Helps reduce pollution of your tank water!

Essential when using rainwater inside or outside

Amount of water diverted is customised to specific requirements of each roof

Diverts contaminated water to the garden

Protects rainwater pumps and internal appliances

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
- Can be painted to match the home
- No mechanical parts – nothing to wear out
How does a First Flush Water Diverter work?

Fitting an appropriately sized water diverter, often called ‘roof washers’, 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. They help ensure cleaner water is available for use, which helps protect rainwater pumps and internal household appliances such as clothes washing machines, toilets, hot water systems, etc.

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, skinks, 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 rainwater 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 Control Valve ensures the chamber empties itself after rain and resets 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.

**The Diverter Chamber empties through a Slow Release Control Valve and can be connected to standard dripper irrigation systems**

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**Getting the best performance from First Flush Water Diverters**

Water Diverters work best when a gutter downpipe rain head is installed upstream of the diverter. Fitted at the downpipe either directly on the underside of the roof gutter or to a wall, the Leaf Eater® or Leaf Beater® rain heads, also from Rain Harvesting, are self cleaning devices that deflect leaves and debris away from the flow of rainwater. Not only do these devices help stop gutters blocking with leaves and debris, they also prevent eaves flooding during heavy rainfall.

By deflecting larger debris upstream, rain heads ensure the diverter chamber and Slow Release Control Valve do not block up as easily. **Rain heads not only help Water Diverters operate more efficiently in preventing fine sediments and pollutants from entering the rainwater tank, they also ensure Water Diverters drain and reset automatically after rainfall, significantly reducing system maintenance.**
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.

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

Rain Harvesting Waters Diverters are sold in kit form and incorporate standard 3”, 4” or 12” 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.

### POLLUTION FACTOR FOR THE ROOF

- **Minimal Pollution** – divert 1 pint (0.5 litre) per 10 square feet of roof area
  - Open field, no trees, no bird droppings, clean environment
- **Substantial Pollution** – divert 4 pints (2 litres) per 10 square feet of roof area
  - Leaves and debris, bird droppings, various animal matter, e.g. dead insects, skinks etc.

### DIVERSION FACTOR FOR A FIRST FLUSH WATER DIVERTER

Square Foot Roof Area X Pollution Factor = Rainwater to be diverted.

**Example for a minimal polluted roof of 1000 square feet (100 square meters)**

1000 square feet X (1/10) = 100 pints (50 litres) to be diverted.

**Example for a heavily polluted roof of 1000 square feet**

1000 square feet X (4/10) = 400 pints (200 litres) to be diverted.

### Types available

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

- **Standard 3”, 4” or 12” PVC pipes** are used as the diverter chamber section.
- The length of pipe used will vary depending on the volume to be diverted.
“Dry” systems

The pipe system runs 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. You can remove the secondary stainless steel screen included with the Leaf Eater®, Leaf Beater® and Rain Catcher® rain heads in “dry” systems, and this will help them perform better. Note: In the case of the Leaf Eater®, the secondary screen frame must be refitted for the primary screen to rest on.

“Wet” systems

The pipes from the gutter go down the wall and underground and then up into 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. 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. The Leaf Eater®, Leaf Beater® and Rain Catcher® rain heads include stainless steel screens to prevent mosquitoes and other pests accessing the pipe system and are designed to meet all legislative guidelines.

“Wet” systems can be converted to “dry” by installing an in-ground water diverter that not only diverts the first flush of contaminated water from the roof, but also drains water from the underground pipe system on a sloping site. (Visit www.rainharvesting.com for more information).
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 3” or 4” 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 each 1 yard of 4” PVC pipe holds approximately 2 gallons 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, and ensure a gap of a minimum of 6” above the ground to allow easy access to the end cap.

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

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

(Above) A galvanized 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 metal downpipes.
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 5 and 39 gallons. Includes a galvanized steel mounting bracket and saddle. A galvanized steel stand is an optional alternative to post or wall mounting. Add the appropriate length of 12” pipe based on the quantity of water you wish to divert. For example, a 80” length of 12” diameter PVC pipe is required to hold 39 gallons of diverted water. The kit is easy to freight, and the diverter volume can be made on site to match exact requirements.

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<th>PIPE</th>
<th>TOTAL</th>
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<tr>
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Buried and out of sight, 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 Diverters are perfect for sloping allotments and can convert “wet” systems into “dry” systems.

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In-Ground Water Diverter kit
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. Installing a self-cleaning gutter downpipe rain head, such as a Leaf Eater® or Leaf Beater® upstream of the Water Diverter will improve performance of the diverter and significantly reduce 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 Slow Release Control Valve.

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

Legislative requirements

Many Local Authorities have developed or are developing guidelines for the installation of rainwater tanks. In fact in some, some states of Australia, where rainwater is the sole water supply for over 3 million people, 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 Authority has such guidelines in place. It is critical 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 its range of First Flush Water Diverters, Rain Harvesting has developed a complete range of rainwater tank accessories.

If you are considering purchasing a rainwater tank, we recommend installing a complete system to improve water quality and catchment efficiency, protect pumps and internal household appliances and reduce tank maintenance. Please visit www.rainharvesting.com for more information.

How To Create the Complete Rain Harvesting System

1. RAIN HEADS.
   Fit Leaf Eater® or Beater® rain heads to each downpipe to deflect leaves, debris and keep mosquitoes out of pipes that hold water (“wet” systems).

2. FIRST FLUSH WATER DIVERTERS.
   (Sometimes called “Roof Washers”). Prevent the first, most contaminated rainwater from entering the tank. Fit to each downpipe that supplies rainwater to the tank, or install a larger diverter that can handle multiple downpipes, beside the tank or in-ground.

3. WATER TANK.
   Consider annual rainfall, roof catchment area and water usage when determining its size.

4. INSECT PROOF SCREENS.
   Fit screens or flap valves to tank overflow outlets to keep mosquitoes and pests out and to vent the tank properly.

5. PUMP.
   Select a system (if required) to distribute water for use insider and/or outside the home.
   - Improve water quality and catchment efficiency
   - Reduce tank maintenance
   - Protect pumps and household appliances
Rain Harvesting System.

www.rainharvesting.com

How To Create the Complete rain Harvesting system.
*Consider the requirements of local authorities and have a plumber complete installation where required.

Available from:

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