



\*Consider local Council requirements and have a plumber complete installation where required.

Available from:

Available from:  
CRT Kyneton  
Corner Saleyards and Edgecombe Roads  
Kyneton 3444  
Vic

Phone: 03 54223796  
Fax: 03 54226798

[www.crtkyneton.com.au](http://www.crtkyneton.com.au)

# water quality first

DOWNPIPE, POST/WALL MOUNTED,  
IN-GROUND AND COMMERCIAL DIVERTERS



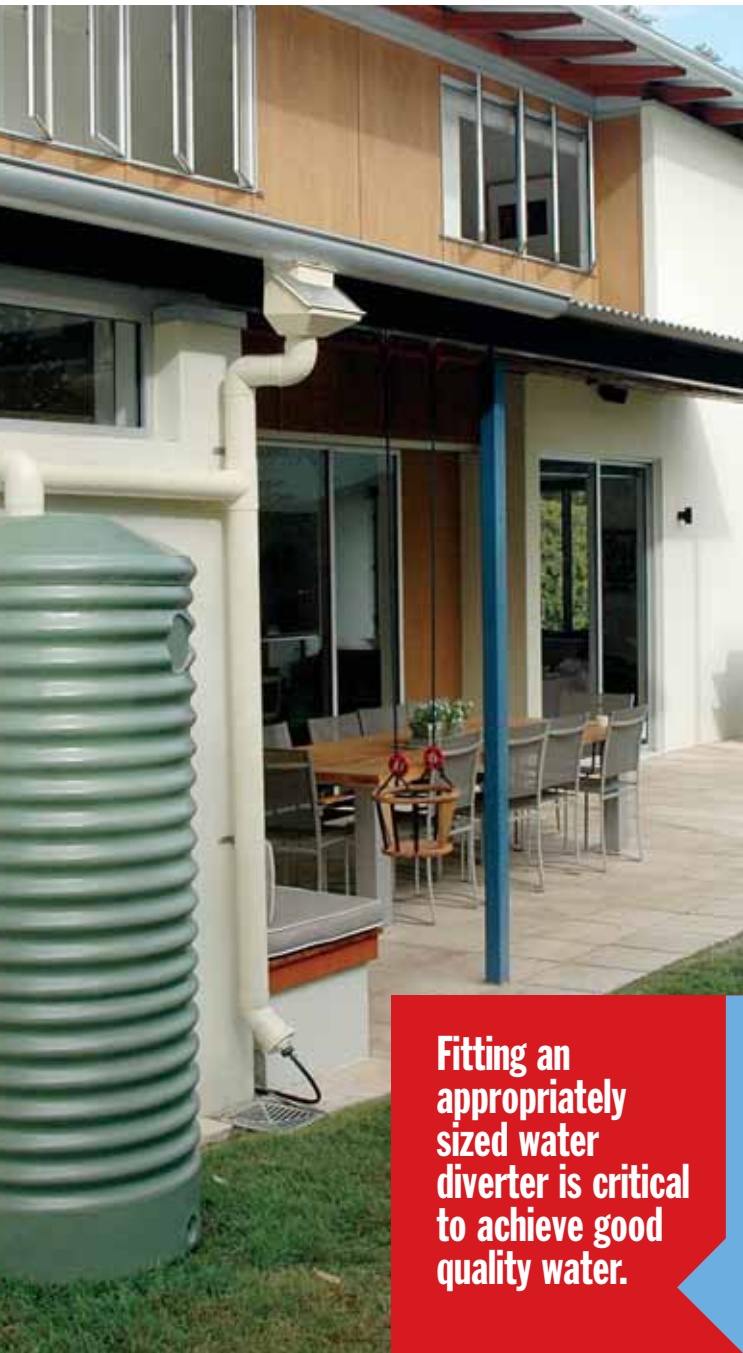
water  
flush  
first

## water diverters

FIRST FLUSH

- Helps reduce pollution of your tank water!
- Essential when using rainwater inside or outside the home
- Amount of water diverted is customised to specific requirements of each roof
- Diverts contaminated water to the garden

Available in kit form – just add PVC pipe • Simple, effective and easy to install • Includes Slow Release Control Valve - empties after rain and resets automatically • No mechanical parts – nothing to wear out • Can be painted to colour match the home • Developed and manufactured in Australia

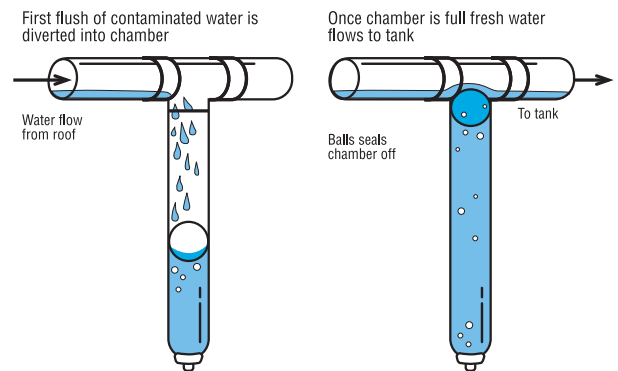


**Fitting an appropriately sized water diverter is critical to achieve good quality water.**

## How does a First Flush Water Diverter work?

Fitting an appropriately sized water diverter is critical to achieve good quality water. Water diverters improve water quality and reduce tank maintenance by **preventing the first flush of water, which may contain roof contaminants, from entering the tank.**

When it rains, water slowly builds up in the roof guttering system before it exits through the downpipe. **The first flush of water from the roof can contain** amounts of bacteria from decomposed insects, skins, bird and animal droppings and concentrated tannic acid. It may also contain sediment, water borne heavy metals and chemical residues, all of which are **undesirable elements to have in a water storage system.**



Instead of flowing to the water tank, these pollutants are diverted with the initial flow of water into the chamber of the water diverter. The water diverters from Rain Harvesting utilise a dependable ball and seat system - **a simple automatic system that does not rely on mechanical parts or manual intervention.** As the water level rises in the diverter chamber the ball floats, and once the chamber is full, the ball rests on a seat inside the diverter chamber preventing any further water entering the diverter. The subsequent flow of water is then automatically directed along the pipe system to the tank.

**A slow release valve ensures the chamber empties itself after rain and resets**



The Diverter chamber empties through a slow release valve and can be connected to standard dripper irrigation systems

automatically. The diverted water need not be wasted water because the drain pipe from the diverter chamber can be fitted to a standard drip irrigation system.

## Calculating the amount of water to divert

Industry experience and field testing suggests that the amount of water diverted should be determined based on (1) the **surface area** of the roof, and (2) the **amount of pollutants** on the roof. The following factors can be used as a guide in determining the volume of water to be diverted.

### POLLUTION FACTOR FOR THE ROOF

#### Minimal Pollution – divert 0.5L per m<sup>2</sup>

Open field, no trees, no bird droppings, clean environment

#### Substantial Pollution – divert 2L per m<sup>2</sup>

Leaves and debris, bird droppings, various animal matter, e.g. dead insects, skinks etc.

### DIVERSION FACTOR FOR A FIRST FLUSH WATER DIVERTER

m<sup>2</sup> Roof Area X Pollution Factor = Litres to be diverted.

#### Example for a minimal polluted roof of 100m<sup>2</sup>

100 X 0.5 = 50 Litres to be diverted.

#### Example for a heavily polluted roof of 100m<sup>2</sup>

100 X 2 = 200 Litres to be diverted.

**As a rule of thumb, the more water that is diverted the better the quality of water in the tank.**

The Diverters are sold in kit form and incorporate standard 90, 100 or 300mm PVC pipes as the diverter chamber section. The length of pipe used will vary depending on the volume to be diverted.

**Diverters with a variable volume chamber are better** than fixed-volume diverters **because the volume of diverted water can be customised** to the specific requirements of each roof.

## Types available

Four types are available – all require minimal maintenance and will improve water quality. The volume of water to be diverted, type of downpipe system and site characteristics will determine the type of diverter required.

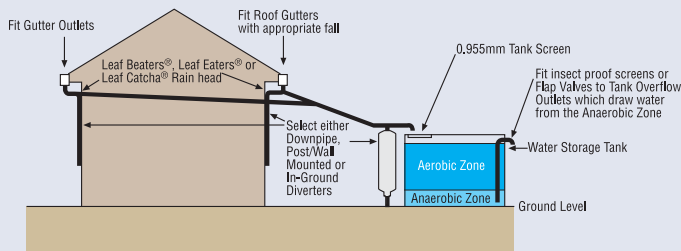
**Standard 90, 100 or 300mm PVC pipes are used as the diverter chamber section. The length of pipe used will vary depending on the volume to be diverted.**



# “WET” & “DRY” SYSTEMS

## “Dry” systems

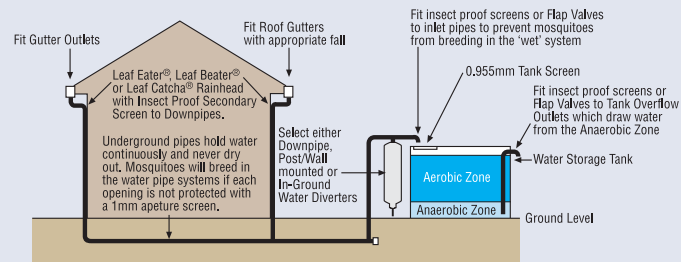
Are systems where the pipe system is designed to run direct from the gutter into the tank. The pipes drain out after rain and do not hold water when the rain stops. “Dry” systems are best because water sitting idle in pipes can become stagnant and provides a potential breeding ground for mosquitoes.



## “Wet” systems

Are systems where the pipes from the gutter go down the wall and underground and then up into the tank. Most systems are “wet” because the size of buildings and the placement of tanks away from the buildings mean that there are long runs of pipe underground leading to a riser at the tank. Because the pipes are underground and below the entry point to the tank, even during periods without rainfall water remains in the pipes. “Wet” systems can be converted to “dry” using In-Ground Water Diverters.

Legislation broadly says that where pipes hold water they must be screened with a non-corrosive screen of not more than 1mm aperture to prevent the entry of mosquitoes and vermin. Mosquitoes are known to be responsible for many diseases including Dengue Fever and Ross River Fever. Rain Heads deflect leaves and debris at the downpipe and the Leaf Eater®, Leaf Beater® and Leaf Catcha® rain heads from Rain Harvesting include stainless steel screens. It is critical to insect proof pipes in a “wet” system and Rain Harvesting rain heads have been designed to meet all legislative guidelines.



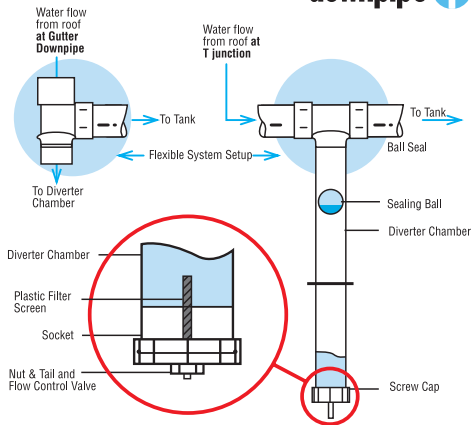
## Downpipe Diverter

A simple and effective first flush device requiring minimal maintenance. **Installed at the gutter downpipe or via a T-junction** to a new or existing system of 90mm or 100mm diameter PVC downpipes. **Add the appropriate length of pipe based on the quantity of water you wish to divert.** Consider as a guide that each and every 1m of 100mm PVC pipe holds approximately 8L of water.

**It is preferable to fit the longest length chamber as possible to ensure better quality water.** Install from the roof gutter and after the rain head, to within 150mm above the ground to allow easy access to the end cap.

Downpipe Diverter should be **installed at each downpipe that supplies water to the tank system** and are ideal diverters for use with under eaves tanks.

**downpipe**  **diverter**  
FIRST FLUSH



## Post/Wall Mounted Diverter

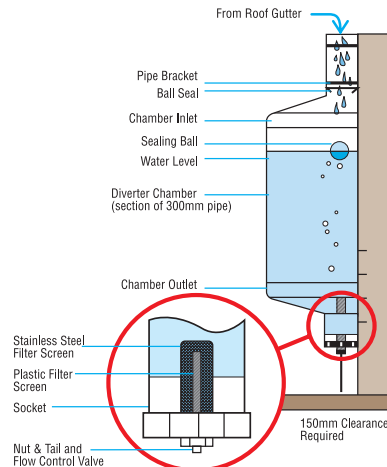
A versatile unit that **can be mounted on a wall, post or stand, to hold larger volumes.** Can be adapted to suit a wide range of applications and will manage single or multiple pipes coming from the roof to divert between 20 and 150L. Includes a galvanised steel mounting bracket and saddle. A galvanised steel stand is an optional alternative to post or wall mounting. **Add the appropriate length of 300mm pipe based on the quantity of water you wish to divert.** For example, a 2m length of 300mm diameter PVC pipe is required to hold 150L of diverted water. The kit is easy to freight, and the diverter volume can be made on site to match exact requirements.

**As a rule of thumb, the more water that is diverted the better the quality of water in the tank.**



(Above) A galvanised steel stand is an optional alternative to post or wall mounting.

(Left) Downpipe Diverter installed with a Leaf Beater® rain head, both painted to match galvanised downpipes.



SIZES	PIPE	TOTAL
Litres	Length (mm)	Total Height Required (mm)
20	225	590
30	365	730
40	500	865
50	630	995
60	780	1145
70	905	1270
80	1050	1415
90	1180	1545
100	1310	1675
120	1610	1975
130	1735	2100
150	2005	2370

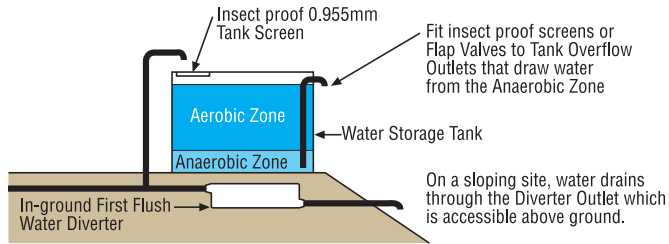
**post/wall**  **diverter**  
FIRST FLUSH

**In-Ground Diverters are perfect for sloping allotments and can convert “wet” systems into “dry” systems.**



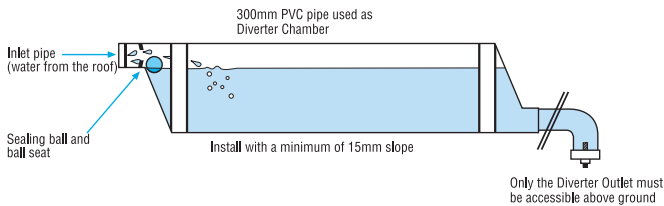
## In-Ground Diverter

Buried and out of site, an In-Ground Diverter is **perfect for sloping allotments**. On a site with a minimum 5° slope, an In-Ground Diverter **allows a “wet” system to be converted into a “dry” system**.



After rainfall when an In-Ground Diverter is installed, not only will the diverter chamber empty, the water held in underground pipes will also drain out through the diverter, converting it to a “dry” system.

**in-ground diverter**  
FIRST FLUSH



SIZES (300mm DIAM. PIPE)		Plus (add) the volume of water held in the pipe section downstream of the Diverter, between the Chamber and the Flow Control Valve / Outlet.  For every 1m of 100mm PVC pipe add 8L.
Length Metres	Volume in Litres Contained (approx)	
1.0	77	
1.5	112	
2.0	147	
2.5	182	
3.0	218	
3.5	253	
4.0	289	
4.5	324	
5.0	360	
5.5	395	
6.0	430	



## Commercial Diverters

**Commercial diverters** are used where large volumes of water must be diverted due to extremely large roof areas or because of a high degree of contamination on the roof.

Generally divert volumes between 500 and 1000L. Individually designed and manufactured to specific requirements. Can be ground mounted next to the holding tank, and even installed in-ground.

## Installation\*

Detailed installation instructions are supplied with each Water Diverter kit. The diverters are easy to install, and importantly, can be adapted on site to suit the needs of the application.

## Maintenance

Ensure the outlet of the diverter is clear of any debris. If the outlet is blocked, the chamber will not empty and the first flush of water when it rains will not be diverted. Instead it will flow to the tank and pollute the water.

**A well maintained water diverter will improve water quality and reduce tank maintenance**

Periodically unscrew the End Cap of the water diverter to allow debris to fall out. Hose or wash the Filter Screen if required and clean the Flow Control Valve.

## Legislative requirements

Many Local Councils have developed guidelines for the installation of rainwater tanks, and in some states of Australia it is law that rain heads, first flush devices and insect proof screens are fitted when rainwater is captured and stored in tanks.

Before installing a rainwater tank, you should check whether your Local Council has such guidelines in place. Health Officers will confirm that it is most important to keep the catchment system free of bacteria at all times to harvest good quality water.

Mosquitoes must be kept out of pipe systems and the tank to prevent breeding and the spread of disease. Ensure that all plumbing work that is carried out complies with all regulations. If in doubt, seek professional advice.

**In some states of Australia it is law that rain heads, first flush water diverters and insect proof screens are fitted when rainwater is captured and stored in tanks.**

# Install the complete Rain Harvesting system

In addition to our range of First Flush Water Diverters, Rain Harvesting Pty Ltd manufactures:

- Blue Mountain Mesh™ an all steel, fire proof gutter system that helps prevent leaves and debris entering gutters.
- The Leaf Eater®, Leaf Beater® and Leaf Catcha® rain heads – the ultimate high performance rain heads.
- A complete range of tank accessories including Gutter Outlets, Mozzie Stoppa™ insect proof Flap Valves and Screens, mains water Tank 'Top Up' systems, and Auto Tank Vacuum systems.

If you are considering purchasing a rainwater tank, we recommend installing a complete system to improve water quality and reduce tank maintenance. Please feel free to visit [www.rainharvesting.com.au](http://www.rainharvesting.com.au) or call **TOLL FREE 1800 06 77 44** for more information.



Photo courtesy of BlueScope Water

# Rain Harvesting

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