



SIDE ARM FOR VERGE MOWING AND HEDGE CUTTING

Heavy-duty range from 5.50 to 8.30 metres

Magistra

M55 - M60

Visiobra M61T

68T - 73T - 83T



unequaled performance

 **NOREMAT**

New safety and ergonomics features

LEFT SIDE PIVOT + FORWARD OFFSET : EFFICIENCY PROVEN OVER 10 YEARS



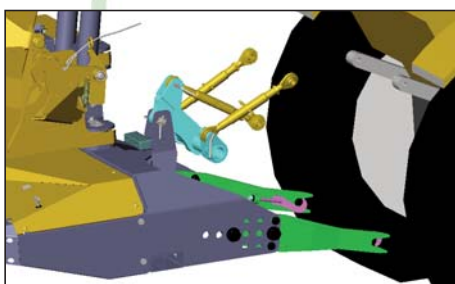
The principle of the left side pivot and the forward offset arm has the advantage of combining better tractor stability with an improved view of the side arm mowing head for the driver.

ACCESSIBILITY



A vertically opening, hinged, bonnet gives easy access to the radiator and the hydraulic valve block, which, when open, does not make the machine any wider. This allows safer “road-side” checking of the machine. Other hydraulic parts are protected by a separate, removable cover.

ERGONOMY



The Magistra range has a quick coupling Noremat axle bracket. There is also a yoke fitted as standard (shown in blue) to ensure the flexibility for travelling between sites and rigidity in operation.

COOLING



New oil cooler with cooling capacity increased from 11 to 14.5 kW.

A removable grille, which slides out for fast, easy cleaning, protects the radiator from clogging and so ensures that the machine does not overheat.



Magistra
M55 - M60
5.50 to 6 m reach

Off-side pivot
and forward
offset arm

Magistra
Visiobra M61T
6.10 m reach

Off-side pivot
and offset
telescopic arm

Magistra
68T - 73T - 83T
6.80 to 8.30 m reach

Off-side pivot
and straight
telescopic arm



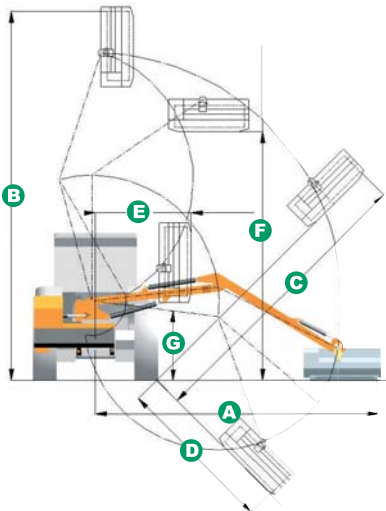
Grass cutting, scrub clearance, tree pruning ... with complete confidence!

The new generation Magistra is designed to perform even the most intensive verge maintenance work. Articulation technology for the Magistra range is based on that found in heavier construction and industrial applications to ensure safe operation in all conditions.

There is a wide range of reaches from 5.50 m to 8.30 m, a wide range of configurations - offset arm, Visiobra or telescopic arm - to ensure that there is a model ideally suited to each application. Robust and efficient, the Magistra range provides multi-purpose equipment for professional users.

The mastery of all your roadworks

Reach kinematics



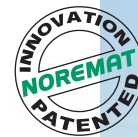
Magistra

	M55	M60	Visiobra M61T		68T	73T	83T
Kinematics (with a 1.25 m wide mowing head)			Telescopic in	Telescopic out			
A Max. horizontal reach*	5.50 m	6.00 m	5.51 m	6.06 m	6.82 m	7.33 m	8.27 m
B Max. vertical reach**	6.27 m	6.77 m	6.27 m	6.82 m	7.58 m	8.09 m	9.09 m
C Upper embankment reach	5.36 m	5.86 m	5.36 m	5.91 m	6.69 m	7.20 m	8.17 m
D Lower embankment reach	3.00 m	3.39 m	2.99 m	3.67 m	4.57 m	4.99 m	5.93 m
E Mini lateral reach*	1.75 m	1.75 m	1.75 m		1.75 m	1.80 m	2.05 m
F Max. over hedge reach	4.23 m	4.61 m	4.22 m	4.51 m	4.90 m	5.29 m	5.90 m
G Under-first arm clearance	1.15 m	1.20 m	1.28 m		1.30 m	1.23 m	1.35 m
Slew angle	90°	90°	90°		90°	90°	90°
Telescopic section length	-	-	0.92 m		1.30 m	1.30 m	2.00 m
Head orientation angle	230°	230°	230°		230°	230°	230°
Overall transport height***	3.50 m	3.73 m	3.57 m		3.76 m	3.78 m	3.95 m
Operating weight	1795 kg	1840 kg	2140 kg		2105 kg	2150 kg	2440 kg

* measured from the tractor centre line
 ** 50 cm ground clearance
 *** may vary according to type of tractor

Ideal equipment for intensive and varied work

From its maximum lateral reach of 6.10 m to its minimum lateral reach of 1.75 m, (with the head at the same height as the tractor cab) the Magistra range is very versatile. It is extremely easy to adapt it to all types of site.



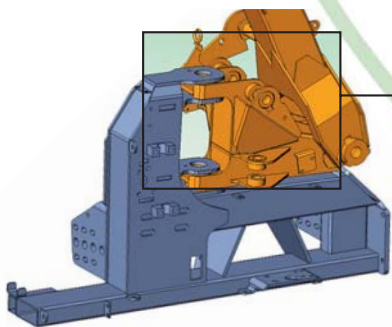
Safety anti-tipping device :
 To prevent the arm tipping due to its own weight when it passes the vertical position a sensor placed at the bottom of the first arm automatically switches the rams to a double acting mode.



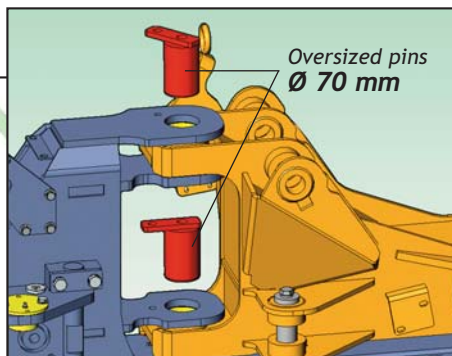
100% heavy duty structure for all your work sites

The Magistra range has a 100% heavy duty chassis specially designed for all intensive grass / brush cutting and tree pruning.

The arm is attached and can rotate around two large diameter pins for maximum load bearing and durable operation.



Pivot mounted on large diameter dual pin assembly.



LONG LIFE ASSURED

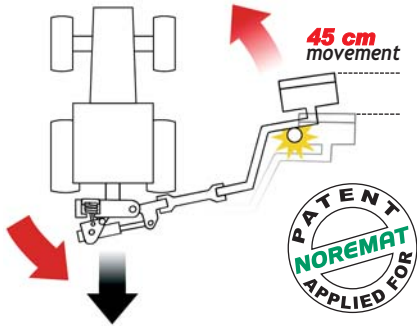


Each bearing has honeycomb grease-retaining sleeves with high surface hardness and excellent seize and wear resistance. The oversized linkage assembly has 40 mm and 50 mm diameter carburised, hardened pins.

100% heavy duty design

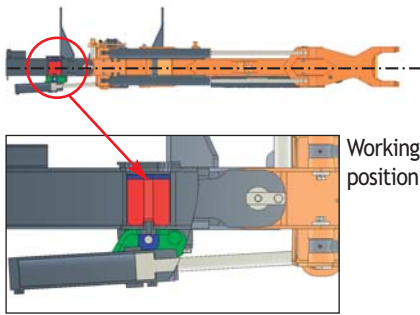
“Safety plus” equipment for long service life applications

ESSENTIAL SECURITY

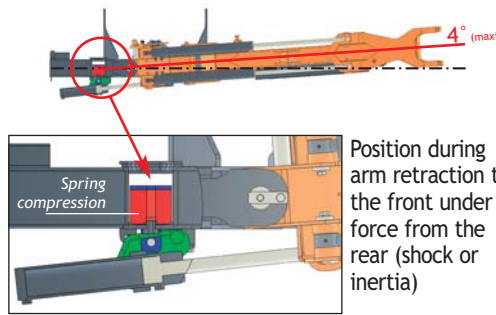


Reversing shock absorber

This device provides extra protection in the event of a mistake while reversing. The pivot fork on the main frame allows the arm to retract towards the front. It eliminates the risk of breaking the slew cylinder.



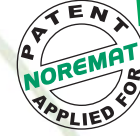
Working position



Position during arm retraction to the front under a force from the rear (shock or inertia)

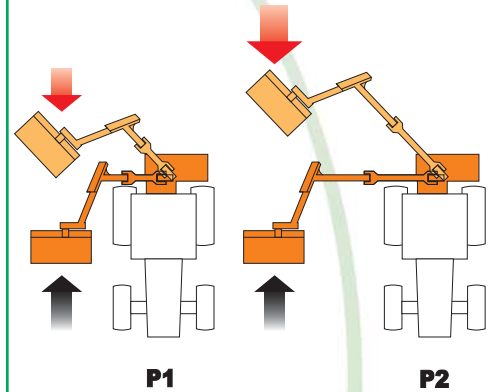
Safety features for improved productivity

HIGHER PRODUCTIVITY



Low pressure for a retracted arm...

Higher pressure for an extended arm



Dual pressure retraction

By using two different pressures in the machine slew cylinder this automatic device maintains the arm in its working position. The resistance force on the head is the same regardless of the arm position.

A range to suit your business

Offset arm

Side reach

from 5.50 m to 6 m

This innovative patented Noremat off-side pivot and offset arm configuration provides natural balance for the tractor/attachment assembly and enables the driver to see the mowing head easily. This reduces operator fatigue and so increases productivity.



Visiobra concept

Side reach

up to 6.10 m

The Magistra Visiobra is able to adjust the position of the mowing head very precisely. You can see the mowing head, the road and the verge at the same time. The Visiobra is designed for comfortable safe verge maintenance.



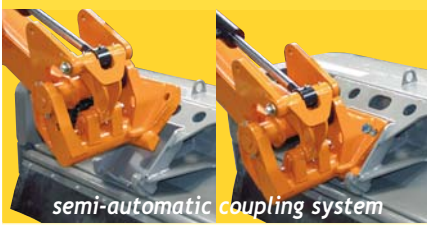
Straight telescopic arm

Side reach

6.80 m, 7.30 m or 8.30 m

These three versions provide a second arm with integral telescopic arm of 1.30 m (68T / 73T) or 2 m (83T) as required. The saw-blade unit can be used for working up to a vertical height of 10 m.

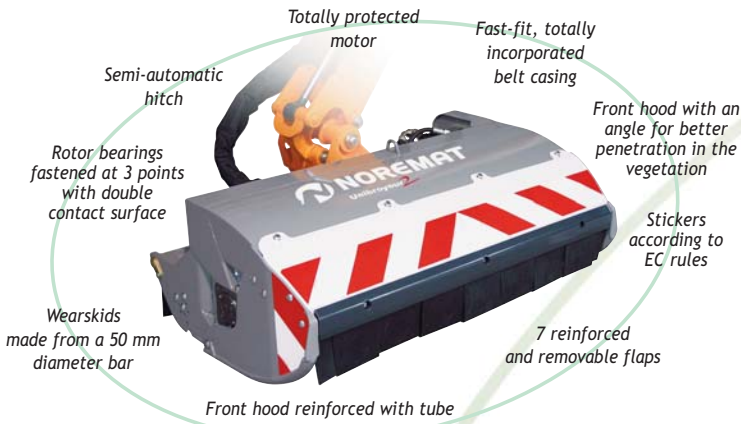




The right tool for every job

Unibroyeur 2

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	2950 rpm (+/- 50 rpm)
Double rotation direction	yes (electrical control)
Float* position	electrical standard feature
Hydraulic motor	axial pistons
Cubic capacity	35 cc
Drive	synchronous belt
Cutting height	adjustable in 3 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

UNIVERSAL ROTOR

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



"Y" flails

Fitted as standard.



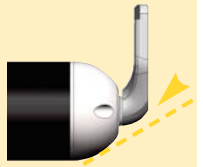
FIXA-SPEED system

Fast fitting mowing flails.



FEELER ROLLER

- The rounded profile of the support allows it to slide along the bottom of the ditch.
- Removable end-cap with double-roller bearings.



FOREST SHREDDER

Special heavy-duty bush-cutter



- Cutting width 1.25 m
- Tubular frame
- New generation Rolmax rotor
- Flails fitted in spiral layout

14 AND 16 MAX

Special extra-wide mowing



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

SAW-BLADE UNIT



- Cutting disk used for light cutting tasks (\varnothing up to 30 mm)

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



BRANCH CUTTER



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

Ergonomics and comfort

Sliding armrest

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



Single-lever Low Pressure mixed (elec. + hydr.) controls

Types of controls **Magistra M55 | M60 | Visiobra M61T | 68T | 73T | 83T**

- multi-lever Low Pressure hydraulic assisted	standard
- single-lever Low Pressure mixed (electric + hydr.)	optional
- single-lever electrical proportional	optional
3 rd proportional movement (moving hd)	option, if electrical control
Electronic support	option, if electrical control



Multi-lever Low Pressure hydraulic assisted controls



Single-lever electrical proportional controls

With your needs in mind

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

Norematt 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.



● Rotor hydraulic circuit

PTO	540 rpm	1 000 rpm
Gear ratio	1 : 4	1 : 2,5
Hydraulic pump		
Type / Cubic capacity	piston / 46 cc	
Flow-rate	100 l/mn.	115 l/mn.
Maximum pressure	325 bar	
Power	73 HP	84 HP
Controls	electric	
Rotor's full 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	22 cc	
Flow-rate	47,5 l	55 l
Maximum pressure	220 bar	
Fastening	pump flanged to gearotor	
Hydraulic ram		
Type	double-acting	
Maximum pressure	250 bar	
Special equipment	beam and arm anti-drop system	

● Movement hydraulic circuit (continued)

Electrical and mixed controls	
Distributor valve block	electrical proportional controls
Controls	single-lever electrical and ergonomic
LP controls	
Distributor valve block	hydraulic proportional controls
Controls	multi-lever
Hydro-pneumatic suspension	
Accumulator on 1 st arm rams	0,7 liter - 250 bar
Control of the accumulator	
Machines with electrical and mixed controls	electric
Machines with mechanical and LP controls	manual

● Filtering and cooling

Tank	
Capacity	70 litres
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	14,5 kW

1 Frame

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

2 Machine swivel

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

3 Beam

Material	HY steel*
Composition and materials used	tube 180 x 180 x 8 mm

4 Straight and M-Type compensating arm

Material	HY steel*
Composition and materials used	reconstituted tube 6 to 10 mm
Arm section ranging from	from 100x112 to 195x180 mm
Front offset for cranked 2 nd arm	650 mm

4 2nd arm "Visiobra"

Material	HY steel*
Composition and materials used	reconstituted tube 6 to 10 mm
Arm section ranging from	from 150x150 to 180x200 mm
Telescopic	tube 120 x 120 x 6.3 mm

4 2nd arm 68T / 73T

Material	HY steel*
Composition and materials used	square tube 150x150x6 to 8 mm
Telescopic	square tube 120 x1 20x6.3 mm

4 2nd arm 83T

Material	HY steel*
Composition and materials used	square tube 180x180x6.3 to 10 mm
Telescopic	square ube 150x150 x6.3 to 10 mm

5 Head angle bracket

Material	HY steel*
Composition and materials used	tube Ø 90 x 10 mm sheet metal x 8 and 12 mm
Hitching element	round Ø 70

* High yield

At Noremat,

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, NOREMAT'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 NOREMAT to start designing their own spare parts. The success of these parts bearing the logo "NR" (for Noremat Reinforced) progressively led NOREMAT 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 NOREMAT

At NOREMAT 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 NOREMAT'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, NOREMAT reserves the right to modify the specifications in this document without notice. Photographs are not contractual - 10/2007.



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