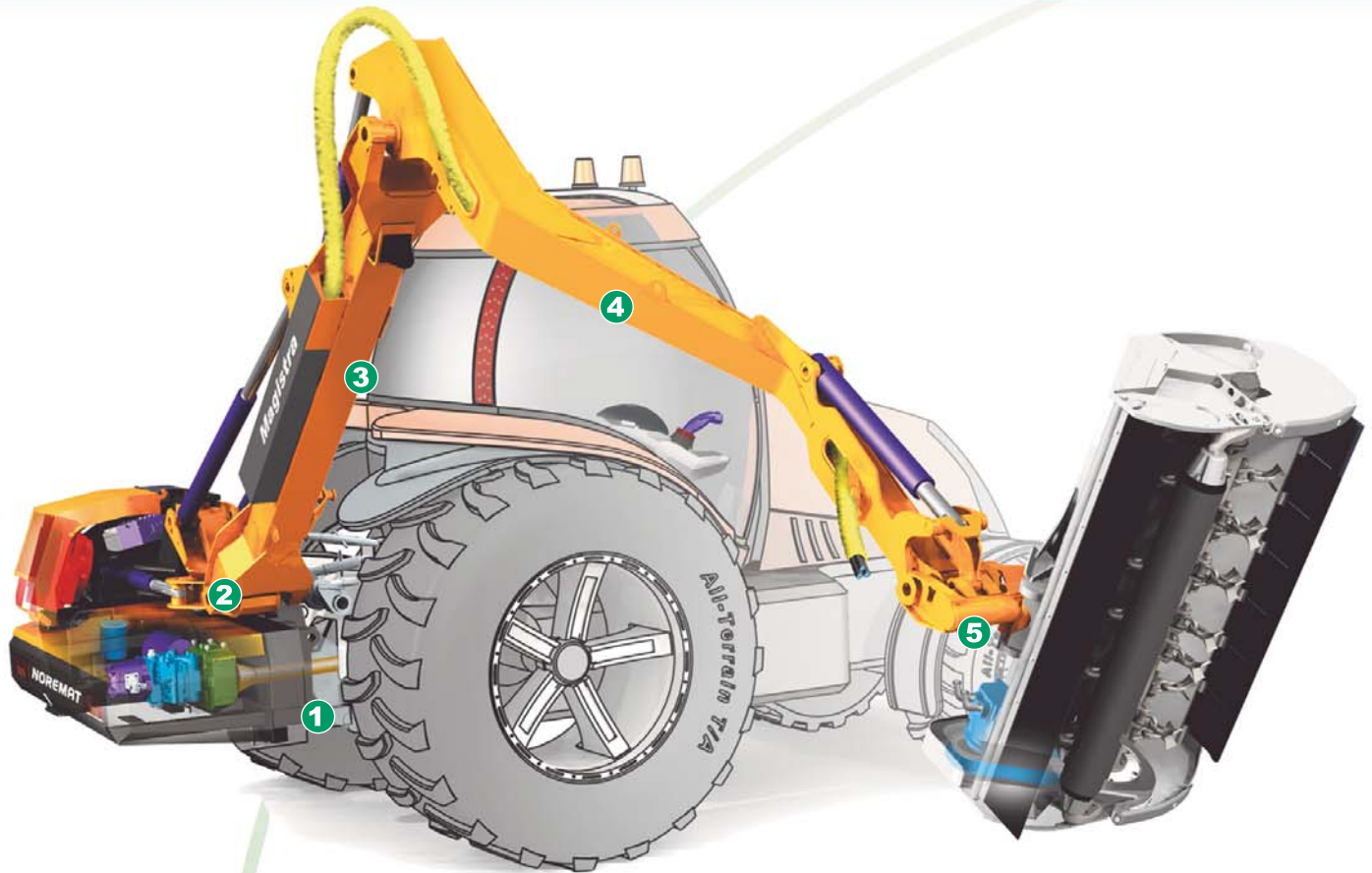
- 2 to 5 blades
- Blade thickness 4 mm and \varnothing 700 mm.
- Ecological cut.
- Kevlar belt.

CUTTER-BAR



- Width 1.30 m or 2.20 m
- Max. branch \varnothing 100 mm
- no maintenance, no sharpening required..

Anatomy of a winner



● Rotor hydraulic circuit

PTO	540 rpm	1,000 rpm
Gear ratio	1 : 4	1 : 2,5
Hydraulic pump		
Type and cubic capacity	piston - 46 cc	
Flow-rate	100 l/min.	115 l/min.
Maximum pressure	300 bar	
Power	68 HP	78 HP
Start-up Control	Electric	
Complete rotor stopping time	3 seconds	
Fastening	Pump flanged to gearbox	
Hydraulic motor		
Type	Piston	
Cubic capacity	35 cc	
Transfer valve incorporated	Yes	

● Movement hydraulic circuit

PTO	540 rpm	1,000 rpm
Gear ratio	1 : 4	1 : 2,5
Hydraulic pump		
Type	geared	
Cubic capacity	17 cc	
Flow-rate	36 l/min.	42 l/min.
Maximum pressure	220 bar	
Fastening	Pump flanged to gerotor	
Hydraulic cylinders	double-acting	
Max. operating pressure	250 bar	
Special equipment	Beam & arm anti-drop system	

● Movement hydraulic circuit (continued)

Electrical and mixed controls	
Distributor	electrical proportional
Controls	single-lever elect. & ergonomic
LP controls	
Distributor	hydraulic proportional
Controls	multi-lever
Oil-pneumatic* suspension	
Accumulator controls	0.7 litre - 250 bar
Commandes de l'accumulateur	
Machines with electrical and mixed controls	electrical
Machine with mechanical and LP controls	manual

Filtering and cooling

Tank	
Capacity	80 litres
Pressurisation	0.35 bar
Oil	
Type	80 W 90-HV 46
Return and suction filters	
Filter type	Spin on
Filtration	10 microns nominal
Cooling	
Radiator	aluminium
Fan	electric - Ø 305 mm
Heat exchange capacity	11 kW

* beam cylinder

1 FRAME

Material	HY steel*
Composition and materials used	tube 60 x 60 th.6 mm tube 120 x 120 th. 8 mm sheet metal th. 8 and 15 mm

2 MACHINE PIVOT

Material	HY steel*
Composition and materials used	sheet metal th. 8 and 12 mm

3 FIRST ARM

Material	HY steel*
Composition and materials used	tube th. 8 140x140 mm

4 SECOND ARM STRAIGHT OR CRANKED

Material	HY steel*
Composition and materials used	reconstituted tube th. 6 to 10 mm
Arm section ranging from	100 x 112 to 138 x 136 mm
Thickness ranging from	6 to 10 mm
Front offset for cranked 2 nd arm	650 mm

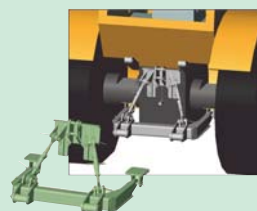
5 HEAD ANGLE BRACKET

Material	HY steel*
Composition and materials used	tube Ø 90 th. 10 mm sheet metal th. 8 and 12 mm
Hitching element	round Ø 50 mm

* High yield

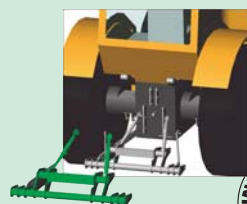
Adaptable frame

Rigid frame



- Rigidity of the machine-tractor assembly.
- Versatility: raised use possible with the flail mower.

Semi-rigid 3-point hitch frame with power-off reaction



- Fast-fit
- Fits all tractor types without removing the lift arms from the tractor.



Optional extras recommended for heavy-duty work

- Automatic arm return.
- Electrical hour counter.
- Oil temperature and level indicator display.
- Mechanical suspension.
- Lights protection kit.
- Electronic sustentation*.

* for electrical controls

Use of the best industrial components

HIGH-PERFORMANCE STEELS

The entire machine is made of HY steel (high yield) offering the following advantages:

- lighter frame,
- increased mechanical capacity,
- increased impact safety factor.

TOP-OF-THE-RANGE HYDRAULIC COMPONENTS

Noremat only uses leading brand-name products in its hydraulic circuits: Sauer, Danfoss, Rexroth...

LONG-LIFE TREATMENT OF CONNECTING ROD ASSEMBLY

To increase the harness and working life of the ring rod assembly, the shafts are tempered as well as case and core hardened.

SPECIFIC BUSHES

The bushes used are thermo-chemically treated to guarantee exceptional wear and gripping resistance. The friction surface of these rings is perforated to create a larger grease reserve while still guaranteeing optimum contact.

* High yield

At Norematt,

The Customer Service conviction is a force

“**NO**uvelle **RE**ntabilité du **MAT**ériel”*

The very name of the company conveys its aim: to use all technical and commercial means possible to improve the profitability of roadside verge maintenance equipment for our business customers.

*New Profitability from your Equipment

NOREMAT'S independence

NOREMAT is a family owned French company, founded in 1981 and specialising in the construction and maintenance of equipment for maintaining roadside verges and large green areas (airports, railways, navigable waterways, etc).



NOREMAT spare parts

Initially, NOREMATT's activity was concentrated around direct customer service : supply of spare parts and after sales service to businesses using flail mowers. Direct contact with users and listening to their needs led NOREMATT to start designing their own spare parts. The success of these parts bearing the logo "NR" (for Norematt Reinforced) progressively led NOREMATT to start designing its own machines as of 1988.



NOREMAT holds a large stock of more than 6000 part numbers, ready for dispatch for the following day

A range for professional users

NOREMAT designs, assembles and tests 400 side flail arms per year at their Ludres factory.

11 basic models are available, all designed for professional use and using hydraulic components from respected brands.



Training by NOREMATT

At NOREMATT we provide training to operators, drivers and technicians, and allocates significant resources to fully train all our own staff to a very high standard (30 sales persons and 25 after sales technicians).



Recognition

Some prestigious prizes have rewarded NOREMATT's research and innovation work.

INPI national Trophy for Innovation 2002



Certificate of approval as a Mercedes Benz partner since 2001



"Lorraine Quality" prize 1997



"Lorraine Performance" prize 1993



Within a policy of constant product improvement, NOREMATT reserves the right to modify the specifications in this document without notice. Photographs are not contractual - 06/2009



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