



ROTRIX

AFRICA INDUSTRIES CC

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ROTRIX GREENKEEPER IRRIGATOR SERVICE MAINTANANCE

1. **Chassis:** Maintenance free

The chassis is hot dipped fully galvanized and protected against rust under wet conditions.

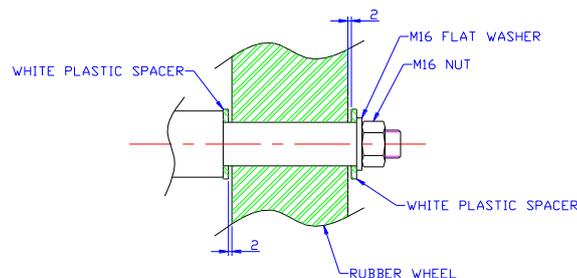
Note: The chassis may discolour and turn brown if water supply has high iron content, but this will not affect the galvanized protection.

2. **Wheels:**

The 2 x 350mm Diameter solid rubber wheels with galvanized centre are fitted with solid nylon bushes. General use over time will cause bushes to wear. This will cause excess play on the wheel shafts, and if not replaced, may damage the wheel shafts. (See parts list for replacement.)

3. **Wheel Shafts:**

The wheel shafts are fitted with a pre tensioning lock nut to keep wheels in place. Wheels should be removed once a month and greased if in continuous use. Each wheel is supplied with 2 nylon spacers. Allow 2mm play on pre-tensioning locking nut.



WHEEL SHAFT DETAIL

4. **Cable Drum Shaft and Bushes:**

The cable drum requires a set of 3 bushes (Greenkeeper cable drum bush set) and a cable drum shaft. Regular maintenance inspection should be done to check that no excessive wear and tear has taken place on bushes and shaft. If play exceeds 5mm, replace bush set. On assemble apply universal bearing grease.

Note: See parts list for details

5. **Cable Maintenance:**

Rotrix Greenkeeper is supplied with a 4mm x 200m galvanized wire rope. The cable is supplied with a swivel anchor ring to attach over anchor pole which prevents the cable twisting while in operation. To prevent cable damage always ensure it is firmly wound back onto drum. Do not allow cable to kink as this may cause failure at a later stage. To preserve the cable life while not in use, it is recommended to pour diesel or used engine oil over cable while wound on drum and allow it to soak into the cable to prevent inner core rust.

6. **Cable Guide Block and Stopping Lever:**

The Greenkeeper has a stopping lever which is designed to shut off the water supply to drive nozzle and is activated by a stopper attached towards the end of the cable near the anchor pole which pulls up against the cable guide block (see parts list for details). This pulls the stopping lever which via a cable closes the ball valve supplying the water to drive nozzle. The cable block guides the cable and keeps it clean. Normal wear and tear of the cable block is acceptable with replacement annually recommended. (See parts list for details).

7. **Skid Plate:**

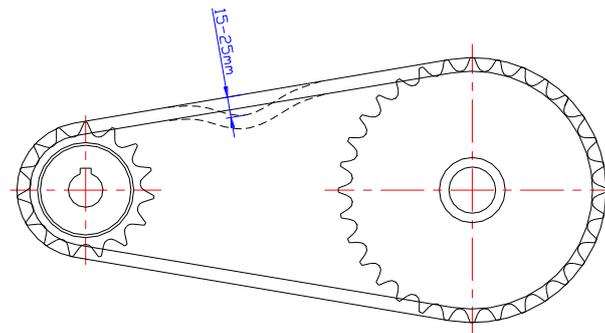
The Greenkeeper has a shaped skid plate fitted to front of chassis which allows the Greenkeeper to travel firmly forward over uneven terrain. The skid plate can be pre tensioned with lock nut and bolt allowing it to swivel up and down over the terrain travelled.

8. **Sprockets:**

The Greenkeeper has 2 x drive sprockets: 1x Gearbox sprocket and 1 x cable drum plate wheel sprocket. (See part list for details) and 2 x Hose winder sprockets. These are locked via key's and grub screws to the shafts and should be inspected for any loose grub screws on a regular basis. **Note:** After many years of use or if a chain is replaced reverse the large cable drum plate wheel as the teeth may show signs of wear in the forward direction.

9. Chain Maintenance:

The Greenkeeper is supplied with 1 x drive chain which connects the gearbox sprocket to cable drum plate wheel and 1x hose winder chain. Tension in the chains should be set to allow for 15mm to 25mm free play.



SPROCKET PLAY DETAIL

Keep chain well greased at all times.

10. Hose Winder: 4 : 1 Ratio

The Greenkeeper is supplied with a mechanical 4 : 1 Ratio hose winder. This allows 1 person the ability to wind the hose back onto its storage reel. The operator should first make sure that hose ends are disconnected from the machine and the hydrant and laid in a straight line behind the Greenkeeper. The Greenkeeper should remain anchored to the anchor pole for stability. This will also stop the machine rolling backwards during the hose roll up process. Once the hose is lying flat on the ground behind the machine, walk along the full hose length lifting it to drain the excess water from the hose. Once this is done, feed the hose end into the centre of the hose reel and start winding. Remember to feed the hose under the roller guide as this action will purge out the remaining water in the hose. Keep the 2 shaft bearings well greased.
Note: This process should be followed every time the machine is moved to a new lane. Failure to do so may affect the hose warrantee.

11. **Gearbox and Pelton open Turbine drive Wheel:**

The gearbox is a sealed unit and does not require maintenance, however if it is discovered that the input shaft has play on the bearings, they should be replaced immediately. **BLUE GEARBOX:** Part no. 2xBearings: 6305ZZ; 6204ZZ, 2x Seals: AS25 62 7; A20 35 7.

ORANGE GEARBOX: AD1: BEARINGS:1X 6204 Z 1X 6004 Z
SEAL: WAS18X47X6/10-NBR.

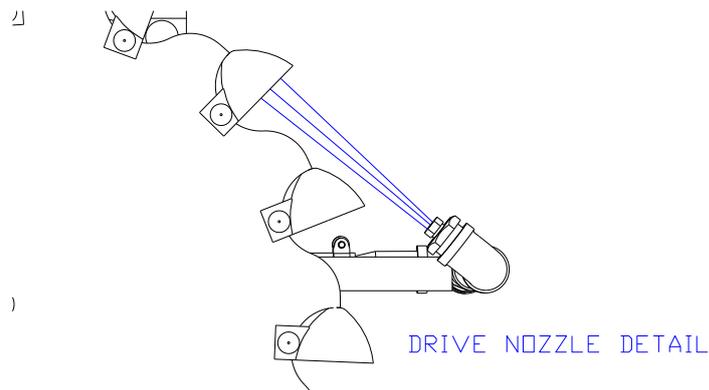
The gearbox can be half filled with universal grease on assembly.

The open drive pelton wheel has 15 special designed rubber cups which harness the energy from the 4mm drive nozzle. It is important that the drive nozzle does not touch the rubber cups as this will cause damage. (Refer to parts list for replacement).

12. **Drive Nozzle with Stream Straighter:**

The drive nozzle is the heart of the mechanical drive process and it is very important that its projector angle is correctly aligned. Incorrect angle will alter the machine's performance. The drive nozzle is 4mm in diameter and under normal conditions at 3 Bar will use 1m³/hour. If the jet appears fuzzy and spread, remove and check for any blockages.

Note: see sketch for adjustment



Adjustment of the drive nozzle can be done by releasing the clamping wing bolts and aligning the nozzle.

13. **Sprinklers:**

The Greenkeeper is fitted with a standard (Part circle) sprinkler and a set of 3 nozzle sizes. At 3 Bar the sprinkler has a wetted diameter of 50m and different size nozzles are available on request to suit water application requirements. The main nozzle has a plastic stream straighter to give the nozzle maximum performance. The stream straighter may become obstructed at times, which will affect the nozzle jet performance. Remove the nozzle to access the stream straighter. Each sprinkler is fitted with a set of 3 seals which allows the sprinkler to turn freely. These may require replacing from time to time if water supply contains dirt particles which act abrasively.

Note: See Parts list

14. **Control Valves & Pressure Gauge:**

The Greenkeeper is supplied with 3 x pressure control valves. 1 x 50mm brass gate valve to control the flow and pressure to sprinkler. 1 x 20mm brass gate valve to control the drive nozzle pressure and speed. 1 x 3 way sagive valve connected to a pressure gauge which will give the individual pressure readings of the drive nozzle and the sprinkler nozzle. Note: It is important that the pressure gauge should be turned off from the pressure while not in use as this will prolong its life. This is done via the 3 way valves.

**For more information and assistance please contact
Rotrix Africa cc.**