

SELF-PROPELLED IRRIGATION MACHINES

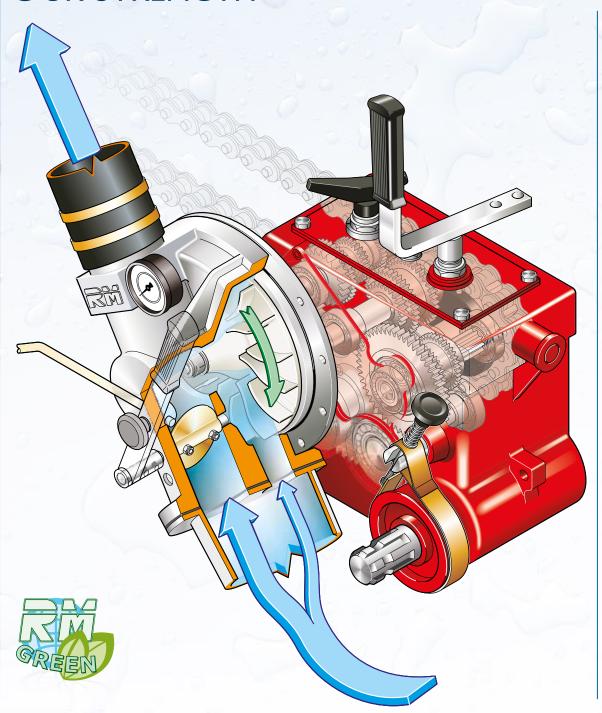








### **OUR STRENGTH**



### ENERGY EFFICIENCY WITH CONSUMPTION REDUCTION thanks to RM Turbo-Reducers

The energy required to rewind the hose is the decisive element in the economy of the self-propelled irrigation machines: RM Turbo-Reducer Unit with in-built water By-Pass and four-speed gearbox drastically reduces pressure losses during the irrigation phase, thus ensuring money saving determined by less energy consumption.

The design of the turbine impeller is the result of a cutting edge aerodynamic calculation which allowed reaching an extraordinary channelled flow of the liquid without any turbulence, thus ensuring the operation with a minimum pressure of 1.5 bar at machine inlet. The quality of the Turbo-Reducer Unit is obtained by using all the movable internal parts in stainless steel, such as all bearings (including the ones of the turbine axle) in class A dipped in oil bath.

The system includes a built-in automatic brake that engages during hose unwinding and disengages during rewinding. Moreover, at the end of rewind the Turbo-Reducer positions the "Operation-Stop" lever to the correct position for the following hose unwind. The exclusive RM Power Save™ system allows for a practical, quick speed change even during the normal hose rewind with water under pressure, thus immediately reducing the turbine rotational speed without having to act on the electronic programmer controls.

RM Turbo-Reducer Unit does not require any periodic maintenance. Moreover, at the end of sprinkling process every liquid residue is automatically ejected from the turbine body.

## AN EXTRAORDINARY ANCHORING through the monolithic RM frames - flexible but indeformable



Both the Xj and Xjm range of RM hose-reel irrigation machines feature a structure that can be hydraulically lowered. Therefore, two positions are determined: on wheels to allow its transfer on road or standing on the ground during work phase.

The latter position allows the hose to be unwound in any direction - 360° movement - without having to reposition it again. Moreover, the base resting on the ground gives the machinery a high anchoring which is very useful with long hoses with a large diameter.

The transverse width of the highest reel allows to considerably lower the overall height of RM machines and their barycentre, thus making them among the stablest ones on the market. Monolithic RM frames are free from any screwed structural elements, manufactured in a single block and hot-dip galvanized, designed through a three-dimensional calculation system.

All models of the XJ and XJM series are equipped with barycentric axle on wheels, thus rendering their transport easy and safe under any running condition.

Such setting - obtained by moving the wheels towards the bar - translates into a less load on tractor hitch system, thus making its use easier even with small-sized vehicles.

Moreover, all models have rear telescopic anchoring brackets that can be individually enabled on the two sides of the machine.

# ACCURACY IN ROTATION by means of chain drive



Another remarkable characteristic of RM hose-reel irrigation machines: the **drive between turbo-reducer and reel is manufactured with high-tensile strength** ARNOLD STOLZEMBERG® chain with extruded rollers and without extension.

Moreover, by using the adjustable toothing (another exclusive of RM) located in the outer reel diameter, a very **high transmission gear ratio** is **created between the wheel and turbo-reduction** gear in order to drastically reduce the energy absorption for rewind as well as the turning moment in the reduction gear output shaft, thus preserving its duration in time; models  $600 \times j$ ,  $840 \times j/\times jm$ ,  $900 \times j/\times jm$  and major evo/ xjm are equipped with with chain tightener with double gear (fixed+movable) with spring coupling to protect the whole structure in case of excessive strain during rewinding

In the MAJOR EVO and MAGNUM (optional mod. 900) models drive chains are located on both reel sides in order to also cancel the torque effect of reel.

REEL AXLE: the best technology available in the market

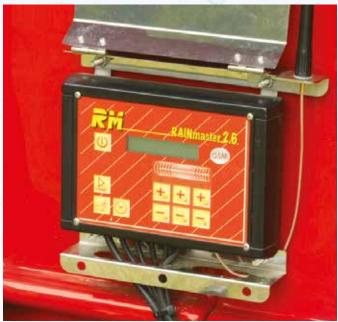


Reel mass with its hose in polyethylene wound and filled with water reaches 80% of machine weight.

Supports on which reel rotates are subject to very high loads, thus generating high frictions, which must be minimized in order to reduce the effort required for the movement. RM reel axle is:

- 1. Supported by large diameter rolling-element bearings that cancel frictions (1);
- 2. Protected by an interchangeable stainless steel compass (2) on which lip seals operate, thus ensuring that it lasts long even in the presence of aggressive fluids such as sludge.
- 3. Aided maintenance: when lip seals are worn out, they can be replaced in a few minutes. This technology an exclusive of all RM models is applied to the whole range, including the cheapest models.

# INTUITIVE OPERATION by means of RM RainMaster 2.6 programmers



RM electronic programmers were designed to be perfectly built into the irrigation machine.

They are simply to use and feature an intuitive, multilingual display; it can be easily bypassed without interrupting the machine irrigation cycle in order to switch from automatic to manual operation.

Electromechanical drain and/or shutoff valves, GSM modem, solar panel for battery and anemometer recharge are available as optionals. The optional additional gun of rewind end can be controlled as well.

### AN EXCEPTIONAL GRIP by means of height-adjustable towing hitch eye



All the XJ and XJM models are fitted with the towing hitch eye whose height can be adjusted through simple gudgeon pins.



### MULTI-SECTION TECHNOLOGY for an indestructible reel structure

Starting from the 58 l Gx model the reel resorts to the multi-section ribbed technology fitted with sides completely made up of high strength DOMEX 420 TM sheet with yield load to 420 kg/mm², made up of wedges precut by means of HD Laser system and then assembled through robotic welding. This leads to a high resistance to bending stress, despite the reel lightness, and to an increase by 300% of the PE hose supporting surface on reel sides - a remarkable advantage compared to the outdated system of side tubular tires. The internal ferrule is made up of calendered flat sheet, which helps preserve, then extend the duration of the polyethylene hose in the course of time.

The 800, 840, 900 models feature the "tapering profile" side reel section, so that all side bends can be effectively counteracted even during the most difficult rewinds.

Sections of each side were designed to be fully and thoroughly coated by the double-layer painting treatment even in the most internal parts. In that way steel does not deteriorate in the boxed or hidden parts.

A side white segment allows checking the regular reel rotation even from a great distance.

# MAXIMUM STABILITY AND DIRECTIONALITY UNDER ANY CONDITION by means of RM rain gun trolleys



All sprinkler trolleys are available in the two- or four-tyred wheel version or made up of cast iron with directional crests.

The latter ones - expressly conceived for the rain gun trolleys of RM hose-reel irrigation machines – increase trolley stability, improve its orientation and distribute the weight where necessary.

Both wheel types can be replaced swiftly and fitted with hubs with tapering bearings and lubricator.

The whole trolley structure is **hot-dipped galvanized**, thus ensuring an outstanding lifespan and much attention was paid to adjustments, which are very user-friendly and can be locked by means of gudgeon pins.

Even all the critical problems connected to the rewind phase were thoroughly analyzed, designing the shape of the middle hose next to the PE hose in order to cancel any entanglement with crops during the rewind phase.

Very high-quality POLYETHYLENE HOSE with differentiated thickness

All RM hose-reel irrigation machines feature the medium density polyethylene hose (PEMD) with differentiated thickness starting from  $\emptyset$  90 included; the highest thickness near the reel allows for a better accuracy on rewind and a less ovalisation due to hose bending.

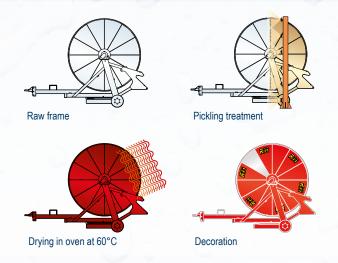
### ATTENTION PAID TO THE ENVIRONMENT

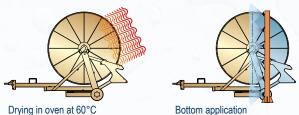
by means of state-of-the-art technologies



RM manufactures its machinery and equipment in compliance with the environmental protection. They use raw materials coming from eco-friendly, certified cycles; they use exclusively water-based paints; they implement technologies in order to reduce energy consumptions. Those are some of the principles determining the technical choices for RM hose-reel irrigation machines, believing that only an attentive approach to those themes — aimed at reducing pollutant emissions — makes the external environment cleaner and the work healthier for workers.

# HIGHER RESISTANCE TO AGING thanks to RM painting cycle







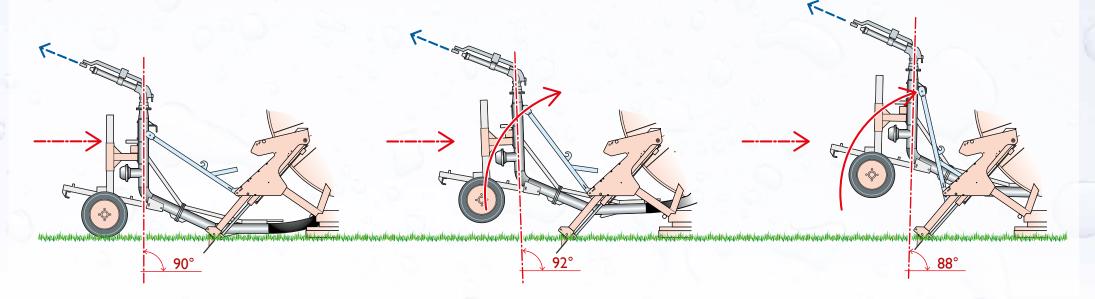


A preventive pickling treatment is performed on the painted parts of all RM machines as well as a following painting process through a double-layer electrostatic system – which ensures a coating even in the most hidden machine parts – with highly eco-friendly water-based paints and primer. Each cycle is accompanied by an in-oven stabilization treatment at 60°C, thus obtaining surfaces which are highly resistant to corrosion and especially to UV rays.

# DISTRIBUTION ALWAYS PERFECT thanks to the exclusive VertiLift™ lifting system

All the XJ and XJM line models of RM hose-reel irrigation machines are fitted with the automatic "VertiLift" lift of trolley during sprinkling end phase.

The exclusive progressive compass system holds the rain gun in a vertical position, thus making the sprinkling action effective until trolley has been lifted from the ground, and correcting any drop between machine and rain gun trolley.



# DOUBLE AXLE WITH ASYMMETRICAL ROCKER ARM less effort on towing on every kind of ground

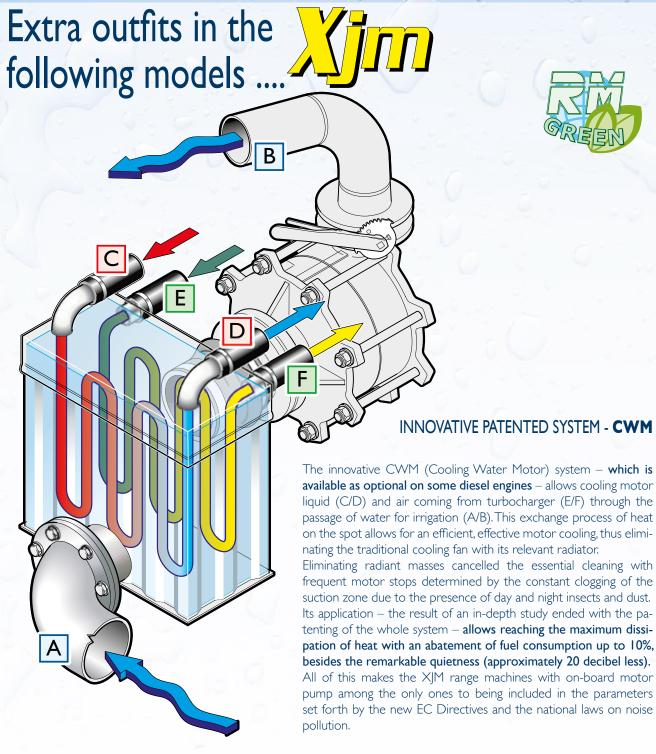


All the machines of the XJ and XJM series fitted with double axle with isodiametric wheels feature the asymmetrical rocker arm.

This solution allows for a remarkable reduction in towing on rough soils, which – accompanied by a reduced side overall dimensions – also ensures a better distribution of weight during the steering phase, thus making the machine handier than the axle.

Machines can be fitted with different size tyres, among which those having a "Big Size" type big section.

Nitrogen-charged shock-absorbers – supplied as standard starting from the 900 model – improve the absorption ground unevenness and reduce bar pitching during towing.



### REWINDING SYSTEM

through RM Turbo-Reducer or through hydrostatic transmission (without turbine).





Hose-reel irrigation machines with in-built motor pump are fitted with RM High-Performance Turbo-Reducer to rewind the hose.

This system allows using (if need be) the models of the XJM series as a normal irrigation machine, that is without compulsorily using diesel engine during rewind.

This option – one-of-a-kind in the scenery of irrigation machines – proved to be extremely efficient to reduce fuel consumption of motor pump unit, as there are not expensive hydrostatic transmissions. (available upon request, if any)

# RM MULTI-STAGE PUMPS, reliability and efficiency made in Italy



The pump in the hose-reel irrigation machines of the XJM range is the throbbing heart of operation. For that reason - besides the wide selection determined by the collaboration with the most important national manufacturers, - RM manufactures on its own a range of multi-stage centrifugal pumps which are especially innovative, using the same care, thoroughness and quality as the ones found in its machines. The entire manufacturing process takes place in Italy, under the direct control of RM engineers in order to ensure a high performance, which is essential for a long-lasting, effective work.

### A GREAT RANGE



All the XJM models are fitted with a great-capacity fuel tank with a vertical development. This makes it impervious to the machine tilt variations. It is not incorporated into the frame, and it is positioned between diesel engine and reel, or in the rear in the MAGNUM Xim models.

All tanks are fitted with right-hand and left-hand refuelling union with key-locked plugs. Moreover, an oversize tank of approximately 800 litres assembled in the rear can be requested for the 900 Xjm and MAJOR Xjm models.

### GUARANTEE OF RELIABILITY, as machines are tested one by one

All RM machines are thoroughly tested before being shipped to the customer. They undergo both mechanical tests – to check their operation – and hydraulic tests by means of pressure water at 12 bar to check the accuracy of joints and connections and the resistance of various components to water pressure.

### HYDRAULIC SYSTEM



All models of the XJM series are equipped with a complete hydraulic system to position the machine and dip tube, manufactured with six-lever spool valve, and by the 900 model assembled on the 180° practical swivelling arm. for the total visual check of positioning movements: up and down motions of the independent rear brackets (RH and LH), up and down motions of the right-hand wheel, up and down motions of the left-hand wheel, up and down motions of the bar base, rotation of base bearing centre plate. In xjm models controls are grouped in a 8-lever distributor which allows swivelling the dip tube carrying arm and moving the winch up and down. The hydraulic system can be enabled by a hydraulic pump assembled on the main diesel engine or by an independent four-time auxiliary motor (on request).

By means of the eight-channel "COMMANDER™" radio-controlled system (optional), all the machine movements can be enabled remotely.

# ALL THAT FOR OUR RESULT

























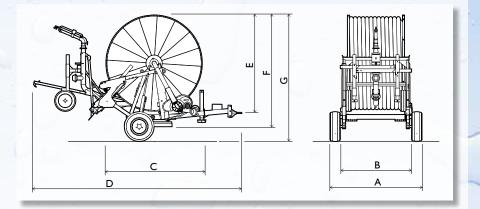






### OVERALL DIMENSIONS AND WEIGHTS

Values are merely indicative, and they can vary according to technical outfitting or technological upgrades.







	٧٤						
Α	В	С	D	E	F	G	KG
2540	2350*	3180*	5900	3060	3200	3500	3450**
* minii	num mea	sures for t	**	(ø 125/3	50 mm)		

Α	В	С	D	Е	F	G	KG
2680	2500*	3300*	6200	3300*	3450	4200**	
* minii	mum mea	sures for t	** (ø 160/380 mm)				



Α	В	C	D	Е	F	G	KG	
3100	2500*	3800*	6800	3800*	3770 4100 750			
* minii	mum mea	sures for t	**	(ø 150/4	150 mm)			

	<u> </u>						
Α	В	С	D	Е	F	G	KG
3200	2500*	4000*	7000	4000*	4200	4570	8800**
* minii	mum mea	sures for t	ransport				

<u>70</u>									
Α	В	С	D	Е	F	G	KG		
2680	2400*	3400*	6600	2800*	2960	2960 3280			
* minii	mum mea	sures for t	**	(ø 125/3	340 mm)				

<u>840X</u> jm								
Α	В	С	D	Е	F	G	KG	
2800	2500*	4680*	7100	3200*	3450	3850	6900**	
* minii	mum mea	sures for t	**	(ø 135/3	80 mm)			

90							
Α	В	С	D	Е	F	G	KG
3100	2500*	5000*	7300	3500*	3700	4000	7800**
* minii	mum mea	sures for t	** (ø 140/450 mm)				

A	B	C	D	Е	F	G	KG
3100	2500*	5000*	7300	3800*	3770	4100	8500**
* mini	mum mea	sures for t	**	(ø 150/4	150 mm)		

<u> FIA</u>	<u> FIANIA</u> M										
Α	В	С	D	Е	F	G	KG				
3200	2500*	5200*	7700	4000*	4200	4570	11200**				
* minii	* minimum measures for transport										









Hose rewind through YANMAR LD70 diesel engine complete with hydrostatic transmission with hydraulic motor on the reduction gear, speed compensating valve, double hydraulic pump for service feed; it can be paired with RM electronic programmers. The optional replaces the turbine rewinding (only for XJ models).



ECU operated by 4-stroke HONDA GX160 engine Hp 5.5 for hydraulic services.



Flanged litre-counter on reel inlet.



Additional coupler for sludge inlet and turbine cutting off.



PE hose rewind through hydraulic motor on PTO, speed adjusting valve, limit switch spool valve and quick coupling torque to tractor:



Water pilot operated drain valve.



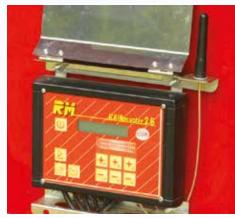
Hot-dip galvanizing treatment on reel.



Compressor for emptying the hose JUROP 9000 lt.



Programmatore NORTOFT ProgramRain 10-12



RM programmer, RainMaster 2.6 model (with antenna and in-built optional GSM module)



Rain Speed 60 digital metre counter for measuring the rewinding speed.



Solar panel for powering electronic equipment.



Electromechanical drain valve and electromechanical shut-off valve controlled by programmer (supplied separate or paired and controlled by electric switch)



IDROMOP programmer for jointly controllling the irrigation machine + diesel engine on the XJM models.



Anemometer for Rain Master 2.6



Amplified antenna for GSM module



Signal of hose rewind end with xenon arc lamp for RM programmer.



Protection stainless steel box for RainMaster 2.6 programmer



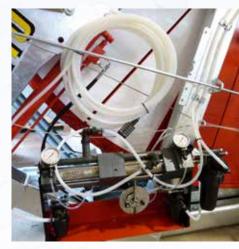
Additional limit switch rain gun controlled by programmer (Skipper or K1 model)  $\,$ 



Hydraulic rotation of fifth wheel (standard on all models except for 600 Xj, 700 Xj, 600 Xjm)



Transparent painting for boosting the protection of galvanized parts



Dosing pump for sewage irrigation with liquid fertiliser.



Double axle for asymmetrical compensator (optional for the 800 XJ, 840 XJ, 900 Evo, 800 XJM models)



Water inlet on both sides (standard on all XJ models)



Inlet filter for B 76, 108 and 133 joint.



"Big size" type tyre for the 600 Xj, 700 Xj models (size  $31 \times 15.50-15$ )



"Big size" type tyre for the 800 jX, 840 Xj, two-axle 900 Evo, 900 Xjm, Major Evo, Major Xjm Evo models (size 15.0/55-17)



"Big size" type tyre for the Giant Xj, Giant Xjm, models (size 500/50-17)



Trolley with standard pneumatic wheels on the XJ model.



Trolley with single cast iron wheels (standard on the XJM model) and extension for irrigating Corn.



Four-wheel trolley made up of cast iron



Trolley with two pneumatic wheels and two cast iron wheels



Four-wheel pneumatic trolley



Kit for side unwind trolley



Hydraulic adjustment of trolley width and mechanical adjustment of wheel height



Stretched angle K1 additional rain gun mounted on trolley



Device for automatic reversal of rotation of gun locks (for SIME guns only)



Under-foliage sprinkler device for tall trees

	1ODEL	700xj		840xj		Major :	Xi	700xjm		900xjr	n	Giant xjm
Standard equipment and equipment on request	600xj		800xj		900xj		Giant Xj		840xjm	-	Major xjn	
								- 11 3			,,	
Flow-distributor turbine with built-in by-pass.	•	•	•	•	•	•	\ •	<b>M•</b> =	•	• /	•	•
4-speed gearbox with shafts completely in oil bath.	•	•	. • %	•	•	1 •	•	/· •	•	•	•	•
PTO for fast hose rewinding.	•		544 ·	•		•	•	•	•	•	•	• -,
Braking system to unwind the hose with fully automatic operation.		•	3. • _	•	•	•	•	•	•	•	•	•
Automatic speed compensator according to the hose winding diameter.	1 - 0 •	( • )	•	•	•	•	•	•	•	•	•	•
Anti-slackening hose safety device.	•	•		•	•	•	•	•	•	•	•	•
Safety device to stop the machine if the hose winds unevenly.	• 1	•		•	•	•	•	•	•	•	•	•
Electronic hose rewinding speed measuring device.	•	•		•	•	•	•	•	•	•	•	•
Worm screw hose turning system with micrometric regulation and double guide.	•	· •		•	•	•	•	6.6	•	•	•	•
Reel support on ball bearings and lipped retention ring with stainless steel bushing.	•	•	•	•	•	•	•	• (	•	•	•	•
Frame swivelling on a ball bearing centre plate through 360°.	•	•	•	•	•	•	•		•	•	•	•
Automatic trolley lifting at the end of sprinkling by means of VertiLift™ system.	•	•	•	•	•	•	•	•	•	•	•	•
Hydraulically controlled rear anchoring brackets, independent on both sides.	•	•	•	•	•	•	•	•	•	•	•	•
Bar base hydraulically controlled through spool valve.	•	•	•	•	•	•	•	•	•	•	•	•
Flexible rubber hose to supply the machine, complete with connections.	•	•	•	•	•	•		$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$
Two-wheeled cast iron sprinkler trolley.	<b>\rightarrow</b>	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	•	•	•	•
Four-wheel trolley (cast iron or pneumatic).	,	$\Diamond$	- V	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$
Adjustable trolley track and wheel height.	•	•	•	•	•	•	•	•	•	•	•	•
SIME sprinkler with slow return and set of nozzles	•	•	•	•	•	•	•	•	•	/ •	•	•
Pressure-gauge in glycerine bath on the machine.	_	•	•	•	•	•	•	•	•	•	•	•
Pressure-gauge in glycerine bath on the sprinkler (SIME).	•	•	•	•	•	•	•		•	•	•	•
Ball joint on sprinkler trolley. (Ø100 F)	•	•	•	•	•	•	- •	•	•	•	•	•
Sprinkler trolley ballasts.	•	•	•	•	•	•	•	•	•	•	•	•
Adjustable bar eye.	•	•	•	•	•	•	•	•	•	•	•	•
Hose rewinding with single-cylinder diesel engine (without turbine).		- 1	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$					
Additional sludge inlet for turbine cutting off.	<u> </u>	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\overline{\Diamond}$	<u> </u>	$\Diamond$	\( \)	$\Diamond$	\(\rightarrow\)	<u> </u>
Hot-dip galvanized structure (painted reel).	•	•	•	•	•	•	•	•	•	•	•	•
Hot-dip galvanized reel.	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	$\wedge$		$\Diamond$	$\Diamond$	$\Diamond$	$\Diamond$	-
Drain valve piloted by the fluid for vacuum stops.	× ŏ	- V		$\delta$	→ V	$\Diamond$	<u> </u>	V	V	·	·	i
Stop valve for slow fluid piloted water inlet shut-off.	v A	<u>\</u>		$\wedge$	$\Diamond$	$\Diamond$	$\Diamond$		<u> </u>	- i		
Turbine inlet filter.	V A			$\wedge$	$\Diamond$	$\Diamond$	$\Diamond$	<del></del>	-	÷	-	
Six-lever spool valve on swivelling arm (8 levers for XJM models)				$\frac{V}{A}$	•	•	•	- i	•	•	•	•
6- or 8-channel COMMANDER™ radio control.	·	Ŏ	- V	$\wedge$	$\Diamond$	$\Diamond$	$\Diamond$	<u>.</u>	$\Diamond$	$\Diamond$	$\Diamond$	$\overline{}$
Manually operated auxiliary sprinkler.	v A			$\frac{v}{o}$	$\overline{\Diamond}$	$\frac{v}{v}$	${\delta}$	$\frac{v}{v}$	∨	$\overline{\hspace{1em}}$	$\overline{\qquad}$	${}$
Water inlet on both sides.	V				•		•					•
K1 auxiliary sprinkler controlled by programmer.	^	$\Diamond$	1	1	1		-	<u>.</u>	-	÷	<del>- i</del> -	1
RIVER auxiliary sprinkler controlled by programmer.	V		$\Diamond$	$\Diamond$	<u>.</u>		^		<u> </u>	$\Diamond$	<u>.</u>	
Program Rain 10 – Nortoft programmer.	^			$\wedge$	$\wedge$			^	<u>\</u>	$\wedge$		
GSM module for programmer.	<u>∨</u>		V A	V		V	V A	- V		$\Diamond$	$\overline{\hspace{1cm}}$	
Rainmaster 2.6 RM programmer	<u>∨</u>	$\wedge$	$\bigcirc$				$\bigcirc$		$\Diamond$			
	Y	$\Diamond$	$\bigcirc$	$\Diamond$		$\Diamond$	$\Diamond$		•	•	•	•
Engine unit for hydraulic movements.	<b>♦</b>	V	•	•	•	•	•	V	•	•	•	•
Hydraulic rotation of bearing centre plate with six levers	<u> </u>	<u> </u>						V		•		•
Engine-driven pump unit built into the machine structure.	<u> </u>				1 ^				•		•	
Vacuum pump to empty the hose.	<u> </u>	<u> </u>	<b>♦</b>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	•	•	•	•
Dip tube ø 150 with revolving joint and basket ø 550.	I	- 1	1	_ 1	1	- 1		1	•	•	•	•

### A WIDE RANGE OF MODELS FOR EVERY NEED

















.... OFFERING A WORLDWIDE **ASSISTANCE** 



The presence: this is the most important characteristic of RM after the customer purchases the machine. Anywhere in the world. A constant vicinity to our customers. We will never abandon an RM hose-reel irrigation machine, it will always be looked after in an efficient and productive way. Therefore, maintaining its value over time.



### www.rmirrigation.com

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