



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**



*unequalled performance*

 **NOREMAT**



# New safety and ergonomics features

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



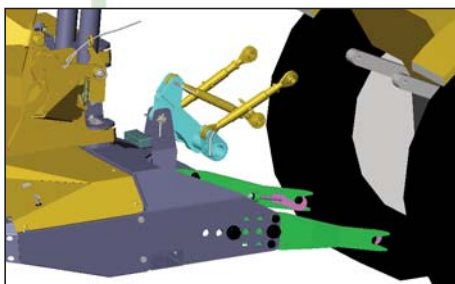
The principle of the left side pivot and the forward offset arm has the advantage of combining better tractor stability with an improved view of the side arm mowing head for the driver.

## 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!

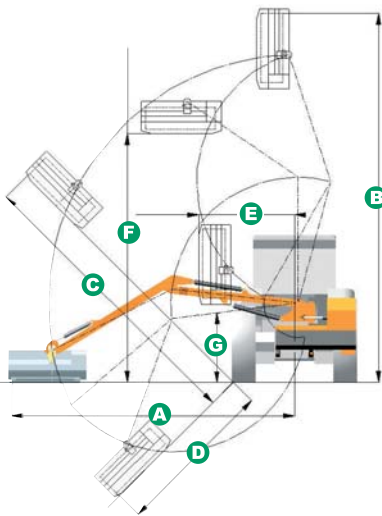
**T**he new generation Magistra is designed to perform even the most intensive verge maintenance work. Articulation technology for the Magistra range is based on that found in heavier construction and industrial applications to ensure safe operation in all conditions.

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			
<b>A</b> 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>B</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
<b>C</b> Upper embankment reach	5.36 m	5.86 m	5.36 m	5.91 m	6.69 m	7.20 m	8.17 m
<b>D</b> Lower embankment reach	3.00 m	3.39 m	2.99 m	3.67 m	4.57 m	4.99 m	5.93 m
<b>E</b> Mini lateral reach*	1.75 m	1.75 m	1.75 m		1.75 m	1.80 m	2.05 m
<b>F</b> 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
<b>G</b> 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

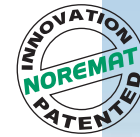
\* measured from the tractor centre line

\*\* 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 :

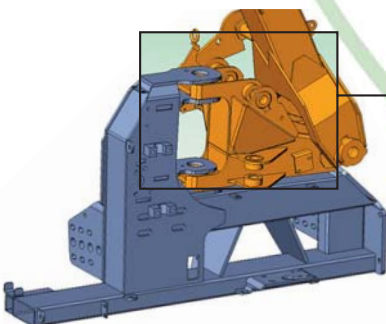
To prevent the arm tipping due to its own weight when it passes the vertical position a sensor placed at the bottom of the first arm automatically switches the rams to a double acting mode.



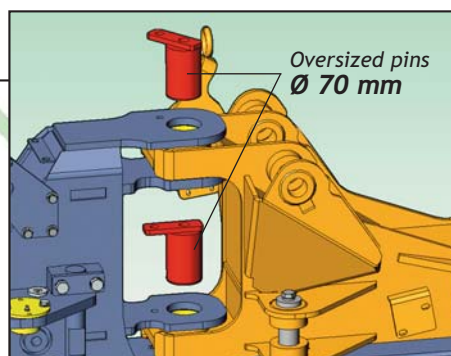
## 100% heavy duty structure for all your work sites

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

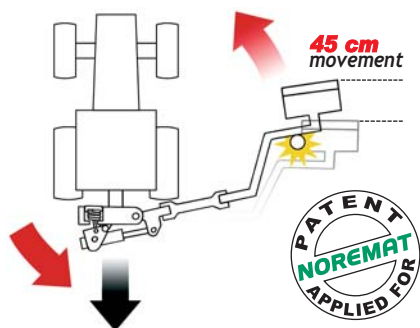


Each bearing has honeycomb **grease-retaining sleeves** with high surface hardness and excellent seize and wear resistance. The oversized linkage assembly has 40 mm and 50 mm diameter carburised, hardened pins.

# 100% heavy duty design

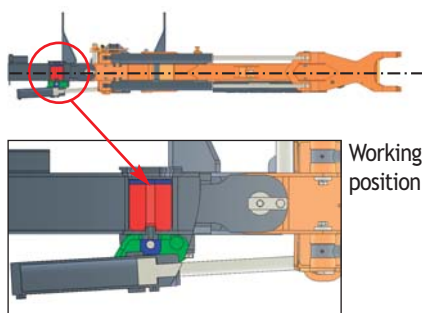
## *“Safety plus” equipment for long service life applications*

**ESSENTIAL SECURITY**

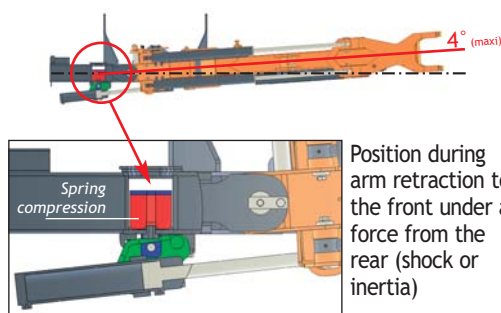


### Reversing shock absorber

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

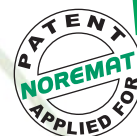


Position during arm retraction to the front under a force from the rear (shock or inertia)



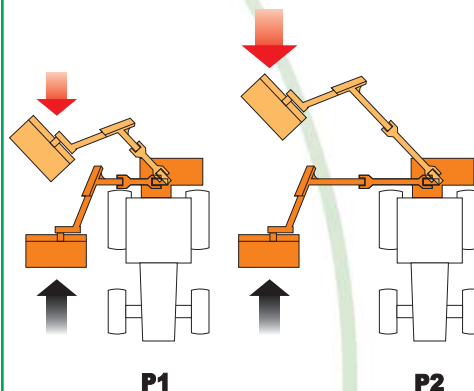
## *Safety features for improved productivity*

**HIGHER PRODUCTIVITY**



Low pressure for a retracted arm...

Higher pressure for an extended arm



P1

P2

### 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**

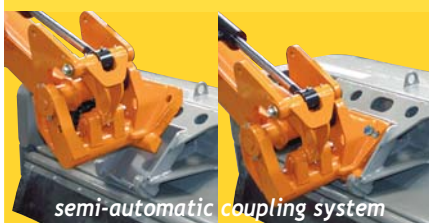
### Side reach

**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.





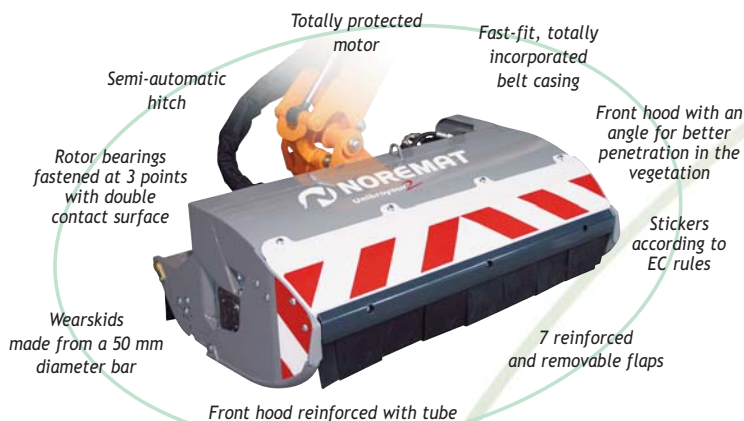


semi-automatic coupling system

# 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 ø 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



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

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



### BRANCH CUTTER



- Width 1.30 m or 2.20 m
- Max. branch ø 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 <sup>rd</sup> proportional movement (moving hd)	option, if electrical control
Electronic support	option, if electrical control

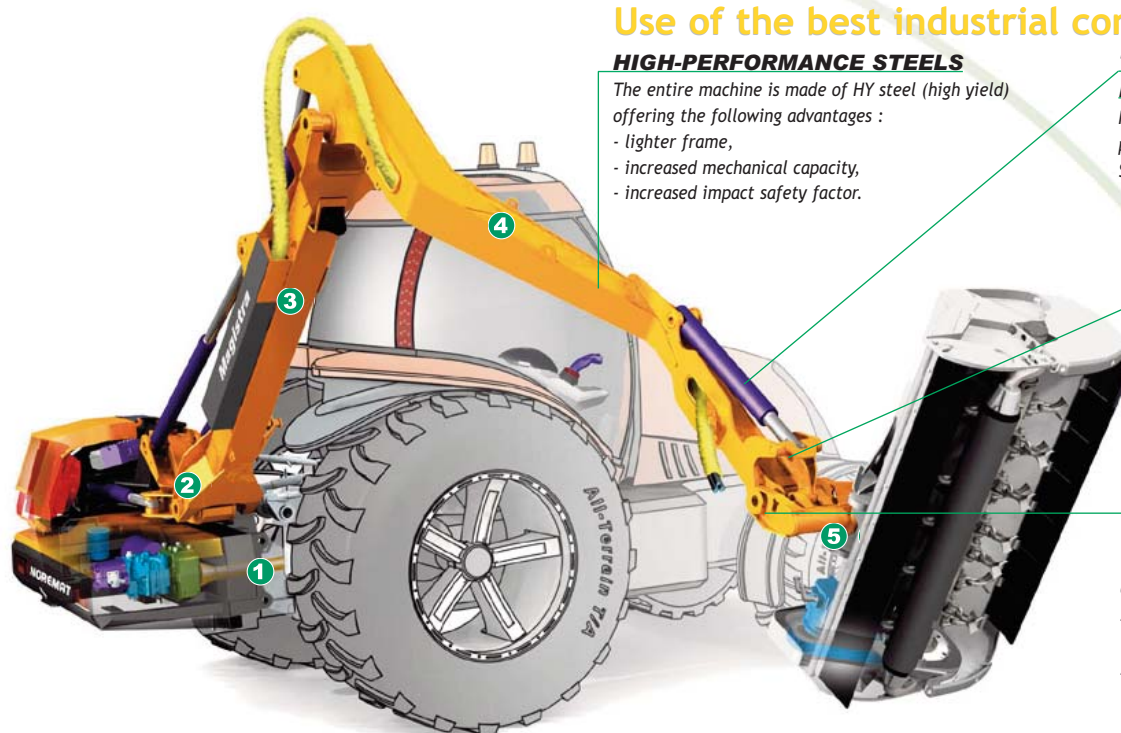


Multi-lever Low Pressure hydraulic assisted controls



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

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.

## ● 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	
Fastenning	pump flanged to gearotor	
Hydraulic ram	double-acting	
Maximum pressure	250 bar	
Special equipment	beam and arm anti-drop system	

## ● Movement hydraulic circuit (continued)

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

## ● Filtering and cooling

<b>Tank</b>	
Capacity	70 litres
<b>Oil</b>	
Type	80 W 90-HV 46
<b>Return and suction filters</b>	
Filter type	spin on
Filtration	10 microns nominal
<b>Cooling</b>	
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 <sup>nd</sup> arm	650 mm

## 4 2<sup>nd</sup> 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 2<sup>nd</sup> 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 2<sup>nd</sup> 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



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