

# Vaughan Irrigators



**Junior**



**Standard**



**VCI-Mk1**



**VCI-Mk2**



**Quad x 4**

## USER MANUAL



**READ THIS INSTRUCTION MANUAEL CAREFULLY  
BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT**

On behalf of Vaughan Irrigators and its parent company AgBoss Group, we would like to thank you for purchasing your irrigator, and for your support of a 100% Australian owned and operated company, employing Australians since 1981.

This manual should be a permanent part of your irrigator and it covers unpacking, minor assembly, operation, maintenance and spare parts.

Every Vaughan Irrigator has been manufactured to exacting standards to ensure long life in the tough Australian landscape. By choosing a Vaughan Irrigator, you have made an investment in premium quality machinery and have helped provide employment within country NSW.

We wish you many years of safe and effective operation and should you have any queries or need any accessories or spare parts, please contact us and our team will do everything possible to help you.



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✉ sales@agboss.com.au

☎ 1800 021 939  
🌐 [www.vaughanirrigators.com.au](http://www.vaughanirrigators.com.au)



# About

Vaughan Irrigators have been manufacturing low pressure travelling irrigators since 1992, and in that time have established themselves as the leader in the market.

Initially the Vaughan Irrigators were designed for effluent distribution, with 80% of the 4,500 irrigators Vaughan have sold being for that purpose. In recent years, Vaughan Irrigators have been bought by farmers who not only wish to spread effluent and take advantage of the natural fertilisers from their dairies, feedlots and piggeries, but also to water small paddocks of up to 25 hectares. By using a small travelling Vaughan Irrigator, many farmers are realising the benefits of spray irrigation compared to flooding. Not only is spray irrigation better for their crops, but also approximately 70% of the water they previously used in flooding is no longer required and better crop results have been achieved.

## The Vaughan Irrigator Range

Junior	-	10-90psi	2-8lps	25 metre throw
Standard	-	10-90psi	1.25-10lps	40 metre throw (11 boom)
VCI MkI	-	30-40psi	3-10lps	45 metre throw
VCI MkII	-	30-40psi	3-10lps	50 metre throw
QUAD	-	30-40psi	6-20lps	45 metre throw

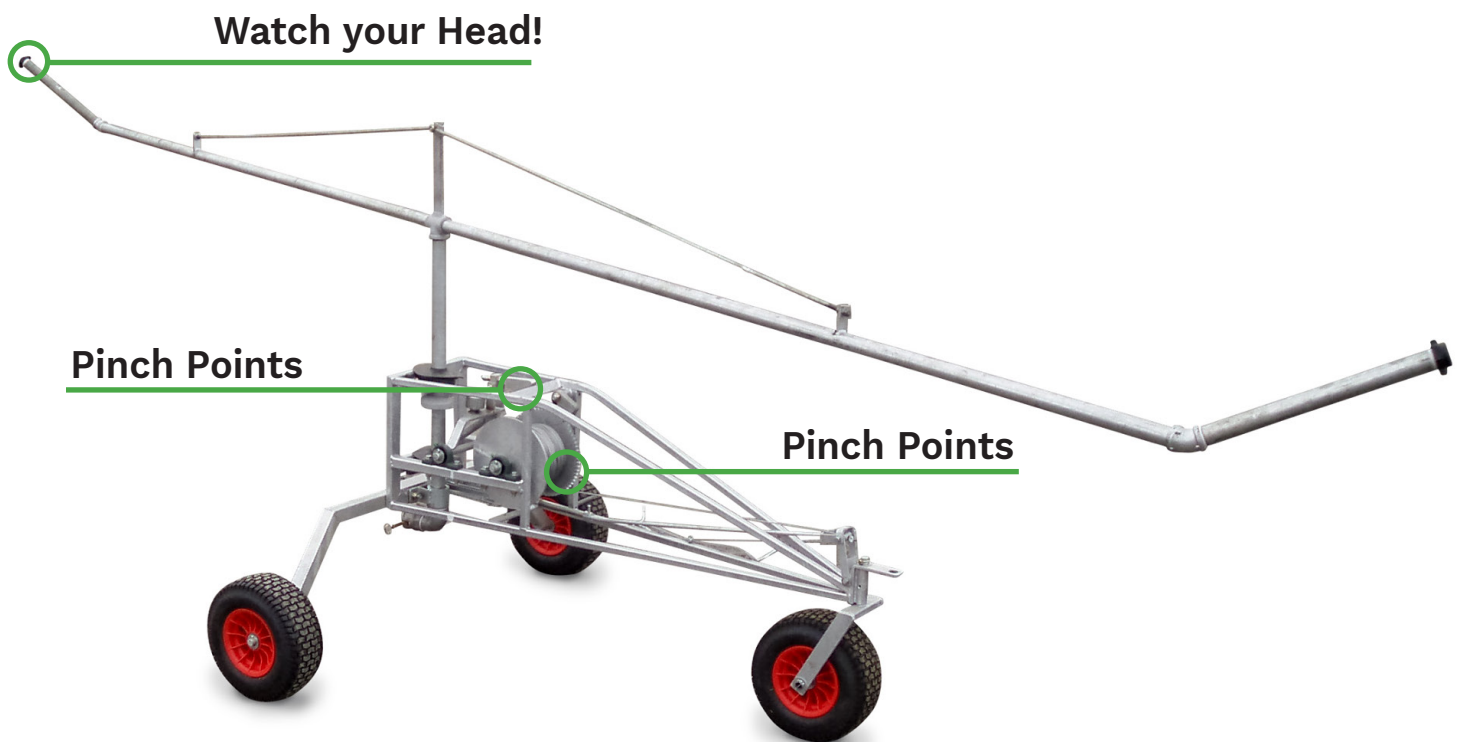
The Vaughan Irrigator has proven itself over time to be very reliable and trouble free, extremely easy to use. Because of our desire to remain at the front of the market, we have been the innovators of improvements in design, such as the smooth operating, and low pressure Sumpmaster cam. This cam allows the irrigator to operate at pressures as low as 70kpa (10psi), where other irrigators on the market will stop operating at around 125kpa (18psi). The other advantage of the Vaughan Irrigator is that you don't need expensive high pressure pumps and pipes. You can operate the Junior with a fire fighting pump, which means the whole system becomes extremely portable if desired.

Vaughan Irrigators recognised that the market needed a bigger irrigator than previously available for a couple of reasons. Firstly dairy herds are becoming bigger and the volume of effluent to be disposed of subsequently became greater and needed to be distributed in greater volume and secondly the farmer who wishes to spray irrigate wants to put more water down in a shorter amount of time. Vaughan Irrigators have brought out the Quad X 4 which is capable of up to 25lps (20,000gph).

From 70 to 280kpa (10 to 40psi), from 1.25 to 25lps (1,000 to 20,000gph) and a throw of up to 50 metres, Vaughan Irrigators has you covered.

Vaughan Irrigators is owned by AgBoss Group Pty Ltd, who are the Australian distributors of the Milk Bar® range of teats and calf feeders. Please contact us for more information about any of our products.

# Warnings



1. Do not attempt to adjust any part of the irrigator at any time while it is running.
2. Watch your head at all times. The irrigator arms have a lot of force behind them when operating.
3. Beware of moving parts on the irrigator which may become a pinch point eg. pawls, cable clamps etc.

# Setting Irrigator Arms

(Applicable to all Models)

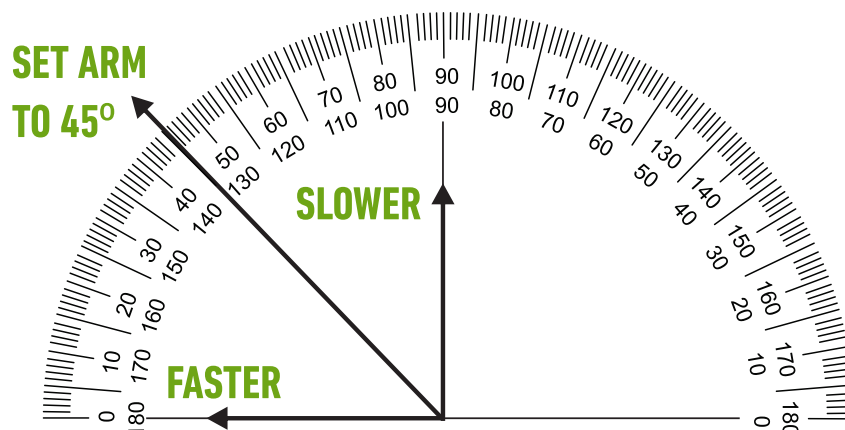
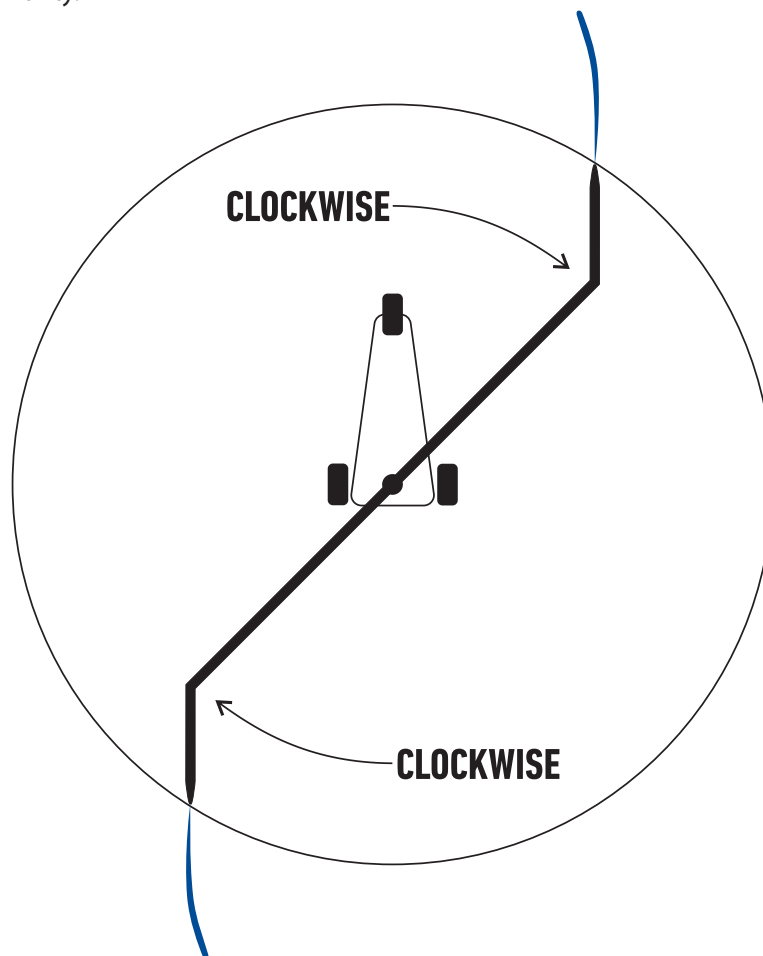
## Arm Rotation

Arm rotation must be clockwise. The outer arms should be set at approximately 45°. Adjust vertically upward to slow the rotation speed or downward to increase rotation speed.

A full rotation should take between 4 and 5 seconds.

## WARNING!

If the arms rotate anti-clockwise you will destroy the operating mechanism of the irrigator which will not be covered by warranty.



# Irrigator Hose Layout

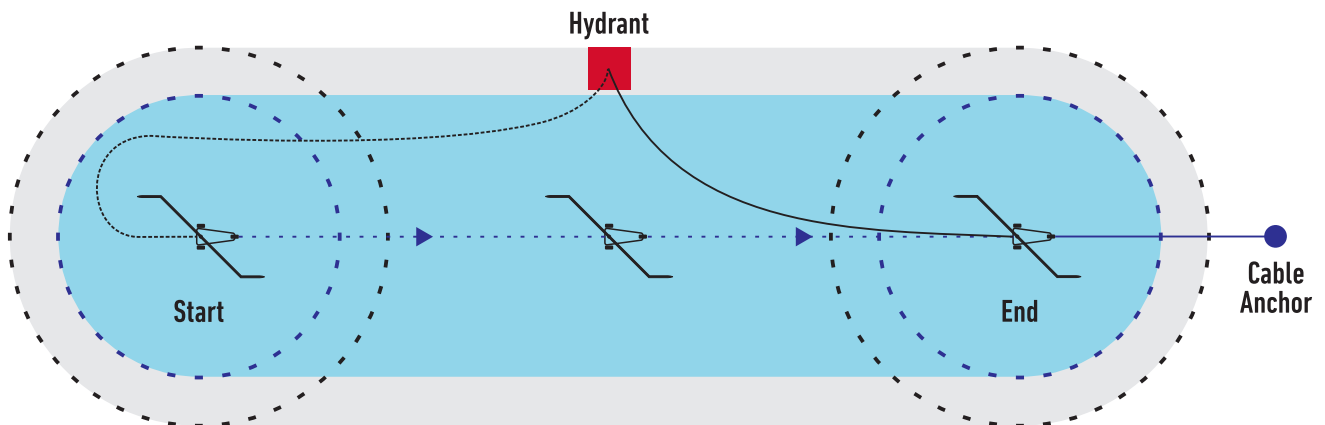
(Applicable to all Models)

## Hose

When choosing a hose for your Vaughan Irrigator, we recommend and supply heavy duty, abrasion resistant lay flat irrigator hose. Lay flat is recommended over poly pipe as poly easily kinks. If this happens, the kinked pipe will need to be cut and rejoined. When towing your lay flat, use a skid to prevent tangles.

## Hydrant

The ideal location for the supply hydrant is in the middle of the irrigator run - see drawing below.



# Assembly Tools

(Applicable to all Models)

We recommend the following tools to assemble your irrigator.

- 2 x Pipe Wrenches
- Set Open End Spanners
- Adjustable Shifter
- 600mm Spirit Level
- Teflon Tape

# Junior Assembly & Operation

## Junior Irrigator Assembly

Attach wheels to back axle using the M16 nuts and bolt supplied.

Insert riser in the inlet flange and bolt to the back of the irrigator. Make sure the riser can turn freely. If not adjust spacers.

Place inlet flange on axle bolts using a washer as a spacer between the flange and back of irrigator if needed.

Place axle in back of the irrigator. Put front wheel on.

Screw arms in tightly using plumbing tape.

The outer arms should be set at about 45°, then varied up to slow down or down to increase rotation speed.

## Junior Irrigator Operation

Disengage front and back pawls.

Run galvanized cable and secure to sufficient anchor.

The hydrant should be in the centre of run (see page 7), attach layflat to the back of irrigator with the camlock and the other end of the layflat connected to the water supply with a gentle loop of at least 2 metres radius to stop kinking.

Start water flow and stand clear of the irrigator.

A full rotation should take between 4 to 5 seconds regardless of water volume and pressure, and turning in a clock wise direction.

# Standard Assembly

## Standard Irrigator Assembly

Attach wheels to back axle using the M16 nuts and bolt supplied.

Place axle in back of the irrigator make sure it is central (drilled holes are not central in axle). Put front wheel on.

Place inlet flange on axle bolts using a washer as a spacer if required, between the flange and back of irrigator and screw arms in tightly using plumbing tape.

Insert riser in the inlet flange and bolt to the back of the irrigator. Make sure the riser can turn freely. If not adjust spacers.

Support rods are bolted to the flat on top of riser and brackets on the arms. Tighten rods so as to slightly lift the arms taking the pressure off the threads.

The outer arms should be set at about 45, then varied up to slow down or down to increase rotation speed.

The hydrant should be in the centre of run (see page ?), attach layflat to the back of irrigator with the camlock and the other end of the layflat connected to the water supply with a gentle loop of at least 2 metres radius to stop kinking.

A full rotation should take between 4 to 5 seconds regardless of water volume and pressure, and turning in a clock wise motion.



# Warranty Registration

## Travel Speed Adjustment

The speed of the irrigator is determined by the "R" clip in one of the four, or five (depending which model), holes in the base of the irrigator, which is located at the bottom of the pivoting mechanism.

The hole closest to the back axle represents one tooth on the cog and the 4th hole 4 teeth. E.g. 3.71lps / 3,000 gph with 1 /2" nozzles should be set on the second hole (two teeth). This cycle takes approximately 6 hours and puts out approximately 15.4mm or .61inches of water.

Once the travel speed has been selected lift both the front and back pawls away from the cog.

Run your cable out to the desired length and anchor to a solid object. (A star picket at an angle will suffice normally)

Return to your irrigator and make sure the small front pawl is firmly locked into the cog and take up any slack in the cable.

# VCI Mk I & Mk II Assembly

## VCI-Mk I & VCI-Mk II

When you receive your irrigator it will most likely be packed onto a pallet. Unpack your irrigator and lay everything on the ground.

Place the body of your irrigator on an elevated surface approximately 450mm off the ground. Place the rear axle in the channel and slide the two bolts through the channel and axle.

Fit the inlet to the axle bolts inside the frame so as the opening is facing to the rear and tighten the nuts supplied.

Fit the front wheel by sliding the rod through the pipe in the front of the frame and inserting the "R" clip provided.

Insert the riser into the inlet and fasten the four bolts through the bearings onto the back of the frame. When you have tightened the bolts make sure the riser turns freely in the bearings and is not rubbing on the edge of the elbow. (If this does happen adjust the elbow and or riser so as its central in the elbow.)

Put thread tape on the threads of all pipe. Screw the two lengths of four meter pipe into the "T" at the top of the riser. Make sure they are done up very tight.

Bolt the two pieces of flat onto the supplied brackets and to the bracket on the riser. Ensuring that the pipe is lifted level. Tighten all nut and bolts.

Attach the 16mm rod to the supplied bracket with the flat welded to the top at an angle and to the flat at the top of the riser. Be sure to have just enough tension as to slightly lift the pipe. If you have a VCI-Mk II make sure you bolt the cable bracket on top of the riser with the support arms. The cable bracket is attached to the top cable a short piece of flat with a tube attached. If you have a VCI-Mk II now is the time to place the two 25 x 25mm uprights over the ends of the arms and tighten them about 200mm from the outer bracket pointing upwards.

Attach the cable support (25mm RHS joined with a clamp) to the top of the riser directly under the "T" 90° to the arms and tighten bolts. If you have a VCI-Mk II, attach the 2 metre length of pipe to each arm and tighten.

Place the cable anchors clamp over the end of the 2 metre pipe approx 800mm from the end. Attach the side cables and tighten with the turnbuckles. If you have a top cable (VCI-Mk II only), place the cable support knob in the uprights and tighten turnbuckles. Be sure to tighten lock nuts on buckles after the cables have been tightened.

Screw on the outer arms and place them at about 45 degrees, then varied up to slow down or down to increase rotation speed.

A full rotation should take between 4 and 5 seconds regardless of water volume and pressure, and turning in a clockwise direction.

# VCI Mk I & Mk II Operation

## Travel Speed Adjustment

The speed of the irrigator is determined by the "R" clip in one of the five holes in the rod at the base of the irrigator directly below the cog, at the bottom of the pivoting mechanism.

The hole closest to the back of the irrigator represents one tooth on the cog and the 5th hole 5 teeth. E.g. 6.3lps (5000gph) with 1 /2" nozzles should be set on the second hole (two teeth). This cycle takes approximately 9 - 10 hours and puts on about 25mm of water.

Once the travel speed has been selected lift both the front and back pawls away from the cog.

Run your cable out to the desired length and anchor to a solid object. (A star picket at an angle will suffice normally.)

Return to your irrigator and make sure the small front pawl is firmly locked into the cog. Then set the large back pawl with a clearance 2-5mm gap from the back of the tooth i.e. front pawl engaged, back pawl free.

Take up the slack in the cable.

Kneel down and spin the boom around in a clockwise rotation, watch out for your head. Check the amount of teeth taken and the clearance of the back pawl.

Each time the speed is changed the large back pawl may need to be adjusted.

Fine speed adjustment can also be made by screwing the bolt in the speed adjuster in or out as desired.

# QUAD Assembly

## Irrigator

Unpack machine and place on a level surface approximately 500mm off the ground using stands or similar. Set frame as level as possible.

Using the M12 bolts provided, attach the rear axle. Lightly tighten the bolts located at the top of the frame. Using a spirit level placed front to back across the flange on top of the rear axle, adjust the M16 thread between the axle and the frame until the flange is level. At this point tighten all bolts on the rear axle (6 x M12 bolts and 2 x M16 threads).

Using clip provided, slide bar on front axle assembly into pipe at front of machine with one washer under the pipe and one above then replace clip.

Bolt on all four wheels.

Next bolt riser assembly to onto the top of the rear axle ensuring the rubber gasket is between the flanges then tighten the four bolts (4 x M16)

Next attach the head unit to the riser ensuring the rubber gasket is between the flanges then tighten the bolts (8 x M16)

## Arms

Wrap Teflon tape on all external threads

Screw 50mm sockets onto head unit (x4) then screw a length of pipe into each socket.

As you go, attach cable to the plate at the top of the head unit using the supplied D shackles and then clamp near the end of the pipe. Tighten the turnbuckle until the cable is taking the weight off the threads. Repeat for the other three arms.

Outer arms are now ready to be installed. Screw outer arm onto arm assembly. These should be approximately 45° to the ground and facing anti clockwise as to rotate in a clockwise direction (see page 7 of this manual) then adjust as required.

A single rotation should take between 4-5 seconds.

# QUAD Operation

## Setting Irrigator to Start

Disengage front and rear pawls using the pin for the front pawl and the chain for the rear pawl.

Run out the desired length of cable and attach to a suitable anchor. A star picket driven into the ground at an angle is normally sufficient.

Return to irrigator, re-engage pawls ensuring they 'seat' into the sprocket.

Attach hose to the rear of the irrigator. Hose should run parallel to the machine approximately 2-3 metres to the side with an even loop into the rear of the irrigator (see page 7 of this manual) and take up any slack in the cable.

Stand clear and activate water supply to irrigator.

Speed adjustment can be achieved by removing individual cams from the riser unit. Eg. removing 2 cam plates will halve the speed and therefore doubling the water applied



# Quick Release & Shut Off Valve

(Optional Extra - Available for all Models)

## Quick Release & Valve

The Quick Release mechanism stops the irrigator and the water supply. It does not turn the pump off which must be done via a pressure switch, no flow switch or similar.

## To set the Quick Release Mechanism

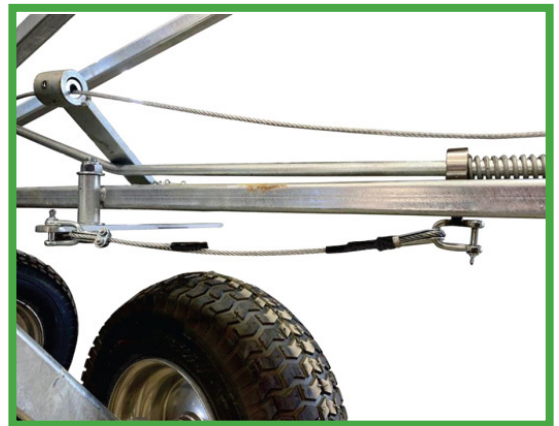
1. Open the valve and hold in position.
2. Place the D shackle under the hook on Quick Release mechanism.
3. Push the hook down and toward the front of the irrigator until it 'clicks' into place.
4. Quick Release Shut Off is now set.



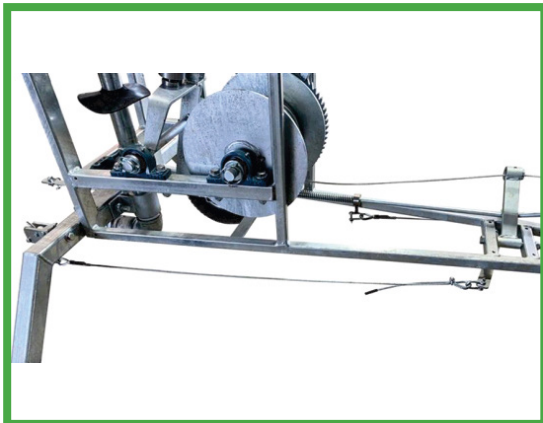
Pic 1: General arrangement, valve is in the shut position.



Pic 2: Connection of spring to the frame. D shackle is screwed on to an M6 bolt.



Pic 3: Connection between brake arm and actuator.



Pic 4: Connection between actuator and quick release mechanism.



Pic 5: Shows mechanism 'loaded'. Valve is in the open position.



Pic 6: Handle locked into quick release mechanism.

# Effluent Nozzle

(Optional Extra - Available for Standard, VCI & QUAD)



## Effluent Nozzle

The effluent nozzle is made up of a camlock fitting and a rubber nozzle so designed to be able to flex as larger solids are passed through. On the occasion that it does block, turn the pump off, undo the camlock and clear the blockage. **NOTE:** If both nozzles are blocked, be careful of built up pressure when removing the camlock fitting.

## Standard Irrigator

The camlock fitting screws directly onto the end of the 45° arm.

## VCI Irrigators

Two 40 x 32mm reducing nipples (Part No. 730711) are required to fit both nozzles to the 45° arms.

## QUAD Irrigator

Four 40 x 32mm reducing nipples (Part No. 730711) are required to fit the four nozzles to the 45° arms.

# 11 metre Boom

(Optional Extra - Available for Standard Irrigator only)

## 11 Metre Extension Boom

Screw the two lengths of three meter pipe into the "T" at the top of the riser. Make sure they are done up tight. Attach the clamps with a single tag facing down approximately 750mm from the riser.

Bolt the two pieces of flat to the bracket on the riser. Tighten all nut and bolts ensuring that the arms are lifted level.

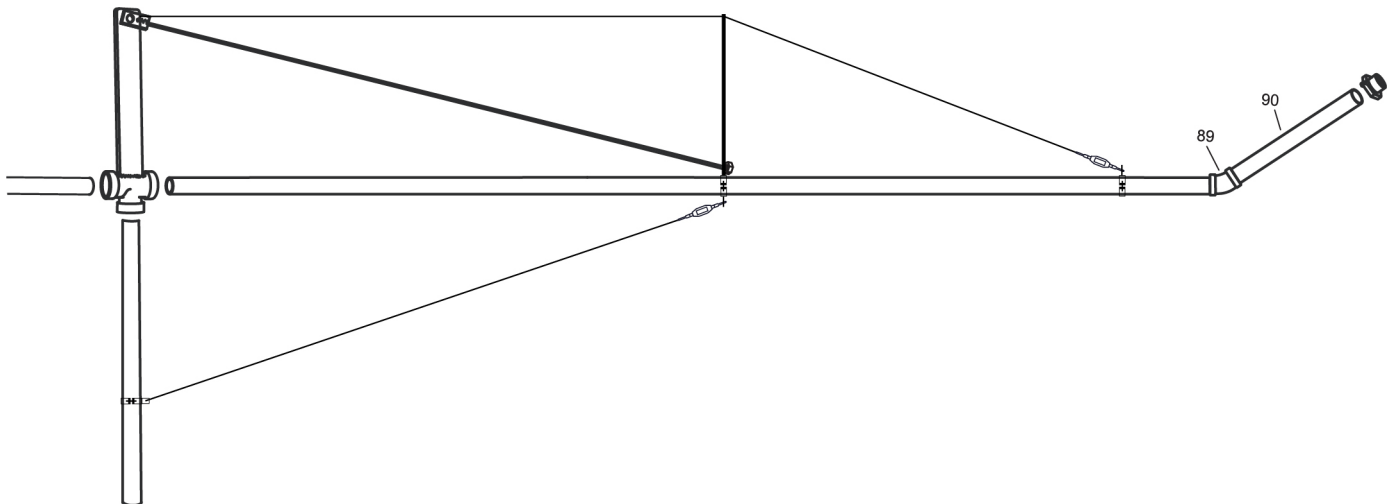
Attach the 12mm rod to the outer bracket and the flat at the top of the riser. Be sure to have just enough tension as to slightly lift the pipe. You will need to make sure you bolt the cable guide (C) on top of the riser with the support arms. The cable bracket is attached to the top cable a short piece of flat with a tube attached.

Attach the 2 x 1 meter lengths of pipe and tighten.

Now is the time to place the two 25 x 25mm uprights (A) over the ends of the arms and tighten them about 200mm from the outer tag pointing upwards.

Attach the Riser Cross Post (B) (25mm RHS joined with a clamp) to the top of the riser directly under the "T" and tighten bolts.

Place the cable anchors (clamp with two tags) over the end of the 2 meter pipe approx 800mm from the end. Attach the side cables and tighten with the turnbuckles. Place the top cable support knob in the uprights and tighten turnbuckles. Be sure to tighten the turnbuckle lock nuts after the cables have been tightened.



# Maintenance

(Applicable to all Models)



1. Grease all points approximately once a week.
2. Before you use your irrigator, grease the main cog and then periodically every 12 months.
3. When using the irrigator for effluent, use old sump oil or similar and pour over the cable which will extend its life.
4. The right angle flange at the bottom of the vertical shaft has a slow drain fluming rubber ("V" rubber seal) in it which may need replacing periodically. Just undo the two bolts holding it in place and it will come off.
5. The cable passes through a steel cotton reel and on some older models, a ceramic insulator. This is a sacrificial part and is designed to wear and break protecting your cable from fraying. When this roller is broken it should be replaced immediately.

# Trouble Shooting

(Applicable to all Models)

1. If the irrigator arms rotate but the irrigator will not drive, adjust the thread length on the back pawl, **CAUTION: Machine must not be operating when adjusting.**
2. If irrigator arms will not rotate, check for low pump pressure. If the pump is running at maximum performance, you can gain a small amount of extra drive by lowering the 45° arms to be more parallel to the ground. NOTE: This will decrease the ground coverage.
3. If the irrigator 'stalls' during operation, this is normally a pressure problem - see point 2. above.
4. If the irrigator fails to stop at the end of the run.
  - (a) Check location and tightness of the cable clamps at the end of the cable. These clamps can be adjusted to have your machine stop at the desired position.
  - (b) Check that the Brake Arm is aligned and activating the Rocker Arm.
5. Once the brake has engaged, the irrigator will continue to rotate until water is switch off at the pump. This can be automated by using a timer or a pressure switch on the pump and a Quick Release & Shut off Valve available as an optional extra.



# Warranty

## Things We Cover

Our warranty is very simple and very straight forward.

We warrant all our irrigators for a period of 12 months from date of purchase to be free of proven defects in materials and workmanship.

Replacement or repair is at the warrantor's discretion.

## Things We Don't Cover

We do not cover damage from freight, handling, accidents or misuse.

We do not cover any damage to any rubber seals or any corrosion damage to pipes, nozzles etc.

The use of parts other than genuine Vaughan parts for repair of warranted items will automatically negate any warranty. Warranted components must be replaced with genuine Vaughan Irrigator parts.

Repairs by an unauthorised agent will automatically forfeit any warranty. Warranty repairs must be carried out by Vaughan Irrigators or an authorised Vaughan Dealer and/or Service Agent only.

This warranty does not cover transportation or insurance costs for Products needing repair or replacement of warranted components. It does not cover any freight or insurance costs in obtaining new parts or returning old parts to Vaughan Irrigators or its agent for inspection purposes.

## Indemnity

Vaughan Irrigators and its associated companies shall not be liable under any circumstances for any liability, loss or damage, whether direct, indirect, incidental, accidental or consequential arising out of the use, misuse, inability to use or use outside the stated specifications and instructions for the operation and use of Vaughan products. Vaughan Irrigators and its associated companies are indemnified against damage to person or property arising during the use of Vaughan products due to the purchaser or other third parties using it or as a result of damage occurring during normal use or incorrect use or use for which it has not been designed.

This indemnity clause shall not abrogate consumer rights under appropriate Australian legislation and/or consumer rights where relevant.

## Safety

Use of Vaughan products does not replace the requirement to observe and undertake safe operational practices including common sense and being mindful of the dangers associated with the use of such equipment.

## Notes

1. This warranty is not transferable.
2. Use irrigator only as stated in the irrigator manual.

# Warranty Registration

## Online

Go to [www.vaughanirrigators.com.au](http://www.vaughanirrigators.com.au), fill out the form and click SUBMIT

## Post

Fill out the form on the next page and post to:

Vaughan Irrigators  
519 Nurigong Street,  
Albury NSW 2640,  
Australia.

# Warranty Registration Form

Please complete this form and return within 14 days of receiving your Vaughan Irrigator. Only then will this warranty be activated. (Otherwise it will be based on a pro rata calculation).

## PRODUCT INFORMATION

Vaughan Model: .....

Serial Number: .....

Dealer Name (if applicable): .....

Purchase Date: .....

## PURCHASER DETAILS

Company &/or Property Name: .....

First Name: .....

Surname .....

Postal Address: .....

Town: ..... State: ..... Post Code: .....

Telephone: .....

Email: .....