eFLOW GUIDE

re:SOURCE™
SUSTAINABLE WATER SOLUTIONS

NETAFIM™

> eFLOW : Water Reuse Dispersal System

eFLOW IS A COMPLETE DRIPPERLINE DIVERSION PACKAGE SPECIFICALLY DEVELOPED FOR ONSITE DOMESTIC AND TREATED GREYWATER DISPERSAL SYSTEMS.

CREATED BY NETAFIM - THE WORLD LEADER IN DRIP IRRIGATION - THIS COMPLETE PACKAGE ALLOWS THE REUSE OF DOMESTIC HOUSEHOLD WATER TO IRRIGATE GARDEN AND TURF AREAS.

How eFLOW works

Netafim's eFLOW dripperline system delivers a slow and precise application of treated effluent evenly throughout the soil. Made of flexible polyethylene tubing, the dripperline has evenly spaced pre-inserted emitters. When water is pumped through the dripperline, these pressure compensating emitters discharge an even, slow distribution of treated effluent into the ground.

The eFLOW advantage

> The highest water efficiency compared to other systems

> Allows reuse of water for supplementary turf and garden irrigation

> Reduces offensive odours, aerosol drifting and buffer zones

> Guaranteed uniform distribution over entire application area

> Low application rate improves water infiltration for all soil types

> Drippers are specifically designed to operate without clogging

> Minimal maintenance and service requirements

> Automated system reduces human interaction

eFLOW is the only product with pressure compensating drippers that hold water within the dripperline during system shut-down. This improves distribution and reduces wasted run-off on slopes.

It also has a clever System Protection Unit with a life-time guarantee against root intrusion for turf applications. Plus, eFLOW dripperline has the largest filtration surface area than any other system on the market.

Installation

The eFLOW system is flexible enough to be used across garden and turfed areas of all shapes, sizes and undulations. It's a comprehensive, easy-to-use package that has all you need to get your eFLOW system up and running in no time.

Your eFLOW kit includes:

- 200m UniBioline CNL dripperline 1.6l/hr @ 0.40m spacings
- 50m Purple LDPE
- 25mm Arkal Disc Filter
- 25mm Techfilter
- Valve Boxes
- Plus all ancillary equipment such as Fittings, Air Valves and Flush Manifolds

Surface installation techniques

Surface Installations apply the same principles as sub-surface Installations except they are not buried. Surface Installations are installed in garden beds on top of the soil and below the mulch layer.

It is recommended that stakes are used during backfilling to stabilise the dripperline header assembly and Flush Manifold.

Sub-surface Dripperline installation techniques

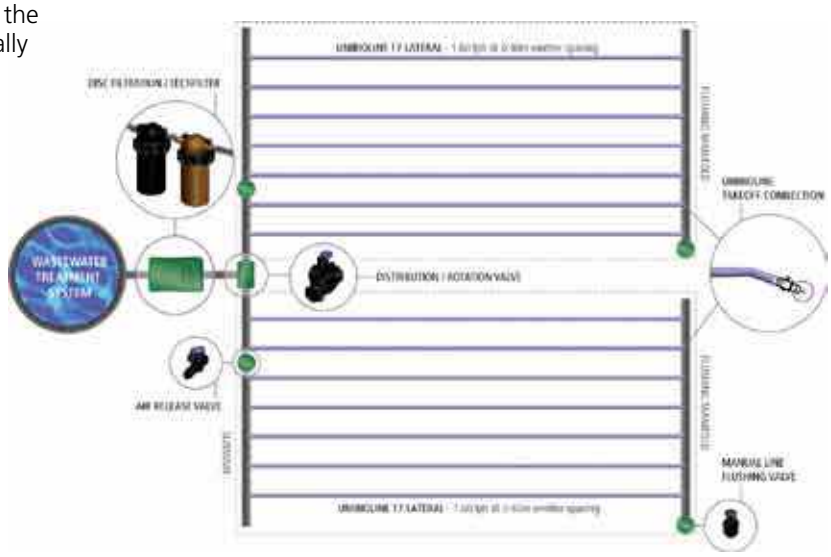
There are a number of techniques you can use when installing the dripperline below the surface.

Trenching

This is the most common technique. This involves digging a trench no wider than 50mm to the depth required. It is important when backfilling not to damage the pipe with sharp rocks and objects. The narrower the trench the better. This ensures water will move laterally rather than down the trench.

Ripping

Using a ripping attachment is the fastest and most successful way of installing a dripperline. If the soil is dry and hard, then wet the area before ripping. Be careful not to stretch or damage the outside wall of the dripperline during installation.

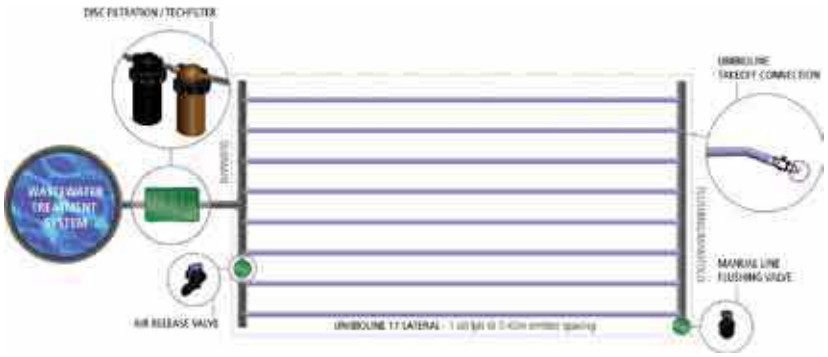


Vibratory Plough

The vibratory plough is more suitable for larger sites with longer run lengths. It works well with difficult compact soil types, however wetting the soil before installation may still be required. These machines are capable of ripping more than one line at a time.

On surface backfilling

This method is particularly useful in new sites where topsoil will be added afterwards. The whole system is laid out on top of the sub-grade, then backfilling of soil over the top of the dripperlines takes place. It is very important not to damage the dripperline with any heavy machinery during backfilling.



Which ever form of installation you choose, we recommend you install Air Valves, Manual Flush Valves and Filters to ensure the longevity of the system.

> Assembly

Filter Assembly

The 25mm Arkal Disc Filter is used to protect the system from contamination of debris. It has a 130 micron element inside that requires cleaning periodically (see maintenance and servicing). The Techfilter is also required to provide the system with trace elements of Trifluralin. This chemical prevents roots from blocking drippers.

1. Assuming the outlet of the treatment plant is a 25mm male thread, use a 25mm ratchet clamp to connect the 25mm LDPE to the treatment plant with the 25mm Nut & Tail fitting.
2. Using the ratchet clamp again, connect the 25mm Arkal Disc Filter (black) to the 25mm LDPE with 25mm Nut & Tail fittings.
3. Now use the ratchet clamp to connect the 25mm Techfilter (black) to 25mm LDPE using 25mm Nut & Tail fittings.

Important:

- *The arrow on the filter indicates the direction of flow*
- *Filters should be installed facing down as shown in illustration*
- *The Arkal Disc Filter is to be installed upstream of Techfilter*
- *If installing multiple zones, tee's are to be installed after the filtration system (Tee's are provided in the 'Add-on' kit only).*
- *The filter system is to be contained within the rectangular valve box provided. This valve box has 'cut outs' for inserting 25mm LDPE either side of filters. Valve boxes require a stable base and a gravel sump to ensure they don't fill with water when it rains.*
- *Only insert the Techfilter cartridge once the system has been installed. Follow the handling procedures shown on the instructions inside the box.*
- *If indexing or controllers are required please consult your Netafim distributor.*

Zone Assembly

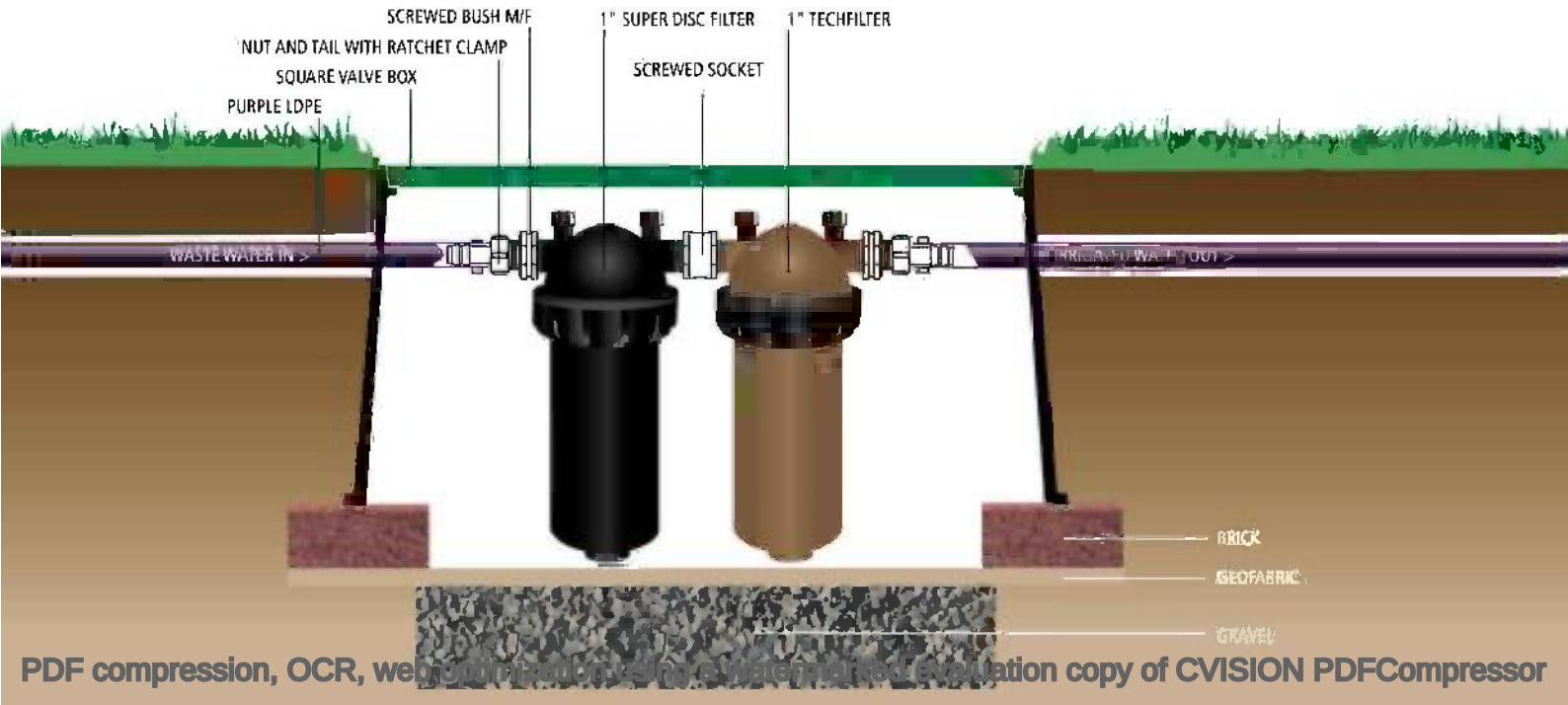
Using the 25mm LDPE from the Filter Assembly, you need to create a header assembly that runs perpendicular to the dripperline. This will be buried below the surface in Sub-surface Dripperline Installations between 100mm and 200mm.

1. Attach the 25mm End Connectors to the end of the header assembly using a 25mm ratchet clamp.
2. Using the punch tool, insert holes into the 25mm LPDE at lateral spacings. With the 17mm ratchet clamp, attach the dripperline into the Start Connectors and insert the fitting into the hole on the 25mm LDPE. Ensure the fitting and initial section of dripperline remains perpendicular to the 25mm LDPE.
3. Using 25mm LDPE, install the Flush Manifold opposite the header assembly.
4. Repeat the installation of Start Connectors between the dripperline and LDPE for the Flush Manifold.
5. Insert the 25mm End Connectors at the highest end of the Flush Manifold using a 25mm ratchet clamp.

Flush Valve

The Flush Valve is used to clear any debris out of the system during routine maintenance. The Flush Valve is located at the lowest end of the Flush Manifold.

1. Screw the 25mm threaded elbow into the male Manual Flush Valve. Be sure to apply thread tape (thread tape not provided).
2. Connect the threaded elbow to the 25mm LDPE Flush Manifold using a 25mm ratchet clamp.
3. Install the Manual Flush Valve at 90° to the surface, ensuring the lilac cap is level with the finish grade of the soil.



Air Vacuum Valve

This component is designed to release air from inside the dripperline during system start-up and shut-down. This reduces the potential risk of soil being sucked into the drippers and causing clogging.

1. Locate the highest point of the system along either the header assembly or Flush Manifold.
2. Using a 25mm ratchet clamp, insert the 25mm female tee into the 25mm LDPE.
3. Insert the 13mm Air Release Valve into the female tee. Do this by applying thread tape and ensure the valve is positioned vertically.
4. Install the 150mm round valve box around the air valve, then use the 'punch outs' to insert the 25mm LDPE.

Completing Installation

Your eFLOW system is now almost complete and ready for operation. To begin using the system, run the following checks:

Check 1
The cartridges in both the Disc filter and Techfilter are installed.

Check 2
When turning on the system for the first time check for leaks being careful not to alow any debris into the dripperline

Check 3
Flush the system by opening the flush valve cap then inserting and turning the flush valve key.

Maintenance and servicing

Regular maintenance and servicing should be carried out periodically. The following parts require on-going servicing to ensure the longevity of your eFLOW system.

Arkal Disc Filter
Remove the disc element from the housing and rinse in water to clean any debris on and in between the discs on a regular basis.

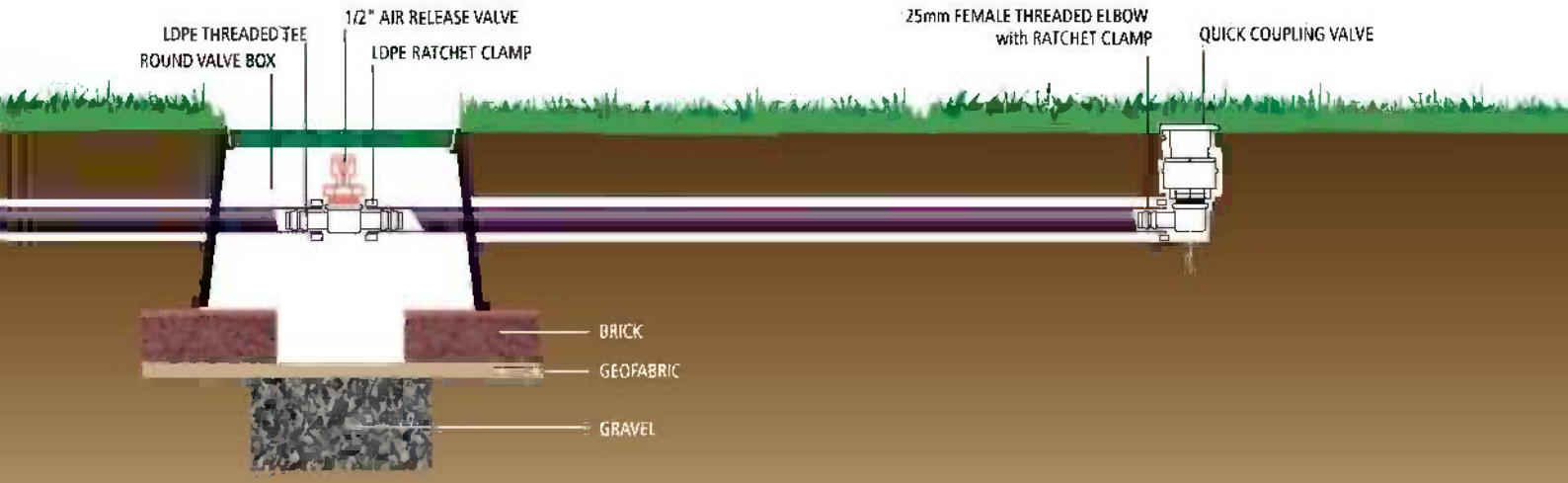
Techfilter
Remove the disc element from the housing and rinse in water to clean all debris on and in between the discs.

Important - Replace the cartridge every 2 years. This will ensure continuous prevention against root intrusion. Using the safety instructions provided with the cartridge, make sure all procedures are adhered to during handling.

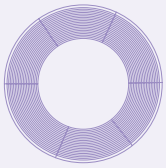
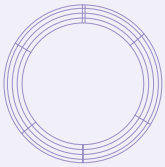
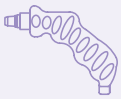
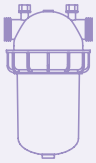
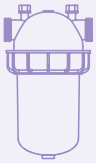
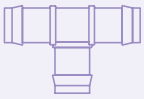
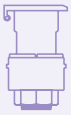
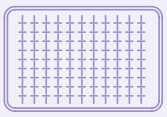
Air Valve
While the system is in operation, check the Air Valve by pushing it downwards to flush out any potential debris. Ensure the Air Release Valve Box is clean and not buried in soil.

Manual Flush Valve
During system operation attach the male QCV (Quick Coupling Valve) to the female connection in the ground. This requires lifting the lilac cap, pushing the male connection and turning it to secure. Use a short piece of clear hose (not provided) at the end of the male connection to monitor the quality of water within the system as it is flushed. Make sure the system is flushed for a minimum of 30 seconds or longer if possible.

Dripperline
Regularly check the dripperline for leaking and ponding around the site. If any leaks are found, use a 17mm ratchet clamp to attached dripperline joiners. This will prevent debris or soil contamination occurring.



> Contents

ITEM	DESCRIPTION	STARTER	ADD-ON	ITEM	DESCRIPTION	STARTER	ADD-ON
	UniBioline CNL 1.6l/hr @ 0.4m spacing	200m	200m		Straight take-off	30	30
	25mm LDPE lilac	50m	50m		Budget Punch tool	1	
	25mm super Arkal disc filter, 120 mesh	1			17mm ratchet clamp	40	40
	25mm short Techfilter	1			17mm joiner	5	5
	25mm x FBSP x 25mm nut and tail	5			25mm LDPE tee		1
	25mm ratchet clamp	16	15		25mm x ¾′ FBSP threaded elbow	1	1
	25mm LDPE joiner	2	2		20mm QCV lilac lid	1	1
	25mm LDPE End Plug	2	2		Plastic quick coupling key	1	
	13mm MBSP Bermad vacuum breaker	1	1		150mm round valve box- lilac lid	1	1
	25mm x ½′ FBSP threaded tee	1	1		Rectangular commercial valve box- lilac lid	1	

> Application

SOIL TEXTURE	SOIL STRUCTURE	DISPERSAL RATE mm/week	DISPERSAL RATE mm/week	AREA REQUIRED 1L/day	DRIPLINE LENGTH per 1L	
					0.5 m spacing	1.0 m spacing
Gravel/Sand	Structureless Massive	35	5	0.200m^2	0.400m	0.200m
Sandy Loams	Weakly Structured	35	5	0.200m^2	0.400m	0.200m
	Massive					
Loams	Highly / Moderately Structured	28	4	0.250m^2	0.500m	0.250m
	Weakly Structured or Massive					
Clay Loams	Highly / Moderately Structured	25	3.5	0.285m^2	0.570m	0.285m
	Weakly Structured					
	Massive Structured					
Light Clays	Strongly Structured	20	2.9	0.345m^2	0.690m	0.345m
	Moderately Structured					
	Weakly Structured or Massive					
Medium/Heavy Clays	Strongly Structured	15	2.14	0.467m^2	0.934m	0.467m
	Moderately Structured					
	Weakly Structured or Massive					

Regulations and Legislation

Each state and council has regulations and by-laws concerning the dispersal of effluent which must be strictly complied with. This manual is intended to be an aid to installers and end users of the eFLOW Water Reuse Dispersal System and according to local, state or federal law and regulation shall take precedence over this manual. You are accordingly advised and requested to check with your own council and state government as to their specific requirements for the installation of the eFLOW Water Reuse Dispersal System. Furthermore, the user of the eFLOW Water Reuse Dispersal System is subject to all local conditions that prevail at the site and further subject to any appropriate expert tests including but not limited to soil tests and water tests, which may be required prior to the installation to determine the fitness for use.

In addition, other factors must be considered to determine fitness for use including but not limited to slope and landscape contours and acceptable hydraulic loading rates.

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