

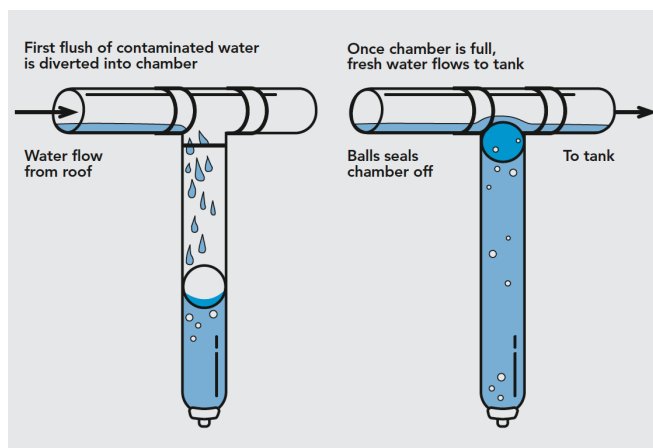
# FIRST FLUSH™ DOWNPIPE WATER DIVERTER

## HOW DOES A FIRST FLUSH™ WATER DIVERTER WORK

Fitting an appropriately sized First Flush 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 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, 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 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 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 DIVER

Industry experience and field testing suggests that the amount of water diverted should be 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.**

POLLUTION FACTOR FOR THE ROOF
<b>Minimal Pollution – divert 0.5L per m<sup>2</sup></b> Open field, no trees, no bird droppings, clean environment
<b>Substantial Pollution – divert 2L per m<sup>2</sup></b> 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.
<b>Example for a minimal polluted roof of 100m<sup>2</sup></b> 100 X 0.5 = 50 Litres to be diverted.
<b>Example for a heavily polluted roof of 100m<sup>2</sup></b> 100 X 2 = 200 Litres to be diverted.

The diverters are sold in kit form and utilise 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.

## EASY INSTALLATION

### STEP 1

Determine the length of diverter tube. Consider as a guide that each 1m of 100mm pipe holds approx. 8L of water. Fit the longest length of pipe possible, making sure the Screw Cap #10 is at least 150mm from the ground to allow for removal and cleaning.

### STEP 2

Place the ball Seat #9 into the Tee Junction #6 ensuring the narrow end of the ball seat points down into the Diverter Chamber. Apply glue to the Diverter Chamber #4 and fit up against the Ball Seat and hold until the glue sets. Glue the Socket #14 to the bottom end of the Diverter Chamber.

### STEP 3

Fix the assembled chamber directly to the wall in the desired position using the Wall Brackets #12 or the support to an existing Downpipe using plastic Pip Brackets #12.

### STEP 4

Connect a Male & Female (M&F) Elbow #8b (if required) to the Chamber Outlet #8 and connect the downpipe #3. Bracket if necessary. Fit an elbow to the InFeed pipe #2 (if required) and connect to the bottom of the selected rain head.

### STEP 5

Select the appropriate Flow Control Valve #11 and insert into the Hose Connector #16. Start by using the Control Washer with the smallest gauge hole (lowest number). Try a larger gauge Washer if experiencing blockages. Place the Filter Screen #13 into position from the outside of the Screw Cap #10 and then attach the Hose Connector #16.

### STEP 6

Place the Sealing Ball #5 into the Diverter Chamber #4 and attach the assembled Screw Cap #10 to the Socket #14.

**These Water Diverters should be installed at each downpipe that supplies water to the tank system.**

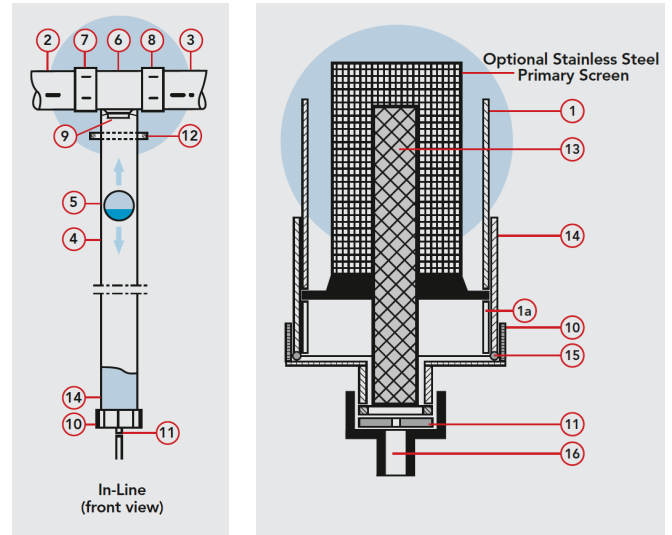
## MAINTENANCE

Periodically remove and clean the following components:

- #16 Hose Connector, #11 Flow Control Valve and #13 Filter Screen. Make sure the hole in the Control Valve is clear. If experiencing blockages of the Control Valve #11, select a larger number Control Washer (different sized washers are provided), and order the Optional Stainless Steel Primary Screen
- #10 Screw Cap, #1 Optional Stainless Steel Primary Screen and #1a Keeper Ring

**Remember these are water diverters not debris diverters.**

## ASSEMBLED END CAP WITH OPTIONAL STAINLESS STEEL PRIMARY SCREEN



REFERENCE CHART	
1	Diverter Chamber
1a	Keeper Ring for Optional Stainless Steel Primary Screen
2	In-feed from the roof
3	To the tank
4	Diverter chamber
5	Sealing Ball
6	Tee Junction
7	Chamber inlet
8	Chamber outlet
8b	Elbow
9	Ball seat
10	Screw cap
11	Flow Control Valve
12	Pipes/Wall Brackets
13	Plastic Filter Screen
14	Socket
15	'O' Ring Seal
16	Hose Connector