



ROTRIXAFRICA

industries cc

MECHANISED IRRIGATION SYSTEMS BUILT TO IRRIGATE AFRICA

*The most versatile
linear travelling
irrigation
system
on the
market . . .*



RAINMAKER

SELF-PROPELLED IRRIGATION SYSTEMS

*The most versatile
irrigation system on
the market, designed
to maximise your
farming profits*



DEALER



Rhino 300 4 x 4

Heavy duty agricultural irrigator suitable for areas up to 15 ha per 7 day cycle. Capable of 100 m, 200 m and 300 m runs, max capacity of 35 m³/h @ 3 bar 25 m radius. Suitable for all crops. Ideal for small scale and commercial farming.



Rainmaker 200 4 x 4

Heavy duty agricultural irrigator suitable for areas up to 10 ha per 7 day cycle. Capable of 200 m runs, max capacity 35 m³/h @ 3 bar 25 m radius. Suitable for all crops. Ideal for small scale and commercial farming.



Rainmaker 200

Heavy duty agricultural irrigator suitable for areas up to 10 ha per 7 day cycle. Capable of 200 m runs, max capacity 35 m³/h @ 3 bar 25 m radius. Suitable for all crops. Ideal for small scale and commercial farming.



Farmer / Greenkeeper 200

Light duty agricultural irrigator suitable for areas up to 5 ha per 7 day cycle. Capable of 200 m runs, max capacity 16 m³/h @ 3 bar 25 m radius. Suitable for vegetables and small scale farming.



Farmer / Clubman 100

Light duty agricultural irrigator suitable for areas up to 2.5 ha per 7 day cycle. Capable of 100 m runs, max capacity 16 m³/h @ 3 bar 25 m radius. Suitable for vegetables and small scale farming.



Cropmaker / Sportsman 120

Light duty agricultural irrigator suitable for areas up to 1 ha per 7 day cycle. Capable of 120 m runs, max capacity 7 m³/h @ 3 bar 18 m radius. Suitable for vegetables, seed beds and small scale farming.



Hose Master 50 / 100

Portable heavy duty galvanised frame on solid rubber wheels, fitted with a single sprinkler and nozzles set. Units are available with 50 m or 100 m x 50 mm Dia. Hoses maximum capacity 16 m³/hr @ 3 bar 25 m radius. Suitable for small scale farming.



Cane Master 300 4 x 4

Heavy duty agricultural irrigator suitable for sugar cane irrigation, up to 25 ha per 7 day cycle. 40 m³/hr @ 5 bar 40 m radius.

SETTING UP THE MACHINE

The irrigator is brought to the beginning of the lane and the cable is drawn off the winch and anchored at the end of the lane. The lay-flat irrigation hose is drawn off the hose reel to the centre of its run length in the same direction as the cable. The hydrant valve will be in the middle of the run to which one end of the hose will be connected. The other end of the hose is connected to the machine. The 4 mm drive nozzle is turned to open and the clutch pin is inserted. When the hydrant valve is opened the machine will move slowly forward. At the end of the run the machine will automatically stop moving and should again be set up for the next run once the hose is wound back onto the hose reel.

When the machine continues to move in the same direction the hose can be pulled up to the next hydrant after the water has been purged from the hose. Two operators will be required to manually wind the hose onto the hose reel through the rollers, using the manual 4:1 ratio winder.



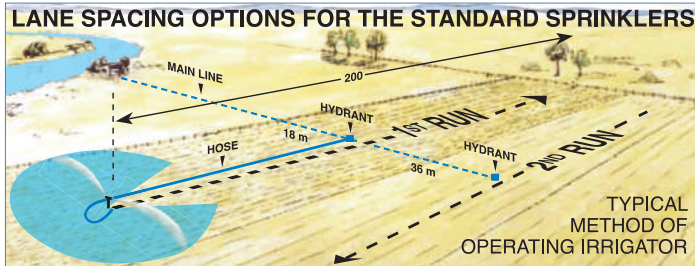
HOSE
WINDER

Important: Always roll up the hose before transportation. Failure to do so will affect your hose warranty.

ROTRIX IRRIGATORS ARE UNIQUE PRACTICAL IRRIGATION SYSTEMS WITH MANY ADVANTAGES

- Capital cost per ha dramatically reduced.
- Labour saving system with low running costs.
- Irrigates large areas without supervision.
- Water application can be adjusted and well managed.
- The IRRIGATORS can be moved and set-up by two operators
- Can be used with existing pump and mainline systems.
- Quickly set-up or moved from one field to another.

Performance Chart For Rotrix Rainmaker 200 And Rhino 300 Using The Standard 25M Radius Sprinklers



RHINO / RAINMAKER APPLICATION RATE

	Nozzle Size	Pressure kPa	No. of Nozzles	Flow m³/h	Lane Spacing	Average Application mm		Pressure at Hydrant kPa	Wetted Dia m
						6 h Run	12 h Run		
IDEAL FOR GERMINATION OF SEED BEDS COMBINED WITH FASTER SPROCKET SET	9mm	300	2	10,6	36m	8,2	16,4	330	44
	10mm	300	2	13,2	36m	11,0	22,0	330	45
	11mm	300	2	16	36m	13,2	26,4	340	46
	12mm	300	2	20,4	36m	15,5	31,0	350	47
SMALL DROPLET POPULATION WITH GOOD RAIN CURTAIN	13mm	300	2	22,5	36m	18,1	36,2	360	49
	14mm	300	2	25,2	36m	21,3	42,6	360	50
	15mm	300	2	31,0	36m	24,1	48,2	380	51
	16mm	300	2	33,0	36m	25,8	51,6	430	51

CALCULATIONS TO SELECT THE CORRECT NOZZLES FOR YOUR RAINMAKER

- Q: How many m³ of water do I need to apply 20mm net to 2 ha?
A: 1 mm of water over 1 ha = 10 m³ therefore $\frac{20 \times 10 \times 2}{0,85} = 470 \text{ m}^3$
- Q: What flow rate do I need in the above case if my irrigation cycle is 3 days and I can pump water to the irrigator for 6 hours per day?
A: $\frac{470}{6 \times 3} = 26 \text{ m}^3/\text{h}$ Select 2 x 14 mm nozzles at 300 kPa and 36 m lane spacing for Rotrix Rainmaker Irrigator.
- Q: What is the maximum and the minimum travelling speed of the irrigator?
A: A 200 m run can be completed between 6 and 12 hours depending upon drive pressure settings.
- Q: How efficient is my overhead irrigation system?
A: More water is lost to sun and wind at low precipitation rates. The precipitation rate should equal the absorption rate of the particular soil type for best irrigation efficiencies of up to 95%. Set sprinkler pressure to avoid misting, responsible for most water losses.

EXAMPLE TO IRRIGATE 10HA APPLYING 35 mm OF WATER

Q: I would like to apply 35 mm net to an area of 10 ha per week (7 days)?

A: **First** determine your **lane scheduling**, eg. 2 x 11 h runs per day over an area of 200 m x 500 m using a lane spacing of 36 m, will cover 10 ha in 14 runs.

Second calculate the **volume required** = $\frac{35 \text{ mm} \times 10 \times 10}{0,85 \text{ efficiency}} = 4118 \text{ m}^3$

Third calculate the **flow m³/h required** = $\frac{4118 \text{ m}^3}{11 \text{ h} \times 2 \times 6 \text{ days}} = 31,5 \text{ m}^3/\text{h}$

From the performance chart select 15 mm nozzles x 2 = 31 m³/h @ 3 bar.

If conditions are windy consider selecting the 30 m lane spacing.

CROPMAKER / SPORTMAN

NOZZLE SIZE (in mm)	PRESSURE (BAR)	RADIUS (m)	FLOW (m³/h)	LANE SPACING (m)	APPLICATION PER RUN (mm)
6.00	2	15	2.8	25	3
	3	17	3.4	25	4
8.00	2	17	4.3	25	5
	3	18	5.2	25	6
10.00	2	17	6	25	7
	3	19	7	25	8

FARMER / CLUBMAN / GREENKEEPER

NOZZLE SIZE (in mm)	PRESSURE (BAR)	RADIUS (m)	FLOW (m³/h)	LANE SPACING (m)	APPLICATION PER RUN (mm)
10.00	3.00	21	7.8	36	6
12.00	3.00	23.5	10.9	36	8
14.00	3.00	24	14.4	36	10
16.00	3.00	25	16	36	12

WATER APPLICATION FORMULA

$$\text{Flow in m}^3/\text{h} = \frac{\text{mm} \times 10 \times \text{area (L x W) m}}{10\,000 \times 0,85 \text{ (efficiency)} \times t}$$

m³/h = Volume of Water supplied to Nozzles per Hour

t = Available time in hours per day and days per month to meet peak monthly irrigation requirement.

mm = Gross depth of water applied per peak month.

Area = Total area irrigated.

L = Length of land (m)

W = Width of land (m)

Note: Days per month is usually 25 to allow for downtime, etc.



Maize



Sugar Cane



Tobacco



Pastures



Wheat



Vegetables



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